



National Commission on Recognition of Dental Specialties and Certifying Boards

APPLICATION FOR RECOGNITION OF

Orofacial Pain

Submitted by the American Academy of Orofacial Pain (AAOP)



American Academy of Orofacial Pain

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A handwritten signature in black ink, appearing to read "JFB", written over a horizontal line.

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Material provided in the application for specialty recognition contains statements that represent conclusions of the sponsoring organization. Recognition of a dental specialty by the National Commission on Recognition of Dental Specialties and Certifying Boards is based on compliance with established *Requirements* and does not imply concurrence

with all of the statements presented in the sponsoring organization's application.

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NATIONAL COMMISSION ON RECOGNITION OF DENTAL SPECIALTIES AND CERTIFYING BOARDS

**PERMISSION TO PUBLISH
APPLICATION FOR RECOGNITION AS A DENTAL SPECIALTY**

The National Commission on Recognition of Dental Specialties and Certifying Boards has sole responsibility related to the recognition of special areas of dental practice and, in that capacity, obtains applications for specialty recognition, including exhibits and supplemental material (the "Specialty Application"). The undersigned hereby grants its full permission and authorization to the National Commission to republish, post and otherwise use or make available the Specialty Application in various ADA publications, including but not limited to the National Commission's website. Furthermore, the undersigned consents to the reproduction, display, transmission and use of the Specialty Application by the National Commission on a perpetual basis, worldwide, without charge, in any media now existing or hereafter created, including, without limitation: brochures, periodicals, Internet, Intranet, websites and CD-ROMs, and to receive or otherwise use the Specialty Application in electronic format as well as print or any other media.

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IN WITNESS WHEREOF, the undersigned, through its duly authorized representative, has executed this Agreement on this 10th day of April, 2019

American Academy of Orofacial Pain
Name of Applicant Organization


Signature:

Jennifer Bassiur, DDS, President of the American Academy of Orofacial Pain
Title

EXECUTIVE SUMMARY

Chronic pain is, perhaps, the most significant issue in health care today. It is the leading reason to seek care, the dominant cause of disability and addiction, and the primary driver of healthcare utilization, resulting in greater expenditures than for cancer, heart disease, and diabetes (1-2). As a result, the nationwide chronic pain and opioid crisis is having a devastating effect on individuals, families, and communities, and imposing enormous financial costs on federal, state, and local governments. Since 1999, the number of deaths from prescription opioids has more than quadrupled and are now over 40,000 deaths per year, a greater number than from motor vehicle accidents. (3) It is estimated that the costs to our communities and governments is at least \$80 billion annually while the financial impact on individuals and families is even more burdensome. (1-4) The human toll is enormous and lamentable.

To reverse the chronic pain and opioid crisis, respected institutions such as the Institute of Medicine, the National Pain Strategy, the Institute for Health Care Improvement, and the U.S. Department of Health and Human Services Pain Management Best Practices Inter-Agency Task Force have recommended that health professionals including dentists improve their recognition, training, and care of pain conditions.(1-5)

This recommendation has been the goal of the American Academy of Orofacial Pain (AAOP) for the past 40 years. The AAOP has represented the field of Orofacial Pain during this time and is the sponsoring body for submission of this application for recognition of Orofacial Pain as a dental specialty to the National Commission on Recognition of Dental Specialties and Certifying Boards. The purpose of this application is to provide clear objective evidenced-based documentation that the field of Orofacial Pain and the AAOP have met all requirements for approval of a dental specialty by this Commission and to demonstrate this specialty is much needed by our patient population.

Additionally, the more important point of this proposal is to ensure that we, as a profession, provide the public access to high quality evidence-based orofacial pain care for patients. Consider the following case as a typical example. A female patient presents with a 5-year history of jaw pain, pain in multiple teeth, ear pain, and headaches with additional symptoms of neck and shoulder pain, limited jaw function, and TMJ joint noise. Her pain began with a dental visit and progressed to having endodontic treatment, restorative dentistry, TMJ surgery, and opioid analgesics from her pain physician that resulted in opioid dependency. Her diagnoses included masticatory and cervical myofascial pain, TMJ disc disorder, TMJ arthralgia, migraine headaches, and atypical tooth pain. She also reports clenching and grinding of her dentition, depression, work loss, financial stress and a dysfunctional family among other stressors.

In a case such as this, health professionals should refer to an orofacial pain specialist who could work with a team including a physical therapist to improve the musculoskeletal function, a pain psychologist to provide counseling for depression and other psychosocial factors, and assistance from other health professionals including the patient's primary care dentist and physician and a physician pain specialist as needed. An orofacial pain dentist would bring together a patient-centered pain management program to both treat the conditions and address the many contributing factors that drive chronic pain, addiction, disability, and ongoing dependency on the healthcare system.

As members of the National Commission on Recognition of Dental Specialties and Certifying Boards, we believe it is time to expand Dentistry into the field of Orofacial Pain, and encourage more dentists to enter advanced education programs, which will provide comprehensive evidence-based care for these patients. This will improve the public's access to care of orofacial pain conditions, and will also encourage more dental schools to train orofacial pain specialists, similar to what has occurred with other areas of dentistry, i.e., oral and maxillofacial radiology.

Thus, the goal of this proposal is to clearly demonstrate that the field of Orofacial Pain has developed sufficiently in the past 40 years to meet all Commission requirements for a dental specialty, and also improves access to quality evidence-based care for millions of patients who suffer from these conditions. No less important will be the confidence of dentists and physicians in referring to qualified Orofacial Pain dentists.

Definition of the Discipline of Orofacial Pain

Orofacial Pain is the discipline of Dentistry which includes the assessment, diagnosis and treatment of patients with orofacial pain disorders, including temporomandibular disorders, oromotor and jaw behavior disorders, neuropathic and neurovascular pain disorders, related orofacial sleep disorders, and chronic orofacial, head and neck pain, as well as the pursuit of knowledge of the underlying pathophysiology and mechanisms of these disorders.

Principal rationales for seeking specialty status for Orofacial Pain

1. To improve access to care for patient with orofacial pain disorders by providing a respected and traditional mechanism to ensure that Orofacial Pain dentists treat with evidence-based therapies and adhere to a standard of care;
2. To recognize a credentialing board with the highest standards as the certifying board for Orofacial Pain dentists, and which complies with CODA specialty accreditation standards.
3. To ensure that graduates of Orofacial Pain programs meet CODA standards.
4. To support and expand the historical and current role of Dentistry in the rapidly evolving field of pain science while addressing concern from the public that Dentistry is not providing leadership in this field.
5. To enable patients, health care providers, and insurers to identify practitioners with knowledge and experience in managing chronic pain problems and to provide a resource for general practitioners and specialists to refer patients not responding to basic therapy.
6. To help address the societal crisis of chronic pain and opioid addiction.

For the past 40 years, the specialty of Orofacial Pain, through the American Academy of Orofacial Pain and the American Board of Orofacial Pain, has consistently met each of the ADA Commission Requirements of Specialty Status for Orofacial Pain as summarized here and documented in the more detailed proposal that follows. Here is a summary of the requirements:

Requirement 1: In order for an area to become and/or remain recognized as a dental specialty, it must be represented by a sponsoring organization: (a) whose membership is reflective of that proposed or recognized dental specialty; (b) in which the privileges to hold office and to vote on any issue related to the specialty are reserved for dentists who either have completed an advanced education program accredited by the Commission on Dental Accreditation in that proposed or recognized specialty or have sufficient experience in that specialty as deemed appropriate by the sponsoring organization and its certifying board; and(c) that demonstrates the ability to establish a certifying board.

The field is represented by the American Academy of Orofacial Pain which is the only orofacial pain organization that is affiliated with CODA-accredited advanced education programs in orofacial pain. Members of the AAOP who hold office and vote on issues related to the specialty are dentists and other health professionals who either have completed an advanced education program accredited by the Commission on Dental Accreditation of Orofacial Pain or have sufficient experience in that specialty as deemed appropriate by the sponsoring organization and its certifying board. Specialists in Orofacial Pain are credentialed by the American Board of Orofacial Pain, the only validated Certifying Board in the field of Orofacial Pain. There are 325 ABOP-certified specialists in the United States.

Requirement 2: A proposed specialty must be a distinct and well-defined field which requires unique knowledge and skills beyond those commonly possessed by dental school graduates as defined by the Commission on Dental Accreditation's Accreditation Standards for Dental Education Programs.

Orofacial pain disorders are not included in the Commission on Dental Accreditation's (CODA) 2019 Standards for Pre-doctoral Dental Education Programs. The most recent standards included in the 2019 Revision of Standards 2-8 and 3-1 were reviewed. Few dental schools provide a didactic course in orofacial pain disorders and no dental school requires a pre-doctoral rotation in orofacial pain clinics. A study of community dentists found nearly all general dentists desire their patients with orofacial pain disorders to see

orofacial pain specialists, if available. They recognize that these patients are complex requiring special knowledge, unique skills, and a team approach that can best address each of the chronic pain, behavioral, psychosocial, and addiction issues. Most states have no access to care to Orofacial Pain specialists.

Requirement 3: The scope of the proposed specialty requires advanced knowledge and skills that: (a) in their entirety are separate and distinct from the knowledge and skills required to practice in any recognized dental specialty and (b) cannot be accommodated through minimal modification of a recognized dental specialty.

In reviewing 2019 curriculum standards of all ADA recognized dental specialties including Dental Anesthesiology, it is clear that the scope of practice for the specialty of Orofacial Pain is separate and distinct from all other dental specialties. The knowledge and skills are included in the 2019 CODA requirements and curriculum standards of any other dental specialty are separate and distinct and cannot be accommodated through minimal modification of a recognized dental specialty. Although several specialties provide knowledge and skills in some orofacial pain areas, such as Oral surgeons performing TMJ surgery and Endodontists treating dental (usually acute) pain, this knowledge and these skills are limited to a defined skill set that are not included in Orofacial Pain Standards. This is reinforced by the recent survey of community dentists that found nearly all general dentists desire to refer their patients with orofacial pain disorders to an orofacial pain specialist, if available. They recognize that these patients are complex requiring special knowledge, skills, a team approach and understanding of chronic pain, psychosocial, and addiction issues. Most states have no such specialists, primarily due to an historical lack of support from organized dentistry and the ADA, thus, contributing to the lack of access to care for patients who suffer from these conditions.

Requirement 4: The specialty applicant must document scientifically, by valid and reliable statistical evidence/studies, that it: (a) actively contributes to new knowledge in the field; (b) actively contributes to professional education; (c) actively contributes to research needs of the profession; and (d) provides oral health services in the field of study for the public; each which the specialty applicant must demonstrate would not be satisfactorily met except for the contributions of the specialty applicant.

The AAOP and orofacial pain specialists have actively contributed to new knowledge with scientific studies and publications in its well respected international journal, the Journal of Oral & Facial Pain and Headache (the official Journal of the American, European, Asian, Australian and New Zealand Academies of Orofacial Pain), as well as many other scientific journals in both dentistry and medicine. The journal publications have resulted from extensive orofacial pain research over the past 40 years with funding from the National Institute of Dental and Craniofacial Research and many other granting agencies. Clinical and research advances in the field of orofacial pain have led to the development of evidence-based diagnostic and management strategies for patients with orofacial pain conditions. This research has helped define underlying mechanisms, diagnostic criteria, etiology, treatment efficacy, surgical implant outcomes, and many other areas of essential knowledge to define the field of Orofacial Pain. The vast majority of these publications and sponsored research on orofacial pain disorders in the past years has been completed by orofacial pain specialists and researchers, and not general dentists or other dental specialists. Yet, there is still a strong need for more research in Orofacial Pain as determined by the recent National Academy of Science Committee on Temporomandibular Disorders (March, 2019)

Requirement 5: A proposed specialty must directly benefit some aspect of clinical patient care.

For the past 30 years, the AAOP has developed and published consensus and evidence-based diagnosis and treatment guidelines that have been widely accepted nationally and internationally by most dental organizations, insurance providers, and government agencies. American Board of Orofacial Pain (ABOP) certified dentists follow these guidelines closely. **Table 1** includes a list of evidence-based treatments used by Orofacial Pain Dentists (All references for systematic review of these treatments are included in **Appendix IVc**).

Table 1. Characteristics and scientific evidence of different treatments of orofacial pain by ABOP certified Orofacial Pain Dentists (See Appendix IVc. Systematic Review of RCTs for Treatment of Orofacial Pain and Temporomandibular Disorders including References.)

Intervention	Scientific Basis	Evidence-based Treatments covered by health plans ^a
Self-management training	Systematic reviews of exercise and cognitive-behavioral therapies	Preventive medicine counseling Exercise Habit-reversal Mindfulness based stress reduction Biofeedback, relaxation, meditation Cognitive-behavioral therapy
Intra-oral splints	Systematic reviews of intra-oral splints	Full coverage stabilization at night; Repositioning splints at night. Immediate quick splints short-term Anterior bite plane short-term
Medications	Systematic reviews of pain, muscle relaxant, and sleep medications	NSAIDs Acetaminophen Tricyclic medications Muscle relaxants Sleep medications Migraine medication Neuropathic medication
Physical therapy	Systematic review evidence of therapeutic exercises, mobilization, and modalities	Therapeutic exercises Mobilization Ultrasound EGS, TENS and micro-current Iontophoresis
Injection and needle therapy	Systematic reviews of acupuncture, dry needling, and injections	Dry needling Trigger point injections Botox injections Steroid joint injections Arthrocentesis
Dental care	Some clinical trials but no systematic reviews	Occlusal equilibration
TMJ and Facial Surgery	Some clinical trials but no systematic reviews	Need to meet criteria for surgery for disk repair, arthroscopic surgery, and discectomy, total joint prosthesis as performed by Oral and Maxillofacial Surgeons

a. Clinical trials and systematic reviews show evidence of efficacy with less risk of adverse events

b. Clinical trials, case series, and some systematic reviews show low evidence of efficacy with higher risk of adverse events

Table 2. The lifetime prevalence and need for treatment of orofacial pain disorders compared to caries and periodontal disease. This prevalence is comparable to the annual prevalence and need for treatment of the most dental disorders including caries and periodontal disease, and missing teeth.(5-21)

Orofacial Pain Disorders	% of Population
Temporomandibular disorders	5-7%
Orofacial pain disorders (burning mouth, neuropathic, atypical pain, neurovascular)	2-3%
Headache disorder (tension-type headaches, migraine, mixed, cluster)	20%
Orofacial sleep disorders (e.g. sleep apnea, snoring)	3-4%

Neurosensory/ chemosensory disorders (e.g. taste, paresthesias, numbness)	0.1%
Oromotor disorders (e.g. occusal dysethesias, dystonias, dyskinesias, severe bruxism)	4.2%
Total Prevalence of Orofacial Pain Disorders	30% to 40%

Requirement 6: Formal advanced education programs of at least two years accredited by the Commission on Dental Accreditation must exist to provide the special knowledge and skills required for practice of the proposed specialty.

The AAOP is affiliated with 13 formal (two or more years) advanced education programs in Orofacial Pain that have been established in accredited Dental Schools to train future specialists in Orofacial Pain as documented in

Table 3. The total first year enrollments in all programs beginning the program in July of 2018 is 35. The number of graduates in the past five years has been 62. With at least 10 million people with a severe orofacial pain disorder that requires care, there are over 9,750,000 people left untreated by OFP dentists and estimates the need of 10,000 more OFP dentists (See adjacent **Figure 1**).

This is comparable to the number of oral and maxillofacial surgeons and endodontists in practice. Support for a specialty in orofacial pain will increase the number of specialists and also highlight the importance of training other dentists to care for those patients with less complex orofacial pain disorders.

Limited Access to Care to for Patients with Orofacial Pain in the United States



# US patients with severe OFP (3%)	10 million
# Orofacial Pain Dentist	250
# new patients/year per OFP Dentist	1,000
OFP patients left untreated	9,750,000
# of OFP Specialists needed	10,000

Table 3. List of Advanced Education Programs in Orofacial Pain

School	CODA Accred.	# of residents / year	Length (years)	Certificate / Degree	Financial	Program Director
Eastman Institute for Oral Health	Yes	3-Jan	3	Certificate	Tuition	Dr. Junad Kahn
University of Kentucky	Yes	2	3	Certificate or Master of Science	Tuition or Stipend	Dr. Jeffrey Okeson
Massachusetts General Hospital	Yes	3-Jan	2	Certificate	Stipend	Dr. Jeffry Shaefer
University of Michigan–Michigan Medicine	Yes	1	2	Certificate	Stipend	Dr. Lawrence Ashman
University of Minnesota	Yes	2	2	Certificate or Master of Science	Stipend	Dr. Shanti Kaimal
Naval Postgraduate Dental School	Yes	2 *Limited to Federal Service Dentists	3	Certificate with Master of Science	Stipend	Dr. Steve Hargitai
University of North Carolina	Yes	1	2	Certificate	Stipend depending on funding	Dr. Pei Feng Lim
Rutgers School of Dental Medicine	Yes	4 Masters 4 Advanced Education in Orofacial Pain	3 1	Master of Dental Science	Tuition	Dr. Gary Heir

SUNY Buffalo	Yes	2	3-Feb	Certificate or Master of Science	Tuition	Dr. Yoly Gonzalez-Stucker
Tufts U. School of Dental Medicine	Yes	2	3-Feb	Certificate or Master of Science	Tuition	Dr. Chao Lu
UCLA	Yes	3/year 2 domestic 1 international	3-Jan	Certificate, Master, PhD	Tuition or Stipend	Dr. Robert Merrill
USC	Yes	2	2+	Certificate, Master, PhD	Stipend	Dr. Glenn Clark
USC–Hybrid/Online	No	20/yr	3	Master of Science	Tuition	Dr. Glenn Clark

In summary, recognition of Orofacial Pain as a specialty should be a high priority for the profession of Dentistry. It will improve access to quality care and help address the chronic pain and opioid crisis as dentists collaborate with colleagues in medicine and other healthcare professions. By supporting this application, the National Commission has an opportunity to expand the Profession of Dentistry to help the millions of patients who are currently suffering from chronic orofacial pain disorders. This is possible without jeopardizing the scope of practice of either general dentistry or any existing dental specialty.

Support of the specialty of Orofacial Pain will ensure that clinicians who limit their practice in this field will be properly trained, knowledgeable, experienced, and Board certified. In turn, graduate programs will attract the highest quality candidates who will receive training beyond that which is provided in the undergraduate dental curriculum, as well as the experience, and credentialing to provide high quality care, and provide a referral source for professional colleagues.

A specialty in Orofacial Pain will set a standard for reliability and accountability of dentistry in the field of Orofacial Pain and maintain compatibly with current standards practiced in pain medicine, physician clinics, medical centers and hospital practices. A specialty in Orofacial Pain will raise the standards of the clinical community and improve pre-doctoral education with properly trained faculty. In addition, a specialty in Orofacial Pain will increase public confidence, increase the confidence of insurers and availability of coverage, and increase the recognition of Orofacial Pain dentistry by medical colleagues, thereby increasing access to care.

The ADA must take a position in support of this specialty to provide leadership and a strong foundation for growth of this promising field in order to serve and protect the public and the profession.

Introduction to the Application

A survey of 805 individuals in the general population with a persistent pain disorder, by Robert Starch Worldwide (4), revealed that more than four out of 10 people have yet to find adequate relief, saying their pain is not well managed— despite having the pain for more than 5 years and switching doctors at least once. This survey suggests that there are millions of people living with severe uncontrolled pain. Russell Portenoy, MD, Past President of the American Pain Society. “This is a great tragedy. Although not everyone can be helped, it is very likely that most of these patients could benefit if provided with state-of-the-art therapies and improved access to pain specialists when needed”.

Chronic pain has become a national health care crisis. It is the primary reason to seek care, the leading cause of disability and addiction, and the primary driver of healthcare utilization, costing more than cancer, heart disease, and diabetes.(1-5) As a result, the nationwide chronic pain and opioid crisis is having a devastating effect on individuals, families, and communities, and imposing enormous financial costs on federal, state, and local governments. Since 1999, the number of deaths from prescription opioids have more than quadrupled and is now over 40,000 deaths per year; a greater number than deaths from motor vehicle accidents.⁴ It is estimated that the cost to our communities and governments is at least \$80 billion annually, with the financial impact on individuals and families even greater.(22-30) The human toll is enormous.

To reverse the chronic pain and opioid crisis, health care leaders including the Institute of Medicine, the National Pain Strategy, the Institute for Health Care Improvement, the Institute for Clinical System Integration, and U.S. Department of Health and Human Services Pain Management Best Practices Inter-Agency Task Force have recommended that health professionals, including dentists, improve recognition, training, and treatment of pain conditions. (1-5) Dentistry has taken a leading role in addressing this crisis by developing the field of Orofacial Pain into a dental specialty.

With this application, it is important to emphasize that the pursuit of specialty in this field is motivated primarily by access to care issues— patients with chronic orofacial pain disorders have historically been poorly treated by all disciplines of health care including Dentistry. Many studies of chronic orofacial pain patients have found that these patients have a high number of previous clinicians (a mean of 5.3) and many years with pain (mean of 4.2 years) prior to seeing an orofacial pain dentist (6-12). Treatment for these patients within the existing structure of dental or medical specialties is either not provided or inadequate, resulting in the suffering of millions.

There is a need both by the ADA and potential new dental specialty certification commissions for an objective process in determining whether recognition of a new dental specialty is warranted. The objective process that has been established ensures a new specialty can make substantial improvements in quality and access to care by addressing patients’ specific needs beyond what is currently offered by general dentists and existing dental specialists. **This is the premise of this application.**

This application will show the reviewers that Orofacial Pain is a field of dentistry where advanced knowledge and skills are essential to maintain or restore orofacial health and well-being and that this knowledge and skill set do not exist in the current structure of dentistry. The field of Orofacial Pain is a large clinical field with millions of patients who have not fared well in our existing system of specialty care. In addition, there are tragic cases where, because of the lack of a specialty in Orofacial Pain, treatment for ominous conditions, missed by unaware clinicians, have led to dire and fatal consequences due to misdirected or delayed treatment. Dentists in the field of Orofacial pain have dedicated themselves for several decades to improving this situation.

For these reasons, we ask you to look not only at how carefully the field of Orofacial Pain has clearly met each requirement but also what this will mean to the millions of patients who are currently suffering from chronic orofacial pain disorders and may not be receiving adequate care. It is they who will thank you for helping them receive high quality, accessible and, most importantly, successful care. Please help us help them.

The Field of Orofacial Pain

Orofacial Pain as a specialty is the discipline of dentistry whose focus is the assessment, diagnosis and treatment of patients with chronic orofacial pain and dysfunction disorders, oromotor and jaw behavior disorders, and chronic head, neck, and facial pain, as well as the pursuit of knowledge of the underlying pathophysiology and mechanisms of these disorders. Examples of orofacial pain disorders included in this field are neuropathic orofacial pain disorders, neurovascular orofacial pain disorders, chronic regional pain syndrome, complex masticatory and cervical neuromuscular pain disorders, primary headache disorders, pain from complex temporomandibular joint disorders, burning mouth, pain secondary to orofacial cancer and AIDS, orofacial dyskinesias and dystonias, associated sleep disorders, and other complex disorders causing persistent pain and dysfunction of or referred to the orofacial structures.

It is important to note that this field does not include acute pain from disorders such as pulpitis, periodontal disease, surgical treatment of TM joint disorders or nerve injuries, impacted 3rd molars, dental hypersensitivity, and other dental disorders that are part of most dentists' or dental specialists' practices. The field also does not include treatment or prevention of acute pain and anxiety from dental surgical or operative procedures.

In the past 20 years, there have been many developments in the field of chronic pain and specifically Orofacial Pain that have led to this application for specialty status. Scientific improvements in our understanding of the epidemiology, basic mechanisms, etiology and diagnostic and treatment strategies for chronic orofacial pain disorders have fueled development of safe and effective treatments for these patients. With over 3 million people each year needing treatment for chronic orofacial pain, clinical practice in the field has accelerated at a greater pace than anticipated. Universities have responded to this need by establishing orofacial pain clinics in many Dental School and accredited 2-year advanced education programs in Orofacial Pain in 12 Dental Schools. More than 25-35 Orofacial Pain dentists are graduating from these programs every year. The American Academy of Orofacial Pain has established an examination and credentialing process for orofacial pain dentists through the development of the American Board of Orofacial Pain. Since 1994, 295 dentists have passed this rigorous process and are focusing their careers in Orofacial Pain.

With these developments, most other major national dental organizations have recognized this field. The National Institutes of Dental and Craniofacial Research (NIDCR) has broadened its research mission in the field by changing its name to reflect the expansion of dental research into the craniofacial structures. NIDCR has also released a number of requests for proposals to expand research in Orofacial Pain, has sponsored 2 international congresses in Orofacial Pain, and supported a recent Technology Assessment Conference on Temporomandibular Disorders. The American Association of Dental Schools have also held several educational conferences in Orofacial Pain and have established pre-doctoral, post-doctoral, and continuing education standards in this field. The United States Armed Forces have also established Orofacial Pain as an advanced field of Dentistry and recruit dentists specifically for Orofacial Pain specialty training. Numerous other countries including Sweden, Korea, Costa Rica and Brazil have also designated this field as an advanced field of Dentistry that meets the requirements of a dental specialty. The International Association for the Study of Pain (IASP) dedicated 2013-2014 as the Global Year Against Orofacial Pain.

The rationale for seeking specialty status for Orofacial Pain.

While there are many benefits to establishing Orofacial Pain as a specialty, it is important to recognize that there are virtually no disadvantages to this recognition. The principal rationales for seeking specialty status for Orofacial Pain include:

a. To ensure that the public is both served and protected by:

- 1) The attendant recognition of a standard of care for Orofacial Pain through establishing ADA accreditation standards for Orofacial Pain programs and national recognition of the American Board of Orofacial Pain as the credentialing Board in Orofacial Pain.
- 2) Increased accountability of organized Dentistry in the field of Orofacial Pain.
- 3) Keeping dentistry compatible with the current standards practiced in pain medicine within physician clinics, medical centers and hospital practices.
- 4) Ensuring minimal training standards for dentists graduating from Orofacial Pain training programs. This will:

- i. raise the standards of the clinical community,
- ii. directly improve pre-doctoral education in this field by contributing properly trained faculty,
- iii. increase public confidence in this currently unregulated field,
- iv. increase the confidence of insurers and, thus, the availability of coverage, and
- v. increase the recognition of Dentistry in this field by medical colleagues.

b. To ensure that Dentistry maintains its high profile and role in the rapidly evolving field of pain science by:

- 1) Maintaining a broad definition of the scope of Dentistry.
- 2) Complying with the ADA recommendations to have “proficiency in the diagnosis and treatment of pain problems related to the head and neck region” as described in the Guidelines for Teaching the Comprehensive Control of Pain and Anxiety in Dentistry at the Advanced Education Level.
- 3) Maintaining a standard in clinical pain science in Dentistry at least equivalent to that in Medicine.
- 4) Requesting that organized Dentistry recognize the de facto specialty of Orofacial Pain that has been recognized by Dental School Deans who have supported two-year full-time advanced education and clinical programs in Orofacial Pain for many years.
- 5) Empowering centers of expertise in Orofacial Pain in Dentistry, through ADA accreditation.
- 6) Improving competitiveness in this field for federal research and training funding.
- 7) Encouraging the number of faculty lines in Orofacial Pain in Schools of Dentistry.

c. To support graduate education in the field and accept two years of full-time study as the minimum required for competency in Orofacial Pain, as per the consensus opinion of the National Consensus Document on Curriculum Guidelines for the Development of Graduate Programs in Temporomandibular Disorders and Orofacial Pain (31-32).

This will help to:

- Ensure availability of qualified experts in Orofacial Pain to all regions of the United States. This will be the core of practitioners eligible to take the Orofacial Pain Board examinations in this initiation period.
- Ensure a flow of excellently qualified candidates into the field by national recognition of specialty graduates.
- Ensure a source of highly qualified clinical and clinician-scientist Orofacial Pain faculty to staff centers of advanced clinical care and research, and help prepare future general practitioners and other specialists to understand this field.
- Assures a high level of standardization and quality
- Assures that all program graduates will achieve the same levels of competency

d. To recognize the dentists who focus their careers and training on treating orofacial pain disorders.

A specialty in Orofacial Pain does not exclude the general practitioner or other dental specialist in diagnosing and managing simple or more complex aspects of specific orofacial pain disorders but instead, this acknowledges that significant benefit can be obtained from co-treatment with an Orofacial Pain dentist. This enables patients, insurers, and hospital boards or multidisciplinary centers to identify practitioners with extended training, testing, and a board-certified level of understanding experience in treating multifactorial orofacial pain conditions. In turn, a knowledgeable and experienced resource will be established for health care providers to obtain consultation and treatment as needed for their patients with orofacial pain conditions.

e. Define the Scope of Practice of Dentistry for Dental Profession.

In the past years, Dentistry has seen its scope of practice infringed upon by many other health providers. In medicine, otolaryngology and plastic surgery continue to expand their scope of practice into orofacial structures. Dental hygiene has expanded its scope of practice into dentistry with administration of local anesthetics and other changes. Denturists and dental laboratories continued to offer low cost dentures to the population. With this application, the American Dental Association has an opportunity to implement their strategic plan by officially defining a scope of practice of the field of Orofacial Pain in a scientifically responsible manner. This can be done without jeopardizing the practice of general dentistry or any existing dental specialty. By supporting a specialty of Orofacial Pain by the ADA Commission, the necessary structure and

procedures will be established to ensure that clinicians who limit their practice in this field will be well trained, knowledgeable, and experienced. A specialty in orofacial pain will strengthen the strategic plan of the ADA to expand the concept and scope of Dentistry and become an example of encouraging a closer relationship between Dentistry and Medicine.

As noted by the Starch survey (4), the millions of people with these disorders coupled with the lack of adequate care for them by existing practitioners have made this a major consumer problem in our country. The ADA and its National Commission is the major leadership body for Dentistry and has the responsibility to address major consumer issues in Dentistry and lead Dentistry into the 21st century. The large field of Orofacial Pain currently exists independent of the ADA and other dental specialties. A review of advances in the field of Orofacial Pain provide the rationale for recognition of the Orofacial Pain as a specialty. This also demonstrates that the field of Orofacial Pain has met all of the requirements for ADA specialty status.

f. To support the sponsoring Academy of Orofacial Pain's longstanding international leadership role sufficiently to:

- Spawn and support international sister academies ~~around the world~~ that convene around the United States founding organizations.
- Establish ADA recognized diagnosis and treatment standard guidelines based on scientific and expert based consensus.

g. Support the Development of the Specialty of Orofacial Pain. The clinicians and researchers in the field of Orofacial Pain have spent the past several decades dedicated to developing the specialty of Orofacial Pain. However, it is as important that the Commission member reviewers and the profession of dentistry understand additional needs for Orofacial Pain as a specialty that are equally important to meeting the requirements. Dentistry needs to continue to evolve to meet the needs of the public, particularly when other health professionals do not address the needs of these patients, and providing care is a natural extension of the knowledge and skills of the Dentist. Thus, there are many rationales for supporting the specialty of Orofacial Pain. Here are just a few of the important reasons for the need for the specialty of Orofacial Pain;

- Addressing the opioid crisis
- Complexity of orofacial disorders
- Lack of growth in orofacial pain specialty training programs
- Need for dental faculty to teach pre-doctoral study, general dentists and other dental specialist on basic knowledge and skills in this area.
- Prevent the proliferation of non-evidence-based and unethical care for orofacial pain disorders
- Expand and integrate dentistry and medicine for pain conditions
- Expand and improve research in the field of Orofacial Pain
- Improve the understanding of orofacial pain disorders by all health professionals
- Improve outcomes of care for care for orofacial disorders
- Improve Collaboration between dentists and Orofacial Pain Dentists
- Public health efforts for preventing chronic orofacial pain and related addiction, disability, and long-term healthcare use

For these and many other reasons, there is a need to expand access to quality evidence-based care for patients with orofacial pain disorders by training more specialists in orofacial pain, teaching all dentists and other health professionals to understand care for these patients, and focus our public health efforts to prevent chronic pain and related addiction, disability, and ongoing dependency on the healthcare system. For these reasons, the AAOP, ABOP, and the Universities and advanced education programs have developed the field to meet all of the requirements of the ADA and the National Commission. The requirements are described in more detail in the next sections.

Requirements for Recognition of Dental Specialties and National Certifying Boards for Dental Specialists Application for the field of Orofacial Pain.

Requirement 1: In order for an area to become and/or remain recognized as a dental specialty, it must be represented by a sponsoring organization: (a) whose membership is reflective of that proposed or recognized dental specialty; (b) in which the privileges to hold office and to vote on any issue related to the specialty are reserved for dentists who either have completed an advanced education program accredited by the Commission on Dental Accreditation in that proposed or recognized specialty or have sufficient experience in that specialty as deemed appropriate by the sponsoring organization and its certifying board; and(c) that demonstrates the ability to establish a certifying board.

The proposed dental specialty of Orofacial Pain is represented by the American Academy of Orofacial Pain (AAOP) whose has a membership that is reflective of Orofacial Pain; have leadership privileges reserved for Orofacial Pain dentists who either have completed an advanced education program accredited by the Commission on Dental Accreditation in that proposed or recognized specialty or have sufficient experience in that specialty as deemed appropriate by the sponsoring organization and its certifying board; and established the American Board of Orofacial Pain as the single discrete board that provides a credentialing and examination process in the field of Orofacial Pain.

Membership in the AAOP currently includes 486 orofacial pain dentists and other health professionals who focus their careers in the field of Orofacial Pain. All potential candidates from any dental organization who has a full time professional effort in Orofacial Pain and has practiced in the field for at least five years has been notified by announcements, mailings, and advertisements of their eligibility to be a candidate for examination with the American Board of Orofacial Pain and to apply for membership in the American Academy of Orofacial Pain. The American Board of Orofacial Pain is the single discrete board that provides a credentialing and examination process in the field of Orofacial Pain to ensure high quality of knowledge and experience of its members using methods consistent with that of all dental and medical specialties (Appendix I). This process has ensured that the Board and the Academy is representative of those dentists whose careers focus on the total scope of Orofacial Pain. A survey of membership reveals that the vast majority of the membership practices fulltime in the field of Orofacial Pain and are not practicing any other dental specialty. To date, 315 have passed the Board process and are certified as being diplomates and having achieved a level of knowledge and expertise in the field of Orofacial Pain consistent with that of a specialist. No candidates were grand-fathered as board certified.

The American Board in Orofacial Pain has been developed in coordination with their sister group in pain medicine, the American Board of Pain Medicine in its efforts to establish board certification and specialty status with the American Board of Medical Specialties. Both have operated in close communication in the development of their curriculum and examination process. The curriculum goals of both Boards follow the published postgraduate curriculum goals advocated by the American Pain Society and its parent body, the International Association for the Study of Pain (IASP)(28). The primary goal of credentialing in Orofacial Pain is to improve the standards of care administered to patients with chronic orofacial pain or difficult pain and dysfunction problems, and to avoid inappropriate unsuccessful treatment and iatrogenic consequences of care. It is important for the public to be able to recognize dentists who are competent in the broad knowledge and skills necessary to provide high quality care rather than as a cloistered personal approach. The purpose of credentialing in Orofacial Pain with ADA recognition is to set forth a process by which competent dentists would be identified, trained, examined and appropriately recognized in the medical, dental and public communities. There are over 40 annual graduates of full-time Orofacial Pain post-doctoral training programs in the field. Their credibility and numbers would be notably strengthened by formal ADA recognition, and the elevation of the current non-ADA recognized ABOP boards to ADA recognition.

1. Founding Date and Historical Development

a. Indicate the year in which the sponsoring organization was founded and briefly summarize its development since that date.

American Academy of Orofacial Pain

The first meeting of the American Academy of Orofacial Pain was held in 1975 in New York City. The need for an organization that would improve the quality of orofacial pain diagnosis and treatment and offer exchange of information among the various authorities in the field was evident. The original name of the organization was to be The American Academy of Craniomandibular Orthopedics. This name was subsequently changed in 1981 to The American Academy of Craniomandibular Disorders and then again to The American Academy of Orofacial Pain in 1992 to reflect the focusing of the discipline to orofacial pain disorders. The basic objectives of the Academy were to improve the knowledge of those interested in chronic orofacial pain disorders by increased communication and exchange of scientific information as well as to stimulate the profession towards greater awareness of these disorders and their treatment. The first scientific meeting was held in 1976 in Colorado Springs, Colorado. In 1984, the first international affiliate, the European Academy of Craniomandibular Disorders, was officially recognized. Subsequently recognized International Academies were the Asian Academy of Craniomandibular Disorders (1989), The Australian Academy of Craniomandibular Disorders (1989), and The Ibero-Latin American Academy of Craniomandibular Disorders (1991).

The First International Symposium of Craniomandibular Academies was held in Chicago in February of 1992. On June 11, 1986, at the First Annual Scientific Meeting of the European Academy on Craniomandibular Disorders an agreement was reached between the American and European Academies and Quintessence Publishing Company to form a new scientific journal, The Journal of Orofacial Pain. The American Academy of Orofacial Pain also published the first edition of its written parameters in Orofacial Pain in 1989 and a subsequent edition in 1992 and 1996. In addition, members from the AAOP began the process of establishing the American Board of Orofacial Pain in 1989. In 1991, the AAOP in conjunction with the American Association of Dental Schools and the University of New Jersey College of Medicine and Dentistry brought together experts in Orofacial Pain and established the first guidelines for pre-doctoral, post-doctoral, and continuing education in the field. In 1997, the AAOP in conjunction with the American Academy of Head, Neck, and Facial Pain sponsored the first application for specialty status for the field of Orofacial Pain. Subsequently, an effort has been made to continue to collaborate on the issues that are of joint interest including the specialty application.

b. Describe the current mission of the organization.

The American Academy of Orofacial Pain, an organization of health care professionals, is dedicated to alleviating pain and suffering through the promotion of excellence in education, research and patient care in the field of orofacial pain and associated disorders. The current missions of the American Academy of Orofacial Pain include:

1. To establish criteria for the diagnosis and treatment of chronic orofacial pain disorders.
2. To stress the significant incidence of chronic orofacial pain disorders for both medical and dental professions.
3. To provide a base for annual meetings for the dissemination of research and treatment for orofacial pain.
4. To support the Journal of Orofacial Pain and Headache stressing research and current studies on orofacial pain disorders.
5. To encourage and stress the study of orofacial pain disorders at pre-doctoral and post-doctoral levels of dental education.
6. To provide a common meeting ground for worldwide authorities on orofacial pain disorders.
7. To encourage hospitals and dental schools to establish centers for treatment of orofacial pain disorders.
8. To encourage research that evaluates equipment and procedures in the field.
9. To publish guidelines for practice standards, treatment and research directions for third party involvement.
10. To organize a speaker's bureau for the purpose of disseminating pertinent information on orofacial pain disorders to the other health professionals.

2. Officers

A. Identify the current officers of the sponsoring organization.

American Academy of Orofacial Pain Officers include the following;

Past-President Jennifer P Bassiur DDS
 Columbia University, Director
 Center for Oral, Facial and Head Pain
 New York, NY

President..... Jay Mackman, DDS
 TMJ & Orofacial Pain Treatment Centers of WI
 2626 North 76th Street, Suite 101
 Wauwatosa, WI 53213

President-Elect..... Jeff Shaefer DDS
 Director Orofacial Pain Center
 Harvard University
 Massachusetts General Hospital
 Boston, Massachusetts

Past Council Chair..... Ghabi A Kaspo DDS
 Facial Pain and Sleep Center, PLC
 3144 John R Road, Suite 100, Troy, MI 48083

Council Vice-Chair.....Gary D Klasser DMD
 Louisiana State University Health Sciences Center
 LSU School of Dentistry
 1100 Florida Avenue, Box 140, New Orleans, LA 70119

Secretary-Treasurer..... Paul L Durham MS, PhD
 Missouri State University
 Distinguished Professor, Director
 524 North Boonville Avenue
 Springfield, MO 65806 USA

Secretary-Elect.....Robert W Mier DDS
 TMJ & Orofacial Pain Treatment Centers of Wisconsin
 6730 S Harvard Dr
 Franklin, WI 53132

Executive Director..... Kenneth S Cleveland
 174 S. New York Ave.
 POB 478, Oceanville, NJ 08231

3. Membership

a. Provide an analysis of the trends in membership over the past ten years.

The active membership of the AAOP includes those dentists who focus their careers in Orofacial Pain and have at least 5 years of training and/or experience in the field. The membership has been steadily increasing over the past few years demonstrating the increasing interest among dentists and the increase demand for services in the field. The trend in membership in the American Academy of Orofacial Pain for last 30 years has been steadily increasing beginning in 1999 with 199 members and increase about 1- to 20 every year to the member now stands at 486 members. **Table 4** provides an analysis of the trends in membership in the AAOP.

Table 4. AAOP 10 Year Membership Summary									
Membership Type/Date	3/10	3/11	3/12	3/13	3/14	3/15	3/16	3/17	3/18
Active/Fellow	376	378	410	412	405	423	469	484	476

Honorary Member	4	4	4	4	4	4	4	4	4
Student/Initiatory	14	15	23	36	52	48	63	40	42
Life Fellow	54	59	60	62	64	64	65	70	67
Affiliate	43	49	53	61	72	66	0	NA	NA
Member Pending	4	3	2	0	3	5	0	0	4
Retired Member	1	1	0	1	1	2	1	4	4
TOTAL	496	504	552	566	601	606	601	598	595

The membership of the American Academy of Orofacial Pain consists of Active, Life, Honorary and Initiatory members, and is by invitation only. The qualifications of each class of membership shall be provided for herein and detailed here.

Active Members.

Active members shall possess the following qualifications. They shall:

- 1) Be members in good standing for a period of at least (5) consecutive years in their respective National Professional Association before being eligible for proposal to membership. (Initiatory membership excluded)
- 2) Must be a licensed dentist (D.D.S., D.M.D.)
- 3) Be recognized by their professional colleagues as ethical practitioners in their prospective professions.
- 4) Have demonstrated a minimum of five (5) years exceptional understanding of Orofacial Pain disorders through graduate or post graduate training, research, or clinical experience.
- 5) Be willing to work within the Academy objectives (guidelines) to promote the best interest and ideals of the Academy.
- 6) Must be a permanent resident of Canada or USA or be a member of one or the international sister academies.

Regular attendance at meetings and payment of dues is a requirement for maintenance of active membership in the Academy.

Initiatory Members

Initiatory Membership shall be granted to a participant or recent graduate of an Academy accredited, full-time post-doctoral university residency program in Orofacial Pain.

- 1) the duration of this membership shall be five (5) years, after which the Initiatory member shall become eligible for Active Membership under the same provisions of Section 2. Nothing in this provision shall prevent an Initiatory Member from becoming an Active Member under Section 2 with less than 5 years as an Initiatory Member.
- 2) Initiatory Members' dues are to be set yearly according to the actual expenses for the journal subscription and meeting costs.
- 3) The initiatory Membership shall become effective upon an application of the resident enrolled in a current Orofacial Pain program. Application shall be made to the AAOP Post-Doctoral Subcommittee of the Education committee.
- 4) The same requirements for Active Membership shall apply except for the clause (a) and (c)
- 5) The Initiatory Members shall have rights, except the right to vote, and duties of membership including attendance requirements.

Regular attendance at meetings is a requirement for maintenance of Initiatory membership in the Academy. If a member is absent from three (3) consecutive annual meetings termination of his affiliation with the Academy will be considered by the council. A two-thirds (2/3) vote of the council will be required for separation. Members will be notified after missing two (2) consecutive meetings. (f) Be willing to work within the Academy objectives (guidelines) to promote the best interest and ideals of the Academy. (g) Must be a licensed dentist (D.D.S.,D.M.D.).

Life Members

Life membership may, at the discretion of council, be granted active members in good standing, due to ill health or other reasons have retired from active participation in their profession. Upon attaining seventy (70) years of age any active member in good standing may request that council transfer him to the life membership. Life members in good standing shall have all privileges of their former status of active membership with no dues required. If the life member (under the age of 70 years) resumes active practice or full-time academics in the field of Orofacial Pain Disorders, the Life member will automatically be reinstated into the category of Active Membership upon a vote by the membership committee.

Honorary Members.

Honorary members may be granted to persons who have made outstanding contributions to their professions even though they may not be directly involved in the active practice of treating orofacial pain disorders.

b. Demonstrate that the organization's membership is representative of the proposed or recognized dental specialty.

The American Academy of Orofacial Pain(AAOP) limits their membership to those practitioners who focus their careers in Orofacial Pain. All potential candidates from any dental organization who has a full time professional effort in Orofacial Pain, who has practiced in the field for at least five years, and meets the eligibility criteria to become a member of the AAOP has been notified by announcements, mailings, and advertisements of their eligibility to be a candidate for examination with the American Board of Orofacial Pain and to apply for membership in the American Academy of Orofacial Pain.

This process has ensured that the Board and the Academy is representative of those dentists whose careers focus on the total scope of Orofacial Pain. A 2009 survey of AAOP members have indicated that about 70% of active members practice fulltime in the practice in Orofacial Pain. In contrast, a recent practice survey of 405 general dentists and dental specialists in the Upper Midwest indicated that only 9% of general dentists and 7% of dental specialists has more than a 4% of their practices in this field and many of those who do are members of the AAOP (Appendix III).

The eligibility criteria for active membership includes;

- (a) Be members in good standing for a period of at least five (5) consecutive years in their respective National Professional Association before being eligible for proposal to membership.
- (b) Be recognized by their professional colleagues as ethical practitioners of their respective professions. This shall be interpreted as behavior consistent with the Academy Code of Conduct.
- (c) Have demonstrated a minimum of five years of an exceptional understanding of the diagnosis and treatment of orofacial pain disorders through graduate school or post-graduate training or clinical experience.
- (d) Be willing to work within the Academy objectives as published in the Academy Guidelines to promote the best interest and ideals of the Academy. Regular attendance at meetings is a requirement for maintenance of active membership in the Academy.
- (e) Must be a licensed dentist (D.D.S., D.M.D.)
- (f) Be a permanent resident of Canada, Mexico or USA or be a member of one of the other international sister academies.

A review of the scientific articles, chapters, and textbooks listed in the reference list demonstrates the breadth and depth of member involvement in Orofacial Pain. Additionally, all the directors and faculty of formal post-doctoral Orofacial Pain programs listed in response to requirement 6 are AAOP members and ABOP eligible or certified.

Supporting Documentation:

Appendix III Summary data from Orofacial Pain Practice Survey

4. Other National Dental Organizations

Identify other national dental organizations whose objectives are advancement of this area of dental

practice.

There are currently no other organizations whose major objectives are advancement of the field of Orofacial Pain as defined in this specialty application. It is important to note that all dentists have a responsibility to be familiar with orofacial pain disorders and there are other dental organizations that represent general dentists who have an interest in TMD and orofacial pain. However, the American Academy of Orofacial Pain is the sole organization whose primary interest is advanced education and board certification of dentists to become specialists in orofacial pain disorders. Currently, the AAOP is also the only organization affiliated with both a validated board certification examination process, the ABOP, and has CODA accredited advanced education programs. The American Academy of Craniofacial Pain (formerly the American Academy of Head, Neck, and Facial Pain) and the American Equilibration Society have strong interest in further development of the aspects of the field of Orofacial Pain and have been supportive of the development of this specialty in the field based on previous co-sponsorship of applications to the ADA. Furthermore, the American Academy of Craniofacial Pain has strong interest in the field being a specialty and has collaborated in the preparation and submission of past ADA applications in the field. However, due to the importance of submitting this application from an organization affiliated with a validated board and CODA approved advanced education programs, the AAOP is currently the only organization meeting the requirements for and submitting this application. We appreciate the support from these other organizations in efforts toward educating dentists and encouraging improved access to care for those patients who suffer from orofacial pain disorders.

5. Activities**Describe and assess the sponsoring organization's specific efforts to promote the improvement of quality in the field (i.e. continuing competence, parameters of care, recertification, continuing education requirements, etc.)**

One of the founding principles of the AAOP was the promotion of continuing research, education, and evidence-based care for patients with orofacial pain in dentistry. Annual meetings have provided a forum at which experts in the field have disseminated knowledge to dentists worldwide. Moreover, members provide the overwhelming majority of continuing education courses offered in Orofacial Pain in this country, as well as write and edit the majority of the articles appearing in the Journal of Orofacial Pain. The publications by our members and the Academy have focused on several major aspects of Orofacial Pain including evidence-based clinical guidelines that have advanced the field and resulted in improved evidence-based orofacial pain care for patients worldwide. Most of the standard texts in Orofacial Pain are also the products of our members.

A high level of competence in the discipline of Orofacial Pain has been established through the certification process by the American Board of Orofacial Pain. The American Academy of Orofacial Pain has established Standards for Advanced Specialty Education Programs in Orofacial Pain that have been approved by the ADA Commission of Dental Accreditation, which certifies programs in Orofacial Pain in a manner consistent with the certification of graduate programs in recognized specialties by the ADA CODA. The American Academy of Orofacial Pain has supported research for the past 40 years. This research has clarified many issues related to diagnosis and management and has been the basis for developing consensus guidelines for the diagnosis and management of orofacial pain disorders. The scientific advances in the field are discussed later in section 8 of this requirement. Based on much of this research, the members have developed and published guidelines that outline principles for diagnosis, evaluation, and treatment of orofacial pain disorders that are consistent with that used in other areas of the body and the International Headache Society's Classification of Headache, Cranial Neuralgias, and Facial Pain. The development of scientifically based guidelines has brought changes in insurance reimbursement for treatment of these disorders. A number of states have clarified insurance reimbursement for OFP by passing legislation that prohibits discrimination against patients with these problems. Although the laws differ somewhat from state to state, they generally ensure that insurance companies provide the same coverage for surgical and non-surgical treatment of orofacial pain disorders that it provides for treatment of any other pain problem in the body and does so under the patient's medical plan. This applies whether the treatment is administered or prescribed by a physician, dentist, or other licensed health care provider.

Due to the lack of recognition of the specialty of Orofacial Pain, there has also been a proliferation of non-evidence-based strategies for their care marketed directly to the patient by dentists, physicians, and other clinicians to increase revenue. This includes the following;

- 1) Use of long-term medical treatments that have questionable long-term efficacy including opioid analgesics and repeated interventions such as joint injections, nerve blocks, and manipulation.
- 2) Use of electronic surface EMG, jaw tracking and other untested diagnostic tests that have no evidence of reliability and validity for TMD and orofacial pain conditions have been promoted to increase revenue for the provider.
- 3) Dental splints used 24 hours per day 7 days per week or partial coverage splints that change the occlusion permanently and create malocclusions that requiring expensive orthodontics, prosthodontic dental care, or jaw surgery to correct the malocclusion and allow normal function again.

In contrast, orofacial pain dentists provide evidence-based rehabilitation care, which integrates patient self-management training with evidence-based rehabilitation treatments to prevent chronic pain and addiction while helping the health care system prevent the devastating escalation to chronic pain and addiction. Clinical trials and systematic reviews have shown that the long-term outcomes of patient-centered rehabilitation approaches such as splints, exercise, physical therapy, cognitive-behavioral training, mindfulness, and relaxation are excellent and able to prevent long-term chronic pain, addiction, and disability in many patients.

Recognition of the field of orofacial pain in dentistry has been accepted by numerous other regulating bodies in the profession. They have consistently agreed that this field warrants specialty status as evidenced by the following developments;

- a) In this country, the United States Air Force and Navy have established Orofacial Pain as a specialty and recruit dentists for Orofacial Pain specialty training programs to ensure an adequate number of qualified providers is available to provide care for their personnel. Each of the Air force, Army, and Navy have all sent dentists to University graduate programs for specialty training in Orofacial Pain over the past 15 years. This decision was based on the fact that this field requires advanced training that is not provided by any other specialty.
- b) The American Association of Dental Schools have co-sponsored several educational conferences on orofacial pain. They have supported standards for both pre-doctoral and post-doctoral advanced education programs that have been used to develop the standard for graduate programs in the field.
- c) The Swedish Dental Society was one of the first countries to recognize this field as a specialty over a decade ago after considerable epidemiological research demonstrated orofacial pain disorders as highly prevalent and lacking in adequate treatment.
- d) Canadian Dental Association has recently recognized Orofacial Pain as a specialty despite the fact there are few practicing Orofacial Pain dentists in the country. This change was enacted as a joint specialty with Oral Medicine and Oral Pathology due to the limited number of each of these specialists in Canada.
- e) The Brazilian Dental Association has also recognized Orofacial Pain as a specialty and is establishing more graduate programs in the field. This has also happened in Costa Rica, Australia, and Korea.

The American Academy of Orofacial Pain along with the members have been instrumental in these legislative changes. Guidelines for pre-doctoral, post-doctoral, and continuing dental education in the field have been developed by members at national conferences and submitted and approved by the CODA. The American Association of Dental Schools worked with the AAOP in recommended goals and objectives for didactic, laboratory, and clinical pre-doctoral courses in Orofacial Pain to be taught in all dental schools. In addition, the AAOP has established guidelines for continuing education courses in the field as well as advanced education training programs. Continuing education guidelines help set standards for quality education programs for dentists who have not had this training in dental school. It is recommended when possible to participate in courses with practical experience by recognized specialists in the field. The post-doctoral guidelines recommend that university advanced education programs be a degree program (M.S. or Ph.D.) and include significant patient care, multidisciplinary didactic courses in clinical sciences and neurosciences, clinical rotations in other medical and dental clinical areas, and research activities associated with orofacial pain.

6. Describe and assess the sponsoring organization's ability to establish a certifying board that possesses the essential characteristics of a board that grants certification in a recognized dental specialty.

The American Board of Orofacial Pain (ABOP) is modeled after the certifying boards of the ADA recognized dental specialties and has become the accepted board for dentists in the field of Orofacial Pain. The ABOP meets all of the *Requirements for Recognition of Dental Specialties and National Certifying Boards for Dental Specialists* and all of the requirement for dental board certification by the *American Board of Dental Specialties*. Currently there are 325 diplomates of the ABOP. The ABOP uses a "Standards for Advanced Specialty Education Programs in Orofacial Pain" to evaluate advanced education Orofacial Pain training programs and is consistent with the content to the "standards" of education and experience approved by the Commission on Dental Accreditation for recognized specialties. These requirements include the successful completion of two or more years of educational training program accredited by the Commission on Dental Accreditation and completion of study at an institution approved by the ADA. In addition, to improve access to care, potential candidates without advanced education certificates may qualify to take the ABOP certification examination, provided they have equivalent training of advanced education specialty training programs by having at least five years of clinical experience in Orofacial Pain and 400 hours of formal didactic education that covers each of the knowledge areas of the CODA approved orofacial pain curriculum to be eligible to taking the Board.

History of the American Board of Orofacial Pain. In 1989, the American Academy of Orofacial Pain (AAOP) formed an Ad Hoc committee to assess the need and define the process for a national standardized board examination in the field of Orofacial Pain. The committee reviewed the examination content of existing dental specialties and determined that there was a clear absence of item concentration consistent with the current knowledge base of Orofacial Pain. The item sufficiency level was determined by reviewing pre-doctoral and post-graduate curriculum content, emerging national practice standards, research activities, and publications. Also, medical specialty training programs and board examination content was reviewed to determine possible overlap since the general field of Pain Management encompassed both dentistry and medicine.

Concurrently and independent to the committee's effort was a joint national task force established by the American Pain Society (APS) to determine the need for board certification by the different health care disciplines. The APS had appointed the AAOP as the dental representative. The task force's conclusion clearly showed the need to organize and standardize a demonstrated minimal competency examination process for each profession. As a result of these findings, the AAOP funded the creation of a totally independent organization to form a national board certification examination.

In 1993, the American Board of Orofacial Pain (ABOP) was incorporated in the state of California with its sole mission of developing and administering a proficiency examination in Orofacial Pain. The Board contracted with Knapp & Associates, an independent health care testing service, to provide the guidance in creating validated standardized examinations. The board of directors was selected to carry out the tasks assigned by Knapp & Associates. Some of these tasks included providing mailing lists of all organizations with a primary focus of Orofacial Pain, developing reading lists, identifying academic components such as curriculum guidelines, recognized full time researchers, NIDCR activities, and establishing an examination council.

Since the ABOP decided not to exempt any individual from taking the examination, a multi-levelled question development process was implemented such that no person was able to see questions in advance of taking the examination. A national practice survey was conducted to determine the appropriate subject matter and degree of importance. This data allowed the construction of an examination blue print which determined the actual question content in terms of number, subject, degree of difficulty, etc. Test question writers were selected for geographic balance, acknowledged expertise in their subject area, and willingness to follow the question writing format prescribed by the testing service. Each question required two reference sources from refereed journals and texts. Once assembled, the examination was statistically normalized according to national testing criteria. The first examination was given on October 8, 1994 and subsequently each February.

The ABOP is governed by a Board of Directors who establishes the examination date and location, reviews disciplinary matters, appoints an Examination Council Chairperson, and determines the annual budget. The Examination Council is responsible for conducting the annual question writing drive and meeting with the testing service to edit and add new questions to the data bank. The Council is appointed by the Chairperson and must be geographically balanced. The examination content continues to be determined by the examination blueprint.

The Board of Directors and the Examination Council cannot alter this format without conducting another survey. In other words, no individual or group of individuals can alter the question distribution, difficulty level or general categories. This prevents examination variance from year to year. The ABOP holds its annual question drive for diplomates from March to October. Then, the Examination Council meets with the testing service to refine and edit all new items so that an examination can be generated with a certain percentage of new questions. The tests are scored and normalized by the testing service. Under no circumstances does any Diplomat or officer play a role in the scoring process. Every 5 years, the ABOP carries out a national survey to review the consistency of the examination, question items, and topic distribution with the current knowledge of Orofacial Pain. Additionally, the testing service carries out a statistical and time purging of the question items that are no longer regarded as "current". The re-certification effort assures a credentialing and scoring process based on the most current didactic and clinical knowledge base.

Supporting Documentation: Appendix Ic ABOP Constitution and Bylaws

7. Provide written parameters of care for the specialty.

The current written parameters of care for the specialty as approved by the AAOP is included in the publication entitled, "Orofacial Pain: Guidelines for Assessment, Diagnosis, and Management (DeLeeuw and Klasser, Quintessence Publishing Company, 2018). We are happy to provide you with a copy of these written parameters for the field. Written parameters of care for the specialty have evolved as a result of numerous efforts by members over the past 15 years and the newest revision was completed in 2018. The American Dental Association initially developed guidelines for temporomandibular disorders in the "Report on the President's Conference on The Examination, Diagnosis, And Management of TM Disorders" in 1983.

The American Academy of Orofacial Pain then published the first edition of its written parameters in 1989 and a subsequent 5 more editions. This document was developed by a consensus panel after an exhaustive assessment of the scientific literature. The guidelines are strategies designed to provide clinicians with a basis for providing scientifically based diagnosis and management to educate clinicians, improve patient outcomes, enhance quality assurance, and reduce inappropriate treatment and the cost of orofacial pain care. All references used have been scientifically based. The members also continue to establish the standards of care for the field of Orofacial Pain in many institutions and journals.

8. Scientific Advances

a. Describe and assess how the knowledge gained through research activities has transferred to the practice in this field.

During the past 40 years, a number of scientific advances have helped improve the knowledge base in the field of Orofacial Pain. These advances have been made by many AAOP members and published peer reviewed original articles in its official journal, the Journal of Oral & facial Pain and Headache. However, many members also publish in a variety of prestigious, peer reviewed dental and health care journals. The journals in the field include; Journal of Oral & and Facial Pain and Headache, Journal of Craniomandibular Practice, Pain, Advances in Pain Research and Therapy, Clinical Journal of Pain, The Pain Forum, Journal of Pain and Symptom Management. Journal of Musculoskeletal Pain, Journal of Back and Musculoskeletal Pain, Headache, and Cephalgia. Other journals that publish occasional articles for general dentists and dental specialties, but Orofacial Pain is not the focus of the journal include, Journal of Dental Research, Archives of Oral Biology. Journal of Oral Medicine, Oral Pathology, and Oral Surgery Journal of the American Dental Association Journal of the Canadian Dental Association Dental Clinics of North America Ear, Nose, and Throat, Journal Otolaryngology, Archives of Physical Medicine and Rehabilitation, American Journal of

Physical Medicine, and Rehabilitation Journal of Oral and Maxillofacial Surgery, Journal of Prosthetic Dentistry, Scandinavian Dental Journal, Journal of Oral Rehabilitation, Swedish Dental Journal, American Journal of Orthodontics and Maxillofacial Orthopedics.

Among the many advances in orofacial pain, 3 areas stand out as critically important to the development of the field and improvement of patient care. These include;

- 1) the neurobiology of pain modulation that has shaped our current concepts of orofacial pain diagnosis and opened avenues of treatment;
- 2) the concept of chronic versus acute pain;
- 3) the application of interdisciplinary teams to management of the chronic pain patient.

1. Neurobiology of Pain Transmission and Modulation. Basic research based on animal experiments has elucidated considerable knowledge about the neurophysiology, neuroanatomy, and neuropharmacology of pain. Findings from these experiments suggest that similar mechanisms occur in humans and have implications for patient care. Although understanding the pain response is more complicated than just understanding the neurobiology, the pain experience and its modulation does involve the noxious (nociceptive) stimulus, the stimulation of nociceptors, the peripheral and central neurologic pathways, modulation of pain, and the perception of, and, reaction to pain (31). Physical pain is meant to be a protective mechanism for humans, arising from a variety of nociceptive stimuli that are potentially destructive to the cells and receptors of the surrounding body structures. These nociceptive stimuli activate nociceptors of different types that overlap and interconnect to form a finely divided net, protecting tissues from injurious agents. Mechanical deformation, extreme temperatures, and many endogenous substances have been found to stimulate nociceptors directly (31, 44, 45). Endogenous substances including substance P and others are also released from peripheral tissue stores during inflammation and act on the nociceptors to sensitize them further to thermal, chemical, or mechanical stimuli (31, 45-49). Analgesics such as aspirin can block some of the chemical mediators (prostaglandins) to decrease sensitization of nociceptors at the periphery (46).

Advances have been made in identifying the many other aspects of the pain and inflammatory processes involving neurochemicals such as bradykinin, histamine, serotonin, CGRP, leukotrienes, substance P, and norepinephrine in injury states have led to new pharmacological agents (47). Drugs such as the tricyclic antidepressants and gabapentin have opened up new approaches to the clinical treatment of pain. Following stimulation of nociceptors by a noxious agent, an afferent nerve impulse is generated and transmitted through the peripheral nerves to the central nervous system (CNS). Once the pain message has reached the CNS, transmission and modulation of pain involves many structures within the spinal cord, brain stem, thalamus, and cerebral cortex as well as functional CNS subsystems such as the limbic system (50). Under normal conditions, this afferent activity signals pain, the system responds, the injury site heals, and the signal system returns to normal due to the plasticity of the nervous system. However, if the noxious stimulus is of sufficient intensity or duration, the central wide dynamic range neurons (WDR) that receive the peripheral activity become sensitized through activation of the NMDA receptor on their cell surface.

This action is driven by the neurotransmitter, glutamate, which is released from the pre-synaptic c-polymodal nociceptors (51-53). When the NMDA receptor is activated, calcium flows into the post-synaptic cell, setting off a cascade of events involving formation of nitric oxide and c-fos oncogene activity (54, 55). Nitric oxide (56) is thought to diffuse to pre-synaptic terminals to cause further release of glutamate and other excitatory neurotransmitters (51, 57). C-fos activity is known to be present after painful stimulation and may cause a change in the genetic phenotype of the WDR neuron wherein it loses its ability to discriminate between low frequency mechano-stimulation and high frequency noxious stimulation. As this occurs, the WDR neuron responds to all stimulation with an output in the pain frequency range (58). In addition, with the central changes that are involved in chronic pain, there is a loss of segmental inhibitory inter neurons or "off-on" cells that are part of the descending pain inhibitory system. These anatomic, neurochemical, physiologic, and genetic changes are responsible for chronic pain and account to a large extent for the peripheral symptoms of allodynia and hyperalgesia (58).

Understanding these scenarios is essential for the dentist involved in pain management by activating descending pain inhibition systems or blocking transmission sites through, for example, centrally acting medication such as tricyclic antidepressant drugs and anti-neuropathic medications. All of these structures interact with each other through complex neural connections that involve ascending and descending pathways for transmitting and inhibiting pain transmissions and, thus, affect the quality and intensity of the pain experience. These pain pathways are characterized by the chemistry of their putative neurotransmitters. Since the identification of serotonin as an inhibitory neurotransmitter, dramatic advances have been made by the discovery of other endogenous neurotransmitters such as the opioid peptides, beta-endorphin and met-enkephalin (59, 60) acting both centrally and peripherally, plus other neurotransmitter systems such as noradrenergic antagonist and agonist, dopaminergic, and intersegmental GABA systems, and hence routes for pain medication therapy.

These and other neurotransmitters have been traced to receptor sites throughout the body, and are also represented in the trigeminal pathways. They are believed to be integrally involved in this network of pain modulating mechanisms (61) in head neck and orofacial pain. In the ascending pathways to the CNS, modulation of pain can occur at the lower CNS centers in the spinal cord where they receive signals from the afferent pain fibers with cell bodies in the dorsal root ganglia or in the trigeminal system, the trigeminal ganglia (62). Before traversing to higher CNS levels, they synapse in different layers of the dorsal horn or brain stem, particularly the substantia gelatinosa. These centers are believed to be the site of pain modulation as originally proposed by the gate theory of pain control (63). This theory suggests that by stimulating faster larger diameter A-beta fibers, they inhibit the transmission of pain via slower small c-fibers by "closing the gate" in the substantia gelatinosa. Although many features of the gate theory have since been updated, it provided a conceptual basis to explain how pain can be influenced by counter stimulation such as transcutaneous electrical nerve stimulation and acupuncture.

These understandings have opened up additional avenues of pain therapy. Descending pain inhibitory systems in pain modulation can be modified by other neurobiologic systems in their action at the dorsal horn and several other CNS sites including the cortex, periaqueductal gray of the midbrain, the raphe nucleus with serotonergic neurons, the locus ceruleus with noradrenergic neurons, and parts of the reticular formation (31, 64). In these systems, activity in the cortex and higher CNS centers can send descending signals that inhibit the afferent pain pathways and, thus, influence the degree of pain perception and reaction. The limbic and reticular systems interact with the signaling and help explain the neurobiochemical nature of emotional overlays. These systems help explain the diverse effects of expectation, anxiety, and depression on pain, as well as the efficacy of distraction, hypnosis, and other cognitive strategies on reducing pain. Hence the importance of integrating treatments such as cognitive-behavioral therapy and pharmacotherapy for clinical depression in an Orofacial Pain practice to address the complexity of chronic pain.

Therefore, the pattern generating mechanism theory proposed by Melzack (65) suggests that the pain experience is influenced by multiple factors that can inhibit or facilitate the pattern of nociceptive input experienced by an individual. This pattern of pain, particularly with chronic pain, is influenced by factors involved with descending control such as past learning, expectations, and anxiety or factors involved with ascending control such as physical therapy modalities, medication, or inflammation. Pain control can then be enhanced by intervening with multiple factors using a multi-modal treatment approach (66). Understanding these avenues has given us powerful physical, psychological, and pharmaco-therapeutic tools to stimulate or inhibit specific receptors thereby blocking pain or shutting down the signaling. Modern understanding of receptors involved also permits us to understand certain side effects and select alternate drugs that activate different receptor pathways. With appropriate training, pain therapy is no longer a hit or miss therapeutic exercise even though it is still an incomplete science. Pain therapy is no longer limited to non-steroidal and narcotic analgesics. Instead, there is a large armamentarium of pharmacological, counter stimulation, behavioral, psychosocial, and rehabilitation therapies that work more directly on the pain mechanisms peripherally and centrally. The medications are not without side effects and the training in proper use and management of side effects: selection dependent on the patients' psychologic profile and medical problems is paramount.

This type of treatment is preferably conducted in a multidisciplinary pain center, which no other existing dental specialty provides. The understanding of Orofacial Pain in Dentistry is, thus, considerably broader than dental and TMD conditions that can cause pain (67, 68). Orofacial pain to many dentists implies TMD while the reality is that only complex TMD is a small part of the overall problem which includes treatment of central neuropathic, inflammatory neurogenic, neurovascular, and centrally mediated neuromuscular pain and many co-morbid pain conditions. During the past ten years, scientific advances have been made with a significant impact on the understanding and management of orofacial pain disorders. Neuropathic and neurogenic orofacial pain conditions are complex, difficult to diagnose, and are commonly confused with dental and TMD conditions (69). Neuropathic pain can be the consequence of any dental or surgical intervention in a few individuals in which peripheral nerves are affected, injured, sensitized, or altered during otherwise normal restorative, endodontic, non-surgical and surgical, periodontal, oral surgery, or implant procedures (70-71).

A greater understanding of neuropathic pain mechanisms (nerve injury pain) has led to more accurate diagnosis and treatment of prior undiagnosed toothache and oral pains. Treatment of these conditions requires an understanding of peripheral and central sensitization and how to modify this with appropriate pharmacotherapeutics that have peripheral or central actions (51, 57, 58, 72). In addition, the role of the sympathetic nervous system in some neuropathic pain conditions that have not responded to treatment has become clearer (73, 74): more is now known about the adrenergic receptors involved in maintaining chronic pain states and what adrenergic agonist or antagonist medications are useful in altering sympathetic activity to stop this pain (75). Insight into the mechanisms of orofacial neurogenic inflammation has led to a more accurate diagnosis for tooth site pain that is non-odontogenic and non-neuropathic in nature (52, 54).

Unfortunately, “toothache” from neurogenic dysregulation of the serotonin system often results in unnecessary tooth oriented procedures and finally extraction: and still the pain remains. The tooth site pain is partially the result of serotonin receptor activation of c-fiber depolarization (54). The treatment for this pain condition requires an understanding and use of medications used to treat neurovascular pain (“migraine”). Abortive migraine medications such as sumatriptan and dihydroergotamine give instant relief of this “toothache”, and prophylactic medications such as beta blockers and calcium channel blockers are used to treat this condition over a longer time period. Specialty knowledge and training is required to treat these conditions currently because of lack of understanding of these types of conditions in the general dental and medical community.

2) Acute versus Chronic Pain

A second important advance has been in the conceptualization of chronic pain as a distinctly different and more complex experience than acute pain (76). Acute pain is temporary and often self-limiting, has a specific observable cause and purpose, and generally has no persistent psychological reactions. Chronic pain, in contradistinction, is not self-limiting, appears permanent, often has no apparent cause, serves no discernible biological purpose, and can create multiple psychological problems that can confound the patient and clinician and perpetuate the problem. A patient with chronic pain may feel helpless and hopeless in his or her inability to receive relief. Although some patients learn to live with pain, others become anxious or depressed with high tension levels, sleep and appetite disturbances. They may focus much of their energy on analyzing the pain problem and see multiple health professionals searching for an organic cure. Many clinicians make gallant attempts with narcotic and non-steroidal analgesics drug regimes, surgical procedures, splints, or other interventions but short-term failure frustrates the clinician and may add to the patient’s ongoing problems. Near the end of this progression, some patients with chronic pain can have multiple drug dependencies, analgesic rebound headache from a steady diet of over the counter and prescription analgesics, transformed migraine headache, high stress levels, operant behaviors including chronic pain behavior, manipulation of medical, dental and social systems, conflicts in relationships, disrupted lifestyles, impaired ability to perform vocational, social or recreational functions, or perhaps become involved in litigation.

These patients often do not receive relief from existing specialty dental delivery systems and usually require a multidisciplinary or interdisciplinary approach involving an Orofacial Pain practitioners. The ADA guidelines recommend deferring irreversible or invasive procedures until the patient is functioning better somatically and

behaviorally (35). Chronic pain syndromes have been recognized in fields such as headache and low back pain, and apply equally to orofacial pain. Studies of patients with chronic orofacial pain have found lifestyle problems similar to that of other chronic pain syndromes (22, 24). For example, a 1986 Harris Poll (9) found that head pain causes more missed work days among employed workers than any other type of pain. In addition, research involving oral stress habits, stress-tension behavior, and depression suggests that each plays some role in orofacial pain disorders (26, 27, 77, 78). Issues such as pain behavior, secondary gain and operant learning have been identified as significant contributing factors that need intervention to achieve pain management (23, 29). Other factors might be implicated in the perpetuation of chronic orofacial pain cycles (1, 25, 79) including postural habits, anxiety, caffeine intake, over the counter medication overuse, central spread of pain and CNS sensitization, general involvement of the upper quarter complicating pain in the orofacial region, systemic disease with pain corollaries, sleep disorders, and dental arch structural problems. These theories have provided significant impetus to developing interdisciplinary teams.

Unfortunately, when organic sources of painful stimulus are absent or equivocal, medical or dental practitioners may be drawn into treatment of more understandable or more discernable findings such as malocclusion or temporomandibular joint noises rather than opening up to psycho-social and behavioral issues that may be driving chronic pain. Chronic pain, sleep disturbance, depression, chronic myofascial pain, fibromyalgia, and migraines all share some commonalities in neurochemistry as well as often combine as multi-factoral problems in chronic pain patients. This reinforces the need for integrated therapy rather than compartmentalizing the patient. Chronic pain rehabilitation programs have been applied to orofacial pain with success similar to clinics for other types of pain (80). Although many patients can be treated by a single Orofacial Pain dentist, interdisciplinary management teams naturally develop for complex patients (30, 81-83). The multiple factors in complex pain patients affirm that single modalities may be too limiting and an integration of medical expertise is often needed. The team does, however, require a leader. Pain management leaders are not abundant in Medicine. Indeed, it is often difficult to find a neurologist or a psychologist with much interest or training in chronic pain, or any experience managing orofacial pain. Therefore, the dentist pain manager will continue to find him or herself in that important role, and needs both dental as well as medical pain management training to communicate medically, discuss all differential treatment options, and integrate care in a medical as well as dental setting. A management team enhances the overall potential for success by encouraging communication, and allows various aspects of the problem to be addressed by different clinicians simultaneously. Please refer to the Standards Document for Orofacial Pain in Appendix II, that recognizes and reflects the International Association for the Study of Pain (IASP) requirement for multidisciplinary pain center programs. This organization is not present in any other dental specialty program or standard, except Orofacial Pain.

3. The application of interdisciplinary and multi-disciplinary teams to management of the chronic pain patient.

Many authors have proposed that because of its multifactorial nature, chronic pain needs to be conceptualized from a broader biopsychosocial model rather than the biomedical model traditionally used for acute problems (24, 76, 81, 82). This paradigm shift suggests that patients should be assessed from a multidimensional perspective determining both the physical diagnosis and the biological, behavioral, psychosocial, and environmental contributing factors (1, 35, 84, 85). There have been advances in defining the domains involved in chronic pain, and providing instruments to measure them (86-89). In the area of orofacial pain, risk assessment) have been developed to assess multidimensional risk factors associated with Orofacial pain. In addition, many Orofacial Pain and Pain Medicine centers use standard psychological assessment instruments such as the MMPI for personality assessment screening for psychological problems, referral for psychology or psychiatry pre-treatment or co-treatment. The MMPI, for example, can assist in patient management by advising on the suitability of invasive procedures, making appropriate medication selections, and estimating potential compliance with treatment. If an underlying primary clinical depression is identified, then this should be managed first before starting rehabilitation therapy. Current approaches to management advocate a long-term rehabilitation approach that addresses both the physical disorder and contributing factors on an equal and integrated basis (81, 82). Issues such as pain behavior, secondary gain and operant learning have been identified as significant contributing factors that need intervention to improve the problem (91, 92)

New approaches to management also follow these concepts by advocating a long term rehabilitation approach

that addresses both the physical disorder and contributing factors on an equal and integrated basis 81, 82). Although most patients can be treated by a single dentist, the development of interdisciplinary management teams have been developed for complex orofacial pain problems (30, 81-83). Traditionally, most treatment of orofacial pain disorders varied according to the clinician's favorite theory of etiology. As a result, success of treatment was often compromised by limited approaches that only addressed part of the problem. With a broader conceptualization of orofacial pain disorders, the integration of knowledge and care from multiple clinicians, particularly dentists, health psychologists, and physical therapists has also evolved. A management team enhances the overall potential for success by allowing various aspects of the problem to be addressed by different clinicians simultaneously. The biopsychosocial approach to medical and dental problems is well established in the literature (26-30,41). The general implication of this model is that virtually all of the problems confronted in dental practice are, in one way or another, an integration of biological, psychological, and sociological phenomena. Biopsychosocial dentistry acknowledges that many patients presenting with dental concerns may not be able to be "cured", and consequently develop psychosocial problems. Physical symptoms may be caused or exacerbated by emotional distress, as well as organic disease may cause conflicts in adjustment resulting in secondary psychological dysfunction.

The interdisciplinary/team approach to treatment and prevention has been documented to be the most comprehensive approach to providing the most well-rounded individualized treatment program for patients(28-31,83). These issues become important regularly during patient care, and pain management dentists in particular must be trained in recognition and appropriately directing psychological and behavioral treatment including: substance abuse; mood disorders; body image concerns; suicidal ideation; stress / anxiety; disorders; spouse abuse; compliance problems; patient education; cognitive deficits; personality issues; unrealistic expectations; psychopharmacologic medication recommendations; relapse prevention.

Services provided in a Orofacial Pain Clinic have also included but not limited to: a) assessing the impact a patient's pain problem has on the patient's psychosocial functioning and behavior; b) the impact that psychosocial factors and behaviors may have on the patient's ability to respond to a physical medicine regime; c) providing various treatments to patients to reduce behavioral problems (biofeedback, relaxation training, Cognitive-Behavioral Training, stress management, surgical preparation); d) training residents to make appropriate psychiatric referrals as well as how to incorporate psychological treatment recommendations in their patient care; e) psychometric testing for patient treatment planning; f) coordinating various treatment recommendations and specialties, g) dealing with suicidal patients, substance abuse, and mood disorders, as well as many other services in treating patients and educating residents. In current programs, it has become evident that patients with problems in all aspects of the dental school curriculum have benefited from the presence of an interdisciplinary Orofacial Pain center within the dental school. The majority of dental schools have Orofacial Pain clinics within them.

b. Provide an analysis of current scientific challenges central to advancing this field.

Several conferences and publications in the past 5 years have documented the scientific challenges that are central to advancing the field. Although the details of many advances in Orofacial Pain are included in section 8a on Scientific advances, the scientific challenges as developed by these conferences are summarized here. For further details of these recommendations, please refer to the individual references cited. 1) Broadening the Scope, Long Range Research Plan for the Nineties. Back in 1989, the Dr. Harald Loe, Director of NIDR convened a panel of experts to outline the long-range goals for research in dentistry into the 2000s. In this vision, he states "Thus, we enter the nineties with the conviction that dental research will no longer be dominated by the two diseases that have colored public perception for the past 100 years: dental caries and periodontal diseases. Instead, our vision is expanded to include all the disease and disorders that affect the oral and facial tissues across the life span".

Orofacial pain disorders and other oral sensory and motor functions are featured as an area that is "solid in past advances but rich in potential for discovery of new methods for diagnosis and management". The general areas that are recommended for research include; 1) anatomy, physiology and chemistry of pain, 2) inflammation and nerve injury, 3) orofacial pain management and outcome, and 4) diagnosis, assessment, and

treatment of chronic orofacial pain conditions. 2) Orofacial Pain and Temporomandibular Disorders: Advances in Research and Therapy, 1993 The American Academy of Orofacial Pain and the NIDR co-sponsored the 1993 Scientific Congress on Orofacial Pain. This Congress featured many of the most distinguished scientist in the field and developed research recommendations for advancing the field of Orofacial Pain. These were published by Fricton and Dubner in Orofacial Pain and Temporomandibular Disorders (116). These recommendations covered all areas of orofacial and included: 1) the need for a better understanding of prevalence and impact of orofacial pain disorders; 2) mechanisms of orofacial pain and its modulation; 3) orofacial pain assessment, diagnosis, and classification; 4) diagnostic strategies for temporomandibular disorders, and 5) outcome and clinical trials associated with all strategies for management of orofacial pain (Temporomandibular Disorders and Related Pain Conditions: Report of an NIH/NIDR Conference. IASP Press. 1995.)

The National Institutes of Craniofacial and Dental Research, the National Institute of Arthritis and Musculoskeletal and Skin Diseases, the Office Research on Women's Health, and Food and Drug Administration organized a workshop to synthesize available information from both the United States and abroad on temporomandibular disorders and associated conditions. One of the purposes of the conference was to identify major research needs in the field. The papers based on this workshop were published by Sessle, Bryant, and Dionne in Temporomandibular Disorders and Related Pain Conditions (34). These recommendations detailed the state of knowledge and specific areas that need research and include: 1) muscle pain and pathophysiology, 2) temporomandibular joint disk displacements, 3) degenerative and inflammatory temporomandibular joint disorders, 4) diagnosis and assessment of temporomandibular disorders, 5) epidemiology and health services research related to TMD, 6) temporomandibular joint structure, function, and repair, 6) therapeutic approaches to TMD, and 7) biostatistical analysis of clinical research. 4) Technology Assessment Conference Statement on Management of Temporomandibular Disorders. The most recent conference included the Technology Assessment Conference Statement on Management of Temporomandibular Disorders sponsored by the National Institute of Dental Research in 1996 and chaired by Judith Albino, Ph.D.(NIDR consensus statement from Technology Assessment Conference, USPHS publication, 1996)

This independent panel of experts outside of the field of orofacial pain were presented with the most recent advances in a specific area, in this case, management of one specific type of orofacial pain: temporomandibular disorders. The panel concluded that although there has been significant advances in the understanding of management of TMD, considerably more research is needed. The areas of recommendation include: 1) the biological basis for diagnosing TMD, 2) reliable and valid classifications of TMD, 3) understanding underlying pathophysiology, 4) longitudinal studies on natural history of TMD and risk factors, 5) health services research on cost and impact, 6) improving our knowledge of outcomes through randomized clinical trials, and 7) underlying basic research in TMD.

The National Academies of Sciences, Engineering, and Medicine Committee on Temporomandibular Disorders (TMD) to gather information, explore the current state of knowledge, and identify priorities for advancing basic, translational, and clinical research on TMD and improve evidence-based treatment and clinical management for patients with TMD. They are hosting a public workshop on March 28 – 29, 2019 in Washington, DC. This workshop is part of the committee's broader effort to review and estimate the public health significance of TMDs, including prevalence, incidence, burden and costs; and review challenges to data collection and reliability.

Some of the challenges addressing the field of TMD and orofacial pain include;

- Evaluate the evidence base for assessment, diagnosis, treatment, and management of acute and chronic TMD. Recognizing that TMDs are diverse and multifactorial conditions influenced by genetics, sex and gender, environmental, physiological, and psychological factors, this effort will:
 - Address patient heterogeneity and challenges to patient stratification to better target therapies toward patients.
 - Identify similarities and differences between chronic TMD, other chronic pain states (as well as chronic

- overlapping pain conditions), and other joint disorders such as phenotypic features that might predict responsiveness to treatments.
- Identify and characterize other non-pain comorbidities that diminish quality of life, including those that affect etiology and influence resilience, such as nutritional challenges and other neurological, metabolic, and mental health conditions (e.g. anxiety, depression).
 - Examine the evidence-base for defining chronic TMD as a multi-system disorder that necessitates multidisciplinary research and interventions.
 - Identify barriers to appropriate patient-centered TMD care, in the presence and absence of an evidence base, and strategies to reduce these barriers along the continuum of TMD pain. This effort will:
 - Evaluate elements and outcomes of patient-centered TMD care.
 - Identify challenges to dissemination and implementation of evidence-based treatments and prevention strategies that are safe and effective.
 - Determine and characterize health inequities in clinical TMD management.
 - Review the state of science for TMD and provide an overview of basic, translational, and clinical research for TMD. This effort will:
 - Examine existing or emerging TMD animal models and their preclinical utility.
 - Identify gaps and opportunities in TMD research relating to central and peripheral mechanisms, genetic/epigenetic contributions, heterogeneity of molecular mechanisms, joint mechanics, neuroimmune processes, endocrine influences, role of the microbiome, and endogenous mechanisms of resilience.
 - Assess the intersection of sex differences in immune/neuroimmune and inflammatory responses in chronic TMD with other autoimmune diseases that are more prevalent in females or males.
 - Assess progress on identification and validation of targets and biomarkers (genetic, neuroinflammation, neuroimaging, proteomic, behavioral, etc.) for use in establishing risk, diagnoses, treatment, outcomes, and reoccurrence.
 - Identify potential approaches to using artificial intelligence for pattern recognition in patient datasets (e.g., genetic, biological, psychological, social traits, electronic health records, and patient-reported outcomes) to distinguish disease subtypes, develop individualized clinical decision support, and predict patient responses.
 - Identify new and rapidly evolving tools and technologies with potential to significantly advance research, diagnosis, and treatment of TMD.
 - Identify opportunities and challenges for development, dissemination, and clinical implementation of safe and effective clinical treatments for orofacial pain, including pharmacological agents, regenerative medicine, behavioral interventions, and complementary and integrative approaches.
 - Identify scientific and clinical disciplines needed to advance TMD science and the development, dissemination, and implementation of safe and effective treatments; as well as strategies to enhance education and training in these disciplines.
 - Identify multi-disciplinary/inter-disciplinary research approaches necessary in the short-and long-term to advance basic, translational, and clinical TMD research and to improve the assessment, diagnosis, treatment, and management of TMDs.

U.S. Department of Health and Human Services: National Institutes of Health (Office of the NIH Director and the National Institute of Dental and Craniofacial Research), This committee's report including its conclusions and recommendations is due to be released in Spring 2020.

c. Describe how the organization has fostered research training.

The members and organizations of the AAOP have been active in fostering research training and scientific and clinical advances in the field. Several Ph.D. programs in Orofacial Pain and Neurosciences (University of Minnesota, University of Kentucky, University of New York at Buffalo, LSU, University of New Jersey, UCLA, and others) have been developed by members to stimulate research and develop faculty in the field. Many members also participate as faculty for these research training programs. In addition, the AAOP has annually brought together nationally known researchers in the various disciplines of Orofacial Pain to present their most recent research at national meetings. These AAOP meetings also sponsor scientific abstracts to allow

presentation of the most recent research by investigators all over the world. The AAOP has a strong history of supporting research and research training in other ways also including;

- 1) Holding annual national scientific meetings and international meetings every 3 years.
- 2) Participating with NIDCR in sponsorship of scientific meetings such as the Management of TMD Technology Assessment Conference.
- 3) Promoting graduate research in Orofacial Pain and related areas through the annual sponsorship of scientific abstracts.
- 4) Members obtaining grants and conducting research.
- 5) Membership in AAOP encourage scientific publications.
- 6) The AAOP providing funds for research and have a peer review process.
- 7) Members collaborating with the AADR neurosciences section and NIDCR intramural Pain Research Center.
- 8) The AAOP publishing the Journal of Orofacial Pain to stimulate research.
- 9) AAOP investigators serving as research mentors to graduate students and new members and participate as members of peer review panels for granting agencies such as the National Institutes of Health (NIH) and the American Fund for Dental Health.
- 10) The requirement by the American Academy of Orofacial Pain's "Standards for Advanced Education Programs in Orofacial Pain" that all Orofacial Pain graduate degree programs include ongoing review of current research and participation in original research.
- 11) The collaboration with international organizations in Orofacial Pain to promote world-wide standards of practice and education.
- 12) The development of standards for disability assessment in the field of Orofacial Pain.
- 13) Collaborating on T=the National Academies of Sciences, Engineering, and Medicine Committee on Temporomandibular Disorders (TMD) to gather information, explore the current state of knowledge, and identify priorities for advancing basic, translational, and clinical research on TMD and improve evidence-based treatment and clinical management for patients with TMD

9. Other Information

Provide any other information which demonstrates that the sponsoring organization meets the definition as described in this standard.

This standard has been met as noted in the previous discussion based on the fact that members of the specialty of orofacial pain have been recognized by medicine, health psychology, physical therapy, and other fields. For example, Dr. William Maixner DDS, PhD is current President of the American Pain Society and Dr. James Friction DDS, MS is President of the International Myopain Society and integrally involved in leading the campaign to prevent chronic pain and addiction.

The campaign includes members of the International Association for the Study of Pain (IASP), the International MYOPAIN Society (IMS), National Fibromyalgia and Chronic Pain Association (NFMCPA), and the Institute for Healthcare Excellence have developed a multi-level strategy to help transform healthcare to relieve and prevent chronic pain and addiction with patient-centered transformative healthcare solutions. The International Association for the Study of Pain (IASP) works to support research, education, clinical treatment, and better patient outcomes for all pain conditions with the goal of improving pain relief worldwide.

These organizations include over 7,000 members representing over 130 countries, 91 national chapters, and Special Interest Groups (SIGs) including Orofacial Pain. These groups foster the exchange of ideas and education to advance the field of pain science. Here is a summary of the campaign. It is now Chronic pain is the big elephant in the room of healthcare as the top reason to seek care, the #1 cause of disability and addiction, and the primary driver of healthcare utilization costing more than cancer, heart disease, and diabetes. Chronic pain often results from patient-centered risk factors such as poor ergonomics, repetitive strain, inactivity, prolonged sitting, stress, sleep disorders, anxiety, depression, abuse, and others that increase peripheral and central pain sensitization. Health professionals' primary role in managing pain conditions should be guiding, coaching, and assisting patients with day-to-day self-management of pain (Institute of Medicine 2011). Transformative care integrates self-management training with treatment using a team and technology

(4-Ts) to improve long-term successful outcomes. The Campaign for Preventing Chronic Pain and Addiction helps health professionals, patients, and the healthcare system implement transformative care. The Campaign is promoting training of health professionals in Transformative Care for Pain Conditions that integrates patient training in self-management with evidence based treatments using teams and technology.

II. Requirement 2:

A proposed specialty must be a distinct and well-defined field which requires unique knowledge and skills beyond those commonly possessed by dental school graduates, as defined by the Commission on Dental Accreditation's Accreditation Standards for Dental Education Programs.

a. Definition

Orofacial Pain is the discipline of dentistry which includes the assessment, diagnosis and treatment of patients with acute and chronic orofacial pain and dysfunction disorders, oromotor and jaw behavior disorders, obstructive sleep disorders, and chronic head, neck, and facial pain, as well as the pursuit of knowledge of the underlying pathophysiology and mechanisms of these disorders. Specifically, the field includes diagnosis and treatment of orofacial pain disorders including neuropathic orofacial pain disorders, neurovascular orofacial pain disorders, chronic regional pain syndrome, masticatory and cervical neuromuscular pain disorders, primary headache disorders, pain from temporomandibular joint disorders(TMD), pain secondary to orofacial cancer and AIDS, orofacial dyskinesias and dystonias, orofacial sleep disorders, and other complex disorders causing persistent pain and dysfunction of the orofacial structures.

It is important to note that this field does not include acute pain from disorders such as pulpitis, periodontal disease, surgical treatment of TM joint disorders or nerve injuries, impacted 3rd molars, dental hypersensitivity, oral lesions, and other acute pain disorders that are part of many dentist's or dental specialist's practices. The field also does not include treatment or prevention of anxiety from dental surgical or operative procedures.

The specialty of orofacial pain requires unique knowledge and skills beyond those commonly possessed by dental school graduates because they have negligible time in dental school pre-doctoral didactic curriculum. The baseline curriculum and training in orofacial pain disorders in the revised 2019 ADA pre-doctoral dental standards is minimal. The most recent standards included in the July 1st, 2019 Revision of Standards 2-8 and 3-1 were reviewed. There are generally no clinical requirement standards for Orofacial Pain diagnosis and treatment. Thus, the field is distinct and well defined in comparison to the definition of all other specialties in dentistry.

b. Advanced knowledge. Compare and contrast the pre-doctoral accreditation standards with the advanced knowledge required for the practice of the specialty, especially with regard to the level of knowledge required.

Table 5 shows a comparison of the pre-doctoral curriculum in the revised 2019 CODA accreditation dental standards with that of post-doctoral Orofacial Pain standards. This table illustrates that the knowledge and skills in the field of Orofacial Pain is largely under-represented in the pre-doctoral curriculum of most dental schools. Pre-doctoral curriculums do include content areas that are not part of the scope of Orofacial Pain such as treatment of pulpitis and periodontal disease, dental anatomy and occlusion, local anesthesia and conscious sedation, acute pain control, and routine treatment of TMD disorders. However, there are generally no clinical requirement standards for treatment of orofacial pain disorders. In contrast, the Orofacial Pain practitioner differs from both the pre-doctoral student and the existing dental specialists in being trained to treat orofacial pain disorders and not just to triage them. As described in the following documents, the curriculum primarily require exposure to and recognition of orofacial pain disorders for either referral or for consideration of dental treatment for other problems:

- The most recent standards included in the July 1st, 2019 Revision of Standards 2-8 and 3-1 and the rest of the 2019 standards were reviewed. In this document, it states that in 2-24, at a minimum, graduates must be competent in providing oral health care within local anesthesia, and pain and anxiety control, including

consideration of the impact of prescribing practices and substance use disorder but no reference to orofacial pain conditions.

- The ADA “Guidelines for Teaching the Comprehensive Control of Pain and Anxiety in Dentistry” are defined as the application of various physical, chemical and psychological modalities to the prevention and treatment of preoperative, operative, and postoperative patient anxiety and pain.
- This broadens the scope in the pre-doctoral and specialties curricula but is predominantly oriented around the acute pain model, anesthesia, and anxiety control. There is only mention of recognition of orofacial pain disorders but no mention of treatment.

Table 5. The table lists the disorders that require advanced knowledge and skills for diagnosis and management and whether they are either included in the 2019 pre-doctoral CODA curriculum standards or treated in clinical practice in the community based on the clinical practice survey of 311 general dentists (Appendix III).

Advanced Knowledge and Skills	% of General Dentists (n=311)	
	Included in Pre-doctoral curriculum?	% of DDS who treat in this disorder in office
Diagnosis and treatment of the following chronic orofacial pain disorders are included in the Orofacial Pain curriculum		
neuropathic orofacial pain disorders	No reference	2%
neurovascular orofacial pain disorders	No reference	1%
chronic regional pain syndrome	No reference	2%
complex masticatory and cervical neuromuscular pain disorders	No reference	11%
primary headache disorders including tension type and vascular headache	No reference	19%
pain from complex temporomandibular joint disorders including failed TMJ surgery and rheumatic diseases	No, Only routine treatment of TMD included	14%
pain secondary to orofacial cancer and AIDS	No reference	2%
orofacial dyskinesias and dystonias	No reference	2%
orofacial sleep disorders	No reference	14%
other complex or atypical disorders causing persistent pain and dysfunction of the orofacial structures	No reference	8%

The 2019 Commission on Dental Accreditation of the American Dental Association Pre-doctoral Dental Education Standard states that the mission of a pre-doctoral dental education program requires goals that include the preparation of a dentist who possesses the competencies within the scope of general dentistry and that early specialization is not permitted until the student has achieved a standard of minimal clinical competency in all areas necessary to the practice of general dentistry, requiring a “curriculum of at least four academic years of instruction or its equivalent.” The areas that imply some knowledge and skills are needed in orofacial pain are highlighted in bold.

The 2019 Pre-doctoral Standards for Biomedical Sciences include; Standard 2-12 Biomedical science instruction in dental education must ensure an in-depth understanding of basic biological principles, consisting of a core of information on the fundamental structures, functions and interrelationships of the body systems.

Standard 2-13 The biomedical knowledge base must emphasize the oro-facial complex as an important anatomical area existing in a complex biological interrelationship with the entire body.

Standard 2-14 In-depth information on abnormal biological conditions **must** be provided to support a high level of understanding of the etiology, epidemiology, differential diagnosis, pathogenesis, prevention, treatment and prognosis of oral and **oral-related disorders**.

In contrast, 2019 Curriculum Standards for the Development of Post-doctoral Programs in Orofacial Pain (31-32) state that "*a minimum of two years full time training, including a 50 percent clinical proportion, is required for minimal competency in this field of Orofacial Pain*". It is not possible to achieve this in the general dental training curriculum. Currently, there is insufficient curriculum time available in the pre-doctoral curriculum and limited numbers of faculty trained in Orofacial Pain to teach the broader aspects of management of orofacial pain disorders to pre-doctoral students.

Dentists in the general practice of dentistry are briefly trained or not trained at all in didactic aspects of differential diagnosis of orofacial pain and treatment competency training is primarily in the practice of dental procedures, including management of acute dental pain problems, acute anxiety management of the dental and surgical patient (ADA Guidelines for teaching the comprehensive control of pain and anxiety in dentistry) and management of pain through local anesthesia and some exposure to use of general anesthesia.

In contrast, graduates of two years or more advanced education programs in Orofacial Pain are expected to become the authoritative resource academically, educationally, and clinically for chronic orofacial pain patients whether working in a dental or medical environment. Because temporomandibular disorders are a component of many dental patients, students are exposed to this in most pre-doctoral and existing specialty programs. Routine management of TMD is not considered to be part of the domain of Orofacial Pain dentists. However, it is proposed that the Orofacial Pain advanced education program graduates will have received the greatest didactic and clinical experience in the management of these patients and will become the critically needed educators in our pre-doctoral and existing post-doctoral program curricula. They will be especially essential if the ADA Council on Dental Education adopts the proposed standards for pre-doctoral education in TMD.

Pre-doctoral didactic courses are commonly offered in temporomandibular disorders and jaw behavior disorders such as bruxism in some schools, but the curriculum has minimum exposure to chronic pain, orofacial pain disorders, and oromotor disorders. The goals are generally diagnostic familiarity and to encourage awareness of wider diagnostic and treatment possibilities, and to understand the sequencing and/or limitations of normal dental procedures in tackling these kinds of multifactorial problems. There are no clinical requirements for pre-doctoral training in Orofacial Pain. Whereas, pre-doctoral students may be exposed to didactic presentations about chronic pain, they do not obtain experience and are not competent in the evaluation, diagnosis, management, treatment, and interdisciplinary care for chronic pain patients.

Most dental schools do not provide exposure to patient care for orofacial pain patients in the pre-doctoral curriculum except by observation rotations, selectives, or electives in some institutions. Some pre-doctoral clinical experience may be acquired in the recognition of temporomandibular disorders and risk management practice of dental procedures in dental patients who have some positive orofacial pain findings. Areas of dental practice that are fundamental to general dentistry have to be taught to competency standards measured by competency testing "*to assess the degree to which each student has mastered published objectives*". There are no pre-doctoral objectives or competency level standards for Orofacial Pain. Graduates of the dental pre-doctoral curriculum generally are not exposed to chronic pain patients and are not trained to any level of competency to treat such patients for whom chronic pain problems are the primary complaint. Through continuing education, many general dentists increase their expertise in the management of TMD problems in their dental patients, which may include other orofacial pain problems on limited basis. However, they cannot replace the necessary core pain neuroscience background, and especially not the problem oriented use of medical, physical medicine, pharmaco-therapeutic, and behavioral sciences in a multidisciplinary environment experience that an accredited orofacial pain specialty program does provide.

c. Advanced skills.

Compare and contrast the advanced skills and levels of competency/proficiency expected of a graduate of the specialty, especially with regard to the level of skill required.

The areas that imply some skills are needed in orofacial pain are highlighted in **bold**. The 2019 Pre-doctoral Accreditation Standard 2-24 states;

At a minimum, graduates must be competent in providing oral health care within the scope of general dentistry, as defined by the school, including:

a. patient assessment, diagnosis, comprehensive treatment planning, prognosis, and informed consent;

b. screening and risk assessment for head and neck cancer;

c. recognizing the complexity of patient treatment and identifying when referral is indicated;

d. health promotion and disease prevention;

e. local anesthesia, and pain and anxiety control, including consideration of the impact of prescribing practices and substance use disorder;

f. restoration of teeth;

g. communicating and managing dental laboratory procedures in support of patient care;

h. replacement of teeth including fixed, removable and dental implant prosthodontic therapies;

i. periodontal therapy;

j. pulpal therapy;

k. oral mucosal and osseous disorders;

l. hard and soft tissue surgery;

m. dental emergencies;

n. malocclusion and space management; and

o. evaluation of the outcomes of treatment, recall strategies, and prognosis

In these standards, there is reference to “oral related disorders”, “recognizing the complexity of patient treatment and identifying when referral is indicated”, “local anesthesia, and pain and anxiety control including consideration of the impact of prescribing practices and substance use disorder”, and “oral mucosal and osseous disorders” are included. However, there is no reference to orofacial pain disorders.

Pre-doctoral clinical competency testing is usually limited to the restorative, periodontal and oral pathologic areas that are subsequently tested for minimal competency in State Board and regional examinations. There is no clinical competency testing in orofacial pain diagnosis and management. This experience is generally limited to exposure to a TMD patient or in risk management in pre-doctoral student dental patients that have the complication of some TMD complaints or findings. The general dentist should be able to practice risk management dentistry in regards to TMD, atypical facial and tooth pain, and some neuropathic pain disorders complaints and findings. The pre-doctoral dental curriculum does not prepare the general dentist to become a practitioner accepting referrals for management of chronic orofacial or head and neck pain problems since or she will not have received clinical training to competency in Orofacial Pain diagnosis and treatment in the general pre-doctoral curriculum.

Behavioral Sciences Standards include;

2-16 Graduates must be competent in the application of the fundamental principles of behavioral sciences as they pertain to patient-centered approaches for promoting, improving and maintaining oral health.

2-17 Graduates **must** be competent in managing a diverse patient population and have the interpersonal and communications skills to function successfully in a multicultural work environment.

In contrast, the practice of orofacial pain management requires the ability to work side by side with health psychologists in the behavioral and psychopharmacological management of these patients. The Orofacial Pain dentist must be competent in conducting a behavioral and psychosocial interview, initial screening, selection of psychometric instruments such as risk assessment, depression, and addiction, and subsequent referral, recognition of underlying signs of clinical depression or other behavioral abnormalities including medication abuse, and sleep disturbance. Orofacial Pain Dentists must be able to communicate professionally with health

care psychologists and work as a team member in interdisciplinary programs. They need to make treatment decisions or modify treatment approaches, set up contingency based treatment contracts for behavioral problem patients, and tailor centrally acting pain medications (many of which have psychopharmacotherapeutic properties) to the psychological profiles. None of these competencies are discussed or deliver in pre-doctoral dental curricula.

The graduates of Orofacial Pain post-doctoral programs must be competent in complete head, neck, and neurological evaluations and be competent in head and neck diagnostic strategies including orofacial and cervical tomographic, CT, MRI, Scintigraphy, arthrography, and other imaging examinations. The pre-doctoral graduates must be able to *"order and interpret appropriate laboratory and other diagnostic tests"* This is generally related to baseline medical screening. In contrast, the graduates of Orofacial Pain post-doctoral programs must be competent in medical laboratory examination including ongoing tests to monitor therapeutic dosing of medications that they are prescribing and to rule out changes indicating adverse or iatrogenic medical effects. In addition, it is recommended that they have exposure to MRI, SPECT, PET, thermography, EMG, EKG, and other diagnostic tests.

The 2019 Orofacial Pain Standards require competency in evaluation, diagnosis and treatment of all orofacial pain disorders, and to act as authoritative sources for the above. The Commission on Dental Accreditation requires each institution to define pre-doctoral graduating competencies for student performance in all essential areas, 5-43, which implies some flexibility between institutions, but little standardization of curriculum or competencies in Orofacial Pain. These include *"Graduate Minimum Competencies"* that may pertain to the pain and dysfunction patient, namely: *"A. examine and evaluate the patient B. identify and record the oral problems presented C. prescribe a sequential treatment plan, and the majority of care required by the patient D. recognized when to refer, and to coordinate care provided by others,"* (5-44). It is also stated that *"The general practitioner understands the indications and contraindications for contemplated treatment and is able to recognize when the scope of treatment is beyond his/her capability"* (5-45). This implies the need for advanced education centers for referral of the complex orofacial pain patient and an educational center to train such experts, such as Orofacial Pain post-doctoral programs. Standards 5-47H and 5-50 direct that the pre-doctoral student must be able to make appropriate decisions on modification of the plan for dental treatment based on the comprehensive evaluation of the patient. This pertains to and can be applied to the problem of risk management regarding orofacial pain cases in the practice of general dentistry. This is the predominant problem numerically in general dental practice. Whereas it is estimated that although 2% of the population will require complex treatment for chronic orofacial pain problems, the prevalence of otherwise more benign TMD problems is closer to 25- 35%. This finding may be warning signs for potential aggravation of TMD in patients for whom extensive dentistry is proposed and warrants screening the complex patients before proceeding with treatment. *"All pre-doctoral students receive appropriate didactic and clinical instruction to achieve competency in control of pain and anxiety, clinical pharmacology and management of related complications"*, 5-57 and 5-59. This requirement as written is predominantly related to the management of acute pain problems, local and general anesthesia.

To put the pre-doctoral exposure into perspective, the same guidelines document specifies that it takes a minimum of 2 years of full-time study in the field of Orofacial Pain to achieve minimal competency in this field (32) and it is therefore not possible to achieve this in the general dental pre-doctoral training curriculum. Orofacial Pain post-doctoral programs also require students to directly evaluate and treat the complex orofacial pain problems including masticatory and cervical neuromuscular pain disorders, pain from complex temporomandibular joint disorders including failed TMJ surgery and rheumatic disease, neurovascular pain disorders, neuropathic pain disorders, chronic regional pain syndrome, orofacial cancer and AIDS pain, dystonias and dyskinesias and other complex or atypical pain and dysfunction disorders of orofacial structures. These are complex disorders that have negligible time in dental school pre-doctoral didactic curricula. Orofacial Pain clinicians are required to develop skills to treat the chronic orofacial pain patient include head and neck examination techniques, cranial nerve screening examination, triage for underlying orofacial and brain pathology, use of laboratory medicine and tests, differential diagnosis and assessment of orofacial pain disorders, neuroblockade testing and treatment, interpretation of orofacial, head and neck and TMJ imaging,

physical medicine modalities, orthotics, neurosensory stents, pharmacotherapy, monitoring drug abuse, opioid and other drugs overuse and chemical dependency issues, and cognitive-behavioral and interdisciplinary methods of pain management.

Although these are general categories of skills and may be used in the context of other dental disease, there is not reference to the use of them for orofacial pain disorders. 5-63 directs the pre-doctoral experience in the management of dental emergencies, but this includes predominantly dental pulpal, periodontal, traumatic or arising from treatment failures. The pre-doctoral student does not obtain clinical training in the emergency management of primary headache, neuropathic pain, neuromuscular pain of central origin, neurovascular pain and pain behavior. Pre-doctoral graduates are "*competent inpatient assessment and diagnosis*, 5-46, and to *conduct a medical and dental comprehensive work up and evaluation of problems*" 5-47. This enables them to carefully screen patients with complex medical or orofacial pain problems and to make the necessary referrals. In contrast, the post-doctoral Orofacial Pain programs teach residents to perform a work-up of sufficient medical competency and dental competency to accept referrals in a clinic, hospital setting or a pain treatment team and evaluate and implement management strategies as necessary.

d. Other information that demonstrates compliance with this criterion.

The scope of the curriculum necessary to conduct an evaluation, diagnosis and treatment of the chronic orofacial pain patient is exemplified in the AAOP's treatment guidelines, Orofacial Pain: Guidelines for Assessment, Diagnosis, and Management. (6), the American Academy of Orofacial Pain Standards for Advanced Specialty Education Programs in Orofacial Pain (**Appendix II**), and the International Association for the Study of Pain's Core Curriculum for Professional Education in Pain Guidelines (120). This provides clear documentation that the knowledge required to achieve competency in this field in Dentistry and is well beyond that required in the ADA pre-doctoral accreditation standards, and that the material is so broad and in-depth that it is unlikely that it could ever be incorporated within a four-year pre-doctoral curriculum.

In summary, it is clear that Orofacial Pain meets each of the requirements #2 in that it is a distinct and well-defined field which requires unique knowledge and skills beyond those commonly possessed by dental school graduates as defined by the Commission on Dental Accreditation's Accreditation Standards for Dental Education Programs.

III. Requirement 3:

The scope of the proposed specialty requires advanced knowledge and skills that: (a) in their entirety are separate and distinct from the knowledge and skills required to practice in any recognized dental specialty and (b) cannot be accommodated through minimal modification of a recognized dental specialty. Review the Commission on Dental Accreditation's (CODA) accreditation standards for advanced specialty education programs and the ADA's approved definition of each recognized specialty and the definition of dentistry.

a. Advanced Knowledge

- (1) Compare and contrast the accreditation standards of each of the recognized dental specialties with the advanced knowledge required for the proposed specialty, especially with regard to the level of knowledge required.**
- (2) Provide a listing of the unique and distinct body of knowledge for the proposed specialty and contrast this listing with the unique and distinct bodies of knowledge of each recognized specialty.**

b. Advanced Skills

- (1) Compare and contrast the accreditation standards of each of the recognized dental specialties with the advanced skills required and levels of competency/proficiency expected of a graduate of the proposed specialty.**
- (2) Identify the advanced skills (techniques and procedures) required for practice of the proposed specialty that are not included within the scope of other recognized specialties.**
- (3) Provide a listing of the unique and distinct skills for the proposed specialty and contrast them to the unique and distinct fields and bodies of knowledge of each recognized specialty.**

Introduction. We reviewed the 2019 published Commission on Dental Accreditation's (CODA) accreditation standards for each of the advanced specialty education programs and compared this to the Orofacial Pain standards. Based on this review, we conclude that the scope of Orofacial Pain as a dental field requires advanced knowledge and skills that are; a) separate and distinct from the knowledge and skills required to practice in any recognized dental specialty and b) cannot be accommodated through minimal modification of a recognized dental specialty.

This review provides clear objective evidence of minimal overlap between the field of Orofacial Pain and any existing dental specialty including newly approved Dental Anesthesiology. These include the following objective evidence:

- a) The definitions and the scope of practice of each existing specialty is distinctly different and;
- b) A review of clinical practices and referral preferences of dental specialists found that these patients are not treated in dental specialist practices and, instead, prefer to refer to an Orofacial Pain dentist,
- c) the knowledge and skills in most current 2019 published accreditation documents of each specialty are different with that of Orofacial Pain and cannot be accommodated through minimal modification of a recognized dental specialty.
- d). Other evidence of a distinction between the definition of Orofacial Pain and existing dental specialties

The rationale for this position is included in the following discussions;

A. Definitions for Existing Dental specialties compared with Orofacial Pain.

The field and scope of the established Dental Specialties is officially defined by the ADA Commission on Dental Accreditation according to the Advanced Specialty Education Standards documents. None of these definitions of dental specialties include diagnosis and treatment of orofacial pain disorders within the definition of their scope and purpose. Their emphasis defines their primary discipline, as does the practice of that discipline. The following definition of ADA specialties was approved and Adopted by the National Commission on Recognition of Dental Specialties and Certifying Boards May 2018.

Dental Anesthesiology: Dental anesthesiology is the specialty of dentistry and discipline of anesthesiology

encompassing the art and science of managing pain, anxiety, and overall patient health during dental, oral, maxillofacial and adjunctive surgical or diagnostic procedures throughout the entire perioperative period. The specialty is dedicated to promoting patient safety as well as access to care for all dental patients, including the very young and patients with special health care needs. (Adopted March 2019)

Dental Public Health: Dental public health is the science and art of preventing and controlling dental diseases and promoting dental health through organized community efforts. It is that form of dental practice which serves the community as a patient rather than the individual. It is concerned with the dental health education of the public, with applied dental research, and with the administration of group dental care programs as well as the prevention and control of dental diseases on a community basis. (Adopted May 2018)

Endodontics: Endodontics is the branch of dentistry which is concerned with the morphology, physiology and pathology of the human dental pulp and peri-radicular tissues. Its study and practice encompass the basic and clinical sciences including biology of the normal pulp, the etiology, diagnosis, prevention and treatment of diseases and injuries of the pulp and associated peri-radicular conditions. (Adopted May 2018)

Oral and Maxillofacial Pathology: Oral pathology is the specialty of dentistry and discipline of pathology that deals with the nature, identification, and management of diseases affecting the oral and maxillofacial regions. It is a science that investigates the causes, processes, and effects of these diseases. The practice of oral pathology includes research and diagnosis of diseases using clinical, radiographic, microscopic, biochemical, or other examinations. (Adopted May 2018)

Oral and Maxillofacial Radiology: Oral and maxillofacial radiology is the specialty of dentistry and discipline of radiology concerned with the production and interpretation of images and data produced by all modalities of radiant energy that are used for the diagnosis and management of diseases, disorders and conditions of the oral and maxillofacial region. (Adopted May 2018)

Oral and Maxillofacial Surgery: Oral and maxillofacial surgery is the specialty of dentistry which includes the diagnosis, surgical and adjunctive treatment of diseases, injuries and defects involving both the functional and esthetic aspects of the hard and soft tissues of the oral and maxillofacial region. (Adopted May 2018)

Orthodontics and Dentofacial Orthopedics: Orthodontics and dento-facial orthopedics is the dental specialty that includes the diagnosis, prevention, interception, and correction of malocclusion, as well as neuromuscular and skeletal abnormalities of the developing or mature orofacial structures. (Adopted May 2018)

Pediatric Dentistry: Pediatric Dentistry is an age-defined specialty that provides both primary and comprehensive preventive and therapeutic oral health care for infants and children through adolescence, including those with special health care needs. (Adopted May 2018)

Periodontics: Periodontics is that specialty of dentistry which encompasses the prevention, diagnosis and treatment of diseases of the supporting and surrounding tissues of the teeth or their substitutes and the maintenance of the health, function and esthetics of these structures and tissues. (Adopted May 2018)

Prosthodontics: Prosthodontics is the dental specialty pertaining to the diagnosis, treatment planning, rehabilitation and maintenance of the oral function, comfort, appearance and health of patients with clinical conditions associated with missing or deficient teeth and/or oral and maxillofacial tissues using biocompatible substitutes. (Adopted May 2018)

Definition of Orofacial Pain. Orofacial Pain is the proposed specialty of dentistry which includes the assessment, diagnosis and treatment of patients with orofacial pain and dysfunction disorders, oromotor and jaw behavior disorders, orofacial sleep disorders, head and neck pain, as well as pursuit of knowledge of the underlying pathophysiology and mechanisms. The field includes treatment of neuropathic orofacial pain disorders, neurovascular orofacial pain disorders, chronic regional pain syndrome, masticatory and cervical

neuromuscular pain disorders, primary headache disorders, pain from temporomandibular disorders, pain secondary to orofacial cancer and AIDS, orofacial dyskinesias and dystonias, orofacial sleep disorders, and other disorders causing persistent pain and dysfunction of the orofacial structures.

Furthermore, Orofacial Pain does not include diagnosis and management of conditions that are included in the scope of practice for any existing dental specialties including surgical treatment of the temporomandibular joint, surgery of the trigeminal nerve, correction of malocclusions, treatment of pulpitis, dentinal hypersensitivity, burning mouth, anxiety and acute pain related to operative procedures, or diagnosis or treatment of oral soft tissue pain. It also does not include skills of prosthodontic or restorative dentistry, orthodontics, any oral surgery procedure, endodontic procedures, periodontal surgery or treatment, or diagnosis or treatment of soft tissue lesions with exception of diagnosis and treatment of temporomandibular disorders. Orofacial Pain also does not include acute pain control and sedation and does not overlap with Dental Anesthesiology. It also does not include treatment of pain from pulpitis, pulpal disease or dental hypersensitivity there is no overlap with Endodontics. Since the field does not include pain from gingival, periodontal or other soft tissue disease, there is no overlap with Periodontics. Since Orofacial Pain does include restorative dental treatments, there is no overlap with Prosthodontics. Since the field does not include pain from 3rd molars and other teeth, surgical treatment of temporomandibular disorders or nerve injuries, or acute pain and anxiety from dental surgical or operative procedures, there is no overlap with oral and maxillofacial surgery and dental anesthesiology. Since the field does not include pain from soft tissue lesions or burning mouth, there is no overlap with Oral Pathology. Since the field does not include orthodontic or orthopedic movement of teeth, there is no overlap with Orthodontics. Since the field does not include care of dental needs for children, there is no overlap with Pediatric dentistry. In conclusion, with regard to definition of each specialty, there is clear evidence that there is no actual or perceived overlap between the field of Orofacial Pain and any existing specialty.

B. Comparison of the clinical practices and referral preferences of dentists.

A comparison of the practice patterns between dentists in the community with those dentists practicing in field of Orofacial Pain also provide clear evidence that there is no perceived overlap in clinical practice with any existing specialty. **Figures 2, 3, and 4** presents results from the 2009 practice survey of 96 dental specialists in reviewing their practice patterns for patients with orofacial pain disorders (Appendix III). Figure 2 shows that when asked “do you treat or refer patients with these orofacial pain disorders?”, the vast majority of patients (mean of 89%) who present with orofacial pain disorders to a dental specialist are referred out of the practice. When asked; “Do you currently or would you refer to an Orofacial Pain dentist?”, the results were similar. Figure 3 shows that a mean of 95% of dental specialists prefer to refer patients to an Orofacial Pain dentists. Figure 4 shows that the major reasons for referral of these patients among all dentists in the survey was not being sufficiently trained (77%) and these patients were too complex (64%). In addition, these dental specialists also supported an ADA specialty in orofacial pain by a 4 to 1 margin.

As most dentists know, patients with orofacial pain disorders are often time-consuming and frustrating for current dental specialists so they have little interest in providing care for them. These patients may have behavioral, psychosocial, and addiction issues, require sophisticated multi-and inter-disciplinary treatment, and generate services that are typically submitted through medical insurance with different diagnosis codes, procedure codes, and health plan contracts than the rest of dentistry. These patients can be a burden on dental practices and, thus, explains why many of these patients are shuffled from one dentist to another and why the vast majority of general dentists and dental specialists choose to refer versus treat these patients.

Figure 2. The percentage of patients with orofacial pain disorders presenting to a general dentist(n=311) or dental specialist office(n=96) who are treated versus those who refer to another specialists (Appendix III).

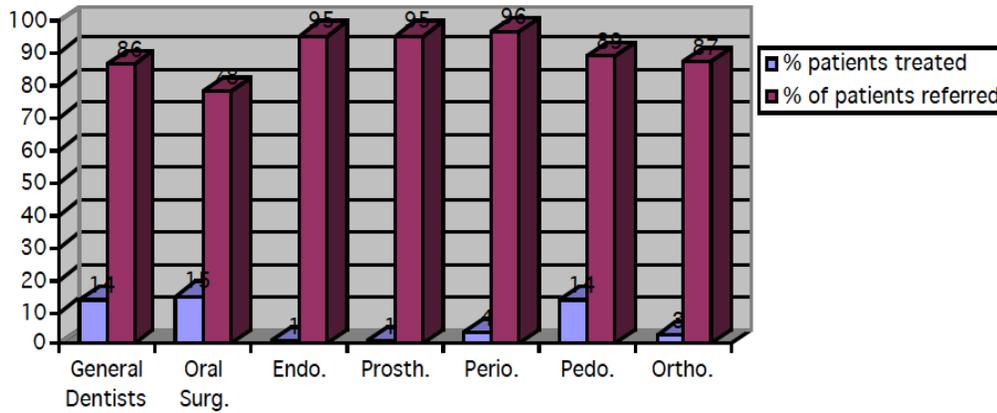


Figure 3. The percentage of general dentist(n=311) or dental specialists(n=96) who either currently do or would prefer to refer these patients to an orofacial pain dentist if they were available (Appendix III).

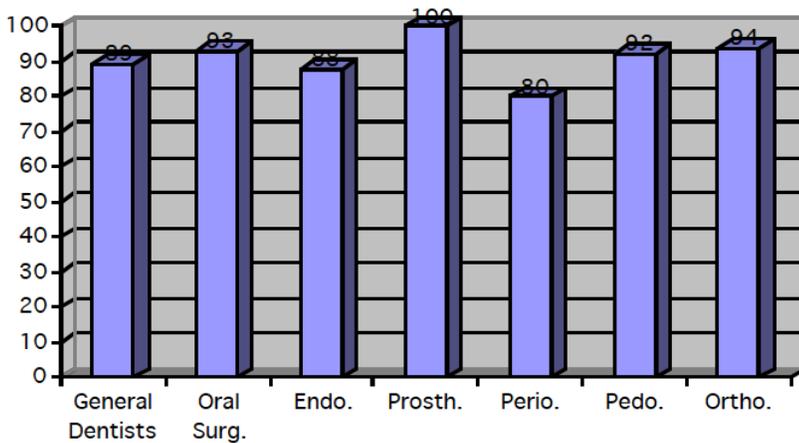
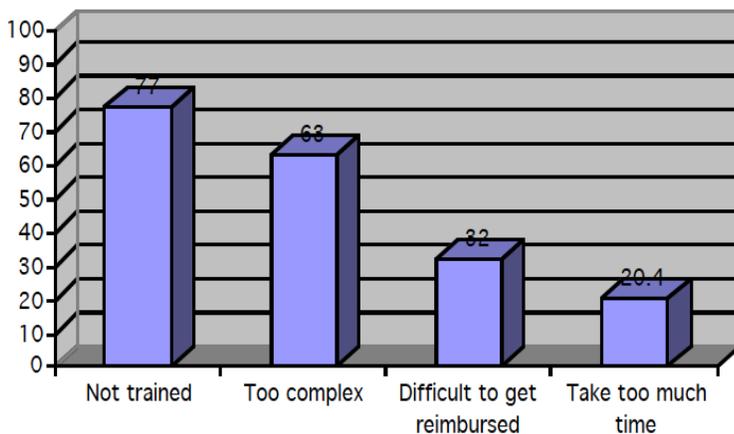


Figure 4. The reasons that general dentists(n=311) and dental specialists(n=96) state for referring these patients instead of treating them.



C. Comparison of Advanced Knowledge and Skills

We completed a comparison of knowledge and skills associated with the 2019 CODA curriculum standards for advanced education program in each of the recognized dental specialties with that of the field of Orofacial Pain. The advanced knowledge and skills in these documents includes no reference to orofacial pain disorders and minimal reference to temporomandibular disorders. Thus, curriculum content and training in orofacial pain disorders as described above is not represented in any of the existing specialties with no overlap with their ADA curriculum and board standards. **Table 6** lists a summary of the results of a comparison of 2019 curriculum standards for advanced education program in the clinical dental specialties with that of advanced knowledge and skills required in diagnosis and management of orofacial pain disorders that are included in the field of Orofacial Pain (2). As noted in the **Table 5**, the existing dental specialties do not reference these conditions except for surgery or care for non-complex splint treatment for temporomandibular disorders.

Table 6. Reference to diagnosis and treatment of orofacial disorders in 2019 CODA Accreditation standards for existing dental specialties.							
Advanced Knowledge and skills for;	Ortho	Prosth	Endo	Perio	Oral Surg	Pedo	Dent Anesth
neuropathic orofacial pain disorders	No	No	No except for diagnosis of orofacial pain	No	No, except for surgical repair of trigeminal nerve	No	No
neurovascular orofacial pain disorders	No	No	except for diagnosis of orofacial pain	No	No	No	No
chronic regional pain syndrome	No	No	except for diagnosis of orofacial pain	No	No	No	No
masticatory and cervical neuromuscular pain disorders	No except for non-complex splint treatment	No	No	No			
primary headache disorders	No	No	No	No	No	No	No
pain from temporomandibular joint disorders including failed surgery and rheumatic diseases	No except for non-complex splint treatment	No except for non-complex splint treatment	No except for diagnosis of orofacial pain	No except for non-complex splint treatment	No except for surgical treatment	No except for non-complex splint treatment in children	No
pain secondary to orofacial cancer and AIDS	No	No	No	No	No	No	No
orofacial dyskinesias and dystonias	No	No	No	No	No	No	No
orofacial sleep disorders	No	No	No	No	No	No	No

Comparison of Advanced Knowledge and Skills for Each Specialty.

The 2019 accreditation standards for each of the recognized specialties make no reference to the advanced

knowledge and skills required for diagnosis and management of orofacial pain disorders with the exceptions noted in this section. Curriculum guidelines for Orofacial Pain advanced education program require a minimum of full-time skills training of two years for graduate, or post-doctoral study in the field of Orofacial pain. This includes a minimum 50% time in Orofacial pain clinical training (estimated 1800 hours), with the remainder in didactic subjects designed to build a core knowledge of medicine, neuroscience, pain science, neuro-psychopharmacology, and behavioral sciences. Knowledge must be brought to a medical competency standard to permit treatment as well as diagnosis for multiple pain conditions and to qualify the graduate to work in a multidisciplinary medical and dental community. Most of the established dental specialties have been required to move to a three-year curriculum because of the amount of skill training in their own disciplines (e.g. Orthodontics, Periodontics, Prosthodontics, etc.) and cannot qualify their graduates to be pain referral providers for orofacial pain disorders.

The International Association for the Study of Pain has published a set of required skills for pain treatment facilities laying down the requirements for a multidisciplinary pain center. This is not fulfilled in current clinical models utilized by the existing dental specialties, but rather is the operational model for the established Orofacial Pain Programs and clinics across the country. It is the experience of Universities with Orofacial Pain program that establishment of these post-doctoral programs enhances the existing dental specialty programs by increasing the level of pain expertise available for crossover patients. Orofacial Pain programs bring additional populations and pool of patients into their dental school and are not competing with the established specialties for patients or procedures. Although general practice dentists and established dental specialties need to be able to evaluate the functional masticatory status to avoid iatrogenic problems, they are not trained in the assessment and treatment of chronic or complex orofacial pain and dysfunction whether it is from TMD or another orofacial pain disorder. Furthermore, orofacial pain disorders are not included in treatment patterns of either general dental practices and dental specialists as illustrated in **Table 7** relative to 12 Orofacial Pain Disorders.

Group	OFP Dentist Practice Patterns		General Dentist Practice Patterns		Dental Specialist Practice Patterns	
	Percent Treated	Percent Referred	Percent Treated	Percent Referred	Percent Treated	Percent Referred
Orofacial Pain Disorders						
Neuromuscular pain disorders	99.1	0.9	12.1	87.9	11.0	89.0
Temporomandibular disorders	94.9	5.1	9.5	90.5	19.1	80.9
Cervical Muscle Pain	70.7	29.3	7.9	92.1	5.2	94.8
Benign Primary Headache	75.8	24.2	19.9	80.1	10.5	89.5
Neurovascular Pain	65.0	35.0	2.2	97.8	7.5	92.5
Neuropathic Pain	66.9	33.1	2.9	97.1	2.6	97.4
Sympathetically Mediated Pain	51.8	48.2	8.2	91.8	4.2	95.8
Atypical Dental and Facial Pain	79.0	21.0	9.7	90.3	13.4	86.6
Oral cancer and AIDS pains	31.9	68.1	2.7	97.3	5.6	94.4

Dyskinesias and Dystonias	43.0	57.0	3.3	96.7	1.4	98.6
Orofacial Sleep Disorders	65.3	34.7	17.0	83.0	4.1	95.9

As noted earlier, surgical treatment of TM joint or trigeminal nerve injury are not included in the domain of the Orofacial Pain specialty. In addition, the occlusal treatment modalities including prosthodontic, orthodontic, and orthognathic surgery that are taught in existing specialties are insufficient to treat complex orofacial pain disorders according to our current understanding of these disorders. Like medicine, the profession of dentistry is now expanded to utilize a myriad of pain inhibition systems including the psycho-physiologic system, serotoninergetic, dopaminergic, neurovascular, neurogenic, neuromuscular components well beyond the training in any existing specialty. Current specialties exist for the proper evaluations, treatment and training of dentists in management of 1) dental supporting tissues (Periodontics), 2) restoration of dental hard tissues and missing dentition (Prosthodontics), 3) management of occlusal dysmorphology (Orthodontics and Oral and Maxillofacial Surgery), 4) oral pathology and disease (Oral Pathology and Oral and Maxillofacial Surgery), 5) public health (Public Health), 6) acute pain and pulpal disease (Endodontics), and 7) pain and anxiety from procedures (Dental Anesthesiology).

In the Restorative, Periodontics, Orthodontics and Endodontics specialties, this is mostly directed to a triage in order to be able to proceed with dental therapy, or to differentiate tooth site pain problems of pulpal, periodontal or dental trauma origin. Treatment of pulpal, periodontal, or dental trauma is cute pain is not included in the Orofacial Pain accreditation standards. Oral and maxillofacial surgery is involved in surgical treatment of the temporomandibular joint, coronoid process, and neuropathic pains from nerve injury. As noted above, TMJ or neural surgery is not included in the Orofacial Pain curricular standards. Oral and maxillofacial surgery, orthodontics, and prosthodontics are involved in the advanced knowledge of structural reconstruction or rehabilitation of the occlusion.

As noted above, reconstruction or rehabilitation of the occlusion is not included in the Orofacial Pain accreditation standards. Several of the specialties have had to extend from two to three years to accommodate their own curricular programs. As a result, they do not have sufficient curriculum time to fulfill the minimal 24 months guideline for advanced training in Orofacial Pain. The Curriculum Guidelines for Post-doctoral Programs in Orofacial Pain were published after review and approval for publication by the Council on Dental Accreditation. In contrast to the operational Orofacial Pain programs, none of the Standards documents for the exiting specialty programs contain the necessary curriculum content for the management of chronic pain patients as per any of the following documents:

- The American Academy of Orofacial Pain, Orofacial Pain: Guidelines for Assessment, Diagnosis, and Management. 3rd Edition, Quintessence Publishing Company, 2018 (6) (Appendix II)
- The American Academy of Orofacial Pain, Standards for Advanced Specialty Education Programs in Orofacial Pain, 2018
- The IASP Core Curriculum for Professional Education in Pain Guidelines published by the International Association for the Study of Pain, 2nd edition. IASP 909 NE 43rd. St., Suite 306; Seattle, WA 98105-6020, USA, 1996.(120)

In contrast to the operational Orofacial Pain programs, none of the 2019 Standards documents for the existing specialty programs have competency level requirements for knowledge and skills of Orofacial Pain. The Advanced Education Standard requirements in orofacial pain are presented as line items from the accreditation standards for each of the eight dental specialties as follows, followed by text discussion. The individual dental specialty accreditation guidelines are reviewed and contrasted under the following headings:

- Summary
- Advanced Knowledge (didactic);
- Advanced skills (clinical);

- Response: (pertaining to Orofacial Pain comparisons);
- Complementary Activity (discussion on the potential benefits of Orofacial pain trained specialists to the Dental Specialty).

DENTAL PUBLIC HEALTH

Summary. In the Dental Public Health 2019 accreditation standards, there is no reference to required knowledge and skills of the diagnosis and management of orofacial pain disorders and therefore no competencies.

Advanced Knowledge (didactic). In Public Health, the 2019 standards 4-2 states; The program **must** provide instruction at the advanced level in the following:

- Epidemiology;
- Biostatistics;
- Behavioral science;
- Environmental health; and
- Health care policy and management

Advanced Skills (clinical): Community issues predominate and the community is served as a patient rather than individuals.

Response: There is no evidence that the Dental Public Health curriculum includes sufficient course work to comply with the accepted orofacial pain post-doctoral guidelines, or to in anyway treat the individual pain patient. Dental public health is the science and art of preventing and controlling dental diseases and promoting dental health through organized community efforts and serves the community as a patient rather than the individual. There is much need for public health efforts to prevent chronic pain and addiction including orofacial pain disorders.

Complementary Activity: With an Orofacial Pain specialty, there will be an increase in team research on the epidemiology and public health efforts of orofacial pain disorders, testing better measures of outcome, prevention of chronic pain and addiction, better interface with third party communities; and to move toward improved etiologic understanding with more basic research and improved diagnosis and management with long term prospective clinical studies.

In summary, considering all this information, there is no overlap or conflict of the specialty of Dental Public Health with the specialty of Orofacial Pain. The presence of the field of Orofacial Pain is beneficial and complimentary to the field of Dental Public Health

ENDODONTICS

Summary. In the Endodontics 2019 accreditation standards, there is no reference to required knowledge and skills of the diagnosis and management of orofacial pain disorders and therefore no competencies. Orofacial Pain dentists also support Endodontic clinical practice by providing support for differential diagnosis of orofacial pain disorders, preventing unnecessary or explorative endodontic treatment, and manage non-endodontic orofacial pain. The standards are reviewed and any reference to orofacial pain disorders in the standards is bolded when applicable.

Advanced Knowledge (didactic): In Endodontics 2019 standards 4-5 Instruction must be provided in:

- Anatomy (gross and micro) of soft and hard tissues of the head and neck;
- Embryology;
- Infectious and immunologic processes in oral health and disease;
- Pathophysiology of pulpal/periradicular disease;
- Wound healing;
- Oral medicine and oral pathology;
- Pharmacotherapeutics;

- h. Research methodology and statistics;
- i. Neurosciences; and
- j. Biomaterials.

Advanced Skills (clinical): Endodontics 2019 standards Section 4-8 state that the educational program must provide in-depth instruction and clinical training so that students/residents are competent in:

- a. Diagnosis, treatment planning and prognosis;
- b. Non-surgical and surgical endodontic treatment and retreatment;
- c. A variety of endodontic techniques;
- d. Outcome evaluation;
- e. Radiography and other diagnostic imaging technologies, including use of Limited Field of View (LFOV) Cone Beam Computed Tomography (CBCT);
- f. Management of endodontic treatment of medically compromised patients;
- g. Emergency treatment for endodontic conditions;
- h. **Management of patients with orofacial pain and anxiety;**
- i. Preparation of space for intra-radicular restorations in endodontically treated teeth;
- j. Communication with patients and health care professionals; and
- k. Use of magnification technologies.

Section 4-9 states; The educational program must provide in-depth instruction and clinical training in:

- a. Vital pulp management;
- b. Endodontic management of developing permanent teeth;
- c. Revascularization/regenerative endodontics;
- d. Intracoronary bleaching procedures; and
- e. Endodontic management of traumatic dental injuries.

An understanding and clinical “competency” is only required in management of patients with orofacial pain and anxiety; The skills developed in the Endodontic program are typically to triage out non-pulpal/ non-peri-radicular pain and pathology, and to recognize endodontic specific pain, diagnose and treat endodontic pain. In-depth didactic and clinical proficiency is required in the management of the endodontic patient in all phases including behavioral management.

Response: Since there is no reference to required knowledge and skills of the diagnosis and management of orofacial pain disorders. There is a reference to management of patients with orofacial pain and anxiety that occurs during endodontic treatment. Endodontics is limited to dental pain versus screening out non-dental causes of orofacial pain, in order to appropriately conduct endodontic treatments. There is no evidence that the Endodontic curriculum includes sufficient course work to comply with the accepted orofacial pain post-doctoral guidelines, or to treat the chronic orofacial pain patient.

Complementary Activity: The Orofacial Pain programs and specialist provide an important complementary service to Endodontics and the problem orofacial pain patient when the response to endodontic procedures is problematic or the source of pain is unclear. In the practice survey, Endodontists referred 95% of those patients with chronic orofacial pain, preferably to an Orofacial Pain dentist. The Orofacial Pain dentist has the training and experience not only in the diagnosis but also in the definitive treatment of tooth site pain of non-odontogenic origin including: treatment of neuritis, peripheral neuropathies, centrally mediated pains including deafferentation pain and atypical odontalgia, traumatic and trigeminal neuralgia, pre-trigeminal neuralgia, sympathetically mediated and independent pains, and referred pain from muscles, facial migraine, and other disorders. *There is no other medical or dental specialty that has training in this treatment.* Reciprocally, the Endodontic specialist is important for referral from the Orofacial Pain dentist since by prevalence the pulpal and periapical pathology is common.

In summary, considering all this information, there is no overlap or conflict of the specialty of Endodontics with the specialty of Orofacial Pain. The presence of an Orofacial Pain dentist is beneficial and complimentary to

the practice of Endodontics.

ORAL & MAXILLOFACIAL PATHOLOGY

In the Oral and Maxillofacial Pathology 2019 accreditation standards, there is no reference to required knowledge and skills of the diagnosis and management of orofacial pain disorders and therefore no competencies. Orofacial Pain dentists and programs can support Oral and Maxillofacial Pathology by referring patients with oral lesions for diagnosis and management. The standards are reviewed and any reference to orofacial pain disorders in the standards is bolded when applicable.

Advanced Knowledge (didactic): The Oral and Maxillofacial Pathology 2019 accreditation standards states that this field is a clinical and laboratory science that investigates the causes, processes, and effects of orofacial, and oral hard and soft tissue pathology.

4-2.1 Students/Residents must study and assume initial major responsibility for reports and diagnosis on an adequate volume of surgical specimens of sufficient variety to obtain competence in surgical oral and maxillofacial pathology.

4-3.1 Training in diagnostic oral cytopathology must be provided to the students/residents

Advanced Skills (clinical): This specialty is primarily a diagnostic discipline involving clinical oral medicine, plus biopsy and laboratory diagnosis of tissue material. It is also the source for ADA credentialed oral medicine clinicians through the clinical wing of their training. The Oral and Maxillofacial Pathology 2019 accreditation standards state that:

4-4.1 The program must provide adequate training in the clinical manifestations of oral and systemic diseases.

4-4.2 Training must include attendance at tumor boards, clinical assessment of patients, selection of appropriate laboratory studies and their interpretation, evaluation of medical and drug status, administration of systemic and local medications, and participation in multi-disciplinary treatment planning.

4-4.3 Oral and maxillofacial pathology students/residents must not spend a significant portion of their clinical training in the routine activities of a screening/emergency clinic.

4-5.1 An acceptable program must provide for a substantial period, of at least six (6) months duration, of residency-level training in anatomic pathology as part of an active, hospital-based pathology department or other laboratory facility in a program accredited and approved by the ACGME.

4-6.1 A program must provide for training in a laboratory medicine program accredited by the ACGME.

4-7.1 A program must provide training in interpretation of diagnostic imaging, including plain film, magnetic resonance imaging (MRI) and computed tomography (CT). Students/Residents must have the opportunity to interpret an adequate volume of material to obtain competence in identifying the imaged features of disease.

Response: There are no advanced knowledge and skills for treatment of orofacial pain disorders included in the 2019 ADA advanced education standards or requirements in Oral and Maxillofacial Pathology and therefore no competency requirement or credentialing in Orofacial Pain. This specialty requires a high proficiency in the anatomic evaluation (clinical, gross and microscopic) of diseases, but not in the longer-term pain management of patients. Practice is described as including research and diagnosis of diseases using clinical, radiographic, microscopic, biochemical, or other examinations. It is therefore a separate discipline from the proposed Orofacial Pain specialty discipline.

Complementary Activity: The Oral and Maxillofacial Pathology specialist is an important member of the multidisciplinary team along with the Orofacial Pain dentist each contributing to the treatment planning of complex or chronic pain patients but with different responsibilities and competencies. The Orofacial Pain dentist is responsible for integrated management and long-term treatment and rehabilitation of chronic pain patients. The clinical Oral Medicine wing of the Oral and Maxillofacial Pathology specialist training is important in providing an exposure of the Orofacial Pain student to the differential diagnosis and triage of other pain producing oral diseases treated in oral diagnosis and oral medicine centers. This source of expertise is important to the Orofacial Pain dentist due to cross over in experiences with some chronic dental pain disorders such as atypical facial pain, burning tongue, and xerostomia for which a triage of pathology is required versus co-management of pain medication side effects.

In summary, considering all this information, there is no overlap or conflict of the specialty of Oral and Maxillofacial Pathology with the specialty of Orofacial Pain. The presence of an Orofacial Pain dentist is beneficial and complimentary to the practice of Oral and Maxillofacial Pathology.

ORAL & MAXILLOFACIAL SURGERY

In the Oral and Maxillofacial Surgery 2019 accreditation standards, there is no reference to required knowledge and skills of the diagnosis and management of orofacial pain disorders and therefore no competencies. Orofacial Pain dentists and programs can support the specialty of Oral and Maxillofacial Surgery (OMFS) by managing orofacial pain disorders and referring them for surgical treatment of orofacial disorders such as nerve injury neuropathic pain and temporomandibular joint surgery. The standards are reviewed and any reference to orofacial pain disorders in the standards is bolded when applicable.

Advanced Knowledge (didactic): The Oral and Maxillofacial Surgery 2019 standard 4-1 The program must provide training in application to the medical sciences with 4-1.1 stating that instruction must provide comprehensive understanding of pathology as well as understanding and application of the biomedical and clinical sciences, as these relate to patient care.

Standard 4-5 states Instruction must be provided in the basic biomedical sciences at an advanced level beyond that of the pre-doctoral dental curriculum. These sciences must include anatomy (including growth and development), physiology, pharmacology, microbiology and pathology. This instruction may be provided through formal courses, seminars, conferences or rotations to other services of the hospital. 4-5.1 Instruction in anatomy must include surgical approaches used in various oral and maxillofacial surgery procedures.

Advanced Skills (clinical): The 2019 standard 4-6 states; A formally structured didactic and clinical course in physical diagnosis must be provided by individuals privileged to perform histories and physical examinations. Resident competency in physical diagnosis must be documented by qualified members of the teaching staff. This instruction must be initiated in the first year of the program to ensure that residents have the opportunity to apply this training throughout the program on adult and pediatric patients.

Standard 4-6.1 Patients admitted to oral and maxillofacial surgery service must have a complete history and physical examination. The majority of these examinations must be performed by an oral and maxillofacial surgery resident.

Standard 4-7 states: the program must provide a complete, progressively graduated sequence of outpatient, inpatient and emergency room experiences. The residents' exposure to major and minor surgical procedures must be integrated throughout the duration of the program.

In addition to providing the teaching and supervision of the resident activities described above, there must be patients of sufficient number and variety to give residents exposure to and competence in the full scope of oral and maxillofacial surgery. The program director must demonstrate that the objectives of the standards have been met and must ensure that all residents receive comparable clinical experience.

Standard 4-8 states; The program must ensure a progressive and continuous outpatient surgical experience, including preoperative and postoperative evaluation, as well as adequate training in a broad range of oral and maxillofacial surgery procedures involving adult and pediatric patients. This experience must include the management of dentoalveolar surgery, the placement of implant devices, traumatic injuries and pathologic conditions, augmentations and other hard and soft tissue surgery, including surgery of the mucogingival tissues. Faculty cases may contribute to this experience, but they must have resident involvement.

Standard 4-8.1 states; Dental implant training must include didactic and clinical experience in comprehensive preoperative, intraoperative and post-operative management of the implant patient.

Standard 4-9 states; The off-service rotation in anesthesia must be supplemented by longitudinal and progressive experience throughout the training program in all aspects of pain and anxiety control. The ambulatory oral and maxillofacial anesthetic experience must include the administration of general anesthesia/deep sedation for oral and maxillofacial surgery procedures to pediatric, adult, and geriatric populations, including the demonstration of competency in airway management.

Standard 4-11 states; For each authorized final year resident position, residents must perform 175 major oral and maxillofacial surgery procedures on adults and children, documented by at least a formal operative note.

For the above 175 procedures there must be at least 20 procedures in each category of surgery. The categories of major surgery are defined as: 1) trauma 2) pathology 3) orthognathic surgery 4) reconstructive and cosmetic surgery. Sufficient variety in each category, as specified below, must be provided. Surgery performed by oral and maxillofacial surgery residents while rotating on or assisting with other services must not be counted toward this requirement.

Standard 4-13 states; In the pathology category, experience must include management of **temporomandibular joint pathology** and at least three other types of procedures.

Standard 4-13.1 states; Pathology management includes, but is not limited to, major maxillary sinus procedures, **treatment of temporomandibular joint pathology**, salivary gland/duct surgery, management of head and neck infections, (incision and drainage procedures), and surgical management of benign and malignant neoplasms and cysts.

Standard 4-15.1 states; Reconstructive surgery includes, but is not limited to, vestibuloplasties, augmentation procedures, **temporomandibular joint reconstruction**, Oral and Maxillofacial Surgery Standards management of hard and soft tissue maxillofacial defects, insertion of craniofacial implants, facial cleft repair, **peripheral nerve reconstruction** and other reconstructive surgery.

Response: Standard 4-13 includes both temporomandibular joint pathology and reconstruction and peripheral nerve reconstruction but no reference to diagnosis or non-surgical management of orofacial pain disorders. The specialty of OMFS is therefore not overlapping or conflicting with the field of Orofacial Pain clinical practice and requirements which are 100% non-surgical chronic pain management and treatment. An important premise of medical practice is for there to be some separation between surgical and non-surgical care as in neurology and neurosurgery, non-invasive, invasive, and surgical cardiology, etc., so that there is neither over commitment or under use of non-surgical or surgical approaches, and that the benefit is patient driven. In the consideration for the application of Orofacial Pain for specialty recognition, it is important for no group to claim to be the whole team.

Complementary Activity: The current history in university and hospital centers with OMFS & Orofacial Pain programs: the record clearly shows separation and that the specialty of OMFS is not in any way overlapped or conflicted by the Orofacial Pain centers in operation or by the proposed specialty of Orofacial Pain, which is 100% non-surgical chronic pain management and treatment. Similarly, neither is General or Specialty surgery in Medical Centers conflicted with medical pain management services, and commonly finds great comfort and benefit in working with pain management teams. In fact, both are complementary to the greater success of all disciplines involved, and more importantly to patient outcome. The specialty of OMFS will benefit greatly by having experts in chronic pain treatment and rehabilitation for co-treatment of certain oral and maxillofacial surgery patients pre- and post-surgery, and in receiving more appropriate referrals for surgical treatment from a new source. In the practice survey, OMFS referred 78% of those patients with orofacial pain disorders and preferred to send them to an Orofacial Pain dentist.

The Orofacial Pain program services are set up as more multidisciplinary services incorporating at least additional physical therapy and psychology services along with either an attending neurologist, pain medicine physician, internist, or anesthesiologist in one physical center, one combined medial record, and team conferences. This fulfills the guidelines for multidisciplinary pain centers and clinic according to the IASP 1990 (International Association of the Society for Pain, parent body to the American Pain Society) whereas this is not fulfilled or required by Oral and Maxillofacial Surgery standards. Some incidental experience can be obtained during hospital rotations and rounds programs. Behavioral management in the training Standards for Oral and Maxillofacial surgeons is only applied to acute pain and anxiety management, compared to the extensive use of psychometrics, psycho-physiological models, behavioral therapies and psychotropic medications in Orofacial Pain programs. Therefore, there is no conflict or duplication in practice or in training.

The presence of an Orofacial Pain program in an institution, or nearby Orofacial Pain dentists should increase the number of patients referred to OMFS for pain from 3rd molar impactions, TM joint and trigeminal nerve procedures because the pool of pain and dysfunction patients coming into expert care will increase. The referrals from Orofacial Pain to surgery comes with more correct inclusion criteria for surgical consideration,

and this should improve authorization for surgery, treatment outcome and patient participation. Orofacial pain dentists refer all cases involving surgery to the oral and maxillofacial surgeon in a similar manner to orthodontics referring orthognathic surgery patients to the oral and maxillofacial surgeon. The trained Orofacial Pain dentists triage and refer all cases involving actual pathology to the oral surgeon, or to the oral and maxillofacial pathologist as appropriate. The Orofacial Pain programs and specialty practices provide a new resource to assist Oral and Maxillofacial Surgery practice by providing assistance in the pre- and post-surgical management of musculoskeletal problems and rehabilitation following TMJ, orthognathic and trauma surgery of the orofacial region.

The Orofacial Pain dentist also provides the dental community with experts in the interdisciplinary management of orofacial pain disorders in difficult post-surgical problems, particularly multiple surgery patients, and neuropathic pain diagnosis and treatment occurring idiopathically and post-surgically. Plus, it brings the resource of additional pain and rehabilitation professionals and therapists. These components of care and the longitudinal care of pain and dysfunction are not performed by oral surgery services or included in Oral and Maxillofacial Surgery training standards. The onsite presence of clinical psychology faculty in the Orofacial Pain program may also be extremely useful in the screening and management of some potential OMFS patients, especially where elective and esthetic procedures are requested.

In summary, considering all this information, there is no overlap or conflict of the surgical specialty of Oral and Maxillofacial Surgery with the specialty of Orofacial Pain, which is all non-surgical. The presence of an Orofacial Pain dentist is beneficial and complimentary to the practice of Oral and Maxillofacial Surgery.

ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS

In the Orthodontics and Dentofacial Orthopedics 2019 accreditation standards, there is no reference to required knowledge and skills of the diagnosis and management of orofacial pain disorders and therefore no competencies. Craniofacial growth and skeletal orthopedics is studied including problems affecting orofacial esthetics, form and function, but temporomandibular disorders are not specified in the standards. The standards are reviewed and any reference to orofacial pain disorders is bolded when applicable.

Advanced Knowledge. In Orthodontics, the 2019 standards 4-2 states: A graduate of an advanced dental education program in orthodontics must be competent to:

- a. Develop treatment plans and diagnosis based on information about normal and abnormal growth and development;
- b. Use the concepts gained in embryology and genetics in planning treatment;
- c. Include knowledge of anatomy and histology in planning and carrying out treatment; and
- d. Apply knowledge about the diagnosis, prevention and treatment of pathology of oral tissues.

Advanced skills. Orthodontic Standard 4-3 Clinical Sciences include;

4-3.1 Orthodontic treatment must be evidence-based. (EBD is an approach to oral health care that requires the judicious integration of systematic assessments of clinically relevant scientific evidence, relating to the patient's oral and medical condition and history, with the dentist's clinical expertise and the patient's treatment needs and preferences.)

4-3.2 An advanced dental education program in orthodontics and dentofacial orthopedics requires extensive and comprehensive clinical experience, which must be representative of the character of orthodontic problems encountered in private practice.

4-3.3 Experience must include treatment of all types of malocclusion, whether in the permanent or transitional dentitions, and should include treatment of the primary dentition when appropriate.

4-3.4 A graduate of an advanced dental education program in orthodontics must be competent to:

- a. Coordinate and document detailed interdisciplinary treatment plans which may include care from other providers, such as restorative dentists and oral and maxillofacial surgeons or other dental specialists;
- b. Treat and manage developing dentofacial problems which can be minimized by appropriate timely intervention;
- c. Use dentofacial orthopedics in the treatment of patients when appropriate;

- d. Treat and manage major dentofacial abnormalities and coordinate care with oral and maxillofacial surgeons and other healthcare providers;
- e. Provide all phases of orthodontic treatment including initiation, completion and retention;
- f. Treat patients with at least one contemporary orthodontic technique;
- g. Manage patients with functional occlusal and temporomandibular disorders;**
- h. Treat or manage the orthodontic aspects of patients with moderate and advanced periodontal problems;
- i. Develop and document treatment plans using sound principles of appliance design and biomechanics;
- j. Obtain and create long term files of quality images of patients using techniques of photography, radiology and cephalometrics, including computer techniques when appropriate;
- k. Use dental materials knowledgeably in the fabrication and placement of fixed and removable appliances;
- l. Develop and maintain a system of long-term treatment records as a foundation for understanding and planning treatment and retention procedures;
- m. Practice orthodontics in full compliance with accepted Standards of ethical behavior;

Standard 4-4 States: The orthodontic graduate must have understanding of:

- a. Biostatistics;
- b. History of Orthodontics and Dentofacial Orthopedics;
- c. Jurisprudence;
- d. Oral Physiology;
- e. Pain and Anxiety Control;**
- f. Pediatrics;
- g. Periodontics;
- h. Pharmacology;
- i. Preventive Dentistry;
- j. Psychological Aspects of Orthodontic and Dentofacial Orthopedic Treatment;
- k. Public Health Aspects of Orthodontics and Dentofacial Orthopedics;
- l. Speech Pathology and Therapy;
- m. Practice Management; and
- n. The variety of recognized techniques used in contemporary orthodontic practice.

Response. There is no requirement to diagnose and treat orofacial pain disorders with orthodontics. The only interface with pain in the orthodontic Standards is in management of functional occlusal and temporomandibular disorders; and treatment of acute pain and anxiety control. This is unrelated to the proposed Orofacial Pain specialty skills. There are no Standards indicating a tertiary treatment requirement for orofacial pain disorders in orthodontics. There are no requirements for developing skills for the diagnosis or treatment of orofacial pain disorders, head and neck pain, neural, neuropathic, neuromuscular, neurovascular, vascular, autonomic pain, sleep disorders or the psycho-behavioral issues of chronic pain in the Orthodontic Standards.

The orthodontist should recognize and promptly respond to any TMD or pain problems arising during orthodontics or following orthodontic care. Due to the prevalence of TM joint findings, orthodontists may need to manage routine TMD findings (TM joint, local muscle problems and jaw behavior habits) in patients requiring orthodontics, particularly for prevention of risk and aggravation of the TMD during orthodontic treatment. In other words, special patient care Orthodontics is needed in patients with chronic TMD and/or orofacial pain. An active Orthodontic approach to treatment of orofacial pain can be listed as a modality-oriented clinic as defined by the IASP and does not qualify as a multidisciplinary clinic or a comprehensive approach to orofacial pain. In contrast, the Orofacial Pain dentist practices in a multidisciplinary clinic and at a higher level of proficiency.

Complimentary. Since orthodontics is primarily involved in orthopedic diagnosis and treatment of the dental-alveolar structures and malocclusion, the inherent tissue adaptation involving the dental, alveolar, skeletal, muscular, and TM joint structures during function is important. Orthodontic treatment has the capability to reduce the adaptation demands on the stomatognathic system and to improve the important occlusal stability on mandibular closure. Therefore, orthodontic specialty training is intimately interested in the co-management

of normal temporomandibular joints and the prior screening out of problem TM joints that may be affected by otherwise normal planned orthopedic/orthodontic treatment.

Conversely problems may arise during periods of instability during treatment which can present as myofascial and TMJ articular disturbances. It is therefore important for the orthodontist to understand the functional jaw and TM joint systems, to carefully screen for problems pre, during and post treatment, to diagnose TMJ problems, and to be competent in initiating treatment or make appropriate referrals if problems arise. However, the 1983 Presidents Guidelines on TMD advises against initial irreversible therapy for patients with principal TMJ complaints because it is unclear how much structural variation is etiologic for or may develop as a result of the initial presentation. The ADA guidelines strongly suggest deferring irreversible or invasive therapies until there has been some improvement in symptoms using more reversible means and then reassess for structural treatment needs when they have resolved.

Thus, it may be appropriate for an orthodontist to seek second opinion on how to manage or step around an underlying milder form of TM joint problem during performance of orthodontics care (risk avoidance). With more overt symptoms that the orthodontist may prefer to refer the patient to an Orofacial Pain dentist to treat the disorder before orthodontic treatment is commenced. A natural collaboration quickly develops between the two disciplines to support the care of the patient. The orthodontist may also encounter patients who have local/peripheral routine temporomandibular disorders and it may be commonplace for the Orthodontist to provide care for non-surgical and non-orthodontic treatment of orthodontic patients with selective pre-treatment TMD complaints.

PEDIATRIC DENTISTRY

In the 2019 CODA pediatric dentistry accreditation standards, there are no standards included for orofacial pain diagnosis and treatment and therefore there are no competencies. Craniofacial growth is studied including problems affecting orofacial esthetics, form and function, but temporomandibular disorders are not specified. The standards are reviewed and reference to orofacial pain disorders is bolded when applicable.

Advanced Knowledge: The 2019 Pediatric Dentistry standards 4-4 states Biomedical sciences must be included to support the clinical, didactic and research portions of the curriculum. The biomedical sciences may be integrated into existing curriculum designed especially for the pediatric dentistry program. Instruction must be provided at the understanding level in the following biomedical sciences:

- a. **BIostatistics and CLINICAL EPIDEMIOLOGY:** Including probability theory, descriptive statistics, hypothesis testing, inferential statistics, principles of clinical epidemiology and research design;
- b. **PHARMACOLOGY:** Including pharmacokinetics, interaction and oral manifestations of chemotherapeutic regimens, **pain and anxiety control**, and drug dependency;
- c. **MICROBIOLOGY:** Including virology, immunology, and cariology;
- d. **EMBRYOLOGY:** Including principles of embryology with a focus on the developing head and neck, and craniofacial anomalies;
- e. **GENETICS:** Including human chromosomes, Mendelian and polygenic patterns of inheritance, expressivity, basis for genetic disease, pedigree construction, physical examination and laboratory evaluation methods, genetic factors in craniofacial disease and formation and management of genetic diseases;
- f. **ANATOMY:** Including a review of general anatomy and head and neck anatomy with an emphasis on the infant, child and adolescent; and
- g. **ORAL PATHOLOGY:** Including a review of the epidemiology, pathogenesis, clinical characteristics, diagnostic methods, formulation of differential diagnoses and management of oral and perioral lesions and anomalies with emphasis on the infant, child, and adolescent.

Standard 4-5 states; Didactic instruction in behavior guidance must be at the in-depth level and include:

- a. Physical, psychological and social development. This includes the basic principles and theories of child development and the age-appropriate behavior responses in the dental setting;
- b. Child behavior guidance in the dental setting and the objectives of various guidance methods;
- c. Principles of communication, including listening techniques, including the descriptions of and

recommendations for the use of specific techniques, and communication with parents and caregivers;

- d. Principles of informed consent relative to behavior guidance and treatment options;
- e. Principles and objectives of sedation and general anesthesia as behavior guidance techniques, including indications and contraindications for their use in accordance with the AAPD guidelines and The Teaching of Pain Control and Sedation to Dentists and Dental Students of the American Dental Association (ADA); and
- f. Recognition, treatment and management of pharmacologic-related emergencies.

Standard 4-7 Didactic Instruction: Didactic instruction in craniofacial growth and development must be at the in-depth level with content to enable the student/resident to understand and manage the diagnosis and appropriate treatment modalities for malocclusion problems affecting orofacial form, function, and esthetics in infants, children, and adolescents. This includes but is not limited to an understanding of:

- a. Theories of normative dentofacial growth mechanisms;
- b. Principles of diagnosis and treatment planning to identify normal and abnormal dentofacial growth and development;
- c. Differential classification of skeletal and dental malocclusion in children and adolescents;
- d. The indications, contraindications, and fundamental treatment modalities in guidance of eruption and space supervision procedures during the developing dentition that can be utilized to obtain an optimally functional, esthetic, and stable occlusion;
- e. Basic biomechanical principles and the biology of tooth movement. Growth modification and dental compensation for skeletal problems including limitations; and
- f. Appropriate consultation with and/or timely referral to other specialists when indicated to achieve optimal outcomes in the developing occlusion.

Standard 4-9 Didactic instruction in oral facial injury and emergency care must be at the in-depth level and include: Care of orofacial injuries in infants, children and adolescents as follows:

- a. Evaluation and treatment of trauma to the primary, mixed and permanent dentitions, such as repositioning, replantation, treatment of fractured teeth, and stabilization of intruded, extruded, luxated, and avulsed teeth;
- b. Evaluation, diagnosis, and management of the pulpal, periodontal and associated soft and hard tissues following traumatic injury;**
- c. Recognition of injuries including fractures of the maxilla and mandible and referral for treatment by the appropriate specialist; and
- d. Recognition, management and reporting child abuse and neglect and non-accidental trauma.

4-10 Clinical Experiences: Clinical experiences in oral facial injury and emergency care must enable students/residents to achieve competency in:

- a. Diagnosis and management of traumatic injuries of the oral and perioral structures** including primary and permanent dentition and in infants, children and adolescents; and
- b. Emergency services including assessment and management of dental pain and infections.

Standard 4-13 Didactic instruction in prevention must be at the in-depth level and include:

- a. The scientific basis for the etiology, prevention, and treatment of dental caries and periodontal and pulpal diseases, traumatic injuries, and developmental anomalies;
- b. The effects of proper diet nutrition, fluoride therapy and sealants in the prevention of oral disease;
- c. Perinatal oral health and infant oral health supervision;
- d. Scientific principles, techniques and treatment planning for the prevention of oral diseases, including diet management, chemotherapeutics, and other approaches;
- e. Dental health education programs, materials and personnel to assist in the delivery of preventive care; and
- f. Diagnosis of periodontal diseases of childhood and adolescence, treatment and/or refer cases of periodontal diseases to the appropriate specialist.

Standard 4-15 Didactic instruction must be at the in-depth level and include:

- a. Restorative and prosthetic techniques and dental materials for the primary, mixed and permanent dentitions;
- b. Management of comprehensive restorative care for pediatric patients;

- c. Treatment planning for infants, children, adolescents and those with special health care needs; and
 - d. Characteristics of the dental home.
- 4-16 Clinical Experiences: Clinical experiences must enable students/residents to achieve competency in:
- a. Diagnosis and treatment planning for infants, children, adolescents and those with special health care needs; and
 - b. Provision of comprehensive dental care to infants, children, adolescents and those with special health care needs in a manner consistent with the dental home.

Standard 4-18 Didactic instruction must be at the in-depth level and include:

- a. Formulation of treatment plans for patients with special health care needs.
- b. Medical conditions and the alternatives in the delivery of dental care that those conditions might require.**
- c. Management of the oral health of patients with special health care needs, i.e.:
 - 1. Medically compromised;
 - 2. Physically compromised or disabled; and diagnosed to have developmental disabilities, psychiatric disorders or psychological disorders.
 - 3. Transition to adult practices

Standard 4-24 Didactic instruction must be at the understanding level and include:

- a. Normal speech and language development and the recognition of speech and language delays/disorders; the anatomy and physiology of articulation and normal articulation development; causes of defective articulation with emphasis on oral anomalies, craniofacial anomalies, dental or occlusal abnormalities, velopharyngeal insufficiency (VPI), history of cleft lip/palate and normal velopharyngeal function and the effect of VPI on resonance; and
 - b. Fundamentals of pediatric medicine including those related to pediatric patients with special health care needs such as:
 - 1. Developmental disabilities;
 - 2. Genetic/metabolic disorders;
 - 3. Infectious disease;
 - 4. Sensory impairments; and
- 5. Chronic disease.**

Advanced skills. Pediatric Dentistry Standard 4-3 Clinical Sciences include;

Standard 4-6 Clinical experiences in behavior guidance must enable students/residents to achieve competency in patient management using behavior guidance:

- a. Experiences must include infants, children and adolescents including patients with special health care needs, using:
 - 1. Non-pharmacological techniques;
 - 2. Sedation; and
 - 3. Inhalation analgesia.

Standard 4-8 Clinical experiences must enable students/residents to achieve competency in:

- a. Diagnosis of dental, skeletal, and functional abnormalities in the primary, mixed, and young permanent dentition stages of the developing occlusion; and
- b. Treatment of those conditions that can be corrected or significantly improved by evidence-based early interventions which might require guidance of eruption, space supervision, and interceptive orthodontic treatments. These transitional malocclusion conditions include, the recognition, diagnosis, appropriate referral and/or focused management of:
 - 1. Space maintenance and arch perimeter control associated with the early loss of primary and young permanent teeth;
 - 2. Transverse arch dimensional problems involving simple posterior crossbites;
 - 3. Anterior crossbite discrepancies associated with localized dentoalveolar crossbite displacement and functional anterior shifts (e.g. pseudo-Class III);

4. Anterior spacing with or without dental protrusion;

5. Deleterious oral habits;

6. Preservation of leeway space for the resolution of moderate levels of crowding;

7. Ectopic eruption, ankylosis and tooth impaction problems; and

8. The effects of supernumerary (e.g. mesiodens) and/or missing teeth.

Standard 4-12 Clinical experiences in oral diagnosis, oral pathology, and oral medicine must enable students/residents to achieve competency in:

a. Pediatric oral and maxillofacial radiology and appropriate procedures of radiation hygiene; and

b. Treatment of common oral diseases in infants, children and adolescents.

Standard 4-14 Clinical experiences must be of sufficient scope, volume and variety to enable students/residents to achieve competency in application of prevention in clinical practice.

Standard 4-25 Clinical experiences must expose students/residents to pediatric medicine:

a. Advanced education students/residents in pediatric dentistry must participate in a pediatric medicine rotation of at least two (2) weeks duration which is the student's/resident's principal activity during this scheduled period

1. This rotation may occur in a variety of settings i.e., Emergency Department, subspecialty clinics, multi-disciplinary team clinics and general pediatrics; and

2. The rotation must include exposure to obtaining and evaluating complete medical histories, parental interviews, system-oriented physical examinations, clinical assessments of healthy and ill patients, selection of laboratory tests and evaluation of data, evaluation of physical, motor and sensory development, genetic implications of childhood diseases, the use of drug therapy in the management of diseases, and parental management through discussions and explanation.

Response: There is no requirement for the diagnose and treatment orofacial pain disorders in the 2019 Pediatric Dentistry standards. The only reference is related to chronic disease, trauma and fracture of the mandibular or maxilla, and oral habits. Yet, the prevalence of TMD and orofacial pain in the pediatric dental population (< 12-15 years of age) is similar to young adults so the experience and need for such training is self-evident. The pediatric referral experience to Orofacial Pain centers is mostly for TMD and injury in the <12 year old patient. Pediatric Dentistry curriculum does require an understanding of sensory impairment (4-3.2 B 1d) which enables screening for more serious neurologic pathology or pain due to pathology. The incidence of migraine or head pain with migraine components increases notably after menarche and cases begin to be referred to Orofacial Pain dentists or medical centers. TM joint dysfunction starts to be more prevalent beyond 15 years of age and referrals are more commonly made by pediatric dentists concerned about findings of early or benign TMJ disorders such as clicking of the TMJ rather than due to an overt TMJ pain complaint. A significant exception can be the young patient with painful TMJ restriction or locking which can often be treated conservatively and with success if referred promptly at early stage. Hence the importance of a support network between Orofacial pain providers and Pediatric Dentistry.

Complimentary Activity. Orofacial Pain dentist requires competency and proficiencies in the evaluation, diagnosis, management and treatment of a wide range of orofacial pain and dysfunction disorders in children, adolescents, and adults. Pediatric dentistry shares some training standards in the medical evaluation of patients, hospital experience, exposure to interdisciplinary care experience, anxiety and pain control but this is primarily limited to acute pain and trauma circumstances. This also includes training in pharmacology but not the understanding of the chronic pain inhibition systems or the use of psychopharmacologic drugs. Pediatric dental training in behavioral management is provided in order to perform dental procedures but unlike Orofacial Pain, not with respect to oral habit behavior. There are no curriculum standards mentioning orofacial pain or TMD in Pediatric Dentistry. The lower prevalence of orofacial pain disorders and also of TM joint problems in a pediatric population would be insufficient to develop competency. It is expected that the Pediatric Dentistry programs would rely on centers of expertise found in an Orofacial Pain program or with orofacial pain trained

specialists for the co-management of those patients in a manner comparable to how Pediatric Dentistry currently interacts with other established dental specialty programs/

PERIODONTICS

In the Periodontics 2019 CODA accreditation standards, there is no reference to the knowledge and skills of diagnosis and management of orofacial pain disorders to a competency level. Orofacial Pain dentists can support Periodontal clinical practice without overlapping in either advanced knowledge or skills. The standards are reviewed and reference to orofacial pain disorders is bolded when applicable.

Advanced Knowledge. In the Periodontics 2019 standards, section 4-3 biomedical knowledge states: Formal instruction in the biomedical sciences must enable students/residents to achieve the following competencies:

- a. Identification of patients at risk for periodontal diseases and use of suitable preventive and/or interceptive treatments;
- b. Diagnosis and treatment of patients with periodontal diseases and related conditions according to scientific principles and knowledge of current concepts of etiology, pathogenesis, and patient management; and
- c. Critical evaluation of the scientific literature.

4-4 Formal instruction must be provided to achieve in-depth knowledge in each of the following areas:

- a. Gross, surgical and ultrastructural anatomy;
- b. Microbiology with emphasis on periodontal diseases;
- c. Inflammatory mechanisms and wound healing with emphasis on periodontal diseases;
- d. Infectious processes in oral and periodontal diseases;
- e. Immunology with emphasis on oral and periodontal diseases;
- f. Oral pathology;
- g. Etiology, pathogenesis, histopathology, and natural history of periodontal diseases;
- h. Epidemiology, including risk assessment, of periodontal diseases;
- i. Genetics, epigenetics and the concepts of molecular biology as they relate to oral and periodontal diseases;
- j. Biostatistics, research design and methods; and
- k. Behavioral sciences especially as they affect patient behavior modification and communication skills with patients and health professionals.

Advanced Skills. In the Periodontics 2019 standards 4-5 The educational program must provide training to the level of competency for the student/resident to:

- a. Collect, organize, analyze and interpret data;
- b. Interpret conventional and three-dimensional images as they relate to periodontal and dental implant therapy;
- c. Formulate diagnoses and prognoses;
- d. Develop a comprehensive treatment plan;
- e. Understand and discuss a rationale for the indicated therapy;
- f. Evaluate critically the results of therapy;
- g. Communicate effectively to patients the nature of their periodontal health status, risk factors and treatment needs;
- h. Communicate effectively with dental and other health care professionals, interpret their advice and integrate this information into the treatment of the patient;
- i. Integrate the current concepts of other dental disciplines into periodontics;
- j. Organize, develop, implement and evaluate a periodontal maintenance program;
- k. Utilize allied dental personnel effectively; and
- l. Integrate infection control into clinical practice.

4-8 The educational program must provide clinical training for the student/resident to the level of competency. This must include, but is not limited to, the following treatment methods for health, comfort, function and esthetics:

- a. Nonsurgical management of periodontal diseases, including:
 - 1. Biofilm control;
 - 2. Mechanical scaling and root planing therapy;
 - 3. Local and systemic adjunctive therapy; and
 - 4. Occlusal therapy.**
- b. Surgical management of periodontal diseases and conditions, including:
 - 1. Resective surgery, including gingivoplasty, gingivectomy, periodontal flap procedures, osteoplasty, ostectomy, and tooth/root resection;
 - 2. Regenerative and reparative surgery including osseous grafting, guided tissue regeneration, the use of biologics, and utilization of tissue substitutes, where appropriate; and
 - 3. Periodontal plastic and esthetic surgery techniques including gingival augmentation, root coverage procedures and crown lengthening surgery.

4-12 The educational program must provide instruction in the following interdisciplinary areas:

- a. The management of orofacial pain to a level of understanding;**
- b. Orthodontic procedures in conjunction with periodontal therapy to a level of understanding;
- c. Surgical exposure of teeth for orthodontic purposes, to a level of understanding; and
- d. Management of endodontic-periodontal lesions to a level of understanding; treatment should be provided in consultation with the individuals who will assume the responsibility for the completion of the case or supervision of endodontics therapy.

Response. In the Periodontics 2019 CODA accreditation standards, there is no reference to the knowledge and skills of diagnosis and management of orofacial pain disorders to a competency level. Proficiency is required in the management of orofacial pain to a level of understanding, occlusal therapy that implies bite adjustment and the use of occlusal bite-guard therapy mostly as part of periodontal treatment. Otherwise, only familiarity is needed in the management of temporomandibular disorders and other orofacial pain conditions and referral of these patients may be indicated. General periodontal clinical skills are extensive, and apply mostly to the diagnosis and treatment of periodontal disease and implants for prosthetic purposes. Proficiency requirements in comprehensive treatment planning and developing interaction skills and dialogue with other professionals including Orofacial Pain Dentist. for determining courses of action in complex cases.

Complimentary Activity. Orofacial Pain dentists can support Periodontal clinical practice without overlapping in either advanced knowledge or skills. Treatment of the occlusal interface and occlusal forces is important in Periodontology so treatment often includes occlusal adjustment and selective grinding and the use of stabilization and tooth splinting which may include bite guard therapy. This is not presented in the context of management of temporomandibular disorders and complex or chronic orofacial pain. Instruction in the diagnosis and management of temporomandibular disorders includes radiographic interpretation and differential diagnosis; Symptomatic treatment including occlusal appliances is placed in a separate advanced education standard but is only required at familiarity and competency level. It should be noted that the Standard also requires referral for TMD treatment when indicated. A similar familiarity about other advanced forms of therapy and coordination of this therapy with other disciplines must be provided, but specifics are not given. There is no requirement for treatment of orofacial pain disorders

PROSTHODONTICS

In the Prosthodontics 2019 CODA accreditation standards, there is no reference to the knowledge and skills of diagnosis and management of orofacial pain disorders to a competency level. There is reference to diagnosis and splint treatment for temporomandibular disorders. Orofacial Pain dentists can also support Prosthodontics clinical practice with referrals without overlapping in either advanced knowledge or skills. The standards are reviewed and reference to orofacial pain disorders is bolded when applicable.

Advanced Knowledge (didactic): Standard 4-12 states Instruction must be provided at the understanding level in each of the following biomedical areas:

- a. Oral pathology;
- b. Applied pharmacology; and
- c. Oral microbiology

Standard 4-13 states Instruction **must** be provided at the understanding level in each of the following clinical areas:

a. Temporomandibular disorders and orofacial pain;

- b. Evidence-based health care principles including identifying, appraising and applying available evidence;
- c. Ethics and professionalism;
- d. Pre-prosthetic surgery;
- e. Geriatric considerations in prosthodontic care;
- f. Maxillofacial prosthetics;
- g. Medical emergencies;
- h. Research methodology; and
- i. Pain control and sedation.

Standard 4-14 Instruction **must** be provided at the understanding level in diagnostic and treatment planning aspects of other recognized dental specialties as they relate to referral, patient treatment and prosthodontic outcomes.

Standard 4-15 Students/Residents **must** receive didactic discipline-specific instruction including but not limited to:

- a. Craniofacial growth and development;
- b. Biostatistics;
- c. Intraoral photography;
- d. Practice management;
- e. Scientific writing;
- f. Sleep disorders;
- g. Teaching methodology including public speaking; and
- h. Behavioral science.

Advanced Skills (clinical) In Prosthodontics, the 2019 standards 4-16 states: Students/Residents must be competent at the advanced prosthodontic level in the treatment of clinical conditions associated with missing or deficient teeth and/or oral and maxillofacial tissues using biocompatible substitutes by achieving clinical competence in the following areas:

- a. Patient assessment, including medical history, dental history, temporomandibular assessment, extra-oral and intraoral examination, radiologic assessment and occlusal analysis;
- b. Systemic, infectious and neoplastic disease screening, including patient education for prevention;
- c. Diagnosis;
- d. Risk assessment and prognosis;
- e. Treatment planning;
- f. Adjunct referral;
- g. Patient Care;
- h. Outcomes assessment;
- i. Maintenance.

Standard 4-28 Students/Residents must be competent in the prosthodontic management of patients with temporomandibular disorders and/or orofacial pain. The *Intent*: *Students/Residents should recognize signs and symptoms associated with temporomandibular disorders and/or orofacial pain. Students/Residents should either provide appropriate treatment or refer, consistent with contemporary practice and the best interest of the patient.*

Response: Standard 4-13 and standard 4-28 Standard 4-13 states Instruction must be provided at the understanding level for Temporomandibular disorders and orofacial pain and be competent in the prosthodontic management of patients with temporomandibular disorders and/or orofacial pain. However, there

is no reference to proficiency in clinical training or treatment of orofacial pain disorders. Standard 4-28 does state that the prosthodontics specialist does need to competently evaluate and co-manage temporomandibular disorders present or arising in the prosthodontic patient. Prosthodontic treatment can impose rapid orthopedic changes on the temporomandibular joint system and therefore has the capability, as does orthodontics, for both favorable and unfavorable responses if there is joint inflammation, arthrosis or disc-condyle instability. Hence the importance of a knowledge base in TM joint function in Prosthodontics. As in Orthodontics, this is a type of special patient care where the potential problem can be articular within the TMJ. The prosthodontist is also intimately involved with jaw behavior and jaw tension disorders in terms of prognosis of the prosthetic outcome. Prosthodontics needs to be practiced with risk avoidance in patients with TM joint dysfunction and peri-articular muscle pain. If pain symptoms are more overt or complex, the patient can be conveniently referred for consultation and pre-treatment by an Orofacial Pain dentist who treats these patients. In the practice survey (Appendix III), Prosthodontists referred 95% of those patients with orofacial pain disorders and all of preferred to send them to an Orofacial Pain dentist. The Prosthodontic Standards require proficiency in prosthodontic treatment of patients with TMD and or orofacial pain. These are modality based skills and therefore differ considerably from the spectrum of diagnosis and treatment skills usually needed to treat orofacial pain disorders patients.

Complimentary Activity. We appreciate the standards in prosthodontics for orofacial pain disorders because it is focus on prevention and recognition of these disorders, appropriate management, and referral when needed. Prosthodontic treatment may be necessary to stabilize a malocclusion caused by osteoarthritis after treatment of pain and maxillomandibular relationship has been stabilized. Primary treatment with prosthodontic methods may have a selective application, namely in cases with notable mandibular instability, and therefore definitely has a place in the mosaic of treatments. However, the 1983 ADA guidelines recommend deferring invasive and irreversible structural treatment such as dental prosthetics until after the main symptoms are under control. Reassessment of prosthetic needs would then be appropriate. Such cases and responsibilities are more comfortably shared with the Orofacial Pain dentist. The belief in the relationship between occlusion as a TMD etiology can be enhanced by anecdotal experience in a Prosthodontic office that tends to attract referral of TMD patients who also have apparent occlusal deficits or problems. In fact, occlusal features only explained a small percent of the variance, or co-factor difference, between TMD patients and normals in studies from several authors (Crawford SD 2009, Kirveskari et al, 1989, Kirveskari et al, 1995, Pullinger and Seligman 1999).

Caution must therefore be expressed before extrapolating this segment of experience to the entire orofacial pain patient population because a high percent of the variance due to other physical, behavioral or psychosocial issues may be overlooked. Hence, the definitive need for the Orofacial Pain dentist who is not solely based on a specific dental specialty or modality. Dental occlusion can be notable on a case by case basis; therefore, many prosthodontists are interested and knowledgeable in management of TMD pain and dysfunction. The challenge is to work out the inclusion and exclusion criteria for prosthodontic treatment of the selective TMD and orofacial pain patient and work as a team during their care. In cases of complex, chronic orofacial pain that is multi-site and/or multi-system and has a more central component of pain, the expectation for stabilization or resolution diminishes significantly if treatment is limited to structural or occlusal intervention. It should also be noted that the Orofacial Pain dentist does not provide restorative dental care. Therefore, the Orofacial Pain Dentist often needs to refer treated pain and dysfunction patients to an expert prosthodontist for restoration of occlusal deficits secondary to TMJ osteoarthritis, etc. As a result, the Prosthodontist and the Orofacial Pain dentist are highly complementary, important to patient care, and mutually supporting, while attracting a different pool of patients. In conclusion, the Advanced Education Standards for Orofacial Pain demonstrate an extensive pain science component to the Biomedical curriculum and extensive clinical requirements in chronic orofacial pain and chronic TMD, that is not found in any other Dental Specialty. This clearly differentiates Orofacial pain as a separate discipline requiring separate training that cannot be duplicated by expansion or combination of other dental disciplines.

DENTAL ANESTHESIOLOGY

In the Dental Anesthesiology 2019 CODA accreditation standards, there is no reference to the knowledge and

skills of diagnosis and management of orofacial pain disorders to a competency level. There is reference to diagnosis and splint treatment for temporomandibular disorders. The standards are reviewed and reference to orofacial pain disorders is bolded when applicable.

Advanced Knowledge (didactic): Standard 2-4 Didactic instruction at an advanced and in-depth level beyond that of the pre-doctoral dental curriculum must be provided and include:

a) Applied biomedical sciences foundational to dental anesthesiology,

Intent: Instruction should include physiology, pharmacology, anatomy, biochemistry, pathology, physics, pathophysiology, and clinical medicine as it applies to anesthesiology. The instruction should be sufficiently broad to provide for a thorough understanding of the body processes related to anxiety and pain control. Instruction should also provide an understanding of the mechanisms of drug action and interaction, as well as information about the properties of drugs used.

b) Physical diagnosis and evaluation,

Intent: This instruction should include taking, recording and interpreting a complete medical history and physical examination, and understanding the indications for and interpretations of diagnostic procedures and laboratory studies.

c) Behavioral medicine,

Intent: This instruction should include psychological components of human behavior as related to the management of anxiety and pain.

d) Methods of anxiety and pain control,

Intent: This instruction should include a detailed review of all methods of anxiety and pain control and pertinent topics (e.g., anesthesia delivery devices, monitoring equipment, airway management adjuncts, and perioperative management of patients).

e) Complications and emergencies,

Intent: This instruction should include recognition, diagnosis, and management of anesthesia-related perioperative complications and emergencies.

f) Pain management, and

Intent: This instruction should include information on pain mechanisms and on the evaluation and management of acute and chronic orofacial pain.

g) Critical evaluation of literature.

Advanced Skills (clinical) in 2019 Dental Anesthesiology Accreditation Standard 2-5 states that the program must ensure the availability of adequate patient experiences in both number and variety that afford all residents the opportunity to achieve the program's stated goals and competency requirements in dental anesthesiology. **Examples of evidence to demonstrate compliance may include:**

Records of resident clinical activity, including specific details of the variety, type, and quantity of cases treated and procedures performed

2-6 The following list represents the minimum clinical experiences that **must** be obtained by each resident in the program at the completion of training:

a) Eight hundred (800) total cases of deep sedation/general anesthesia to include the following:

(1) Three hundred (300) intubated general anesthetics of which at least fifty (50) are nasal intubations and twenty-five (25) incorporate advanced airway management techniques. No more than ten (10) of the twenty five (25) advanced airway technique requirements can be blind nasal intubations.

(2) One hundred and twenty five (125) children age seven (7) and under, and

(3) Seventy five (75) patients with special needs,

b) Clinical experiences sufficient to meet the competency requirements (described in Standard 2-1 and 2-2) in managing ambulatory patients, geriatric patients, patients with physical status ASA III or greater, and patients requiring moderate sedation; and

c) Exposure to the management of patients with chronic orofacial pain.

Standard 2-9 At the completion of the program, each resident must have the following experiences in the administration of the full spectrum of anesthesia service for same-day surgery dental patients:

1. At least one hundred (100) cases of the experiences listed in Standard 2-6 in outpatient anesthesia for dentistry that are supervised by dentist anesthesiologists.
 2. Experience as the provider of supervised anesthesia care.
- 2-10 Residents must** participate in at least four (4) months of clinical rotations from the following list. If more than one rotation is selected, each **must** be at least one month in length.
- a) Cardiology,
 - b) Emergency medicine,
 - c) General/internal medicine,
 - d) Intensive care,
 - e) Pain medicine,**
 - f) Pediatrics,
 - g) Pre-anesthetic assessment clinic (max. one (1) month), and
 - h) Pulmonary medicine.

Responses: There is no reference to proficiency in clinical training or treatment of orofacial pain disorders other than if it involves understanding pain management and rotating through pain medicine with the intent of including information on pain mechanisms and on the evaluation and management of acute and chronic orofacial pain.

Complimentary Activity. Dental Anesthesiology, like medical Anesthesiology is involved in pain and anxiety control with pharmacological and behavioral methods. However, they can see patients with pain issues and does need to know how to evaluate, provide initial pharmacological or neural anesthetic care and then refer the patient to an Orofacial Pain Dentists. Some Dental Anesthesiologist are also trained in Orofacial Pain with a dual specialty.

(2) Identify the advanced skills (techniques and procedures) required for practice of the specialty of Orofacial Pain that are not included within the scope of other recognized specialties.

Any specialty shares some skills with other specialties, particularly evaluation and diagnostic skills. Although most of the individual evaluation and diagnostic skills listed are not the exclusive domain of Orofacial Pain, the skills of treatment of specific chronic complex orofacial pain disorders are unique and not included in the scope of other recognized specialties. Structural dental or surgical treatments such as surgery, orthodontics, and prosthodontics are not part of Orofacial Pain and are deferred until the patient is mostly asymptomatic, stable and functioning well. Routine treatment skills for TMD such as splints, exercise and pharmacological treatments are also not the exclusive domain of the proposed specialty of Orofacial Pain. Treatment of acute pain and anxiety are also not emphasized in Orofacial Pain practice.

Table 8 focuses on those advanced treatment skills and procedures for the field of Orofacial Pain that are not included in the scope of other recognized specialties and compares them to the skills required by other ADA recognized specialties. Dental Anesthesiology is not included in the table but does include understanding and use of many of these pharmacological treatments. In addition, the following is a list of advanced skills noted in the Orofacial Pain Curriculum Standards that are a part of a specialized Orofacial Pain practice. **Note that the techniques and procedures that are likely also performed by other recognized specialties are italicized**

Advanced Skills of Orofacial Pain

- a. *Conducting a comprehensive pain history interview.*
- b. *Collect, organize, analyze and interpret data from medical, dental, behavioral, and psychosocial histories and clinical evaluation to determine their relationship to the patient's chronic orofacial pain complaints.*
- c. *Performing clinical examinations and tests followed by the interpretation of the significance of the data as it may relate to the patient's chronic pain and associated dysfunction;*
 - i) Clinical evaluation may include but is not limited to: 1) musculoskeletal examination of the head, jaw, neck and shoulders; 2) jaw movement studies; 3) general evaluation of the cervical spine; 4) assessment of TM joint function; 5) odontologic screening; 6) cranial nerve screening; 7) testing major reflexes; 8)

examination of structural variation including facial-skeletal and dental-occlusal relationships; 9) evaluation of oral and dental hard and soft tissues; 10) posture evaluation; 11) general joint mobility or laxity; 12) general presentation, gait, and demeanor; 13) signs of oral, head and neck stress related tension habits; and 14) physical assessment including vital signs.

ii) Chairside clinical tests may include but are not limited to: 1) neurosensory testing; 2) neurosensory, articular and myofascial diagnostic blockade; 3) jaw, muscle and tooth loading and provocation tests; 4) *pulp testing*; 5) joint and muscle palpation; 6) spray and stretch responses; 7) mandibular position maneuvers; 8) challenges to pain abortive medications as appropriate.

d) *Order or refer for additional tests including but not limited to:* 1) plane film or advanced imaging of the orofacial, mandibular and cervical structures; 2) order or refer for brain imaging; 3) order or refer for psychometric testing; 4) *referral for psychological or psychiatric evaluation*; 5) *order laboratory medicine tests*; 6) order or refer for diagnostic autonomic nervous system blocks, and systemic anesthetic challenges; 7) *evaluate pain from dental and oral soft tissue disease*; 8) order additional consultations and screenings; and 9) interpreting the significance of the collected data.

e) *Establish a multidimensional differential diagnosis and an orderly (prioritized) problem list, using published guidelines based on inclusion criteria for the following categories of orofacial pain disorders:*

1) neuropathic orofacial pain disorders; 2) neurovascular orofacial pain disorders and headache; 3) associated primary headache disorders; 4) chronic complex regional pain syndromes (I, II, III); 5) complex masticatory and cervical neuromuscular and musculoskeletal disorders; 6) pain from chronic temporomandibular joint disorders; 7) *pain secondary to orofacial cancer and AIDS*; 8) orofacial neuromuscular dyskinesias and dystonias; 9) orofacial sleep disorders; and 10) other disorders causing persistent pain and dysfunction of the orofacial region.

f) *Screen for diagnosis, triage, or referral to obtain appropriate consultation for other medical and dental disorders that could be responsible for chronic orofacial, head and neck pain, including pain from:* 1) intracranial disorders including aneurysm, sentinel headache, exertional headache, cerebral vascular anomaly or constriction, transient ischemic attacks, neoplasia, edema, intracranial pressure fluctuations, abscesses and hematomas, and other secondary headaches; 2) symptomatic trigeminal neuralgia (intra or extracranial pathology), acoustic neuroma, and MS; 3) CNS infections including bacterial meningitis; 4) associated unexplained sensory or motor loss or change; 5) complex and chronic migraine; 6) otolaryngological disease involving the ears including sensory loss, middle and inner ear problems (equilibrium and dizziness) , nose, throat, salivary glands, oropharynx, larynx, sinuses, mastoid process, stylohyoid, palate, and related structures; 7) ophthalmologic disease involving the eye and surrounding structures including ruling out papilledema and glaucoma when appropriate; 8) cervical and upper quarter joints and facets, vertebral artery compression, thoracic outlet syndrome, brachial plexus compression or other upper extremity nerve conduction problems; 9) assessment of behavioral or psychiatric disorders requiring medical treatment; 10) chemical dependency disorders; 11) intractable headache requiring an in-patient pain protocol; 12) intractable multidimensional chronic pain requiring a comprehensive multidisciplinary in-patient pain program and 13) when appropriate, screenings should be requested for medical and psychological problems that contraindicate proposed chronic pain treatment and certain pain medications or that require co-treatment or pre-treatment.

g. *Skills necessary in multi-modality interdisciplinary or multidisciplinary pain management for the chronic orofacial pain disorder patient.* This includes but is not limited to the following treatment planning experiences: 1) making an assessment of each problem on the diagnostic problem list; 2) construction of a written sequential treatment plan after presentation to a multidisciplinary forum as needed, incorporating coordinated behavioral, medical and dental interdisciplinary care as appropriate, with re-evaluation after segments of treatment; 3) emphasis of reversible or less invasive therapies in the early phases of treatment, deferring potential structural change for reassessment and treatment when the patient's status has stabilized; 4) *informed consent requirements*; and 5) establishment of an agreement with the complex pain patient as appropriate, emphasizing the patient's responsibilities, involvement, and contingencies.

h. Skills necessary in Orofacial Pain Treatment including: 1) advanced treatment of a broad spectrum of chronic orofacial pain patients in a multidisciplinary orofacial pain clinic setting with interdisciplinary associated services; 2) treatment of a wide range of patients with local, regional and complex multi-system chronic orofacial pain; 3) diagnostic and therapeutic injections including myofascial trigger point injections, intra-articular injections, intra-muscular injections for dystonias, sympathetic nerve blocks for the orofacial region, trigeminal nerve blocks, and other regional blocks referring to the orofacial region; 4) neurosensory stents for neuropathic pain and experience with topical pain medications directed at different pain mechanisms; 5) local pain management of jaw rheumatological disorders, neuromuscular disorders, and chronic orthopedic/temporomandibular joint disorders *with provisional stabilization with or without intra-oral orthotics as appropriate*; 6) diagnostic and therapeutic use of physical medicine procedures including therapeutic exercise, heat and cold packs, vapo-coolant spray and stretch, ultrasound, phonophoresis, iontophoresis, soft tissue massage, joint and muscle mobilization, electrical stimulation, postural awareness training, strengthening, and establishment of at home exercise regimes for orofacial structures and structures contributing to referred pain into those regions. This should also include the establishment of a close association with physical medicine services provided for cervical spine, upper quarter and back problems as they are related to orofacial pain; 7) intraoral appliances for breathing related sleep disorders coordinated with the ability to develop an appropriate diagnosis and measure outcome.

i. Competency in associated psychological and/or behavioral therapies including: 1) cognitive-behavioral therapies that include *habit reversal for oral habits*, sleep problems, muscle tension habits and other behavioral factors; use of pain and activity diaries for awareness feedback, compliance assurance and monitoring; and interaction with biofeedback/stress management and hypnosis for pain relief and behavioral changes, treatment of secondary gain, and chronic pain behavior; 2) tailoring treatment and medication approaches to recommendations for psychologic and personality profiles; 3) co-management of chronic orofacial pain patients who are taking antidepressant, anxiolytic, and other psychotropic medications; 4) *management of jaw tension and behavior disorders contributing to chronic orofacial pain*.

j. Competency in the pharmacotherapeutic treatment of orofacial pain disorders. This should include: 1) judicious selection of medications directed at the presumed pain mechanisms as well as titration, adjustment, monitoring and reevaluation; 2) which should also include: management of side effects, adverse reactions, undesired potentiations, dependency or tolerance; 3) protocols for serum level monitoring and known risk of adverse physiological reactions; 4) selection in medically and behaviorally compromised patients, as appropriate; and 5) preparation and enforcement of controlled substance agreements when indicated.

k. Common chronic pain medications and issues include: 1) *muscle relaxants for chronic neuromuscular pain disorders*; 2) *sedative agents for chronic pain and sleep management*; 3) *opioid use in management of chronic pain*; 4) the adjuvant analgesic use of tricyclics and SSRI antidepressants for chronic pain and awareness of the utility and problems with the use of MAO inhibitors in pain and headache; 5) anticonvulsants, membrane stabilizers, and sodium channel blockers for neuropathic pain; 6) *anxiolytics for anxiety and pain*; 7) *analgesics and anti-inflammatories*; 8) prophylactic and abortive medications for primary headache disorders (in-patient and out-patient protocols) including serotonergic and anti-serotonergic medications; 9) management of analgesic rebound pain; 10) medication side effects that alter sleep architecture; 11) in-patient and outpatient methods for prescription medication dependency withdrawal; 12) referral and co-management (of pain) in patients addicted to prescription, non-prescription and recreational drugs; 13) local and systemic anesthetics in management of neuropathic pain as well as familiarity with the role of preemptive anesthesia in neuropathic pain; 14) the role of neuroleptics in headache management; 15) topical and systemic use of NMDA inhibitors; 16) GABA and dopaminergic medications used in chronic pain; 17) the role of alpha adrenergic medications in sympathetically mediated pain; and 18) the therapeutic use of use of Botulinum toxin injections.

Table 8. Orofacial Pain skills that are not included in the scope of other recognized specialties as indicated by the 2019 accreditation standards. Dental Anesthesiology is not included in the table but does include understanding and use of many of these pharmacological treatments.

Advanced Skills in Diagnosis and Treatment of;	Is there any reference of the skills of diagnosis or treatment of complex chronic orofacial pain disorders in curriculums of Accreditation Standards?					
	Ortho	Prosth	Endo	Perio	Oral/Max Surg	Pedo
<u>Pharmacological agents</u> Muscle relaxants for chronic muscular pain disorders	No, for routine TMD only ¹	No, for routine TMD only ²	No	No, for routine TMD only ⁴	No, for routine TMD only ⁵	No
Sedative agents for chronic pain/ sleep management	No	No	No	No	No	No
Narcotics and other analgesics for complex chronic orofacial pain	No, acute pain only	No, acute pain only	No, acute pain only	No, acute pain only	No, acute pain only	No, acute pain only
Antidepressants including tricyclics and SSRIs for chronic pain and depression	No	No	No	No	No	No
Anticonvulsants and membrane stabilizers for neuropathic pain	No	No	No	No	No	No
Treatment of rebound pain from overuse of analgesics	No	No	No	No	No	No
Detoxification for complex chronic orofacial pain disorders	No	No	No	No	No	No

Substance abuse monitoring for orofacial pain disorders	No	No	No	No	No	No
Cognitive-behavioral therapies/ compliance monitoring for chronic pain	No	No	No, for anxiety only	No, for anxiety only	No	No, for anxiety only
Habit reversal for oral habits, poor sleep and other behavioral factors	No	No	No	No	No	No
Biofeedback/stress management	No	No	No	No	No	No
Hypnosis for chronic pain relief and behavioral change	No	No	No	No	No	No
Treatment of secondary gain, treatment conflicts, and chronic pain behavior	No	No	No	No	No	No
Trigger point injections for neuromuscular	No	No	No	No	No	No
Intramuscular injections for dystonias	No	No	No	No	No	No
Sympathetic nerve blocks for chronic regional pain	No	No	No	No	No	No
Peripheral nerve blocks for neuropathic pain	No	No	Yes ³	No	No	No
Joint injections for arthralgias	No	No	No	No	Yes ⁴	No
Therapeutic exercises for chronic orofacial pain	No, for routine TMD only ¹	No, for routine TMD only ²	No	No, for routine TMD only ⁴	No, for routine TMD only ⁵	No
Cold or cryotherapy-spray and stretch, ice, cold towel	No	No	No	No	No	No
Superficial heat and hot packs	No, for routine TMD only ¹	No, for routine TMD only ²	No	No, for routine TMD only ⁴	No, for routine TMD only ⁵	No
Ultrasound and phonophoresis	No	No	No	No	No	No
Soft tissue massage	No	No	No	No	No	No
Joint and muscle mobilization	No	No	No	No	No	No
Electric stimulation	No	No	No	No	No	No

including Iontophoresis, TENS, and MENS)						
Postural awareness training	No	No	No	No	No	No
Intra-oral orthotics for chronic orofacial pain disorders	No, for routine TMD only ¹	No, for routine TMD only ²	No	No, for routine TMD only ⁴	No, for routine TMD only ⁵	No
neurosensory stent for neuropathic pain	No	No	No	No	No	No
Intra-oral sleep apnea appliances	No	No	No	No	No	No
Integration of pain clinic teams in the management of complex chronic orofacial pain	No	No	No	No	No	No

¹Orthodontics- “4-3.3g Manage patients with functional occlusal and temporomandibular disorders” The assumption here is to include routine treatment skills. There is no reference to diagnosis or management skills of complex chronic orofacial pain disorders

³Prosthodontics- in 4-8 Didactic instruction “Instruction must be provided at the understanding level in each of the following:...Temporomandibular disorders and orofacial pain”. In clinical training section, there is only reference to “Students must be competent in the prosthodontic treatment of patients with temporomandibular disorders and/or oral facial pain”.”; The only reference is to didactic diagnosis or management of orofacial pain disorders, but no reference to clinical training or treatment of chronic complex orofacial pain disorders other than if involving prosthodontics.

³Endodontics- in section 4-9 “The educational program must provide instruction at the understanding level and clinical training at the competency level for the student to: a.Develop a differential diagnosis of orofacial pain;” The assumption here is to include diagnostic nerve blocks as part of the differential diagnosis process. However, there is no reference to diagnosis or management of complex chronic orofacial pain disorders.

⁴Periodontics- 4-13 b. “The management of temporomandibular disorders including: 1.Radiographic interpretation, differential diagnosis, treatment planning, symptomatic treatment, occlusal appliances, and referral when indicated, to a level of familiarity; and 2.Concepts related to more advanced forms of therapy and coordination of this therapy with other disciplines, to a level of familiarity.”. There is no reference to diagnosis or management of complex chronic orofacial pain disorders.

⁵Oral and Maxillofacial Surgery- In 4-14 “In pathology category, experience must include management of TMJ pathology” and in 4-14.1 “...management of fifth nerve surgery”; The assumption here is TMJ surgery or joint injections. There is no reference to any other skills of diagnosis or management of complex chronic orofacial pain disorders.

There is no reference to skills in diagnosis and management of complex chronic orofacial pain in either Pediatric dentistry or Oral and Maxillofacial Pathology curriculums in the Accreditation Standards

In summary, the evidence clearly supports the contention that the scope of knowledge and skills required of the specialty of Orofacial Pain are separate and distinct from all existing recognized dental specialties and have

virtually no overlap with the curriculums of Prosthodontics, Oral and Maxillofacial Surgery, Orthodontics, Oral and Maxillofacial Pathology, Periodontics, Pedodontics, and Public Health.

As noted in previously, over 89% of patients with orofacial pain disorders seen in Specialty practice are beyond the level of experience and training of any of these existing dental specialties and that 95% of dentists prefer to refer these patients to an Orofacial Pain dentist. Clearly, the bulk of these patients in this country would be referred to Orofacial Pain dentists if there was a specialty in this field. However, due to the lack of recognition of the specialty and the lack of adequate numbers of providers, many patients are referred to various medical and dental specialties who are not prepared to deal with the complexities of orofacial pain. Recognition of the Orofacial Pain dentist as a specialist distinct from other specialties will greatly improve patient access to care in this field.

(3) Provide a listing of the unique and distinct skills for the proposed specialty and contrast them to the unique and distinct fields and bodies of knowledge of each recognized specialty.

The bodies of knowledge and unique skills that define the practice of Orofacial Pain include:

Have an in depth knowledge of biomedical science areas specific for orofacial pain disorders including:

- a. Gross and functional anatomy and neuroanatomy of orofacial, head, and cervical structures,
- b. Hereditary, growth, development, and aging of orofacial structures,
- c. Neurophysiology of pain transmission,
- d. Pharmacology, pharmacodynamics, pharmacokinetics and pharmaco-therapeutics,
- e. Central, peripheral and autonomic nervous system mechanisms of pain and pain modulation through facilitation and inhibition systems
- f. Pathophysiology of orofacial pain disorders,
- g. Muscle, joint, and bone physiology,
- h. Sleep physiology,
- i. Behavioral Science as related to orofacial pain disorders,
- j. Psychoneuroimmunology, molecular biology, genetics and epigenetics as related to chronic pain,
- k. Principles of biostatistics, research design, research methodology, scientific writing, and critical evaluation of the literature,
- l. Epidemiology of orofacial pain disorders and their public health significance.

Have an in-depth knowledge and proficiency in the skills of assessment and diagnosis of orofacial pain disorders including:

- a. *Conducting a comprehensive pain history interview* including onset event, progression of problem, past diagnostic testing, past treatment, past self-care, relationship to other pain conditions and medical conditions, and other aspects of history
- b. *Collect, organize, analyze and interpret data* from medical, dental, behavioral, and psychosocial histories and clinical evaluation to determine their relationship to the patient's chronic orofacial pain complaints including risk factor and protective factor assessment.
- c. *Perform clinical examinations and tests*, and interpret the significance of the data as it may relate to chronic pain and associated dysfunction; Clinical evaluation may include but is not limited to: 1) musculoskeletal examination of the head, jaw, neck and shoulders; 2) jaw movement studies; 3) general evaluation of the cervical spine; 4) assessment of TM joint function; 5) odontologic screening; 6) cranial nerve screening; 7) testing major reflexes; 8) examination of structural variation including facial-skeletal, and dental-occlusal; 9) oral and dental hard and soft tissues; 10) posture evaluation; 11) general joint mobility or laxity; 12) general presentation, gait, and demeanor; 13) signs of tension habits; 14) physical assessment including vital signs. Chairside clinical tests may include but are not limited to: 1) neurosensory testing; 2) neurosensory, articular

and myofascial diagnostic blockade; 3) jaw, muscle and tooth loading and provocation tests; 4) pulp testing; 5) joint and muscle palpation; 6) spray and stretch responses; 7) mandibular position maneuvers; and 8) challenges to pain abortive medications; as appropriate.

d. Order or refer for additional tests including but not limited to: 1) plane film or advanced imaging of the orofacial, mandibular and cervical structures; 2) order or refer for brain imaging; 3) psychometric testing; 4) referral for psychological or psychiatric evaluation; 5) laboratory medicine tests; 6) diagnostic autonomic nervous system blocks and systemic anesthetic challenges; 7) differential diagnosis of pain from dental or soft tissue oral disease; 8) additional consultations and screenings; and ultimately the interpretation of the significance of the data.

e. Establish a multidimensional differential diagnosis and an ordered (prioritized) problem list, using published guidelines based on inclusion criteria for the following categories of orofacial pain disorders: 1) neuropathic orofacial pain disorders, 2) neurovascular orofacial pain disorders; 3) associated primary headache disorders; 4) chronic regional pain syndromes (I, II, III); 5) complex masticatory and cervical neuromuscular and musculoskeletal disorders; 6) pain from chronic temporomandibular joint disorders; 7) pain secondary to orofacial cancer and AIDS; 8) functional disorders such as orofacial dyskinesias and dystonias; 9) orofacial sleep breathing disorders; 10) other disorders causing persistent pain and dysfunction of the orofacial region.

f. Screen for diagnosis, triage, or obtain appropriate consultation for other medical and dental disorders that could be responsible for chronic orofacial and head and neck pain, including pain from: 1) intracranial disorders including aneurysm, sentinel headache, exertion headache, cerebral vascular anomaly or constriction, transient ischemic attacks, neoplasia, edema, intracranial pressure, abscesses and hematomas, and other secondary headaches; 2) symptomatic trigeminal neuralgia (intra or extracranial pathologic), acoustic neuroma, and MS; 3) CNS infections including bacterial meningitis; 4) associated unexplained sensory or motor loss or change; 5) complex migraine; 6) otolaryngological disease involving the ears including sensory loss, middle, and inner ear (equilibrium and dizziness problems), nose, throat, salivary glands, oropharynx, larynx, sinuses, mastoid process, stylohyoid, palate, and related structures; 7) ophthalmologic disease involving the eye and surrounding structures including ruling out papilledema and glaucoma, when appropriate; 8) cervical and upper quarter joints and facets, vertebral artery compression, thoracic outlet syndrome, brachial plexus compression, or other upper extremity nerve conduction problems; 9) behavioral or psychiatric disorders requiring medical treatment; 10) chemical dependency disorders; 11) intractable headache requiring an in-patient pain protocol; 12) intractable multidimensional chronic pain requiring a comprehensive multidisciplinary in-patient pain program; 13) when appropriate, screenings should be requested for medical and psychological problems that contraindicate proposed chronic pain treatment, or certain pain medications, or that require co-treatment, or pre-treatment.

g. Skills in multi-modality interdisciplinary or multidisciplinary pain management for the chronic orofacial pain disorder patient. This includes but is not limited to the following treatment planning experience: 1) making an assessment of each problem on the diagnostic problem list; 2) development of a written sequential treatment plan after presentation to a multidisciplinary forum incorporating coordinated behavioral, medical and dental interdisciplinary care as appropriate, with re-evaluation after segments of treatment; 3) emphasis on reversible or less invasive therapies in the early phases of treatment and deferring potential structural change for reassessment and treatment when the patient's condition has stabilized; 4) informed consent requirements and 5) establishment of a formal agreement with the complex pain patient as appropriate, emphasizing the patient's responsibilities, involvement, and contingencies.

h. Skills in Orofacial Pain Treatment including: 1) a broad spectrum of chronic orofacial pain patients in a multidisciplinary orofacial pain clinic setting or with interdisciplinary associated services; 2) a wide range of patients with local, regional and complex multisystem chronic orofacial pain; 3) diagnostic and therapeutic injections including myofascial trigger point injections, joint injections, intra-muscular injections for dystonias, sympathetic nerve blocks for the orofacial region, trigeminal nerve blocks, other regional blocks referring to the orofacial region; 4) neurosensory stents for neuropathic pain and experience with topical pain medications

directed at different pain mechanisms; 5) initial pain management of jaw rheumatological disorders, neuromuscular disorders, and chronic orthopedic temporomandibular joint disorders and provisional stabilization with or without intra-oral orthotics as appropriate; 6) diagnostic and therapeutic use of physical medicine procedures including therapeutic exercise, heat and cold packs, vapo-coolant spray and stretch, ultrasound, phonophoresis, iontophoresis, soft tissue massage, joint and muscle mobilization, electrical stimulation, postural awareness training, strengthening, and establishment of at home exercise regimes for orofacial structures and structures referring pain into those regions. Also' establishment of a close association with physical medicine services provided for cervical spine, upper quarter and back problems as they are related to orofacial pain; 7) intraoral appliances for breathing related sleep disorders coordinated with ability to make a diagnosis and measure outcome.

i. Competency in associated psycho-behavioral therapies including: 1) a. cognitive-behavioral therapies including habit reversal for oral habits, sleep problems, muscle tension habits and other behavioral factors; b. use of pain and activity diaries for awareness feedback, compliance assurance and monitoring; and c. interaction with biofeedback/stress management, and hypnosis for pain relief and behavioral changes, treatment of secondary gain and chronic pain behavior; 2) tailoring treatment and medication approaches to recommendations with regard to psychologic and personality profiles; 3) co-management of chronic orofacial pain patients who are taking antidepressant, anxiolytic, and other psychotropic medications; 4) management of jaw tension and behavior disorders contributing to chronic orofacial pain; 5) competency in the pharmacotherapeutic treatment of orofacial pain disorders. This should include judicious selection of medications directed at the presumed pain mechanisms involved, as well as adjustment, monitoring and reevaluation. In addition, this should include the management of side effects, adverse reactions, undesired potentiations, dependency or tolerance' as well as protocols for serum level monitoring and known risk of adverse physiological reactions and selection in medically and behaviorally compromised patients, as appropriate.

j. Competency with the use of common chronic pain medications and issues that include: 1) muscle relaxants for chronic neuromuscular pain disorders; 2) sedative agents for chronic pain and sleep management; 3) opioid use in management of chronic pain; 4) the adjuvant analgesic use of tricyclics and SSRI antidepressants for chronic pain and an awareness of the utility and problems with MAO inhibitors in pain and headache; 5) anticonvulsants, membrane stabilizers, and sodium channel blockers for neuropathic pain; 6) anxiolytics for anxiety and pain; 7) analgesics and anti-inflammatories; 8) prophylactic and abortive medications for primary headache disorders (inpatient and out-patient protocols) including serotonergic and anti-serotonergic medications; 9) management of analgesic rebound pain; 10) medication side effects that alter sleep architecture; 11) in-patient and outpatient methods for addressing prescription medication dependency and withdrawal; 12) referral, and co-management (of pain) in patients addicted to prescription, non-prescription and recreational drugs; 13) local and systemic anesthetics in the management of neuropathic pain including familiarity with the role of preemptive anesthesia in these conditions; 14) the role of neuroleptics in headache management; 15) topical and systemic use of NMDA inhibitors; 16) GABA and dopaminergic medications used in chronic pain; 17) role of alpha adrenergic medications in sympathetically mediated pain; and 18) the therapeutic use of use of Botulinum toxin injections.

Have an in depth understanding and proficiency with the professional and medico-legal issues in Orofacial Pain;

- a) Legal guidelines governing licensure and dental practice.
- b) Scope of practice and boundaries with regard to orofacial pain disorders.
- c) Criteria for assessing impairment and disability.
- d) Medical record documentation, pain diaries, and outcome measurements for orofacial pain disorders.

c. Overlap in Scope/Advanced Knowledge

(1) Could the specialty be readily incorporated within the scope of a recognized specialty?

Yes _____ No X

Rationale: A comparison of the total program length and items in standards directly related to orofacial pain disorders in the 2019 accreditation standards for dental specialties as compared to Orofacial Pain standards reveals that the proportion of educational Standards in the Dental Specialties relevant to orofacial pain disorders ranges from only a maximum of 11% down to 0%. This provides objective evidence that the scope of the specialty cannot be accommodated through modification of recognized specialties. By extrapolation, this signifies that the proportion of curriculum time required to credential students in their primary discipline ranges from 89% to 100%:

- a) Extrapolating this line item analysis to the potential current training hours applicable to TMD/Orofacial Pain reveals a minimal training except in the Orofacial Pain program:
- e.g. Orthodontic curriculum: At a required 3700 scheduled Orthodontic training hours, and a maximum rate of <2.9% line items in the standards for Orthodontics = a maximum of 107.3 hours devoted to training in the field of TMD.
 - e.g. Prosthodontic curriculum: At a required 33 month scheduled Prosthodontic training = 4950 hours, at a maximum rate of <6.5% = a maximum 322 hours with potential involvement in functional and TMD/pain issues.
 - Comparison to training time in the Orofacial Pain curriculum: At a required 3600 scheduled Orofacial Pain training hours, and a minimum rate of >81.6% line items in the Standards directly related to chronic orofacial pain sciences and treatment = a minimum of 2937.6 hours devoted to training in the field of chronic orofacial pain treatment.
 - The following documents also attest to the fact that the time required to graduate a post-doctoral student or resident to minimal competency in chronic orofacial pain management and treatment is 24 months of full time study. Each of the other dental specialties include at least 24 months for their own didactic and clinical training leaving insufficient time to incorporate the broad knowledge and clinical skills of Orofacial Pain.
- b) The dental specialties therefore do not have the time to accommodate this very large number of hours, and are not set up to accommodate a totally different orientation in clinic structure, multi-disciplinary management, and acquire standards competency in diagnosis and management of orofacial pain disorders. Several have already increased their training period to three years to accommodate their primary curriculum (e.g. Prosthodontics and Periodontics).
- c) The dental specialties do not contain any chronic orofacial pain management or treatment experience and would need to add a totally new curriculum.
- Current experience is primarily routine diagnosis and treatment of TMJ, jaw myalgia and jaw tension habits as a complication, requiring triage, and referral, and risk avoidance while performing their primary discipline; or a TMJ neural surgical approach. None of these are included in scope of the field of Orofacial Pain.
 - The current specialty accreditation standards and experience only require application of the primary modality approaches to orofacial pain disorders (TMJ surgery, Prosthodontics, Orthodontics).
 - The experience of established Orofacial Pain programs is that post-doctoral students who already have a dental specialty certificate still require 24 months training to become competent in the clinical field of orofacial pain disorders.

Therefore, simple minimal modification of existing specialties would not come close to achieving the competency to treat complex or orofacial pain disorders to the expected dental and medical standards of care. In comparison, the Advanced Education Standards for Orofacial Pain demonstrate an extensive pain science component to the Biomedical curriculum; extensive clinical requirements in orofacial pain disorders that is not found in any other Dental Specialty, and clearly differentiate Orofacial pain as a separate discipline requiring separate training, that cannot be duplicated by expansion or combination of other dental disciplines.

(2) Could the specialty be accommodated by a combination of currently recognized specialties.

Yes ___ No X . Present the rationale for this response.

Rationale:

1) Since the Orofacial Pain training and experience in the current 2019 accessed accreditation documents is limited to either splint therapy for temporomandibular disorders and acute pain and anxiety, this field of Orofacial Pain cannot be accommodated by a combination of currently recognized specialties. These existing programs do not produce the required expertise in orofacial pain disorders needed to serve the American public.

2) Experience in dental schools with University established Orofacial Pain programs, shows them to be:

- a) Complementary and not competitive with existing programs and accredited dental specialties for access to patient care and evidence-based clinical management,
- b) Helpful to the co-management of orofacial pain disorders in patients attending those discipline based clinics.
- c) A center for additional diagnostic and education expertise to a dental school,
- d) An important vehicle of communication with an affiliated medical center,
- e) A link to involve physicians and other non-dentist professionals in the dental school curriculum with referrals to the orofacial pain clinics,
- f) A strategy to attract an entirely separate and additional large patient population pool into the dental school.

This affirms that a mosaic of the current accredited dental specialties are not providing these services and that Orofacial Pain cannot be accommodated by a combination of currently recognized specialties.

3) The ADA identifies Orofacial Pain as a necessary field of patient care in many documents and conferences. The definition of the field has been expanded by the ADA from TMD origins with Griffiths publication in JADA of 1983 (37) into orofacial pain management, and into to orofacial, head and neck pain management. (Accreditation Document for Advanced Education Programs in Orofacial Pain, 2019)

4) The current accredited dental specialties have meanwhile seen expansions in training requirements and years in their own primary disciplines, and do not and cannot provide treatment in Orofacial Pain as identified by the ADA itself. There is therefore a void that can only be met by accreditation of a new specialty of Orofacial Pain.

5) No current dental specialty program has clinical competency training in orofacial pain disorders and no current ADA recognized dental specialty Board is able to credential dentists with competency in the field Orofacial Pain. A simple combination of credentialing from all discipline sources still does not cover 90% of the required field.

3) Identify any areas of biomedical and/or behavioral science in which advanced knowledge and advanced skills are required for practice of the proposed specialty that are not included in the scope of the currently recognized dental specialties.

Biomedical Science: There are many areas biomedical and behavioral science in which advanced knowledge and advanced skills are required for practice of Orofacial Pain that are not included in the scope of the currently recognized dental specialties. For example, Orofacial Pain requires much study in the applied medical sciences, e.g. neurosciences, rheumatology, functional anatomy, laboratory medicine, sleep physiology; and an important segment of the neurosciences which for convenience is presented in these documents under "Pain Sciences". The Pain Sciences are uniquely taught for Orofacial Pain and are not part of the pre-doctoral or dental specialty curricula in any of the Standards in the existing dental specialties. Application of these sciences to clinical differential diagnosis of orofacial pain requires a competency level in understanding rather than just an educational background.

Some biomedical science subjects are "shared" among all dental specialties, but taught with different emphasis and purpose. This is true in Orofacial Pain and also requires some additional customized instruction in the following areas: 1) Gross and functional anatomy including the musculoskeletal and articular systems of the orofacial, head, cervical and upper quarter structures, with assessment of common dysfunction and pathophysiologic effects. (*in-depth level*) 2) Functional neuroanatomy of the brain, cervical nerves, and cervical

system with a particular emphasis on pain and common pathophysiological effects. (*in-depth level*) (to permit a differential diagnosis of pain, altered sensory description, and motor lesion disorders) 3) Growth, development, and aging of the masticatory system. (*understanding level*) 4) Muscle, joint, bone, oral mucosal and other soft tissue pathophysiology and common pathology, with emphasis to pain. (*understanding level*) 5) Basic clinical laboratory medicine interpretation. (*understanding level*) (same as Oral and Maxillofacial Surgery program: needed as a basis for routine clinical application) 6) Sleep physiology and dysfunction. (*understanding level*) (only otherwise found in the Prosthodontic Standards as “may be given”) (Needed in Orofacial Pain as a basis of sleep architecture changes with various psychotropic medications used in pain treatment; study of clinical depression; understanding serotonin dysregulation and changes during sleep in migraine, other peripherally and centrally-generated pain).

Biomedical science subjects not shared with other dental specialties, taught with purposeful application as the basis for orofacial pain disorders in clinical practice, or level of instruction: (*at the understanding level of instruction*)

- 1) Applied rheumatology with emphasis on TM normal and abnormal joint histology, synovial fluid assays, systemic arthritis affects and serological tests as applied to orofacial pain disorders,
- 2) Oromotor disorders including dystonias, dyskinesias, and bruxism* (*central mediation of, association with sleep architecture, relationship to medications in use in chronic pain treatment, responsiveness to short term medication challenges, association to other sleep disturbance),
- 3) Reading of current pain science and applied pain literature in dental and medical science journals with special emphasis on pain mechanisms, orofacial pain, head and neck pain, and headache,
- 4) Jaw movement kinesiology: jaw movement studies, emg study, (excludes articulator analogues),
- 5) Epidemiology of orofacial pain disorders and its public health significance.

Biomedical sciences with pain sciences subset (*required at the in-depth level of instruction*) is the basis for chronic pain clinical practice, and is not taught (unless incidentally *by exposure/introduction to*) in the other dental specialties. A strong foundation is required in the neurobiology, neuroanatomy and neurophysiology of pain through study of:

- 1) the neurobiology of pain transmission and pain mechanisms
- 2) nociception, conduction, neurotransmitters and receptor biology in acute and chronic pain conditions and conditions of neuronal injury.
- 3) the heterogeneity of the peripheral nervous system and relationship to the second order neuron transmission in normal function and chronic pain.
- 4) thalamic and cortical projections, and interaction with the reticular and limbic systems (Biopsychophysiologic models)
- 5) pain facilitatory and inhibitory neural pathways and systems.
- 6) changes associated with chronic pain
- 7) the neurophysiologic changes in chronic pain; differentiation of chronic pain from acute pain, in terms of neurotransmitters and receptors; and long term or permanent change because of neuronal plasticity. (See Appendix for additional chronic pain terminology and concepts),
- 8) pharmacotherapeutic principles related to sites of neuronal receptor specific action in chronic pain.
- 9) organization of the trigeminal and cervical nervous systems
- 10) the nuclear and subnuclear organization of the trigeminal brainstem complex, and relation to orofacial pain.
- 11) the organization of the CNS dorsal horn and the trigeminal nucleus analogue, in normal function versus chronic pain and neuropathic change,
- 12) cervicogenic pain and headache, and interactions between trigeminal and cervical CNS segments.
- 13) chronic pain classification systems.
- 14) psychoneuroimmunology and its relation to chronic pain syndromes.
- 15) primary and secondary headache mechanisms.
- 16) tooth site pain of odontogenic and non-odontogenic origin.
- 17) the influence of hormonal cycling on pain threshold and neurovascular pain,
- 18) the scientific basis of acupuncture, and stimulation analgesia.
- 19) the contribution and interpretation of orofacial structural variation (occlusal and skeletal) to orofacial pain,

headache, and dysfunction.

Behavioral Sciences: Clinical behavioral and psychological assessment and co-treatment with behavioral and psychological therapists is a fundamental and routine operational part of clinical Orofacial Pain programs and practice. Competency in applying pain psychology findings to treatment decisions is essential in orofacial pain management, but is largely absent in all other specialty disciplines except for development of skills for facilitating dental treatment in the anxious or impaired patient, including anxiety and pain management by conscious and deep sedation techniques.

Formal instruction in didactic behavioral sciences at the in-depth level that is not included in other dental specialty curriculums include; 2) predisposing, initiating, perpetuating or resultant factors. 3) study of character disorders and profiles impacting pain behavior, 4) exposure to psychiatric disorders including somatization, factitious pain, and others 5) understanding, conducting and applying the results of psychometric tests including standard psychology, and dental (e.g. risk assessment, pain outcomes, interference outcomes) instruments, and exposure to psycho-physiologic tests.

Formal instruction in Clinical Behavioral Science at the in-depth level that is not included in other dental specialty curriculums include; 3) Training programs in Orofacial Pain differ greatly from other dental disciplines in operating in a multidisciplinary clinic framework, with a staff psychologist or psychiatrist on the clinic floor and in attendance at patient rounds. 4) Competency is required in the identification and co-treatment of chronic pain behavior, co-management of endogenous and reactive depression, co-management of anxiety traits, personality disorders, or formal screening for actual psychopathology. 5) Competency is required in the routine use of psychosocial interviewing, administration of psychometrics (and implementation of psychologist's recommendations), or referrals for clinical psychology or psychiatric evaluation of patients with orofacial pain disorders. 6) use of cognitive-behavioral therapies including habit reversal for oral habits, sleep problems, muscle tension habits and other behavioral factors, use of pain and activity diaries for awareness feedback, compliance assurance and monitoring; interaction with biofeedback/stress management, and hypnosis for pain relief and behavioral changes, treatment of operant pain and treatment of secondary gain, and chronic pain behavior for patients with orofacial pain disorders 7) tailoring treatment and medication approaches to psychologic and personality profiles for orofacial pain disorders 8) co-management of orofacial pain patients who are taking antidepressant, anxiolytic, and other psychotropic medications 9) identification of patient compliance and abuse profiles. 10) familiarity with medication withdrawal methods, 11) management of jaw tension and behavior disorders contributing to orofacial pain disorders.

Advanced Knowledge and Skills Summary.

In summary, the clear difference between Orofacial Pain and other dental specialists is that none of the existing dental specialties have training in diagnosis and management of the orofacial pain patient. Orofacial Pain is the only discipline with curriculum and clinic time necessary to develop greater experience in the treatment of patient with orofacial pain disorders. Furthermore, the Orofacial Pain post-graduate curriculum does not include any of the skills that are in the other specialties such as crown and bridge, TMJ or neural surgery, endodontics, periodontal surgery, dental anesthesia for pain and anxiety, or orthodontics. In designing the Orofacial Pain curriculum, the lack of overlap with existing specialties was designed purposely to ensure there were no conflict with other specialties.

As noted earlier, the Orofacial Pain dentist does and will continue to refer patients to other dentists and dental specialists for specific treatments such as general dentistry, TMJ surgery, endodontics, prosthodontics, radiology, and orthodontics. Orofacial pain disorders are one of the only remaining cornerstone in the evaluation and treatment of dental patients that remains unsupervised by the ADA, and is without the aegis of an ADA recognized specialty board. As noted earlier this gap is NOT bridged by the 2019 Advanced Education Standards of the existing dental specialties or by any combination of specialties. The perception that the treatment of orofacial pain disorders is covered by the existing specialties is shown to be incorrect, when the knowledge base, content, levels of instruction, and breadth and level of clinical skills required by their Advanced Education Standards are examined.

This objective based evidence supports the following conclusions regarding advanced knowledge;

- None of the 2109 Advanced Education Standards of each Dental Specialties require any study of complex (multi-site, multi-system) orofacial pain, focus on familiarity in knowledge only, and none develop the skills to treat patients suffering with these many problems.
- The dental specialties limit their requirements to routine temporomandibular disorders at most which is more local and related problems with associated oral parafunctional habits.
- Requirement Standards are limited with regard to the knowledge and ability to make a differential diagnosis but with no treatment requirements
- The ability to triage orofacial pain problems before commencing treatment by the primary dental discipline
- The knowledge competencies are limited to the approaches of that discipline: i.e. prosthodontic/ orthodontic/TM joint surgical/ treatment of patients with TMD problems or are de facto TMD risk management during the performance of their primary specialty discipline.
- Analysis of the percentage of the curriculum standards, and the time allocated to education in orofacial pain disorders is minimal.
- The current dental specialty programs operate out of modality based clinics and not multidisciplinary pain clinics as required (IASP) for pain centers and clinics, and the treatments offered largely mirror the primary specialty.
- The major curriculum differences, and the time required to train Dentists to competency in orofacial pain disorders treatment precludes adding this on to an existing specialty.
- A mosaic of services and perspectives exists in only in TMD in the dental specialties, but each sees only a small part of the orofacial pain diagnosis and treatment spectrum. Those approaches may be valid in selective subsets of patients who are selected for referral to those modality disciplines such as Oral and Maxillofacial Surgery, but Orofacial Pain dentists need to be recognized for training and expertise in management across the field of Orofacial Pain.
- Medical and dental standards of care for the chronic pain patient require a more comprehensive training and systems approach than is provided by the existing Advanced Education Standards of the current accredited dental specialties.
- The US dental school deans have taken the lead over the last 10 years to sponsor the current 8 Orofacial Pain post-doctoral two-year specialty training programs, with three more in development.
- The basis for establishment of 2 academy organizations (Academy of Orofacial Pain and American Academy of Craniofacial Pain), and their journals on orofacial pain disorders that define the field, and are separate from the interests of the established dental specialties includes;
- The establishment of the Journal of Orofacial Pain and Headache, Journal of Craniomandibular Practice, Pain, Clinical Journal of Pain, Pain Forum, Headache, Cephalgia, Journal of Musculoskeletal Pain, and many others independent from any existing dental specialty.
- The establishment of new Board examination process for Orofacial Pain independent from any existing dental specialty.
- The development of nationally and internationally accepted comprehensive guideline documents for the diagnosis and treatment of Orofacial Pain from the American Academy of Orofacial Pain (6) independent from any existing dental specialty.
- The international recognition and spin-off of American Academy of Orofacial Pain (AAOP) leadership evidenced in the formation of sister academies to the AAOP now in all continents of the world independent from any existing dental specialty.

It is, thus, the contention of this application that it is the best interest of the public, and the profession of Dentistry, and other healthcare professionals to acknowledge by the National Commission that the field of Orofacial Pain needs to be and is a Dental Specialty. A review of the advanced skills of Orofacial Pain as compared to existing dental specialties will further reinforce this opinion.

(d) Other Information. Provide any other information that demonstrates compliance with this requirement

Other dental organizations and countries have established Orofacial Pain as an advanced field of Dentistry. Numerous national and international dental organizations have already gone through the process of evaluating the field of Orofacial Pain and have established Orofacial Pain as a dental area distinct from other dental specialties. For example, the United States Military has recently established Orofacial Pain as a specialty and has been active and obtaining specialty training for a number of its dentists (See letters in Appendix VII). The National Institute of Dental and Craniofacial Research (NIDCR) and the American Association of Dental Schools have treated this field as an advanced field separately from other specialties. NIDCR established a pain research center dedicated to understanding pain, released several RFPs for orofacial pain research, organized study sections that have focused exclusively in this area, and has held many conferences including a Technology Assessment Conference dedicated to expansion of knowledge in the field. The American Association of Dental Schools have sponsored curriculum conferences on Orofacial Pain focusing on the development of advanced education program curriculums for Orofacial Pain.

In addition, the national dental organizations in many countries including Costa Rica, Brazil, Australia, Korea, and the Netherlands have designated this field as a specialty. Each of these efforts has been accomplished with support from general dentists and current dental specialties. This has led to the general recognition by most leaders in Dentistry that Orofacial Pain is a distinct advanced field of dentistry not included in any of the existing dental specialties.

Other evidence of distinction between Orofacial Pain and existing specialties include the vastly different journals and parameters of care, the lack of membership of existing dental specialists in the AAOP (<5%), lack of existing specialists among faculty of University orofacial pain clinics and graduate programs (<5%), lack of existing specialist's attendance at annual meetings (4% at last meeting), lack of existing specialists among National Institute of Dental and Craniofacial Research supported research in the field, and lack of existing specialists authoring articles and textbooks in the field. This knowledge and skills of Orofacial Pain is reflected in the many international refereed journals that cover the field of Orofacial Pain and are outside of any current dental specialty as noted earlier. Each of these efforts have been accomplished by members who were trained in Orofacial Pain and Neuroscience. Thus, there has been general recognition by leaders in dentistry that Orofacial Pain is a distinct field not incorporated in any of the other specialties.

As indicated, diagnosis and treatment of temporomandibular disorders is not exclusive to the Orofacial Pain specialty or programs. Since TMD is a common clinic problem, it is important that every dentist and dental specialist is familiar with the diagnosis and early management of TMD. This is especially true of those dental specialties that have the potential to make orthopedic changes and shifts in the occlusion and resulting maxilla-mandibular relationships, also have the potential to increase TM joint stability or to propagate instability. Risk management and risk avoidance is therefore very important in those disciplines, as well as general dentistry. Competency in pre-treatment screening of both orofacial pain disorders and TM joint dysfunction is therefore a very important skill in orthodontics, prosthodontics, endodontics, orthognathic surgery, and general dentistry, and even prior to prolonged open mouth procedures especially when not reflexively protected such as during general anesthesia. Competency in recognizing problems arising during or following dental treatment, and either treating them directly or by referral is an essential skill.

The Advanced Education Standards for those dental specialties only require treatment of TMD/TMJ findings by application of that primary discipline: i.e. prosthodontic, orthodontic, and TMJ surgical (or trigeminal nerve surgery). The Orofacial Pain specialty stands alone in requiring advanced training and clinical competency in treatment of the whole spectrum of orofacial pain disorders. The Orofacial Pain specialty also makes clear distinction between the co-management of local TMD problems in the course of practicing the primary dental specialty, from the evaluation, assessment, and actual treatment of chronic pain patients including multi-site, multi-system pain, that may also include some chronic temporomandibular findings as part of the problem list not responding to traditional TMD dental treatments. It is also very evident that the dental specialties do not want to treat these patients, or at least not until the chronic pain problems are better controlled, and most contain Advanced Education Standards promoting easy referral paths. As the practice survey indicates, 89% of dental specialists refer these patients and 95% prefer to refer them to an Orofacial Pain dentist (Appendix III)

It is also evident that Orofacial Pain programs bring an additional and separate stream of patients into the dental schools. Proportionally, they derive most of their referrals from medicine as much as dentistry, and are never a competition with the existing specialty programs or general dental clinic sources for patients. Orofacial Pain consultation, co-management, or full treatment options are of great benefit to all the dental disciplines when assistance is needed. This is important to the operation and success of dental schools, and to the community of Dentistry. Recognition of trained specialists in Orofacial Pain in dental schools (as opposed to management of acute dental pain problems) is becoming important to affiliated hospital and medical center programs in knowing whom to call in the co-management of difficult orofacial pain, and head and neck pain problems.

Orofacial pain programs are important in building greater interaction between Dentistry and Medicine. The expertise contained within Orofacial Pain programs are complementary to and helpful to the existing accredited specialties and the general dental school clinics. They do not compete with the existing programs. The general dental education programs will also benefit greatly from the greater availability of trained dentists in this field. Orofacial Pain programs and clinics require a multidisciplinary center or clinic that mostly incorporates expertise outside that of the existing accredited dental specialties. The treatment model for orofacial pain disorders management usually employs the medical model and not a surgical or traditional dental model especially in primary care.

Therefore, the specialty of Orofacial Pain, and Orofacial Pain programs are complementary, and not competitive with existing programs or to general dentistry. They are also extremely helpful to, for example, the Oral and Maxillofacial Surgery programs just as is the cardiologist to the cardiac surgeon or the orthodontist to oral and maxillofacial surgery. The oral surgeons rarely want to take on extensive pre- and post-surgical management of chronic management problems nor should they because this involves medical and psychology models. The restorative and occlusion related disciplines do not and should not take on the care of chronic pain because the scientific relationship to dental occlusal problems has been shown to explain only a small part of the etiology. The current dental disciplines are however important where there are definite structural deficits, or mandibular instability issues, once the chronic pain problems are under better control.

Overall, the field of Orofacial Pain is a mosaic, with the existing specialties already playing a focused part of access to care for patients with these conditions. However, the proportion of their curriculum even connected to this field is limited to 0% to 11% of their Advanced Education Standards, and limited to temporomandibular joint, jaw muscle pain, and jaw tension habits, except in the performance of triage and making a preliminary differential diagnosis of pain. The overlap in basic science curriculum etc. with the existing dental specialties is <15% which is similar to the differences between other specialties. None of the existing specialties can absorb the extra 24 months minimal training required to train and credential dentists to the current medical and dental standards of care required to treat patients with chronic pain. The Boards of the dental specialties are not set up nor require examination of Orofacial Pain to clinical competency as it relates to the primary discipline.

Therefore, there is no current credentialing process for dentists in Orofacial Pain outside those parameters. Hence the important need for the specialty of Orofacial Pain. Recognition of trained specialists in Orofacial Pain in dental schools (as opposed to management of acute dental pain problems) is becoming important to affiliated hospital and medical center programs in knowing whom to call in the co-management of difficult orofacial pain, and head and neck pain problems. Orofacial pain programs are important in building greater interaction between Dentistry and Medicine. The expertise contained within Orofacial Pain programs are complementary to and helpful to the existing accredited specialties and the general dental school clinics. They do not compete with the existing programs. Orofacial Pain programs and clinics require a multidisciplinary center or clinic that mostly incorporates expertise outside that of the existing accredited dental specialties, except in post-acute phase care in a few cases. The treatment model for orofacial pain management usually employs the medical model and not a surgical or traditional dental model especially in primary care.

Therefore, the Orofacial Pain program is complementary, and not competitive with existing specialties and their

programs, and helpful to, for example, the Oral and Maxillofacial Surgery programs just as is the cardiologist to the cardiac surgeon or the orthodontist to oral and maxillofacial surgery. The surgeons rarely want to take on extensive pre- and post-surgical management of chronic management problems nor should they because this involves medical and psychology models. The restorative or occlusal-related disciplines do not take on the care of orofacial pain because the scientific relationship of orofacial pain to dental occlusal problems explain.

In summary, it is clear that the scope of Orofacial Pain meets each of the requirements #3 by requiring advanced knowledge and skills that: (a) in their entirety are separate and distinct from the knowledge and skills required to practice in any recognized dental specialty and (b) cannot be accommodated through minimal modification of a recognized dental specialty.

References for Requirement 2 and 3

1. National Commission on Recognition of Dental Specialties and Certifying Boards. <https://www.ada.org/en/ncrdscb/dental-specialties>. Accessed July 24, 2019.
2. Griffiths, R.H., *Report of the president's conference on the examination, diagnosis, and management of temporomandibular disorders*. JADA, 1983. **106**(1): p. 75-77.
3. The National Consensus Document on Curriculum Guidelines for the Development of Graduate Programs in Temporomandibular Disorders and Orofacial Pain based on First Education Conference to Develop the Curriculum in TM Disorders and Orofacial Pain, co-sponsored by the American Association of Dental Schools, 1990).
4. Curriculum Guidelines for the Development of Post-doctoral Programs in Temporomandibular Disorders and Orofacial Pain. J. Dent. Ed. 56:650-657, 1992 (published after review and approval for publication by the AADS Council of Sections Administrative Board and the Executive Committee).
5. Guidelines for teaching the comprehensive control of pain and anxiety in dentistry. American Dental Association, Council on Dental Education, 1992.
6. Accreditation Document for The Field of Orofacial Pain. National Commission on Recognition of Dental Specialties and Certifying Boards. <https://www.ada.org/en/ncrdscb/dental-specialties>. Accessed July 24, 2019.

IV. Requirement 4. The specialty applicant must document scientifically, by valid and reliable statistical evidence/studies, that it: (a) actively contributes to new knowledge in the field; (b) actively contributes to professional education; (c) actively contributes to research needs of the profession; and (d) provides oral health services in the field of study for the public; each which the specialty applicant must demonstrate would not be satisfactorily met except for the contributions of the specialty applicant.

a. Cite peer reviewed epidemiological data that establishes the incidence and/or prevalence of conditions diagnosed and/or treated by practitioners in the proposed specialty. Identify the source of the data and provide an estimate of reliability of the data.

According to the most conservative and reliable data on lifetime prevalence and treatment need studies, suggest that 25% to 35% of the population have a current orofacial pain problem that is severe enough to warrant treatment (**Table 9**) (5-19). The epidemiological data on orofacial pain disorders as compared to dental disorders provide substantial support that these disorders are as common as caries and periodontal disease (20-21). Of these we estimate the number of new cases to be at a minimum of about 5-7% of the population. Several surveys of persistent symptoms of orofacial pain disorders have demonstrated that approximately 7% or 13 million Americans suffer from an orofacial pain disorder causing pain in the face or jaw. In a survey of 45,711 American households, Lipton (5) demonstrated that 7.4% of the population experienced at least one of four types of chronic orofacial pain in the past six months. The most common type of persistent orofacial pain was peri-auricular or jaw pain reported by 5.3% of the population. Face or cheek pain was reported by 1.4% and burning mouth pain being reported 0.7%.

Chronic pain of all types remain one of the great unsolved health problems of this century (1-3). Pain is the most common reason that brings patients to health care providers. Chronic pain, particularly in the head is the leading cause of disability to workers second only to respiratory infections for lost work days, and by far the leading reason for long term disability. A significant portion of this is spent on inappropriate or ineffective diagnostic and treatment modalities for orofacial pain disorders. A discussion of the current epidemiology of orofacial pain disorders includes literature in 3 general areas; orofacial pain, neuropathic pain, and headache. A comparison of the literature in each area is difficult because of the apparent overlap between the areas. Headache studies can include both vascular (migraine) and muscular (tension type headache and myofascial TMD pain). Studies of orofacial pain includes orofacial pain in general, neuropathic pain, and headache. Since there is overlap, epidemiological data for each category has not been considered as cumulative but rather is presented to represent the most conservative estimates of need in the field.

Table 9. The lifetime prevalence and need for treatment of orofacial pain disorders compared to caries and periodontal disease. This is compared to the annual prevalence and need for treatment of the most dental disorders of caries and periodontal disease, and missing teeth.	
Prevalence of Orofacial Pain Disorders (3-8)	% of Population
Temporomandibular disorders	5-7%
Orofacial pain disorders (burning mouth, neuropathic, atypical pain)	2-3%
Headache disorder (tension-type headaches, migraine, neurovascular, mixed, cluster)	10-20%
Orofacial sleep disorders (e.g. sleep apnea, snoring)	3-4%
Neurosensory/ chemosensory disorders (e.g. taste, paresthesias, numbness)	0.1%
Oromotor disorders (e.g. occusal dysethesias, dystonias, dyskinesias, severe bruxism)	5%
Total Estimated Prevalence of Orofacial Pain Disorders	24% to 35%
Estimated Prevalence of Dental Disorders*	% of Population
Adolescent Dental caries in the 1988 (at least 1 tooth)	20%
Adolescent Dental caries in the 2000	16%

Adult permanent teeth with caries in 1988	6.2%
Adult permanent teeth with caries in 2000	2.6%
Periodontal disease in the 1988 (> 4mm pocket)	22.2%
Periodontal disease in the 2000 (> 4mm pocket)	9.0%
Missing all teeth in 1988	6.1%
Missing all teeth in 2000	3.7%
Total Prevalence in 2000	31.3%

*(NHANES data 1988-2004)

TMD and Orofacial Pain. Von Korff et. al.(11) surveyed 1016 members of a large HMO and found that 12% of this population reported experiencing facial pain in the past six months. Riley and colleagues studied 1636 elderly population in the age range of 65 to 100 years for orofacial pain and found that 15.6% had reported either burning mouth(1.1%), jaw joint pain(7.6%), or facial pain(6.9%)(Riley, et al, 2009, Appendix IV). Of these individuals, over 50% of them reported seeking care in the past year for these problems with 50% seeking care for burning mouth, 56% for jaw joint pain, and 61% for facial pain.

Recent research has supported that the vast majority of these people in the general population are treated unsuccessfully, or left untreated and continuing to suffer from pain. For example, a 1999 general population survey by Robert Starch Worldwide (4) found that of the 805 individuals who reported having a persistent pain disorder, more than four out of 10 people have yet to find adequate relief, saying their pain is out of control—despite having the pain for more than 5 years and switching doctors at least once. Considering data on health care utilization for these chronic orofacial pain patients, the most conservative estimate of the total cases that will demand or seek treatment per year by an Orofacial Pain dentist is about 2.0 % of the population or 3 million people per year.

There is also substantial evidence to suggest that these patients with orofacial pain disorders are not being treated adequately by current general practitioners or dental specialists. As noted earlier, few general dentists and dental specialists choose to provide care to patients with chronic orofacial pain. According to the 2009 practice survey of 403 dentists (Appendix III), the percent of dentists who treat any of these patients is low including; General Dentists (14%), Oral Surgeons (22%), Orthodontists (13%), Endodontists(5%), Periodontists(4%), Prosthodontists(5%), and Pediatric dentists(11%) and that nearly all (95%) have less than 5% of their practice in this field.

Furthermore, several studies of chronic orofacial pain patients have found that these patients have a high number of previous clinicians (a mean of 5.3) and many years with pain (mean of 4.2 years) prior to seeing an orofacial pain dentist (7-9). This clearly documents that the treatment by general dentists and specialists is either not provided or inadequate. The results of the previously noted practice survey also found that 89% of dentists would rather refer chronic orofacial pain patients because they are too complex (78%) and not trained(81%). In contrast, the practice survey of Orofacial Pain dentists found that about 70% practice fulltime in the field and those who indicated that they do not practice full time cited the major reason as clinical preference and financial issues (86%) and not due to an inadequate number of patients referred(14%).

If recognition and treatment of the problem by clinicians is inadequate or inappropriate, the personal impact can be tragic and the costs great. Persistent pain can cause depression, suicidal ideation, dependent relationships, loss of work, disability and many lifestyle disturbances. It can lead to patients undergoing many costly surgeries, diagnostic tests, long-term medications, and an ongoing dependency and drain on the health care system. A 1986 Harris Poll (12) found that 129 156.9 million work days are lost due to head pain with at least 50% from orofacial pain disorders. With this prevalence, degree of impact, and lack of interest among general dentists and dental specialists, the demand for services in by Orofacial Pain dentists is high. Based on demographic changes and disease projections, it is estimated that a minimum of 3 million patients with chronic orofacial pain will seek care for their problem this year.

Neuropathic Orofacial Pain Disorders. This category refers to pain occurring in the distribution of one or more

cranial nerve(s) and/or cervical roots two and three with projection to orofacial areas. Neuropathic and neurovascular disorders that are part of the scope of orofacial pain practice include post-traumatic continuous neuropathic pain, trigeminal neuralgia and pre-trigeminal neuralgia, glossopharyngeal neuralgia, occipital neuralgia, facial nerve neuralgia, nervus intermedius neuralgia, post-herpetic neuralgia of trigeminal, complex tooth pain from non-dental causes, neurovascular orofacial pain, deafferentation pain syndrome, and sympathetically mediated orofacial pain. Although many of these disorders have not been studied specifically, several studies have estimated the prevalence of the most common neuropathic pain includes trigeminal neuropathic pain ranges from 6.9% to 10% (17).

Primary Headache Disorders and Neurovascular Pain. Headache can be a symptom of many disorders affecting the orofacial structures and is especially prevalent in patients with orofacial pain disorders. Because of this, headache also needs to be considered as a problem diagnosed and treated by orofacial pain dentists. Many studies have found recurrent headache to occur in as many as 70-85% of patients with chronic orofacial pain disorders (117, 118), compared to approximately 20% of a general population. It has been estimated that one in three persons suffers from severe headache at some stage in his or her life, a lifetime incidence very similar to the 34% rate estimated for severe chronic orofacial pain disorders (16). Von Korff et. al.(16) in his survey of 1016 members of a large HMO found that in the past six months 26% reported headaches and up to 40% of the individuals who reported pain missed one or more work days because of the pain. Currently, 5% to 10% of the North American population has sought medical advice in the past year for severe headache (9). One comprehensive survey examining chronic pain prevalence among adults in North America (9) found 73 % experiencing headache in the preceding 12 months. Thus, in the United States, it has been conservatively estimated that 13.7% of men and 27.8% of women in the adult U.S. population have headaches "every few days" or that "bother quite a bit" and, thus, have a high predisposition to seek care.

b. Document and assess the need for services by the proposed specialty that are not currently being met by general practitioners or recognized dental specialists. Include documentation regarding referral patterns, including documentation that identifies who normally refers patients to practitioners in the proposed specialty and the frequency of these referrals.

The need and demand for services of an orofacial pain dentist is not being met with current dentists or dental specialties as documented by the high number of previous clinicians and treatments received by these patients, the high number of years with pain, and the lack of interest and training by current general dentists and dental specialists. Data Supporting the Need for Treatment According to the most conservative and reliable data on prevalence and treatment need, studies suggest that at least 7% or over 13 million Americans have a current orofacial pain disorder that is severe enough to warrant treatment each year (3-22).

For example, Riley and colleagues studied 1636 elderly population in the age range of 65 to 100 years for orofacial pain and found that 7.7% had reported seeking care either burning mouth(.5%), jaw joint pain(3.8%), or facial pain(3.4%) in the past year (119) (Appendix IV). Interestingly in this study, the persistence and severity of symptoms were the best predictor of frequency of health care utilization. This epidemiological data on orofacial pain disorders provide substantial support that these disorders are nearly as common as caries and periodontal disease and treatment need is vast.

Data Supporting the Demand for Treatment: Considering the target population (ages 13 to 70) and that some people may not seek care due to financial, access to care or other reasons, the most conservative and reliable estimate of demand for clinical services by patients with chronic orofacial pain disorders is about 2 to 3% of the population or 3 million people. The reliability of these numbers are supported by several studies that have examined the percent of people who actually receive care for orofacial pain disorders (8-19). Data suggesting demand is not being met by general dentists and existing dental specialists. Substantial evidence suggest that current general practitioners and existing dental specialists are not meeting the demand of services by consumers with chronic orofacial pain. Recent research has supported that nearly 50% of these people in the general population are left untreated and continuing to suffer from pain (1-3).

For example, a 1999 general population survey by Robert Starch Worldwide (4) found that of the 805 individuals who reported having a persistent pain disorder, more than four out of 10 people have yet to find adequate relief, saying their pain is out of control— despite having the pain for more than 5 years and switching doctors at least once. Other evidence provides support also and include;

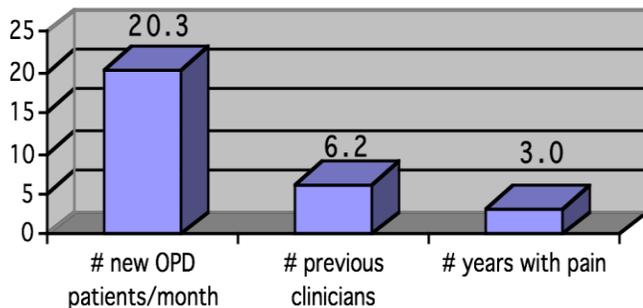
1) Few general dentist or dental specialists provide care for chronic orofacial pain patients. This was clearly highlighted in Figure 2, 3 and 4. The percent of patients who present with chronic orofacial pain and are treated by either general dentists or dental specialists is low including; General Dentists (14%), Oral Surgeons (22%), Orthodontists(3%), Endodontists(5%), Periodontists(4%), Prosthodontists(5%), and Pediatric dentists(11%) (Appendix III).

In addition, as illustrated in **Figure 3**, page 42, the vast majority of these dentists (95%) either do or would prefer to refer to an Orofacial Pain dentist. The results of the previously noted practice survey also found that 95% of dentists would rather refer chronic orofacial pain patients because they were not sufficiently trained (77%) and that the patients were too complex (63%) as shown on **Figure 4**.

In contrast, the practice survey of Orofacial Pain dentists found that 70% of them practice a significant part of their practices in Orofacial Pain and those who indicated that they do not practice full time cited the major reason as clinical preference and financial issues (86%) and not due to an inadequate number of patients referred (14%) (Appendix III). It is important to note that it is still very difficult to be reimbursed for care in this field because at least partially due to the lack of a specialty in Orofacial Pain. Although many AAOP members would like to practice full time in the field, 30% felt that this lack of reimbursement was the major reason for not practicing 100% in the field. ADA specialty recognition would greatly help patients obtain insurance reimbursement for this care.

2) Few patients receive adequate care for their chronic orofacial pain problem by their dentists or physicians. For example, several studies of chronic orofacial pain patients have found that these patients have a high number of previous clinicians and treatments prior to seeing an orofacial pain dentist (**Figure 5**). Many patients continue to have chronic or persistent pain despite being treated by a general dentist, dental specialist or other provider. For example, in one study, the average number of clinicians seen by orofacial pain patients prior to seeing an Orofacial Pain dentist was 4.5 (7). The AAOP practice survey found that the mean number of previous clinicians was 5.3 prior to seeing an orofacial pain dentists (Appendix III). A patient has to be very motivated to suffer through the frustration and cost of seeing multiple clinicians and continue to seek care. Our existing dental and medical care systems are not set up to manage these problems and, thus, the patient continues to be referred from clinician to clinician hoping someone will know what to do. Patients do not know who to turn to and clinicians do not know who to refer to when finding a patient with these problems. This will be improved when a specialty in Orofacial Pain is established by the ADA.

Figure 5. The figure illustrates that many of the patients have high number of previous clinicians, previous treatment, and many years with pain prior to being referred to an Orofacial Pain dentist. (AAOP survey, 1999, Appendix V)



3) Patients with chronic orofacial pain disorders also suffer for many years before finding care with an orofacial pain dentist. In a survey of Orofacial Pain dentists, the mean years that patients have to suffer with pain prior to seeing the orofacial pain dentists is 4.2 years (**Figure 5**). Another recent independent study of 805 individuals in the community with chronic pain by Roger Starch Worldwide (4) found that more than half (56%) of respondents reported suffering more than five years, yet only 22% had been referred to a pain specialist.

This is a problem of access to successful care and can only be remedied with supporting an ADA specialty in this field. Pain that is allowed to persist uncontrolled can by itself contribute to a multitude of other problems for the patient. If recognition and treatment of the problem by clinicians is inadequate or inappropriate, the personal impact can be tragic and the costs great (1-4). The pain becomes entrenched in the patient's life with the development of dependent relationships, emotional disturbances, disability and many behavioral and psychosocial problems. They present a frustrating medical and dental picture with patients undergoing costly surgeries, diagnostic tests, long-term medications, and an ongoing dependency on the health care system. It is estimated by a 1986 Harris Poll (7) that 156.9 million work days are lost due to head pain and that over 50% of this head pain is related to orofacial pain disorders (24). In summary, these facts collectively provide convincing support that there is a huge unmet need for care in the general population and that the demand for quality successful care for chronic orofacial pain disorders is not being met by general dentists and existing specialists. The negative personal and lifestyle consequences of inadequately treated chronic orofacial pain syndromes warrants avoiding care with inexperienced clinicians or experimental treatments to "see if it will work". It would be unwise to filled the current need for Orofacial Pain clinicians by unqualified individuals since it may cause the patient more time, effort, and complicate the pain problem if not treated adequately.

c. Identify and provide background information on who contributes to the body of knowledge for the proposed specialty (this would include individuals who represent the applicant organization and others including non-dentist scientists, etc).

Many members of the field of orofacial pain and the AAOP have worked at Universities and Clinical practice with funding agencies including National Institute of Dental and Craniofacial Research to contributes to the body of knowledge in Orofacial Pain. This research communicates the breadth and depth of prevention research funded by NIH while also retaining sufficient specificity to be of practical value. The following PRCC definition of prevention research reflects efforts to align these goals. However, it is important to recognize that individual Institutes and Centers may adapt the definition to best reflect their missions and the state of knowledge in their respective scientific fields.

Research by members of the field and NIDCR encompasses research designed to yield results directly applicable to evaluating and treatment for patients with OFP disorders, identifying and assessing risk, and to developing interventions for preventing or ameliorating high-risk behaviors and exposures, the occurrence of a disease, disorder, or injury, or the progression of OFP disorders. Prevention research also includes research

studies to develop and evaluate disease prevention and health promotion recommendations and public health programs.

For example, the American Academy of Orofacial Pain funded and lead a team effort to complete systematic reviews of randomized controlled trials (RCT) to evaluate six types of treatments for temporomandibular muscle and joint disorders (TMJD) including orthopedic appliances, occlusal therapy, physical medicine modalities, pharmacologic therapy, cognitive-behavioral and psychological therapy, and temporomandibular joint (TMJ) surgery. A quality assessment of 210 published RCTs assessing the internal and external validity of these TMJD RCTs was conducted using CONSORT criteria adapted to the methods of the studies. **Appendix IVc** summarizes the clinical trials involved in the reviews. This paper concluded that much of the evidence base for TMJD treatments may be susceptible to systematic bias and suggested ways to improve clinical trials. However, a scatter plot of RCT quality versus year of publication shows improvement in RCT quality over time and it is hoped that future studies will continue to improve methods that minimize bias.

In addition, the AAOP has been involved in the ad hoc TMD committee under the auspices of the National Academies of Sciences, Engineering, and Medicine's Health and Medicine Division to address the current state of knowledge regarding TMD research, education and training, safety and efficacy of clinical treatments of TMD, and burden and costs associated with TMD. The ad hoc committee is identifying approaches to advance basic, translational, and clinical research in the field. The committee's findings, conclusions, and recommendations will inform development of policies related to evidence-based treatment and clinical management of TMD patients. **Appendix IVd** by Past AAOP President Dr. Gary Heir provides a summary of the some of these issues related to the field of Orofacial Pain.

Members of the field of Orofacial Pain have also contributed to many other categories of research including:

- The need for a better understanding of prevalence and impact of orofacial pain disorders
- Mechanisms of orofacial pain and it's modulation
- orofacial pain assessment, diagnosis, and classification;
- diagnostic strategies for temporomandibular disorders and orofacial pain
- Outcome and clinical trials associated with all strategies for management of orofacial pain
- Underlying mechanisms and diagnosis of orofacial pain disorders
- Identification of modifiable risk and protective factors for diseases/disorders/injuries;
- Studies on assessment of risk, including genetic susceptibility;
- Development of methods for screening and identification of markers for those at risk for onset or progression of asymptomatic diseases/disorders, or those at risk for adverse, high-risk behaviors/injuries;
- Development and evaluation of interventions to promote health for groups of individuals without recognized signs or symptoms of the target condition;
- Translation of proven effective prevention interventions into practice;
- Effectiveness studies that examine factors related to the organization, management, financing, and adoption of prevention services and practices; and
- Methodological and statistical procedures for assessing risk and protective factors and measuring the effects of preventive interventions.

d. Identify and analyze new and emerging trends in the field; evaluate findings from surveys, such as the ADA Survey of Dental Practice data regarding services rendered and time spent providing the services.

A survey of AAOP members examined referral patients including the source of referrals and their frequency. Of the surveys returned, 135 reported on referral patterns in their Orofacial Pain practices. **Table 20** list the percent from different referral sources for patients referred to orofacial pain clinicians. Requests for Orofacial Pain services came from all dental specialties, most medical specialties, and patients as well. This survey indicated that the frequency of referrals to an Orofacial Pain practice was a mean of 23 patients per month with

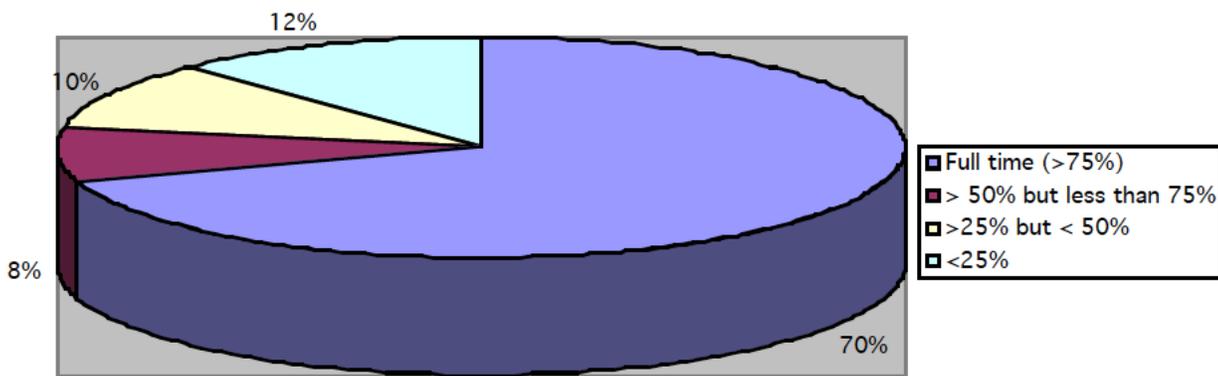
a range from 200 per month (multi-group practice) to 1 per month. The maximum number new patients seen by specialist is limited by the months of time it takes to treat a patient and the time intensive nature of the appointments. The best estimate is that a single Orofacial Pain clinicians can see about a maximum of 500 new patient consultations per year.

Table 10. Referral sources for patients of Orofacial Pain dentists (Survey of AAOP members)	
Source of Referral	Percent
Patients	18.6%
Other patients	15.0
Self-referral	3.6
Dentists	48.6%
General dentists	22.1
Orthodontists	15.7
Oral Surgeons	7.7
Endodontists	1.8
Periodontists	1.6
Prosthodontists	1.2
Pedodontists	0.4
Oral Pathologists	0.1
Physicians	22.7%
Family practice	9.2
ENT	5.5
Neurology	3.8
Physical Medicine	1.2
Rheumatology	0.6
Orthopedists	0.5
Anesthesiologists	0.4
Oncologists	0.3
Psychiatry	0.2
Others	9.1%
Attorneys	3.5
Physical Therapists	2.4
Chiropractors	2.2

e. Indicate the number of individuals who devote the majority (greater than 50%) of time to the practice of the discipline.

According to a 2009 survey of AAOP members, the number of AAOP dentists currently devoting full time (>75% limited to the practice of Orofacial Pain) is approximately 70% or 340. **(Figure 6)**. The number of Orofacial Pain dentists currently devoting over 50% of their time to the practice of Orofacial Pain is approximately 80% of the membership or 390.

Figure 6. The percent of dentists currently devoting full-time to the practice of Orofacial Pain.



f. Document how the proposed specialty contributes to the educational needs of the profession at the pre-doctoral, postdoctoral and continuing education levels.

The members of the field of Orofacial Pain have contributed to the educational needs of the profession at each of the pre-doctoral, postdoctoral and continuing education levels. The faculty and specialists from Orofacial Pain have supported advanced education programs in 12 Advanced Education Programs at Universities through the U.S. IN addition, they have taught at the pre-doctoral, postdoctoral training in existing dental specialties and continuing education courses. Here is a summary of some of the offerings;

Background for pre-doctoral, postdoctoral training in existing dental specialties and continuing education in Orofacial Pain. Orofacial pain disorders including headache, temporomandibular muscle and joint disorders (TMJ), dental sleep disorders, burning mouth, neuropathic, atypical pain, and others are one of the most common and complex disorders with a collective prevalence that ranges from 30% to 40% of the population. Since orofacial structures have close associations with functions of eating, communication, sight, and hearing as well as form the basis for appearance, self-esteem and personal expression, pain in this region can deeply affect an individual physically and psychosocially often leading to chronic pain, addiction and disability. (6-20)

The purpose of pre-doctoral and continuing education programs in Orofacial Pain is to improve access to care for those who suffer from orofacial disorders by encouraging all dentists and physicians to broaden their care of these problems in the United States. Improving access to care for orofacial disorders needs to be a priority of all healthcare providers, Centers of Medicare (CMS), state boards, health systems, and health plans but is challenging because care for these conditions lies between medicine and dentistry with a limited number of health professionals trained to care for these patients. By participating in multidisciplinary clinical team activities, lectures, on-line training, and professional meetings, it is expected that all dentists will acquire some skills and knowledge necessary to provide the highest quality of evidence-based care for individuals with TMD and other common orofacial pain condition to improve access to care for these conditions.

Curriculum Content for these courses. Orofacial Pain is the field of Dentistry that involves pain and dysfunction caused by diseases or disorders of orofacial and masticatory structures and associated dysfunction of the peripheral and central nervous system. The objectives of the fellowship include the following;

- Elicit and document a comprehensive history, emphasizing establishing a physical diagnosis for the condition and identifying risk factors and protective action plans for orofacial conditions.
- Perform and document a thorough musculoskeletal and neurological, dental, and orofacial examination, including diagnosis of orofacial conditions, record keeping and outcome measures.
- Understand imaging techniques, laboratory and diagnostic studies appropriate for diagnosis of various orofacial pain disorders.
- Arrive at a differential diagnosis of temporomandibular and orofacial and sleep disorders

- Assess and address the behavioural and psychosocial diagnoses related to chronic pain
- Assess and measure the cognitive, physical, behavioural, emotional, spiritual, social, and environmental risk factors within patient's life that contribute to pain, physical dysfunction and disability using valid and reliable assessment tools.
- Understanding the efficacy and implementation rehabilitation treatment strategies for TMD and orofacial pain including intra-oral splints, health psychology, physical therapy, injections, medications, and surgery.
- Understanding the efficacy and implementation of interventional pain treatments for orofacial pain condition including trigger Point Injections, Botox injections, Trigeminal, and Peri-neural Injections, and others.
- Communicate with and direct interdisciplinary treatment planning with other health providers
- Identify professional, system, patient, family and community barriers to effective pain assessment and management.
- Implement management that includes patient self-management training and education to learn the cognitive, physical, behavioural, emotional, spiritual, social, and environmental protective actions that can relieve pain.
- Demonstrate an awareness of their scope of practice to evaluate and manage patients experiencing pain using evidenced-based practice strategies for clinical shared decision-making.
- When appropriate, refer patients in a timely manner for additional care to practitioners with expertise such as medical and surgical, behavioural and psychological, or pharmacological interventions.
- Recognise individuals who are at risk for under or over-treatment of their pain (e.g., individuals who are unable to self-report pain, neonates, cognitively impaired).
- Apply knowledge of basic science of pain including peripheral and central sensitization to the assessment and management of people with pain.
- Promote health and well-being through prevention of pain and disability.
- Practice in accordance with an ethical code that recognises human rights, diversity, and the requirement to "do no harm."
- Reflect critically on effective ways to work with and improve care for people with pain.
- Regularly update personal knowledge on orofacial conditions and its management.
- Training in Business Practice Skills.

This knowledge and content of orofacial pain includes assessment, diagnosis and treatment of the following conditions:

- Intraoral, intra-cranial, extracranial, and systemic disorders that cause orofacial pain
- Complex masticatory and cervical musculoskeletal pain
- Neurovascular pain, i.e. headache disorders resulting in orofacial pain
- Neuropathic pain
- Psychological concerns
- Dental Sleep disorders
- Orofacial pain secondary to systemic disorders such as cancer or AIDS
- Regional pain syndromes
- Orofacial movement disorders
- Other complex disorders causing persistent pain and dysfunction of the orofacial structures.

Continuing Education Courses in Orofacial Pain. Theoretical and hands on training, including tutorials, workshops, symposium, case discussions and journal clubs on orofacial conditions are available at the following Universities;

1) **CE Courses and Mini-residencies in Orofacial Pain.** There are weekend mini-residencies and on-line courses in Orofacial Pain at several Universities at;
https://aaop.clubexpress.com/content.aspx?page_id=22&club_id=508439&module_id=128634&sl=104598366

Here is a sample of the some of the education offerings in Orofacial Pain;

a) **University of Minnesota** Massive Open On-line Course on Preventing Chronic Pain at

<https://www.coursera.org/learn/chronic-pain> and Snoring and Sleep Apnea at <http://www.dentalce.umn.edu/>.

b) **University of Kentucky** at on Orofacial Pain at <https://dentistry.uky.edu/ofpmr2018>,

c) **UCLA** at Sleep Medicine Mini-Residency at mayra@dentistry.ucla.edu

<http://www.dentistry.ucla.edu/continuing-education/courses/sleepmayra@dentistry.ucla.edu>

<http://www.dentistry.ucla.edu/continuing-education/courses/sleepmayra@dentistry.ucla.edu>

<http://www.dentistry.ucla.edu/continuing-education/courses/sleep> and TMJ and Orofacial Pain Mini-Residency

<http://www.dentistry.ucla.edu/continuing-education/courses/433-temperomandibular-joint-and-orofacial-pain-disorders-mini-residency>.

d) **Louisiana State University Online SU Orofacial Pain Continuum.** This 1- hour online course covers the basics of physiological aspects and categories of orofacial pain including somatic, musculoskeletal, neuropathic sources of pain and various categories of headache at <http://www.lsuorofacialpaine.org/online-education.html>

2) Rutgers School of Dental Medicine Orofacial Pain Beyond TMD. This innovative, online course is a formal educational experience to learn the latest in orofacial pain diagnosis and management. Emphasis will be on the diagnosis and management of patients with neuropathic, neurovascular (headache) and musculoskeletal disorders. See http://sdm.rutgers.edu/CDE/calendar/180924_OFFnet.html

3) USC Online Certificate in Orofacial Pain. This is a hybrid program (face-to-face and online classes) with a total of 8 courses (12.5 academic units), specifically designed for the practicing dental professional who wants to improve skills and gain expertise to deliver the best care for patients with complex conditions.

<https://online.usc.edu/programs/certificate-orofacial-pain/>

g. Project the need for practitioners in the specialty over the next five years, taking into account disease trends, demographic changes and other pertinent factors.

It is expected that the need for Orofacial Pain dentists is high and will increase over the next five years. Considering data on health care utilization for these chronic orofacial pain patients, the most conservative estimate of the total cases that will demand or seek treatment is about 2.0% of the population or 3 million people per year. The detailed calculation of the need and demand for Orofacial Pain dentists was presented under Requirement 4-f. (1-19)

Using these figures, **Table 11** illustrates the lack of adequate numbers of specialist to provide care for these patients. Based on demographic changes and disease projections, it is estimated that 3% or a minimum of 10 million patients with orofacial pain conditions will seek care for their problem this year. If 1000 patients per year can be seen by a full-time Orofacial Pain dentist and we currently have about 250 full-time specialists, an estimate of the number of additional specialists that are needed in the field is a minimum of 10,000. This is consistent with the number of specialists in other fields of dentistry such as oral and maxillofacial surgeons and Endodontists. This also demonstrates how there is a dramatic access to care issue in our country, particularly when patients see an average of 6.2 previous clinicians for their problem prior to seeing an orofacial pain specialist.

Table 11. The estimated need for Orofacial Pain dentists nationally over the next 5 years based on health services rates of treatment need, current numbers of orofacial pain dentists, and patient load. (1-19)	
# of current FTE Orofacial Pain Specialists	250
Estimate the number of new cases that are treated by Orofacial Pain Dentists per year	1,000 (20 new patients per week)
Total Prevalence of TMD, Orofacial Pain, and Headache that need treatment per year based on epidemiological data (30% of population)	100 million
Prevalence of new cases of TMD, Orofacial Pain, and Headache that need treatment per year based on epidemiological data (3% of population)	10 million
Total cases that can be managed by the existing total of Orofacial Pain	250,000

Specialists	
Total cases that are left untreated per year without an orofacial pain specialist	9,750,000
Number of additional Orofacial Pain Specialists estimated to be needed over next 5 years (1000 new patients per year)	10,000
Number of Dentists in the U.S.	200,000
Number of Oral and Maxillofacial Surgeons in the U.S.	8,000
Number of Endodontists in the U.S.	4,500

We recognize that patients with orofacial pain disorders seek care with many types of health care professionals and in many cases successfully managed by physical therapists, physicians, health psychologists and others. However, as noted, these patients often wander from doctor to doctor in search for successful care because orofacial pain disorders have such a significant impact. For these reasons, we made several low estimates and assumptions in understanding the figures in this table;

1) Assumption 1 defines an Orofacial Pain dentist as one who either belongs to the AAOP, has more than 5 years of experience in the field, has passed the ABOP exam, and/ or has more than 50% of clinical practice is limited to patients with orofacial pain. There are an estimated 250 fulltime current Orofacial Pain dentists who meet this criteria. There are many more dentists who care for patients with orofacial pain disorders.

2) Assumption 2 defines the total cases treated per year by an Orofacial Pain dentist is that mean number of new cases that can be evaluated and treated by a full-time Orofacial Pain dentist in a year. This is estimated at 1000 per year based on a survey of both AAOP members in full-time (100%) practices. The figure is the number of new patients per month cited by the busiest 10th percentile of these clinicians.

3) Assumption 3 defines the total number of cases that need treatment per year by an Orofacial Pain dentist is about 3% of the population. This is estimated to be a minimum of 10 million people in our country. The prevalence of any type of orofacial pain is estimated at 30% to 40% of population and includes both those with existing pain and/or dysfunction and new cases of orofacial pain disorder. However, the number of case of severe orofacial pain who seek care is estimated to be 10% of that or a minimum 3% of the population or 10 million people. The reliability of the point prevalence is estimated to be with 95% confidence with both United States and European studies providing prevalence estimates. The point prevalence was chosen over annual incidence to determine demand for treatment because orofacial pain disorders will fluctuate in severity and both current and new cases can become severe during in given period, thus, requiring care.

4) Assumption 4 is the total cases that are treated per year by an Orofacial Pain dentist. This is calculated by the total number of cases that are being treated per year by an Orofacial Pain dentist multiplied by the number of Orofacial Pain dentists nationally. This is estimated to be 250,000 cases.

5) Assumption 5 is the total cases that are left without an Orofacial Pain dentist to manage their care and is the difference between the total number of cases that need treatment per year by an Orofacial Pain dentist and the total number of cases that are being treated by an Orofacial Pain dentist. This is estimated at 9,750,000.

6) Assumption 6 defines the total number of new Orofacial Pain dentists needed per year as the number of untreated cases per year divided by the 1000 new cases that can be treated per year by each dentist subtracting the current number of clinicians. The fact that 10,000 new orofacial pain dentists are needed to meet the minimal need is close to equivalent to the number of Oral and Maxillofacial Surgeons that are practicing currently and twice as many as endodontists who are practicing. This suggests that Orofacial Pain has much potential to grow dramatically to meet the access to care needs of our population and a great opportunity for the profession of Dentistry to grow.

h. Other Information.

There are other considerations when reviewing the adequacy of orofacial pain dentist in the United States. Here is additional information that demonstrates compliance with this requirement. Among pain conditions, orofacial pain and associated disorders are one of the most common and potentially complex disorders with a collective prevalence studies that range from 30% to 40% of the population.(1-20) Orofacial disorders include

temporomandibular disorders, orofacial pain disorders, headache disorders, dental sleep disorders, neurosensory and chemosensory disorders, bruxism, oromotor disorders and many others. Because oral and facial structures have close associations with functions of eating, communication, sight, and hearing as well as form the basis for appearance, self-esteem and personal expression, persistent pain or disease in this area can deeply affect an individual both psychologically and systemically. Furthermore, the higher degree of sensory innervation in the face and mouth compared to other area of the body can cause more complex and persistent pain conditions. A national poll found more adults miss work from head and face pain than any other site of pain. There are additional considerations also.

Ethical Considerations in Access to Care for Orofacial Pain.

Unfortunately, access to quality evidence-based care for patients with these disorders is often difficult because the limited number of dentists who focus their practices in this area, and the lack of understanding of the complex nature of these problems by most physicians and dentists. As a result, patients with these conditions are often confused and frustrated when seeking care from health care professionals. They are at risk of receiving inconsistent, trial and error, or inappropriate care including extensive dental work, dependency on opioid medications, multiple surgeries and other treatments that may not be beneficial and in some cases, may increase risk of adverse events and addiction. Each of these problems have created a problem of low access to evidence-based care, doctor shopping, the opioid crisis, and high cost of chronic pain.

The Opioid Crisis.

The ADA Statement on the Use of Opioids in the Treatment of Dental Pain (2016) highlights the importance of Dental profession to recognize their important role in preventing opioid addiction by judicious use of non-opioid analgesics and preventing chronic pain. One study found that adolescents exposed to opioids have a 33 percent higher risk of abusing prescription painkillers later in life, particularly when they have a pain condition. Dentists in particular have an increased responsibility to curb this pipeline of addictive drugs because they prescribe more opioids to teenagers than any other healthcare provider. It's estimated more than 2 million Americans abuse prescription drugs. From 2001 to 2011, the number of people seeking treatment for prescription painkillers increased five times because of pain from pain disorders including orofacial disorders. Deaths from opioid overdoses are at a level right now reaching proportions. The latest numbers from the NIH show 1 in 8 high schoolers report using prescription opioid painkillers recreationally. The majority of these kids get their pills from friends and family, which is hardly surprising considering a 2016 study found nearly 100 million prescribed painkillers go unused after wisdom tooth extractions. Since 1999, sales of opioids have nearly quadrupled and there have been as many opioid prescriptions as citizens in the U.S.

High Cost of Chronic Pain.

A study published online last month in *Pain Practice* found that pain conditions including head, neck, and orofacial pain costs \$31,692 per patient per year and this increased by 29% in the 2nd year of the study.⁽⁷⁾ The researchers examined medical records and claims from 12,165 patients at the Henry Ford Health Care System to assess the overall cost and demand for resources triggered by 24 different chronic pain conditions including headache, TMD, and orofacial pain during calendar year 2010. Except for pharmacy visits, the most used resource were outpatient visits, at a mean 18.8 visits per patient. Of these 59% represented specialty consultations. Chronic pain complaints resulted in a mean of 5.2 discrete imaging tests per patient. Almost 39% of patients were prescribed opioid medication for their condition. Pain conditions including arthritis, back pain, headache, and neck pain were associated with the highest overall costs. Another study of the Trillium health plan in Oregon evaluated the cost of member's health care costs without a pain condition was \$245 per member per month (PMPM) or \$2,940 per year while the cost of members with members with pain conditions is more than 4 times this at \$1,023 PMPM or \$12,276 per year.⁸ Both studies support the need for comprehensive integrated care programs that include self-management training with treatment to improve patient outcomes and lower the long-term costs for chronic pain patients. Orofacial care dentists are trained in transformative care.

The Problem of Limited Reimbursement.

The plight of the patient with orofacial pain disorders in seeking health care is profound due to lack of access

and reimbursement of care for these problems. If initial efforts to manage pain fail by inexperienced clinicians with trial and error treatments, care may escalate to higher cost, higher risk passive interventions such as on-going opioid analgesics, polypharmacy, implantable devices, injections, extensive dental reconstruction, and multiple surgeries. Unfortunately, access to care for patients with orofacial disorders is often difficult because the care for these conditions lies between dentistry and medicine, thus, creating confusion in covering in helping these patients. Most orofacial pain dentists are out of network from medical health plans and dental plans do not cover care because of the medical nature of these problems. This lack of recognition limits the number of dentists who specialize in this area and establish clinical practices to care for these patients. Furthermore, the lack of awareness of this specialty among both consumers and health professionals also limits referrals. Yet, the lack of practical training in these disorders within both medical and dental primary care and specialty training programs motivate most health care providers to choose to refer these patients to a specialist. A survey of 405 health professionals found that 95% either do or would like to refer these patients to a specialist because of their complex nature.⁷

Lack of Specialty Recognition Drives More Chronic Pain and Addiction.

The lack of specialty recognition has led to low or no reimbursement for treatment of these disorders. This has led to patient frustration, anger, neglect of the problem, and in many cases, progression of the disorder. Epidemiological studies have revealed that temporomandibular disorders (TMD) often begin with jaw clicking and mild pain and can result in serious jaw locking, degenerative arthritis and constant, severe pain in the face, head and neck. Successful management of these disorders can usually be accomplished with conservative nonsurgical treatment such as medications, physical therapy, splints, and behavioral therapy. If treatment is neglected, denied, or inappropriate, the personal consequences can be tragic and the costs great. The pain may become entrenched in the patient's life with the development of severe pain, disability, difficulty eating and talking, and many behavioral and psychosocial problems characteristic of a chronic pain syndrome. A frustrating medical and dental picture results that may involve costly surgeries, diagnostic tests, complex pain programs, long-term medications, and an on-going dependency on the health care system. It is estimated by a Harris Poll that 156.9 million work days are lost due to head pain (7). In other studies, over 50% of head and face pain is related to temporomandibular disorders (6-20). Thus, the lack of successful resolution of these disorders can have serious consequences in patient suffering and economic impact to insurers and other businesses. Lack of insurance reimbursement for treatment is a major reason that patients postpone treatment.

Ethical Issues of Non-Evidence Based Care for Orofacial Pain Disorders.

Due to the lack of health plan coverage, there has also been a proliferation of expensive non-evidence-based strategies for their care marketed directly to the patient by dentists, physicians, and other clinicians to increase revenue.(121-123) This includes the following;

- 4) Use of long-term medical treatments that have questionable long-term efficacy including opioid analgesics and repeated interventions such as injections, nerve blocks, and manipulation.
- 5) Use of electronic surface EMG, jaw tracking and other untested diagnostic tests that have no evidence of reliability and validity for TMD and orofacial pain conditions have been promoted to increase revenue for the provider.
- 6) Dental splints used 24 hours per day 7 days per week or partial coverage splints that change the occlusion permanently and create malocclusions that requiring expensive orthodontics, prosthodontic dental care, or jaw surgery to correct the malocclusion and allow normal function again.

In contrast, orofacial pain dentists provide transformative rehabilitation care, which integrates patient self-management training with evidence-based rehabilitation treatments to prevent chronic pain and addiction while helping the health care system prevent the devastating escalation to chronic pain and addiction. Clinical trials and systematic reviews have shown that the long-term outcomes of patient-centered rehabilitation approaches such as splints, exercise, physical therapy, cognitive-behavioral training, mindfulness, and relaxation are excellent and able to prevent long-term chronic pain, addiction, and disability in nearly every patient.

Denying Health Plan Coverage for Patients with Orofacial Pain Conditions

Since legislation was passed in 1987 to clarify coverage of orofacial disorders, many health plans nationally provide reimbursement for services provided by physicians and dentists on an equal basis in evaluation and management of orofacial disorders. State regulations state that no policy or certificates of health, medical, hospitalization, or accident and sickness insurance regulated under state laws is required to specifically provides coverage for surgical and non-surgical treatment of orofacial disorders and that coverage shall be the same as that for treatment to any other similar condition in other parts of the body, and shall apply if the treatment is administered or prescribed by a physician, dentist or other health professional. However, the confusion regarding who is qualified to provide care for these conditions have added language to their health care policies that excluded coverage of specific orofacial disorders, out of network providers, or specific treatments such as splint. This often acts to exclude non-surgical treatment and cover only more expensive surgical treatment for these problems. Yet, most patients do not require surgery and are successfully treated with less costly conservative rehabilitation modalities such as self-management strategies, medication, intra-oral splints, physical therapy and behavioral therapy. In these situations, some patients sought care for surgery because of insurance coverage and not necessarily appropriateness. Most states have now responded to these discriminatory policies of insurance companies by issuing regulations that prohibits discrimination against patients with orofacial disorders. In most CMS regions, Medicare and Medicaid provides the same coverage for surgical and non-surgical treatment of orofacial disorders that it provides for treatment of any other joint, muscle or condition in the body or it is considered discriminatory against females since these conditions have a 4:1 prevalence in women or men (5). Discriminatory practices by health plans to deny coverage for orofacial pain conditions has been clearly stated by insurance regulators as both unethical or illegal in most states.

Health Plan Efforts to Improve Quality of Orofacial Care.

In the states that have embraced coverage of these conditions, health plans have had dramatic effect in helping prevent the staggering cost and suffering chronic pain and addiction, particularly for orofacial disorders by including orofacial pain dentists in their networks and reimbursing them for their services. National Government Services (NGS), who administers Medicare and Medicaid, and most health plans have made administrative decisions to cover treatment of orofacial disorders. These health plans recognize that when a patient is denied coverage for evidence-based treatment of orofacial disorders, they still are motivated to seek care and often bounce between many in-network providers who may not understand comprehensive successful management of these conditions. Some patients with denials have worked diligently to educate health plans to change policies and bring orofacial pain dentists into the network. These patients can complain to their health plan or NGS directly and indicated that they are discriminatory. They have first appealed to the health plan with a simple letter but then can escalate to write to their senator and congressional representative complaining about the recent change in your health plan. They also file complaints with the state or federal insurance regulatory agency using the following points to educate health plans that deny including orofacial pain dentists in their medical networks;

- Orofacial disorders occur in 30% to 40% of the population, affect mostly women, and cause facial pain, headaches, earaches, and difficulty in chewing and jaw function (5-19).
- Orofacial Pain Dentists are Dental Specialists who successfully treat these pain conditions, have advanced training in dentistry and medicine, and successfully manage these conditions using evidence-based treatments.
- State legislation throughout the country has determined that orofacial disorders are medical conditions and should covered under their medical plans regardless of whether the treatment was provided a physician or dentist.
- Some health plans are still denying access to care for these disorders to save money by excluding them in standard policies or recommending that companies not include them in self-insured policies. Discrimination against these patients only escalates chronic pain, addiction, and healthcare costs.
- Patients must remember that only they can change this policy of health plans trying to deny essential services.

Collaboration with other Health Care Professionals.

Access to health care and changing demographics are driving a new vision of the health care workforce. Dental curricula can change to develop a new type of dentist, providing opportunities early in their educational experiences to engage allied colleagues and other health care professionals. Enhancing the public's access to oral health care and the connection of oral health to general health form a nexus that links oral health care providers to colleagues in other health professions. Health care professionals educated to deliver patient-centered care as members of an interdisciplinary team present a challenge for educational programs. Patient care by all team members will emphasize evidence-based practice, quality improvement approaches, the application of technology and emerging information, and outcomes assessment. Dental education programs are to seek and take advantage of opportunities to educate dental school graduates who will assume new roles in safeguarding, promoting, and caring for the health care needs of the public.

Promoting Evidence-based Orofacial Pain Care.

Evidence-based dentistry (EBD) is an approach to oral health care that requires the judicious integration of systematic assessments of clinically relevant scientific evidence, relating to the patient's oral and medical condition and history, with the dentist's clinical expertise and the patient's treatment needs and preferences.¹ EBD uses thorough, unbiased systematic reviews and critical appraisal of the best available scientific evidence in combination with clinical and patient factors to make informed decisions about appropriate health care for specific clinical circumstances. Curricular content and learning experiences must incorporate the principles of evidence-based inquiry, and involve faculty who practice EBD and model critical appraisal for students during the process of patient care. As scholars, faculty contribute to the body of evidence supporting oral health care strategies by conducting research and guiding students in learning and practicing critical appraisal of research evidence.

Scientific Discovery and the Integration of Knowledge.

The interrelationship between the basic, behavioral, and clinical sciences is a conceptual cornerstone to clinical competence. Learning must occur in the context of real health care problems rather than within singular content-specific disciplines. Learning objectives that cut across traditional disciplines and correlate with the expected competencies of graduates enhance curriculum design. Beyond the acquisition of scientific knowledge at a particular point in time, the capacity to think scientifically and to apply the scientific method is critical if students are to analyze and solve oral health problems, understand research, and practice evidence-based dentistry.

State Boards of Dentistry Step up to Support Access to care

To help improve this problem of access to quality evidence-based care in their state, some State Dental Boards have initiated the following steps;

1. Support the recognition of the specialty of Orofacial Pain to encourage awareness that specialty trained and American Board of Orofacial Pain-certified specialists are available for those residents of the state who require care. Dental boards are helping ensure that orofacial pain patients have access to quality evidence-based care and are not subject to unethical care using TMD as a rationale to provide extensive prosthodontic occlusal reconstruction.
2. Dentists who want to advertise as an Orofacial Pain Specialist can do so if qualified as a specialist by the State Boards if they complete a 2-year advanced education training (or show the equivalency of this training), follow ethical guidelines in of care, and maintain board certification in the American Board of Orofacial Pain (ABOP). The ABOP is the only Orofacial Pain specialty board associated with CODA approved advanced education programs in Orofacial Pain and approved by the American Board of Dental Specialties. Recently, the ABOP has had to defend itself against litigation from other unqualified groups that promote unethical care in claiming to be specialists.
3. Improve the public's awareness of board-certified orofacial pain specialists in the state to provide care for these problems through public awareness and marketing programs. This will help the general public, physicians, dentists, and other health professionals know that successful evidence-based care is available and help prevent patients from "wandering" from doctor to doctor or undergoing unethical care before receiving successful care.

V. Requirement 5: A specialty must directly benefit some aspect of clinical patient care.

a. Principal Health Services. Identify the principal health services provided to the public by individuals in this area of practice.

Members of the American Academy of Orofacial Pain have developed and published consensus based diagnosis and treatment guidelines that have been widely accepted nationally and internationally by most dental organizations, insurance providers, and government agencies (Appendix III). The services outlined in these guidelines and provided by all Orofacial Pain practitioners include; 1) a complete head and neck examination,

- 2) imaging and laboratory technique and interpretation,
- 3) differential physical diagnosis of pain disorders,
- 4) behavioral and psychosocial assessment and diagnosis,
- 5) interdisciplinary treatment planning,
- 6) treatment procedures including;
 - b) craniofacial nerve blocks, joint injections, and Intramuscular injections,
 - c) physical medicine modalities, therapeutic exercises, and orthotics
 - d) cognitive-behavioral management strategies,
 - e) pharmacotherapies and chemical abuse management, and
 - f) coordinating interdisciplinary and multidisciplinary management strategies.

Because the demand for these services has been so high, state insurance regulators have had to clarify insurance coverage for treatment of orofacial pain disorders. These laws have used the guidelines to determine reimbursement of services and have mandated that the care be provided under the medical plans regardless of whether dentist or physician provided the care. This is distinctly different than any other dental specialty. The prevalence and loss of productivity and quality of life due to orofacial pain disorders in our country coupled with the advances by dentists to successfully manage these disorders will continue to increase demand for care in this field. Thus, recognition of Orofacial Pain by the ADA as a dental specialty will have a significant impact in serving the public.

A description of the services provided by Orofacial Pain dentists include;

1) Orofacial, head, neck examination Complete musculoskeletal examination, salivary gland and lymph node examination, biochemical and cytological testing, joint function evaluation, cranial nerve function assessment, and a dental evaluation including probing, percussion, vitality testing, transillumination, occlusal assessment, and periodontal probing as indicated. Some of the techniques employed include digital palpation, auscultation, pinwheel and other sensory differentials, fundoscopic exam, and motor and strength testing.

2) Imaging and laboratory technique and interpretation. Determining the indication and interpretation of imaging and laboratory data including CT, MRI, tomography, plane film, arthrography, bone scans, EMG, functional studies, blood studies, urine studies, liver function studies, and other diagnostic tests. A close alliance exists between the radiologist, pathologists, and orofacial pain dentist.

3) Differential physical diagnosis of pain disorders. The diagnostic range of disorders includes hundreds of orofacial pain disorders such as masticatory and cervical neuromuscular pain disorders, primary headache disorders, pain from complex temporomandibular joint disorders, neurovascular pain disorders, neuropathic pain disorders, chronic regional pain syndrome, orofacial cancer and AIDS pain, orofacial sleep disorders and other chronic orofacial pain disorders of orofacial structures. In order to reach correct diagnostic conclusions, the orofacial pain dentist must be able to interpret clinical symptoms, histories, examination findings and certain diagnostic tests such as blood chemistries, liver functions, therapeutic drug levels particularly with polypharmacotherapy, histopathology, and imaging. This data is synthesized as part of the differential diagnostic process in ruling out all possible disorders to arrive at the correct diagnoses.

4) Behavioral and Psychosocial Assessment and Diagnoses. The Orofacial Pain dentist must complete a standard personal history, psychosocial history, behavioral problem review and contributing factor assessment as part of all evaluations. The contribution of behavioral and psychosocial components to multiple pain complaints needs to be determined and, if necessary, the interaction and coordination of treatment with a Health Psychology pain specialists is accomplished. The Orofacial Pain dentist must also have the knowledge of which psychometric tests are appropriate for each case and be able to understand the interpretations of the test results provided by the Health Psychologist.

5) Treatment planning. As an Orofacial Pain dentist, the responsibilities of treatment planning include defining a well-defined course of treatment that may involve multiple treatments and specialties such as Physical Medicine and Rehabilitation, Health Psychology, and Neurology. The Orofacial Pain dentist serves as team leader and be responsible for coordinating care, monitoring compliance, adjusting the treatment plan as new data is collected, and conducting treatment progress meetings with the patient and team members. Objective outcome data collection during and after treatment is an integral part of this process.

6) Treatment procedures. The Orofacial Pain dentist is responsible for understanding the indications, contraindications, precautions, and techniques of implementing diagnostic and treatment including;

- a) Muscle relaxants for muscular disorders

- b) Sedative agents for chronic pain and sleep management

- c) Opioids for chronic orofacial pain

- d) Tricyclics and SSRIs for chronic pain

- e) Anticonvulsants and membrane stabilizers for neuropathic pain

- f) Analgesics and anti-inflammatories for chronic orofacial pain

- g) Vaso-active analgesics for neurovascular pain and primary headache disorders

- h) Chemical dependency issues for chronic orofacial pain disorders

- i) Treatment of rebound pain and medication side effects

- j) Diagnostic and therapeutic injections including trigger point injections, intramuscular injections for dystonias, sympathetic nerve blocks for orofacial region, trigeminal nerve blocks, and joint injections

- k) Neurosensory stents for neuropathic pain

- l) Physical medicine procedures including therapeutic exercise, cryotherapy, heat and hot packs, ultrasound, phonophoresis, soft tissue massage, joint and muscle mobilization, electric stimulation, and postural awareness training

- m) Stabilization, anterior positioning and other intra-oral orthotics

- n) Intra-oral appliances for breathing related sleep disorders

- o) Cognitive-behavioral therapies including habit reversal for oral habits, sleep problems, muscle tension habits and other behavioral factors, biofeedback/stress management, hypnosis for pain relief and behavioral changes, and treatment of secondary gain and chronic pain behavior, and compliance assurance and monitoring

b. Practice Setting

Identify the setting in which these services are customarily provided, e.g., private office, hospital, laboratory, institutional setting, community health setting, etc.

According to the past surveys of AAOP members, the clinical settings for practitioners are;

- Private Dental Office - 75%
- Hospital - 14%
- Dental School - 28%
- managed care clinic- 4%
- Other/state/ federal institutional setting - 7%.
- Note: many clinicians have multiple settings, thus, adding up to more than 100%.

Many Orofacial Pain dentists also have hospital privileges in addition to their primary practice setting. This

survey shows that 41% currently have university or hospital privileges. Orofacial Pain dentists remain readily available on a consultation basis to both private hospitals, dental and medical professionals in the area.

c. Other Information. None

Requirement 6: Formal advanced education programs of at least two years accredited by the Commission on Dental Accreditation must exist to provide the special knowledge and skills required for practice of the proposed specialty.

a. Operational Advanced Education Programs.

List all currently operational advanced education programs in the proposed specialty, indicating:

- (1) the name of the sponsoring institution;
- (2) the name and educational background of the program director;
- (3) the mandatory length of the program for full-time students; (Refer to Standard 4 of CODA’s *Standards for Advanced Specialty Education Programs*);
- (4) the certificate and/or degree awarded upon completion of the program. Enclose a letter from each institution's chief executive officer verifying sponsorship of the program. All information provided should pertain to the most recent academic year for which statistics are available. This timeframe should be identified. Do not include continuing education courses in this listing.

Table 12 list all of the advanced education programs in Orofacial Pain and a summary of the above required information. The total first year enrollments in all programs beginning the program in July of 2018 is 53. The number of graduates in the past five years (2013-8) has been 155. Letters from the Deans of each of the programs have been included. In addition to the clinically based specialty programs, there are 3 Ph.D. programs in neuroscience and orofacial pain (the University of New York at Buffalo, the University of Minnesota, and UCLA) that are concurrent with Orofacial Pain clinical certificate programs. These programs have support from the National Institute of Dental Research through the Dentist- Scientist program. The curriculums of these Orofacial Pain advanced education programs as presented in Appendix VII are consistent with that defined by the Commission of Dental Accreditation's Standards for Advanced Specialty Education Programs. In addition, the curriculums are consistent with standards recognized by the American Board of Orofacial Pain, the American Academy of Orofacial Pain, and the American Association of Dental Schools(10-12).

The operational standards are defined in Standards for Advances Specialty Education Programs in Orofacial Pain in Appendix IIa as adopted by the AAOP in 1994 and revised several times since then. An accreditation process to guide the revision and development of new post-doctoral programs in the field has been established by the AAOP. To date, the “accreditation” site visit process has been university based utilizing the Advanced Education in Orofacial Pain Self Study Accreditation Document. The UCLA, Kentucky, and Minnesota program accreditation site visit document as an example is available upon request. A survey was conducted of all educational programs in Orofacial Pain that are University Based to determine the enrollment, characteristics, and other relevant of information.

Table 12. Information on advanced Orofacial Pain programs that are a minimum of 2 years								
School	CODA Accred.	# of residents / year	Length (years)	Certificate / Degree	Financial	Program Director	Contact Information	Website
Eastman Institute for Oral Health	Yes	3	3	Certificate	Tuition	Dr. Junad Kahn	Mounia Demdam 585-275-8315	https://www.urmc.rochester.edu/dentistry/education/tmj.aspx
University of Kentucky	Yes	2	3	Certificate or Master of Science	Tuition or Stipend	Dr. Jeffrey Okeson	Rosemary Grayson	https://dentistry.uky.edu/orofacial-pain

							859-323-5500	
Massachusetts General Hospital	Yes	3	2	Certificate	Stipend	Dr. Jeffry Shaefer	Jared Katz jkatz11@mg h.harvard.edu 617-726-8222	http://www.massgeneral.org/omfs/education/residency.aspx?id=80&display=overview
University of Michigan–Michigan Medicine	Yes	1	2	Certificate	Stipend	Dr. Lawrence Ashman	Carolyn Campbell 734-232-6048	https://medicine.umich.edu/dept/surgery/surgical-specialties/oral-maxillofacial-surgery-hospital-dentistry/training/orofacial-pain-residency
University of Minnesota	Yes	2	2	Certificate or Master of Science	Stipend	Dr. Shanti Kaimal	Dr. Shanti Kaimal 612-625-3984 kaima001@umn.edu	https://www.dentistry.umn.edu/degrees-programs/advanced-education-programs/orofacial-pain
Naval Postgraduate Dental School	Yes	2 *Limited to Federal Service Dentists	3	Certificate with Master of Science	Stipend	Dr. Steve Hargitai	Dr. Steve Hargitai Istvan.a.hargitai.mil@mail.mil	http://www.wrnmccapmed.mil/ResearchEducation/NPDS/SitePages/OrofacialPain.aspx
University of North Carolina	Yes	1	2	Certificate	Stipend depending on funding	Dr. Pei Feng Lim	Dr. Pei Feng Lim PeiFeng_Lim@unc.edu	https://www.dentistry.unc.edu/academicprograms/ade/orofacialpain/
Rutgers School of Dental Medicine	Yes	4 Master 4 Advanced Education in Orofacial Pain	3 1	Master of Dental Science	Tuition	Dr. Gary Heir	Dr. Gary Heir Heirgm@sdm.rutgers.edu	http://sdm.rutgers.edu/students/prospectiv e/postdoctoral/other/orofacial_faculty/g_heir.html
SUNY Buffalo	Yes	2	3-Feb	Certificate or Master of Science	Tuition	Dr. Yoly Gonzalez-Stucker	Dr. Yoly Gonzalez-Stucker ymg@buffalo.edu	http://dental.buffalo.edu/education/advanced-education/tmd---orofacial-pain-program.html

Tufts U. School of Dental Medicine	Yes	2	3-Feb	Certificate or Master of Science	Tuition	Dr. Chao Lu	Dr. Chao Lu Chao.Lu@tufts.edu	https://dental.tufts.edu/academics/graduate-programs/advanced-education-orofacial-pain
UCLA	Yes	3/yr (2 domestic 1 internat)	3-Jan	Certificate, Master, PhD	Tuition or Stipend	Dr. Robert Merrill	Louis Gutierrez 310-825-7478 postdds@dentistry.ucla.edu	https://www.dentistry.ucla.edu/learning/orofacial-pain-dysfunction-0
USC	Yes	2	2+	Certificate, Master, PhD	Stipend	Dr. Glenn Clark	Dr. Glenn Clark 213-821-5831 ofpom@usc.edu	https://dentistry.usc.edu/programs/certificate/orofacial-pain/
USC-Hybrid/ On-line	No	20 /yr	3	Master of Science	Tuition	Dr. Glenn Clark	Dr. Glenn Clark 213-821-5831	http://ofpom.usc.edu

b. Adequacy of Enrollment

1) Indicate the number of dentists currently in practice who have received two or more years of formal advanced education in the specialty (not including continuing education).

Formal education of two or more years in orofacial pain has been available for more than twenty years at various dental schools around the country. This has provided the field with at least 95 dentists who have been formally trained, completed and graduated from their programs, and focus their careers in this field. **Table 13** presents the results from the national survey of Orofacial Pain Dentists (Appendix III).

Table 13. Data regarding the number of members in the AAOP survey who have completed advanced graduate education. (Note: some answered with multiple responses (% of total members responding n= 117))		
Type of Training Program	N=117	Percent
Continuing Ed.	23	20%
Fulltime 2-3 yr	95	80%
Formal M.S.	15	13%
Formal Ph.D.	4	3%

2) For each of the past five years list the number of advanced education programs of two years or more in length in operation in the proposed specialty.

A survey was conducted of all educational programs in Orofacial Pain that are University Based to determine the enrollment, characteristics, and other relevant of information (Appendix VII). **Table 13** present a summary of some of this information.

Table 13. A summary of information on enrollment in advanced Orofacial Pain programs for 2013-2018. 158 students have graduated from these programs in the past five years.									
School	CODA Accred.	# of residents / year	2013	2014	2015	2016	2017	2018	

Eastman Institute for Oral Health	Yes	3	3	3	3	3	3	3
University of Kentucky	Yes	2	2	2	2	2	2	2
Massachusetts General Hospital	Yes	3	3	3	3	3	3	3
University of Michigan–Michigan Medicine	Yes	1	1	1	1	1	1	1
University of Minnesota	Yes	2	2	2	2	2	2	2
Naval Postgraduate Dental School (*Limited to Federal Service Dentists)	Yes	2	2	2	2	2	2	2
University of North Carolina	Yes	1	1	1	1	1	1	1
Rutgers School of Dental Medicine	Yes	4 Masters 4 Advanced Education in Orofacial Pain	8	8	8	8	9	8
SUNY Buffalo	Yes	2	2	2	2	2	2	2
Tufts U. School of Dental Medicine	Yes	2	2	2	2	2	2	2
UCLA (2 domestic and 1 international)	Yes	3	3	3	3	3	3	3
University of Southern California (residency)	Yes	2	2	2	2	2	2	2
University of Southern California (Hybrid/Online)	No	20	8	15	20	20	20	20
Total Students in MS and PhD		53	45	48	53	53	53	53

3) Describe and assess the adequacy of the projected enrollment in these programs to meet the projected needs in the field over the next five years.

Table 15 illustrates the numbers of additional specialists that are needed in the field nationally and compares them to the number of specialist that will graduate from a graduate program in the next year and 5 years. Using the assumptions from **Table 11**, it estimates that the United States will require close to 10,000 new Orofacial Pain Dentists to meet the minimal access to care demands. This is about the same numbers of Oral and Maxillofacial Surgeons in the country in clinical practice. Since only 110 current specialists will be trained in Advanced Education Programs in next five years, there is a major inadequacy in meeting the access to care needs. We need another scenario to come close to meeting the need and demand for services.

Given that the vast majority of dentists and physicians currently admit to be poorly trained to manage orofacial pain patients and prefer to refer these patients to an Orofacial Pain dentist (91%), we need to improve the training of all dentists and physicians. If the majority of these patients (75%) are treated by existing dentists and physicians, we could decrease this need to about 2,500 more Orofacial Pain dentists to be trained in the next five years to meet the minimal needs of the population with orofacial pain. it is clear that the patients will not have adequate access to an Orofacial Pain dentist.

However, to accomplish this, much more effort is necessary to increase enrollment in advanced education programs in existing specialties and expand teaching of Orofacial Pain to general dentistry within Schools of Dentistry in our country. With this estimate, there will still be an enrollment shortfall of at least 2,390 specialists over the next five years (**Table 15**). Granting specialty status is just only a beginning to meet the public’s access to care needs. Schools of Dentistry must also embrace this field by expanding the number of advanced education programs and training of these specialists in orofacial pain. If an advanced education program is developed in 50 dental schools with 4 residents per program, we would come close to meeting this need in 10 years by producing 2,000 additional specialists. This is the goal that the profession of Dentistry could

realistically strive for. However, the limiting factor is to find faculty to teach in dental schools nationally. Another option is to create fellowships within Orofacial Pain specialty practices to teach clinical skills and knowledge of Orofacial Pain to interested general dentists. The didactic knowledge can be acquired with the many continuing education course available across the nation to allow these dentists to meet the qualifications to take the national speciality board of American Board of Orofacial Pain.

Table 15. Comparison of the numbers of additional Orofacial Pain dentists that are needed in the field nationally to the number of specialists that will complete a graduate program in the next year and 5 years.				
	# Orofacial Pain specialist needed	# graduating this year	# specialist graduating over 5 years	Shortage of specialists
Nationally	2,500	22	110	-2,390

c. Minimum Curricular Requirements.

Provide a description of the minimum biomedical, behavioral, and clinical science requirements for advanced education programs in the specialty. These curricular requirements must provide the advanced knowledge and skills required for the specialty as identified in Requirements 2 and 3 of this application.

Minimum curricular requirements are provided in The Standards for Advanced Specialty Education Programs in Orofacial Pain (Appendix IIa). The American Academy of Orofacial Pain began certifying the curricula of advanced education programs in Orofacial in 1994. The certification process consists of a self-study assessment evaluation (Appendix IIb) and a site visit by at least two members of the Board as with recognized specialty programs. The AAOP survey of graduate programs has shown that all of the programs currently meet this core curriculum. The advanced dental specialty program in Orofacial Pain is designed to provide special knowledge and skills beyond the D.D.S. or D.M.D. training and is oriented to the accepted standards of specialty practice as set forth in specific requirements contained in the standards document. The recommended curriculum guidelines for Orofacial Pain in university graduate programs for dentists, are intended to provide a broad-based learning experience in a program that requires a minimum of two years to complete. These programs may be constructed in a post-doctoral or residency format. The core didactic portion must include both basic science and clinical science topics to provide overall coverage of knowledge in orofacial pain. Supplementary topics should be added to meet the specific goals of the candidate and fit within the framework of the overall orofacial pain program.

The clinical portion must include major clinical experiences in primary patient care, pharmacotherapeutics, physical medicine, chronic pain team management and behavioral medicine, and management of the medically compromised patients, and minor clinical experience in imaging, management of the TMJ surgery patient, and inpatient pain management, and oral medicine as it relates to pain. Supplementary clinical participation experience in hospital-based patient care should be arranged through individual departments or divisions such as rheumatology, neurology, psychiatry, orthopedics, anesthesiology, physical medicine, physical rehabilitation, and otolaryngology. Participation in ongoing research is encouraged to expose the trainees to the critical thinking and laboratory and experimental skills that are fundamental to exploring new ideas and the development of new areas of knowledge. A thesis is only required in articulated degree programs. Minimum core curriculum for Orofacial Pain postgraduate training programs is only in summary outline form here. For more detail of the curriculum, please refer to the Standards for Advanced Specialty Education Programs in Orofacial Pain (Appendix II).

The levels of Knowledge are defined as: 1. In-depth - a thorough knowledge of concepts and theories for the purpose of critical analysis and the synthesis of more complete understanding (the highest level of knowledge). 2. Understanding - a thorough or technical knowledge with the ability to apply; characteristic of specialization. 3. Familiarity - a simplified knowledge for the purpose of orientation and recognition of general principles.

Levels of Skill are defined as:

1. Proficient - the level of skill attained when a particular activity is accomplished with repeated quality and a more efficient utilization of time (the highest level of skill).
2. Competent - the level of skill displaying special skill or knowledge derived from training and experience.
3. Exposed - the level of skill attained by observation of, or participation in a particular activity. The minimum curriculum content areas include the following Minimum core curriculum for Orofacial Pain postgraduate training programs.

The bodies of knowledge and unique skills that define the practice of Orofacial Pain include those listed in standard 4 - curriculum and program duration of The Accreditation Standards of The Orofacial Pain The advanced dental specialty program **must** be designed to provide special knowledge and skills beyond the D.D.S. or D.M.D. training and be oriented to the accepted standards of specialty practice as set forth in specific requirements contained in this document. The level of specialty area instruction in the graduate and postgraduate programs **must** be comparable. Documentation of all program activities **must** be assured by the program director and available for review. If an institution and/or program enrolls part-time students, the institution **must** have guidelines regarding enrollment of part-time students.

Part-time students **must** start and complete the program within a single institution, except when the program is discontinued. The director of an accredited program who enrolls students on a part-time basis **must** assure that: (1) the educational experiences, including the clinical experiences and responsibilities, are the same as acquired by full-time students; and (2) there are an equivalent number of months spent in the program.

4-1. Program Duration: Advanced specialty education programs in Orofacial Pain **must** be a minimum of 24 months of full-time study. Articulation with a graduate program leading to a master's degree with a thesis is likely to require an extension period for completion, and as required by the institution for a doctoral degree.

4-2. A minimum of 50% of the total program time **must** be devoted to providing chronic orofacial pain patient services, including direct patient care, clinical rotations and reporting services.

4-3 Students **must** actively participate in the collection of history and clinical data, diagnostic assessment, treatment planning, treatment, and presentation of treatment outcome. 4-3.1. Each student should have about 200 patients assigned to them over the training period.

4-4. The program should include organized teaching experience in orofacial pain, carefully evaluated in relation to the goals and objectives of the overall program and the interests of the individual student.

4-5 Research experience of a publishable topic should be included that enhances the students' ability to interpret and critically analyze scientific literature. A thesis should only be required if the program is articulated with an advanced degree program, at the discretion of the degree program.

4-6 The overall goals and objectives for advanced education programs in Orofacial Pain **must** be defined developed by each Orofacial Pain program, including: 4-6.1 written goals and objective must be developed for all instruction included in this curriculum, 4-6.2 content outlines must be developed for all didactic portions of the program, 4-6.2.1 This must include a strong foundation in basic and applied pain science as a prerequisite for clinical decision making. 4-6.3 students must become proficient in preparing and presenting diagnostic data, treatment plans, providing treatment, and presenting the results of treatment for chronic orofacial pain, and associated head and neck pain patients, including their functional rehabilitation. This should be conducted according to the standards of care expected in Dentistry and Medicine in chronic pain treatment, 4-6.4 experience in interdisciplinary and multidisciplinary models of care.

BIOMEDICAL SCIENCES

4-7 Formal instruction **must** be provided at the **in-depth** * level in each of the following: * **in-depth** - A thorough knowledge of concepts and theories for the purpose of critical analysis and the synthesis of more complete understanding. a. Gross and functional anatomy including the musculoskeletal and articular systems of the orofacial, head, cervical and upper quarter structures, with assessment of common dysfunction and pathophysiological effects. b. Functional neuroanatomy of the brain, cervical nerves, and cervical system with a particular emphasis on pain and common pathophysiological effects. c. Reading of current pain science and applied pain literature in dental and medical science journals with special emphasis on pain mechanisms, orofacial pain, head and neck pain, and headache.

4-8 Formal instruction at the **understanding** level **must** be in each of the following areas: Adequate knowledge with the ability to apply. a. Growth, development, and aging of the masticatory system. b. Muscle, joint, bone, oral mucosal and other soft tissue pathophysiology and common pathology, with emphasis to pain. c. Applied rheumatology with emphasis on TM normal and abnormal joint histology, synovial fluid assays, systemic arthritis affects and serological tests. d. Basic clinical laboratory medicine interpretation. e. Sleep physiology and dysfunction: f. Oromotor disorders including dystonias, dyskinesias, and bruxism. g. Jaw movement kinesiology h. Epidemiology of chronic orofacial pain disorders and it's public health significance. i. Pharmacology and pharmacotherapeutics j. Principals of biostatistics, research design and methodology, scientific writing, and critique of literature.

BEHAVIORAL SCIENCES

4-9 Formal instruction at the **in-depth** level **must** be provided in behavioral science, with exposure to psychiatric assessment, as they relate to chronic orofacial pain and chronic pain behavior including: a. predisposing, initiating, perpetuating or resultant factors. b. study of character disorders and profiles impacting pain behavior, c. exposure to psychiatric disorders including somatization, factitious pain, and others d. conducting and applying the results of psychometric tests including standard psychology, pain, risk assessments, (e.g. Sleep Tests, Pain assessments, Risk Assessments, Oral Habit Index, SF-36, Diagnostic Criteria for TMD) instruments, and exposure to psychophysiologic tests.

PAIN SCIENCES

4-10 The program **must** provide a strong foundation of basic and applied pain sciences to develop knowledge at the **in-depth** level in the neuroanatomy and neurophysiology of pain through study of:

- 4-10.1 Neurobiology of pain transmission and pain mechanisms a. nociception, conduction, neurotransmitters and receptor biology in acute and chronic pain conditions and conditions of neuronal injury. b. the heterogeneity of the peripheral nervous system and relationship to the second order neuron transmission in normal function and chronic pain. c. thalamic and cortical projections, and interaction with the reticular and limbic systems (Biopsychophysiologic models) d. pain facilitatory and inhibitory pathways and systems.
- 4-10.2 Changes associated with chronic pain a. the neurophysiologic changes in chronic pain; differentiation of chronic pain from acute pain, in terms of neurotransmitters and receptors; and long term or permanent change because of neuronal plasticity. (See Appendix for additional chronic pain terminology and concepts).
- 4-10.3 Pharmacotherapeutic principles related to sites of neuronal receptor specific action in chronic pain.
- 4-10.4 Organization of the trigeminal and cervical nervous systems a. the nuclear and subnuclear organization of the trigeminal brainstem complex, and relation to orofacial pain. b. the organization of the CNS dorsal horn and the trigeminal nucleus analogue, in normal function versus chronic pain and neuropathic change, c. cervicogenic pain and headache, and interactions between trigeminal and cervical CNS segments.
- 4-10.5 Chronic pain classification systems.
- 4-10.6 Psychoneuroimmunology and its relation to chronic pain syndromes.
- 4-10.7 Primary and secondary headache mechanisms.
- 4-10.8 Tooth site pain of odontogenic and non-odontogenic origin.
- 4-10.9 the influence of hormonal cycling on pain threshold and neurovascular pain.
- 4-10.10 the scientific basis of acupuncture, and stimulation produced analgesia.
- 4-10.11 the contribution and interpretation of orofacial structural variation (occlusal and skeletal) to orofacial pain, headache, and dysfunction.

CLINICAL PROGRAM 4-11 The educational program **must** provide in-depth instruction and clinical training to the level of **proficiency** for the clinical assessment and diagnosis of complex orofacial pain disorders. This includes:

- a. Conducting a comprehensive pain history interview.
- b. Collect, organize, analyze and interpret data from medical, dental, behavioral, and psychosocial histories and clinical evaluation to determine their relationship to the patient's chronic orofacial pain complaints.

c. Performing clinical examinations and tests, and interpreting the significance of the data; i) Clinical evaluation may include but is not limited to: 1) musculoskeletal examination of the head, jaw, neck and shoulders, 2) jaw movement studies; 3) general evaluation of the cervical spine; and 4) TM joint function; 5) odontologic screening; 6) cranial nerve screening; 7) testing major reflexes; 8) examination of structural variation including facial-skeletal, and dental-occlusal; 9) oral and dental hard and soft tissues; 10) posture evaluation; 11) general joint mobility or laxity; 12) general presentation, gait, and demeanor; 13) signs of tension habits, 14) physical assessment including vital signs. ii) Chairside clinical tests may include but are not limited to: 1) neurosensory testing, 2) neurosensory, articular and myofascial diagnostic blockade, 3) jaw, muscle and tooth loading and provocation tests; 4) pulp testing; 5) joint and muscle palpation; 6) spray and stretch responses; 7) mandibular position maneuvers; 8) challenges to pain abortive medications; as appropriate.

d) Order or refer for additional tests including but not limited to: 1) plane film or advanced imaging of the orofacial, mandibular and cervical structures; 2) order or refer for brain imaging; 3) psychometric testing, 4) referral for psychological or psychiatric evaluation; 5) laboratory medicine tests; 6) diagnostic autonomic nervous system blocks, and systemic anesthetic challenges; 7) pain from dental soft tissue oral disease; 8) additional consultations and screenings; and interpreting the significance of the data.

e) Establish a multidimensional differential diagnosis and an ordered (prioritized) problem list, using published guidelines based on inclusion criteria for the following categories of chronic orofacial pain disorders: 1) neuropathic orofacial pain disorders, 2) neurovascular pain disorders; 3) associated primary headache disorders; 4) chronic regional pain syndromes (I, II, III); 5) complex masticatory and cervical neuromuscular and musculoskeletal disorders; 6) local and systemic rheumatologic diseases and injury affecting the temporomandibular joints, and associated structural problems; 7) pain from chronic temporomandibular disorders, 8) pain secondary to orofacial cancer and AIDS; 9) orofacial dyskinesias and dystonias, 10) orofacial sleep disorders, 11) other disorders causing persistent pain and dysfunction of the orofacial structures.

f) Screen for diagnosis, triage, or obtain appropriate consultation for other medical and dental disorders that could be responsible for chronic orofacial and head and neck pain, including pain from: 1. intracranial disorders including aneurysm, sentinel headache, exertion headache, cerebral vascular anomaly or constriction, transient ischemic attacks, neoplasia, edema, intracranial pressure, abscesses and hematomas, and other secondary headaches, 2. symptomatic trigeminal neuralgia (intra or extracranial pathologic), acoustic neuroma, and MS, 3. CNS infections: including bacterial meningitis, 4. associated unexplained sensory or motor loss or change, 5. complex migraine, 6. otolaryngological disease involving the ears , including sensory loss, middle, and inner ear (equilibrium and dizziness problems) , nose, throat, salivary glands, oropharynx, larynx, sinuses, mastoid process, stylohyoid, palate, and related structures, 7. ophthalmologic disease involving the eye and surrounding structures, including ruling out papilledema and glaucoma, when appropriate, 8. cervical and upper quarter joints and facets, vertebral artery compression, thoracic outlet syndrome, brachial plexus compression, or other upper extremity nerve conduction problems, 9. contribution from behavioral or psychiatric disorders requiring medical treatment, 10. chemical dependency disorders, 11. intractable headache requiring an in-patient pain protocol, 12. intractable multidimensional chronic pain requiring a comprehensive multidisciplinary in-patient pain program, 13. When appropriate, screenings should be requested for medical and psychological problems that contraindicate proposed chronic pain treatment, or certain pain medications, or that require co-treatment, or pre-treatment.

4-12 The educational program **must** provide in-depth instruction and clinical training to the level of **proficiency** in skills for multi-modality interdisciplinary or multidisciplinary pain management for the chronic orofacial pain disorder patient. This includes but is not limited to the following experience: 4-12.1 Treatment planning including:

- a. making an assessment of each problem on the diagnostic problem list,
- b. construction of a written sequential treatment plan, after presentation to a multidisciplinary forum as needed, incorporating coordinated behavioral, medical and dental interdisciplinary care as appropriate, and re-evaluation after segments of treatment,
- c. emphasis of reversible or less invasive therapies in the early phases of treatment, deferring potential

structural change for reassessment and treatment to when the patient is more asymptomatic, d. informed consent requirements, e. and establishment of a patient contract with the complex pain patient as appropriate, emphasizing the patient's responsibilities, involvement, and contingencies.

4-12.2 Orofacial Pain Treatment including:

a. students **must** diagnose and **treat** to a level of **proficiency** a broad spectrum (outlined in 4-11 e) of chronic orofacial pain patients in a multidisciplinary orofacial pain clinic setting, or interdisciplinary associated services.

b. the students **must** have primary responsibility for treatment of a wide range of patients with local, regional and complex multisystem chronic orofacial pain.

c. the students **must** achieve proficiency in: 1. diagnostic and therapeutic injections including myofascial trigger point injections, joint injections, intramuscular injections for dystonias, sympathetic nerve blocks for the orofacial region, trigeminal nerve blocks, other regional blocks referring to the orofacial region, 2. neurosensory stents for neuropathic pain, and experience with topical pain medications directed at different pain mechanisms, 3. initial pain management of jaw rheumatologic and chronic orthopedic problems, and provisional stabilization with or without intra-oral orthotics as appropriate, 4. diagnostic and therapeutic use of physical medicine procedures including therapeutic exercise, heat and cold packs, vapocoolant spray and stretch, ultrasound, phonophoresis, iontophoresis, soft tissue massage, joint and muscle mobilization, electrical stimulation, postural awareness training, strengthening, and establishment of at home exercise regimes, for orofacial structures and structures referring pain into those regions. Also establishment of a close association with physical medicine services provided for cervical spine, upper quarter and back problems as they are related to orofacial pain, 5. intraoral appliances for breathing related sleep disorders, coordinated with ability to make a diagnosis and measure outcome, 6. management of post-traumatic injury related to chronic orofacial myoligamentous, arthrogenous, neurovascular and neuropathic pain; and associated chronic head pain and behavioral disorders; plus provisional non-surgical management of jaw dysfunction and mandibular position instabilities.

d. the students **must** achieve competency in associated psychobehavioral therapies including: 1. cognitive-behavioral therapies including habit reversal for oral habits, sleep problems, muscle tension habits and other behavioral factors, use of pain and activity diaries for awareness feedback, compliance assurance and monitoring; and interaction with biofeedback/stress management, and hypnosis for pain relief and behavioral changes, treatment of secondary gain, and chronic pain behavior, 2. tailoring treatment and medication approaches to recommendations from psychologic and personality profiles. 3. co-management of chronic orofacial pain patients who are taking antidepressant, anxiolytic, and other psychotropic medications 4. management of jaw tension and behavior disorders contributing to chronic orofacial pain.

e. the students **must** achieve competency in the pharmaco-therapeutic treatment of chronic orofacial pain disorders. This should include judicious selection of medications directed at the presumed pain mechanisms involved, as well as adjustment, monitoring and reevaluation. This should also include management of side effects, adverse reactions, undesired potentiation, dependency or tolerance; protocols for serum level monitoring and known risk of adverse physiological reactions; and selection in medically and behaviorally compromised patients, as appropriate. Common chronic pain medications and issues include: 1. muscle relaxants, 2. sedative agents for chronic pain and sleep management, 3. opioid use in management of chronic pain, 4. the adjuvant analgesic use of tricyclics and SSRI antidepressants for chronic pain; and awareness of the utility and problems with MAO inhibitors in pain and headache, 5. anticonvulsants, membrane stabilizers, and sodium channel blockers for neuropathic pain, 6. anxiolytics, 7. analgesics and anti-inflammatories, 8. prophylactic and abortive medications for primary headache disorders (in-patient and out-patient protocols), including serotonergic and anti-serotonergic medications, 9. management of analgesic rebound pain, 10. medication side effects that alter sleep architecture, 11. in-patient and outpatient methods for prescription medication dependency withdrawal, 12. referral, and co-management (of pain) in patients addicted to prescription, non-prescription and recreational drugs, 13. local and systemic anesthetics in management of neuropathic pain; and familiarity with the role of preemptive anesthesia in neuropathic pain, 14. role of

neuroleptics in headache management, 15. topical and systemic use of NMDA inhibitors, 16. GABA and dopaminergic medications used in chronic pain, 17. role of alpha adrenergic medications in sympathetically mediated pain, 18. therapeutic use of use of Botulinum toxin injections.

f. Emergency Services requirements include: 1) emergency coverage for clinic patients of record, 2) on-call availability to the interdisciplinary team, 3) successful completion of a basic CPR and emergency medicine course at commencement of training, 4) identification of emergency medical, and psychiatric referral sites.

4-12.3 Students **must** have an in-depth understanding and competency in the professional and medical legal issues in chronic Orofacial Pain practice:

- a. Patient records and documentation should include: 1) maintenance of a problem oriented style medical record including a diagnostic problem list and SOAP progress notes format, and medication log; 2) measurement of patient outcome e.g. using progress sheets, repeat questionnaires, reexamination, and pain diaries.
- b. Students should demonstrate skills in verbal and timely written communication with other health care professionals and patients.
- c. Students should understand the requirements of medicolegal, Workers Compensation, and second opinion reporting; and understand the criteria for assessing impairment and disability.
- d. Students should understand the legal guidelines governing licensure and dental practice, and the scope of practice with regards to orofacial pain disorders.
- e. Students should receive instruction in the regulatory requirements of chronic opioid maintenance.

4-13 Credentialing preparation should include:

- a. student feedback on progress, and encouragement to take the written Part I of the ADA recognized credentialing Orofacial Pain Board on graduation;
- b. students should maintain a log of all clinical cases for which they had major responsibility
- c. students should extensively document and present a selection of 20 cases as a future teaching resource, and as a model for submission of their own cases post-graduation to Part II of the Orofacial Pain Board examination.

DENTAL DEPARTMENT, HOSPITAL AND ADJUNCTIVE EXPERIENCES

4-14 The educational program should provide clinical assistance to other dental and medical disciplines, and where needed be a helpful part of the treatment team.

- a. Orofacial Pain programs should provide pain support services to Oral and Maxillofacial Surgery for the chronic rehabilitation of TMJ and fifth nerve surgery cases if requested, and consultation pre- and post-treatment for Orthodontics, Prosthodontics or other disciplines along with co-treatment if requested. Diagnostic and treatment assistance can be provided for tooth-site pain of nonodontogenic origin and for complex pain and dysfunction issues if requested. The Orofacial Pain program will refer treated orofacial pain patients to the appropriate dental and surgical disciplines as needed when stabilized.

4-15 The educational program should provide clinical training to the level of **exposure** to other medical and dental services (not to exceed 10 percent of total training period):

- a. hold combined rounds with other dental specialties where possible; and attend and participate in selective medical rounds.
- b. observation of closed and open TMJ surgery
- c. attend an outpatient anesthesiology pain service, and an in-patient pain program rotation
- d. observation or participation in selective rheumatology, neurology, oncology clinics, with other electives at the discretion of the program chair
- e. an oral medicine rotation,
- f. visitation to hospital pharmacy, radiology departments, and dental laboratory providing support functions.
- g. be exposed to several models of pain management treatment, practices, and centers.

TEACHING. 4-16 Students should be encouraged to obtain teaching experience in orofacial pain, in small group, and lecture formats, presenting to their dental and medical peer groups, pre-doctoral students, and

continuing education opportunities. However, this experience **must** not compromise the didactic or clinical

Sample of Curricula currently used

Provide a representative sample of curricula currently used in several existing programs. The examples provided should reflect the various approaches for structuring advanced education in the proposed specialty.

Sample curricula from institutions presently training Orofacial Pain dentists are provided here from the Schools of Dentistry from University of California, Los Angeles, Rutgers University, and University of Minnesota.

I. UCLA Orofacial Pain Advanced Education Program Residency Program

All course hours are based on a 48 week per year unless otherwise noted, conducted over a 24-month period. Vacations are on a sliding schedule to maintain clinical coverage. Paid vacation period for UCLA Hospital Residents is 3 weeks per year, plus administrative holidays provided that one resident remains on call. Faculty are second on call. Residents are on call to the hospital during the day-time and must respond. A record must be kept and filed in the OFP program Clinic office of all external and hospital calls taken. On-call residents must be within 15 minutes travel time to the hospital. You are required to maintain an up-to-date listing of the courses you are taking for each quarter with the Section secretary in order to receive a course completion or grades. Course are expected to be taken for credit unless an exception is made for auditing. If you have already taken a course as a previous UCLA student you should still audit the course. Advanced credit for courses can only be given with agreement of the course director, or by a pretest if available. Taking Oral Biology courses in anticipation of enrollment in the Oral Biology MS program cannot be instead of the residency requirements. The residency program courses are required courses unless stated as Selectives or Electives.

UCLA OROFACIAL PAIN Curriculum (2019)

1. Clinic Rounds

Schedule: Monday, Wednesday and Friday 7:30-9:00 (120 hours per clinic year)

Course Description: Clinic Rounds are held every Monday and Friday prior to the clinic day. Patients scheduled for the day are discussed by the resident before the attending faculty. Diagnosis, treatment protocols and progress of each patient are discussed. The residents keep notes and directions in the patient chart to help them optimize patient response to treatment.

2. Introduction to TMJ Disorders

Schedule: Summer Quarter as part of the New Resident Orientation. (4 hours divided in 2 session during 1st year Summer Quarter)

Course Description: This 2 session 4 hour course reviews TMJ disorders and the examination process. The new residents learn how to relate the clinical signs and symptoms to the pathophysiology of TMJ disorders and how to perform a clinical examination of stomatognathic function and muscle system relative to the temporomandibular joint.

3. Basic Neurology/Neuroanatomy

Schedule: 1st Year Summer Quarter (2 Hours on 4 consecutive Fridays, total 8 hours)

Course Description: The basic neurological examination is taught with emphasis on the cranial nerves. The cranial nerve exam is related to neuroanatomy of the head and neck. The residents learn how to efficiently perform the neurological examination including fundoscopy, neurosensory, motor and reflex evaluations.

4. Introduction to Orofacial Pain

Schedule: 1st year Summer Quarter (2 hours per session on 2 consecutive Tuesday mornings)

Course Description: This summer introductory course covers the basic conditions included within the scope of orofacial Pain. The course reviews musculoskeletal, neuropathic, neurovascular and related neurologic disorders commonly seen in an orofacial pain clinic. The pathophysiology of these conditions is discussed and linked with the examination procedure required to form a differential diagnosis and focus on a primary diagnosis.

5. Introduction to Pain Psychology

Schedule: 1st year Summer Quarter (4 hours in 2 sessions)

Course Description: The OFP residents are introduced to the impact that chronic pain has on the individual. Psychological assessment instruments are reviewed and related to patient presentations and response to treatment.

6. History Taking, Charting and The OFP Examination

Schedule: 1st year Summer Quarter (1 Hour)

Course Description: The OFP Chief Resident introduces the UCLA Chart and teaches the new resident the charting system including the History, Stomatognathic, Myofascial and Neurologic exam forms, the Progress Notes, the Pain Diary, the Treatment Contract, the Informed Consent forms, the patient handouts for the myofascial program and how to complete the forms.

7. Introduction to Myofascial Pain

Schedule: 1st year Fall Quarter (6 hours)

Course Description: The OFP resident is introduced to myofascial pain, including a review of the literature, the myofascial examination and the treatment protocols, including muscle palpation, trigger point referrals, spray and stretch and trigger point injections. The theory of the pathophysiology of myofascial pain is introduced. In addition, clinic experience with assigned patients is monitored by the course director. Each muscle group in the orofacial, cervical and shoulder girdle is review in detail including insertion, attachments, innervations and referral patterns.

8. Introduction to Pain Pharmacology

Schedule: 1st year Summer or Fall Quarter (2 hours)

Course Description: The 1st year residents are introduced to the medications that are used to mediate chronic pain disorders. These medication include the medications for neurovascular disorders, medication for neuropathic pain disorders, medications for musculoskeletal pain and psychotropic medications that are used for adjunctive therapy to improve response to pain management.

9. DS300 (TMJ Disorders)

Schedule: 1st Year Summer Quarter, Thursdays 5:30 to 6:30 (7 hours)

Course Description: DS300 Summer course reviews TMJ disorders in detail. Each component of TMJ disorders is discussed, including Muscle pain disorders, TM joint anatomy, displaced discs with and without reduction and the arthritides. The examination, pathophysiology and treatment of each TMJ disorder is discussed, including physical and pharmacologic therapy. This course also is attended by residents in other UCLA/ VA residency programs.

10. Oral Medicine Clinic Rotation

Schedule: 1st Year Summer and Fall Quarter Wednesday Morning 9-12 (16 hours)

Course Description: Each resident rotates into the Oral Medicine Clinic on Wednesday Mornings for the Summer and Fall quarters of the 1st year. The resident shadows the oral medicine clinicians, observing the examination and evaluation of oral lesions, burning mouth syndromes and other pathological conditions seen in the oral environment. The residents also assist in obtaining biopsies, closing wounds and other oral medicine procedures.

11. Basic Neuroanatomy of the Orofacial Region

Schedule: 1st Year Summer and Fall Quarters. Tuesday Mornings 10-12. (40 Hours)

Course Description: A detailed review of neuroanatomy. This course uses Blumenfeld's Neuroanatomy through Clinical Cases as the text and reviews each of the cranial nerve in terms of the neuroanatomy and clinical cases illustrating disorders involving the nerves. The neurologic exam is also reviewed for each of the nerves and the relevant pain and dysfunction problems seen in an orofacial pain practice.

12. Medical Emergencies

Schedule: 1st year Summer Quarter. 6 hours per week for 8 weeks.

Course Description:

13. Sedation

Schedule: 1st Year Summer Quarter. 2 hours per week for 7 weeks.

Course Description: Principles of Sedation

14. Hospital Dentistry

Schedule: 1st Year Summer Quarter. 5 consecutive days, 8 hour/day.

Course Description: The general objectives of the program are to (1) provide residents with the necessary didactic and clinical experiences that will enable them to provide state-of-the-art comprehensive dental care to

the broadest possible spectrum of the population; (2) provide advanced training in hospital and operating room procedures, including admission procedures, history and physical evaluation, laboratory evaluation, consultations, emergency care, pre- and post-operative care, and inpatient and outpatient surgery; (3) enhance the graduate's ability to make sound clinical judgment; (4) provide dental services for segments of the population which are currently underserved, including medically compromised, mentally and physically challenged, pediatric, adult, and geriatric individuals; (5) provide training in quality assurance protocols and risk management techniques; (6) enhance the understanding of and provide experience in practice administration, including communication and management skills; (7) develop the graduate's ability to critically review the literature; and (8) enhance the graduate's diagnostic and treatment planning skills.

15. Physical Diagnosis

Schedule: 1st Year Summer Quarter. 12 Day 3 hours per day.

Course Description: Physical Assessment

16. Literature Review

Schedule: 2 year 4 Quarters per year, 2 hours per week.

Course Description: The residents and faculty director review journal articles on subjects related to orofacial pain taken from peer reviewed journals. The subject matter includes Headache Disorders, Neurologic disorders, Sleep disorders, Orofacial Pain disorders. Residents are assigned to read the articles and prepare reviews of the articles that are presented in a class format.

17. Radiology

Schedule: 1st year 4 Quarters, 3 hours per week.

Course Description: The residents rotate in Dental Radiology to review radiographs of patients referred to the Radiology Clinic. They spend time assessing CT's for both dental and TMJ problems. Additionally, time is spent evaluating airway problems associated with obstructive sleep disordered breathing.

18. Rotation and Shadowing in UCLA OFP Private Practice

Schedule: 2 years, 6 hours per week.

Course Description: Residents shadow in the orofacial pain faculty practice, participating in the evaluation and treatment of the private patients. Residents do intakes of the patients, prepare patients for procedures, give patient instructions for home care. This rotation increases the residents' experience in evaluation, diagnosing and treating orofacial pain patients.

19. Rotation and Shadowing in Cedar Sinai Pain Center

Schedule: 6 consecutive weeks in the second year of residency. 1 day per week.

Course Description: Residents shadow in the orofacial pain faculty practice, participating in the evaluation and treatment of the private patients. Residents do intakes of the patients, prepare patients for procedures, give patient instructions for home care. This rotation increases the residents' experience in evaluation, diagnosing and treating orofacial pain patients.

20. Rotation and Shadowing Neurology in Neurology Headache Fellowship Program.

Schedule: TBA

Course Description: Rotation and Shadowing in the Neurology Headache Clinic

21: Dental Sleep Medicine

Schedule: Starts in Fall Quarter. 5 months, 2 full days per month

Course Description: The course provides in depth lectures in all phases of sleep medicine and provides hands-on training in all clinical phases of dental sleep medicine including reading and interpreting the PSG study, the comprehensive medical examination, nasal and oropharyngeal airway assessment, pharyngometry, pulse oximetry, impression and bite registration, selection and delivery of a variety of dental sleep appliances and adjustment and optimization of the appliances.

22: Neuroscience of Pain

Schedule: 1st Year: Fall, Winter and Spring Quarters. 1 hour per week

Course Description: The neuroscience of pain is reviewed in this course, starting with a description of the sensory system, a review of the neuroanatomy of the head and neck, peripheral mechanisms of pain perception, the neurotransmitters and receptors involved in transduction of pain from the periphery, peripheral sensitization, central sensitization, and Complex Regional Pain syndromes. Papers are assigned to the residents who will develop powerpoint presentations to discuss the main points of the papers.

23: Occlusion and TMD

Schedule: 1st Year, Fall Quarter. Monday Evening 4:30-5:30. (2 Hours)

Course Description: In this 2 hour course, the concepts and relationships of occlusion and TMD will be reviewed. Literature assignments are given to the residents who will review and critique the papers with the course director.

24: History of Pain

Schedule: 1st Year Fall Quarter (4 Hours)

Course Description: The instructor discusses the history of pain from prehistory to present day. The residents are taught the concepts of pain in relationship to time and culture with key figures who contributed to the development and understanding of pain and its treatment through the ages.

25: Pharmacotherapy of Pain

Schedule: 1st Year Fall Quarter (6 hours)

Course Description: This course reviews medications used to treat all aspects of orofacial pain, including the CYP450 metabolism and excretion of the medications. An in depth review is made of medications used to treat musculoskeletal disorders, headache disorders and neuropathic pain.

26: Neuropathic Pain Disorders: Diagnosis and Treatment

Schedule: 1st Year Fall Quarter (6 hours)

Course Description: Classification, Diagnosis and Treatment of Head and Neck Neuropathic Pain

II. Rutgers School of Dental Medicine Program in Orofacial Pain

Orofacial Pain Dentistry is concerned with the prevention, evaluation, diagnosis, and management of persistent and recurrent orofacial pain disorders. This two year program is designed to provide advanced knowledge and skills beyond those of the standard curriculum leading to the DDS or DMD degrees.

RSDM requires that the competent orofacial pain dentist demonstrate knowledge, diagnostic skills, and treatment expertise in areas, such as musculoskeletal, neurovascular, and neuropathic pain syndromes; sleep disorders related to orofacial pain; orofacial movement disorders; and intraoral, intracranial, extracranial, and systemic disorders that cause orofacial pain or dysfunction. The orofacial pain dentist is responsible to understand pain mechanisms and for the diagnosis and treatment of patients in pain that is often chronic, multifactorial, and complex. It is the responsibility of the orofacial pain dentist to accurately diagnose the cause(s) of the pain and decide if treatment should be dentally, medically, or psychologically oriented, or if optimal management requires a combination of all three treatment approaches. Management may consist of a number of interdisciplinary modalities including, e.g., physical medicine, behavioral medicine, and pharmacology or, in rare instances, surgical interventions. Among the essential armamentarium is the knowledge and proper use of pharmacologic agents.

Students pursue a Master of Science in Dentistry or a Master of Dental Science as their degree. Although 50% of the program is dedicated to patient care, the Master of Science in Dentistry program is also designed to train students for a career in academic dentistry or for those who wish to focus on research. To accomplish this objective, each student completes a thirty-credit program comprising eighteen didactic credits and a twelve-credit thesis/research project.

The Master of Dental Science program is designed to give students a more in-depth understanding of the biological processes underlying their clinical specialty. The program stresses interpretation of the literature. The objective of the program is to enable the students to become critical thinkers and evaluators of best practices in dentistry or for those who may desire a career in research. To accomplish these objectives, each student must complete thirty credits of the didactic, clinical and research-based program.

Upon completion of the program, the postdoctoral student receives the Master of Dental Science or Master of Science in Dentistry degree and meets eligibility requirements for the American Academy of Orofacial Pain Board examination.

Curriculum

The CORE Curriculum is designed to provide a broad foundation in the Biomedical Sciences upon which training in specialized dental disciplines is based. The PGY1 CORE course is Foundations of Oral Biology, which consists of the following modules:

- Professional Ethics
- Clinical Photography
- Research Design and Data Analysis
- Microbiology and Immunology
- Gross Anatomy
- Histology and Pathobiology

The PGY2 CORE course is Advanced Biomedical Science in Dentistry, which consists of the following modules:

- Orofacial Pain
- Oral Medicine & Pathology
- Advanced Dental Therapeutics and Pharmacology
- Embryology and Genetics
- Behavioral and Social Science in Dentistry

These courses are taught in an interdisciplinary format to residents in RSDM's Advanced Specialty Education programs in Endodontics, Pediatric Dentistry, Periodontics, and Prosthodontics, as well as residents in the Advanced General Dentistry Education program in Orofacial Pain and students in RSDM's Masters programs. This didactic instruction occurs in a weekly two-hour seminar.

The curriculum is comprised of didactic assignments, clinical experience, medical and dental rotations, and teaching responsibilities. Different types of learning experiences include seminars, lectures, workshops, and self-study activities. Each post graduate student is required to complete a series of courses and rotations designed to provide the necessary scientific background for management of patients with orofacial pain. An important part of the program is clinical experience that continues across the entire program commencing in the first quarter. The clinical component of the program will comprise 50% of the student's time. The faculty will assess competence in the field of orofacial pain on a regular basis. Knowledge of basic sciences and material presented in didactic lectures will be assessed by a series of written examinations at the end of the program.

OFP 701: SEMINARS IN OROFACIAL PAIN (60 HOURS): This seminar series focuses primarily on the diagnosis and management of temporomandibular disorders, musculoskeletal disorders of the head and neck, neurovascular disorders, and neuropathic pain disorders.

OFP 702: CLINICAL MANAGEMENT OF OROFACIAL PAIN: This provides the post graduate student with clinical experience in the diagnosis and management of patients referred to the Orofacial Pain Center. As the post graduate student progresses, he/she will obtain patient histories, perform examinations, and manage patients using various modalities. All clinical activities are under the direct supervision of the faculty. Clinical activity comprises 50% of the Program.

OFP 703: OROFACIAL PAIN LITERATURE REVIEW (JOURNAL CLUB): This seminar consists of an overview of the current scientific literature relating to the fundamental of pain and pain management as well as orofacial pain. Each post graduate student will be responsible for a specific reading assignment and will lead the seminar. An informal seminar setting is used to encourage stimulating discussion from all the participants. This seminar will be held monthly.

OFP 704: OROFACIAL PAIN GRAND ROUNDS: All new and ongoing patients seen in the clinic are presented by the post graduate student in an open discussion with the faculty. Emphasis is on diagnosis and management strategies with all clinical decisions validated and supported by the scientific literature. In addition, monthly Grand Rounds are held with the New Jersey Neuroscience Institute of Rutgers School of Medicine where our residents interact with and present case to neurologists, neurosurgeons and their residents regarding orofacial pain.

OM 801 ORAL MEDICINE GRAND ROUNDS: New and ongoing patients being treated in the Oral Medicine Clinic for a condition other than an orofacial pain problem are presented and discussed in an open forum. This conference meets every week.

OM 806: ORAL-MAXILLOFACIAL RADIOLOGY AND ADVANCED IMAGING: In addition to topics discussed in the Dent 5010 and 5020 courses, the post graduate student will spend time in the Radiology Clinic at the dental school to become familiar with more sophisticated imaging techniques, their indication/selection and interpretation.

INDEPENDENT STUDY: Post graduate students have approximately 6 hours per week protected for library work and independent study.

Interdisciplinary Courses

OFP 706: EXTRAMURAL ROTATIONS: Post graduate students are assigned to various clinical rotations to gain exposure in various specialized areas including TMJ surgery, Otolaryngology, Physical Medicine and

Rehabilitation, Neurology, Headache Management and Rheumatology.

Scholarly Activity. Orofacial pain post graduate students are required to prepare case presentations or lectures on various orofacial pain topics either of their choosing or by assignment from the faculty. Their presentations are given to the Division of Orofacial Pain faculty and students. Each postgraduate student is expected to present 3-4-hour presentations per year. This does not include the Masters' thesis defense.

In addition, as this program culminates in the awarding of a Master's Degree, each post graduate student must defend his or her thesis in a public forum by presenting their data in a lecture format. Post graduate students are also required to complete a paper of publishable quality for submission to a refereed scientific journal on a topic to be mutually determined by the student and program director.

III. UNIVERSITY OF MINNESOTA SCHOOL OF DENTISTRY OROFACIAL PAIN ADVANCED EDUCATION PROGRAM COURSE REQUIREMENTS

Course Sequence

During the first summer of graduate study, the academic program in Orofacial Pain focuses on several areas: acquisition of solid research skills, introduction to anatomy of the head and neck, physical evaluation, and overview of the theory and principles of orofacial pain. The didactic coursework is as follows:

- Head and Neck Anatomy
- Physical Diagnosis and Evaluation
- Seminars in Orofacial Pain
- Principles of Research in Orofacial Pain (Current Literature)
- Orofacial Pain Clinic

During the following semesters, students take more in-depth courses related to orofacial pain, as well as continue with additional coursework in related areas. They continue to work in literature review and orofacial pain seminars in each semester and will take thesis credits.

- Seminars in Orofacial Pain
- Current Literature in TMJ and Orofacial Pain
- Advanced Orofacial Pain Clinic
- Thesis credits

Orofacial Pain courses include:

- TMD Miniresidency (3-day CE course offered to general dentists)
- Clinical Interviewing (Year 1)
- Methods in Research and Writing (Fall, Year 1)
- Teaching and Evaluation in Dentistry (Spring, Year 1)
- Psychological Issues in Orofacial Pain (Fall, Year 1)
- Neurobiology of Pain and Analgesia (every two years)
- Advanced Topics in Orofacial Pain (Spring, every two years)
- Biostatistics (Summer Year 2)
- Principles of Management in Health Services Organizations (Fall Year 2)

All students will be attending the Orofacial Pain Clinic during each semester of both two years. Rotations through other clinics are arranged during the summer and fall of the second year of study and are part of the clinic course in Orofacial Pain.

The clinic course is a major course for all students. Students spend 4 full days per week in the clinic. They mostly observe patients and faculty members during the first summer. During this time they work on clinical interviewing skill acquisition, head and neck examination skills, gaining solid diagnostic skills. They will also begin to work with splints (insertion and adjustment), physical medicine techniques, health psychology and pharmacotherapy.

In the fall of the first year, students will begin seeing their own patients, supervised by faculty. At this time, they must begin keeping track of patients seen and procedures performed in order to acquire the number and types of experiences necessary to meet program standards.

Clinical training within Orofacial Pain Clinic

The knowledge base for all residents includes diagnosis and management of:

- Neuropathic orofacial pain disorders such as trigeminal neuralgia, atypical facial pain and burning mouth syndrome,
- Primary headache disorders such as tension type and migraine headaches,
- Other neurovascular disorders such as cluster headache, hemicranias continua and medication overuse headache,
- Chronic regional pain syndromes (I and II),
- Masticatory, cervical, and upper shoulder neuromuscular and musculoskeletal disorders such as myofascial pain, muscle spasm, and contracture,
- Temporomandibular joint disorders such as arthralgia, disk displacement and arthritis,
- Pain and dysfunction secondary to orofacial trauma, cancer and AIDS and it's treatment,
- Orofacial dyskinesias and dystonias,
- Sleep disordered breathing such as obstructive sleep apnea, UARS and snoring,
- Other disorders causing persistent pain and dysfunction of the orofacial region

Services provided include:

- Complete clinical history
- Complete head and neck examination
- Imaging and laboratory technique and interpretation
- Differential diagnosis of orofacial pain disorders
- Behavioral and psychosocial assessment and diagnosis
- Interdisciplinary treatment planning
- Diagnostic and treatment procedures including:
 - a. craniofacial nerve blocks
 - b. intramuscular trigger point injections in the masticatory, head and neck muscles
 - c. physical medicine modalities, therapeutic exercises, and orthotics
 - d. cognitive-behavioral management strategies,
 - e. pharmacotherapy and chemical abuse management
 - f. coordination of interdisciplinary and multidisciplinary management strategies

Extramural Rotations

Second-year residents spend part of their clinical training in extramural facilities completing rotations. The following is a list of rotations for the Orofacial Pain Residents:

- Otolaryngology
- Rheumatology
- Chronic Pain Service, Neurology and Acupuncture
- Sleep Medicine
- Physical Medicine and Rehabilitation
- Neurology
- Oral and Maxillofacial Surgery
- Movement Disorder Clinic

Research

All students are required to engage in research activity. Students who elect to enter the Master of Science Degree Program are expected to develop the study idea, work through the data collection and/or analyses, present their findings at a public defense, and submit for publication in an appropriate scientific journal. They are also required to develop and complete an independent research project under the guidance of a thesis committee approved by the University of Minnesota Graduate School. Students not participating in a

Graduate School administered degree program are required to either complete their own research project, or participate in research being conducted by the Orofacial Pain Faculty. Students are also encouraged to develop abstracts for presentation at local, state and national meetings.

This portion of the program gives the student:

- A strong foundation in science and analysis
- Competency in critique of the written literature in the field of TMD and orofacial pain
- Competency in research design, methodology and scientific writing

References to Orofacial Pain Specialty Application (References to treatments are in Appendix IVc)

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APPENDIX Ia. CONSTITUTION AND BYLAWS OF THE AMERICAN ACADEMY OF OROFACIAL PAIN

AAOP Mission Statement

The American Academy of Orofacial Pain, an organization of dentists and allied health care professionals, is dedicated to alleviating pain and suffering through the promotion of excellence in education, research and patient care in the field of orofacial pain and associated disorders.

CHAPTER I MEMBERSHIP

SECTION 1. Classification and Basic Requirements. The membership of the American Academy of Orofacial Pain shall consist of Active Members, Fellow Members, Student/Initiatory Members, Life/Life Fellow Members, Retired Members and Honorary Members. The qualifications of each class of membership shall be provided for herein. The membership criteria may be modified at the request of Membership Committee and then must be approved by a majority vote of the Council unless an amendment to the bylaws is applicable in which case the process of amending will be followed.

The following must apply to all members:

- (a) All members of the American Academy of Orofacial Pain (Academy), including any and all categories of membership in the Academy, must agree to abide by the bylaws of the Academy.
- (b) All members of the Academy, including any and all categories of membership in the Academy, must agree to abide by the Code of Conduct of the American Academy of Orofacial Pain and be willing to work within the Academy's "Objectives" to promote the best interest and ideals of the Academy throughout said membership.
- (c) All Members of the Academy with the exception of the Retired, Life/Life Fellow & Honorary Membership categories must be a permanent resident of the United States of America, Canada, Mexico, Bermuda, the Bahamas or an independent Caribbean nation or
 - (1) Be a member in good standing of one of the Sister Academies as per the current Sister Academy Agreement regarding membership, or
 - (2) Have been a continuous member in good standing of AAOP and joined prior to 1987.

SECTION 2. Active Members. Active Members shall possess the following qualifications. They shall:

- (a) Be a licensed dentist (DDS, DMD or equivalent degree) or be a licensed physician (MD or DO or equivalent degree) or be a non-dental or non-physician allied health care professional or researcher in good standing within the state or country within which they practice.
- (b) Meet the current residency requirements as stipulated in Chapter 1, Section 1.
- (c) Applicants shall:
 - (1) Be approved by Council upon recommendation of the Membership Committee. Upon approval by Council, the membership at-large will be notified by written or electronic means of the pending applications, and barring any written objection they will be accepted as members. If any objections are received, the application will be returned to the membership committee for further consideration.
- (d) Regular payment of dues is a requirement for maintenance of Active membership in the Academy.
- (e) Active Members shall be eligible to hold office, serve on the Academy Council or chair a committee.
- (f) Active Members shall possess the right to vote in the election of officers at the annual membership business meeting and for all items required to be presented to the membership of the academy for further action.

SECTION 3. Fellow of the Academy. Fellows of the Academy shall possess the following qualifications. They Shall:

- (a) Be a Life member prior to 2005 who shall be recognized as a Life Fellow, or
- (b) Have been an Active member and a licensed dentist (DDS, DMD or equivalent degree) in good standing prior to 2005 and maintained their membership since, or

(c) Be an Active member and a licensed dentist (DDS, DMD or equivalent degree) who has demonstrated a minimum of five (5) years of an exceptional understanding of the treatment of temporomandibular disorders and orofacial pain through graduate or post graduate training, research or clinical experience, or graduated from an advanced university-based orofacial pain program that is equivalent to at least a 2-year full-time program, and

(1) Completed and submitted the application for Fellowship

(2) Have passed the American Board of Orofacial Pain Examination.

(3) Provide two (2) letters of recommendation from Fellow Members

(d) Fellow of the Academy may be granted by Council to individuals of exceptional merit, who have not taken the American Board of Orofacial Pain examination, based on their contribution to the field of temporomandibular disorders and/or orofacial pain. The granting of Fellow status by the Academy Council under Chapter 1, Section 3, item (d) is solely at the discretion of the Council and may not be applied for.

Additional Membership Rights and Requirements

(e) Regular payment of dues is a requirement for maintenance of Fellow of the Academy membership.

(f) Fellow of the Academy members shall be eligible to hold office, serve on the Academy Council or chair a committee.

(g) Fellows of the Academy members shall possess the right to vote in the election of officers at the annual membership business meeting and for all items required to be presented to the membership of the academy for further action.

SECTION 4. Student/Initiatory Members. Student/Initiatory Members shall possess the following qualifications. They shall:

(a) Be a current full-time dental or post-graduate dental student in good academic standing, and one of the following

(1) A licensed dentist (DDS, DMD or equivalent degree) in good standing within the state or country within which they practice and a current participant of an Academy recognized post-doctoral full-time university residency program, or

(2) A licensed dentist (DDS, DMD or equivalent degree) in good standing within the state or country within which they practice and a graduate within the past 12 months of an Academy recognized post-doctoral full-time university residency program, or

(3) A full time, current predoctoral dental student with interest in temporomandibular disorders and/or orofacial pain, or

(4) Be a licensed dentist (DDS, DMD or equivalent degree) in good standing within the state or country within which they practice and enrolled in, or successfully completed within the past 12 months, an orofacial pain post-graduate or residency program not described above and approved by council for student/initiatory membership.

(5) A full-time orofacial pain post-graduate or residency program must be consistent with current CODA accreditation standards

(b) Student/Initiatory Members/Applicants shall:

(1) Be approved by Council upon recommendation of the Membership Committee.

(2) Meet the residency requirements as stipulated in Chapter 1, Section 1.

(c) Regular payment of dues is a requirement for maintenance of Student/Initiatory membership in the Academy.

(d) Student/Initiatory Members may serve on or chair a committee.

(e) Student/Initiatory Members shall possess the right to vote in the election of officers at the annual membership business meeting and for all items required to be presented to the membership of the academy for further action.

(f) Student/Initiatory Members shall have all the additional benefits of membership except a subscription to the Academy's designated journal.

(g) Student/Initiatory Memberships must be transitioned to Active membership within (4) four years from date of joining.

SECTION 5 Life/Life Fellow Members. Life Members shall possess the following qualifications. They shall:

- (a) Be a licensed dentist (DDS, DMD or equivalent degree) or be a licensed physician (MD or DO or equivalent degree) or be a non-dental or non-physician allied health professional or researcher in good standing within the state or country within which they practice or teach
- (b) Have been an Active or Fellow Member in good standing for ten (10) consecutive years and therefore have satisfied all the requirements of Active or Fellow Member and will continue to do so.
- (c) Any Fellow of the Academy becoming a Life member will be referred to as a Life Fellow of the Academy. Life Fellows must meet all of the additional requirements of Fellow Members.
- (d) Be retired from active participation in their profession but may be paid to teach two or fewer days per week.
- (e) Have all the privileges of Active or Fellow membership and shall pay dues as determined by council, with the understanding that any Life member may, for personal reasons, appeal to council in writing for an exemption from part of, or the entire dues requirement. Receipt of the designated journal is at the discretion of Council.
- (f) Life Membership may be granted at the discretion of the Council upon application by the member.
- (g) Life Members who resume active practice or full time academics will automatically be reinstated to their previous category of membership.

SECTION 6. Retired Member. Retired Members shall possess the following qualifications. They shall:

- (a) Have been a Member in good standing for less than ten (10) consecutive years.
- (b) Be retired from active participation in their profession but may be paid to teach two or fewer days per week.
- (c) Have all the privileges of their prior Membership category except receipt of the designated journal with half the applicable Membership dues.
- (d) Once a Retired Member achieves ten years of total membership he may be eligible for Life Membership upon written request to, and approval by the Council.
- (e) If a Retired member is unable to meet the full dues requirements for personal reasons, he/she may appeal to council in writing for an exemption from part of, or the entire dues requirement.

SECTION 7 . Honorary Membership. Honorary Membership may be granted by the Council to individuals who have made outstanding contributions to their profession even if not directly involved in orofacial pain and/or temporomandibular disorders.

Honorary Membership is generally granted to individuals who are not Members of the Academy.

Honorary Membership may be proposed by any Academy Member to the Membership Committee which forwards favorable recommendations to the Council for approval. Honorary Membership shall be granted upon two-thirds (2/3) majority vote of the Council.

Honorary Members shall have all the rights and privileges of Active Members except the right to vote or be an Academy officer.

CHAPTER II ELECTION OF MEMBERS

SECTION 1. Election to Membership. Membership shall be open to all dentists, physicians and allied health care professionals or researchers who have an interest in the treatment of temporomandibular disorders and orofacial pain.

- (a) Stipulations are:
 - (1) Adherence to the requirements of membership as detailed in Chapter I
 - (2) A completed membership application form and submission of dues payment
 - (3) Copies of the applicant's current curriculum vitae, professional business card, letterhead, website, and Yellow Pages and telephone listing may be required if requested by the Membership Committee.

(4) Student/Initiatory Member applicants must provide certification from their program chairman that the candidate is a current participant or a recent graduate of an Academy approved program.

The nomination process may be modified at the request of the Membership Committee and approved by a majority vote of the Council.

SECTION 2. Forfeiture of Membership.

(a) Violation of the Constitution, Bylaws, Code of Conduct of the Academy, or any part thereof, or any act of any member which, in the judgment of the Council, is contrary to the welfare and best interest of the Academy and its members, shall be grounds for forfeiture of membership in the Academy. The Council shall have full power to act thereon, and its actions shall be final and binding on all members of the Academy. Forfeiture of membership so determined by Council shall be effective upon the giving of written notice thereof by the Secretary to the offending member.

(b) Regular timely payment of annual dues is a requirement for maintenance of all dues paying Members of the Academy. Non-payment of dues may result in forfeiture of membership or affiliation with the Academy until rectified.

CHAPTER III

OFFICERS AND THE COUNCIL

SECTION 1. Officers.

The Officers of the Academy shall be the President, President-Elect, Treasurer, Secretary and Secretary-Elect. Fellows of the Academy, Active, Retired and Life/Life Fellow Members shall be eligible to be Academy Officers.

SECTION 2. Election of Officers.

Election of Officers shall be held each year at the annual general membership meeting of the Academy.

(a) The retiring President-Elect shall automatically become President, the retiring Treasurer shall automatically become President-Elect, and the retiring Secretary shall automatically become Treasurer and the retiring Secretary-Elect shall become Secretary for the ensuing year.

(b) The Nominating Committee Chair shall request nominations from the Nominating Committee at least one hundred twenty (120) days prior to the Annual Meeting, and the nominees shall be forwarded to Council at least ninety (90) days prior to the Annual Meeting. Nominees shall be presented to the Academy General Membership at least sixty (60) days prior to the annual meeting.

(c) Additional nominations for Secretary-Elect may be made by written petition of fifteen (15) Fellows of the Academy, Active, Retired, or Life Members and delivered to the Chair of the Nominating Committee at least sixty (60) days before the election.

(d) Normally nominations at-large can only be for the Office of Secretary-Elect since Officers of the Academy progress through the sequence from Secretary-Elect to Secretary to Treasurer to President-Elect to President.

(e) Election shall be by official ballot only when there are two or more nominees for a given office.

(f) Voting shall only be in person by Active, Fellow, Retired and Life Members; voting by mail or proxy voting shall not be permitted.

SECTION 3. The Council Membership.

(a) The Council shall consist of:

- i) a Chair, who is the Immediate Past President and presiding officer at the Council Meetings,
- ii) a Vice-Chair, who is the Immediate Past Chair,
- iii) the incumbent President of the Academy,
- iv) the incumbent President-Elect of the Academy,
- v) the incumbent Treasurer of the Academy,
- vi) the incumbent Secretary of the Academy
- vii) the Secretary-Elect,

- viii) six (6) at-large Fellow, Active, Retired or Life/Life Fellow Members, two (2) of whom shall be elected by the General Membership upon recommendation by the Nominating Committee each year at the annual meeting to serve for a term of three (3) years thereafter
- (b) A Parliamentarian and the Chair of the Membership Committee shall be ex-officio members of the Council with no vote in Council decisions.
- (c) Any member of the Council, who is absent from a Regular meeting of Council, without reasonable cause, is accountable to Council, and may be considered by Council for termination as a member of Council.

SECTION 4. Council Business.

The Council has full power to act on behalf of the Academy in the interim between meetings of the Academy and shall transact all business of the Academy, except the election of officers. By written petition of three (3) Active, Fellow, Life, Retired or Life Affiliate Members, any matter may be brought before the Council for action. The Council shall report its proceedings to the Academy's General Membership at each annual meeting for approval.

SECTION 5. Council Meetings.

(a) Regular Meetings. The Council shall have its annual regular meeting, just prior to the academy's annual scientific conference, unless good cause to do otherwise can be given. The Council shall also have an interim meeting later in the year, time and location to be determined by the Council in coordination with the executive director and central office. Regular Meetings of the Council will entail the physical assembly of the Council at a specified date, time and place.

(b) Special Meetings. May be called by the Chair and shall be called on the written request of three (3) members of Council, and that having been properly called, proper and adequate notice given. A special meeting may be held via electronic/conference call means provided all council members have reasonable access to such means. Any member not having reasonable access to such means may grant a waiver for the meeting to be held.

(c) Quorum. The presence of 60% of the voting members of the Council at any meeting shall be necessary to constitute a quorum. In establishing a quorum the Parliamentarian and the Chair of the Membership committee are not counted.

SECTION 6. Council Minutes.

- (a) All official proceedings and decisions of the Council shall be recorded by the Secretary, entered into the minutes and
- (b) a copy of the minutes provided to the members of Council within thirty (30) days of the meeting, unless a more immediate response is required.
- (c) Council members are to submit any corrections to the Secretary within thirty (30) days of receipt of the minutes, after which the minutes shall be considered as being approved, and
- (d) A copy of all Council minutes shall be available to Academy Members.

SECTION 7. Parliamentarian.

A Parliamentarian shall be appointed by the President to facilitate the efficient conduct of business during Council and General Membership Meetings of the Academy. The Parliamentarian will represent the official interpretation of the Bylaws, its other governing documents, and the Rules of Order during business meetings. The Parliamentarian is an ex-officio member of the Council with no vote in Council business decisions.

SECTION 8. Notice of Council Meetings.

The secretary shall give notice to:

- (a) Academy members shall be notified of regular meetings to be held by the Council by Postal Mail, electronic means such as email, or a notice in an Academy publication such as the Newsletter or Journal at least ten (10) days prior to the date of the Council Meeting.

(b) Council members may be notified by mail, telephone, facsimile, electronic means such as email, personal communication or other personal method to members of the Council at least ten (10) days prior to the date of regular or special meetings of the Council. When immediate Council action is required via a special meeting this provision will not apply.

SECTION 9. Action by Unanimous Written Consent Without Meeting.

Any action required or permitted to be taken by the Council, under any provision of law, may be taken without meeting, if all voting members of the Council shall individually or collectively consent in writing or via electronic communication to such action. Such written consent shall have the same force and effects as the unanimous vote of the Council members.

SECTION 10. Non-liability of Council Members.

No member of the Council shall be personally liable for the debts, liabilities or obligations of the Academy.

CHAPTER IV

GENERAL MEMBERSHIP MEETINGS

SECTION 1. Annual Meetings. There shall be an annual meeting of the Academy for the election of officers, the transaction of business, the presentation of essays and papers on professional subjects, the presentation of clinics, and for such other purposes as may be determined by the Council. The time and place of the Annual General Membership Meeting and any special meetings shall be determined by the Council, and members notified thereof.

SECTION 2. Interim Meetings. Interim meetings may be scheduled by the Council if necessary. The time and place shall be determined by the Council.

SECTION 3. Admission to Meetings. Admittance to all Essay and Clinic Meetings shall be by current membership registration or as a duly registered guest. Registration Fee to be determined by the Council.

SECTION 4. Quorum and Voting. The Quorum for an official General Membership Meeting necessary to conduct the business of the Academy shall be ten percent 10 % of the total Academy members eligible to vote. All members with voting privileges as determined by the Academy bylaws and in good standing with the Academy shall be entitled to vote on matters brought before the Academy. In case of a tie, the Presiding Officer shall cast the deciding vote. Please see Chapter XIII for rules governing the amending of these bylaws.

SECTION 5. Emergency Provision. It shall take a majority vote of Council to declare that an emergency exists. During a declared emergency, the officers and elected members of Council shall remain in office until the emergency is ended. During the declared emergency, it shall be the duty of the Council to develop methods of procedure for the continuance of the Academy and its activities. The Council shall determine the feasibility of holding a meeting and shall prescribe the type of meeting to be held during such emergency.

CHAPTER V

OFFICERS

SECTION 1. President.

- (a) The President shall preside at all meetings of the Academy
- (b) The President shall appoint all committees.
- (c) The President shall have general supervision of the work of all committees and shall be ex-officio member thereof.
- (d) The President shall perform such duties as appertain to his office by custom.

During the President's tenure as Secretary, the President shall have authority to appoint a Program Chair and Program Committee to function during the 3 to 4 year period concluding with his/her term as President.

SECTION 2. President-Elect.

- (a) The President-Elect shall assume the duties of the President in the absence of the President.
- (b) The President-Elect shall Chair the Budget Committee which develops the ensuing year's annual budget.

SECTION 3. Treasurer.

- (a) The Treasurer shall take charge of all monies of the Academy, keep an account of the same and pay bills approved by the Council, present an official audit of the financial affairs of the Academy each year and report the same to the Academy at the Annual General Membership Meeting. It is understood that the Treasurer shall include the Secretary's expense account in this report.
- (b) The Treasurer shall be a member of the Budget Committee which shall develop an itemized budget for the Academy's ensuing fiscal year for approval by Council.

SECTION 4. Secretary. The Secretary shall record all official proceedings and decisions of the Council, and a copy of the minutes shall be provided to the members of Council within thirty (30) days of each meeting, unless a more immediate response is required.

- (a) Candidates for the Office of Secretary must have been on a standing committee for at least three (3) years and served as Chair of a standing committee for at least one term.
- (b) The Secretary shall keep a record of the Academy General Membership Meetings and of the Council Meetings. The Secretary shall notify members of meetings, nominations for membership and similar matters, and prepare official ballots for election of officers and members of the Council, keep a list of members delinquent in the payment of dues, keep current copies of the Constitution and Bylaws on hand at all times and poll the Council on all matters of policy and in an emergency.
- (c) The Secretary is entitled to adequate monetary allowance as determined each year by the Council.
- (d) The Secretary shall be responsible for maintaining the Policies and Procedures Manual of the Academy. This shall include establishing and administering a time line for activities and events in coordination with the President, the Council, and the Chair of all Academy Committees as well as monitoring and overseeing the activities of the Central Office in the timely performance of these tasks.
- (e) The Secretary shall be a member of the Bylaws Committee to facilitate compliance with the Bylaws and to maintain the Bylaws as a living document through timely updates and necessary changes. The Secretary shall obtain recommendations for updates and changes from the Chair of each Academy Committee, and the Secretary shall subsequently present these recommendations to the Bylaws Committee for consideration.
- (f) The Secretary shall receive a copy of all correspondence of the Academy. Academy correspondence shall be directed to the Secretary with copy to the Central Office.

SECTION 5. Secretary Elect.

The Secretary-Elect shall be a full voting member of the Council and Executive Committee. He/she shall assume the responsibilities of the Secretary in his/her absence.

- (a) The prerequisites for the office of Secretary-Elect shall be the same as for Secretary.
 - (1) Candidates for the Office of Secretary-Elect must have been on a standing committee for at least three (3) years and served as Chair of a standing committee for at least one term.
 - (2) The responsibilities of the Secretary-Elect are to assume those of the Secretary as the need arises.

SECTION 6. Term of Office. The term of office for each elected official shall be for approximately one year and span the period between General Membership Meetings. Officers will be elected by the General Membership at the annual meeting of the Academy.

SECTION 7. The Executive Director. The Executive Director shall be selected by the Executive Committee and shall be reimbursed according to written contract approved by the Council. The duties of the Executive Director are delineated in detail in the policy and procedures manual and can be changed by vote of council from time to time reflecting current needs of the Academy.

CHAPTER VI COMMITTEES

SECTION 1. Establishment of Standing Committees. The power to establish, revise or disband standing committee shall be vested in the Academy Council and such actions taken by the Council to modify Chapter VI of these bylaws shall not require a formal "amendment of the bylaws" process to be initiated and adhered to as outlined in Chapter XII. The Academy Council shall have the authority to amend Chapter VI of the Constitution and Bylaws with respect to standing committees via the affirmation of 2/3 of those Council members in attendance, a quorum of the Council having been established.

SECTION 2. Executive Committee.

(a) Composition. The Executive Committee shall be composed of the President, President-Elect, Treasurer, Secretary, Secretary-Elect, Chair of the Council, and Vice Chair of the Council. The Executive Director shall be an ex-officio member of the Executive Committee.

(b) Duties of the Committee. The duties of the Executive Committee shall be to contract with an Executive Director, and to advise and facilitate the activities of the Academy.

SECTION 3. Continuing Education Oversight Committee

Duties and Composition of the Committee. The Continuing Education Oversight Committee (CEOC) will be responsible for overseeing all continuing education activities of the Academy including the planning, arranging and conducting the: Annual Scientific Meetings of the Academy, Interim Educational Symposia as they arise, Online Continuing Education & any other program as determined by the Council.

(a) The Continuing Education Oversight Committee will coordinate with the central office to ensure that the Academy maintains its status as an approved continuing education provider.

(b) The Continuing Education Oversight Committee will meet at least semi-annually including in person at the annual scientific meeting. All other meetings may be electronic or coincide with other meetings as opportunities arise.

(c) The Continuing Education Oversight Committee will review the annual scientific meeting evaluation summary within five (5) months of the completed meeting.

(d) The Continuing Education Oversight Committee will explore and implement options for modernizing the Academy's annual meeting by utilizing current technology to enhance the attendee experience.

(e) Will coordinate with the program chairs and poster chair to develop and present a continuing education program at each year's annual scientific meeting.

(f) The Committee's Composition shall include Two Co-Chairs who shall be the President-Elect of the current fiscal year and one appointed member for a term of three (3) years. Additional members will include chairs and members listed under sections (g) and (h).

(g) The yearly Program Committees shall function as independent committees but under the oversight of the CEC co-chairs and in cooperation with the other program committees as follows:

1. The Program Co-Chairs of the next four (4) annual scientific meetings who shall be appointed by the individual (Secretary-Elect) who shall be President in the respective year of the meeting.

2. Program Committees shall be responsible for submitting a preliminary planned program and faculty to the Council for approval twenty four (24) months before the scheduled scientific meeting and shall submit their proposed planned program and faculty to the Executive Council eighteen (18) Months before the meeting is to take place for final approval.

3. Reviewing and updating the annual scientific meeting Integrated Action Plan (IAP) on a monthly basis during the years preceding their meeting and as the IAP dictates in prior years.

4. Program Co-Chairs shall submit their reports directly to the CEOC Co-Chairs who will intern submit their report to the AAOP Council.
5. The yearly Program Co-Chairs at their discretion may add members to their program committees who shall function under their direction as members of that year's program committee.
 - (h) Additional members of the Continuing Education Committee shall include:
 1. The Poster Chair who will be appointed by the CEOC co-chairs and at least three (3) committee members to assist in the solicitation review and selection of scientifically appropriate poster displays at the annual scientific meeting.
 3. The Online Education Chair who will be appointed by the CEOC co-chairs and at least three (3) committee members to assist in the development of an online education program.
 4. Additional members may be appointed at the discretion of the CEOC co-chairs provided they are assigned specific tasks in accordance with the overall committee IAP.
 5. The Industry Relations Chair will select one member of the Industry Relations Committee to serve as an ex-officio member of the CEOC.

SECTION 4. Nominating Committee.

- (a) Nominating Committee.
 - (a) Composition. The Nominating Committee shall be composed of the President, President-Elect, Treasurer, Chair of the Council, Vice Chair of the Council who shall serve as Chair of the Nominating Committee, two (2) past president members elected by the General Membership, one each per successive year and two members at large to be appointed by the president. Each elected past president shall serve a term of two (2) years.
 - (b) Duties of the Nominating Committee. The duties of the Nominating Committee are:
 - (1) To conduct balloting procedures for the nomination and election of candidates for Officers of the Academy and at-large Council and committee representatives as specified in the Bylaws for the upcoming fiscal year at the annual business meeting of the General Membership.
 - (2) To propose to Council a slate of candidates for the immediate subsequent fiscal year following the upcoming year for the election of the Secretary-Elect, two (2) new members of the Council, one (1) new member of the Nominating Committee, and a Past President to be Chair of the Sister Academy Liaison Committee. After approval by Council, the slate is presented by the Nominating Committee Chair to the General Membership at the annual business meeting.
 - (3) To solicit and identify new potential leaders from the Academy's membership and make recommendations for their placement upon committees.
 - (4) To conduct annual leadership orientation for Academy directors, committee chairs and committee members.
 - (5) The meeting of the Nominating Committee shall be closed to all non-committee members. All Nominating Committee communications shall be considered confidential.

SECTION 5. International Journal Liaison

- (a) Composition. The International Journal Liaison Committee shall be composed of a Chairperson and two additional members appointed at the discretion of the President.
- (b) Duties of the Committee. The Chair and one committee member shall represent the interests of the American Academy at any deliberations of, or business conducted by, the International Journal Committee. Representatives of each of the sister Academies are invited to sit on International Journal Liaison Committee ex-officio.

SECTION 6. Membership Committee.

- (a) Composition. The Membership Committee shall consist of a chair or co-chairs appointed by the president and at least 5 additional members one of which shall be the Secretary-Elect.
- (b) Duties of the Committee.
 - (1) Review all applicants for Membership in the Academy and notify Council and Ethics/Grievances committee of any discrepancies or possible reasons for denying membership to an applicant.

- (2) Review the applications for Fellow Status in the Academy and make recommendations for approval to Council.
- (3) Review the applications for Life Member Status in the Academy and make recommendations for approval to Council.
- (4) Develop and implement a marketing plan or work directly with any ad-hoc committee or task force in order to do same
- (5) Review and revise as needed the Academy membership application.
- (6) Attempt to contact all expired members by June 30th of each year.
- (7) Conduct the annual New Member and New Fellow orientation at the annual meeting.

SECTION 7. Committee on Constitution and Bylaws.

- (a) Composition. The Chair of the Constitution and Bylaws Committee shall be appointed by the President. The Committee on Constitution and Bylaws shall consist of at least three (3) members.
- (b) Duties of the Committee.
 - (1) The Committee shall study the Constitution and Bylaws and recommend to the Council any changes which appear desirable at least thirty (30) days prior to the Annual Council Meeting.
 - (2) Upon approval by the Council, the Committee Chair shall present the Committee's recommended Bylaws changes to the General Membership for approval. For ratification see Chapter XIII section 2.
 - (3) The Chair shall be responsible to verify that Bylaws changes ratified by the General Membership have been duly added to the most current Official copy of the Bylaws, as kept by the Secretary at the Academy Central Office, no later than thirty (30) days after each General Membership Meeting.
 - (4) The Committee is authorized to correct article and section designation, punctuation, spelling, gender reference, and cross references as may be necessary to reflect the intent of the Academy without Membership approval.

SECTION 8. Ethics and Grievance Committee.

- (a) Composition. The Chair of the Ethics and Grievance Committee shall be appointed by the President. The Chair shall select other members to serve on the Committee.
- (b) Duties of the Committee.
 - (1) The Ethics and Grievance Committee shall adopt a Code of Ethics for the Membership subject to Council approval.
 - (2) The Committee shall investigate and report to Council any member complaint or violation of the Code of Conduct.
 - (3) The Committee shall adopt a due process procedure for investigative and disciplinary action with continuous review to insure fairness in all investigations.

SECTION 9. Resident/Academic Training Committee.

- (a) Composition. The President shall appoint a Chair or Co-Chairs to the Committee. The Chair of the Guidelines Committee shall be an ex-officio member of the Committee. The Resident/Academic Training Committee *may* consist of two (2) standing sub-committees appointed by the President: the Pre-Doctoral Subcommittee, the Post-Doctoral Subcommittee. There shall be a Review Course coordinator. Other members may be appointed as needed.
- (b) Duties of the Committee.
 - (1) The Pre-Doctoral Subcommittee shall be responsible for monitoring and recommending pre-doctoral dental school curricula pertaining to orofacial pain and temporomandibular disorders.
 - (2) The Post-Doctoral Subcommittee shall be responsible for monitoring and recommending post-doctoral dental school curricula pertaining to orofacial pain and temporomandibular disorders and shall develop and operate an accreditation protocol for such programs.
 - (3) The Review Course Coordinator shall be responsible for developing, arranging and holding continuing education review courses on orofacial pain and temporomandibular disorders on behalf of the Academy.
 - (4) Contact all course directors and residents of Post-doctoral Orofacial Pain programs in the United States.

- (5) Represent to council the specific interests of new members, recent graduates and participants of Post-doctoral Orofacial Pain programs.

SECTION 10. Research Grant Committee.

(a) Composition. The President shall appoint a Chair and members of the Research Grant Committee.

(b) Duties of the Committee.

(1) The Research Grant Committee shall select grant recipients according to the Committee's accepted protocol and determine the amount of each grant for qualified research in the field of orofacial pain and temporomandibular disorders. Said protocol and guidelines are available upon request from the Executive Director.

(2) The Committee will be responsible for obtaining agreement by each grant recipient that they will make a poster presentation at each Academy Annual Meeting during the term of their grant.

SECTION 11. Guidelines Committee.

(a) Composition. The Chair of the Guidelines Committee will be appointed by the President and will serve for the entire term of publication preparation for each edition of the Academy Guidelines. The Committee members will also serve throughout the revision period for each edition of the Guidelines unless determined otherwise by the Chair. After publication of the current edition of the Guidelines, the Chair will continue to serve as a Committee Member for one year under the new Committee Chair to accommodate transition for the subsequent edition of the Guidelines.

(b) Duties of the Committee. The Guidelines Committee is responsible for revision of each edition of the Academy Guidelines publications on Orofacial Pain and Temporomandibular Disorders.

SECTION 12. Sister Academy Liaison Committee.

(a) Composition. The Sister Academy Liaison Committee shall be composed of at least three (3) members: a Chair, the current Secretary, and at least one (1) other Academy Member/ Affiliate appointed by the President. The Chair shall be a Past President determined by the Nominating Committee for approval by Council; the Chair shall serve a four (4) year term to coincide with planning and execution of the next ensuing International Meeting of the combined affiliated Academies. The Chair shall represent the American Academy in the International Committee of the combined affiliated academies which fosters mutual aims and purposes of the combined academies and plans the quadrennial International Meeting. Representatives of each of the sister Academies are invited to sit on the Sister Academy Liaison Committee ex-officio.

(b) Duties of the Committee. The Sister Academy Liaison Committee shall coordinate all interaction between the American Academy of Orofacial Pain and the four sister Academies.

SECTION 13. Strategic Plan Steering Committee.

(a) Composition. The Strategic Plan Steering Committee is selected every three years and membership remains constant during this period. The Chair is the President during the initial year of the three-year period. Nine other members are chosen by the President/Chair: two (2) Past Presidents, the Secretary-elect, the Secretary, the treasurer, and the President-elect, one (1) clinician, one (1) academician and one (1) member at-large. The Executive Director serves ex-officio.

(b) Duties of the Committee. The Strategic Plan Steering Committee shall implement revisions to the current Academy Strategic Plan and develop a new plan for the ensuing three-year period. This committee will also monitor the committee IAPs and update the strategic plan accordingly

SECTION 14. Budget Committee.

(a) Composition. The Budget Committee shall consist of the President, President-Elect, Treasurer and Secretary; the President-Elect shall serve as Chair. The Council Chair, Continuing Education Oversight Committee Co-Chairs, and the Executive Director serve ex-officio.

(b) Duties of the Committee. The Budget Committee is responsible for developing a detailed budget proposal for the Academy's ensuing year. The Committee is to present their proposed itemized budget for Council approval, 30 days prior to the Annual Meeting.

SECTION 15. Publications Committee.

- (a) Composition. The Publications Committee Chair shall be appointed by the President and shall act as the Editor of the Academy Newsletter, The AAOP News, and shall oversee other official Academy Publications as determined by Council. Other members shall be appointed to support the undertakings of the Committee.
- (b) Duties of the Committee. The Publications Committee oversees all Academy Publications except the *Journal of Oral and Facial Pain and Headache* and the Academy Guidelines. The Publications Committee shall develop, design, write, solicit and edit the Official Academy Newsletter and other Official Academy Publications and communications as deemed appropriate by Council.

SECTION 16. Professional Relations Committee

- (a) Composition. The Professional Relations Committee Chair shall be appointed by the President. The committee members will include all official AAOP liaisons to other organizations which are appointed by the president and/or AAOP Council, the Industry Relations Chair, Sister Academy Liaison Committee Representative and Access to Care Chair. The Chair shall appoint additional members to the committee.
- (b) Duties of the Committee. The Professional Relations Committee develops and oversees relations and liaisons with other professional organizations. The committee will develop means of cooperation and common ground with other organizations. The committee will make regular reports to the Academy Council and seek Council approval before officially endorsing any agreements or liaisons with other organizations.

SECTION 17. Industry Relations Committee

- (a) Composition. The Industry Relations Committee Chair shall be appointed by the President. The committee members will include the Research Grants Committee Chair, Professional Relations Committee Chair & Budget Committee Chair. The Chair shall appoint additional members to the committee.
- (b) Duties of the Committee. The Industry Relations Committee develops and oversees relations and liaisons with other companies that have in interest and/or market share in the scientific field of health care and specifically dentistry with a focus on orofacial pain and temporomandibular disorders. The committee will coordinate the annual exhibits program and any sponsor programs or solicitations originating within the Academy. The committee will make regular reports to the Council and seek Council approval before officially endorsing any agreements or liaisons with other organizations.

SECTION 18. Access to Care Committee.

- (a) Composition. The Chair of the Access to Care Committee shall be appointed by the President. The Chair shall select other members to serve on the Committee. In addition, there may be ex-officio members invited by the Academy from appropriate organizations who can provide useful information and assistance to the Committee. The Access to Care Committee shall consist of three (3) standing sub-committees, with Chairs appointed by the President: the Insurance Subcommittee, the Legislative Subcommittee, and the Advocacy Subcommittee.
- (b) Duties of the Committee.
- (1) The Insurance Subcommittee shall be responsible for the development of a working relationship with third parties and issues involving ICD and CPT codes, and the subcommittee shall develop and maintain an updated ICD/CPT codes brochure pertaining to orofacial pain and temporomandibular disorders for the Academy.
- (2) The Legislation Subcommittee shall be responsible for monitoring and recommending legislation on a state-by-state and federal level necessary to establish appropriate access to care pertaining to orofacial pain and temporomandibular disorders.
- (3) The Advocacy Subcommittee shall be responsible for interactions with patient advocacy groups pertaining to orofacial pain and temporomandibular disorders and for incorporating the Academy's expertise with other groups' political endeavors.

SECTION 19. Physical Therapy Committee.

- (a) Composition. The Physical Therapy Committee Chair shall be appointed by the President. Other members will be selected to facilitate the various Committee activities. The membership of the committee shall be composed of, but not limited to five (5) of the total Physical Therapist Members of the Academy.
- (b) Duties of the Committee. The Committee shall represent and project the interests of the Academy on issues related to the activities of physical therapists within the Academy.

SECTION 20. Website Committee.

- (a) Composition. The Website Committee Chair shall be appointed by the President, shall act as the Editor of the Academy Website and shall oversee the official Academy Website and its contents as determined by Council. Other members shall be appointed to support the undertakings of the Committee.
- (b) Duties of the Committee. The Website Committee shall develop, design, write, solicit and edit the Official Academy Website and as deemed appropriate by Council.

SECTION 21. Sleep Medicine Committee

- (a) Composition. The committee shall be composed of a least five (5) members, including the Chair appointed by the president. The Chair may select others to serve on the committee. The committee shall consist of two (2) subcommittees: 1) the Sleep Education Subcommittee and 2) the Practice Parameters Subcommittee. Furthermore, because of the nature of this committee's work, a Medical Advisory Board may be created and appointed by the President in consultation with the Chair.
- (b) Duties of the Committee.
 - 1) The Sleep Education Subcommittee will function to promote the education of sleep and sleep related issues germane to the Academy membership, both in an advisory and cooperative manner with the Academy's Program Co-Chairs.
 - 2) The Practice Parameters Subcommittee will establish evidence-based guidelines as they apply to the dentist's role in sleep medicine.

SECTION 22. Special Meetings. Special Meetings shall proceed according to an agenda as proposed by the Chair of the committee and proceedings shall be recorded and become part of that committee's annual report to Council. Special Meetings are defined as any meeting in addition to the regularly scheduled committee meeting conventionally held immediately prior to the annual scientific session.

CHAPTER VII FEES AND DUES

SECTION 1. Initiation Fee for New Active Members. The initiation fee for new Members shall be determined by the Council.

SECTION 2. Annual Dues for Members of the Academy. Annual dues for all membership categories shall be determined by the Council after consultation with the Academy Treasurer and Budget Committee. Any Life Member may, for personal reasons, appeal to the Council in writing for an exemption from part of, or the entire dues requirement.

SECTION 3. Forfeiture of Membership Because of Non-Payment of Dues. Any Member delinquent in the payment of dues shall automatically forfeit membership in the Academy on April 1, provided notice of this delinquency shall have been served upon the Member by postal mail.

SECTION 4. Reinstatement for Non-Payment of Dues. Reinstatement for a Member who has been dropped for non-payment of dues may be made at the discretion of the Council.

SECTION 5. Dues Suspension. The Council may suspend any member's dues obligation when special circumstances prevent the member from normal active participation in their profession.

CHAPTER VIII
VACANCIES

SECTION 1. Vacancies Among Officers and Members of the Council. In the event of an unexpected vacancy of one of the elective offices, it shall become the Council's responsibility to fill the vacancy for the unexpired term. It will be the responsibility of the Nominating Committee to resolve any vacancy within the progression of Officers leading to the Office of President.

SECTION 2. Vacancies on Committees. Vacancies on Committees shall be filled by the President.

CHAPTER IX
QUORUM

The Quorum for an official General Membership Meeting of the Academy shall be ten percent (10%) of the total Academy Members who are eligible to vote.

CHAPTER X
SUSPENSION OF THE BYLAWS

The Bylaws may be suspended by unanimous vote of Members present and eligible to vote.

CHAPTER XI
PROCEDURE AT ANNUAL AND INTERIM MEETINGS

Robert's Rules of Order, Current Edition, shall govern at all Academy business meetings on points not otherwise herein provided for.

CHAPTER XII
AMENDMENT TO THE BYLAWS

SECTION 1. Effective Date. These Bylaws shall become effective immediately upon their adoption. Amendments to these Bylaws shall become effective immediately upon their adoption or such later date as specified in the Amendment.

SECTION 2. Amendments. Upon recommendation of the Council, the Bylaws of the Academy may be amended at any General Membership Meeting by the affirmative vote of not less than two-thirds (2/3) of the Members of the Academy who are eligible to vote and who shall vote at the General Membership Meeting either in person or via Written Ballot, provided that the Members of the Academy are notified in writing of such proposed changes at least thirty (30) days prior to the Meeting. Written Proxy Ballot must be received by the Office of Record no later than ten (10) day prior to the General Membership Meeting.

SECTION 3. Certification and Inspection. The original, or a copy, of these Bylaws as amended or otherwise altered to date, certified by the Secretary of the Academy, shall be recorded in a book and on a computer disc and kept in the principal office of the Academy, and an Official Copy shall be available for inspection by Academy Members at all reasonable times.

CHAPTER XIII
CORPORATE RECORDS

SECTION 1. Minutes of Meetings. The Academy shall keep at its principal office, or at a place the Council may determine, a book of the minutes of all meetings of the Council and all General Membership Meetings, with the time and place of holding, whether regular or special, and, if special, how authorized, the notice given, the names of those present at Council Meetings, the number of Members present at General Membership Meetings, and the proceedings thereof.

SECTION 2. Inspection of Records. Any member of the Council shall have the right at any reasonable time to inspect all Academy books, records, and documents of every kind. The books of account and minutes of meetings of the Council, the members, and committees shall be open to inspection at any reasonable time on the written demand of any Academy Member.

SECTION 3. Special Meetings. Special or Extraordinary Meetings of Council or General Membership shall proceed according to an agenda as proposed by the Presiding Officer and shall be recorded and become part of the Annual Report to Council.

CHAPTER XIV LIMITATIONS AND RESTRICTIONS

SECTION 1. Prohibited Transactions. No Member, Director, Officer, employee, or other person connected with the Academy, or any other private individual, shall receive at any time, any of the net earnings or pecuniary profit from the operations of the Academy. This provision shall not prevent payment of reasonable compensation to any person for services rendered to or for the Academy in effecting any of its purposes as shall be fixed by resolutions of the Council; and no person or persons shall be entitled to share in the distribution of, and shall not receive any of the corporate assets on dissolution of, or winding up of affairs of the Academy, whether voluntary or involuntary. The assets of the Academy then remaining in the hands of the Council after all debts have been satisfied shall be distributed as required by the Articles of Incorporation of the Academy, and not otherwise.

SECTION 2. The Officers and Council of the Academy shall make no binding, long term alliances with any other professional academies, organizations or groups, without fulfilling the following:

1. Notify the membership by written or electronic means of the proposed action at least thirty (30) days prior to the General Membership meeting
2. Request an on-line dialogue concerning the proposal at least thirty (30) days prior to the General Membership meeting
3. Require a majority vote by the General Membership that requires the presence of a minimum of 25% of members participating in the voting process, or authorize a vote by written or electronic means requiring a vote of at least 25% of active members prior to acceptance.

SECTION 3. Other Limitations and Restrictions. Notwithstanding any other provision in these Bylaws, the Academy shall adhere to all relevant US laws governing non-profit organizations.

END OF BYLAWS

Appendix Ib. AAOP Strategic Plan 2017-2020

MISSION/VISION

The American Academy of Orofacial Pain, an organization of dentists and other health care professionals, is dedicated to alleviating pain and suffering through the promotion of excellence in education, research, and patient care in the field of orofacial pain and associated disorders

Current Goals:

- I. Provide the highest quality, evidence based educational opportunities and training to professionals within the fields of orofacial pain, sleep medicine, temporomandibular disorders, and associated disorders.
- II. Increase the effectiveness of the Academy by sustaining member retention and growth, increasing opportunities for member participation and leadership development, improving the level of member satisfaction, and maintaining sound financial policies.
- III. Improve patient care, access to care, and to broaden insurance benefits for patients suffering from orofacial pain, TMD, and associated disorders.
- IV. Establish and/or maintain relations with other health care professional organizations.

Goal	Objectives/ Strategies	Committees' IAP Reference
I. Provide the highest quality, evidence based educational opportunities and training to professionals within the fields of orofacial pain, sleep medicine, temporomandibular disorders, and associated disorders.	<p>A. Hold an annual evidenced based educational meeting that strives for a balanced program. Clinical and research topics are covered.</p> <p>B. Predoctoral: Advocate to increase the amount and improve the quality of predoctoral education in the areas of TMD and other orofacial pain disorders.</p> <p>C. Postdoctoral: Support sustainability of postdoctoral OFP programs at dental schools.</p> <p>D. Encourage postdoctoral students and program directors to be part of AAOP community.</p> <p>E. Provide financial support for graduate and predoctoral student research into orofacial pain and TMD disorders.</p> <p>F. Develop online continuing education.</p>	<p>Academic Education Committee Ambassador Committee Budget Committee Continuing Education Committee Guidelines Committee Physical Therapy Committee Program Committees 2018-2020 Research Committee Residents & New Grad Committee Sleep Medicine Committee Web Committee</p>

Goal	Objectives/ Strategies	Committees' IAP Reference
<p>II. Increase the effectiveness of the Academy by sustaining member retention and growth, increasing opportunities for member participation and leadership development, improving the level of member satisfaction and maintaining sound financial policies.</p>	<p>A. Marketing of AAOP to all dentists and other health care professionals with an interest in OFP, sleep medicine, and/or TMD</p> <p>B. Improved communication between AAOP leadership and members</p> <p>C. Provide excellence in membership services</p> <p>D. Increase annual revenue through steady growth in membership, annual meeting attendance and corporate support</p> <p>E. Develop and promote greater opportunities and participation in committees by new and existing members</p> <p>F. Develop new leaders within AAOP and provide guidelines and structure for overseeing the Academy</p> <p>G. Establish the governing principles and documents of the Academy to insure compliance with legal standards and documentation history</p> <p>H. Monitor and control expenses to within 110% of budget unless special circumstances deem a necessary variance</p> <p>I. Pursue an endowment</p>	<p>Academic Education Committee Ambassador Committee Budget Committee Constitution & Bylaws Committee Continuing Education Committee Council Guidelines Committee Industry Relations Committee Professional Relations Committee Leadership Ad-Hoc Committee Membership Committee Nominating Committee Past Presidents Committee Program Committee Publications Committee Residents & New Grads Committee Sleep Medicine Committee Strategic Planning Committee Web Site Committee</p>

Goal	Objectives/ Strategies	Committees' IAP Reference
<p>III. Improve patient care, access to care, and to broaden insurance benefits for patients suffering from orofacial pain, TMD, sleep medicine, and associated disorders.</p>	<p>A. Support efforts to secure specialty recognition</p> <p>B. Increase awareness between buyers and payers and communicate with insurance providers</p> <p>C. Actively advocate for patients and work within legislative process</p> <p>D. Pursue body parts equalization</p> <p>E. Provide education and resources to help members deal effectively with third party payers</p> <p>F. Provide education to patients, e.g., through patient brochures</p> <p>G. Promote the AAOP as the pre-eminent resource for professional referrals</p>	<p>Access to Care Budget Committee Constitution & Bylaws Committee Council Publications Committee Sleep Medicine Committee Strategic Planning Committee</p>

Goal	Objectives/ Strategies	Committees' IAP Reference
<p>IV. Establish and/or maintain relations with other health care professional organizations</p>	<p>A. Explore possible collaborations with similar professional organizations</p> <p>B. Establish Liaisons with other related professional organizations</p> <p>C. Explore the possibilities for holding complementary or joint educational meetings with similar organizations</p> <p>D. Maintain good relationship with international community</p>	<p>Continuing Education Committee Professional Relations Committee Sister Academy Liaison</p>

Appendix Ic. American Board of Orofacial Pain Constitution and By-Laws

Table Of Contents:

- I. Name
- II. Status
- III. Purpose
- IV. Mission Statement
- V. Goals and Objectives
- VI. Eligibility
- VII. Certification
- VIII. Board of Directors
- IX. The Examination Council

I. NAME

The name of the corporation shall be the American Board of Orofacial Pain. The lettered designation "ABOP" can be used to mean the same as the name of the corporation.

II. STATUS

The ABOP is organized and shall operate as a California Nonprofit Mutual Benefit Corporation.

III. PURPOSE

The purpose of the ABOP is to act as an association of licensed professionals in order to conduct certification examinations in the field of Orofacial Pain.

IV. MISSION STATEMENT

The mission of the American Board of Orofacial Pain is to assist the public by certifying that individuals who hold themselves out as "Diplomates of the American Board of Orofacial Pain" have passed a certifying examination and are subject to periodic recertification.

V. GOALS AND OBJECTIVES

The goals and objectives of the ABOP are:

1. To inform the public, through a list maintained at its central office and posted on its website, of individuals who are certified as Diplomates of the American Board of Orofacial Pain,
2. To determine if candidates meet qualifications and requirements of ABOP and recognized specialty certifying organizations and agencies for challenging certifying examinations in orofacial pain.
3. To create, maintain, and administer certifying examinations to evaluate the knowledge and experience of such candidates,
4. To issue certificates and award the status of "Diplomate, American Board of Orofacial Pain" to those candidates who are found to be qualified under the stated requirements of the American Board of Orofacial Pain and recognized specialty certifying agencies.
5. To communicate to graduates and program directors of U.S. university-based or hospital-based Orofacial Pain advanced education programs, the scope and topic proportions on current ABOP examinations, changes in content and topic proportions on future examinations, changes in the types of tests administered, and information on new tests that may be offered by the ABOP,
6. To provide information to the public, professional organizations, healthcare agencies, and regulatory bodies regarding certification in Orofacial Pain.

VI. ELIGIBILITY

The Board of Directors may, from time to time, modify existing criteria or impose additional criteria for eligibility.

Written Exam

Dentists who have accrued at least 400 hours of continuing education in topics specifically related to orofacial pain and have practiced orofacial pain for at least two years are considered board eligible and may sit for the written portion of the ABOP certifying examination. Dentists enrolled in a full-time U.S. university or hospital-based residency program in orofacial pain, may be considered board eligible and apply to sit for the written exam upon formal conveyance by the program director to the ABOP that the dentist has successfully completed at least one year of the program. Dentists who have previously taken the written examination unsuccessfully may retake the examination.

Oral Exam

Board eligible dentists who have successfully passed the written exam are eligible to take the oral exam. Oral exam eligible candidates must take the oral exam no sooner than 1 year and no later than 5 years after passing the written exam. Extensions of the time limit for challenging the oral examination may be considered on a case by case basis, based on academic, research, military or other extenuating circumstances.

CERTIFICATION

Board eligible dentists must pass both the written and oral examinations to receive the designation of Diplomate-elect. The entire examination process is supervised by and passing scores are statistically determined by an independent testing service. Upon receipt by the Executive Secretary of a signed agreement to abide by the ABOP Code of Conduct, future revisions of the Code of Conduct, and Guidelines for Disciplinary Action, the Board of Directors shall award to the Diplomate-elect the status of Diplomate of the American Board of Orofacial Pain. The Diplomate shall receive a certificate that bears the Diplomate's name, degree(s) conferred by a university, the ABOP seal, certification number and date of the certification. The Diplomate is then entitled to all rights designated by the ABOP. Those individuals who successfully challenge the exams but have not yet completed training programs will receive Diplomate status after completion of a formal training program.

Individuals who have been Diplomates in good standing for at least a minimum of 10 years may, upon permanent disability or retirement, apply to the Board of Directors for "Diplomate Emeritus" status of the American Board of Orofacial Pain." This designation is available only to those individuals who have maintained an orofacial pain practice, not been in arrears on renewal fees, and have appropriately documented all continuing education requirements during the immediate past ten years prior to the application for this change in status. A Diplomate Emeritus may not practice in the field of orofacial pain, but may continue to contribute through teaching, research and publications. A Diplomate Emeritus will maintain all of the privileges of an active member. A minimal fee for administrative support will be assessed as determined appropriate by the Board of Directors.

VIII. THE BOARD OF DIRECTORS

General Powers of the Board of Directors

1. The ABOP shall be governed by its Board of Directors which shall have full authority to manage its affairs, including but not limited to the power to establish policies, rules, regulations, examination candidacy requirements, requirements for certification, recertification and other examinations within the scope of orofacial pain.
2. Decisions of the Board of Directors shall require a majority vote of the Board of Directors with the exception of the following, which will require a $\frac{3}{4}$ (seventy five percent majority) vote: election of the Examination Council Chairperson, filling an unfilled position of President-elect or President, making changes to these Bylaws, impeaching a Diplomate, revising the examination blueprint, and rejecting a recommendation of the Examination Council. Should there be a need to fill the position of Immediate Past President the position must be filled by the next most recent past president.
3. The Board of Directors authorizes the President and Secretary to award a Diplomate certificate to a Diplomate-elect to identify himself or herself as a "Diplomate of the American Board of Orofacial Pain" and permits use of such designation on letterhead, business cards, biographical information and prescriptions. The Board of Directors must approve the designation of "Diplomate of the American Board of Orofacial Pain" on other communications prior to its use. Diplomates must abide by local laws and regulations regarding use of the designation of Diplomate, in the aforementioned, or other media.
4. The Board of Directors may retain an accounting firm, a legal firm specializing in certification law, an independent testing service, an executive secretary, a parliamentarian, and other professionals as may be needed from time to time. The individuals and companies filling these positions, as well as the amount of compensation they are to receive, must be confirmed by the Board of Directors.
5. The Board of Directors shall write, update, administer, and govern a formal Code of Conduct and Guidelines for Disciplinary Action subject to restrictions imposed by law. Each Diplomate-elect shall be provided with a copy of the ABOP Code of Conduct and Guidelines for Disciplinary Action. Signed acceptance of the Code of Conduct and Guidelines for Disciplinary Action by the Diplomate-elect must be received by the Executive Secretary of the ABOP in order to receive full and official Diplomate status.
6. The Board of Directors shall determine certifying examination fees and renewal fees.
7. The Board of Directors may maintain an insurance policy for the purpose of protecting officials of the Board of Directors from civil liability.

Composition, Tenure and Qualifications of the Board of Directors.

1. The officers of the ABOP shall consist of the President, the Immediate-past President, the President-elect, the Secretary and the Treasurer.
2. There shall be an automatic rotation of offices from President-elect, to President and to Immediate Past President. In the event that the President-elect, or another officer, cannot ascend to the next position, or chooses not to ascend, the Nominating Committee shall recommend a replacement to be confirmed by a ¾ (seventy five percent) majority of the Board of Directors.
3. The term of all offices of the ABOP will begin on June 1 and terminate on May 31. The term of office of the President, President Elect, and Immediate Past President shall be two years. The term of office of the Examination Council Chairperson and Vice Chairperson will be a minimum of two years and a maximum of 4 years. The term for the examination council chairperson and vice chairperson may be renewed at the discretion of the Board of Directors. The term of office of at-large Directors shall be four years with two at-large Directors rotating off of the Board of Directors every two years. At-large Directors may serve more than one term provided those terms do not run consecutively. Officials of the Board of Directors may not hold more than one office simultaneously.
4. The number of voting Directors shall be at least nine (and not more than 15). These Directors are the Immediate Past President, President, President-elect, and six at-large Directors. All voting Directors must be Diplomates of the ABOP.
5. Non-voting officials shall be the Examination Council Chair and Vice-Chair who must be Diplomates of the ABOP and, at the discretion of the Board of Directors, one representative from selected organizations that the ABOP determines are dedicated to the field of orofacial pain and whose input would enhance the ABOP mission. These representatives may or may not be Diplomates. Representatives from other professional organizations serve a two-year term. The Board of Directors may appoint an Ad Hoc committee chair for a specified task. Ad Hoc committee chairs are non-voting members of the Board of Directors.
6. The Executive Director of the ABOP is not a formal member of the Board of Directors but attends the meetings, is responsible for the day-to-day business of the ABOP, and is available to officers for assistance in performing their responsibilities.

The Nominating Committee

The Nominating Committee shall be composed of the Immediate Past President, the President, and the President Elect. The Immediate Past President shall serve as chairperson. The committee is charged with nominating the Exam Council Chairperson, six at-large directors (two of whom will also be nominated as the Secretary and Treasurer of the Board of Directors), vacancies on the Board of Directors, and additional seats to the Board of Directors or Examination Council. A nominee will be confirmed by a 2/3 (two thirds) vote of the Nominating Committee. Should nominees of the Nominating Committee fail to be confirmed by a majority of the Board of Directors, additional nominations can be made by members of the Board of Directors.

General Powers and Responsibilities of Officers of the Board of Directors

1. President.

The President shall be the principal executive officer of the ABOP and shall in general supervise the affairs of the ABOP that include

but are not limited to:

1. Representing the public and professional interests of the ABOP,
2. Writing and editing journal announcements for certification examinations,
3. Choosing journals and other formats in which examinations are to be publicized with the approval of the Board of Directors,
4. Setting the date and location of certifying examinations with approval of the Board of Directors
5. Presiding over the resolution of disputes between a potential candidate, or candidate, and the ABOP with approval of the Board of Directors,
6. Calling at least one annual Board of Directors' meeting to conduct the affairs of the ABOP,
7. Setting the agenda for the Board of Directors' meetings,

8. Setting the budget of the ABOP in consultation with the Treasurer and authorizing loans and payments of debts with the approval of the Board of Directors,
9. Conferring regularly with the Examination Council Chairperson,
10. Being an ex-officio member of all committees appointed by the Board of Directors and the Examination Council,
11. Appointing committees, and committee chairpersons, all of whom must be Diplomates of the ABOP, to perform tasks on behalf of the ABOP,
12. Selecting a time and method of updating the ABOP Blueprint with consultation of the Examination Council Chairperson, and the Independent testing service followed by the majority approval of the Board of Directors,
13. Interviewing candidates to fill the positions of Independent testing service and Executive Secretary, as needed, and present at least two choices to the Board of Directors for their consideration and approval.
14. Providing documentation necessary to show compliance with the American Dental Association rules and regulations,
15. Preside over the impeachment process in the event that the Immediate Past President is the subject of allegations or violations of the ABOP Code of Conduct.
16. Participating as a member of the nominating committee.

2. President-elect

In the absence of the President, or in the event of the President's inability to act, the President-elect shall perform the duties of the President. When so acting, the President-elect shall have all the powers of and be subject to all of the restrictions of the President. The President-elect shall perform additional duties assigned by the Board of Directors from time to time. The President-elect is a member of the nominating committee.

3. Immediate Past President

The Immediate Past President's responsibilities include but are not limited to:

1. Providing counsel to the President,
2. Presiding over meetings of the Nominating Committee,
3. Participating as a member of the nominating committee.
4. Contacting nominees to ensure that the nominee is willing to serve, if confirmed,
5. Presiding over allegations of violations of the ABOP Code of Conduct by a Diplomate,
6. Presiding over impeachment of an official of the Board of Directors, an official of the Examination Council, or a Diplomate for actions prejudicial to the best interests of the ABOP,
7. Reviewing and recommending to the Board of Directors updates to the Code of Conduct,
8. Performing additional duties assigned by the Board of Directors from time to time.

4. Secretary (also an at-large director)

The Secretary's responsibilities include but are not limited to:

1. Maintaining a historical record of the ABOP, including names and positions of all ABOP officials and their dates of tenure, and providing a yearly update of these records to the Executive Secretary of the ABOP,
2. Recording the proceedings of the Board of Directors meetings, maintaining records of the Examination Council meetings and committee meetings,
3. Maintaining records of the ABOP Blueprint and the means by which the Blueprint was determined,
4. Maintaining lists of candidates who have passed, failed, requested hand scoring of examinations, and those who are Board eligible,
5. Consulting with the President regularly,
6. Reporting yearly to the Board of Directors.
7. Perform additional duties assigned by the Board of Directors from time to time.

5. Treasurer (also an at-large director)

If required by the Board of Directors the Treasurer shall give a bond for the faithful discharge of his/her duties a sum and with surety.

or sureties, as the Board of Directors may determine

The Treasurer shall have responsibility for:

1. Performing all duties incident to the office and other duties as from time to time may be assigned by the President or the Board of Directors,
2. Overseeing the management of bank accounts and investment accounts in consultation with the President the Board of Directors regarding changes in investment strategies,
3. Signing disbursement checks presented by the Executive Secretary, or alternately, signing and faxing an approval to the Executive Secretary to sign and disburse funds for specific amounts to specific parties. In the event that the Treasurer is unable to perform this function, the President-elect and President shall be authorized to institute the disbursement of funds,
4. Reviewing and signing tax documents prepared by the ABOP's accounting firm,
5. Conferring quarterly with the President,
6. Reporting yearly to the Board of Directors.
7. Perform additional duties assigned by the Board of Directors from time to time.

IX. THE EXAMINATION COUNCIL

General Powers of the Examination Council

1. The purpose of the Examination Council is to construct and recommend to the Board of Directors psychometrically valid examinations that test minimal competence of the scope and breadth of knowledge of an orofacial pain practitioner while faithfully adhering to the specifics of the entire ABOP examination blueprint, oversee examination administration, determine passing scores for each question on examinations, and generally facilitate the credentialing process,
2. Decisions relating to examination shall be approved by a majority of the Examination Council officials, provided the construction of the examination does not violate the ABOP examination blueprint and is made in accordance with the advice of the Independent Testing Service,
1. The Examination Council may write examination questions, solicit questions from experts in the field of orofacial pain, or, with approval of the Board of Directors, purchase questions from other certification organizations. If questions are purchased, they must be purchased from certifying boards in the field of pain whose test construction standards and confidentiality standards are similar to those of the ABOP,
2. The Examination Council rates questions and sets the passing score for each examination according to guidelines set forth by the Independent Testing Service,
3. The Examination Council shall maintain a standing committee of no less than six Diplomates to administer oral examinations. The minimal term of officials in this committee is five years beginning June 1 and ending May 31. Three officials of the Examination Council standing committee may rotate off the committee every five years and can be replaced by three new officials.
4. The Examination Council publishes an annual Bulletin of Information that describes the types of examinations being given, the content and approximate proportion of subject content of the examinations, and the date, place, and time of examinations. The Bulletin of Information shall also describe qualifications to become a candidate for the certifying examination, the ABOP Code of Conduct, Guidelines for Disciplinary Action, and other information deemed necessary by the Board of Directors. The Bulletin of Information must be published approximately six (6) months in advance of the examination date.

Composition, Tenure and Qualifications of the Examination Council

The officials of the Written Examination Council include a Chairperson, a Vice-Chairperson and not less than 7 or more than 13 additional Examination Council officials. The geographic representation of the Examination Council should be consistent with the geographic distribution ratios of the Diplomates of the ABOP,

1. The Written Examination Council officials shall be nominated by the Examination Council Chairperson and confirmed by the Board of Directors. Once the Examination Council officials have been confirmed by the Board of Directors, the Written Examination Council Chairperson shall select one of the officials to serve as the Written Examination Council Vice-Chairperson.
2. The Oral Examination Council Chairperson and Vice-Chairperson must have served on the Examination Council for at least one examination cycle before assuming these roles,

3. The Oral Examination Council officials shall be nominated by the Examination Council Chairperson and confirmed by the Board of Directors. Once the Examination Council officials have been confirmed by the Board of Directors, the Oral Examination Council Chairperson shall select one of the officials to serve as the Examination Council Vice-Chairperson,

The term of all Examination Council officials will be a minimum of two years and a maximum of 4 years. This term may be altered at the discretion of the Board of Directors, upon recommendation of the Exam Chair.

The Examination Council Chairperson is the principal officer of the Examination Council and shall preside over all meetings of the Examination Council,

4. Examination Council officials are expected to contribute to examination construction as determined necessary by the Examination Council Chairperson and must attend in person at least one of at most 2 annual examination council meetings.
5. To protect the integrity of the examinations, all officials of the Examination Councils must be Diplomates of the ABOP and must sign a confidentiality form provided by the Examination Council Chairperson.

General Powers and Responsibilities of Officers of the Examination Councils

1. Examination Council Chairperson

The Examination Council Chairpersons, for the written and oral examinations, shall be the principal officer of the Examination Council and shall in general supervise the affairs of the Examination Council that include but are not limited to:

1. Supervising the construction and administration of examinations given by the ABOP.
2. Appointing an official of the Examination Council to serve as Examination Council Vice-Chairpersons.
3. Nominating officials of the Examination Council and securing signed confidentiality forms from each selected official,
4. Appointing committee(s) and committee chairperson(s) for a specific purpose and for a specific period of time, all of whom must be Diplomates of the ABOP, to assist the Examination Council Chairperson in carrying out the responsibilities of the Examination Council,
5. Serving as an ex-officio member of all Examination Council committees,
6. Updating the ABOP Examination Bulletin of Information annually, which must then be approved by the President of the ABOP. When policies of the ABOP are changed in the Bulletin of Information, approval must be obtained by a majority vote of the Board of Directors,
1. Publishing the Bulletin of Information in advance of each examination,
2. Setting the agenda for the Examination Council meetings, choosing the date, time and location of the meetings, and notifying the Independent Testing Service of the meetings to assure that a representative, if necessary, attends the meetings,
3. Assisting with documentation required by the Independent Testing Service to assure compliance with nationally accepted standards,
4. Assisting with documentation required by official agencies certifying specialty.
5. Supervising the review, editing, addition and deletion of questions from the ABOP pool of questions with approval of the Examination Council officials,
6. Reviewing the examination, as presented by the Independent Testing Service to assure the quality and quantity of questions assigned to each category, discarding questions deemed inappropriate, selecting replacement questions from the pool of questions and submitting the final examination to the Examination Council for their editing and approval,
7. Editing and approving for recommendation to the Board of Directors the final draft of examinations providing changes are consistent with national testing standards and the ABOP blueprint,
8. Recommending to the Board of Directors the cut-off passing score, should there be a statistical variation,
9. Reviewing questioned or disputed items with the Independent Testing Service after the administration of each examination and making a final determination, with consultation from the President of the ABOP, as to which items, if any, will be deleted from scoring,
10. Periodically reviewing the Blueprint and recommending to the President of the ABOP whether an update is needed,
11. Reviewing and advising the President of the ABOP of financial needs of the Examination Council.

2. Examination Council Vice-Chairpersons

In the absence of the Examination Council Chairperson, or in the event of the Chairperson's inability to

act, the Vice-Chairperson shall perform the duties of the Chairperson. When so acting the Vice-Chairperson shall have all the powers of and be subject to all of the restrictions on the Chairperson. The Vice-Chairperson duties include but are not limited to:

1. Reviewing candidate's applications to take the certifying examination to assure that the candidate has met the requirements of the ABOP and the ADA to sit for the ABOP Certifying examination. If, in the event the Vice-Chairperson is uncertain whether a candidate meets the ABOP criteria to sit for the examination, the Vice-Chairperson will defer the decision to the Examination Chairperson and the Board of Directors,
2. Notifying the Executive Secretary of the candidate's qualifications to sit for the examination in order to facilitate completion of documentation required for appearing for the examination,
3. Answering inquiries relating to the eligibility of an applicant for a certifying examination,
4. Functioning as the test supervisor of examinations,
5. Recruiting assistant proctors to help in the administration of the examinations,
6. Assist the Examination Council Chairperson in ways that facilitate the Chairperson to carry out his/her responsibility,
7. Maintaining minutes of meetings of the Examination Council, and its committees, and reporting the minutes to the President and Secretary of the ABOP.

Appendix II. a) Standards for Advanced Education Programs in Orofacial Pain

Commission on Dental Accreditation Standards for Advanced Dental Education Programs in Orofacial Pain

Commission on Dental Accreditation
211 East Chicago Avenue
Chicago, Illinois 60611-2678

Document Revision History Date	Item	Action
August 5, 2016	Accreditation Standards for Advanced General Dentistry Education Programs in Orofacial Pain	Approved
August 5, 2016	Revised Mission Statement	Adopted
January 1, 2017	Revised Mission Statement	Implemented
July 1, 2017	Accreditation Standards for Advanced General Dentistry Education Programs in Orofacial Pain	Implemented
August 4, 2017	Revised Accreditation Status Definitions	Approved, Implemented
August 4, 2017	Revised Standards 1-5, 1-9, 1-10, 2-2, 2-3, 2-4, 2-12, 2-18, 2-20, 3-3, 3-6, 4-6, 4-7, 4-9 and 5-1 and new Standard 3-9	Adopted
July 1, 2018	Revised Standards 1-5, 1-9, 1-10, 2-2, 2-3, 2-4, 2-12, 2-18, 2-20, 3-3, 3-6, 4-6, 4-7, 4-9 and 5-1 and new Standard 3-9	Implemented
August 3, 2018	Revised Terminology Related to Advanced Education Programs	Adopted
January 1, 2019	Revised Terminology Related to Advanced Education Programs	Implemented

Mission Statement of the Commission on Dental Accreditation

The Commission on Dental Accreditation serves the public and profession by developing and implementing accreditation standards that promote and monitor the continuous quality and improvement of dental education programs.

Commission on Dental Accreditation

Adopted: August 5, 2016

Accreditation Status Definitions

Programs That Are Fully Operational

Approval (without reporting requirements): An accreditation classification granted to an educational program indicating that the program achieves or exceeds the basic requirements for accreditation.

Approval (with reporting requirements): An accreditation classification granted to an educational program indicating that specific deficiencies or weaknesses exist in one or more areas of the program. Evidence of compliance with the cited standards or policies must be demonstrated within a timeframe not to exceed eighteen (18) months if the program is between one and two years in length or two years if the program is at least two years in length. If the deficiencies are not corrected within the specified time period, accreditation will be withdrawn, unless the Commission extends the period for achieving compliance for good cause. Identification of new deficiencies during the reporting time period will not result in a modification of the specified deadline for compliance with prior deficiencies.

Circumstances under which an extension for good cause would be granted include, but are not limited to:

- sudden changes in institutional commitment;
- natural disaster which affects affiliated agreements between institutions; faculty support; or facilities;
- changes in institutional accreditation;
- interruption of an educational program due to unforeseen circumstances that take faculty, administrators or students away from the program.

Revised: 8/17; 2/16; 5/12; 1/99; Reaffirmed: 8/13; 8/10, 7/05; Adopted: 1/98

Programs That Are Not Fully Operational

A program which has not enrolled and graduated at least one class of students/residents and does not have students/residents enrolled in each year of the program is defined by the Commission as not fully operational. The accreditation classification granted by the Commission on Dental Accreditation to programs which are not fully operational is "initial accreditation." When initial accreditation status is granted to a developing education program, it is in effect through the projected enrollment date. However, if enrollment of the first class is delayed for two consecutive years following the projected enrollment date, the program's accreditation will be discontinued, and the institution must reapply for initial accreditation and update pertinent information on program development. Following this, the Commission will reconsider granting initial accreditation status.

Initial Accreditation is the accreditation classification granted to any dental, advanced dental or allied dental education program which is not yet fully operational. This accreditation classification provides evidence to educational institutions, licensing bodies, government or other granting agencies that, at the time of initial evaluation(s), the developing education program has the potential for meeting the standards set forth in the requirements for an accredited educational program for the specific occupational area. The classification "initial accreditation" is granted based upon one or more site evaluation visit(s).

Introduction

This document constitutes the standards by which the Commission on Dental Accreditation and its site visitors evaluate Advanced Dental Education Programs in Orofacial Pain for accreditation purposes. It also serves as a program development guide for institutions that wish to establish new programs or improve existing programs.

The standards identify those aspects of program structure and operation that the Commission regards as essential to program quality and achievement of program goals. They specify the minimum acceptable requirements for programs and provide guidance regarding alternative and preferred methods of meeting standards.

Although the standards are comprehensive and applicable to all institutions that offer advanced dental education programs, the Commission recognizes that methods of achieving standards may vary according to the size, type, and resources of sponsoring institutions. Innovation and experimentation with alternative ways of providing required training are encouraged, assuming standards are met and compliance can be demonstrated. The Commission has an obligation to the public, the profession, and the prospective resident to assure that programs accredited as Advanced Dental Education Programs in Orofacial Pain provide an identifiable and characteristic core of required training and experience.

Goals

Advanced Dental Education Programs in Orofacial Pain are educational programs designed to provide training beyond the level of predoctoral education in oral health care, using applied basic and behavioral sciences. Education in these programs is based on the concept that oral health is an integral and interactive part of total health. The programs are designed to expand the scope and depth of the graduates' knowledge and skills to enable them to provide care for individuals with orofacial pain.

The goals of these programs should include preparation of the graduate to:

1. Provide education in orofacial pain at a level beyond predoctoral education relating to the basic mechanisms and the anatomic, physiologic, neurologic, vascular, behavioral, and psychosocial aspects of orofacial pain.
2. Plan and provide interdisciplinary/multidisciplinary health care for a wide variety of patients with orofacial pain.
3. Interact with other healthcare professionals in order to facilitate the patient's total healthcare.

4. Manage the delivery of oral health care by applying concepts of patient and practice management and quality improvement that are responsive to a dynamic health care environment.
5. Function effectively and efficiently in multiple health care environments and within interdisciplinary/multidisciplinary health care teams.
6. Apply scientific principles to learning and oral health care. This includes using critical thinking, evidence or outcomes-based clinical decision-making and technology-based information retrieval systems.
7. Enhance the dissemination of information about diagnosis and treatment/management of orofacial pain to all practitioners of the health profession.
8. Encourage the development of multidisciplinary teams composed of basic scientists and clinicians from appropriate disciplines to study orofacial pain conditions, to evaluate current therapeutic modalities, and to develop new and improve upon existing procedures for diagnosis and treatment/management of such conditions/diseases/syndromes.
9. Enhance the interaction and communication among those investigating pain at their institution and beyond.
10. Utilize the values of professional ethics, lifelong learning, patient centered care, adaptability, and acceptance of cultural diversity in professional practice.

Definition of Terms

Key terms used in this document (i.e., Must, should, could and may. were selected carefully and indicate the relative weight that the commission attaches to each statement. The definition of these words as used in the standards follows:

Competencies: Written statements describing the levels of knowledge, skills, and values expected of residents completing the program.

Competent: The level of knowledge, skills, and values required by residents to perform independently an aspect of dental practice after completing the program.

Educationally qualified: Board eligible in orofacial pain or successful completion of an orofacial pain program of at least two years in length.

Examples of evidence to demonstrate compliance include: Desirable condition, practice or documentation indicating the freedom or liberty to follow a suggested alternative.

Intent: Intent statements are presented to provide clarification to the advanced dental education programs in orofacial pain in the application of and in connection with compliance with the Accreditation Standards for Advanced Dental Programs in Orofacial Pain. The statements of intent set forth some of the reasons and purposes for the particular Standards. As such, these statements are not exclusive or exhaustive. Other purposes may apply.

Interdisciplinary: Including dentistry and other health care professions.

Manage: Coordinate the delivery of care using a patient-focused approach within the scope of their training. Patient-focused care should include concepts related to the patient's social, cultural, behavioral, economic, medical and physical status.

May or could: Indicates freedom or liberty to follow a suggested alternative.

Multidisciplinary: Including all disciplines within the profession of dentistry.

Must: Indicates an imperative or duty; an essential or indispensable item; mandatory.

Patients with special needs: Those patients whose medical, physical, psychological, or social situations make it necessary to modify normal dental routines in order to provide dental treatment for that individual. These individuals include, but are not limited to, people with developmental disabilities, complex medical problems, and significant physical limitations.

Should: Indicates a suggested way to meet the standard; highly desirable, but not mandatory.

SOAP: Subjective Objective Assessment Plan

Sponsor: The institution that has the overall administrative control and responsibility for the conduct of the program.

Resident: The individual enrolled in a Commission on Dental Accreditation-accredited advanced dental education program.

STANDARD 1 – INSTITUTIONAL AND PROGRAM EFFECTIVENESS

1-1 Each sponsoring or co-sponsoring United States-based educational institution, hospital or health care

organization must be accredited by an agency recognized by the United States Department of Education or accredited by an accreditation organization recognized by the Centers for Medicare and Medicaid Services (CMS).

United States military programs not sponsored or co-sponsored by military medical treatment facilities, United States-based educational institutions, hospitals or health care organizations accredited by an agency recognized by the United States Department of Education or accredited by an accreditation organization recognized by the Centers for Medicare and Medicaid Services (CMS) must demonstrate successful achievement of Service-specific organizational inspection criteria.

Examples of evidence to demonstrate compliance may include:

Accreditation certificate or current official listing of accredited institutions

Evidence of successful achievement of Service-specific organizational inspection criteria

1-2 The sponsoring institution must ensure that support from entities outside of the institution does not compromise the teaching, clinical and research components of the program.

Examples of evidence to demonstrate compliance may include:

Written agreement(s)

Contract(s)/Agreement(s) between the institution/program and sponsor(s) related to facilities, funding, and faculty financial support

1-3 The authority and final responsibility for curriculum development and approval, resident selection, faculty selection and administrative matters must rest within the sponsoring institution.

1-4 The financial resources must be sufficient to support the program's stated purpose/mission, goals and objectives.

Examples of evidence to demonstrate compliance may include:

Program budgetary records

Budget information for previous, current and ensuing fiscal year

1-5 Arrangements with all sites not owned by the sponsoring institution where educational activity occurs must be formalized by means of current written agreements that clearly define the roles and responsibilities of the parties involved.

Intent: Sites where educational activity occurs include any dental practice setting (e.g. private offices, mobile dentistry, mobile dental provider, etc.). The items that are covered in agreements do not have to be contained in a single document. They may be included in multiple agreements, both formal and informal (e.g., addenda and letters of mutual understanding).

Examples of evidence to demonstrate compliance may include:

Written agreements

1-6 There must be opportunities for program faculty to participate in institution-wide committee activities.

Examples of evidence to demonstrate compliance may include:

Bylaws or documents describing committee structure

Copy of institutional committee structure and/or roster of membership by dental faculty

1-7 Orofacial pain residents must have the same privileges and responsibilities provided residents in other professional education programs.

Examples of evidence to demonstrate compliance may include:

Bylaws or documents describing resident privileges

1-8 The medical staff bylaws, rules, and regulations of the sponsoring, co-sponsoring, or affiliated hospital must ensure that dental staff members are eligible for medical staff membership and privileges.

Intent: Dental staff members have the same rights and privileges as other medical staff of the sponsoring, co-sponsoring or affiliated hospital, within the scope of practice.

Examples of evidence to demonstrate compliance may include:

All related hospital bylaws

Copy of institutional committee structure and/or roster of membership by dental faculty

1-9 The program must have written overall program goals and objectives that emphasize:

- a. orofacial pain,
- b. resident education,
- c. patient care, and

d. research.

Intent: The “program” refers to the Advanced Dental Education Program in Orofacial Pain that is responsible for training residents within the context of providing patient care. The overall goals and objectives for resident education are intended to describe general outcomes of the residency training program rather than specific learning objectives for areas of residency training as described in Standard 2-2. Specific learning objectives for residents are intended to be described as goals and objectives or competencies for resident training and included in the response to Standard 2-2. An example of overall goals can be found in the Goals section on page 8 of this document.

Examples of evidence to demonstrate compliance may include:

Written overall program goals and objectives

1-10 The program must have a formal and ongoing outcomes assessment process that regularly evaluates the degree to which the program’s overall goals and objectives are being met and make program improvements based on an analysis of that data.

Intent: The intent of the outcomes assessment process is to collect data about the degree to which the overall goals and objectives described in response to Standard 1-9 are being met.

The outcomes process developed should include each of the following steps:

- 1. development of clear, measurable goals and objectives consistent with the program’s purpose/mission;*
- 2. implementation of procedures for evaluating the extent to which the goals and objectives are met;*
- 3. collection of data in an ongoing and systematic manner;*
- 4. analysis of the data collected and sharing of the results with appropriate audiences;*
- 5. identification and implementation of corrective actions to strengthen the program; and*
- 6. review of the assessment plan, revision as appropriate, and continuation of the cyclical process.*

Examples of evidence to demonstrate compliance may include:

Written overall program goals and objectives

Outcomes assessment plan and measures

Outcomes results

Annual review of outcomes results

Meeting minutes where outcomes are discussed

Decisions based on outcomes results

Successful completion of a certifying examination in Orofacial Pain

Ethics and Professionalism

1-11 The program must ensure that residents are able to demonstrate the application of the principles of ethical reasoning, ethical decision making and professional responsibility as they pertain to the academic environment, research, patient care, and practice management.

Intent: Residents should know how to draw on a range of resources such as professional codes, regulatory law, and ethical theories to guide judgment and action for issues that are complex, novel, ethically arguable, divisive, or of public concern.

STANDARD 2 – EDUCATIONAL PROGRAM

2-1 The orofacial pain program must be designed to provide advanced knowledge and skills beyond the D.D.S. or D.M.D. training.

Curriculum Content

2-2 The program must either describe the goals and objectives for each area of resident training or list the competencies that describe the intended outcomes of resident education.

Intent: The program is expected to develop specific educational goals that describe what the resident will be able to do upon completion of the program. These educational goals should describe the resident’s abilities rather than educational experiences the residents may participate in. These specific educational goals may be formatted as either goals and objectives or competencies for each area of resident training. These educational goals are to be circulated to program faculty and staff and made available to applicants of the program.

Examples of evidence to demonstrate compliance may include:

Written goals and objectives for resident training or competencies

2-3 Written goals and objectives must be developed for all instruction included in this curriculum.

Example of Evidence to demonstrate compliance may include:

Written goals and objectives

Content outlines

2-4 The program must have a written curriculum plan that includes structured clinical experiences and didactic sessions designed to achieve the program's written goals and objectives or competencies for resident training.

Intent: The program is expected to organize the didactic and clinical educational experiences into a formal curriculum plan. For each specific goal or objective or competency statement described in response to Standard 2-2, the program is expected to develop educational experiences designed to enable the resident to acquire the skills, knowledge, and values necessary in that area. The program is expected to organize these didactic and clinical educational experiences into a formal curriculum plan.

Examples of evidence to demonstrate compliance may include:

Written curriculum plan with educational experiences tied to specific written goals and objectives or competencies

Didactic and clinical schedules

Biomedical Sciences

2-5 Formal instruction must be provided in each of the following:

- a. Gross and functional anatomy and physiology including the musculoskeletal and articular system of the orofacial, head, and cervical structures;
- b. Growth, development, and aging of the masticatory system;
- c. Head and neck pathology and pathophysiology with an emphasis on pain;
- d. Applied rheumatology with emphasis on the temporomandibular joint (TMJ) and related structures;
- e. Sleep physiology and dysfunction;
- f. Oromotor disorders including dystonias, dyskinesias, and bruxism;
- g. Epidemiology of orofacial pain disorders;
- h. Pharmacology and pharmacotherapeutics; and
- i. Principles of biostatistics, research design and methodology, scientific writing, and critique of literature.

2-6 The program must provide a strong foundation of basic and applied pain sciences to develop knowledge in functional neuroanatomy and neurophysiology of pain including:

- a. The neurobiology of pain transmission and pain mechanisms in the central and peripheral nervous systems;
- b. Mechanisms associated with pain referral to and from the orofacial region;
- c. Pharmacotherapeutic principles related to sites of neuronal receptor specific action pain;
- d. Pain classification systems;
- e. Psychoneuroimmunology and its relation to chronic pain syndromes;
- f. Primary and secondary headache mechanisms;
- g. Pain of odontogenic origin and pain that mimics odontogenic pain; and
- h. The contribution and interpretation of orofacial structural variation (occlusal and skeletal) to orofacial pain, headache, and dysfunction.

Behavioral Sciences

2-7 Formal instruction must be provided in behavioral science as it relates to orofacial pain disorders and pain behavior including:

- a. cognitive-behavioral therapies including habit reversal for oral habits, stress management, sleep problems, muscle tension habits and other behavioral factors;
- b. the recognition of pain behavior and secondary gain behavior;
- c. psychologic disorders including depression, anxiety, somatization and others as they relate to orofacial pain, sleep disorders, and sleep medicine; and
- d. conducting and applying the results of psychometric tests.

Clinical Sciences

2-8 A majority of the total program time must be devoted to providing orofacial pain patient services, including direct patient care and clinical rotations.

2-9 The program must provide instruction and clinical training for the clinical assessment and diagnosis of

complex orofacial pain disorders to ensure that upon completion of the program the resident is able to:

- a. Conduct a comprehensive pain history interview;
- b. Collect, organize, analyze, and interpret data from medical, dental, behavioral, and psychosocial histories and clinical evaluation to determine their relationship to the patient's orofacial pain and/or sleep disorder complaints;
- c. Perform clinical examinations and tests and interpret the significance of the data;
Intent: Clinical evaluation may include: musculoskeletal examination of the head, jaw, neck and shoulders; range of motion; general evaluation of the cervical spine; TM joint function; jaw imaging; oral, head and neck screening, including facial-skeletal and dental-occlusal structural variations; cranial nerve screening; posture evaluation; physical assessment including vital signs; and diagnostic blocks.
- d. Function effectively within interdisciplinary health care teams, including the recognition for the need of additional tests or consultation and referral; and
Intent: Additional testing may include additional imaging; referral for psychological or psychiatric evaluation; laboratory studies; diagnostic autonomic nervous system blocks, and systemic anesthetic challenges.
- e. Establish a differential diagnosis and a prioritized problem list.

2-10 The program must provide instruction and clinical training in multidisciplinary pain management for the orofacial pain patient to ensure that upon completion of the program the resident is able to:

- a. Develop an appropriate treatment plan addressing each diagnostic component on the problem list with consideration of cost/risk benefits;
- b. Incorporate risk assessment of psychosocial and medical factors into the development of the individualized plan of care;
- c. Obtain informed consent;
- d. Establish a verbal or written agreement, as appropriate, with the patient emphasizing the patient's treatment responsibilities;
- e. Have primary responsibility for the management of a broad spectrum of orofacial pain patients in a multidisciplinary orofacial pain clinic setting, or interdisciplinary associated services. Responsibilities should include:
 1. intraoral appliance therapy;
 2. physical medicine modalities;
 3. sleep-related breathing disorder intraoral appliances;
 4. non-surgical management of orofacial trauma;
 5. behavioral therapies beneficial to orofacial pain; and
 6. pharmacotherapeutic treatment of orofacial pain including systemic and topical medications and diagnostic/therapeutic injections.

Intent: This should include judicious selection of medications directed at the presumed pain mechanisms involved, as well as adjustment, monitoring, and reevaluation.

Common medications may include: muscle relaxants; sedative agents for chronic pain and sleep management; opioid use in management of chronic pain; the adjuvant analgesic use of tricyclics and other antidepressants used for chronic pain; anticonvulsants, membrane stabilizers, and sodium channel blockers for neuropathic pain; local and systemic anesthetics in management of neuropathic pain; anxiolytics; analgesics and anti-inflammatories; prophylactic and abortive medications for primary headache disorders; and therapeutic use of botulinum toxin injections.

Common issues may include: management of medication overuse headache; medication side effects that alter sleep architecture; prescription medication dependency withdrawal; referral and co-management of pain in patients addicted to prescription, non prescription and recreational drugs; familiarity with the role of preemptive anesthesia in neuropathic pain.

2-11 Residents must participate in clinical experiences in other healthcare services (not to exceed 30% of the total training period).

Intent: Experiences may include observation or participation in the following: oral and maxillofacial surgery to include procedures for intracapsular TMJ disorders; outpatient anesthesia pain service; in-patient pain rotation; rheumatology, neurology, oncology, otolaryngology, rehabilitation medicine; headache, radiology, oral

medicine, and sleep disorder clinics.

2-12 Each assigned rotation or experience must have:

- a. written objectives that are developed in cooperation with the department chairperson, service chief, or facility director to which the residents are assigned;
- b. resident supervision by designated individuals who are familiar with the objectives of the rotation or experience; and
- c. evaluations performed by the designated supervisor.

Intent: This standard applies to all assigned rotations or experiences, whether they take place in the sponsoring institution or a major or minor activity site. Supplemental activities are exempt.

Examples of evidence to demonstrate compliance may include:

Description and schedule of rotations

Written objectives of rotations

Resident evaluations

2-13 Residents must gain experience in teaching orofacial pain.

Intent: Residents should be provided opportunities to obtain teaching experiences in orofacial pain (i.e. small group and lecture formats, presenting to dental and medical peer groups, predoctoral student teaching experiences, and/or continuing education programs.

2-14 Residents must actively participate in the collection of history and clinical data, diagnostic assessment, treatment planning, treatment, and presentation of treatment outcome.

2-15 The program must provide instruction in the principles of practice management.

Intent: Suggested topics include: quality management; principles of peer review; business management and practice development; principles of professional ethics, jurisprudence and risk management; alternative health care delivery systems; informational technology; and managed care; medicolegal issues, workers compensation, second opinion reporting; criteria for assessing impairment and disability; legal guidelines governing licensure and dental practice, scope of practice with regards to orofacial pain disorders, and instruction in the regulatory requirements of chronic opioid maintenance.

Examples of evidence to demonstrate compliance may include:

Course outlines

2-16 Formal patient care conferences must be held at least ten (10) times per year.

Intent: Conferences should include diagnosis, treatment planning, progress, and outcomes. These conferences should be attended by residents and faculty representative of the disciplines involved. These conferences are not to replace the daily faculty/resident interactions regarding patient care.

Examples of evidence to demonstrate compliance may include:

Conference schedules

2-17 Residents must be given assignments that require critical review of relevant scientific literature.

Intent: Residents are expected to have the ability to critically review relevant literature as a foundation for lifelong learning and adapting to changes in oral health care. This should include the development of critical evaluation skills and the ability to apply evidence-based principles to clinical decision-making.

Relevant scientific literature should include current pain science and applied pain literature in dental and medical science journals with special emphasis on pain mechanisms, orofacial pain, head and neck pain, and headache.

Examples of evidence to demonstrate compliance may include:

Evidence of experiences requiring literature review

Program Length

2-18 The duration of the program must be at least two consecutive academic years with a minimum of 24 months, full-time or its equivalent.

Examples of evidence to demonstrate compliance may include:

Program schedules

Written curriculum plan

2-19 Where a program for part-time residents exists, it must be started and completed within a single institution and designed so that the total curriculum can be completed in no more than twice the duration of the program length.

Intent: Part-time residents may be enrolled, provided the educational experiences are the same as those acquired by full-time residents and the total time spent is the same.

Examples of evidence to demonstrate compliance may include:

Description of the part-time program

Documentation of how the part-time residents will achieve similar experiences and skills as full-time residents

Program schedules

Evaluation

2-20 The program's resident evaluation system must assure that, through the director and faculty, each program:

a) periodically, but at least two times annually, evaluates and documents the resident's progress toward achieving the program's written goals and objectives of resident training or competencies using appropriate written criteria and procedures;

b) provides residents with an assessment of their performance after each evaluation. Where deficiencies are noted, corrective actions must be taken; and

c) maintains a personal record of evaluation for each resident that is accessible to the resident and available for review during site visits.

Intent: While the program may employ evaluation methods that measure a resident's skills or behavior at a given time, it is expected that the program will, in addition, evaluate the degree to which the resident is making progress toward achieving the specific goals and objectives or competencies for resident training described in response to Standard 2-2.

Examples of evidence to demonstrate compliance may include:

Written evaluation criteria and process

Resident evaluations with identifying information removed

Personal record of evaluation for each resident

Evidence that corrective actions have been taken

STANDARD 3 – FACULTY AND STAFF

3-1 The program must be administered by a director who is board certified or educationally qualified in orofacial pain and has a full-time appointment in the sponsoring institution with a primary commitment to the orofacial pain program.

3-2 The program director must have sufficient authority and time to fulfill administrative and teaching responsibilities in order to achieve the educational goals of the program.

Intent: The program director's responsibilities include:

a. program administration;

b. development and implementation of the curriculum plan;

c. ongoing evaluation of program content, faculty teaching, and resident performance;

d. evaluation of resident training and supervision in affiliated institutions and off-service rotations;

e. maintenance of records related to the educational program; and

f. resident selection; and

g. preparing graduates to seek certification by the American Board of Orofacial Pain.

In those programs where applicants are assigned centrally, responsibility for selection of residents may be delegated to a designee.

Examples of evidence to demonstrate compliance may include:

Program director's job description

Job description of individuals who have been assigned some of the program director's job responsibilities

Formal plan for assignment of program director's job responsibilities as described above

Program records

3-3 All sites where educational activity occurs must be staffed by faculty who are qualified by education and/or clinical experience in the curriculum areas for which they are responsible and have collective competence in all areas of orofacial pain included in the program.

Intent: Faculty should have current knowledge at an appropriate level for the curriculum areas for which they are responsible. The faculty, collectively, should have competence in all areas of orofacial pain covered in the

program.

The program is expected to develop criteria and qualifications that would enable a faculty member to be responsible for a particular area of orofacial pain if that faculty member is not trained in orofacial pain. The program is expected to evaluate non-discipline specific faculty members who will be responsible for a particular area and document that they meet the program's criteria and qualifications.

Whenever possible, programs should avail themselves of discipline-specific faculty as trained consultants for the development of a mission and curriculum, and for teaching.

Examples of evidence to demonstrate compliance may include:

Full and part-time faculty rosters

Program and faculty schedules

Completed BioSketch of faculty members

Criteria used to certify a non-discipline specific faculty member as responsible for teaching an area of orofacial pain

Records of program documentation that non-discipline specific faculty members as responsible for teaching an area of orofacial pain

3-4 A formally defined evaluation process must exist that ensures measurements of the performance of faculty members annually.

Intent: The written annual performance evaluations should be shared with the faculty members. The program should provide a mechanism for residents to confidentially evaluate instructors, courses, program director, and the sponsoring institution.

Examples of evidence to demonstrate compliance may include:

Faculty files

Performance appraisals

3-5 A faculty member must be present in the clinic for consultation, supervision, and active teaching when residents are treating patients in scheduled clinic sessions.

Intent: This standard does not preclude occasional situations where a faculty member cannot be available. Faculty members should contribute to an ongoing resident and program/curriculum evaluation process. The teaching staff should be actively involved in the development and implementation of the curriculum.

Examples of evidence to demonstrate compliance may include:

Faculty clinic schedules

3-6 At each site where educational activity occurs, adequate support staff, including allied dental personnel and clerical staff, must be consistently available to allow for efficient administration of the program.

Intent: The program should determine the number and participation of allied support and clerical staff to meet the educational and experiential goals and objectives.

Examples of evidence to demonstrate compliance may include:

Staff schedules

3-7 There must be evidence of scholarly activity among the orofacial pain faculty

Intent: Such evidence may include: participation in clinical and/or basic research; mentoring of orofacial pain resident research; publication in peer-reviewed scientific media; development of innovative teaching materials and courses; and presentation at scientific meetings and/or continuing education courses at the local, regional, or national level.

3-8 The program must show evidence of an ongoing faculty development process.

Intent: Ongoing faculty development is a requirement to improve teaching and learning, to foster curricular change, to enhance retention and job satisfaction of faculty, and to maintain the vitality of academic dentistry as the wellspring of a learned profession.

Examples of evidence to demonstrate compliance may include:

Participation in development activities related to teaching, learning, and assessment

Attendance at regional and national meetings that address contemporary issues in education and patient care

Mentored experiences for new faculty

Scholarly productivity

Presentations at regional and national meetings

Examples of curriculum innovation

Maintenance of existing and development of new and/or emerging clinical skills

Documented understanding of relevant aspects of teaching methodology

Curriculum design and development

Curriculum evaluation

Resident assessment

Cultural Competency

Ability to work with residents of varying ages and backgrounds

Use of technology in didactic and clinical components of the curriculum

Evidence of participation in continuing education activities

3-9 The program must provide ongoing faculty calibration at all sites where educational activity occurs.

Intent: Faculty calibration should be defined by the program.

Examples of evidence to demonstrate compliance may include:

Methods used to calibrate faculty as defined by the program

Attendance of faculty meetings where calibration is discussed

Mentored experiences for new faculty

Participation in program assessment

Standardization of assessment of resident

Maintenance of existing and development of new and/or emerging clinical skills

Documented understanding of relevant aspects of teaching methodology

Curriculum design, development and evaluation

Evidence of the ability to work with residents of varying ages and backgrounds

Evidence that rotation goals and objectives have been shared

STANDARD 4 – EDUCATIONAL SUPPORT SERVICES

4-1 The sponsoring institution must provide adequate and appropriately maintained facilities and learning resources to support the goals and objectives of the program.

Intent: The facilities should permit the attainment of program goals and objectives. Clinical facilities suitable for privacy for patients should be specifically identified for the orofacial pain program. Library resources that include dental resources should be available. Resource facilities should include access to computer, photographic, and audiovisual resources for educational, administrative, and research support. Equipment for handling medical emergencies and current medications for treating medical emergencies should be readily accessible. "Readily accessible" does not necessarily mean directly in the dental clinic. Protocols for handling medical emergencies should be developed and communicated to all staff in patient care areas.

Examples of evidence to demonstrate compliance may include:

Description of facilities

4-2 There must be provision for a conference area separated from the clinic for rounds discussion and case presentations, sufficient to accommodate the multidisciplinary team.

4-3 Dental and medical laboratory, dental and medical imaging, and resources for psychometric interpretation must be accessible for use by the orofacial pain program.

4-4 Lecture, seminar, study space, and administrative office space must be available to conduct the educational program.

Selection of Residents

4-5 Applicants must have one of the following qualifications to be eligible to enter the advanced dental education program in orofacial pain:

a. Graduates from a predoctoral dental education program accredited by the Commission on Dental Accreditation;

b. Graduates from a predoctoral dental education program in Canada accredited by the Commission on Dental Accreditation of Canada; and

c. Graduates from an international dental school with equivalent educational background and standing as

determined by the institution and program.

4-6 Specific written criteria, policies and procedures must be followed when admitting residents.

Intent: Written non-discriminatory policies are to be followed in selecting residents. These policies should make clear the methods and criteria used in recruiting and selecting residents and how applicants are informed of their status throughout the selection process.

Examples of evidence to demonstrate compliance may include:

Written admission criteria, policies and procedures

4-7 Admission of residents with advanced standing must be based on the same standards of achievement required by residents regularly enrolled in the program. Residents with advanced standing must receive an appropriate curriculum that results in the same standards of competence required by residents regularly enrolled in the program.

Intent: Advanced standing refers to applicants that may be considered for admission to a training program whose curriculum has been modified after taking into account the applicant's past experience. Examples include transfer from a similar program at another institution, completion of training at a non-CODA accredited program, or documented practice experience in the given discipline. Acceptance of advanced standing residents will not result in an increase of the program's approved number of enrollees. Applicants for advanced standing are expected to fulfill all of the admission requirements mandated for residents in the conventional program and be held to the same academic standards. Advanced standing residents, to be certified for completion, are expected to demonstrate the same standards of competence as those in the conventional program.

Examples of evidence to demonstrate compliance may include:

Written policies and procedures on advanced standing

Results of appropriate qualifying examinations

Course equivalency or other measures to demonstrate equal scope and level of knowledge

4-8 The program's description of the educational experience to be provided must be available to program applicants and include:

- a. a description of the educational experience to be provided;
- b. a list of program goals and objectives; and
- c. a description of the nature of assignments to other departments or institutions.

Intent: This includes applicants who may not personally visit the program and applicants who are deciding which programs to apply to. Materials available to applicants who visit the program in person will not satisfy this requirement. A means of making this information available to individuals who do not visit the program is to be developed.

Examples of evidence to demonstrate compliance may include:

Brochure or application documents

Program's website

Description of system for making information available to applicants who do not visit the program

Due Process

4-9 There must be specific written due process policies and procedures for adjudication of academic and disciplinary complaints that parallel those established by the sponsoring institution.

Intent: Adjudication procedures should include institutional policy that provides due process for all individuals who may be potentially involved when actions are contemplated or initiated that could result in dismissal of a resident. Residents should be provided with written information that affirms their obligations and responsibilities to the institution, the program and the faculty. The program information provided to the residents should include, but not necessarily be limited to, information about tuition, stipend or other compensation, vacation and sick leave, practice privileges and other activity outside the educational program, professional liability coverage, due process policy, and current accreditation status of the program.

Examples of evidence to demonstrate compliance may include:

Written policy statements and/or resident contract

STANDARD 5 – PATIENT CARE SERVICES

5-1 The program must ensure the availability of patient experiences that afford all residents the opportunity to achieve the program's written goals and objectives or competencies for resident training.

Intent: Patient experiences should include evaluation and management of head and neck musculoskeletal disorders, neurovascular pain, neuropathic pain, sleep-related disorders, and oromandibular movement disorders.

Examples of evidence to demonstrate compliance may include:

Written goals and objectives or competencies for resident training

Records of resident clinical activity, including specific details on the variety and type and quantity of cases treated and procedures performed

5-2 Patient records must be organized in a manner that facilitates ready access to essential data and be sufficiently legible and organized so that all users can readily interpret the contents.

Intent: Essential data is defined by the program and based on the information included in the record review process as well as that which meets the multidisciplinary educational needs of the program. The patient record should include a diagnostic problem list, use of pain assessment and treatment contracts, progress sheets, medication log, and outcome data, plus conform to SOAP notes format.

The program is expected to develop a description of the contents and organization of patient records and a system for reviewing records.

Examples of evidence to demonstrate compliance may include:

Patient records

Record review plan

Documentation of record reviews

5-3 The program must conduct and involve residents in a structured system of continuous quality improvement for patient care.

Intent: Programs are expected to involve residents in enough quality improvement activities to understand the process and contribute to patient care improvement.

Examples of evidence to demonstrate compliance may include:

Description of quality improvement process including the role of residents in that process

Quality improvement plan and reports

5-4 All residents, faculty, and support staff involved in the direct provision of patient care must be continuously recognized/certified in basic life support procedures, including cardiopulmonary resuscitation.

Intent: ACLS and PALS are not a substitute for BLS certification.

Examples of evidence to demonstrate compliance may include:

Certification/recognition records demonstrating basic life support training or summary log of certification/recognition maintained by the program

Exemption documentation for anyone who is medically or physically unable to perform such services

5-5 The program must document its compliance with the institution's policy and applicable regulations of local, state and federal agencies, including, but not limited to, radiation hygiene and protection, ionizing radiation, hazardous materials, and blood-borne and infectious diseases. Policies must be provided to all residents, faculty and appropriate support staff and continuously monitored for compliance. Additionally, policies on blood-borne and infectious diseases must be made available to applicants for admission and patients.

Intent: The policies on blood-borne and infectious diseases should be made available to applicants for admission and patients should a request to review the policy be made.

Examples of evidence to demonstrate compliance may include:

Infection and biohazard control policies

Radiation policy

5-6 The program's policies must ensure that the confidentiality of information pertaining to the health status of each individual patient is strictly maintained.

Examples of evidence to demonstrate compliance may include:

Confidentiality policies

STANDARD 6 - RESEARCH

6-1 Residents must engage in research or other scholarly activity and present their results in a scientific/educational forum.

Intent: The research experience and its results should be compiled into a document or publication

Appendix II b) Self Study Accreditation Guidelines for Orofacial Pain by the ADA Commission on Dental Accreditation

Document Revision History

<u>Date</u>	<u>Item</u>	<u>Action</u>
January 1, 2010	Self-Study Guide for the Accreditation of an Advanced General Dentistry Education Program in Orofacial Pain	Effective
August 6, 2010	Policy Additions and Revisions (Distance Education, Off-Campus Sites), Revised Criteria for Granting Accreditation.	Adopted
January 1, 2011	Policy Additions and Revisions (Distance Education, Off-Campus Sites), Revised Criteria for Granting Accreditation.	Implemented
February 4, 2011	Ethics and Professionalism Standard (1-11)	Adopted
July 1, 2011	Ethics and Professionalism Standard (1-1)	Implemented
August 5, 2011	Addition of intent statement to Standard 5-4	Adopted and Implemented
August 5, 2011	Selection of Residents Standard (4-5)	Adopted
February 3, 2012	Revised Standard 1-1	Adopted
July 1, 2012	Selection of Residents Standard (4-5)	Implemented
July 1, 2012	Revised Standard 1-1	Implemented
August 1, 2012	Revised Compliance with Commission Policies and Program Effectiveness sections	Implemented
February 1, 2013	Addition of Exhibit 13 (BioSketch)	Implemented
February 1, 2013	Revised Policy on Accreditation of Off-Campus Sites	Adopted and Implemented
February 1, 2013	Addition of Faculty Development Standard (3-8)	Adopted
February 1, 2013	Revised Compliance with Commission Policies section (Complaints)	Implemented
July 1, 2013	Addition of Faculty Development Standard (3-8)	Implemented

Document Revision History (cont)

August 9, 2013	Revised Policy on Accreditation of Off-Campus Sites	Adopted and Implemented
August 9, 2013	Revised Instructions for Completing Self-Study	Adopted and Implemented

August 9, 2013	Revision of intent statement for Standard 5-4	Adopted and Implemented
January 30, 2014	Revised Examples of Evidence for Standard 1-1	Implemented
January 30, 2014	Revised Protocol for Conducting a Site Visit	Implemented
February 6, 2015	Revised Standard 1-1	Adopted, Implemented
February 6, 2015	Revised Standard 4-7	Adopted, Implemented
February 6, 2015	Addition of intent statement to Standard 4-7	Adopted, Implemented
August 7, 2015	Revision of term “resident” to “resident.”	Approved, Implemented
August 7, 2015	Updated language related to Privacy and Data Security Requirements for Institutions	Implemented
August 7, 2015	Addition of Program Changes to Compliance with Commission Policies section	Implemented

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INTRODUCTION TO THE SELF-STUDY GUIDE

The Self-Study Guide is designed to help an institution succinctly present information about its Advanced General Dentistry Education Programs in Orofacial Pain in preparation for an evaluation visit by the Commission on Dental Accreditation. It is suggested that the institution initiate the self-study process approximately 12 months prior to completion of the Self-Study Report. The primary focus of the self-study process should be to assess the effectiveness of the educational program in meeting (1) the program's stated goals and objectives and (2) the Commission's Accreditation Standards for Advanced General Dentistry Education Programs in Orofacial Pain.

The Self-Study Report should be a concise, yet thorough, summary of the findings of the self-study process. The Commission hopes that the self-study will be a catalyst for program improvement that continues long after the accreditation process has been completed. In its opinion, this is a more likely outcome if there is thorough planning, as well as involvement of residents and administrators in the self-study process. Most programs will concentrate upon questions germane to the Commission's Accreditation Standards. Nevertheless, the benefits of self-study are directly related to the extent to which programs evaluate their efforts, not simply in light of minimal standards for accreditation, but also in reference to the program's stated goals and objectives as well as standards for educational excellence. Conclusions of the self-study may include qualitative evaluation of any aspect of the program whether it is covered in the Self-Study Guide or not. Programs must respond to all questions included in the Self-Study Guide. The responses should be succinct, but must in every case provide or cite evidence demonstrating achievement of objectives in compliance with each of the Accreditation Standards.

For the Commission and visiting committee, the self-study process should:

1. Ensure that the program has seriously and analytically reviewed its objectives, strengths and weaknesses.
2. Provide the site visitors the basic information about the program and the program's best judgment of its own adequacy and performance, thus providing a frame of reference to make the visit effective and helpful to the program and the Commission.
3. Ensure that the accrediting process is perceived not simply as an external review but as an essential component of program improvement.
4. Ensure that the Commission, in reaching its accreditation decisions, can benefit from the insights of both the program and the visiting committee.

The Self-Study process and report are **not** the following:

A self-study is not just a compilation of quantitative data. Such data may be a prerequisite for developing an effective self-study, but such data in themselves are not evaluative and must not be confused with a self-study.

A self-study is not or should not be answers to a questionnaire or a check-off sheet. While a questionnaire may be probing, it is essentially an external form and does not relieve the responder of the critical review essential to self-study. A check-off list based on the Commission's Accreditation Standards can be helpful in developing the self-study but does not reveal the conditions or rationale leading to the answers - again both the

organizing activity and the critical analysis are missing.

A self-study is not or should not be a simple narrative description of the program. While such a description is necessary, the self-study should go beyond such description to an analysis of strengths and weaknesses in light of the program's objectives, as well as develop a plan for achieving those objectives that have not been fully realized. It should be emphasized that, while the self-study is essential to the accrediting process, the major value of an effective self-study should be to the program itself. The report is a document which summarizes the methods and findings of the self-study process. Thus, a self-study report written exclusively by a consultant or an assigned administrator or faculty member is not a self-study.

POLICIES AND PROCEDURES RELATED TO THE EVALUATION OF ADVANCED GENERAL DENTISTRY EDUCATION PROGRAMS IN OROFACIAL PAIN

The Commission has established a seven-year site visit cycle for accreditation review. Every effort is made to review all existing dental and dental-related programs in an institution at the same time. However, adherence to this policy of institutional review may be influenced by a number of factors, e.g., graduation date established for new programs, recommendations in previous Commission reports, and/or current accreditation status.

The purpose of the site evaluation is to obtain in-depth information concerning all administrative and educational aspects of the program. The site visit verifies and supplements the information contained in the comprehensive self-study document completed by the institution prior to the site evaluation.

As stated in "Instructions for Completing the Self-Study Report," one copy of the completed Self-Study Report should be sent directly to each member of the visiting committee at least sixty (60) days prior to the date of the visit. Names and addresses of the members of the team will be provided to the institution approximately two to three months ahead of the visit. In addition, one copy of all self-study materials is to be submitted to the Commission office sixty (60) days in advance of the visit. NOTE: If a Commission staff member is serving on the visiting committee, the Commission should receive one copy of the self-study report for this individual and a second copy for the program's files.

Third Party Comment Policy: The program is responsible for soliciting third party comments from residents and patients that pertain to the Standards or policies and procedures used in the Commission's accreditation process. An announcement for soliciting third party comments is to be published at least ninety (90) days prior to the site visit. The notice should indicate that third party comments are due in the Commission's office no later than sixty (60) days prior to the site visit. Please review the entire policy on "Third Party Comments" in the Commission's EOPP: Evaluation and Operational Policies and Procedures.

Complaints Policy: The program is responsible for developing and implementing a procedure demonstrating that residents are notified, at least annually, of the opportunity and the procedures to file complaints with the Commission. Additionally, the program must maintain a record of complaints received since the Commission's last comprehensive review of the program. Commission on Dental Accreditation site visitors will expect to have documentation demonstrating compliance with the policy on "Complaints" made available on-site. Please refer to the Commission's publication, Evaluation and Operational Policies and Procedures for the entire policy on "Complaints."

Distance Education: Programs that offer distance education must have processes in place through which the program establishes that the resident who registers in a distance education course or program is the same resident who participates in and completes the course or program and receives the academic credit. In addition, programs must notify residents of any projected additional resident charges associated with the verification of resident identity at the time of registration or enrollment. Please read the entire policy on "Distance Education" in the Commission's EOPP: Evaluation and Operational Policies and Procedures manual.

Consultant Requests or Additional Information: Visiting committee members are expected to carefully review

the completed self-study reports and note any questions or concerns they may have about the information provided. These questions are forwarded to Commission staff (or staff representatives), compiled and submitted to the program director prior to the visit. The requested information is provided to the team members either prior to the visit or upon their arrival to the program.

Site Visit Committee Composition: The Commission on Dental Accreditation's accreditation program is accomplished through mechanisms of annual surveys, site evaluations and Commission reviews. The visiting committees are assigned to review dental and dental-related programs by the Commission Chairman. The visiting committees are composed, as appropriate, of Commission staff representatives who are responsible for coordinating the visit and preparing the site visit report; Commission representatives/dentists who chair the committees; and Commission-appointed site visitors in orofacial pain.

For advanced education site visits, the Commission urges the program to invite a representative from the dental examining board of the state in which the program is located to participate with the committee as the State Board representative. This representation; however, must be at the request of the institution/program being evaluated. State Board representatives participate fully in site visit committee activities as non-voting members of the committee. State Board representatives are required to sign the Commission's "Agreement of Confidentiality."

After the Site Visit: The written site visit report embodies a review of the quality of the program. It serves as the basis for accreditation decisions. It also guides officials and administrators of educational institutions in determining the degree of their compliance with the accreditation standards. The report clearly delineates any observed deficiencies in compliance with standards on which the Commission will take action.

The Commission is sensitive to the problems confronting institutions of higher learning. In the report, the Commission evaluates educational programs based on accreditation standards and provides constructive recommendations which relate to the Accreditation Standards and suggestions which relate to program enhancement.

Preliminary drafts of site visit reports are prepared by the site visitors, consolidated by staff into a single document and approved by the visiting committee. The approved draft report is then transmitted to the institutional administrator for factual review and comment prior to its review by the Commission. The institution has a maximum of thirty (30) days in which to respond. Both the visiting committee's approved draft report and the institution's response to it are considered by the Commission in taking the accreditation action.

The site visit report reflects the program as it exists at the time of the site visit. Any improvements or changes made subsequent to a site visit may be described and documented in the program's response to the preliminary draft report, which becomes part of the Commission's formal record of the program's evaluation. Such improvements or changes represent progress made by the institution and are considered by the Commission in determining accreditation status, although the site visit report is not revised to reflect these changes. Following assignment of accreditation status, the final site visit report is prepared and transmitted to the institution. The Commission expects the chief administrators of educational institutions to make copies of the Commission site visit reports available to program directors, faculty members and others directly concerned with program quality so that they may work toward meeting the recommendations contained in the report.

Commission members and visiting committee members are not authorized, under any circumstances, to disclose any information obtained during site visits or Commission meetings. The extent to which publicity is given to site visit reports is determined by the chief administrator of the educational institution. Decisions to publicize reports, in part or in full, are at the discretion of the educational institution officials, rather than the Commission. However, if the institution elects to release sections of the report to the public, the Commission reserves the right to make the entire site visit report public.

Commission Review of Site Visit Reports: The Commission and its review committees meet twice each year to consider site visit reports, progress reports, applications for accreditation and policies related to accreditation. These meetings are usually in January and July. Reports from site visits conducted less than ninety (90) days prior to a Commission meeting are usually deferred and considered at the next Commission meeting.

Notification of Accreditation Action: An institution will receive the formal site visit report, including the accreditation status, within 30 days following the official meeting of the Commission. The Commission's definitions of accreditation classifications are published in its Accreditation Standards documents.

Additional Information: Additional information regarding the procedures followed during the site visit is contained in the Commission's publication, Evaluation Policies and Procedures. The Commission uses the Accreditation Standards for Advanced General Dentistry Education Programs in Orofacial Pain as the basis for its evaluation of Advanced General Dentistry Education Programs in Orofacial Pain; therefore, it is essential that institutions be thoroughly familiar with this document.

ORGANIZING FOR THE SELF-STUDY

The self-study should be comprehensive and should involve appropriate faculty and staff throughout the institution.

When feasible, it is suggested that a committee, with appropriate faculty representation, be selected to assist the program director with the self-study process. This committee should be responsible for developing and implementing the process of self-study and coordinating the sections into a coherent self-study report. It may be desirable to establish early in the process some form or pattern to be used in preparing the sections in the report in order to provide consistency.

The committee should have assistance with preparing and editing the final self-study report. Appropriate faculty and other institutional representatives (e.g., learning resources staff, financial/budget officers, counselors, admissions officers, instructional design staff) should be involved in the process to ensure that the Self-Study Report reflects the input of all individuals who have responsibility for the program.

Suggested Timetable for Self-Study

Months Prior to Visit

12 Appoint committee and resource persons; Assign sections of self-study to appropriate faculty-resource persons; Develop action plan and report format

10 Sections of report are analyzed and developed by assigned individuals

7 Faculty and program director review tentative reports

6 Committee prepares rough draft of self-study document

5 Draft document is reviewed institution-wide

4 Self-study document finalized and duplicated

3 Solicit comments in accordance with the "Policy on Third Party Comments" found in the Commission's Evaluation and Operational Policies and Procedures manual.

2 Final self-study document forwarded to Commission and members of the visiting committee sixty (60) days prior to date of the scheduled visit.

Staff Assistance/Consultation: The Commission on Dental Accreditation provides staff consultation to all educational programs within its accreditation purview. Programs may obtain staff counsel and guidance at any time.

Policies and Procedures for Site Visits: These policies and procedures are included at the end of this Self-Study Guide.

Self-Study Format: As noted in the instructions with this Self-Study Guide, this is a suggested approach to completing a self-study report. All institutions should be aware that the Commission respects their right to organize their data differently and will allow programs to develop their own formats for the exhibits requested in the “Examples of Evidence” to demonstrate compliance may include” sections of the Guide. However, if the program’s proposed format differs from that suggested in the Self-Study Guide, the program should contact Commission staff for review and approval prior to initiating the self-study process. This procedure will provide assurance to the program that its proposed format will include the elements considered essential by the Commission and its visiting committees.

INSTRUCTIONS FOR COMPLETING THE SELF-STUDY

The following general instructions apply to the development of the Advanced General Dentistry Education Programs in Orofacial Pain program’s self-study report:

1. It is expected that information collected during the self-study will be presented in the order that the sections and questions occur in the Guide. The sections of the report should culminate in a qualitative analysis of the program’s strengths and weaknesses. Keep in mind that the program’s written responses must provide the Commission and its visiting committee with enough information to understand the operation of the programs.
2. The suggested format for preparing the report is to state the question and then provide the narrative response. A copy of the Self-Study Guide is available on a word processing program (IBM compatible-Microsoft Word) from the Commission office.
3. All questions posed in the Guide should be addressed. In the event that a program has chosen to meet a particular standard in a manner other than that suggested by the questions, please so indicate and explain how the program complies with the Standards. There is no need to repeat at length information that can be found elsewhere in the documentation. Simply refer the reader to that section of the report or appended documentation which contains the pertinent information.
4. The completed self-study document should include appropriately indexed sections; pages should be numbered. (The page numbers in the completed document are not expected to correspond to the page numbers in this Guide).
5. The completed document should include:
 - a. Title Page: The title page should include the name of program and sponsoring institution; street address, city and state, telephone number and area code; and date of accreditation visit.
 - b. Verification Page: The Commission requests that the institution’s chief executive officer, chief administrator of the academic unit that sponsors the Advanced General Dentistry Education Programs in Orofacial Pain, program director and other appropriate administrators of the institution verify that the contents of the completed self-study document are factually correct. The verification page should include the names, titles, and signatures of individuals who have reviewed the self-study report.

c. Table of Contents: The table of contents should include the verification page, the summary of factual information, previous site visit recommendations, compliance with Commission policies, sections on each of the Standards, the conclusions and summary of the Self-Study Report and any necessary appendices; page numbers for each section should be identified.

d. Self-Study Report: The Commission encourages programs to develop a self-study report that reflects a balance between outcomes and process and that produces an appropriately brief and cost-effective Self-Study Report. The supportive documentation substantiating the narrative should not exceed what is required to demonstrate compliance with the Standards. Exhibits should be numbered sequentially. The Exhibit numbers in the completed document are not expected to correspond with the example exhibits provided in the Self-Study Guide.

e. Conclusion and Summary: At the completion of the report, a standard by standard qualitative analysis of the program's strengths and weaknesses is required. Actions planned to correct any identified weaknesses should be described. It is suggested that the summary be completed by the program director with assistance from other faculty and appropriate administrators.

6. Keeping costs in mind, the Commission requests the minimum number of copies of the Self-Study Report necessary. One copy of the completed Self-Study Report, bound in soft pliable plastic binders, and the program's suggested schedule of conferences should be sent directly to each member of the visiting committee and the Commission office at least 60 days prior to the date of the visit. (Hard cover binders are expensive in terms of cost, postage and filing space and should not be used).

In addition to the number of paper copies requested above, please be advised that the Commission requires that all accreditation documents, reports and related materials submitted to the Commission for a program's permanent file be done so electronically. The attached Electronic Submission Guidelines will assist you in preparing your report. The program is responsible for assuring that the electronic copy submitted is an exact replica of the paper copy. Failure to comply with these guidelines will constitute an incomplete report. If the program is unable to provide a comprehensive electronic document, the Commission will accept a paper copy and assess a fee for electronic conversion to the program for converting the document to an electronic version.

A summary of the self-study documentation that must be provided to the visiting committee prior to the visit and additional information which must be available on-site is listed in "Policies and Procedures Related to the Evaluation of Advanced General Dentistry Education Programs in Orofacial Pain" section of the Self-Study Guide.

7. **Note:** The program's documentation for CODA (self-study, application, or reports to CODA, for example) must NOT contain any sensitive personally identifiable information ("Sensitive Information" or "PII") as outlined in "Privacy and Data Security Requirements for Institutions" (see below). Similarly, such documentation must not contain any identifiable patient information ("PHI"); therefore, no "patient identifiers" may be included (see below). This applies whether or not the program is required to comply with HIPAA.

Before sending documents such as self-studies or faculty CVs to CODA, institutions must fully and appropriately redact all PII and all PII all patient identifiers such that the PII and patient identifiers cannot be read or otherwise reconstructed. Covering information with ink is not an appropriate means of redaction.

If the program/institution submits documentation that does not comply with the directives on PHI and PII (noted above), CODA will assess a penalty fee of \$1000 to the institution; a resubmission that continues to contain PHI or PII will be assessed an additional \$1000 fee.

8. Programs/institutions must meet established deadlines for submission of requested information. Program information (i.e. self-studies) is considered an integral part of the accreditation process. If an institution fails to comply with the Commission's request, it will be assumed that the institution no longer wishes

to participate in the accreditation program. In this event, the Commission will immediately notify the chief executive officer of the institution of its intent to withdraw the accreditation of the program at its next scheduled meeting.

ADMINISTRATOR VERIFICATION OF SELF-STUDY REPORT FOR THE ADVANCED GENERAL DENTISTRY EDUCATION PROGRAMS IN OROFACIAL PAIN

I have reviewed this document and verify that the information it is accurate and complete, and that it complies with the Commission on Dental Accreditation’s Privacy and Data Security Requirements for Institutions.

SPONSORING OR CO-SPONSORING INSTITUTION	CO-SPONSORING INSTITUTION (If applicable)
Name: Street Address (do not list P.O.Boxes) City, State, Zip:	Name: Street Address (do not list P.O.Boxes) City, State, Zip:
Chief Executive Officer (Univ. Pres., Chancellor, Hospital President) Name: Title: Phone: E-Mail: Signature: Date:	Chief Executive Officer (Univ. Pres., Chancellor, Hospital President.) Name: Title: Phone: E-Mail: Signature: Date:
Chief Administrative Officer (Dental Dean/Chief of Dental Service) Name: Title: Phone: Fax: E-Mail: Signature: Date:	Chief Administrative Officer (Dental Dean/Chief of Dental Service) Name: Title: Phone: Fax: E-Mail: Signature: Date:
Program Director or Co-Program Director Name: Title: Phone: Fax: E-Mail: Signature: Date:	Program Director or Co-Program Director Name: Title: Phone: Fax: E-Mail: Signature: Date:

PREVIOUS SITE VISIT RECOMMENDATIONS

Using the program’s previous site visit report, please demonstrate that the recommendations included in the report have been remedied.

The suggested format for demonstrating compliance is to state the recommendation and then provide a narrative response and/or reference documentation within the remainder of this self-study document.

* Please note if the last site visit was conducted prior to the implementation of the most current Accreditation

Standards for Advanced General Dentistry Education Programs in Orofacial Pain (see document revision history), some recommendations may no longer apply. Should further guidance be required, please contact Commission on Dental Accreditation staff.

COMPLIANCE WITH COMMISSION POLICIES

Please provide documentation demonstrating the program's compliance with the Commission's Reporting Program Changes in Accredited Programs, Third Party Comments, Complaints, and Distance Education policies.

Program Changes

Changes have a direct and significant impact on the program's potential ability to comply with the accreditation standards. These changes tend to occur in the areas of finances, program administration, enrollment, curriculum and clinical/laboratory facilities, but may also occur in other areas. Failure to report in advance any increase in enrollment or other change, using the Guidelines for Reporting Program Changes, may result in review by the Commission, a special site visit, and may jeopardize the program's accreditation status.

The program must report changes to the Commission in writing at least thirty (30) days prior to a regularly scheduled, semi-annual Review Committee meeting. The Commission recognizes that unexpected changes may occur. If an unexpected change occurs, it must be reported no more than 30 days following the occurrence. Unexpected changes may be the result of sudden changes in institutional commitment, affiliated agreements between institutions, faculty support, or facility compromise resulting from natural disaster. Failure to proactively plan for change will not be considered unexpected change. Depending upon the timing and nature of the change, appropriate investigative procedures including a site visit may be warranted.

For enrollment increases in postdoctoral general dentistry education programs the program must submit a request to the Commission one (1) month prior a regularly scheduled semiannual Review Committee/Commission meeting.

For the addition of off-campus sites, the program must report in writing to the Commission at least thirty (30) days prior to a regularly scheduled semi-annual Review Committee meeting.

See the Guidelines for Reporting Enrollment Increases In Postdoctoral General Dentistry Education Programs and the Guidelines for Reporting Off-Campus Sites for specific information on these types of changes. Please review the entire policy on "Reporting Program Changes in Accredited Programs" in the Commission's EOPP: Evaluation and Operational Policies and Procedures manual.

1. Identify all changes which have occurred within the program since the program's previous site visit, in accordance with the Commission's policy on Reporting Program Changes in Accredited Programs

Third Party Comments

The program is responsible for soliciting third party comments from residents and patients that pertain to the Standards or policies and procedures used in the Commission's accreditation process. An announcement for soliciting third party comments is to be published at least ninety (90) days prior to the site visit. The notice should indicate that third party comments are due in the Commission's office no later than sixty (60) days prior to the site visit. Please review the entire policy on "Third Party Comments" in the Commission's EOPP: Evaluation and Operational Policies and Procedures manual.

1. Please provide documentation and/or indicate what evidence will be available during the site visit to demonstrate compliance with the Commission's policy on "Third Party Comments."

Complaints

The program is responsible for developing and implementing a procedure demonstrating that residents are notified, at least annually, of the opportunity and the procedures to file complaints with the Commission. Additionally, the program must maintain a record of resident complaints received since the Commission's last comprehensive review of the program. Please review the entire policy on "Complaints" in the Commission's EOPP: Evaluation and Operational Policies and Procedures manual.

1. Please provide documentation and/or indicate what evidence will be available during the site visit to demonstrate compliance with the Commission's policy on "Complaints."

Distance Education

Programs that offer distance education must have processes in place through which the program establishes that the resident who registers in a distance education course or program is the same resident who participates in and completes the course or program and receives the academic credit. In addition, programs must notify residents of any projected additional resident charges associated with the verification of resident identity at the time of registration or enrollment. Please read the entire policy on "Distance Education" in the Commission's EOPP: Evaluation and Operational Policies and Procedures manual.

1. Please provide documentation and/or indicate what evidence will be available during the site visit to demonstrate compliance with the Commission's policy on "Distance Education."

PROGRAM EFFECTIVENESS

Program Performance with Respect to Resident Achievement:

1. Provide a detailed analysis explaining how the program uses resident achievement measures, such as national assessment scores, results of licensure or certification examinations and/or employment rates to assess the program's overall performance. In your analysis, provide examples of program changes made based on resident achievement data collected and analyzed.

SUMMARY OF FACTUAL INFORMATION

Enrollment at Completion of this Self-Study:

Year	Full-Time	Part-Time
1		
2		
3		

Award Granted upon Completion: _____

Off-Campus Training Sites (For Didactic and Clinical Activity):

List the names and addresses of all off-campus training sites, purposes of the training, and amount of time any resident is assigned to the training site.

Name & Address	Purpose (include if enrichment and/or optional)	Amount of time any resident spends at site

Dental Service Data:

Is there a dental service at the sponsoring institution? ____YES ____NO

If YES, please answer the following questions. If NO, provide projected caseload, if applicable.

Number of total patient visits per year: _____

Source of patients: _____

Number of orofacial pain patients per year: _____

Source of patients: _____

If applicable, number of dental inpatients/same day surgery per year: _____

Hospital Data:

If applicable, identify the hospital (name, city and state) at which residents receive their primary hospital experiences.

Indicate the number of beds at this hospital: _____

Briefly describe the mission and scope of services at this hospital, including the variety of medical and dental cases treated; also describe the role of dentists in this hospital.

STANDARD 1 – INSTITUTIONAL AND PROGRAM EFFECTIVENESS

1-1 Each sponsoring or co-sponsoring United States-based educational institution, hospital or health care organization **must** be accredited by an agency recognized by the United States Department of Education or accredited by an accreditation organization recognized by the Centers for Medicare and Medicaid Services (CMS).

United States military programs not sponsored or co-sponsored by military medical treatment facilities, United States-based educational institutions, hospitals or health care organizations accredited by an agency recognized by the United States Department of Education or accredited by an accreditation organization recognized by the Centers for Medicare and Medicaid Services (CMS) **must** demonstrate successful achievement of Service-specific organizational inspection criteria.

Self-Study Analysis:

1. Please provide the following information:

Sponsor	Information
Institutional Accrediting Agency Name	
Current Status	
Year of Next Review	
Describe any scheduled reviews or expected changes in status that will occur prior to the site visit	

Co-Sponsor, if applicable	Information
Institutional Accrediting Agency Name	
Current Status	
Year of Next Review	
Describe any scheduled reviews or expected changes in status that will occur prior to the site visit	

2. If the sponsoring institution(s) are not accredited, please explain.

Examples of evidence to demonstrate compliance may include:

Accreditation certificate or current official listing of accredited institutions

Evidence of successful achievement of Service-specific organizational inspection criteria

Note: As of September 2013, accreditation organizations recognized by the Centers for Medicare and Medicaid Services (CMS) include:

Accreditation Association for Ambulatory Health Care (AAAHC)

Accreditation Commission for Health Care, Inc. (ACHC)

American Association for Accreditation of Ambulatory Surgery Facilities (AAAASF)

American Osteopathic Association Healthcare Facilities Accreditation Program (AOA/HFAP)

Center for Improvement in Healthcare Quality (CIHQ)

Community Health Accreditation Program (CHAP)

Det Norske Veritas Healthcare (DNV Healthcare)

The Joint Commission (JC)

Self-Study: Provide above item(s) in the appendix

1-2 The sponsoring institution **must** ensure that support from entities outside of the institution does not

compromise the teaching, clinical and research components of the program.

Self-Study Analysis:

1. Briefly describe the organizational flow and identify the individuals responsible for the teaching, clinical and research components of the program.

Examples of evidence to demonstrate compliance may include:

Written agreement(s)

On-Site: Have signed agreements available for review committee.

Contract(s)/Agreement(s) between the institution/program and sponsor(s) related to facilities, funding, and faculty financial support

On-Site: Have signed contracts available for review committee

1-3 The authority and final responsibility for curriculum development and approval, resident selection, faculty selection and administrative matters **must** rest within the sponsoring institution.

Self-Study Analysis:

1. Briefly describe the organizational flow and identify the individuals responsible for curriculum development and approval, resident selection, faculty selection, and administrative matters.

1-4 The financial resources **must** be sufficient to support the program's stated purpose/mission, goals and objectives.

Self-Study Analysis:

1. Describe/Explain the process utilized to develop the program's budget. Include the timeframe, individuals involved, and final decision-making body/individual(s).

2. If financial resources include grant monies, specify the type, amount and termination date of the grant. What is the primary use of these funds? Upon termination of the grant(s), how will these funds be replaced? *(Exhibit 1 is suggested for presenting this information)*

3. Describe the five-year plan developed to assist the program in ensuring stable and adequate funding. *(Append a copy of the five-year plan)*

4. Provide information on the program's budget for the previous, current and ensuing fiscal year. *(Exhibit 2 is suggested for presenting this information)*

Examples of evidence to demonstrate compliance may include:

Program budgetary records

Self-Study: Provide above items in the appendix. Exhibit 1 is suggested.

Budget information for previous, current and ensuing fiscal year

Self-Study: Provide above item in the appendix. Exhibit 2 is suggested.

1-5 All arrangements with co-sponsoring, affiliated institutions, or extramural facilities **must** be formalized by means of written agreements that clearly define the roles and responsibilities of the parties involved.

Intent: *Institutions include entities such as private practices. The items that are covered in inter-institutional agreements do not have to be contained in a single document. They may be included in multiple agreements, both formal and informal (e.g., addenda and letters of mutual understanding).*

Self-Study Analysis:

1. If the program is co-sponsored, briefly describe the nature of this relationship (i.e. division of major responsibilities for educational components of the curriculum, fiscal oversight, and overall program management, etc., including the reporting/authority structure).
2. If written agreements between co-sponsors, affiliates or extramural facilities (including all off-campus training sites) do not exist or if the existing agreements provided as documentation with the self-study do not clearly define the current roles and responsibilities of each institution, please explain rationale or any plans for securing such agreements.
3. For each affiliated institution or extramural facility, or off-campus training site, provide the information requested in Exhibit 3. Include any optional or enrichment experience training sites.

Examples of evidence to demonstrate compliance may include:

Written agreements

Self-Study: for each affiliate, provide Exhibit 3 in the appendix

On-Site: have signed written agreements available for review by visiting committee

1-6 There **must** be opportunities for program faculty to participate in institution-wide committee activities.

Self-Study Analysis:

1. Describe the opportunities available for program faculty to participate in institution-wide committee activities.

Examples of evidence to demonstrate compliance may include:

Bylaws or documents describing committee structure

Copy of institutional committee structure and/or roster of membership by dental faculty

Self-Study: Provide related bylaws or documents in the appendix

On-Site: Have complete bylaws document available for review

1-7 Orofacial pain residents **must** have the same privileges and responsibilities provided residents in other professional education programs.

Self-Study Analysis:

1. Do the residents enjoy the same privileges and responsibilities as residents in other professional education programs?

Yes

No

If no, describe exceptions and the effect, if any, on the orofacial pain residents' educational experience.

Examples of evidence to demonstrate compliance may include:

Bylaws or documents describing resident privileges

Self-Study: Provide related bylaws or documents in the appendix or cross-reference with Standard 1-6

On-Site: Have complete bylaws available for review

1-8 The medical staff bylaws, rules, and regulations of the sponsoring, co-sponsoring, or affiliated hospital **must** ensure that dental staff members are eligible for medical staff membership and privileges.

Intent: Dental staff members have the same rights and privileges as other medical staff of the sponsoring, co-sponsoring or affiliated hospital, within the scope of practice.

Self-Study Analysis:

1. Do the bylaws, rules and regulations of each institution listed above ensure that dental staff members are eligible for medical staff membership and privileges?

___ Yes

___ No

If no, please describe plans or activities underway to address this situation.

Examples of evidence to demonstrate compliance may include:

All related hospital bylaws

Self-Study: Provide relevant portions of bylaws in the appendix

On-Site: Have complete bylaws available for review

Copy of institutional committee structure and/or roster of membership by dental faculty

Self-Study: Provide above item(s) in the appendix

1-9 The program **must** develop overall program goals and objectives that emphasize:

- a. orofacial pain,
- b. resident education,
- c. patient care, and
- d. research.

Intent: The “program” refers to the Advanced General Dentistry Education Program in Orofacial Pain that is responsible for training residents within the context of providing patient care. The overall goals and objectives for resident education are intended to describe general outcomes of the residency training program rather than specific learning objectives for areas of residency training as described in Standard 2-2. Specific learning objectives for residents are intended to be described as goals and objectives of resident training or competencies and proficiencies and included in the response to Standard 2-2. An example of overall goals can be found in the Goals section on page 8 of this document.

Self-Study Analysis:

1. Do the overall program goals and objectives emphasize the following:

Area of Emphasis	Yes	No
Orofacial Pain		
Resident Education		
Patient Care		
Research		

If an area of emphasis is not included with the stated goals and objectives, please explain.

Examples of evidence to demonstrate compliance may include:

Overall program goals and objectives

Self-Study: Provide overall program goals and objectives in the appendix. (Please note goals and objectives for resident training in required curriculum areas will be requested in Standard 2 – Curriculum)

1-10 The program **must** have a formal and ongoing outcomes assessment process that regularly evaluates

the degree to which the program's stated goals and objectives are being met and make program improvements based on an analysis of that data.

Intent: *The intent of the outcomes assessment process is to collect data about the degree to which the overall goals and objectives described in response to Standard 1-9 are being met.*

The outcomes process developed should include each of the following steps:

1. *development of clear, measurable goals and objectives consistent with the program's purpose/mission;*
2. *implementation of procedures for evaluating the extent to which the goals and objectives are met;*
3. *collection of data in an ongoing and systematic manner;*
4. *analysis of the data collected and sharing of the results with appropriate audiences;*
5. *identification and implementation of corrective actions to strengthen the program; and*
6. *review of the assessment plan, revision as appropriate, and continuation of the cyclical process.*

Self-Study Analysis:

1. Describe the program's established formal outcomes assessment process. If this exists in a formal document, please provide a copy in the appendix. *(Exhibit 4 is suggested for presenting this information)*
2. For each of the overall program goals and objectives, describe the outcomes measurement mechanism(s) utilized to determine the degree to which the goal or objective is being met. *(Exhibit 4 is suggested for presenting this information)*
3. For each of the overall program goals and objectives, provide assessment data collected, or summaries of the data collected, in the appendix. *(Exhibit 4 is suggested for presenting this information)*
4. For each of the overall program goals and objectives, illustrate by providing documented examples, how the program has followed its formal assessment plan from the stage of evaluating results of the specific assessment data through the stage of determining whether to make programmatic changes. *(Exhibit 4 is suggested for presenting this information)*

Examples of evidence to demonstrate compliance may include:

Overall program goals and objectives

Self-Study: Provide above item(s) in the appendix or cross-reference with Standard 1-9.

Outcomes assessment plan and measures

Self-Study: Provide the outcomes assessment plan and measures in the appendix; Exhibit 4 is suggested.

Outcomes results

Self-Study: Provide outcomes results in the appendix; Exhibit 4 is suggested.

Annual review of outcomes results

Self-Study: Provide review of outcomes results in the appendix

Meeting minutes where outcomes are discussed

Self-Study: Provide review of outcomes results in the appendix

Decisions based on outcomes results

Self-Study: Provide example of decisions made based on outcomes results. Exhibit 4 is suggested.

Successful completion of a certifying examination in Orofacial Pain

Self-Study: Provide evidence of successful completion of certifying examination in the appendix

Ethics and Professionalism

1-11 The program **must** ensure that residents are able to demonstrate the application of the principles of ethical reasoning, ethical decision making and professional responsibility as they pertain to the academic

environment, research, patient care, and practice management.

Intent: Residents should know how to draw on a range of resources such as professional codes, regulatory law, and ethical theories to guide judgment and action for issues that are complex, novel, ethically arguable, divisive, or of public concern.

Self-Study Analysis:

1. Describe how residents are exposed to the application of principles of ethical reasoning, ethical decision making and professional responsibility as they pertain to the academic environment, research, patient care, and practice management.
2. Describe how the program ensures that residents are able to demonstrate the application of principles of ethical reasoning, ethical decision making and professional responsibility as they pertain to the academic environment, research, patient care, and practice management.

Examples of evidence to demonstrate compliance may include:

Didactic course(s)

Self-Study: Provide above item(s) in the appendix; Exhibit 7 is suggested or cross-reference with 2-2.

Course outline and appropriate lectures

Self-Study: Provide above item(s) in the appendix.

Resident evaluations with identifying information removed

On-Site: Have completed evaluations available for review by visiting committee.

Case studies

On-Site: Prepare above item(s) for review by visiting committee.

Documentation of treatment planning sessions

On-Site: Prepare above item(s) for review by visiting committee.

Documentation of treatment outcomes

On-Site: Prepare above item(s) for review by visiting committee.

Patient satisfaction surveys

On-Site: Prepare above item(s) for review by visiting committee.

Examples of literature reviews related to ethics and professionalism

Self-Study: Provide above item(s) in the appendix.

STANDARD 2 – EDUCATIONAL PROGRAM

2-1 The orofacial pain program **must** be designed to provide advanced knowledge and skills beyond the D.D.S. or D.M.D. training.

Self-Study Analysis:

1. Describe how the program is designed to ensure training is beyond that of the D.D.S. or D.M.D.

Examples of evidence to demonstrate compliance may include:

Curriculum plan

Self-Study: Provide a copy of the curriculum plan in the appendix. Exhibit 5 is suggested for presenting this information.

Curriculum Content

2-2 The program **must** either describe the goals and objectives for each area of resident training or list the competencies and proficiencies that describe the intended outcomes of resident education.

Intent: The program is expected to develop specific educational goals that describe what the resident will be

able to do upon completion of the program. These educational goals should describe the resident's abilities rather than educational experiences the residents may participate in. These specific educational goals may be formatted as either goals and objectives of each area of resident training or competencies and proficiencies. These educational goals are to be circulated to program faculty and staff and made available to applicants of the program.

Self-Study Analysis:

1. In the appendix, provide a copy of the program's goals and objectives of resident training or the competencies and proficiencies.
2. Describe how the program's goals and objectives of resident training or the competencies and proficiencies are circulated to program faculty and staff and made available to applicants of the program.

Examples of evidence to demonstrate compliance may include:

Goals and objectives for resident training or competencies and proficiencies

Self-Study: Provide a copy of the goals and objectives for resident training or competencies and proficiencies in the appendix.

2-3 Written goals and objectives **must** be developed for all instruction included in this curriculum.

Self-Study Analysis:

1. Have written goals and objectives been developed for all instruction in the curriculum?
If no, please explain

Example of Evidence to demonstrate compliance may include:

Goals and objectives

Self-Study: Provide a copy of the goals and objectives for resident training or competencies and proficiencies in the appendix or cross-reference with Standard 2-2.

Content outlines

Self-Study: Provide course outlines in the appendix.

2-4 The program **must** have a curriculum plan that includes structured clinical experiences and didactic sessions designed to achieve the program's goals and objectives for resident training or the program's competencies and proficiencies.

Intent: *The program is expected to organize the didactic and clinical educational experiences into a formal curriculum plan.*

For each specific goal or objective or competency and proficiency statement described in response to Standard 2-2, the program is expected to develop educational experiences designed to enable the resident to acquire the skills, knowledge, and values necessary in that area. The program is expected to organize these didactic and clinical educational experiences into a formal curriculum plan.

Self-Study Analysis:

1. Provide the program's curriculum management plan in the appendix. *(Exhibit 5 is suggested for presenting this information or cross-reference with Standard 2-1)*
2. For each year of the program, provide an overview of the distribution of the residents' time in the major areas of the curriculum: ambulatory care, inpatient care, assignments to other services, formal classes, conference and seminars, research, etc. *(Exhibit 6 is suggested for presenting this information)*
3. For the previous calendar year, provide a monthly schedule and the responsible faculty member.

4. For each course or seminar, list the director, the course objectives and the specific competencies or goals and objectives for resident training and evaluation mechanisms that this course addresses. (*Exhibit 7 is suggested for presenting this information*)

5. For each resident position, provide a month-by-month list of activities. (*Exhibit 8 is suggested for presenting this information*)

Examples of evidence to demonstrate compliance may include:

Curriculum plan with educational experiences tied to specific goals and objectives or competencies and proficiencies

Self-Study: Provide a copy of the curriculum plan in the appendix. (Exhibit 5 is suggested for presenting this information or cross-reference with Standard 2-1)

Distribution of residents' time in major curriculum areas

Self-Study: Provide above item in appendix. Exhibit 6 is suggested for presenting this information

Didactic Schedules

Self-Study: Provide a copy of the didactic schedules. Exhibit 7 is suggested presenting this information.

Clinical schedules

Self-Study: Provide a copy of the clinical schedules. Exhibit 8 is suggested presenting this information.

BIOMEDICAL SCIENCES

2-5 Formal instruction **must** be provided in each of the following:

- a. Gross and functional anatomy and physiology including the musculoskeletal and articular system of the orofacial, head, and cervical structures;
- b. Growth, development, and aging of the masticatory system;
- c. Head and neck pathology and pathophysiology with an emphasis on pain;
- d. Applied rheumatology with emphasis on the temporomandibular joint (TMJ) and related structures;
- e. Sleep physiology and dysfunction;
- f. Oromotor disorders including dystonias, dyskinesias, and bruxism;
- g. Epidemiology of orofacial pain disorders;
- h. Pharmacology and pharmacotherapeutics; and
- i. Principals of biostatistics, research design and methodology, scientific writing, and critique of literature.

Self-Study Analysis:

1. Describe how residents receive formal instruction in the areas noted in items **a-i** listed above. If the information presented does not reflect instruction related to items **a-i** as listed in this Standard, please explain and note plans underway to address this situation.

Examples of evidence to demonstrate compliance may include:

Course outlines

Self-Study: Provide course outlines in the appendix

Didactic Schedules

Self-Study: Provide didactic schedules in the appendix. Exhibit 7 is suggested or cross-reference with Standard 2-4

Resident Evaluations

On-Site: Have completed evaluations available for review by the visiting committee

2-6 The program **must** provide a strong foundation of basic and applied pain sciences to develop knowledge in functional neuroanatomy and neurophysiology of pain including:

- a. The neurobiology of pain transmission and pain mechanisms in the central and peripheral nervous systems;

- b. Mechanisms associated with pain referral to and from the orofacial region;
- c. Pharmacotherapeutic principles related to sites of neuronal receptor specific action pain;
- d. Pain classification systems;
- e. Psychoneuroimmunology and its relation to chronic pain syndromes;
- f. Primary and secondary headache mechanisms;
- g. Pain of odontogenic origin and pain that mimics odontogenic pain; and
- h. The contribution and interpretation of orofacial structural variation (occlusal and skeletal) to orofacial pain, headache, and dysfunction.

Self-Study Analysis:

1. Describe how a strong foundation of basic and applied pain sciences, as noted in items a-h listed above, is provided to the residents. If the information presented does not reflect instruction related to items **a-h** as listed in this Standard, please explain and note plans underway to address this situation.

Examples of evidence to demonstrate compliance may include:

Course outlines

Self-Study: Provide course outlines in the appendix

Didactic Schedules

Self-Study: Provide didactic schedules in the appendix. Exhibit 7 is suggested or cross-reference with Standard 2-4

Resident Evaluations

On-Site: Have completed evaluations available for review by the visiting committee

BEHAVIORAL SCIENCES

2-7 Formal instruction **must** be provided in behavioral science as it relates to orofacial pain disorders and pain behavior including:

- a. cognitive-behavioral therapies including habit reversal for oral habits, stress management, sleep problems, muscle tension habits and other behavioral factors;
- b. the recognition of pain behavior and secondary gain behavior;
- c. psychologic disorders including depression, anxiety, somatization and others as they relate to orofacial pain disorders; and
- d. conducting and applying the results of psychometric tests.

Self-Study Analysis:

1. Describe how residents receive formal instruction in the areas noted in items **a-d** listed above. If the information presented does not reflect instruction related to items **a-d** as listed in this Standard, please explain and note plans underway to address this situation.

Examples of evidence to demonstrate compliance may include:

Course outlines

Self-Study: Provide course outlines in the appendix

Didactic Schedules

Self-Study: Provide didactic schedules in the appendix. Exhibit 7 is suggested or cross-reference with Standard 2-4

Resident Evaluations

On-Site: Have completed evaluations available for review by the visiting committee

CLINICAL SCIENCES

2-8 A minimum of 50% of the total program time **must** be devoted to providing orofacial pain patient services, including direct patient care and clinical rotations.

Self-Study Analysis:

1. Describe how it is ensured that a minimum of 50% of the total program time is devoted to providing orofacial pain services. (*Exhibit 6 is suggested for presenting this information*)

Examples of Evidence to demonstrate compliance may include:

Distribution of residents' time in major curriculum areas

Self-Study: Provide above item in appendix. Exhibit 6 is suggested for presenting this information or cross-reference with Standard 2-4.

2-9 The program **must** provide instruction and clinical training for the clinical assessment and diagnosis of complex orofacial pain disorders to ensure that upon completion of the program the resident is able to:

- a. Conduct a comprehensive pain history interview;
- b. Collect, organize, analyze, and interpret data from medical, dental, behavioral, and psychosocial histories and clinical evaluation to determine their relationship to the patient's orofacial pain complaints;
- c. Perform clinical examinations and tests and interpret the significance of the data;

Intent: *Clinical evaluation may include: musculoskeletal examination of the head, jaw, neck and shoulders; range of motion; general evaluation of the cervical spine; TM joint function; jaw imaging; oral, head and neck screening, including facial-skeletal and dental-occlusal structural variations; cranial nerve screening; posture evaluation; physical assessment including vital signs; and diagnostic blocks.*

- d. Function effectively within interdisciplinary health care teams, including the recognition for the need of additional tests or consultation and referral; and

Intent: *Additional testing may include additional imaging; referral for psychological or psychiatric evaluation; laboratory studies; diagnostic autonomic nervous system blocks, and systemic anesthetic challenges.*

- e. Establish a differential diagnosis and a prioritized problem list.

Self-Study Analysis:

1. Describe how the residents receive formal instruction in the areas reflected in items **a-e** noted above. Provide the course outline(s) as an appendix. If the course outline(s) does not reflect instruction related to items **a-e** as listed above, please explain and note plans to address this situation.

2. Describe how the residents receive clinical training in the areas reflected in items **a-e** noted above. If residents do not receive clinical training in items **a-e** as listed above, please explain and note plans to address this situation.

Examples of evidence to demonstrate compliance may include:

Goals and objectives of resident training or competencies and proficiencies organized by the areas described above

Self-Study: Provide above item(s) in the appendix; Exhibit 9 is suggested and may be cross-referenced with 2-2

Didactic Schedules

Self-Study: Provide didactic schedules in the appendix. Exhibit 7 is suggested or cross-reference with Standard 2-4

Clinical Schedules

Self-Study: Provide clinical schedules in the appendix. Exhibit 8 is suggested or cross-reference with Standard 2-4

Resident Evaluations

On-Site: Have completed evaluations available for review by the visiting committee

Treatment planning sessions

On-Site: Have documentation available for review by the visiting committee

Documentation of Chart reviews

On-Site: Have documentation available for review by the visiting committee

Case simulations

On-Site: Have available for review by the visiting committee

2-10 The program **must** provide instruction and clinical training in multidisciplinary pain management for the orofacial pain patient to ensure that upon completion of the program the resident is able to:

- a. Develop an appropriate treatment plan addressing each diagnostic component on the problem list with consideration of cost/risk benefits;
- b. Incorporate risk assessment of psychosocial and medical factors into the development of the individualized plan of care;
- c. Obtain informed consent;
- d. Establish a verbal or written agreement, as appropriate, with the patient emphasizing the patient's treatment responsibilities;
- e. Have primary responsibility for the management of a broad spectrum of orofacial pain patients in a multidisciplinary orofacial pain clinic setting, or interdisciplinary associated services. Responsibilities should include:
 1. intraoral appliance therapy;
 2. physical medicine modalities;
 3. sleep-related breathing disorder intraoral appliances;
 4. non-surgical management of orofacial trauma;
 5. behavioral therapies beneficial to orofacial pain; and
 6. pharmacotherapeutic treatment of orofacial pain including systemic and topical medications and diagnostic/therapeutic injections.

Intent: *This should include judicious selection of medications directed at the presumed pain mechanisms involved, as well as adjustment, monitoring, and reevaluation.*

Common medications may include: muscle relaxants; sedative agents for chronic pain and sleep management; opioid use in management of chronic pain; the adjuvant analgesic use of tricyclics and other antidepressants used for chronic pain; anticonvulsants, membrane stabilizers, and sodium channel blockers for neuropathic pain; local and systemic anesthetics in management of neuropathic pain; anxiolytics; analgesics and anti-inflammatories; prophylactic and abortive medications for primary headache disorders; and therapeutic use of botulinum toxin injections.

Common issues may include: management of medication overuse headache; medication side effects that alter sleep architecture; prescription medication dependency withdrawal; referral and co-management of pain in patients addicted to prescription, non prescription and recreational drugs; familiarity with the role of preemptive anesthesia in neuropathic pain.

Self-Study Analysis:

1. Describe how the residents receive formal instruction in the areas reflected in items **a-e** noted above. Provide the course outline(s) as an appendix. If the course outline(s) does not reflect instruction related to items **a-e** as listed above, please explain and note plans to address this situation.
2. Describe how the residents receive clinical training in the areas reflected in items **a-e** noted above. If residents do not receive clinical training in items **a-e** as listed above, please explain and note plans to address this situation.

Examples of evidence to demonstrate compliance may include:

Didactic Schedules

Self-Study: Provide didactic schedules in the appendix. Exhibit 7 is suggested or cross-reference with Standard 2-4

Clinical Schedules

Self-Study: Provide clinical schedules in the appendix. Exhibit 8 is suggested or cross-reference with Standard 2-4

Resident Evaluations

On-Site: Have completed evaluations available for review by the visiting committee

Treatment planning sessions

On-Site: Have documentation available for review by the visiting committee

Documentation of Chart reviews

On-Site: Have documentation available for review by the visiting committee

Case simulations

On-Site: Have available for review by the visiting committee

Records of resident clinical activity (such as case logs) including procedures performed in each area described above

On-Site: Have records available for review by the visiting committee

Patient records

On-Site: Have records available for review by the visiting committee

2-11 Residents **must** participate in clinical experiences in other healthcare services (not to exceed 10 percent of total training period).

Intent: Experiences may include observation or participation in the following: oral and maxillofacial surgery to include procedures for intracapsular TMJ disorders; outpatient anesthesia pain service; in-patient pain rotation; rheumatology, neurology, oncology, otolaryngology, rehabilitation medicine; headache, radiology, oral medicine, and sleep disorder clinics.

Self-Study Analysis:

1. For each assigned experience in other healthcare services, provide the information contained in Exhibit 10.

Examples of evidence to demonstrate compliance may include:

Distribution of residents' time in major curriculum areas

Self-Study: Provide above item in appendix. Exhibit 6 is suggested for presenting this information

Clinical Schedules

Self-Study: Provide clinical schedules in the appendix. Exhibit 8 is suggested or cross-reference with Standard 2-4

Description and schedule of rotations, including supervising faculty

Rotation/Experience objectives

Self-Study: Provide above items in appendix. Exhibit 10 is suggested.

Resident Evaluations

On-Site: Have evaluations available for review by visiting committee

2-12 For each assigned rotation, or experience in an affiliated institution or extramural facility, there **must** be:

- a. objectives that are developed in cooperation with the department chairperson, service chief, or facility director to which the residents are assigned;
- b. resident supervision by designated individuals who are familiar with the objectives of the rotation or experience; and
- c. evaluations performed by the designated supervisor.

Intent: This standard is intended to apply to all rotations, whether they take place in the parent institution or an affiliated institution or extramural facility.

Self-Study Analysis:

1. For each assigned experience or rotation, provide the information contained in Exhibit 10.

Examples of evidence to demonstrate compliance may include:

Description and schedule of rotations, including supervising faculty

Rotation/Experience objectives

Self-Study: Provide above items in appendix. Exhibit 10 is suggested or cross-reference with Standard

2-11

Resident Evaluations

On-Site: Have evaluations available for review by visiting committee

2-13 Residents **must** gain experience in teaching orofacial pain.

Intent: Residents should be provided opportunities to obtain teaching experiences in orofacial pain (i.e. small group and lecture formats, presenting to dental and medical peer groups, predoctoral student teaching experiences, and/or continuing education programs.

Self-Study Analysis:

1. Describe the residents' experiences in teaching orofacial pain.
2. Indicate the number of hours residents participate in teaching activities.

Examples of evidence to demonstrate compliance may include:

Schedule of residents' orofacial pain teaching activities

Self-Study: Provide schedules(s) in the appendix

2-14 Residents **must** actively participate in the collection of history and clinical data, diagnostic assessment, treatment planning, treatment, and presentation of treatment outcome.

Self-Study Analysis:

1. Describe how the residents participate in the collection of history and clinical data, diagnostic assessment, treatment planning, treatment and presentation of treatment outcome.

Examples of evidence to demonstrate compliance may include:

Documentation of treatment planning sessions/conferences where treatment outcomes are discussed

On-Site: Have documentation available for review by the visiting committee

Documentation of Chart reviews

On-Site: Have documentation available for review by the visiting committee

Case simulations

On-Site: Have available for review by the visiting committee

Records of resident clinical activity (such as case logs) including procedures performed in each area described above

On-Site: Have records available for review by the visiting committee

Patient records

On-Site: Have records available for review by the visiting committee

Resident evaluations

On-Site: Have evaluations available for review by the visiting committee

2-15 The program **must** provide instruction in the principles of practice management.

Intent: Suggested topics include: quality management; principles of peer review; business management and practice development; principles of professional ethics, jurisprudence and risk management; alternative health care delivery systems; informational technology; and managed care; medicolegal issues, workers compensation, second opinion reporting; criteria for assessing impairment and disability; legal guidelines governing licensure and dental practice, scope of practice with regards to orofacial pain disorders, and instruction in the regulatory requirements of chronic opioid maintenance.

Self-Study Analysis:

1. Does the program provide instruction in the following topics? (check all that apply)

- management of allied dental professionals and other office personnel
- quality management
- principles of peer review
- business management and practice development
- principles of professional ethics
- jurisprudence and risk management
- alternative health care delivery systems
- managed care

2. Describe the intended outcomes of instruction either in terms of goals and objectives for resident training or competencies and proficiencies

The instruction in this area is intended to enable the resident to:

Examples of evidence to demonstrate compliance may include:

Course outlines

Self-Study: Provide the outlines in the appendix

2-16 Structured patient care conferences **must** be held at least every other week.

Intent: Conferences should include diagnosis, treatment planning, progress, and outcomes. These conferences should be attended by residents and faculty representative of the disciplines involved. These conferences are not to replace the daily faculty/resident interactions regarding patient care.

Self-Study Analysis:

1. Are patient care conferences held every other week? Yes No
If no, please explain and describe any plans underway to ensure that such conferences are held at least every other week.
2. Describe how patient care conferences are organized.
3. Who is in attendance at patient care conferences?

Examples of evidence to demonstrate compliance may include:

Conference schedules

Self-Study: Provide schedules in the appendix

2-17 Residents **must** be given assignments that require critical review of relevant scientific literature.

Intent: Residents are expected to have the ability to critically review relevant literature as a foundation for

lifelong learning and adapting to changes in oral health care. This should include the development of critical evaluation skills and the ability to apply evidence-based principles to clinical decision-making.

Relevant scientific literature should include current pain science and applied pain literature in dental and medical science journals with special emphasis on pain mechanisms, orofacial pain, head and neck pain, and headache.

Self-Study Analysis:

1. Describe how residents learn to identify and critically review scientific literature.
2. Describe a typical literature review assignment and provide an example in the appendix.
3. Residents participate in the following: (check all that apply)

- Journal Club
- Literature Reviews
- Development of Journal Abstracts

Examples of evidence to demonstrate compliance may include:

Evidence of experiences requiring literature review

Self-Study: Provide examples of experiences in the appendix

Program Length

2-18 The duration of the program **must** be at least two consecutive academic years with a minimum of 24 months, full-time or its equivalent.

Self-Study Analysis:

1. Is the program at least two consecutive academic years with a minimum of 24 months, full-time or its equivalent?
If no, please explain.

Examples of evidence to demonstrate compliance may include:

Program schedules

Self-Study: Provide schedules in the appendix

Curriculum plan

Self-Study: Provide curriculum plan in the appendix or cross-reference with Standard 2-1

2-19 Where a program for part-time residents exists, it **must** be started and completed within a single institution and designed so that the total curriculum can be completed in no more than twice the duration of the program length.

Intent: *Part-time residents may be enrolled, provided the educational experiences are the same as those acquired by full-time residents and the total time spent is the same.*

Self-Study Analysis:

1. Are residents at this institution able to pursue a part-time program?

If yes, please describe the program's policies related to the length of time for completion of a part-time program and provide a part-time schedule.

Examples of evidence to demonstrate compliance may include:

Description of the part-time program

Documentation of how the part-time residents will achieve similar experiences and skills as full-time residents
Program schedules

Self-Study: Provide the above items in the appendix

Evaluation

2-20 The program's resident evaluation system **must** assure that, through the director and faculty, each program:

- a) periodically, but at least two times annually, evaluates and documents the resident's progress toward achieving the program's goals and objectives of resident training or competencies and proficiencies using appropriate written criteria and procedures;
- b) provides residents with an assessment of their performance after each evaluation. Where deficiencies are noted, corrective actions **must** be taken; and
- c) maintains a personal record of evaluation for each resident that is accessible to the resident and available for review during site visits.

Intent: While the program may employ evaluation methods that measure a resident's skills or behavior at a given time, it is expected that the program will, in addition, evaluate the degree to which the resident is making progress toward achieving the specific goals and objectives of resident training or competencies and proficiencies described in response to Standard 2-2.

Self-Study Analysis:

1. Describe the process used to evaluate the resident's progress toward achieving the program's goals and objectives of resident training or competencies and proficiencies. Include the written criteria and procedures used including:

- a. frequency of evaluation
- b. written criteria and procedures used, including the maintenance of records
- c. who participates in the evaluations
- d. how a determination is made regarding the resident's progress toward achieving the program's goals and objectives of resident training or competencies and proficiencies
- e. how residents are informed of the results of the evaluations
- f. how corrective actions are undertaken when deficiencies are noted.

2. If evaluations are not conducted at least two times a year, please explain any activities underway to address this situation.

Examples of evidence to demonstrate compliance may include:

Evaluation criteria and process

Evidence that corrective actions have been taken

Self-Study: Provide in response above or in appendix

Resident evaluations with identifying information removed

Personal record of evaluation for each resident

Self-Study: Provide a blank evaluation form in appendix

On-Site: Have completed evaluations available for review by visiting committee

STANDARD 3 – FACULTY AND STAFF

3-1 The program **must** be administered by a director who is board certified or educationally qualified in orofacial pain and has a full-time appointment in the sponsoring institution with a primary commitment to the orofacial pain program.

Self-Study Analysis:

1. Is the program director board certified or educationally qualified in orofacial pain?
 Yes No
 If yes, please provide date of board certification or date of completion of an orofacial pain program of at least two years in length.
 If no, please explain

2. Does the program director have a full-time appointment in the sponsoring institution with a primary commitment to the orofacial pain program?
 Yes No
 If no, please explain

Examples of evidence to demonstrate compliance may include:

- Program Director's BioSketch (Exhibit 13)
- Copy of board certification certificate
- Letter from board attesting to current/active board certification
- Self-Study: Provide above items in appendix*

3-2 The program director **must** have sufficient authority and time to fulfill administrative and teaching responsibilities in order to achieve the educational goals of the program.

Intent: *The program director's responsibilities include:*

- a. *program administration;*
- b. *development and implementation of the curriculum plan;*
- c. *ongoing evaluation of program content, faculty teaching, and resident performance;*
- d. *evaluation of resident training and supervision in affiliated institutions and off-service rotations;*
- e. *maintenance of records related to the educational program; and*
- f. *resident selection; and*
- g. *preparing graduates to seek certification by the American Board of Orofacial Pain.*

In those programs where applicants are assigned centrally, responsibility for selection of residents may be delegated to a designee.

Self-Study Analysis:

1. Provide the following factual information:
 Program Director's Name: _____
 Number of hours per week at sponsoring institution _____
 Number of hours per week devoted to the orofacial pain program _____

2. Provide a copy of the program director's job description in the appendix.

3. Does the program director's job description include the following responsibilities?

Responsibility	Yes	No
Program administration		
Development and implementation of curriculum plan		
Ongoing evaluation of program content, faculty teaching, and resident performance		
Evaluation of resident training and supervision in affiliated institutions and off-service rotations		
Maintenance of records related to the educational program		
Resident selection		
Preparing graduates to seek certification by the American		

Board of Orofacial Pain		
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4. Describe the program director’s participation in each of the above activities.

Examples of evidence to demonstrate compliance may include:

- Program director’s job description
- Job description of individuals who have been assigned some of the program director’s job responsibilities
- Formal plan for assignment of program director’s job responsibilities as described above
 - Self-Study: Provide above items in the appendix*
- Program records
 - On-Site: Prepare above items for review by visiting committee*

3-3 The program **must** be staffed by faculty who are qualified by education and/or clinical experience in the curriculum areas for which they are responsible and have collective competence in all areas of orofacial pain included in the program.

Self-Study Analysis:

1. Provide data regarding faculty responsibilities and qualifications (Exhibits 11 and 12 are suggested for presenting this information)
2. Describe how the teaching staff members are oriented to the philosophy and objectives of the program.
3. In the event of a change in program personnel, how is program continuity ensured?
4. Assess the adequacy of the size and time commitment of the teaching staff

Examples of evidence to demonstrate compliance may include:

- Full and part-time faculty rosters
 - Self-Study: Provide above items in the appendix. Exhibits 11 and 12 are suggested for presenting this information.*
- Program and faculty schedules
- Completed BioSketch of faculty members with major responsibilities to the program (Exhibit 13)
 - Criteria used to certify a non-specialist faculty member as responsible for a specialty teaching area
 - Self-Study: Provide above items in the appendix*
 - Documentation that non-specialist faculty members are responsible for a specialty teaching area
 - On-Site: Prepare the above items for review by the visiting committee*

3-4 A formally defined evaluation process **must** exist that ensures measurements of the performance of faculty members annually.

Intent: The written annual performance evaluations should be shared with the faculty members. The program should provide a mechanism for residents to confidentially evaluate instructors, courses, program director, and the sponsoring institution.

Self-Study Analysis:

1. Describe how the faculty is evaluated. Include the frequency of evaluations, who performs the evaluation, whether it is documented, and whether written performance evaluations are shared with individual faculty. If an evaluation form is used, provide a blank copy in the appendix.

Examples of evidence to demonstrate compliance may include:

Faculty files

On-Site: Prepare the above items for review by the visiting committee

Performance appraisals

Self-Study: Provide a blank faculty performance evaluation form if utilized

On-Site: Prepare above items for review by visiting committee

3-5 A faculty member **must** be present in the clinic for consultation, supervision, and active teaching when residents are treating patients in scheduled clinic sessions.

Intent: *This standard does not preclude occasional situations where a faculty member cannot be available.*

Faculty members should contribute to an ongoing resident and program/curriculum evaluation process. The teaching staff should be actively involved in the development and implementation of the curriculum.

Self-Study Analysis:

1. Describe how it is ensured that a faculty member is present in the dental clinic for consultation, supervision, and active teaching when residents are treating patients in scheduled clinic sessions.

2. Provide a monthly faculty clinic schedule in the appendix; include only one page if the schedule remains the same for all 12 months.

Examples of evidence to demonstrate compliance may include:

Faculty clinic schedules

Self-Study: Provide the schedules in the appendix

3-6 Adequate support staff, including allied dental personnel and clerical staff, **must** be consistently available to allow for efficient administration of the program.

Intent: *The program should determine the number and participation of allied support and clerical staff to meet the educational and experiential goals and objectives.*

Self-Study Analysis:

1. Indicate the number of positions and total number of hours per week devoted to this program and provide support staff schedules in the appendix.

Type of Support Staff	Number of Positions	Total # Hours/week Allocated to this Program
Dental Assisting		
Dental Hygiene		
Secretarial/Clerical		
Other (please describe)		

2. Assess whether adequate allied dental personnel are consistently available to the program. If the support is inadequate please describe how this affects the residents' educational experience. In addition, describe efforts that have been taken to remedy this situation.

3. Assess whether adequate clerical personnel are consistently available to the program. If the support is inadequate please describe how this affects the residents' educational experience. In addition, describe efforts that have been taken to remedy this situation.

Examples of evidence to demonstrate compliance may include:

Staff schedules

Self-Study: Provide schedules in the appendix

3-7 There **must** be evidence of scholarly activity among the orofacial pain faculty.

Intent: *Such evidence may include: participation in clinical and/or basic research; mentoring of orofacial pain resident research; publication in peer-reviewed scientific media; development of innovative teaching materials and courses; and presentation at scientific meetings and/or continuing education courses at the local, regional, or national level.*

Self-Study Analysis:

1. Describe how the orofacial pain faculty are involved in scholarly activity.

Examples of evidence to demonstrate compliance may include:

Publication in peer-reviewed scientific media

Teaching materials developed

Scientific meeting presentations

On-Site: Have items above available for review by the visiting committee

3-8 The program **must** show evidence of an ongoing faculty development process.

Intent: Ongoing faculty development is a requirement to improve teaching and learning, to foster curricular change, to enhance retention and job satisfaction of faculty, and to maintain the vitality of academic dentistry as the wellspring of a learned profession.

Self-Study Analysis:

1. Describe the faculty development process and how the program ensures faculty involvement in the process.

Examples of evidence to demonstrate compliance may include:

Participation in development activities related to teaching, learning, and assessment

Attendance at regional and national meetings that address contemporary issues in education and patient care

Mentored experiences for new faculty

Scholarly productivity

Presentations at regional and national meetings

Examples of curriculum innovation

Maintenance of existing and development of new and/or emerging clinical skills

Documented understanding of relevant aspects of teaching methodology

Curriculum design and development

Curriculum evaluation

Resident assessment

Cultural Competency

Ability to work with residents of varying ages and backgrounds

Use of technology in didactic and clinical components of the curriculum

Evidence of participation in continuing education activities

STANDARD 4 – EDUCATIONAL SUPPORT SERVICES

4-1 The sponsoring institution **must** provide adequate and appropriately maintained facilities and learning resources to support the goals and objectives of the program.

Intent: *The facilities should permit the attainment of program goals and objectives. Clinical facilities suitable*

for privacy for patients should be specifically identified for the orofacial pain program. Library resources that include dental resources should be available. Resource facilities should include access to computer, photographic, and audiovisual resources for educational, administrative, and research support. Equipment for handling medical emergencies and current medications for treating medical emergencies should be readily accessible. "Readily accessible" does not necessarily mean directly in the dental clinic. Protocols for handling medical emergencies should be developed and communicated to all staff in patient care areas.

Self-Study Analysis:

1. Provide data regarding accessibility of equipment for the dental equipment. (Exhibit 14 is suggested for presenting this information)
2. Clinical Facilities
 - a. Indicate the total number of functional operatories in the dental clinic:
 - b. How many of these operatories are designated for use by the program?
 - c. Assess the availability of operatories when residents are scheduled to provide direct patient care.
 - d. Describe and assess the adequacy of the dental clinic's facilities and equipment
 - e. Assess the ability of the institution to provide privacy for patients of the orofacial pain program.
3. Emergency Equipment and Protocols
 - a. Comment on the accessibility of current emergency medications and equipment.
 - b. Describe procedures and documentation used to ensure that these medications and equipment are regularly inspected.
 - c. Describe protocols for treating medical emergencies.
4. Radiology Facilities
 - a. Describe and assess the radiographic imaging facilities within the institution.
 - b. Assess the adequacy of the services provided by these facilities.
 - c. Assess the adequacy of available radiographic equipment in the clinic.
5. Library Resources
 - a. Describe the accessibility and hours of operation of the sponsoring institution's library and any other learning resource centers utilized by the program.
 - b. Assess the scope of holdings and available resources, including:
 1. Computerized information retrieval capabilities
 2. Interlibrary loan arrangements
 3. Audiovisual equipment and supplies
 4. Dental resources
6. Distance Education Resources (if applicable)
 - a. Describe the distance education resources utilized, including the videoconferencing equipment.
 - b. Describe the facility (location, room size) where the videoconferencing sessions are held.

Examples of evidence to demonstrate compliance may include:

Description of facilities

Self-Study: Provide the above items in the appendix. Exhibit 14 is suggested.

4-2 There **must** be provision for a conference area separated from the clinic for rounds discussion and case presentations, sufficient to accommodate the multidisciplinary team.

Self-Study Analysis:

1. Describe the availability of conference areas separated from the clinic for rounds and case presentations, sufficient to accommodate the multidisciplinary team.

Examples of evidence to demonstrate compliance may include:

Description of the facilities

Self-Study: Provide the description of the facilities in the appendix. Exhibit 14 is suggested or cross-reference with Standard 4-1

4-3 Dental and medical laboratory, dental and medical imaging, and resources for psychometric interpretation **must** be accessible for use by the orofacial pain program.

Self-Study Analysis:

1. Describe the availability of dental and medical laboratory, dental and medical imaging, and resources for psychometric interpretation for the orofacial pain program.

Examples of evidence to demonstrate compliance may include:

Description of the facilities

Self-Study: Provide the description of the facilities in the appendix. Exhibit 14 is suggested or cross-reference with Standard 4-1

4-4 Lecture, seminar, study space, and administrative office space **must** be available to conduct the educational program.

Self-Study Analysis:

1. Describe the availability of lecture, seminar, study space and administrative office space to conduct the educational program.

Examples of evidence to demonstrate compliance may include:

Description of the facilities

Self-Study: Provide the description of the facilities in the appendix. Exhibit 14 is suggested or cross-reference with Standard 4-1

Selection of Residents

4-5 Applicants **must** have one of the following qualifications to be eligible to enter the advanced general dentistry education program in orofacial pain:

- a. Graduates from a predoctoral dental education program accredited by the Commission on Dental Accreditation;
- b. Graduates from a predoctoral dental education program in Canada accredited by the Commission on Dental Accreditation of Canada; and
- c. Graduates from an international dental school with equivalent educational background and standing as determined by the institution and program.

Self-Study Analysis:

1. Are program applicants graduates from a predoctoral dental education program accredited by the Commission on Dental Accreditation?

2. Are program applicants graduates from a predoctoral dental education program in Canada accredited by the Commission on Dental Accreditation of Canada?

3. If the program accepts graduates from international dental schools, what is the process used to ensure that the applicant's educational background and standing is equivalent?

Examples of evidence to demonstrate compliance may include:

Appropriate qualifying documentation

Educational equivalency or other measures to demonstrate eligibility

Self-Study: Provide above item(s) in the appendix

Diplomas of enrollees

On-Site: Prepare above item(s) for review by visiting committee.

4-6 Specific written criteria, policies and procedures **must** be followed when admitting residents.

***Intent:** Written non-discriminatory policies are to be followed in selecting residents. These policies should make clear the methods and criteria used in recruiting and selecting residents and how applicants are informed of their status throughout the selection process.*

Self-Study Analysis:

1. Describe and/or provide as an appendix, the program's admission criteria, policies and procedures.

Examples of evidence to demonstrate compliance may include:

Written admission criteria, policies and procedures

Self-Study: Provide above item(s) in the appendix; items such as a brochure, catalog or formal description of the program containing the statement may be used.

4-7 Admission of residents with advanced standing **must** be based on the same standards of achievement required by residents regularly enrolled in the program. Residents with advanced standing **must** receive an appropriate curriculum that results in the same standards of competence required by residents regularly enrolled in the program.

***Intent:** Advanced standing refers to applicants that may be considered for admission to a training program whose curriculum has been modified after taking into account the applicant's past experience. Examples include transfer from a similar program at another institution, completion of training at a non-CODA accredited program, or documented practice experience in the given discipline. Acceptance of advanced standing residents will not result in an increase of the program's approved number of enrollees. Applicants for advanced standing are expected to fulfill all of the admission requirements mandated for residents in the conventional program and be held to the same academic standards. Advanced standing residents, to be certified for completion, are expected to demonstrate the same standards of competence as those in the conventional program.*

Self-Study Analysis:

1. Does the orofacial pain program admit residents with advanced standing? If yes, describe the policies and methods for awarding advanced standing credit. Indicate the type of courses for which advanced standing is granted and the maximum number of credits that can be awarded.

2. Describe how the program ensures that transfer residents with advanced standing receive an appropriate curriculum that results in the same standards of competence required by residents regularly enrolled in the program

Examples of evidence to demonstrate compliance may include:

Policies and procedures on advanced standing

Self-Study: Provide above item(s) in the appendix

Course equivalency or other measures to demonstrate equal scope and level of knowledge

On-Site: Prepare above item(s) for review by the visiting committee

Results of appropriate qualifying examinations

On-Site: Prepare above item(s) for review by the visiting committee

4-8 The program's description of the educational experience to be provided **must** be available to program applicants and include:

- a. a description of the educational experience to be provided;
- b. a list of program goals and objectives; and
- c. a description of the nature of assignments to other departments or institutions.

Intent: *This includes applicants who may not personally visit the program and applicants who are deciding which programs to apply to. Materials available to applicants who visit the program in person will not satisfy this requirement. A means of making this information available to individuals who do not visit the program is to be developed.*

Self-Study Analysis:

1. Describe how information regarding the educational experiences (including the list of the program's goals and objectives and the nature of assignments to other departments or institutions is made available to program applicants.

Examples of evidence to demonstrate compliance may include:

Brochure or application documents

Program's website

Description of system for making information available to applicants who do not visit the program

Self-Study: Provide above item(s) in the appendix.

Due Process

4-9 There **must** be specific written due process policies and procedures for adjudication of academic and disciplinary complaints that parallel those established by the sponsoring institution.

Intent: *Adjudication procedures should include institutional policy that provides due process for all individuals who may be potentially involved when actions are contemplated or initiated that could result in dismissal of a resident. Residents should be provided with written information that affirms their obligations and responsibilities to the institution, the program and the faculty. The program information provided to the residents should include, but not necessarily be limited to, information about tuition, stipend or other compensation, vacation and sick leave, practice privileges and other activity outside the educational program, professional liability coverage, due process policy, and current accreditation status of the program.*

Self-Study Analysis:

1. Provide a copy of the specific written due process policies and procedures for adjudication of academic complaints in the appendix.
2. Do the procedures provide due process for all individuals who may potentially be involved when actions are contemplated or initiated that could result in dismissal of a resident?
3. Do the due process procedures parallel those established by the sponsoring institution? _____ YES
NO If no, please explain:
4. Are residents provided with written information that affirms their obligations and responsibilities to the institution, the program and the faculty?
5. Program information provided to residents includes (check those that apply):
____ tuition, stipend or other compensation information
____ vacation and sick leave
____ practice privileges and other activity outside the program
____ professional liability coverage
____ due process policy
____ current accreditation status of the program

Examples of evidence to demonstrate compliance may include:

Policy statements and/or resident contract

Self-Study: Provide above item(s) in the appendix.

Health Services

4-10 Residents, faculty, and appropriate support staff **must** be encouraged to be immunized against and/or tested for infectious diseases, such as mumps, measles, rubella, and hepatitis B prior to contact with patients and/or infectious objects or materials, in an effort to minimize the risk to patients and dental personnel.

Self-Study Analysis:

1. How are residents encouraged to be immunized against and/or tested for infectious diseases prior to contact with patients and/or infectious objects or materials?

Examples of evidence to demonstrate compliance may include:

Immunization policy and procedures

Self-Study: Provide above item(s) in the appendix.

On-Site: Prepare above item(s) for review by visiting committee.

STANDARD 5 – PATIENT CARE SERVICES

5-1 The program **must** ensure the availability of patient experiences that afford all residents the opportunity to achieve the program's stated goals and objectives of resident training or competencies and proficiencies.

Intent: Patient experiences should include evaluation and management of head and neck musculoskeletal disorders, neurovascular pain, neuropathic pain, sleep-related disorders, and oromandibular movement disorders.

Self-Study Analysis:

1. Describe the method used to monitor the adequacy of the patient experiences available to the residents (include frequency of reviews, individuals responsible, and how data collected is correlated with the program's goals and objectives of resident training or competencies and proficiencies.)
2. Explain how and when corrective actions are taken if one or more residents is not receiving adequate patient experiences.

3. Assess the current patient pool in terms of providing adequate patient experiences and note, if applicable, any plans currently underway to identify and secure additional sources of patient experiences.

Examples of evidence to demonstrate compliance may include:

Records of resident clinical activity, including specific details on the variety and type and quantity of cases treated and procedures performed.

Self-Study: Provide a sample of the reporting format utilized or a sample record of clinical activity for one resident to familiarize the visiting committee with the format in advance of the visit.

On-Site: Prepare above item(s) for review by visiting committee on-site. Have available, complete records of all residents' clinical activities.

- 5-2** Patient records **must** be organized in a manner that facilitates ready access to essential data and be sufficiently legible and organized so that all users can readily interpret the contents.

Intent: Essential data is defined by the program and based on the information included in the record review process as well as that which meets the multidisciplinary educational needs of the program. The patient record should include a diagnostic problem list, use of pain assessment and treatment contracts, progress sheets, medication log, and outcome data, plus conform to SOAP notes format.

The program is expected to develop a description of the contents and organization of patient records and a system for reviewing records.

Self-Study Analysis:

1. Describe the process of record review. Include how frequently the records are reviewed and the criteria used in the review.
2. Define essential data used by the program in its record review and multidisciplinary education.
3. Assess the adequacy of the mechanism to ensure that ambulatory and inpatient records are organized in a manner that facilitates ready access to essential data and are sufficiently legible and organized so that all users can readily interpret the contents.

Examples of evidence to demonstrate compliance may include:

Patient records

Self-Study: Provide blank ambulatory and inpatient record review forms and documentation of record review process

On-Site: Prepare above items for review by visiting committee

Record review plan

Documentation of record reviews

Self-Study: Provide the items listed above in the appendix

- 5-3** The program **must** conduct and involve residents in a structured system of continuous quality improvement for patient care.

Intent: Programs are expected to involve residents in enough quality improvement activities to understand the process and contribute to patient care improvement.

Self-Study Analysis:

1. Briefly describe and/or provide in the appendix the program's quality improvement plan for patient care.
2. Explain how the program involves residents in the quality improvement system.

Examples of evidence to demonstrate compliance may include:

Description of quality improvement process including the role of residents in that process

Self-Study: Provide the description in the appendix

Quality improvement plan and reports

Self-Study: Provide quality improvement plan and copies of quality improvement reports for the last six months in the appendix

On-Site: Have available any reports generated after completion of the self-study

5-4 All residents, faculty, and support staff involved in the direct provision of patient care **must** be continuously recognized/certified in basic life support procedures, including cardiopulmonary resuscitation.

Intent: *ACLS and PALS are not a substitute for BLS certification.*

Self-Study Analysis:

1. Describe the procedures used to assure that all residents, faculty and support staff involved in the direct provision of patient care are recognized/certified in basic life support procedures, including cardiopulmonary resuscitation.
2. How and when are residents trained and certified in basic life support?
3. Describe the procedure used, if any, to document and maintain records of any resident who is medically or physically unable to perform basic life support procedures.

Examples of evidence to demonstrate compliance may include:

Certification/recognition records demonstrating basic life support training or summary log of certification/recognition maintained by the program

Exemption documentation for anyone who is medically or physically unable to perform such services

Self-Study: Provide in the appendix a copy of recognition policy and procedures.

On-Site: Prepare up-to-date recognition/certification records for all residents, faculty and support staff.

5-5 The program **must** document its compliance with the institution's policy and applicable regulations of local, state and federal agencies, including, but not limited to, radiation hygiene and protection, ionizing radiation, hazardous materials, and blood-borne and infectious diseases. Policies **must** be provided to all residents, faculty and appropriate support staff and continuously monitored for compliance. Additionally, policies on blood-borne and infectious diseases **must** be made available to applicants for admission and patients.

Intent: *The policies on blood-borne and infectious diseases should be made available to applicants for admission and patients should a request to review the policy be made.*

Self-Study Analysis:

1. Provide information regarding the program's procedures to document compliance with the institution's policies and applicable governmental regulations in the four areas specified in the standard. (*Exhibit 15 is suggested for presenting this information.*)
2. Explain how these policies are provided to all residents, faculty and appropriate support staff and how monitoring for compliance is achieved. (*Exhibit 15 is suggested for presenting this information.*)
3. Describe how policies on blood-borne infectious diseases are made available to applicants for admission. (*Exhibit 15 is suggested for presenting this information.*)

4. Describe how policies on blood-borne infectious diseases are made available to patients. (*Exhibit 15 is suggested for presenting this information.*)

Examples of evidence to demonstrate compliance may include:

Narrative Response Table is suggested – Exhibit 15

Infection and biohazard control policies

Radiation policy

Self-Study: Provide above item(s) in the appendix.

5-6 The program’s policies **must** ensure that the confidentiality of information pertaining to the health status of each individual patient is strictly maintained.

Self-Study Analysis:

1. Describe and/or provide the program’s policies on confidentiality.

2. Explain where these records are kept, by whom, and how this ensures that the confidentiality of information pertaining to the health status of each individual is strictly maintained.

Examples of evidence to demonstrate compliance may include:

Confidentiality policies

Self-Study: Provide above item(s) in the appendix.

STANDARD 6 - RESEARCH

6-1 Residents **must** engage in research or other scholarly activity and present their results in a scientific/educational forum.

Intent: The research experience and its results should be compiled into a document or publication

Self-Study Analysis:

1. Describe how the residents are engaged in scholarly activity or research.

Examples of evidence to demonstrate compliance may include:

List of resident research/scholarly activity projects

Self-Study: Provide above item(s) in the appendix.

SUMMARY

Provide a standard-by-standard summary of the program’s strengths and weaknesses. Describe actions planned to correct any identified weaknesses.

Standard 1 – Institutional and Program Effectiveness

Strengths:

Weaknesses:

Standard 2 – Educational Program

Strengths:

Weaknesses:

Standard 3 – Faculty and Staff

Strengths:

Weaknesses:

Standard 4 – Educational Support Services

Strengths:

Weaknesses:

Standard 5 – Patient Care Services

Strengths:

Weaknesses:

Standard 6 – Research

Strengths:

Weaknesses:

APPENDICES

STD	DOCUMENTATION	Appendix Number	Document and/ or Suggested Exhibit	Prepare for review on-site*
STANDARD 1 -- INSTITUTIONAL AND PROGRAM EFFECTIVENESS				
1-1	Accreditation certificate or current official listing of accredited institutions		certificate/listing	None
	Evidence of successful achievement of Service-specific inspection criteria		Evidence of achievement	
1-2	Written agreement(s)		None	Agreements
	Contracts between the institution/program and sponsor(s) (For example: contract(s)/agreement(s) related to facilities, funding, faculty allocations, etc.)		None	Contracts
1-4	Table of resources for current year		Exhibit 1	None
	Budget information for previous, current and ensuing fiscal years		Exhibit 2	Budget plans
1-5	Written agreements		Exhibit 3 (for each affiliate)	Agreements
1-6	Bylaws or documents describing committee structure		Bylaws excerpts	Bylaws
	Copy of institutional committee structure and/or roster of membership by dental faculty		Committee structure and/or membership by dental faculty	None
1-7	Bylaws or documents describing resident privileges		Bylaws excerpts	Bylaws-See 1-6
1-8	Bylaws or documents describing committee structure		Bylaws excerpts	Bylaws
	Copy of institutional committee structure and/or roster of membership by dental faculty		Committee structure and/or membership by dental faculty	None
1-9	Overall program goals and objectives		Goals and objectives	None

STD	DOCUMENTATION	Appendix Number	Document and/ or Suggested Exhibit	Prepare for review on-site*
1-10	Overall program goals and objectives		Goals and objectives See 1-9	None
	Outcomes assessment plan and measures		Plan/Exhibit 4	None
	Outcomes results		Results/Exhibit 4	Updated Results
	Annual review of outcomes results		Annual review	None
	Meeting minutes where outcomes are discussed		Minutes	None
	Decisions based on outcomes results		Decisions/Exhibit 4	None
1-11	Didactic courses		Schedules/Exhibit 7	None
	Course outlines		Outlines	None
	Resident evaluations		None	Evaluations
	Case studies		None	Case Studies
	Documentation of treatment planning sessions		None	Documentation
	Documentation of treatment outcomes		None	Documentation
	Patient satisfaction surveys		None	Surveys
	Example of literature reviews		None	Literature reviews
STANDARD 2 - EDUCATIONAL PROGRAM				
2-1	Curriculum plan		Curriculum Plan/Exhibit 5	None
2-2	Goals and objectives for resident training or competencies and proficiencies		Goals/Objectives or Competencies and Proficiencies	None
2-3	Goals and objectives		Goals and objectives	None
	Content Outlines		Outlines	None
2-4	Curriculum Plan with experiences tied to specific goals and objectives or competencies and proficiencies		Curr Plan/Exhibit 5	None
	Overview of distribution of time in major curriculum areas		Overview/Exhibit 6	None
	Didactic Schedules		Schedules/Exhibit 7	None
	Clinical Schedules		Schedules/Exhibit 8	None

STD	DOCUMENTATION	Appendix Number	Document and/ or Suggested Exhibit	Prepare for review on-site*
2-5	Course Outlines		Course Outlines	None
	Didactic Schedules		Schedules/Exhibit 7	None
	Resident evaluations with identifying information removed		None	Evaluations
2-6	Course Outlines		Course Outlines	None
	Didactic Schedules		Schedules/Exhibit 7	None
	Resident evaluations with identifying information removed		None	Evaluations
2-7	Didactic Schedules		Schedules/Exhibit 7	None
	Course outlines		Outlines	None
	Resident evaluations with identifying information removed		None	Evaluations
2-8	Overview of distribution of time in major curriculum areas		Overview/Exhibit 6	None
2-9	Goals and objectives of resident training or competencies and proficiencies organized by the areas described above		Goals/Objectives or Competencies and Proficiencies or see 2-2/Exhibit 9	None
	Didactic Schedules		Schedules/Exhibit 7	None
	Clinical Schedules		Schedules/Exhibit 8	None
	Resident evaluations with identifying information removed		None	Evaluations
	Documentation of Treatment Planning Sessions		None	Documentation
	Documentation of Chart Reviews		None	Documentation
	Documentation of Case Simulations		None	Documentation
2-10	Didactic Schedules		Schedules/Exhibit 7	None
	Clinical Schedules		Schedules/Exhibit 8	None
	Resident evaluations with identifying information removed		None	Evaluations
	Documentation of Treatment Planning Sessions		None	Documentation
	Documentation of Chart Reviews		None	Documentation
	Documentation of Case Simulations		None	Documentation
	Records of resident clinical activity (such as case logs)		None	Records
	Patient Records		None	Records
STD	DOCUMENTATION	Appendix Number	Document and/ or Suggested Exhibit	Prepare for review on-site*
2-11	Distribution of residents time in major curriculum areas		Exhibit 6	
	Clinical Schedules		Schedules/Exhibit 8	None
	Description and schedule of rotations		Schedules	None

	Rotation/Experience objectives		Objectives/Exhibit 10	None
	Resident evaluations with identifying information removed		None	Evaluations
2-12	Description and schedule of rotations		Schedules or see 2-11	None
	Rotation/Experience objectives		Objectives/Exhibit 10	None
	Resident evaluations with identifying information removed		None	Evaluations
2-13	Schedule of orofacial pain teaching experiences		Schedule	None
2-14	Documentation of Treatment Planning Sessions/conferences where outcomes are discussed		None	Documentation
	Documentation of Chart Reviews		None	Documentation
	Documentation of Case Simulations		None	Documentation
	Records of resident clinical activity (such as case logs) including procedures performed in each area described above		None	Records
	Patient Records		None	Records
	Resident evaluations with identifying information removed		None	Evaluations
2-15	Course outlines		Outlines	None
2-16	Conference schedules		Schedules	None
2-17	Evidence of experiences requiring literature review		Evidence	None
2-18	Program Schedules		Schedules	None
	Curriculum Plan		Curr Plan/Exhibit 5/See Standard 2-1	None

STD	DOCUMENTATION	Appendix Number	Document and/ or Suggested Exhibit	Prepare for review on-site*
2-19	Description of the part-time program		Description	None
	Documentation of how part-time residents will achieve similar experiences and skills as full-time residents		Description	None
	Program Schedules		Schedules	None
2-20	Evaluation criteria and process		Criteria (in response)	None
	Resident evaluations with identifying information removed		Blank evaluation form	Evaluations
	Personal record of evaluation for each resident		Record	None
	Evidence that corrective actions have been taken		Corrective actions taken	None
STANDARD 3 - FACULTY AND STAFF				
3-1	Program Director's BioSketch		Completed BioSketch (Exhibit 13)	None
	Copy of board certification certificate		Certificate	None
	Letter from Board attesting current/active certification		Letter	None
3-2	Program Director's Job description		Description	None
	Job description of individuals who have been assigned some of the program director's job responsibilities		Description	None
	Formal plan for assignment of program director's job responsibilities		Plan	None
	Program records		None	Program Records
3-3	Program and faculty schedules		Schedules	None
	Full and part-time faculty rosters		Exhibits 11 & 12	None
	Completed BioSketch for faculty members		Completed BioSketch (Exhibit 13)	None
	Criteria used to certify non-specialist faculty member as responsible for a specialty teaching area		Criteria	None
	Documentation that non-specialist faculty members are responsible for specialty teaching area		None	Documentation

STD	DOCUMENTATION	Appendix Number	Document and/ or Suggested Exhibit	Prepare for review on-site*
3-4	Faculty files		None	Files
	Performance appraisals		Blank Evaluation Form	Completed Forms
3-5	Faculty clinic schedules		Schedules	None
3-6	Staff schedules		Schedules	None
3-7	Publication in peer-reviewed scientific media		None	Publications
	Teaching materials developed		None	Teaching materials
	Scientific meeting presentations		None	Presentations
3-8	Evidence of participation in development activities related to teaching, learning and assessment		Evidence	None
	Attendance at regional/national meeting were contemporary issues in education and patient care are addressed		Evidence	None
	Mentored experiences for new faculty		Description of experiences	None
	Scholarly productivity		Scholarly works	None
	Presentations at regional and national meetings		Sample presentations	None
	Examples of curriculum innovation		Curriculum innovations	None
	Maintenance of existing and development of new and/or emerging clinical skills		Description of how skills are maintained or new skills are developed	None
	Understanding of relevant aspects of teaching methodology		Documented understanding	None
	Curriculum design and development		Redesigned or developed curriculum	None
	Curriculum evaluation		Evidence of curriculum evaluation	None
	Resident assessment		Sample Assessments	Assessments
STD	DOCUMENTATION	Appendix Number	Document and/ or Suggested Exhibit	Prepare for review on-site*
	Cultural competency		Evidence of cultural competency	None
	Ability to work with residents of varying ages and backgrounds		Documented evidence	None
	Use of technology in didactic and clinical components of the curriculum		Documented evidence	None

	Evidence of participation in continuing education experiences		Documented evidence	None
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STANDARD 4 - EDUCATIONAL SUPPORT SERVICES

4-1	Description of facilities		Exhibit 13	None
4-2	Description of facilities		Exhibit 13 or 4-1	None
4-3	Description of facilities		Exhibit 13 or 4-1	None
4-4	Description of facilities		Exhibit 13 or 4-1	None
4-5	Diplomas of enrollees		None	Diploma
	Appropriate qualifying documentation		Documentation	None
	Educational equivalency or other measures to demonstrate eligibility		Documentation	None
4-6	Written criteria, policies and procedures		Criteria, policies, procedures	None
4-7	Policies and Procedures		Policies and procedures	None
	Results of appropriate qualifying examinations		None	Results of exams
	Course equivalency or other measures as described		None	Documentation
4-8	Brochure or application documents		Documents	None
	Program's website		Website address or paper copy of information on website	
	Description of system for making information available to applicants who do not visit the program		Description	None

STD	DOCUMENTATION	Appendix Number	Document and/ or Suggested Exhibit	Prepare for review on-site*
4-9	Policy statements and/or resident contract		Statements/ contracts	None
4-10	Immunization policy and procedure documents		None	None
STANDARD 5 - PATIENT CARE SERVICES				
5-1	Records of resident clinical activity		Sample Record	Records
5-2	Patient records		Blank Record Review Form	Records
	Record Review Plan		Record review plan	None
	Documentation of record reviews		Documentation	None
5-3	Quality improvement plan and reports		Copy of Plan and Reports (6 mos.)	Updated Reports
	Description of quality improvement process including the role of residents in the process		Description	None
5-4	Certification/recognition records demonstrating life support training or summary log of certification/recognition		Copy of Policy Summary log	Current Records
	Exemption documentation for anyone medically or physically unable to perform such services		Copy of policy	Current Records
5-5	Narrative Response Table		Exhibit 14	None
	Infection and biohazard control policies		Copy of Policies	None
	Radiation policy		Copy of Policy	None
5-6	Confidentiality policies		Copy of Policy	None

STD	DOCUMENTATION	Appendix Number	Document and/ or Suggested Exhibit	Prepare for review on-site*
STANDARD 6 - RESEARCH				
6-1	List of residents engaged in scholarly activity or research		List of projects	None

* It should be understood that “None” in the “Prepare for review on-site column” implies that the program should be prepared to provide updated information related to written material provided in the self-study.

INDEX OF SUGGESTED EXHIBITS

<u>Exhibit</u>	<u>Standard(s)</u>	<u>Title</u>
Study: Provide above items in the appendix		
1	1-4	Financial Resources
2	1-4	Program Budget Information
3	1-5	Off-Campus Training sites
4	1-10	Outcomes Assessment
5	2-1, 204	Curriculum Management Plan
6	2-4, 2-8	Resident Total Program Time
7	2-4, 2-5, 2-6, 2-7, 2-9, 2-10	Didactic Program
8	2-9, 2-10, 2-11	Clinical Schedules
9	2-9, 2-10	Required Curricular Areas
10	2-11, 2-12	Assignments to Other Services
11	3-3	Full-Time Faculty
12	3-3	Part-Time Faculty
13	3-1, 3-3	BioSketch
14	4-1	Facilities
15	5-5	Radiation, Hazard and Infection Control Policies and Procedures

EXHIBIT 2
PROGRAM BUDGET INFORMATION

Using the following form, provide information on the advanced education in general dentistry program's budget for the previous, current and ensuing fiscal years.

	<u>Previous Year</u> 20__ to 20__	<u>Current Year</u> 20__ to 20__	<u>Ensuing Year</u> 20__ to 20__
I. Capital Expenditures			
A. Construction	\$ _____	\$ _____	\$ _____
B. Equipment	-	-	-
1. Clinic (dental unit, chair, etc.)	_____	_____	_____
2. Radiography (including darkroom)	_____	_____	_____
3. Laboratory	_____	_____	_____
4. Reception Room	_____	_____	_____
5. Faculty & Staff offices	_____	_____	_____
6. Instructional equipment	_____	_____	_____
7. Other (specify)	_____	_____	_____
TOTAL	_____	_____	_____
	_____	_____	_____
	_____	_____	_____
	_____	_____	_____
	\$ _____	\$ _____	\$ _____
II. Non-capital expenditures	-	-	-
A. Instructional materials, e.g., slides, films	\$ _____	\$ _____	\$ _____
B. Clinic supplies	-	-	-
C. Laboratory supplies	_____	_____	_____
D. Office supplies	_____	_____	_____
E. Program library collection	_____	_____	_____
1. Institutional	_____	_____	_____
2. Departmental	_____	_____	_____
F. Equipment maintenance and replacement	_____	_____	_____
G. Other (specify)	-	-	-
_____	_____	_____	_____
_____	_____	_____	_____
TOTAL	_____	_____	_____
	_____	_____	_____
	_____	_____	_____
	\$ _____	\$ _____	\$ _____
III. Faculty	-	-	-
A. Salaries	\$ _____	\$ _____	\$ _____

B.	Benefits	-	-	-
C.	Professional Development	_____	_____	_____
D.	Other (specify)	-	-	-

TOTAL		_____	_____	_____
		\$ _____	\$ _____	\$ _____
		_____	_____	_____
IV.	Staff			
A.	Secretarial Support	\$ _____	\$ _____	\$ _____
B.	Allied Support (specify)	-	-	-

TOTAL		_____	_____	_____
		\$ _____	\$ _____	\$ _____
		_____	_____	_____
V.	Other Categories, if any (specify)	\$ _____	\$ _____	\$ _____
_____		-	-	-

TOTAL		_____	_____	_____
		\$ _____	\$ _____	\$ _____
GRAND TOTAL		_____	_____	_____
		\$ _____	\$ _____	\$ _____
		-	-	-

EXHIBIT 3

OFF--CAMPUS TRAINING EXPERIENCES

Please make copies of this form as needed for each off-campus training experience; number sequentially

a. Official name, city, state of off-campus training site:

b. Length and purpose of the rotation (number of weeks, hours per week). Indicate if required or optional/enrichment:

c. Is the institution accredited by an agency recognized by the United States Department of Education or accredited by an accreditation organization recognized by the Centers for Medicare and Medicaid Services (CMS)? See Examples of Evidence for list of agencies.

____ YES ____ NO ____ N/A

If another accrediting body, please list: _____

d. Distance from the training site to sponsoring institution: _____

e. One-way commuting time: _____

f. Indicate why this training site was selected, the nature of training provided to residents, teaching staff responsible for conducting the program and supervising residents at the training site, and how these educational experiences supplement training received at the sponsoring institution. Indicate if the experiences are optional/enrichment or required for accreditation or program requirements.

g. If written agreements have not been updated to include this program, please provide timetable for updating the agreement.

EXHIBIT 4

OUTCOMES ASSESSMENT

This table provides one example of a format which may be utilized to present the program’s outcomes assessment plan and process. A copy should be made for each of the program’s overall goals and objectives. If an alternative format is used, please be sure it includes the information below.

Overall Goal or Objective # _____ :

Overall Goal or Objective	
Outcomes Assessment Mechanism	
How often conducted	
Date to be conducted/ finished by	
Results expected	
Results achieved	
Assessment of results	
Program improvement as a result of data analysis	
Date of next assessment	

EXHIBIT 5

CURRICULUM MANAGEMENT PLAN

Using the format illustrated below, present the curriculum management plan, listing competency, proficiency and program requirements or goals and objectives of resident training outlined in Standard 2. Include the didactic instruction and clinical experience designed to achieve program requirements and the evaluation mechanisms used. Reproduce this exhibit as needed.

Goal and Objective/ Competency and Proficiency/or Program Requirement	Didactic Instruction	Clinical Experience	Evaluation Mechanism(s)

EXHIBIT 6**RESIDENT TOTAL PROGRAM TIME**

Estimate the percent of time devoted by the residents to each of the following:

AREA	First Year*	Second Year*
Didactics	%	%
Clinical Activities		
Orofacial Pain	%	%
Other	%	%
Rotations/assignment to other services	%	%
Conferences/seminars	%	%
Laboratory activities	%	%
Teaching	%	%
Investigative Work	%	%
Other (please specify)	%	%
	%	%
TOTAL	100%	100%

*Above calculations are based on an average of _____ hours per week.

EXHIBIT 7

DIDACTIC PROGRAM

This table provides one example of a format which may be utilized to present the program's educational programs. Complete one page for each course. Please attach the most recent course syllabus for each course or seminar series.

Course or Seminar: _____

Course/Seminar Name	
Course/Seminar Director	
When Course/Seminar is offered and how many total hours.	
Course/Seminar Objective(s)	
Specific Goals and Objectives or Competencies to be achieved	
Evaluation Mechanism	

EXHIBIT 8**RESIDENT CLINICAL SCHEDULES**

Using this suggested format or another format, please provide a month-by-month listing of each resident's activities. If this is a two-year program please include a schedule for both years.

Month	Resident #1		Resident #2	
July	Orientation	Clinic	Orientation	Clinic
August	Clinic	Physical Diagnosis	Clinic	Physical Diagnosis
September	Anesthesia Rotation		Clinic	
October	Clinic		Anesthesia Rotation	
November	ER Rotation	Clinic	Clinic	ER Rotation
December	Clinic		Clinic	
January	Medicine Rotation	Clinic	Clinic	Medicine Rotation
February	OMS Rotation		Clinic	
March	OMS Rotation	Clinic	Clinic	OMS Rotation
April	Clinic		OMS Rotation	
May	Clinic		Clinic	
June	Clinic		Clinic	

EXHIBIT 9**REQUIRED CURRICULUM AREAS**
INTENDED OUTCOMES, DIDACTIC INFORMATION, CLINICAL EXPERIENCES

Copy the form as needed and complete one form for each required area.

Required Area: _____

Years Offered: _____

- A. Describe the intended outcomes of resident training in the area listed above either in terms of goals and objectives for resident training or competencies and proficiencies. (Use additional sheets if necessary.)

The curriculum in this area is intended to enable the resident to:

- B. Describe the educational experiences that make up the curriculum in this area:

Didactic instruction in this area is provided through:

- _____ Dental departmental seminar, conference, lecture program
 _____ Formal course(s) –title(s) _____
 _____ Off-service rotation to: _____
 _____ Other (specify): _____
 _____ No formal instruction is provided.

Total hours of didactic instruction in this area are: _____

The topics covered in didactic instruction in this area are:

- C. Describe the nature and amount of clinical experience residents receive in this area. Identify specific procedures performed by residents in this area.

EXHIBIT 10**ASSIGNMENTS TO OTHER SERVICES/ROTATIONS**

Provide the information listed below for each assignment to other services or rotation. Duplicate the page as needed for each assignment/rotation.

Service: _____

—

Length of Rotation or Experience (in weeks): _____

Number of Hours per Week: _____

1. Describe the intended objectives of this rotation or experience.

2. Were these objectives developed in cooperation with the department chairperson, service chief, or facility director? ___Yes ___No If no, please comment:

3. Describe how residents are advised of the written objectives of each rotation or experience.

4. Describe how the faculty designated to provide resident supervision are made familiar with the objectives of the rotation or experience.

5. Describe the process and evaluation instruments utilized by the designated faculty to evaluate resident performance.

EXHIBIT 11

FULL-TIME FACULTY
TIME COMMITMENT, ASSIGNMENTS AND QUALIFICATIONS FOR SUBJECTS
TAUGHT

On the table below, indicate the members of the teaching staff who are scheduled to devote ONE-HALF DAY OR MORE PER WEEK specifically to the program. Indicate whether each staff member listed is a general practitioner or specialist, the number of hours per week, and the number of weeks per year devoted to the program. If the staff member is a specialist, indicate the specialty and board status. Be sure to include the program director.

Name	Discipline/ Specialty	Board Status (If Specialist)	Hours per week	Weeks per year	Assignments*	Subjects Taught	Qualifications related to subjects taught

*Use the following codes to indicate assignments:
 SC—Supervision of residents in clinic T—Teaching Didactic Sessions (lectures, seminars, courses) PA—Program Administration

EXHIBIT 12

PART-TIME FACULTY
TIME COMMITMENT, ASSIGNMENTS, AND QUALIFICATIONS FOR SUBJECTS TAUGHT

Starting with the individual who has the greatest time commitment to the program, list members of the attending staff or consultants who are scheduled to devote LESS THAN ONE-HALF DAY PER WEEK, BUT AT LEAST ONE-HALF DAY (OR MORE) PER MONTH specifically to the program. Indicate whether each individual listed is a general practitioner (GP) or specialist, the number of days per month, and the number of weeks per year devoted to the educational program. If the staff member or consultant is a specialist, indicate specialty and board status.

Name	Discipline/ Specialty	Board Status (If Specialist)	Days per month	Weeks per year	Assignments*	Subjects Taught	Qualifications related to subjects taught

*Use the following codes to indicate assignments:
 SC—Supervision of residents in clinic T—Teaching Didactic Sessions (lectures, seminars, courses) PA—Program Administration

EXHIBIT 13**BioSketch****Do not attach Curriculum Vitae.****Print or Type Only****Name:**

Current Institution:

Address:**City, State, Zip:**

Phone:**Fax:****E-mail:**

EDUCATIONAL BACKGROUND (Begin with college level)

Name of School, City and State	Yr of Grad.	Certificate or Degree	Area of Study

LICENSURE

License (Do not include license number)	From (Year)	To (Year)

BOARD CERTIFICATION

Certifying Organization	Specialty	Date certified

CE COURSES TAKEN (last 5 years)

Course Title	Course Content and Provider	Month and Year

TEACHING APPOINTMENTS (Begin with current)

Name of Institution, City and State	Rank	Subjects/Content Areas Taught/ Administrative Responsibilities	From (Year)	To (Year)

CURRENT TEACHING RESPONSIBILITIES

Name of Institution, City, State	Course Title	Discipline and Level of Students (Year)	Total Contact Hours Per Year	
			Didactic	Clinic/Laboratory

HOSPITAL APPOINTMENTS (Begin with current)

Name of Hospital	City	State	From (Year)	To (Year)

PRACTICE EXPERIENCE

Location (City and State)	Type of Practice	From (Year)	To (Year)

MEMBERSHIP, OFFICES OR APPOINTMENTS HELD IN LOCAL, STATE OR NATIONAL DENTAL OR ALLIED DENTAL ORGANIZATIONS, INCLUDING APPOINTMENTS TO STATE BOARDS OF DENTISTRY AND CODA

Name of Organization	Title	From (Year)	To (Year)

PUBLISHED WORKS (For the most recent five years, list articles in which you were the principal author that appeared in refereed journals or text books, by author(s), title, publication, and date)

Author(s)	Title	Publication	Date

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EXHIBIT 14**FACILITIES**

For each item listed below, indicate whether the item is located within the dental clinic, outside the dental clinic but readily accessible to it, or not available (check appropriate response.)

Facilities, Capabilities/Equipment	Within Clinic	Readily Accessible	Not Available
Intraoral radiographic facilities			
Extraoral radiographic facilities			
Dental laboratory facilities			
Staff offices			
Study areas			
Conference rooms			
Library Resources including Dental Resources			
Dental recovery area			
<u>Sterilization capabilities:</u>			
Autoclave			
Ethylene oxide			
Dry heat			
Emergency drugs			
<u>Emergency equipment:</u>			
Oxygen under pressure			
Suction			
Resuscitative equipment			
Distance Education Resources (videoconferencing equipment, etc.)			

EXHIBIT 15

RADIATION, HAZARD AND INFECTION CONTROL POLICIES AND PROCEDURES

	Radiation Hygiene And Protection	Ionizing Radiation	Hazardous Materials	Blood-borne and Infectious Diseases
Institution's Policies and any Applicable Governmental Regulations <i>(name documents containing policies)</i>				
Who maintains documentation of compliance?				
How are policies provided to residents?				
How is resident compliance monitored?				
How are policies provided to faculty?				
How is faculty compliance monitored?				
How are policies provided to support staff?				
How is support staff compliance monitored?				
How are policies made available to applicants for admission?				
How are policies made available to patients?				

PROTOCOL FOR CONDUCTING A SITE VISIT

Introduction: The Commission recognizes that there may be considerable latitude in determining procedures and methodology for site visits. Experience has shown that the conference method for conducting a site visit is widely favored and has been found most satisfactory.

Conferences with administrators and faculty should be scheduled in an adequately-sized and well-ventilated meeting room with a conference table which is large enough to accommodate the visiting committee and faculty member participants. It is suggested that all conferences be scheduled for the same room. If more than one program is to be evaluated, an additional conference room for each program (within close proximity) will be required.

Briefing Faculty, Administrators and Residents on the Site Visit: It is presumed that the program's faculty, residents and administration will be apprised of the Commission's visit. The program director should inform the faculty that they will be expected to explain course objectives, teaching methods, particular skills and abilities expected of residents upon completion of the course and the measures used to evaluate resident performance.

Focus of the Accreditation Review: Commission action on accreditation status is based upon the program in operation at the time of the site visit. It is not based upon any proposed changes in the program. The visiting committee will, however, expect to be apprised of any facility, faculty or curricular changes that are contemplated but not yet implemented.

Resources/Materials Available On-Site: It is expected that additional sources of information will be made available to the visiting committee on-site. Materials may include, but are not limited to: affiliation agreements, institution by-laws, the institution's infection and hazard control protocol, inpatient/outpatient records, resident files, resident and teaching staff evaluation records, and a record of resident complaints as appropriate.

Visiting Committee Schedule: While it is expected that all arrangements will be determined by the program director, experience indicates that administrators welcome suggestions by the Commission for the conduct of site visits. Although a more detailed suggested schedule of conferences will be forwarded to the program director prior to the scheduled visit, the Commission expects that an evaluation visit will include the following components:

1. An opening conference with the appropriate institutional administrators and program director at the beginning of the visit to include an overview and description of the institution and its programs. The purpose of this initial conference is to orient visiting committee members to a program's particular strengths and weaknesses. This session is also intended to orient the administrators and program director to the methods and procedures of the visiting committee. Topics frequently covered in this session include: program goals, administration, faculty recruitment and evaluation, finances, facilities, curriculum development, assessment of outcomes, long-term planning and program development.
2. Tours of the program facilities and related learning resources facilities.
3. Conferences with faculty who have teaching or administrative responsibilities for the program.
4. Interviews with residents. The purpose of these resident interviews is to determine general reactions to the program and to learn whether the residents understand the objectives of the various components. Interviews can be conducted as a group or individually, as preferred by the site visitor. Faculty members should not be included.
5. If the program utilizes off-campus sites for clinical experiences or didactic instruction, please review the Commission's Policy on Accreditation of Off-Campus Sites found in the Evaluation and Operational Policies and Procedures manual (EOPP). Please be aware that the visiting committee may visit any and all off-campus sites. In preparation for the site visit, the program will be asked to complete

the "Sites Where Instruction Occurs" form. Completed forms will be provided to the visiting committee who will determine if a visit to any off-campus sites is warranted.

6. A final conference, with the director of the program will be conducted at the end of the visit. The visiting committee will, at that time, summarize its recommendations relating to the educational program. The program director may choose to include other individuals, such as faculty members, in the final conference. This conference may be combined with the final conference with institutional administrators (see #7).

7. Following the final conference with the program director, another conference, with the institution's chief executive officer will be conducted. The visiting committee will report briefly on the findings and recommendations related to the evaluation. Such a meeting also affords the chief executive officer an opportunity to relate plans for the entire institution that will involve the dental program. The director of the program is usually present during the conference with the institution's administrator(s).

Guidelines and Protocol for the Site Visit: The Commission has approved the following guidelines for visiting committee members describing their responsibilities during site visits.

1. Committee members cannot accept social invitations from host administrators. The Commission believes firmly that the primary function of a visiting committee is program evaluation and review.

2. Self-study reports are mailed to committee members at least 60 days prior to a site visit. Committee members are expected to review all materials and to be familiar with academic and administrative aspects of the program as described in the self-study report prior to the site visit.

3. Committee members meet in executive sessions to review, evaluate and discuss all aspects of the program. An executive session is generally held in the evening preceding the site visit and at scheduled intervals during the site visit.

4. Although committee members discuss general findings and recommendations with the administrator during the final conference, a decision regarding the accreditation status of the education program will be made only by the Commission at its regularly scheduled meeting following discussion and in-depth review of the committee's report and the institution's response.

Appendix III. Practice Patterns for Orofacial Disorders: A Survey of General Dentists, Dental Specialists and Orofacial Dental Specialists

John O. Look, D.D.S., M.P.H., Ph.D.
James R. Friction, D.D.S., M.S.

Look J, Friction J. Practice Patterns for Orofacial Disorders: A Survey of General Dentists, Dental Specialists

ABSTRACT

Orofacial disorders include a classification of disorders that affect the orofacial structures causing pain and dysfunction. They include masticatory and cervical neuromuscular pain disorders, temporomandibular joint disorders, benign headache disorders, neuropathic and neurovascular orofacial pain disorders, burning mouth pain, chronic regional pain syndrome, atypical dental and facial pain, orofacial cancer and AIDS pain, orofacial sleep disorders, and oromotor dysfunction conditions such as dyskinesias and dystonias. Because the orofacial structures have more density of innervation and vascularity of tissues than other areas of the body, the prevalence of these disorders is high at over 40% of the general population. A survey of practice patterns for the diagnosis and treatment of patients with orofacial disorders was sent to a defined population of general dentists and dental specialists who are members of the Minnesota Dental Association (MDA). Of the 1200 surveys mailed to the MDA members, 426 (35.5%) were returned by 329 general dentists and 97 dental specialists. The results demonstrated that on the average, 95% of the general dentists and dental specialists choose to refer these patients to an orofacial care dentist who specializes in managing these conditions. Yet, there very few dentists who focus their practices in these fields of Dentistry creating a large access to care problem. The need to expand training of more orofacial care specialists are needed to meet this need.

INTRODUCTION

Orofacial Pain is the discipline of dentistry that focuses on the assessment, diagnosis and treatment of patients with chronic orofacial pain disorders. These conditions include masticatory and cervical neuromuscular pain disorders, temporomandibular joint disorders, benign headache disorders, neuropathic and neurovascular orofacial pain disorders, burning mouth pain, chronic regional pain syndrome, atypical dental and facial pain, orofacial cancer and AIDS pain, orofacial sleep disorders, and oromotor dysfunction conditions such as dyskinesias and dystonias. Changes in the U. S. population demographics and an increasing awareness of these disorders by the public have contributed to a rapidly expanding demand for orofacial pain services (1). The dental profession has a great responsibility to meet this demand in terms of differentiating orofacial pain by type and mechanism, performing a proper clinical assessment, and developing appropriate treatment plans for these patients (2).

The professional training received by most dentists has been traditionally oriented toward treating caries and periodontal disease, rather than to meet such new challenges (1, 3). However, OFP shows a similar prevalence to that of caries and periodontal disease in the U.S. adult population. For example, the NHANES III survey found 40.5 % of the U.S. population, aged 18 to 74, had at least one tooth or tooth space meeting criteria defined as compromised structural integrity, dysfunction or disease (non-periodontal) that may benefit from treatment (4). Similarly, 30% of the population, aged 13-65, was determined to have a gingival pocket depth ≥ 4 mm, and 4% had a pocket ≥ 6 mm in depth (5). A 1989 national orofacial pain survey of 45,711 households found that 22% of adults had suffered some type of orofacial pain during the previous six months (6). A 1986 survey of the city of Toronto found 40% of respondents had experienced dental or facial pain during the previous four weeks (7).

Temporomandibular disorders (TMD), which constitute just one of the orofacial pain disorders, are present in about 5-6% of the adult population at a severity that would benefit from treatment (1, 6, 8, 9). When all facial pain disorders are considered, a conservative estimate for OFP treatment needs in the adult population would be at least 7% (6, 10). In the U.S. civilian non-institutionalized population 18

years and over, that total could number from 11 to 12 million. Studies in children indicate they may also experience similar levels of temporomandibular signs and symptoms (1). Thus, combining adults and children, the prevalence of OFP in the American population could easily surpass 13 million.

Perhaps more important than the caseload is OFP's association with disability. It was estimated by a 1986 Harris Poll that 156.9 million work days were lost due to head pain (11). Wedel and Carlsson (12) found that 10% of 350 consecutive patients referred for OFP treatment, had been on sick-leave. In the 1986 survey of Toronto, 70% of the respondents with dental or facial pain reported worry or concern over their conditions, and one or more behavioral impacts occurred in 58% of them (7).

For many less complex orofacial pain conditions such as simple TMD, a conservative initial therapy consisting of explanations about the condition, home care instructions, and a short-term use of mild to moderate analgesics and anti-inflammatory medication may be sufficient (13). The clinical problem presenting for many dentists is knowing when more intensive therapy is indicated, and providing this care. When such pain persists, it can become entrenched in one's life and may lead to dependent relationships, emotional disturbances, disability, and significant behavioral and psychosocial problems (14). If treatment of the orofacial pain disorder is inadequate or inappropriate, the outcome can be tragic in terms of personal effects and financial costs (7, 12). A frustrating medical and dental picture may result with such patients undergoing costly treatments, diagnostic tests, long-term medications, and an ongoing dependency on the health care system. These issues highlight an important question to be answered by the profession of dentistry: Where can OFP patients turn when their pain evolves into a chronic and complex (i.e., disabling) problem?

Roper Starch Worldwide recently surveyed 805 individuals in the general population with a persistent pain disorder (12). Fifty-six percent of respondents had suffered pain for more than 5 years, 47% had switched care providers at least once, and 40% reported that their pain was out of control. Two studies have found that OFP patients have seen an average of five clinicians and suffered with their pain an average of more than six years prior to consulting an orofacial pain dentist (16, 17). Since uncertainty may exist among dental professionals as to who currently treats patients with chronic orofacial pain disorders, there is a need to: 1) identify who treats these patients, 2) determine the practice patterns and the limitations of the various disciplines within organized dentistry, and 3) assess whether it is necessary to further develop the field of orofacial pain care in order to address societal needs. The purpose of this paper is to present results of a recent survey of dentists who described their clinical practice patterns relative to the diagnosis and treatment of OFP.

METHODS

A survey of practice patterns for the diagnosis and treatment of patients with chronic orofacial pain disorders was sent to a defined population of general dentists and dental specialists who are members of the Minnesota Dental Association (MDA), and to orofacial pain dentists who are members of American Academy of Orofacial Pain (AAOP). Of the 1200 surveys mailed to the MDA members, 426 (35.5%) were returned by 329 general dentists and 97 dental specialists. Of the 255 surveys sent to practicing orofacial pain dentists, 120 (47.1%) were returned.

The surveys were introduced with a letter stating that a study was being conducted to determine the types of treatment provided by the dental profession for chronic orofacial pain disorders. This request for information was limited to a single mailing, with no follow-up appeals or other pressure directed toward those who failed to respond. As a result, the response rates were modest and similar to what other investigators have observed (18).

The Statistical Analysis System software (SAS Institute) was used to analyze practice differences between orofacial pain dentists versus general dentists, and between orofacial pain dentists versus dental specialists. The primary group differences being investigated were: 1) frequencies of treatment decisions as to treat or refer OFP patients; 2) frequencies of specified OFP diagnostic skills; and 3) frequencies of specified OFP treatment skills. Reported frequencies by group and by item were entered

into 2X2 contingency tables, and chi-square tests were employed to estimate the statistical significance of the group differences.

Additional descriptive data were collected on the questionnaires. All participants were polled as to the percent of their practices devoted to treatment of OFP patients. The general dentists and dental specialists were questioned as to which dental or medical specialists they referred OFP patients, and whether they would prefer to refer these patients to an orofacial pain specialist, if one were available. They were also asked to indicate the reasons why they preferred to not treat the OFP patients whom they referred. The orofacial pain dentists were asked to estimate the average number of new OFP patients they see per month, the number of previous clinicians these patients had seen for their orofacial pain condition, and the number of years these patients had experienced pain prior to consulting an orofacial pain dentist. Finally, all recipients of the questionnaire were queried as to their support for recognition by the American Dental Association (ADA) of orofacial pain dentistry as a dental specialty.

RESULTS

Treatment versus referral of OFP patients: General dentists and dental specialists reported that they referred from 75% to nearly 100% of all patients with the disorders in Table 1. In contrast, the orofacial pain dentists treat nearly all of the myofascial pain disorders and complex TMD cases, as well as from 65% to 79% of cervical muscle pain, benign headache, neurovascular pain, neuropathic pain, burning mouth pain, atypical pain and sleep disorders cases. Finally, they treat from 30% to 40% of cancer pain cases, sympathetically mediated pain cases, and dyskinesias or dystonias.

Statistical comparisons of practice patterns relative to each disorder were performed. For each contrast, the orofacial pain dentists differed significantly from the general dentists with chi-squares ranging from 62 to 283. Based on 1 degree of freedom, a chi-square value greater than 10.83 has an associated p-value < 0.001. Likewise, practice differences between orofacial pain dentists and dental specialists were highly significant with chi-squares ranging from 17 to 163.

OFP diagnostic skills: The diagnostic skills that were surveyed are listed in Table 2. They included the use of a diagnostic classification to differentiate orofacial disorders, the ability to perform head, neck and intra-oral exams, the use of appropriate radiographic diagnostic techniques, and provocative pulp testing. Other skills included the ability to perform sleep disorder diagnostics, psychosocial interviews and psychometric testing, and diagnostic injections for muscle, neural and joint blockades. Finally, a question was asked relative to electronic diagnostic testing for orofacial disorders. This diagnostic modality was considered by many in each group to have limited application, and it was the only item showing close agreement between all three groups ($p > 0.3$), with 84-89% never employing it.

Excluding use of electronic diagnostic testing, a large majority of orofacial pain dentists reported the diagnostics skills noted above, although just 74% of them performed psychometric testing. In contrast, more than half of the general dentists and dental specialists did not use, even on an occasional basis, 60% or more of these diagnostics methods. The statistical differences between orofacial pain dentists versus general dentists and between orofacial pain dentists versus dental specialists were highly significant with chi-square values greater than 18 for contrasts relative to any of these diagnostic skills, with the exception, of course, of the electronic diagnostic testing.

OFP treatment skills: Table 3 shows 28 treatment modalities that are employed for orofacial pain disorders. This list is not exhaustive, but it served as the basis for this survey. This table includes the percent of practitioners who reported frequent use of the treatment modalities, and the percent who never used them.

About one half of the orofacial pain dentists were not involved in chemical abuse management, detoxification treatment, intramuscular injection for dystonias, and cervical nerve blocks. In addition, nearly three quarters did not perform stellate ganglion blocks. The majority of them did, however, offer the other services listed in the questionnaire. In contrast, more than half of the general dentists and dental specialists reported mainly the use of stabilization splints, NSAIDs, home exercise programs, and heat/cold therapy for treatment of orofacial pain disorders. The between-group differences in services were highly statistically significant. For contrasts comparing orofacial pain dentist with general

dentists, the chi-square was 31 or greater. For the orofacial pain dentist/dental specialist contrasts, the chi-square values were 22 or greater.

Descriptive findings from the survey

Figure 1 shows that more than 90% of general dentists and dental specialists devote less than 5% of their time to the treatment of orofacial pain disorders. Twenty-one percent of orofacial pain dentists devote less than 25% of their time to these services, but 50% of them devote 75% or more of their practice to orofacial pain dentistry.

Figure 2 shows that approximately 85% of general dentists and dental specialists currently refer orofacial pain patients to orofacial pain dentists. Fifty-nine percent of general dentists also refer some of these patients to oral surgeons, but less than 25% of either group refers to the other specialties listed. The survey revealed that 93.7% of general dentists and 95.6% of dental specialists would prefer to refer their patients to an orofacial pain dentist with ADA specialty status, if such a person were available.

As to the reasons for referral of OFP patients, about one half or more of the general dentists and dental specialists indicated that they were not sufficiently trained, and that the orofacial disorders were too complex. One quarter to one third cited the difficulties in reimbursement, the lack of equipment and the time required to provide these services (see Figure 3).

Specialty status for the discipline of orofacial pain was supported by a 6 to 1 margin among dentists and dental specialists. Specifically, 62.9% of general dentists and 58.8% of dental specialists supported this specialty while 9.1% and 14.4%, respectively, were opposed. Nearly one fourth of this sample was undecided. Of the AAOP members, 119 out of 120 supported specialty status for this field.

As seen in Figure 4, orofacial pain dentists in this sample indicated that they see an average of 20.3 new OFP patients per month, with a mode of 10. Of these new patients, 53% had to wait less than two weeks for their appointment, 36% had a wait time of two to four weeks, and 11% were waiting longer than four weeks for their assessment. These OFP patients had already seen an average of 6.2 clinicians (mode = 2), and had experienced their pain an average of 3 years (mode of 2).

DISCUSSION

This study suggests that general dentists and dental specialists overwhelmingly prefer to refer patients with chronic orofacial pain disorders to orofacial pain dentists. This accords with the observation of Bohannen (3) that today's practitioners are "highly oriented toward and supported by a variety of specialists." This study also shows that orofacial pain dentists provide a high level of care for the chronic orofacial pain disorders. General dentists and dental specialists provide primarily palliative care for the less complex temporomandibular disorders, and cite their lack of training and experience as the principal reason for their practice preferences.

Methodological considerations

It has long been observed that the most willing and ready candidates for studies are those who have characteristics, or possess skills that are being studied. This response is analogous to the volunteer bias that is also the antithesis of the nonrespondent bias (19). Because the volunteer bias is known for its association with positive health attitudes and behaviors, one would anticipate that OFP services would be less prevalent on the average among the nonrespondents (20). It is not known, however, whether the observed differences in practice patterns between orofacial pain dentists and their non-AAOP colleagues would hold true for the nonrespondents in each of these groups. Furthermore, based on a 47% response rate, it is statistically impossible to generalize these current results to all the AAOP dentists, although, as noted above, it is reasonable to believe the nonresponders would be no better trained in OFP, or more active in this field. Finally, we do not know how Minnesota dentists compare to those in other states. We would anticipate that OFP practice patterns are not less prevalent in Minnesota than in the other states for two reasons: All undergraduate dental students have received formal training in TMD and orofacial pain since 1970. In addition, Minnesota was in 1987 the first state to mandate reimbursement for OFP services by medical insurance carriers (21).

The need for orofacial pain care providers.

Using data of a large health organization in Seattle, Von Korff and colleagues found that 12 % of the members had experienced a facial pain condition in the previous six months, that 23% of these had sought care, and that 9.1 % had experienced limitation of their activities due to the pain (10). This portion (9.1%) of the 13 million people affected by OFP would represent about 1.2 million complex cases. It is estimated there are currently 500 orofacial pain dentists in private practice, or staff at hospitals and universities, who devote a significant part of their practice to this field. It is also estimated that a full-time orofacial pain dentist treats about 500 OFP cases per year (22). Based on these figures, treatment for all the complex OFP cases at any given time would require about 2000 additional orofacial pain dentists. Not surprisingly, this figure is consistent with the number of specialists in other disciplines of dentistry (22). Given the increasing demand for these services by patients presenting with non-complex disorders, a greater part of OFP care will also need to be rendered by general dentists as well as the practitioners of the existing dental specialties.

Limitations that dictate practice patterns.

It is the responsibility of the dental profession to address the problems of orofacial pain sufferers. The first step is to recognize the facial pain conditions when they present. It is considered appropriate for all dental patients to receive a TMD and orofacial pain screening examination that might typically include a questionnaire, brief history and an examination (23). For a description of this screening examination, the reader can also refer to Okeson (24). It must be recognized, however, that there are serious disincentives that can deter general dentists and dental specialists from serving OFP patients. These include problems related to diagnosis, treatment and reimbursement.

If a screening is positive for the likely presence of an orofacial disorder, then a comprehensive history, physical examination and behavioral/psychological assessment should be undertaken. Along with the recognition of the type of OFP that is present (Axis I diagnosis), there is a need to conceptualize signs and symptoms based on potential Axis II factors. Axis I relates to the physical disorder, while Axis II factors include the psychosocial, behavioral and functional disturbances common to chronic pain patients. The Axis II association may also become stronger as the duration of the chronic pain becomes greater, and the pain becomes more a part of the patient's daily routine. Dworkin and Massoth (25) have characterized these distinctions as *disease versus illness*. Disease would thus relate to pathologic changes and dysfunction, whereas illness and illness behaviors describe the patient's "subjective experience" that needs to be managed in the treatment of all chronic pain conditions. It has been shown for both dentists and physicians that their initial clinical impression is not typically adequate for identifying psychological problems (26). The effects of psychological states such as stress, anxiety, depression and somatization on persistent pain have been extensively discussed in the literature (14, 25, 27, 28). Issues such as maladaptive behaviors, secondary gain and operant learning have also been identified as significant contributing factors that need to be addressed for some chronic pain conditions to improve (29, 30).

Based on the diagnosis and prognosis of an orofacial pain condition, various multi-modal and multi-disciplinary treatment strategies have to be implemented (17). Twenty-eight of the commonly used treatments are listed in Table 3. The problem is that these treatments include psychotropic and neuro-active medications, muscle, joint and neural blocks, rehabilitation procedures, and cognitive-behavioral strategies that are often not familiar to general dentists and dental specialists. Nonetheless, all dentists should be aware of the existence of such treatments and their indications (14).

While dental care by general dentists and existing dental specialties is often billed by procedure through dental codes, orofacial pain services are billed by time using the Current Regional Value System and Current Procedural Terms (CPT) medical codes. Over 20 states have passed legislation that places insurance coverage of orofacial pain disorders under medical insurance in a manner similar to some dental services in oral surgery and oral medicine. These rules are applied whether or not the services are provided by a dentist. Thus, ICD-9 (International Classification of Diseases) medical

diagnosis codes are required along with CPT medical codes, in addition to a patient accounting system that is different from that which is used in many dental offices.

Future considerations relative to OFP services

A large majority of general dentists and dental specialists indicated a lack of training as the reason why they are not more involved in the treatment of OFP patients. Their responses summarized in Tables 2 and 3 corroborated this self-assessment.

Knowledge in pain science and neuropharmacology has expanded so rapidly that it has been difficult for any dentist to adjust to these changes. The same is true for the existing curriculums in pre- and post-doctoral dental programs where this training is nearly absent. Although chronic pain syndromes have been recognized for years, the concept of chronic pain has only recently been applied to orofacial pain. Chronic pain rehabilitation programs used in the treatment of orofacial pain have met with success similar to programs for chronic back pain (31). This shift in knowledge has added to the skills and knowledge required of dentists to provide more successful care. Formal programs in dental education (32, 33) and continuing education for dentistry (34) must respond to the need for this training. It is not reasonable to expect that all dentists should be trained to treat the most complex OFP cases (1). However, many of these cases are less complex, and would respond favorably to simpler treatment strategies (13).

The Department of Health and Human Welfare has authorized the American Dental Association (ADA) through the Commission of Dental Accreditation to provide accreditation for dental training in the United States. Thus, the ADA has a responsibility to be proactive in assuring that orofacial pain patients receive quality care. This will require encouraging pre- and post-doctoral programs to provide adequate training and experience for high quality diagnosis and treatment of these disorders. As clinical practice in orofacial pain disorders has escalated, ten U.S. dental schools have responded by developing an accredited 2-year program for advanced education in this field. More than twenty orofacial pain dentists are graduating from these programs every year. In view of the unquestionable need for this advanced training, ADA support for a specialty status in orofacial pain dentistry would improve care for OFP patients in several ways. First, the ADA would be able to ensure by means of their credentialing authority that clinicians who focus their practices in this field are well trained, knowledgeable and experienced. Secondly, this sense of recognition would encourage general dentists, dental specialists, and dental students to become better trained in this field. Thirdly, this credentialing process would be reassuring to the 94% of general dentists and 96% of dental specialists who indicated that they would prefer to refer OFP patients to an orofacial pain dentist with ADA specialty status. Tables 1, 2 and 3 demonstrate that the scope of OFP practice is already a de facto specialty, avoiding most overlap with the practice of general dentistry and existing dental specialties. It is important to remember that the field of OFP dentistry focuses primarily on *chronic* orofacial pain disorders. If we must conclude that it is not reasonable for all dentists to be prepared to treat the more complex cases (1), then we should also be ready to recognize those who make the effort to render these services.

SUMMARY

At any given time, more than 13 million people in the U.S. suffer from an orofacial pain disorder that can progress to a condition with a significant personal and societal impact. An unacceptable number of Americans are still living through years of pain and multiple clinicians without resolution of their pain problems. In addition, the demand for treatment from this segment of our population is increasing. Although organized dentistry shares the responsibility for improving care for these people, this study provides evidence that the dental profession is not currently in a position to address the needs of all patients who may need treatment. It is concluded that changes are required, including an increase in the training opportunities for general dentists in orofacial pain disorders, and support for advanced dental training in orofacial pain. Finally, official support for a new specialty in orofacial pain would be a positive step toward encouraging more dentists to consider a career in orofacial pain dentistry, and ensuring they are appropriately trained. This survey suggests that orofacial pain dentistry is presently a

de facto specialty, having little overlap with other dental practices. The well-trained orofacial pain specialist is an important link in the chain of services needed to maintain the American public's high confidence in the dental profession.

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Table 1: Treatment and Referral Practice Patterns for Orofacial Pain (OFP) Dentists (n=120), General Dentists (n=329) and Dental Specialists (n=97) Relative to Twelve Orofacial Pain Disorders.

Group	OFP Dentist Practice Patterns		General Dentist Practice Patterns		Dental Specialist Practice Patterns	
	Percent Treated	Percent Referred	Percent Treated	Percent Referred	Percent Treated	Percent Referred
Orofacial Pain Disorders						
Myofascial Pain Disorder	99.1	0.9	12.1	87.9	11.0	89.0
Complex TMD	94.9	5.1	9.5	90.5	19.1	80.9
Cervical Muscle Pain	70.7	29.3	7.9	92.1	5.2	94.8
Benign Headache	75.8	24.2	19.9	80.1	10.5	89.5
Neurovascular Pain	65.0	35.0	2.2	97.8	7.5	92.5
Neuropathic Pain	66.9	33.1	2.9	97.1	2.6	97.4
Burning Mouth and oral lesions	74.5	25.5	26.2	73.8	25.0	75.0
Sympathetically Mediated Pain	51.8	48.2	8.2	91.8	4.2	95.8
Atypical Dental and Facial Pain	79.0	21.0	9.7	90.3	13.4	86.6
Oral cancer pains	31.9	68.1	2.7	97.3	5.6	94.4
Dyskinesias and Dystonias	43.0	57.0	3.3	96.7	1.4	98.6
Sleep Disorders	65.3	34.7	17.0	83.0	4.1	95.9

Statistical contrasts for each of the orofacial pain disorders comparing OFP dentists with general dentists and OFP dentists with dental specialists showed chi-square values > 17, and the associated p-values < 0.001.

Table 2: Diagnostic Skills Reported by Orofacial Pain (OFP) Dentists (n=120), General Dentists (n=329) and Dental Specialists (n=97) Relative to Orofacial Pain Disorders.

Group	OFP Dentist Diagnostic Skills		General Dentist Diagnostic Skills		Dental Specialist Diagnostic Skills	
	Percent Often	Percent Never	Percent Often	Percent Never	Percent Often	Percent Never
Diagnostic Classifications	87.3	3.6	27.8	36.1	44.1	22.6
Head, Neck and Intra-oral Exam	98.2	0.0	70.4	10.3	71.1	8.9
Plain Film Radiographs and Tomography	77.3	0.0	27.3	48.1	43.0	30.2
Provocative Pulp Testing	39.5	7.3	47.5	20.1	27.6	46.0
Sleep Disorder Exam and History	63.1	3.6	21.0	39.5	9.4	55.3
Psychosocial Interviewing	59.1	5.5	9.7	66.6	7.0	69.8
Psychometric Testing	23.3	26.2	0.3	96.0	1.2	92.9
Diagnostic Neural Blockade	38.7	7.2	0.7	86.2	2.3	72.1
TMJ and/or Auriculo-temporal Blocks	30.6	13.5	1.0	94.0	2.3	83.7
Diagnostic Intra-muscular Injections	39.6	10.8	0.3	94.6	1.2	84.8
Electronic Diagnostic Testing	3.7	84.1	2.4	87.9	4.8	89.3

No difference in the use of electronic diagnostic tests was observed between OFP dentists, general dentists and dental specialists (chi-square values < 2.2, $p > 0.3$). Statistical contrasts for all other diagnostic skills comparing OFP dentists with general dentists and OFP dentists with dental specialists each showed chi-square values > 18, and the associated p-values < 0.001.

Table 3: Treatment Skills Reported by Orofacial Pain (OFP) Dentists (n=120), General Dentists (n=329) and Dental Specialists (n=97) for Orofacial Pain Disorders.

Group	OF Dentist Treatment Skills		General Dentist Treatment Skills		Dental Specialist Treatment Skills	
	Percent Often	Percent Never	Percent Often	Percent Never	Percent Often	Percent Never
Stabilization Splint	86.7	0.0	32.5	19.9	25.3	43.7
Anterior Positioning Splint	27.9	14.4	8.6	53.8	3.7	63.0
Intra-oral Sleep Apnea Appliance	15.9	28.3	4.1	54.6	1.2	86.6
Cognitive-Behavioral Therapies	43.8	11.6	9.4	65.3	8.6	72.8
Oral Habits Reversal Therapies	54.4	6.1	13.4	47.3	14.8	55.6
Biofeedback Stress Management	46.9	10.6	5.8	74.0	4.9	79.0
Chronic Pain Behavior Treatment	56.8	2.7	4.2	77.8	4.9	76.8
Muscle Relaxant Medications	55.8	6.2	2.4	54.0	5.9	58.8
Sedative Medications	31.0	17.7	1.0	77.7	1.2	73.5
Narcotic Medications	14.2	20.3	1.0	76.2	2.4	78.3
Anti-depressant Medications	56.6	13.3	0.3	95.9	1.2	83.3
Anti-convulsive Medications	22.7	28.2	0.7	92.2	2.4	90.4
NSAIDS	74.3	0.9	35.6	24.2	36.0	27.1
Chemical Abuse Management	7.1	46.9	0.0	92.8	1.2	89.2
Detoxification Strategies	4.5	49.1	0.3	97.6	1.2	95.2
Trigger Point Injections	39.0	15.0	0.0	95.8	2.4	88.1
Intra-muscular Injections for Dystonias	4.4	54.9	0.0	99.0	1.2	92.6
Stellate Ganglion Blocks	1.8	71.8	0.0	99.7	1.2	97.6
Trigeminal Nerve Blocks	16.4	32.7	0.3	93.5	3.6	83.1
Upper Cervical Nerve Blocks	6.3	56.8	0.0	100.0	1.2	95.1
Temporomandibular Joint Injections	21.4	17.9	0.0	97.9	2.4	86.6
Home Exercises Program	78.7	1.8	14.2	38.2	21.4	39.3
Cold or Heat Therapy						

	88.5	0.9	28.2	16.2	36.8	24.1
Physical Therapy Modalities	84.1	0.9	9.6	54.0	18.1	54.2
Joint and Muscle Mobilization	69.4	1.8	4.5	72.2	10.8	61.5
Postural Awareness Training	70.8	6.2	10.0	53.4	11.0	63.4
Team Treatment Strategies	75.9	0.9	3.8	68.8	24.1	54.2
Multi-modal Treatment Strategies	76.2	1.8	3.2	75.4	16.2	62.5

Statistical contrasts for each of the treatment modalities comparing OFP dentists with general dentists and OFP dentists with dental specialists showed chi-square values > 22, and the associated p-values < 0.001.

Figure 1: Percent of General Dentists, Dental Specialists and Orofacial Pain Dentists by Percent of Their Practices Devoted to Orofacial Pain Dentistry.

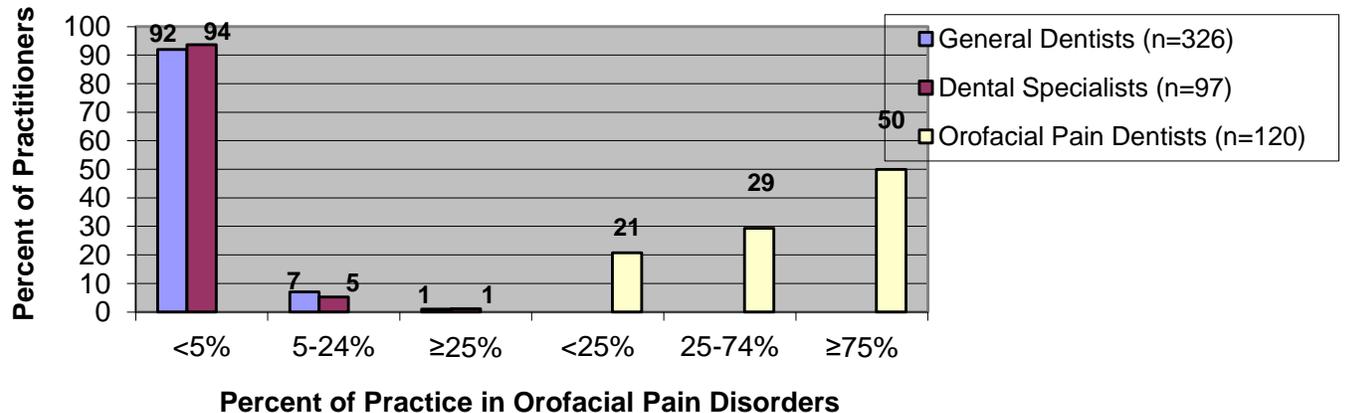
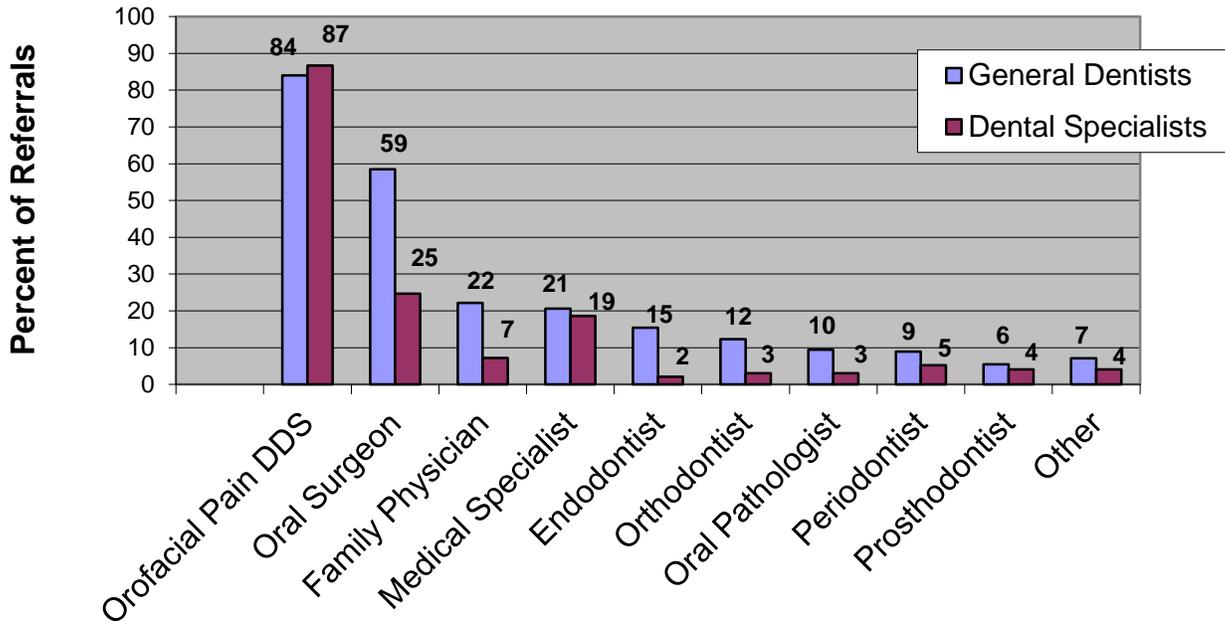


Figure 2: Referral Preferences of General Dentists and Dental Specialists for Orofacial Pain (OPD) Patients.



Dental/Medical Specialties to Which OPD Patients Are Referred.

Figure 3: Reasons Reported by General Dentists and Dental Specialists for Referral of Orofacial Pain (OPD) Patients to Clinicians Outside of Their Practices.

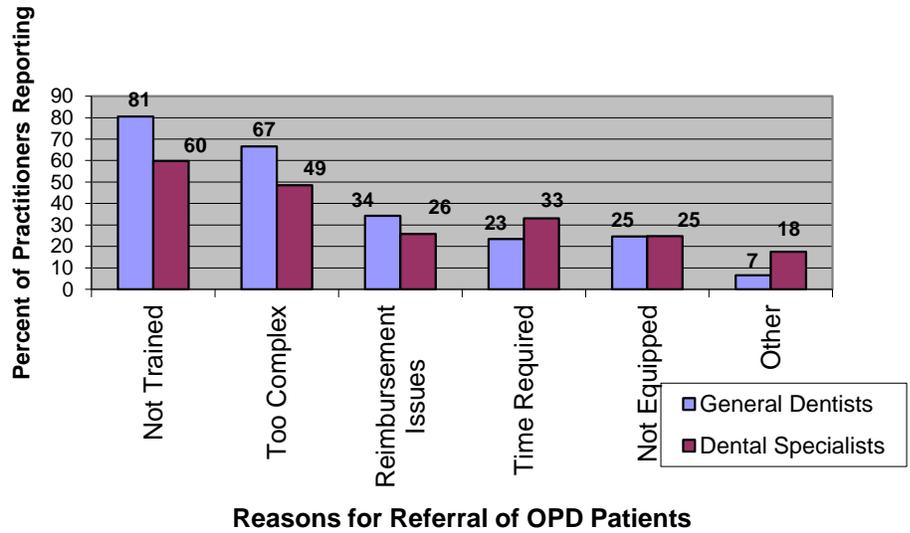
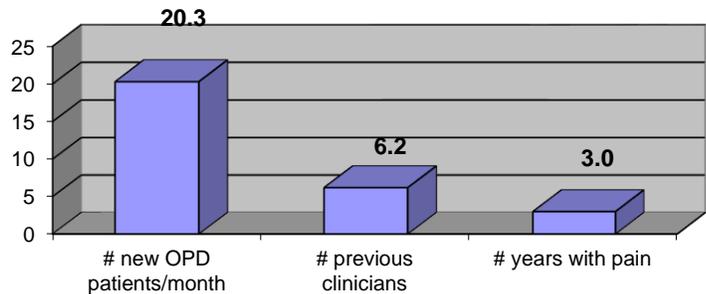


Figure 4: New OPD Patients Seen by Orofacial Pain Dentists: Average Number/Month, Number of Previous Clinicians and Number of Years in Pain.



**Appendix IVa. Improving Access to Care and Specialty Issues in Emerging Fields of Dentistry
Dr. James Friction and Dr. Jeff Crandall, American Board of Orofacial Pain**

The Problem of Orofacial Disorders. Among the chronic pain conditions, orofacial disorders are one of the most common and complex disorders with a collective prevalence that ranges from 42% to 50% of the population (Table 1).¹⁻⁵ Because oral and facial structures have close associations with functions of eating, communication, sight, and hearing as well as form the basis for appearance, self-esteem and personal expression, persistent pain or disease in this area can deeply affect an individual both psychologically and systemically. Furthermore, there is a higher degree of sensory innervation in the face and mouth than in any other area of the body.⁶ A national poll found more adults working full-time miss work from head and face pain than any other site of pain.⁷ Unfortunately, access to care for patients with these disorders is often difficult because the limited number of dentists who specialize in this area and the fact that the care often lies within both medicine and dentistry. As a result, patients often seek care from an array of medical and dental specialists and are at risk of receiving multiple medications, surgeries, and other treatments that may not be beneficial. A survey of 405 health professionals found that 95% either do or would like to refer these patients to a specialist because of their complex nature of these conditions.⁸

Emerging Fields of Dentistry. Because of problems with access to care, Oral Medicine and Orofacial Pain have emerged as new specialties of Dentistry addressing this problem. These providers are involved in the clinical assessment, diagnosis and management of these orofacial disorders as well as the pursuit of understanding the underlying pathophysiology and contributing mechanisms. The high prevalence, personal impact, and complicated nature of diagnosis and management, as well as lack of ready access to care, suggest the need for an expanded role of dentistry in developing and marketing a diagnostic discipline in dentistry. Furthermore, recent major scientific advances in diagnostic and treatment strategies for dental and orofacial conditions including pharmacological treatment, risk assessment, salivary analysis, tissue biomarker analysis, genetic testing, quantitative sensory testing, cone beam CT imaging, neuroscience advances, and many others support the need to train dentists who specialize in the clinical application of these new diagnostic, treatment, and management strategies.

Table 1. Common orofacial disorders that require special diagnostic and treatment needs with estimated prevalence.¹⁻⁹

Orofacial Pain Disorders	Estimated prevalence
Temporomandibular disorders	5-12%
Orofacial pain disorders (burning mouth, neuropathic, atypical pain, neurovascular)	2-3%
Headache disorder (tension-type headaches, migraine, mixed, cluster)	10-20%
Orofacial sleep disorders (e.g. sleep apnea, snoring)	3-4%
Neurosensory and chemosensory disorders (e.g. taste, paresthesias, numbness)	0.1%
Oromotor disorders (e.g. occusal dysethesias, dystonias, dyskinesias, bruxism)	4%
Oral lesions (herpes, aphthous, pre-cancer, cancer)	3- 5%
Oral mucosal disease (e.g. lichen planus, candida)	1-2%
Salivary disorders and xerostomia	2%
Oral systemic disorders (e.g. oral effects of autoimmune, cancer, AIDS, heart disease)	2-3%
Total Estimated Prevalence in General Population	30% to 40%

Need for Improved Access to Care for Patients with Orofacial Disorders. There is a great need for dental specialists who care for patients with a broad range of orofacial disorders to provide optimal evidence-based and cost-effective care for these disorders. Care is implemented by an interdisciplinary integrative care system with dental specialists, medical specialists, physical therapists, and health psychologists and includes defined patient-centered clinical protocols with evidence-based treatments, risk assessment, cognitive-behavioral training, health coaching, and care coordination. Treatment includes an array of both complex medical and dental treatments that may vary from

medications and physical therapy to splints and occlusal therapies. Training focuses on teaching patients to reduce risk factors and enhance protective factors to minimize delayed recovery.

Dental Specialties in Orofacial Disorders will strengthen the profession of Dentistry. Currently, there are several organizations and boards that represent about 1000 dentists who provide care for patients with these orofacial disorders. Currently, there are also over 20 CODA accredited advanced training programs in these disciplines. The American Board of Orofacial Pain and the American Board of Oral Medicine have achieved specialty status through the American Board of Dental Specialties. These boards have expressed interest in collaborating to improve care for patients with orofacial disorders. With leadership and guidance from the State Board of Dentistry, these groups can be brought together to support this clinical area of Dentistry and strengthen the profession's ability to provide care for these patients. This will not only increase access to care by increasing the number of trained specialists but also increases the strength of academic programs, research, and pre-doctoral teaching of these new areas.

Improving access to care. Unfortunately, access to care for patients with these disorders is often difficult because of the limited number of dentists who focus their practices in this area, the lack of coverage by health or dental benefit plans, and the lack of recognition of this specialties by ADA and State Boards. The inability of these specialists to advertise and announce that they have advanced knowledge and skills for these conditions has limited recognition by the general public and other health professions. It is important to note that the lack of practical training about these disorders in medical and dental school motivate most health care providers to choose to refer these patients to a specialist. Specialty is recognized, access to care is not likely to improve since both dental and medical insurers as well as Medicare are limiting reimbursement to general dentists managing these disorders and physicians do not treat them. Health care providers, thus, do not know to whom to refer these patients to.

Legal Decisions regarding Specialty Status in Dentistry. Several legal decisions have supported the concept of an independent and objective process for recognizing certifying boards for Dental Specialties. A group comprised of the American Academy of Implant Dentistry, American Academy of Oral Medicine, the American Society of Dentist Anesthesiologists, and the American Academy of Orofacial Pain in conjunction with dentists who practice these specialties in the State of Texas, prevailed in litigation in the Texas District Court. This decision prohibits the Texas State Board of Dental Examiners from solely deferring to the American Dental Association (ADA) for the recognition of 'specialties' in dentistry. This decision is consistent with previous, similar decisions in Florida and California and has implications for every state board across the United States. In summary, these decisions prohibit state boards from deferring to the ADA, a trade organization, as the sole resource for the specialty recognition process. This also prohibits the establishment of regulations that restrict the advertising of board-certification for recognized specialties in Dentistry.

The Emergence of the American Board of Dental Specialties. With this background, the American Board of Dental Specialties (ABDS) has evolved with the stated mission of encouraging the further development of the profession of Dentistry through independent recognition of certifying boards, improving the quality of care, and protecting the public. The ABDS requires that applicant specialty boards demonstrate advanced evidence-based knowledge and clinical decision-making skills in its respective field by the evaluation of competency with written and oral board examinations of candidates using valid, reliable, and calibrated testing methods. Successful achievement of these standards is established through the support from accredited Schools of Dentistry to establish these advanced education programs. Each specialty board is responsible for the development of its high quality, validated Board Certification process. Accordingly, this is accomplished through a rigorous process of reviewing objective criteria submitted by each field. The criteria include;

1. Reflect a distinct and well-defined area of expertise in dental practice, above and beyond that provided at the level of pre-doctoral dental education, that is founded in evidence-based science, contributes to professional growth and education, and concerns the practice of dentistry.

2. Develop a rigorous standard of preparation and evaluation in the dental specialty area.
3. Provide evidence of psychometric evaluation of the written and oral examination processes for a period of time sufficient to ensure validity and reliability.
4. Provide an effective mechanism to maintain certification.
5. Exist as an independent, self-governing entity whose main purpose is to evaluate candidates for board certification in a field of dentistry.

The ABDS has recognized the board from four new dental specialties: Dental Anesthesiology, Implant Dentistry, Orofacial Pain, and Oral Medicine. The ABDS welcomes both existing and emerging dental specialties to apply because it believes that dentistry should continue to grow through research and advanced education programs and certifying boards. Moreover, there is strength in new dental specialties representing the continued evolution and growth of the profession.

ADA Resolution 65. The American Dental Association (ADA) House of Delegates responded to the new landscape of specialty status at their meeting in Denver, Colorado of October of 2016. After much discussion, the House of Delegates passed Resolution 65 submitted by the Council on Ethics, Bylaws and Judicial Affairs. This Resolution permits “educationally qualified dentists practicing in areas of dentistry recognized as specialties in their jurisdictions, but not by the ADA, to announce as specialists”. The passage of Resolution 65 by the ADA House of Delegates is a milestone in the development of an independent and objective process for recognizing certifying boards for both Dental Specialties (Level 1) and Subspecialties (Level 2) within the Profession of Dentistry. In addition, the resolution also improves access to care by freeing up specialist to be able to provide essential general dental care in addition to their specialty care. Consistent with ABDS and ADA requirements, each new dental specialty board has assembled and submitted appropriate documentation to demonstrate that each of the objective criteria for specialty recognition have been met.

Implications for State Dental Boards. Resolution 65 has opened the door for State Boards of Dentistry to recognize an independent, objective-based path for the recognition of specialty fields and to determine who may announce and be approved for licensure as a dental specialist. It also relieves State Boards from the legally precarious position of having a trade organization, the ADA, serve as the sole determinant of dental specialty status. This task is the responsibility of State Dental Boards and they are now able to recognize all dental specialties based upon specific criteria. State boards will be evaluating the impact of Resolution 65 on their specialty determination process and some have already expressed interest in utilizing the ABDS process as a more objective and a valid resource for certifying dental specialty boards. Most state Boards also recognize the importance of offering a national, objective, and independent process for evaluating and certifying qualified dental specialties and subspecialties while keeping the issue out of the courts and in the hands of dentists.

National Commission on Recognition of Dental Specialties and Certifying Boards. As a result of the litigation against state boards, the National Commission on Recognition of Dental Specialties and Certifying Boards was established to provide a more objective assessment of the need for specialty status and provide clear objective evidenced-based documentation for new field of Dentistry. The National Commission will help ensure that the Profession of Dentistry improve the access to high quality evidence-based care for patients cared for by dentists in the new specialties such as Dental Anesthesiology, Orofacial Pain and Oral Medicine.

Response by Board of Dentistry. In Minnesota, Washington and other states, the Boards of Dentistry have also approved changes to address deficiencies in access to care. They approved orofacial pain as a dental specialty by allowing specialty license by credentials to orofacial pain specialists and voted to allow them to advertise as an orofacial pain dental specialist. This will apply to all specialty areas of Dentistry that are recognized by Commission on Dental Accreditation with their board approved by the American Board of Dental Specialties or the National Commission on Recognition of Dental Specialties and Certifying Boards. In addition to the application procedures, an applicant for a specialty license shall:

1. Have successfully completed a postdoctoral specialty education program accredited by the Commission on Dental Accreditation (All advanced education programs in emerging dental

specialties have been approved by CODA), or have announced a limitation of practice before 1967;

2. Have been certified by a specialty examining board approved by the Minnesota Board of Dentistry, or provide evidence of having passed a clinical examination for licensure required for practice in any state or Canadian province, or in the case of oral and maxillofacial surgeons only, have a Minnesota medical license in good standing;
3. Have been in active practice or a postdoctoral specialty education program or United States government service at least 2,000 hours in the 36 months prior to applying for a specialty license.

In addition, the Board may grant a specialty license in the specialty areas of dentistry to Internationally-educated Dental Specialist if they have the following criteria.

1. Completed dental education equivalent to or greater than the dental education provided at a school that is accredited by the Commission on Dental Accreditation (CODA), and
2. Graduated with at least a 2.5 Grade Point Average (GPA). Regardless of GPA, if an individual has failed the same course twice, he/she will not be eligible for licensure.

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Appendix IVb. Systematic Review of RCTs for Treatment of Orofacial Pain and Temporomandibular Disorders including References.

Table 1. The Number and Percent of Studies Meeting CONSORT methods criteria for Level I, the Percent Range of all Criteria Met by each Treatment Type, and the Mean percent and Standard Deviations for Quality Scores (Percent Criteria met) by Treatment Type.

Treatment	Number of RCTs	% of Level I Criteria Met	Range of % for Criteria Met	Mean % and S.D.
Physical medicine/ Injections	82	13 (n=11)	20 to 93	58 ± 17
Orthopedic appliances	46	13 (n=6)	27 to 87	53 ± 15
Occlusal therapy	9	11 (n=1)	33 to 67	45 ± 11
Pharmacologic therapy	44	9 (n=4)	27 to 87	67 ± 14
Cognitive-behavioral/ psychological therapy	24	8 (n=2)	33 to 80	54 ± 12
Temporomandibular joint surgery	7	14 (n=1)	33 to 100	55 ± 22
Totals/ Mean	212	11 (n=25)	33 to 67	45 ± 11

Systematic Review of Exercise and Physical Therapies and Injections for Temporomandibular Disorders: 44 RCTs reviewed

Table 1. CRITERIA APPLIED IN THE CRITICAL APPRAISAL OF TMJD RCTs.
These criteria are defined in the paper entitled: "Critical Appraisal of Methods in Randomized Controlled Trials for Temporomandibular Disorders." Their application has been determined to have adequate inter-rater reliability (Intraclass correlation coefficient of 0.88)

Level	Criteria	% of physical therapy studies meeting criteria
Level I: Essential design criteria for Internal Validity to minimize systematic bias	1. Selection bias: Defined and concealed randomization process with rater and subject blind of group assignment	24%
	2. Measurement bias: Blinding of clinician and subjects to outcome measures	58%
	3. Comparison group bias: Interventions equal between groups and include baseline comparison	96%
	4. Attrition bias: Drop-outs and cross-overs less than 15% and considered in analysis	31%
Level II: Additional criteria for Internal Validity	5. Relevant and reliable multi-dimensional measures used	80%
	6. Ceiling and floor effects considered. (e.g., Pain > 5/10)	47%
	7. Pre and post measures included	100%
	8. Temporal characteristics of symptoms considered	64%
	9. Follow-up schedule defined and appropriate (> 2mos)	62%
	10. Wash out period for concomitant treatments	11%
	11. Adherence for treatments monitored	13%
Validity of Statistical Conclusions	12. Power and sample size analysis	4%
	13. Complete analysis of data	53%
Criteria for External Validity	14. Treatment well defined and standardized	96%
	15. Clear recruitment with inclusion/ exclusion criteria	89%
Mean value		55%

Table 2. Summary of RCT evidence for Therapeutic Exercise and Postural Improvement for Treatment of Temporomandibular Disorders. (chronological order)									
Trial	Diagnosis	Group Size	Treatment	Duration of follow-up	Outcome Measure	Treatment efficacy	NNT	Met minimum criteria?	Quality Score (0-1)
Studies with exercise and postural Improvement compared to placebo or no treatment controls									
Burgess et al. 1988 ¹⁷	Myofascial pain	10 11 8	A: Jaw stretching and neck stretching with ice B: Reflex inhibition C: Non-intervention	3 weeks	<ul style="list-style-type: none"> • 50% pain reduction • Vertical jaw opening • Muscle palpation pain 	A>B, A>C, B=C A=B=C A=B=C	A:B 2 A:C 2 B:C 10 NA NA	no	0.47
Dall' Arancio et al. 1993 ¹³	Myofascial pain	11 11	A: Jaw stretching B: Placebo exercises (just 1 finger opening)	4 weeks	<ul style="list-style-type: none"> • Pain reduction pre-post 	A>B (no A vs B statistical test)	NA	no	0.73
Wright et al. 2000 ¹⁶	TMJD of masticatory muscle origin	30 30	A. Posture training and self management B. Self management	4 weeks	<ul style="list-style-type: none"> • Jaw pain • Neck pain • Pain-free opening 	A>B A>B A>B	NA NA NA	no	0.53
Minakuchi et al. 2004 ¹⁰⁸	Painful TMJ DD without reduction	23 25 21	A: PALLIATIVE CARE B: Physical therapy (Splint + mobilization) C: No treatment	8 weeks	<ul style="list-style-type: none"> • SYMPTOM IMPROVEMENT • DIFFICULTY OF TREATMENT • Satisfaction 	A>B=C B>A=C A=B=C	NA NA NA	no	0.67
TORELLI ET AL. 2004 ⁸⁰	TENSION-TYPE HEADACHE: 50% EPISODIC 50% CHRONIC	48	CROSSOVER AT 8 WEEKS: A: STANDARDIZED PHYSIOTHERAPY EXERCISE B: OBSERVATION	8 WEEKS	<ul style="list-style-type: none"> • REDUCTION IN HEADACHE DAYS • SEVERITY • DURATION 	A>B A=B A=B	NA NA NA	NO	0.8
Studies with exercise and postural Improvement compared to other treatments for TMJD									
Carlson et al. 1991 ¹⁸	Masseter myofascial pain	17 17	Single-treatment intervention: A: Postural relaxation B: Stretch relaxation	After treatment	<ul style="list-style-type: none"> • Recovery from stressor (measured as change in masseter EMG reading) • Self-rated muscle tension 	A>B A=B	NA NA	no	0.47
Buchbinder et al. 1993 ⁸¹	Hypomobility 2° to Radiation	9 5 7	A: AROM+Therabite® B: AROM C: AROM+Wood blade	10 weeks	<ul style="list-style-type: none"> • Max. Inter-incisal ROM 	A>B=C	NA	no	0.47
KOMIYAMA ET AL. 1999 ¹²	Myofascial pain + limited opening	19 18 14	A: CBT with progressive muscle relaxation+ coping B: CBT + Posture C: general information	6 months 9 months	<ul style="list-style-type: none"> • Pain intensity at max. opening • Pain-free max. opening • Disturbance in daily activity 	A>C, B>C A>C, B>C A>C, B>C A>C, B>C	NA NA NA NA	no	0.60

				12 months	<ul style="list-style-type: none"> • Pain intensity at max. opening • Pain intensity at max. opening 	A=B=C	NA		
Magnusson and Syren, 1999 ¹⁴	TMJD of muscle origin	12 11	A: Flat splint night B: Jaw exercises	6 months	<ul style="list-style-type: none"> • Pain 	A=B	NA	no	0.40
Carmeli et al., 2001 ¹⁰⁹	Anterior disc displacement	18 18	A: Soft anterior repositioning splint B: Exercises and therapist-performed mobilization	4 weeks	<ul style="list-style-type: none"> • Reduced subjective pain • Improved mouth opening 	B > A B > A	NA B:A 2	no	0.47
Grace et al. 2002 ⁸³	Muscular TMJD	15 15 15	A. Splints, exercise, self care, OTC meds B. A + muscle strengthening device (BAE) C. Muscle strengthening device (BAE) with education	2 months	<ul style="list-style-type: none"> • Pain reduction • Maximum opening • Wellness scale 	A = B = C A = B = C A = B = C	NA NA NA	no	0.53
Maloney et al. 2002 ⁸²	TMJD not responding to flat plane intraoral appliance	Joint group: 10, 7, 7 Muscle group: 7, 5, 10	A. Passive jaw motion device therapy (Therabite®) + flat splint B. wooden tongue blade stretch + flat splint C. Splint only	8 weeks	Joint: <ul style="list-style-type: none"> • Pain reduction • Range of motion Muscle: <ul style="list-style-type: none"> • Pain reduction • Range of motion 	A > B = C A > B = C A > B = C A > B = C	NA NA NA NA	no	0.40
YODA ET AL. 2003 ⁸⁴	TMJ DISC DISPLACEMENT	21 21	A: THERAPEUTIC EXERCISE B: NO-TREATMENT CONTROL	3 MONTHS	<ul style="list-style-type: none"> • CLICKING 	A > B	A:B 2	NO	0.67
Michelotti et al. 2004 ⁸⁵	Muscle TMJD	36 34	A: Home exercise w/ education B: Education only	3 months	<ul style="list-style-type: none"> • Success rate • Pain-free jaw opening • Headache 	A=B A>B A=B	A:B 5 NA NA	no	0.60

Diagnoses - TMJD: Temporomandibular muscle and joint disorder; TMJ: Temporomandibular joint; DD: Disc displacement; ADTMD: Anterior displaced temporomandibular disc.

Study treatments - AROM: Active range of motion exercises; CBT: Cognitive behavioral therapy; BAE: Bite Assist Exerciser

Outcome acronyms - EMG: electromyography; ROM: Range of motion

Table 3. Summary of RCT evidence for ultrasound, iontophoresis, and phonophoresis, for treatment of temporomandibular disorders. (chronological order)									
Trial	Diagnosis	Group size	Treatment	Duration of follow-up	Outcome Measure	Treatment efficacy	NNT	Met minimum criteria?	Quality score
Talaat et al. 1986 ²⁸	Myofascial pain of the masticatory system	40 40 40	A: Methocarbamol 400mg plus acetyl salicylic acid 325mg. B. Shortwave diathermy C: Ultrasonic therapy	After 2-week treatment, F/U varied from 6 to 12 months	Improvements reported for: Pain intensity Palpation pain Mandibular ROM TMJ Clicking	No statistical test: B,C>A B,C>A A=B=C A=B=C	NA NA NA B:A 3 C:A 2 C:B 4	no	0.33
Gray et al. 1994 ⁸⁶	TMJD	27 27 30 29 26	A. diathermy B. megapulse C. ultrasound D. soft laser E. placebo	1 week 3 months	Symptom Improvement Symptom Improvement	A=B=C=D>E A=B=C=D>E	NA A:E 2 B:E 2 C:E 2 D:E 2	no	0.53
Reid et al. 1994 ⁸⁹	Painful TMJ DDR, DDwoR, or OA	22 31	Three treatments separated by 1 day: A: Ionto with Dex + Lido B: Placebo Saline	14 days after last treatment	Pain Relief ROM	A = B A = B	NA NA	no	0.47
Schiffman et al. 1996 ⁸⁸	TMJ capsulitis with DDwoR	9 9 9	Three treatments separated by 1 day: A: Ionto Dex +Lido B: Lidocaine C: Saline	7 days after treatment	Pain Relief SSI DI ROM improvement	A=B=C A=B=C A>B=C A=B=C	NA NA NA A:B 3 A:C 5 B:C 9	no	0.67
Shin et al. 1997 ⁸⁷	TMJ arthralgia	10 10	Two treatments on consecutive days: A : US + Phono with Indomethacin cream B: US + Phono with placebo cream	After last treatment	Comparisons within groups were performed: Pain Relief pre-post Increased pressure-pain threshold pre-post	A > B A > B (No A vs. B statistical tests)	NA NA	no	0.47

Diagnoses – TMJD: Temporomandibular muscle and joint disorder; TMJ: Temporomandibular joint; DDR: Disc displacement with reduction; DDwoR: Disc displacement without reduction; OA: osteoarthritis;

Study treatments - Ionto: Iontophoresis; Phono: Phonophoresis; US: Ultrasound massage; Dex: dexamethasone sodium phosphate; Lido: lidocaine;

Outcome acronyms – F/U: Post-treatment follow-up; SSI: Symptom Severity Index, DI: Dysfunction Index; ROM: Range of motion;

Table 4. Summary of RCT evidence for electrical stimulation, pulsed radio frequency energy, and electromagnetic therapy for treatment of temporomandibular disorders. (chronological order)									
Trial	Diagnosis	Group Size	Treatment	Duration of follow-up	Outcome Measure	Treatment efficacy	NNT	Met minimum criteria?	Quality score
Hansson and Ekblom, 1983 ⁹⁰	Acute orofacial pain	22 20 20	A: High freq TENS B: Low freq TENS C: Placebo TENS	30 minutes	• 50% pain relief successes	A: 7/22 B: 9/20 C: 2/20 (No statist. test)	A:C 5 B:C 3	no	0.20
Reich et al. 1989 ⁹²	Migraine (56%) & tension-type HA (44%)	173 161 178 191	A: relaxation B: TENS C: biofeedback D: Multimodal	8-36 months	• HA Pain VAS • HA freq./hours per week	C>A; C=B=D C>A; C=B=D	NA NA	no	0.27
Foley-Nolan et al., 1990 ⁹⁶	Chronic (>8 weeks) cervival pain	10 10	A: PEMT B: Placebo PEMT	3 weeks	• Pain reduction • Cervical ROM • Subj. improvement	A>B A>B A>B	NA NA A:B 2	yes	0.93
Bertolucci and Grey 1995 ⁹³	Painful DJD	16 16 16	A: Mid-laser B: MENS C: Placebo	3 weeks	• Pain • Total ROM • Lateral deviation	A>B>C A>B>C A=B>C	NA NA NA	no	0.33
Linde et al., 1995 ⁴⁵	TMJ pain and DD without reduction	15 16	A: Flat splint 24 h/d B: TENS	6 weeks	• Muscle/TMJ Pain • 50% reduction in pain	A=B A>B	NA A:B 2	no	0.53
Kruger et al. 1998 ⁴⁶	Masticatory myofascial pain	5 5	A: TENS B: placebo TENS	14 weeks	• Pain VAS	A=B	NA	no	0.40
Sherman et al., 1998 ⁹⁷	Migraine HA	9	Crossover treatments separated by 1 week: A: PEMT B: Placebo PEMT	Post-2-wk treatment	Average # HA/week	A>B	NA	yes	0.80
Treacy et al. 1999 ⁴⁷	Bruxism-TMJD less than 6 mos. duration	8 7 8	A: Relaxation B: TENS C: placebo TENS	4 months	Improvement for: • Subj. discomfort • ROM • Muscle EMG activity	A=B=C A>B or C A>B or C	NA NA NA	no	0.47
Ahmed et al. 2000 ¹¹⁰	Chronic headache	30 30	Crossover 2-week treatments separated by 1 week: A: PENS B. needles only	2 weeks	• Pain relief VAS • Improved sleep • Decreased HA impact on activity	A>B A>B A>B	NA NA NA	no	0.53
Wieselmann-Penkner et al. 2001 ¹¹¹	Masticatory myofacial pain	10 10	A: EMG-biofeedback B: TENS	3 weeks	• EMG activity • Skin conductance level	A<B A=B	NA NA	no	0.47
Farina et al. 2004 ⁹¹	Trapezius myofacial pain	19 21	A: FREMS B: TENS	1 week 1 month 3 months	Improvement in: • Pain and disability • Pain and disability • Pain and disability	A>B A>B A=B	NA NA NA	yes	0.80

Al-Badawi et al. 2004 ⁵⁴	TMJ arthralgia	20 20	A: Pulsed Radio Frequency Energy B: Placebo device	4 weeks	<ul style="list-style-type: none"> • Pain Relief NRS • Mouth opening • Lateral ROM 	A > B A > B A > B	NA NA NA	no	0.60
Peroz et al. 2004 ⁹⁴	TMJD	36 42	A: Electromagnetic therapy (PEMF) B: Placebo PEMF	4 months	<ul style="list-style-type: none"> • Pain intensity • Limited ADL • ROM 	A=B A=B A=B	NA NA NA	yes	0.73
Smania et al. 2005 ⁹⁵	Trapezius myofacial pain	17 18 18	A: Repetitive magnetic stim. (rMS) B: TENS C: Placebo (sham ultrasound)	Post-treatment 1 month 3 months	<ul style="list-style-type: none"> • Pain reduction • Pain threshold • Pain reduction • Pain threshold • Pain reduction • Pain threshold 	A>C, B>C, A=B A>C, B=C, A>B A>C, B=C, A>B A>C, B=C, A>B A>C, B=C, A>B A>C, B=C, A>B	NA NA NA NA NA NA	yes	0.73

Diagnoses – TMJD: Temporomandibular muscle and joint disorder; TMJ: Temporomandibular joint; HA: headache; DJD: Degenerative joint disease; DD: Disc displacement;

Study Treatments – TENS: Transcutaneous electrical neuromuscular stimulation; PEMT: Pulsed electromagnetic therapy; PENS: Percutaneous electrical neuromuscular stimulation, (needles with electricity); FREMS: Frequency modulated neural stimulation; MENS: Microcurrent electrical stimulation; Mid-laser: Infrared, 700 Hz, 27 watts; PEMF: Pulsed electromagnetic fields; F/U: post-treatment follow-up.

Outcome acronyms – EMG: Electromyographic; VAS: Visual analogue scale; NRS: Numerical rating scale; ROM: range of motion, ADL: activities of daily living.

Table 5. Summary of RCT evidence for soft laser for treatment of temporomandibular disorders. (chronological order)									
Trial	Diagnosis	Group size	Treatment	Duration of follow-up	Outcome Measure	Treatment efficacy	NNT	Met minimum criteria?	Quality score
Ceccherelli et al. 1989 ⁹⁸	MPD of cervical muscles	13 14	A: Infrared Diode Laser B: Placebo Laser	Post 2-week treatment 3 month F/U	Pain reduction Pain reduction	A > B A > B	NA NA	no	0.60
Bertolucci and Grey, 1995 ⁹⁹	Active DJD	16 16	A: Mid-laser B: Placebo Mid-laser	Post 3-week treatment	Pain reduction Vertical opening R/L LD	A > B A > B A > B	NA NA NA	no	0.33
Conti 1997 ⁵²	Arthrogeous TMJD Myogenous TMJD	5 5 5 5	A: myogenous + Low-laser B: arthrogeous + Low-laser C: myogenous + Placebo D: arthrogeous + Placebo	3 weeks	Pain reduction Range of Motion	A=B=C=D A=B=C=D	NA NA	no	0.60
Kulekcioglu et al. 2003 ¹⁰⁰	Arthrogeous TMJD Myogenic TMJD	20 15	A: low-laser with exercise B: Exercise only as a control (stretching motion, posture training)	Post-treatment 1 month F/U	Pain reduction Decreased # of TP AROM Pain reduction Decreased # of TP AROM	A=B A>B A>B A=B A>B A>B	NA NA NA NA NA NA	no	0.47
Ceylan et al. 2004 ¹¹²	Myofascial pain	19 20	A: Infrared laser with medication B: Sham laser with medication	Post-10-day treatment Post-9-day treatment	Pain reduction Urinary 5-HIAA and 5-HT + 5-HTP	A>B A>B	NA NA	no	0.60
Gur et al. 2004 ¹⁰²	Trapezius myofascial pain	30 30	A: Actual laser B: Placebo laser	Post 3-week treatment 10-week F/U	50% improvement Reduced pain Decreased # of TP Reduced pain Decreased # of TP Disability scale Depression	A>B A>B A>B A>B A>B B>A B>A	A:B 2 NA NA NA NA NA NA	yes	0.93
Ilbuldu et al. 2004 ¹⁰¹	Trapezius myofascial pain	20 20 20	A: Laser with exercise B: Placebo laser with exercise C: Dry needling with exercise	Post 4-week treatment 6 month F/U	Pain reduction Pain threshold Pain reduction Pain threshold	A>B,C A>B,C A=B=C A=B=C	NA NA NA NA	no	0.6
Altan et al. 2005 ¹⁰³	Cervical myofascial pain	23 25	A: GaAs laser with exercise B: Placebo laser with exercise	Post 2-week treatment 12-week F/U	Pain reduction Pain threshold Cervical flexion Pain reduction Pain threshold Cervical flexion	A=B A=B A=B A=B A=B A=B	NA NA NA NA NA NA	no	0.73

Diagnoses – TMJD: Temporomandibular muscle and joint disorder; MPD: Myofascial Pain Dysfunction; DJD: Degenerative Joint Disease; TP: Tender points

Study treatments - Low laser: Low Level Laser Therapy;

Outcome acronyms – F/U: Post-treatment follow-up; AROM: active range of motion

Table 6. Summary of RCT evidence for multiple modalities for treatment of TMJD pain. (chronological order)									
Trial	Diagnosis	Group Size	Treatment	Duration of follow-up	Outcome Measure	Treatment efficacy	NNT	Met minimum criteria?	Quality score
Crockett et al., 1986 ¹⁰⁵	Myofascial pain of the masticatory system	7 7 7	A: Stab. Splint and PT B: Relaxation/ stress therapy C: TENS	8 weeks	Pain reduction	A=B=C	NA	no	0.53
De Laat et al. 2003 ¹⁰⁶	Myofascial pain of the masticatory system	13 13	A: <u>4 weeks</u> of physical therapy (heat, massage, ultrasound, muscle stretching) B: <u>6 weeks</u> of the same physiotherapy	6 weeks	Signif. within-group improvement for: Pain reduction Pain threshold Jaw function	A = B A = B A = B	NA NA NA	no	0.53

Study treatments - TENS: Transcutaneous electrical stimulation; TMJPS: Temporomandibular joint pain dysfunction syndrome;
Outcome acronyms – F/U: Post-treatment follow-up; ROM: Range of motion

Systematic Review of Injection Treatments and Acupuncture for Temporomandibular Disorders: 38 RCTs reviewed

Table 1. Criteria used for critical appraisal of RCTs for TMJD. These criteria are defined in the paper entitled: "Critical Appraisal of Methods in Randomized Controlled Trials for Temporomandibular Disorders". The application of them has been determined to have adequate inter-rater reliability (intraclass correlation is 0.88)		
Level	Criteria	% of physical medicine studies meeting criteria
Level I: Essential design criteria for Internal Validity to minimize bias	1. Measurement bias: Blinding of clinician and subjects to outcome measures	72%
	2. Selection bias: Defined and concealed randomization process with rater and subject blind of group assignment	23%
	3. Attrition bias: Drop-outs and cross-overs less than 15% and considered in analysis	34%
	4. Comparison group bias: Interventions equal between groups and include baseline comparison	95%
Level II: Additional criteria for Internal Validity	5. Relevant and reliable multi-dimensional measures used	72%
	6. Ceiling and floor effect considered. (e.g. Pain > 5/10)	45%
	7. Pre and post measures included	100%
	8. Temporal characteristics of symptoms considered	76%
	9. Follow-up schedule defined and appropriate (> 2mos)	72%
	10. Wash out period for concomitant treatments	20%
Validity of Statistical Conclusions	11. Adherence for treatments monitored	8%
	12. Power and sample size analysis	11%
External Validity criteria	13. Complete analysis of data	55%
	14. Treatment well defined and standardized	96%
	15. Clear recruitment with inclusion/ exclusion criteria	86%
Mean value		58%

Table 2. Summary of RCT evidence for muscle injections for treatment of masticatory muscle pain. (chronological order)									
Trial	Diagnosis	Group size	Treatment	Duration of follow-up	Outcome Measure	Treatment efficacy	NNT (when possible)	Met minimum criteria?	Quality score
Botox Injection Studies									
Cheshire et al. 1994 ¹⁵	MPD: cervical and shoulder muscles	6 6	A: 50 MU botulinum toxin A B: placebo saline TPI At 2 sites in same subject at 8 weeks apart	2-4 weeks 8 weeks Crossover trial	<ul style="list-style-type: none"> Pain VAS Pain intensity Spasm 30% reduction in pain 	A>B A>B A>B A>B	NA NA NA 2	no	0.67
Rollnik et al. 2000 ¹⁶	Tension type headache	11 10	A: botulinum toxin 200 MU injection B: placebo saline	4 weeks 8 weeks 12 weeks	<ul style="list-style-type: none"> Pain intensity VAS 	A = B	NA	no	0.67
Schmitt et al. 2001 ¹⁷	Chronic tension type headache	30 29	A: Botulinum Toxin A 20 U B: Placebo saline	4 weeks 8 weeks	<ul style="list-style-type: none"> 25% reduction in overall self-report 25% reduction in pain 25% reduction in overall self-report 25% reduction in pain Analgesics 	A=B A=B A=B	100 20 33 6 NA	no	0.67
Nixdorf et al. 2002 ³¹	MPD of jaw muscles	15 15	A: Botulinum toxin 50 U B: Placebo saline	8 weeks Crossover trial	<ul style="list-style-type: none"> Pain intensity (VAS) Max opening w/o pain # of muscular tender points 	A=B A=B A=B	NA NA NA	yes	0.93
von Lindern et al. 2003 ³⁰	Chronic facial pain	60 30	A: Botulinum Toxin B: Placebo saline	4 weeks	<ul style="list-style-type: none"> Pain severity (VAS) 	A>B	NA	no	0.27
Kokoska et al. 2004 ²⁹	Frontal tension type headache	20 20	A: Botulinum Toxin A 50 U B: Placebo saline	6 months	<ul style="list-style-type: none"> Headache intensity Headache frequency 	A>B A=B	NA NA	no	0.87
Ondo et al. 2004 ²⁸	Chronic daily headache	29 29	A: Botulinum Toxin A: 200 U B: Placebo saline	12 weeks	<ul style="list-style-type: none"> # of headache-free days Global impression 	A>B A>B	NA 2	no	0.67
Padberg et al. 2004 ²⁵	Chronic tension type headache	19 21	A: Botulinum Toxin: 1 U per kg and max 100 U B: Placebo saline	12 weeks	<ul style="list-style-type: none"> 45% reduction in VAS Pain intensity VAS Headache days Analgesics 	A=B A=B A=B A=B	6 NA NA NA	no	0.93
Relja et al. 2004 ²⁷	Chronic tension type headache	16 16	A: Botulinum Toxin A B: Placebo	2-8 weeks Crossover trial	<ul style="list-style-type: none"> Headache severity Tenderness 	A>B A>B	NA NA	no	0.33
Schulte-Mattler et al. 2004 ²⁶	Chronic tension type headache	53 54	A: Botulinum Toxin A: 500 mouse unit B: Placebo saline	10 weeks	<ul style="list-style-type: none"> 50% reduction in headache days Depression 	A=B A=B	28 NA	yes	0.73

Ferrante et al. 2005 ²¹	Cervicothoracic myofascial pain	32 34 31 35	A: Botulinum Toxin A: 10 U/TP B: Botulinum Toxin A: 25 U/TP C: Botulinum Toxin A: 50 U/TP D: Placebo saline	0-12 weeks	<ul style="list-style-type: none"> • VAS • PPT • Medication use 	A=B=C=D A=B=C=D A=B=C=D	NA NA NA	no	0.73
Kamanli et al. 2005 ¹⁸	Myofascial pain syndrome	9 10 10	A: Botulinum Toxin A B: Lidocaine C: Dry needling	4 weeks	<ul style="list-style-type: none"> • PPT • Pain score • VAS 	B>A>C B>A=C A=B>C	NA NA NA	no	0.53
Mathew et al. 2005 ²³	Chronic headache	Placebo non-responder: 134 145 Placebo responder: 39 37	A: Botulinum Toxin A: 200 U B: Placebo saline	180 days 210 days 9 months	<ul style="list-style-type: none"> • Frequency of headache-free days • 50% reduction in headache days • Frequency of headache-free days • 50% reduction in headache days • Frequency of headache-free days 	A>B A>B A>B A>B	NA 6 NA 5 NA	yes	0.73
Silberstein et al. 2005 ²⁰	Chronic daily headache	182 168 174 178	A: Botulinum Toxin A: 225 U B: Botulinum Toxin A: 150 U C: Botulinum Toxin A: 75 U D: Placebo saline	30 days 240 days 9 months	<ul style="list-style-type: none"> • Frequency of headache • Frequency of headache • Frequency of headache 	A,C>B A,B>D B>D	NA NA NA	no	0.73
• Trigger point injection with local anesthesia studies									
Hong 1994 ¹¹	Myofascial pain: trapezius	26 15 9 8	A: 0.5% lidocaine w/ LTR B: dry needling w/ LTR C: 0.5% lidocaine w/o LTR D: dry needling w/o LTR	After treatment 2 weeks	<ul style="list-style-type: none"> • Complete pain relief • Pain intensity • Pain intensity 	A=B A=B A>B	A:B 10 NA NA	no	0.60
Tschopp et al. 1996 ¹²	Myofascial pain of head and neck	40 33 34	A: bupivacaine 0.25% B: lignocaine 1% C: saline 0.9%	4 sessions, 1 wk apart	<ul style="list-style-type: none"> • Improvement in pain 	A=B=C	A:C 77 A:B 6 B:C 6	no	0.27
McMillan et al. 1997 ²	Myofascial pain of jaw muscles	10 10 10	A: Procaine 1 placebo dry needling B: dry needling + placebo local anesthetic C: simulated dry needling + placebo local anesthetic	3 sessions, 1 wk apart	<ul style="list-style-type: none"> • Pain intensity • PPT 	A=B=C A=B=C	NA NA	yes	0.90

Muller et al. 2004 ⁴⁷	Tendinopathies and MPD	20 20 20 17 16	A1: 2mg tropisetron B1: 10mg prilocaine A2: 5mg tropisetron B2: 10mg dexamethason with 60mg lidocaine A3: 5mg tropisetron B3: 50mg prilocaine	3 days 7 days	<ul style="list-style-type: none"> • Pain VAS • Pain VAS • Patients' assessment 	A1>B1 A2=B2 A3>B3	NA 7 2	no	0.33
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MPD: Myofascial Pain Dysfunction, LTR: Local Twitch Response, TPI: Trigger Point Injection: in most tender point of muscle, PR: Pain Relief, VAS: Visual Analogue Scale, PPT: pressure pain threshold

Table 3. Summary of RCT evidence for Intra-articular Injections for Treatment of Temporomandibular Joint Disorders. (chronological order)									
Trial	Diagnosis	Group size	Treatment Intra-articular Injections	Duration of follow-up	Outcome Measure	Treatment efficacy	NNT	Met minimum criteria?	Quality score
Kopp et al. 1985 ⁵¹	TMJD (pain >6 months)	18 15	A: 2 x 0.5 ml Sodium Hyaluronate B: 2 x 0.5 ml Betamethasone	4 weeks	Symptom improvement Clinical signs	A = B A = B	5 NA	no	0.53
Kopp et al. 1987 ⁵²	TMJ Arthritis	12 12	A: 2 x 0.5 ml Sodium Hyaluronate B: 2 x 0.5 ml Betamethasone	1 year 2 year	Symptom improvement Clinical signs Symptom improvement Clinical signs	A = B A = B A = B A = B	6 NA 18 NA	no	0.60
Kopp et al. 1991 ⁵³	Rheumatoid Arthritis involving TMJ	14 14 13	A: 2 x 0.7ml Sodium Hyaluronate B: 2 x 0.7ml Methylprednisolone C: 2 x 0.7ml Saline	4 weeks	Symptom improvement Clinical dysfunction ROM	A = B = C A = B = C A = B > C	A:B 5 B:C 4 NA	no	0.53
Bertolami et al. 1993 ³²	DDR DDN DJD	80 41	A: 10 mg/ml Sodium Hyaluronate B: Physiologic Saline	1 month 2 months 6 months	DDR: VAS, HI, APM Dysfunction improvement DDN: VAS, HI, APM Dysfunction improvement DJD: VAS, HI, APM Dysfunction improvement DDR: VAS, HI, APM Dysfunction improvement DJD: VAS, HI, APM Dysfunction improvement DDR: VAS, HI, APM Dysfunction improvement DJD: VAS, HI, APM Dysfunction improvement	A > B A = B A > B A > B A = B A > B A > B A = B A > B A > B	NA 7 NA 2 NA NA 2 NA NA 5 NA	no	0.60
Bryant et al. 1999 ⁵⁴	Post-arthroscopy TMJD patients	7 7 7	A: 1ml normal saline 2.5ml normal saline B: 1ml normal saline 1 mg morphine sulphate C: 0.1mg naloxone with 1 mg morphine sulphate	1-5 days	Pain score Need for analgesia post-operatively	A = B = C A = B = C	NA NA	no	0.67

APM: Arthrophonometry HI: Helkimo indices TMJD: Temporomandibular Disorders DDR: Disc Displacement with Reduction

DDN: Disc Displacement Non-reduction DJD: Degenerative Joint Disease VAS: visual analogue scale

Table 4. Summary of RCT evidence for acupuncture for treatment of temporomandibular disorders. (chronological order)									
Trial	Diagnosis	Sample size	Treatment	Duration of follow-up	Outcome Measure	Treatment efficacy	NNT	Met minimum criteria?	Quality score
Raustia 1986 ⁶³	TMJD	25 25	A: Acupuncture B: counseling, occlusal adjustment, exercise, splint or combined	3 months	CDS TMJ pain ROM	A = B A = B A = B	NA NA NA	no	0.27
Carlsson et al. 1990 ⁶¹	TTH	23 29	A: Acupuncture B: Physiotherapy (massage, cryotherapy, TENS, relaxation)	After treatment	Intensity MT Neck mobility	B > A B > A A = B	NA NA NA	no	0.60
Vincent 1990 ⁵⁶	TTH	14 14	A: Acupuncture B: Placebo Acupuncture	4 sessions A + 4 sessions B (8 weeks) Follow-up: 4 months	Pain reduction	Trend: A > B	NA	no	0.60
Johansson et al., 1991 ⁵⁹	CMD: facial pain, HA	15 15 15	A: Acupuncture B: Stabilization. Splint C: No treatment	3 months	Reduced clinical dysfunction score	A, B > C	A:C 2 B:C 2	no	0.60
List et al., 1992 Part 1 ⁶⁸	Craniomand Disorder (CMD), muscle origin	40 40 30	A: Acupuncture B: Stabilization splint C: No treatment	6-8 weeks	Anamnestic Index Score = 0 Reduced subjective symptoms Pain intensity	A>B,C A>B A=B	A:C 5 A:B 3 B:C 5 NA	no	0.60
List et al., 1992 Part 2 ⁶²	CMD, muscle origin	22 25	A: Acupuncture B: Stabilization splint C: No treatment	1 year follow-up	Subjective symptoms	A=B C - not analyzed	B:A 10	no	0.53
List et al., 1993 ⁶⁰	CMD	20 20 15	A: Acupuncture B: Stabilization splint C: No treatment	6-8 week treatment	Measures post-treatment: Clinical dysfunction Pain intensity At 6-month follow-up: Clinical dysfunction/pain	A=B > C A=B > C A=B	NA NA NA	no	0.47
Elsharkawy and Ali 1995 ⁶⁷	TMJD	23 22 23 17	A: Soft splint night B: Acuhealth C: Acuhealth1splint D:Placebo acuhealth	3 months	Percent subjectively symptom free	A=B=C>D	A:D 1 B:D 2 C:D 1	no	0.53
Karst et al. 2000 ⁵⁵	TTH	21 18	A: Acupuncture B: Placebo acupuncture	6 weeks	Pain VAS PPT	A = B A > B	NA NA	no	0.60

White et al. 2000 ⁵⁷	TTH	22 22	A: Acupuncture B: Placebo Acupuncture	1 month 3 months	50% reduction in headache days TTH duration Headache VAS 50% reduction in headache days TTH duration Headache VAS	A = B A = B A = B A = B A = B	5 NA NA Infinity NA NA	no	0.67
Goddard et al. 2002 ⁶⁴	Myofascial pain	10 8	A: Acupuncture B: placebo acupuncture	30 min	10 mm or greater VAS reduction in Pain	A = B	5	no	0.40
Xue et al. 2004 ⁶⁵	TTH	20 20	A: Electroacupuncture B: Sham electroacupuncture	After phase I (4 weeks) 3 months after phase II (4 weeks)	Headache intensity Frequency Duration Pain threshold Headache intensity Frequency Duration Pain threshold	A > B A > B A > B A > B A = B A = B A = B A = B	NA NA NA NA NA NA NA NA	yes	0.8
Ebneshahidi et al. 2005 ⁶⁶	Chronic TTH	25 25	A: Low energy acupuncture B: Placebo acupuncture	1-3 months	Intensity VAS Duration of attack Number of days with headache/month	A > B A > B A > B	NA NA NA	no	0.6
Melchart et al. 2005 ⁵⁸	TTH	132 63 75	A: Acupuncture B: Minimal acupuncture C: Waiting list	24 weeks	50% reduction in headache days	A = B A > C	9 2	yes	0.8

SDS: Subjective Dysfunction Score, VAS: Visual Analogue Scale, PPT: Pressure Pain Thresholds, MT: Muscle Tenderness, CDS: Clinical Dysfunction Score, ROM: Range of Motion

Table 5. Summary of RCT evidence for sphenopalatine injections for treatment of chronic orofacial pain. (chronological order)									
Trial	Diagnosis	Group Size	Treatment	Duration of follow-up	Outcome Measure	Treatment efficacy	NNT	Met minimum criteria?	Quality score
Janzen et al. 1997 ¹³⁸	Myofascial pain of head and neck with fibromyalgia	31 30	A: SPGB with lidocaine B: SPGB with saline	4 weeks	• Pain Relief	A = B	NA	no	0.47
Ferrante et al. 1998 ¹³⁷	Head, neck and shoulder myofascial pain	10 13 23	A: SPGB W/ 4% lidocaine B: SPGB W/ saline C: TPI w/ 1% lidocaine	1 week	• 10 mm and greater pain relief score • Pain intensity	A = B A < C	3 NA	no	0.53

SPGB- Sphenopalatal ganglion blocks

TPI- Trigger point injections

Table 7. Summary of RCT evidence for multi-modalities for Treatment of chronic orofacial pain.

Trial	Diagnosis	Group Size	Treatment	Study Duration	Measurement	Outcome	NNT	Met minimum criteria?	Quality score
Crockett et al. 1986 ⁵⁴	Chronic facial pain (muscle)	7 7 7	A. Splint + physical therapy (heat/cold, postural ex, avoid chewy foods and ex) B. Muscle relaxation, biofeedback, stress management C. TENS	8 weeks	Reduction in worst pain	A = B = C	NA	no	0.53
De Laat et al. 2003 ⁵⁵	Myofascial pain of the masticatory system		A: 4 wks of physical therapy (heat, massage, ultrasound, muscle stretching) B: 6 wks of the same physical therapy	4 weeks to 6 weeks	Pain Relief	A = B	NA	no	0.53

Ex - exercise

TENS - transcutaneous electrical stimulation

Systematic Review of RCTs evaluating Intraoral Orthopedic Appliances and Occlusal Treatment for Temporomandibular Disorders (55 RCTs)

Table 1. Percent of RCT studies that met criteria used for methodological assessment. The application of these criteria has been determined to have adequate inter-rater reliability (intraclass correlation is 0.88).			
Level	Criteria	% of appliance studies meeting criteria (n = 46)	% of occlusal studies meeting criteria (n = 9)
LEVEL I: Essential design criteria to minimize systematic bias	1. Selection bias: Defined and concealed randomization process with rater and subject blind of group assignment	9%	22%
	2. Measurement bias: Blinding of clinician and subjects to measures	45%	44%
	3. Comparison group bias: Interventions equal between groups and include baseline comparison	91%	67%
	4. Attrition bias: Drop-outs and crossovers less than 15% and considered in analysis	43%	67%
LEVEL II:	5. Relevant and reliable multidimensional measures used	95%	78%

Additional internal validity criteria	6. Ceiling and floor effect considered (i.e. selecting subjects with severity sufficient to show differences)	32%	67%
	7. Pre and post measures included	91%	78%
	8. Temporal characteristics of symptoms considered	66%	0%
	9. Follow-up schedule defined and appropriate (> 2mos)	93%	89%
	10. Washout period for concomitant treatments	7%	11%
	11. Adherence for treatments monitored	9%	11%
Validity of statistical conclusions	12. Power and sample size analysis was conducted	16%	0%
	13. Complete analysis of data	41%	11%
External validity	14. Treatment was well defined and standardized	93%	56%
	15. Clear recruitment with inclusion/exclusion criteria	91%	78%
Mean value		55%	45%

Table 2. Summary of RCTs evaluating stabilization splints versus a placebo splint for TMJD (chronological order)									
Trial	Diagnosis	Group Size	Treatment	Duration of Follow-up	Measure	Outcome ¹ (p ≤ 0.05)	NNT ²	Minimum criteria met? ³	Quality score ⁴
Rubinoff et al., 1987 ⁸²	MPD from general population	15 13	A: stabilization splint B: non-occluding splint	Not reported	<ul style="list-style-type: none"> • Pain (0-5) • Muscle tenderness • Inter-incisal opening 	A = B A = B A = B	NA NA NA	no	0.37
Dao et al., 1994 ⁶⁴	Muscle pain from general population	22 20 19	A: stab splint 24 hrs/d B: passive control: occlusal splint 30min/visit C: non-occluding palatal splint 24 hrs/d	7 visits over 10 weeks	<ul style="list-style-type: none"> • Pain intensity VAS • Pain unpleasant VAS • Pain on chewing VAS • Quality of life 	A = B = C A = B = C A = B = C A = B = C	NA NA NA NA	yes	0.87
Ekberg et al., 1998, ⁶⁷ 1998 ⁶⁶ and 1999 ⁶⁸ (1998 study with additional reports)	TMJ Capsulitis/ Synovitis from clinic population	30 30	A: Stab appliance during sleep B: Palatal splint during sleep	10 weeks	<ul style="list-style-type: none"> • Subjective improvement in overall pain & discomfort. • 50% reduced TMJ pain. • TMJ pain-free with lateral palpation. • Change in condyle-fossa relationship. 	A > B A > B A > B A > B	A:B 3 A:B 6 A:B 5 A:B 2	no	0.73
Raphael et al, 2001 ⁸⁰	MFP from clinic population	32 31	A: Hard splint at night during sleep B: Placebo palatal splint during sleep	5 visits over 6 weeks	<ul style="list-style-type: none"> • Average pain • Tenderness • Jaw function • If widespread pain present • Days of pain interference 	A > B A = B A = B A = B A = B	NA NA NA NA A:B 6	yes	0.80
Ekberg et al., 2003 ⁶⁹	TMJD with myofascial pain from clinic population	30 30	A: Occlusal Stabilization Appliance during sleep B: Non-occluding palatal splint during sleep	10 weeks	<ul style="list-style-type: none"> • Subjective improvement in overall pain & discomfort. • 50% of pain reduced. • Reduced # subjects with < 40mm maximum opening. 	A > B A = B A > B	A:B 2 A:B 4 NA	no	0.67
Ekberg et al., 2004 ⁹⁰ (Follow-up to 2003 study)	TMJD with myofascial pain	30 30	A: Stabilization appliance B: Palatal appliance	6 months 12 months	<ul style="list-style-type: none"> • Subjective improvement in overall pain & discomfort at 8 mos • Subjective improvement in overall pain & discomfort at 12 mos 	A > B A > B	A:B 2 A:B 2	yes	0.87

Wassell et al., 2004 ⁸⁵	TMJD from general dental practice	34 38	A: Lower stabilizing splint full-time B: non-occluding splint full-time.	6 weeks	<ul style="list-style-type: none"> • Pain VAS • Muscle tenderness • Joint tenderness • Inter-incisal opening 	A = B A = B A = B A = B	NA NA NA NA	no	0.53
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¹ Outcome defined by whether a statistical significance in outcome measure(s) between groups. A>B means that group A had significant better outcomes than group B.

² NNT (Number needed to treat): A:B means that outcome of A has a higher rate of treatment success than B regardless of statistical significance between groups. The NNT # (e.g., A:B 6) means 6 patients need to be treated by treatment A in order for one person to experience a beneficial outcome, or for one more person to have a benefit than would be true for treatment B. A lower NNT (e.g., 2 to 4) is typically taken to indicate that the intervention is effective. The NNT was calculated if data was available regardless of statistical difference between groups.

³ Minimum Level I criteria for minimizing systematic bias includes selection bias, measurement (or detection) bias, comparison group (or performance) bias, and attrition bias

⁴ The quality assessment score (0-1) was calculated to reflect the percent of all fifteen criteria that was met for each study, thus permitting an overall estimate of the quality of the evidence base for the treatment of TMJD

Table 3. Summary of RCTs of splints versus no treatment or other treatment (chronological order)									
Trial	Diagnosis	Group size	Treatment	Duration	Measure	Outcome ¹ (p≤0.05)	NNT ²	Minimum criteria met? ³	Quality score ⁴
Dahlstrom 1982 ⁶²	Mandibular dysfunction	15 15	A: Flat splint B: Biofeedback	6-week treatment.	<ul style="list-style-type: none"> • Muscle pain at 1 mo • Pain in movement at 1 mo • Range of motion at 1 mo 	A=B A=B A=B	NA NA NA	no	0.47
Okeson et al., 1983 ⁸⁹	TMJD	12 12	A: stabilization splint B: simplified relaxation therapy	4- 6 weeks	<ul style="list-style-type: none"> • Muscle tenderness • Incisal opening 	A > B A > B	NA NA	no	0.40
Dahlstrom 1984 ⁶³	Mandibular dysfunction	15 15	A: Flat splint night B: Biofeedback	6 week 12 months	<ul style="list-style-type: none"> • Pain at 6 wks • Pain at 12 mos 	A=B A=B	NA NA	no	0.53
Raustia et al., 1985 ⁸¹	TMJD	25 25	A: Stomatognathic treatment B: Acupuncture	3 months	<ul style="list-style-type: none"> • Pain (VAS) 	A=B	A:B 4	no	0.27
Crockett et al., 1986 ⁶¹	Myofascial pain	7 7 7	A:Stab Splint and PT B: Relax/ stress trt C: TENS	8 weeks	<ul style="list-style-type: none"> • Pain 	A=B=C	NA	no	0.53
Lundh et al., 1988 ⁵³	Disc displacement with reduction	20 21 22	A: Disc-repos onlays B: Flat splint night C: No treatment	6 month	<ul style="list-style-type: none"> • Reduced pain (chief complaint) • Reduced joint dysfunction • Reduced joint pain to palpation 	A>B>C A=B>C A=B A>C B=C	NA NA A:B 3 A:C 2 B:C 7	no	0.47
Wenneberg et al., 1988 ⁸⁴	CMD & HA symptoms	15 15	A: Occlusal splint B: Occlusal equilibration	2 months	<ul style="list-style-type: none"> • Reduced subjective symptoms • Reduced clinical dysfunction • Headache frequency 	A>B A>B A>B	NA A:B 3 NA	no	0.33
Schokker et al., 1990 ⁸³	Headache	23 25	A: CMD treatment B: Neurological treatment	6 weeks	<ul style="list-style-type: none"> • Headache intensity • Headache frequency • Drug intake 	A>B A>B	A:B 3 NA	no	0.47
Johannson et al., 1991 ⁷¹	CMD: facial pain and HA	15 15 15	A: Acupuncture B: Stabilization. Splint C: No treatment	3 months	<ul style="list-style-type: none"> • Reduced clinical dysfunction score 	A,B >C	A:C 2 B:C 2	no	0.60
List et al., 1992 Part I ⁷³	CMD of muscle origin	40 40 30	A: Acupuncture B: Stabilization splint C: No treatment	6-8 weeks	<ul style="list-style-type: none"> • Anamnestic Index Score = 0 • Reduced subjective symptoms • Pain intensity 	A>B,C A>B A=B	A:C 5 A:B 3 NA	no	0.60
List et al., 1992 Part 2 ⁷⁴	CMD of muscle origin	22 25	A: Acupuncture B: Stabilization splint C: No treatment	1 year follow-up	<ul style="list-style-type: none"> • Subjective symptoms 	A=B C - not analyzed	B:A 10	no	0.53

Lundh et al., 1992 ⁷⁶	Painful disc displacement without reduction	25 26	A: Flat occlusal splint B: No treatment	12 months	• Joint and muscle pain	A=B	NA	no	0.53
List et al., 1993 ⁷⁵	CMD	20 20 15	A: Acupuncture B: Stabilization splint C: No treatment	6-8 week treatment	• Clinical dysfunction • Pain intensity • Pain At 6 mos	A=B > C A=B > C A=B	NA NA NA	no	0.47
Turk et al., 1993 ⁸⁷	TMJD clinic patients	28 30 20	A: stabilization splint full-time, B: stress management/ biofeedback C: waiting list control	6 weeks 6 months	• Pain at 6 wks • Muscle tenderness • Depression • Pain at 6 mos • Muscle tenderness • Depression	A>B>C A>B>C A>B>C A=B>C A=B>C B>A>C	NA NA NA NA NA NA	no	0.53
Linde et al., 1995 ⁷²	TMJ pain and DD without reduction	15 16	A: Flat splint 24 h/d B: TENS	6 weeks	• Muscle and TMJ Pain • 50% reduction in pain	A=B A>B	NA A:B 2	no	0.53
Turk et al., 1996 ⁸⁸	TMJD	20 21	A: Splint 1 Stress Management /BFB 1 Cognitive therapy B: Splint 1 Stress Management / BFB 1 Supportive counseling	6 months	• Reduced muscle palpation pain • Reduced TMJ palpation pain • Unassisted opening without pain • Unassisted opening regardless of pain • Reduction in medication usage	A > B A = B A = B A = B A > B	NA NA NA NA A:B 4	no	0.60
Magnusson and Syren, 1999 ⁷⁷	TMJD of muscle origin	12 11	A: Flat splint night B: Jaw exercises	6 months	• Pain	A=B	NA	no	0.40
Carlson et al., 2001 ⁹⁶	Myofascial pain	23 21	A: Physical self-regulation B: Stabilization splint with self-care instructions	6 week post-treatment 26 weeks	• Reduction in pain at 6 wks • Improved mouth opening • Reduction in pain at 26 wks • Improved mouth opening	A=B A=B A>B A>B	NA NA NA NA	yes	0.87
Alvarez-Arenal et al., 2002 ⁶⁰	TMJD with Bruxism	24	A: Occlusal splint B: Transcutaneous electric nerve stimulation (TENS)	4 months	• Pantographic reproducibility index • Joint clicking • Pain to muscle palpation	A=B A=B A=B	NA NA NA	no	0.40
Wahlund et al., 2003 ⁸⁶	Adolescents w/ TMJD pain	42 41 39	A: Splint + Brief Information B: Relaxation Therapy + Brief Information C: Brief Information	6 months	• 50% improved pain intensity • Improvement in mean pain index	A > B = C A = B > C	A:C 3 B:C 11 NA	yes	0.80

Tommaso et al., 2005 ⁹¹	Chronic tension headache	9 9	A: Intraoral device appliance B: Amitriptyline	2 months	<ul style="list-style-type: none"> • Total Tenderness Score • Laser-evoked potential • Frequency of headache 	A > B A < B A = B	NA NA NA	no	0.27
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Table 4. Summary of RCTs of various designs and applications of splints (chronological order)

Trial	Diagnosis	Group size	Treatment	Duration	Measure	Outcome ¹ (p<0.05)	NNT ²	Minimum criteria met? ³	Quality score ⁴
Manns et al., 1983 ⁷⁸	MPD syndrome	25 25 25	A: 1 mm splint B: 4.42 mm splint C: 8.15 mm splint	3 weeks	<ul style="list-style-type: none"> Reduced subjective symptoms Reduced muscle/joint pain to palpation 	B=C >A B=C >A	NA NA	no	0.60
Anderson et al., 1985 ⁴³	DD-R, pain	10 10	A: Flat splint 24 h/d B: Repos splint 24 h/d	3 months	<ul style="list-style-type: none"> Subjective dysfunction Functional pain TMJ pain 	B>A B=A B>A	B:A 2 B:A 5 B:A 2	no	0.40
Dahlstrom 1985 ⁵⁷	Mandibular dysfunction	10 9	A: Flat splint night B: Anterior bite plate	6 weeks	<ul style="list-style-type: none"> Symptoms and signs EMG activity 	A>B A=B	A:B 7 NA	no	0.47
Manns et al., 1985 ⁷⁹	Mandibular dysfunction	20 20 20	A: 1 mm splint B: 4.25 mm splint C: 8.25 mm splint	3 weeks	<ul style="list-style-type: none"> Reduced EMG masseter activity 	B=C>A	NA	no	0.27
Gray et al., 1991 ⁷⁰	TMJ pain dysfunction syndrome	34 21	A: Stab splint B: LOIS splint (ball clasp)	3 months	<ul style="list-style-type: none"> Number improving clinically and subjectively 	A=B	B:A 8	no	0.40
Elsharkawy and Ali 1995 ⁴⁰	TMJD	23 22 23 17	A: Soft splint night B: Acuhealth C: Acuhealth1splint D:Placebo acuhealth	3 months	<ul style="list-style-type: none"> Percent subjectively symptom free 	A=B=C>D	A:D 1 B:D 2 C:D 1	no	0.53
Wright et al., 1995 ⁶	MFP	10 10 10	A: Soft splint B: Palliative self care C: No treatment	4-11 weeks	<ul style="list-style-type: none"> Subjective pain Pain-free opening Muscle pain threshold 	A>B=C A>B=C A>B=C	NA NA NA	no	0.53
Davies and Gray, Part I, 1997 ⁵⁵	Disc Displ. without reduction	25 25 20	A: Repos splint 24 hour B: Repos day time C: Repos night time	3-month Treatment: At 1 month: (during trt.) At 3 months: (post-trt.)	<ul style="list-style-type: none"> Joint sounds Joint pain to palpation ROM Overall subjective and objective improvement 	A>B=C A=B=C A>B=C A>B=C	NA NA NA A:B 3 A:C 5 C:B 8	no	0.47
Davies and Gray, Part II, 1997 ⁶⁵	TMJD Pain dysfunction syndrome	23 19 28	A: stabilization splint 24 hour B: stab. splint day only C: stab. splint night only	3 month	<ul style="list-style-type: none"> Joint sounds Pain Limited opening Percent improved 	A=B=C A=B=C A=B=C A=B=C	NA NA NA A:B 5 A:C 7 C:B 12	no	0.53
Shankland et al., 2001 ⁵⁶	TTH/ Migraine	43 51	A: NTI anterior bite splint	8 weeks	<ul style="list-style-type: none"> Greater than 85% reduction in migraine. Percent reduction in tension headache 	A > B A > B	A:B 10 NA	no	0.53

			B: Mandibular full-coverage occlusal splint		<ul style="list-style-type: none"> Percent reduction in headache intensity 	A = B	NA		
Carmeli et al., 2002	Anterior disc displacement	18 18	A: Soft anterior repositioning splint B: Exercises and therapist-performed mobilization	4 weeks	<ul style="list-style-type: none"> Reduced subjective pain Improved mouth opening 	B > A B > A	NA B:A 2	no	0.47
Fayed et al., 2004 ⁹²	Anterior disc displacement with reduction	7 7	A: Anterior repositioning splint B: Stabilization splint	3 months	<ul style="list-style-type: none"> MRI-TMJ disc recapture TMJ disc size & position 	B > A B > A	B:A 7 NA	no	0.60
Magnusson et al., 2004 ⁵⁸	TMJD	14 14	A: Stabilization splint B: NTI splint	3 months 6 months	<ul style="list-style-type: none"> Subjective symptoms Anamnestic index Subjective symptoms Global improvement 	A>B A>B A>B A>B	A:B 3 NA A:B 5 A:B 2	no	0.60
Jokstad et al., 2005 ⁹⁴	TMJD	20 18	A: Stabilization splint (Michigan type) B: NTI splint	3 months	<ul style="list-style-type: none"> Range of motion Headache TMJ pain to palpation Jaw muscle tenderness Comfort 	A = B A = B A = B A = B A = B	NA NA NA NA NA	yes	0.73
Schmitter et al., 2005 ⁹³	Anterior disc displacement without reduction	38 36	A: Centric splint B: Distraction splint	6 months	<ul style="list-style-type: none"> Success defined as 50% functional pain reduction and 20% increase in mouth opening 	A > B	NA	no	0.67
Stiesch-Scholz et al., 2005 ⁹⁵	Anterior disc displacement without reduction	20 20	A: Stabilization splint B: Pivot splint	3 months	<ul style="list-style-type: none"> Jaw mobility Subjective pain Tenderness to palpation score (joint and muscle) 	A = B A = B A = B	NA NA NA	no	0.67

Table 5. Summary of RCT evidence of occlusal dental treatment for treatment or for prevention of TMJD. (chronological order)

Trial	Diagnosis	Group size	Treatment	Duration	Measures	Outcome ¹ (p ≤ 0.05)	NNT ²	Minimum criteria met? ³	Quality score ⁴
Forssel et al., 1986 ⁹⁷	HA (with mandibular dysfunction)	48 43	A: Occlusal Adjustment B: Placebo Adjustment	A:8 months B:4 months	<ul style="list-style-type: none"> Reduction in clinical signs Reduction in subjective symptoms 	A > B A = B	NA NA	No	0.47
Wenneberg et al., 1988 ⁸⁴	CMD with headache	15 15	A: Occlusal Equilibration B: Splint, exercise, and occlusal adjustment	2 months	<ul style="list-style-type: none"> Reduced subjective dysfunction: Reduced clinical dysfunction: Number not needing rescue treatment: 	B > A B > A B > A	B:A 2 B:A 3 B:A 2	No	0.33
Tsolka et al., 1992 ⁹⁸	Cranio-mandibular Disorder (CMD)	25 22	A: Occlusal Adjustment B: Placebo Adjustment	10 days	<ul style="list-style-type: none"> Helkimo Anamnestic Index Helkimo Dysfunction Index Severe Anamnestic Dysfunction 	A = B A = B A = B	NA NA A:B 5	No	0.53
Vallon et al., 1995 ⁹⁹	Muscular CMD with headache	25 25	A:Occlusal Adj. + Counselling B: Counseling	3 months 6 months	<ul style="list-style-type: none"> Overall symptoms improved Reduced headache freq Reduction in facial pain Reduced Dysfunction index <ul style="list-style-type: none"> Overall symptoms improved Reduced headache freq Reduction in facial pain Reduced Dysfunction index 	A > B A = B A = B A > B A = B A = B A > B A = B	A:B 3 A:B 13 A:B 6 NA A:B 6 A:B 8 A:B 2 NA	No	0.33
Vallon et al., 1998 ¹⁰⁰	Muscular CMD with HA	25 25	A:Occlusal Adj. + Counseling B: Counseling	7-year follow-up	<ul style="list-style-type: none"> Number not requiring rescue treatment over 0 to 7 years (A = 13; B = 4) 	A > B	A:B 3	No	0.33
Karppinen et al., 1999 ⁵⁹	Chronic Neck & Shoulder Pain with or without HA	20 20	A: Occlusal Adjustment + physical therapy (PT) B: Placebo Adjustment + PT	6 weeks 12 months	<ul style="list-style-type: none"> Improvement in overall pain at 6 wks Reduction in painful/stiff head movement at 6 wks Improvement in overall pain at 12 mos Reduction in painful/stiff head movement at 12 mos Reduced headache at 12 mos 	A = B A = B A > B A > B A > B A > B	NA NA NA NA A:B 3 NA	No	0.53

				60 months	<ul style="list-style-type: none"> Improvement in overall pain at 60 mos Reduction in painful/stiff head movement at 60 mos Reduced headache at 60 mos 	A = B A > B	NA A:B 4		
• Occlusal Adjustment to Prevent TMJD									
Kirveskari et al., 1989 ¹⁰¹	Health young adults	30 32	A:Occlusal adjustment to prevent TMJD B:Placebo adjustment	2 years	<ul style="list-style-type: none"> Increased subjective symptoms over follow-up Increased muscle sites tender to palpation Range of motion 	A < B A = B (p=0.08) A = B	A:B 4 NA NA	No	0.40
Kirveskari et al., 1998 ¹⁰²	Healthy children and adolescents	62 67	A:Occlusal adjustment to prevent TMJD B:Placebo adjustment	4 years (treatment every 6 months)	<ul style="list-style-type: none"> Incidence rate of TMD as defined by seeking care for TMD 	A < B	A:B 9	Yes	0.67
• Restorative Treatment for TMJD									
Lundh et al., 1988 ⁵³	Disc displacement with reduction	20 21 22	A: Disc-repos onlays B: Flat splint night C: No treatment	6 month	<ul style="list-style-type: none"> Reduced pain related to chief complaint.* Joint dysfunction. Joint pain to palpation 	A>B,C A=B, A>C, A=B, B>C,	NA NA A:B 3 A:C 2 B:C 7	no	0.47

* Symptoms returned after onlays removed

Systematic Review of Pharmacological Therapy for Temporomandibular Disorders: 44 RCTs reviewed

Table 1. Criteria used for critical appraisal of RCTs for TMJD. These criteria are defined in a paper in this series entitled: "Critical Appraisal of Methods in Randomized Controlled Trials for Temporomandibular Disorders". The application of them has been determined to have adequate inter-rater reliability (Intraclass Correlation Coefficient = 0.88). ⁹³		
Level	Criteria	% of medication studies meeting criteria
Level I: Essential design criteria for: Internal Validity to minimize systematic bias	1. Selection bias: Defined and concealed randomization process with rater and subject blind of group assignment	13%
	2. Measurement bias: Blinding of clinician and subjects to measures	93%
	3. Comparison group bias: Interventions equal between groups and baseline comparison performed	100%
	4. Attrition bias: Drop-outs and cross-overs less than 15% and considered in analysis	60%
Level II: Additional criteria for: Internal Validity	5. Relevant and reliable multi-dimensional measures used	63%
	6. Ceiling and floor effect considered. (e.g. Pain Severity is greater than 5 on a 0-10 scale)	48%
	7. Pre and post measures included	100%
	8. Temporal characteristics of symptoms considered	80%
	9. Follow-up schedule defined and appropriate (> 2mos)	65%
	10. Wash out period for concomitant treatments	60%
Validity of Statistical Conclusions	11. Adherence for treatments monitored	40%
	12. Power and sample size analysis	20%
	13. Complete analysis of data	75%
External Validity	14. Treatment well defined and standardized	85%
	15. Clear recruitment with inclusion/ exclusion criteria	98%
Mean value		67%

Table 2. Summary of RCT evidence of non-steroidal anti-inflammatory agents and acetaminophen for treatment of temporomandibular disorders including tension-type headache (chronological order)									
Trial	Diagnosis	Group size	Treatment	Duration of Follow-up	Measure	Outcome	NNT	Met minimum criteria?	Quality score
Mongini et al. 1993 ²⁰	Headache and Craniofacial Pain	20	A:Meclufenamate Sodium 100 mg BID for 15 days B:Placebo	Crossover with 15-day treatments	Reduced pain severity Reduced # of painful events	A>B A>B	NA NA	no	0.67
Lange and Lentz 1995 ¹⁵	Tension-type HA	87 86 87 85	A:Ketoprofen 25mg B:Ketoprofen 12.5mg C:Ibuprofen 200mg D:Naproxen 275mg	4 hours	Pain relief	A=B=C=D	A:B 33 A:C 17 D:A equal D:C 17	no	0.47
Ekberg et al. 1996 ²¹	Temporomandibular joint pain	16 16	A:Diclofenac B:Placebo	Post-2-week treatment	Subj. improvement No joint pain to palpation	A=B A=B	A:B 8 A:B equal	no	0.73
				2-week follow-up	Subj. improvement No joint pain to palpation	A=B A=B	A:B 5 A:B 4		
Schachtel et al. 1996 ¹⁹	Tension-type HA	153 151 151	A:Ibuprofen 400 mg B:Acetaminophen 1000 mg C:Placebo	4 hours	Pain severity	A,B>C	NA	no	0.53
Svensson et al. 1997 ²³	Exercise-induced jaw pain	10	A: Ibuprofen topical gel + placebo tablet B: Ibuprofen tablet + placebo gel C: placebo tablet and gel	3 days	Higher pressure pain threshold	A>B=C	NA	no	0.67
		10			Pain tolerance thresholds	A=B=C	NA		
		10			Maximum voluntary occlusal force	A=B=C	NA		
Steiner and Lange 1998 ¹³	Tension-type HA	107 119 113	A:Ketoprofen 25mg B:Acetaminophen 1000mg C:Placebo	2 hours after dosing	Reduced headache pain intensity	A=B>C	A:B 10 A:C 3 B:C 4	no	0.80
				4 hours after dosing		A=B=C	A:B 7 A:C 13 B:C 16		
Mehlisch et al. 1998 ¹⁴	Tension-type HA	155 158 164 150	A:Ketoprofen 25mg B:Ketoprofen 12.5mg C:Acetaminophen 1000mg D:Placebo	4 hours	Pain relief Onset of pain relief Subj. improvement	A>B=C=D A>C=D, A=B A,B>D	NA NA A:D 7 B:D 8	no	0.80
Packman et al. 2000 ¹⁶	Tension-type HA	60 62 32	A:Ibuprofen(liquigel) 400mg B:Acetaminophen 1000mg C:Placebo	3 hours	Onset of pain relief Complete pain relief	A>B>C A>B>C	NA A:B 2 A:C 2 B:C 5	no	0.60
Diamond et al. 2000 ¹⁷	Tension-type HA	97 99 57 48	A:Ibuprofen+caffeine B:Ibuprofen 400mg C:Caffeine 200mg D:Placebo	6 hours	Reduced pain intensity Subj. improvement	A>B=C=D A>B A>C A>D	NA A:B 8 A:C 5 A:D 4	no	0.53

Di Rienzo Businco et al. 2004 ²⁴	TMJD	18 18	A: Oral diclofenac sodium B: Topical diclofenac	14 days	Pain intensity Joint tenderness Opening limitation	A=B A=B A=B	NA NA NA	no	0.47
Ta et al. 2004 ²⁵	TMJ pain due to TMJ DD with reduction	24 22 22	A: Celecoxib B: Naproxen C: Placebo	6 weeks	Reduced joint pain (at 3-6 weeks) Increased mandibular opening 50% pain reduction	B>C, B>A B>A=C B>A=A	NA NA B:A 7 B:C 2 A:C 3	yes	0.87
Minakuchi et al. (2004) ²²	TMJ disc displacement without reduction	23 25 21	A: Diclofenac with aldioxa (GI) and self care B: Splint, jaw mobilization and self care C: Counseling control	8 weeks	SYMPTOM IMPROVEMENT TREATMENT-RELATED DIFFICULTIES Treatment satisfaction	A>B=C B>A=C A=B=C	NA NA NA	no	0.67
Cerbo et al. 2005 ¹⁸	Tension-type HA	20 20	A: IndoProCaf (combining Indomethacin, Prochlorperizine and Caffeine) B: Nimesulide (NSAID)	2 hours 4 hours 8 hours	50 % Pain reduction Mean severity of pain 50 % Pain reduction Mean severity of pain Mean severity of pain	A>B A=B A>B A=B A=B	A:B 2 NA A:B 3 NA NA	yes	0.87

SSRI- Selective serotonin reuptake inhibitor

Table 3. Summary of RCT evidence of tricyclic and SSRI antidepressants for treatment of temporomandibular disorders including tension-type headache (chronological order)									
Trial	Diagnosis	Group size	Treatment	Duration of Follow-up	Measure	Outcome	NNT	Met minimum criteria?	Quality score
Sharav et al. 1987 ⁷⁴	TMJD pain	Group I: B vs C (8) Group II: A vs C (11) Group III: A vs B (9)	A: High dose Amitryptiline (>30mg) B: Low dose Amitryptiline (10-30 mg) C: placebo	Crossover with 4-wk treatments	Pain reduction	A=B>C	NA	no	0.67
Langemark et al. 1990 ⁷²	Tension-type HA	28 27 35	A: Clomipramine (75-150 mg)-tricyclic antidepressant. B: Mianserin (30-60 mg) – tetracyclic antidepressant. C: Placebo	3 weeks 6 weeks	50% reduction in overall pain VAS 50% reduction in overall pain VAS Reduced HA pain	A=B=C A=B=C A,B>C	A:B 7 A:C 5 B:C 25 A:B 33 A:C 13 B:C 20 NA	no	0.60

Nappi et al. 1990 ⁸¹	Tension-type HA or tension-type HA & migraine HA	19	A: Ritanserin (5-HT ₂ antagonist) B: Amitriptyline	4 months	HA pain total index Hamilton scale for depression Hamilton scale for anxiety	A=B	NA	no	0.60
		19				A=B	NA		
Pffaffenrath et al. 1994 ⁷³	Tension-type HA	67	A: Amitriptyline(60-90 mg) B: Amitriptyline (50-75 mg) C: Placebo	16 weeks	50% reduction in primary endpoint - (HA freq X duration plus HA intensity)	A=B=C	A:B 13 A:C 12 B:C 200		0.73
		66							
		64							
Manna et al. 1994 ⁷⁹	Tension-type HA	20	A: Mianserin (30-60 mg/d) –tetracyclic antidepr. B: Fluvoxamine (50-100 mg/d) - SSRI	8 weeks	Reduced HA activity (frequency and intensity)	B>A for non-depressed subjects. A>B for depressed subjects.	NA	no	0.87
		20					NA		
Gobel et al. 1994 ⁶⁹	Tension-type HA	24 29	A: Amitriptyline 75 mg B: Placebo	6 weeks	Reduced duration of daily headache	A>B	NA	no	0.73
Saper et al. 1994 ⁷⁸	Chronic daily HA	30 24	A: Fluoxetine (20-40 mg) - SSRI B: Placebo	3 months	Improved HA status 50% reduced HA Reduced HA freq. Mood	A>B A=B A>B A>B	NA A:B 4 NA NA	no	0.67
Boline et al. 1995 ⁷⁶	Tension-type HA	70	A: Spinal manipulation B: Amitriptyline (30 mg/day)	Post-6-wk treatment	Reduced HA intens. Reduced HA freq. Reduced med. use	A=B A=B A=B	NA NA NA	no	0.73
		56		4 weeks after treatment	Reduced HA intens. Reduced HA freq. Reduced med. usage	A>B A>B A>B	A:B 3 A:B 2 A:B 3		
Bendtsen et al. 1996 ⁶⁸	Tension-type HA	34 34 34	A: Amitriptyline 75 mg/d B: Citalopram (SSIR) 20 mg/d C: Placebo	3-way crossover with 8-wk treatments	Reduction in: Headache duration Headache frequency Medication usage Headache intensity	A>C, C=B A>C, C=B A>C, C=B A=B=C	NA NA NA NA	no	0.67
Mitsikostas et al. 1997 ⁸⁰	Tension-type HA	22 27	A: Buspirone (30 mg/d) B: Amitriptyline (50 mg/d)	12 weeks	50% less HA days Reduced med. usage Subj. improvement	A=B B>A B>A	B:A 14 NA NA	no	0.53
Holroyd et al. 2001 ⁷¹	Tension-type HA	44 34 40 26	A: Amitriptyline or Nortriptyline B: Stress mgmt+placebo C: Stress mgmt+TCA D: Placebo	6 months	Red. HA Index score 50% reduction in headache score	C=A=B>D C>A C>B C>D A>D B>D	NA C:A 4 C:B 3 C:D 3 A:D 11 B:D 17	no	0.73
Rizzatti-Barbosa et al. 2003a ⁷⁵	TMJD pain	6 6	A: Amitriptyline (25 mg/d) B: Placebo	Post-2-wk treatment 1 week follow-up	Pain reduction Discomfort reduction Pain reduction Discomfort reduction	A>B A>B A>B A>B	NA NA NA NA	no	0.27

Bendtsen et al. 2004 ⁷⁷	Tension-type HA	22 22	A: Mirtazapine (15to 30 mg/d)(tetracyclic) B: Placebo	Crossover with 8-wk treatments	Reduced HA curve (duration*intensity)	A>B	NA	no	0.87
Forssell et al. 2004 ⁹⁴	Atypical facial pain	18 18	A: Venlafaxine B: Placebo	Crossover with 4-wk treatments	Pain intensity	A = B	NA	no	0.80

SSRI- Selective serotonin reuptake inhibitor

Table 4. Summary of RCT evidence of benzodiazepines and muscle relaxants for treatment of temporomandibular disorders and tension-type headaches (chronological order)									
Trial	Diagnosis	Group size	Treatment	Duration of Follow-up	Measure	Outcome	NNT	Met minimum criteria?	Quality score
Talaat et al. 1986 ⁹⁵	MFP	40 40 40	A: Methocarbamol 400mg plus acetylsalicylic acid 325mg. B. Shortwave diathermy C: Ultrasonic therapy	Up to 12 months	* Reduced pain intensity * Reduced muscle pain to palpation * Reduced TMJ click/noise	B,C>A B,C>A B,C>A	NA NA B:A 2 C:A 2	no	0.33
Harkins et al. 1991 ⁸²	TMJD	10 10	A: Clonazepam (.25-1 mg, mean .375 mg) B: Placebo	30 days	Palpation pain (muscle or TMJ) Subj. head pain Subj. TMJ pain Subj. neck pain	A=B A=B A=B A<B	NA NA NA NA	no	0.60
Fogelholm et al. 1992 ⁸⁷	Tension-type HA	37 37	A: Tizanidine (6-18 mg/d) B: Placebo	6 weeks	Reduced daily pain Subj. improvement HA-free days Red. analgesic use	A>B A>B A>B A>B	NA A:B 3 NA NA	no	0.87
Singer and Dionne 1997 ⁸⁵	Orofacial pain	39 total	A: Ibuprofen (2400 mg/d) B: Diazepam (avg 17 mg/d) C: Ibuprofen+Diazepam D: Placebo	4 weeks	Pain relief Pain intensity Depression Anxiety	C>A=B=D A=B=C=D A=B=C=D A=B=C=D	NA NA NA NA	no	0.67
DeNucci et al. 1998 ⁸³	TMJD pain	20 20	A: Triazolam (.25-.5 mg)(Benzo.) B: Placebo	Crossover w/ 4-day treatments	Pain intensity Improved sleep quality	A=B A>B	NA NA	no	0.80
Murros et al. 2000 ⁸⁸	Tension-type HA	56 49 55	A: Tizanidine MR 6 mg B: Tizanidine 12 mg C: Placebo	6 weeks	Daily pain ratings (VAS) HA-free days	A=B=C A=B=C	NA NA	no	0.67
Herman et al. 2002 ⁸⁴	MFP/jaw pain in morning	13 13 15	A: Clonazepam (.5 mg) B: Cyclobenzaprine (10 mg) C: Placebo	3 weeks	Morning jaw pain Sleep quality	B>A,C A= C A=B=C	NA NA NA	no	0.47
Rizzatti-Barbosa et al. 2003b ⁸⁶	TMJD	7 7	A: benzodiazepine(B)--orphenadrine citrate(O)--occlusal splint(S) B: O--S--B	21 days	Helkimo index	A=B=C	NA	no	0.53

		7	C: S--B--O						
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Table 5. Summary of RCT evidence of other pharmacological agents for temporomandibular disorders (chronological order)									
Trial	Diagnosis	Group size	Treatment	Duration of Follow-up	Measure	Outcome	NNT	Met minimum criteria?	Quality score
OPIOIDS AND BARBITURATES									
Friedman and DiSerio 1987 ³⁹	Tension-type HA	66 65 67	A: Butalbital with acetaminophen B: Acetaminophen w/ codeine C: Placebo	4 hours	Red. pain severity Red. tension Red. muscle stiffness Complete pain relief	A,B>C A>B=C A,B>C A=B=C	NA NA NA A:B 6 B:C 8 A:C 3	no	0.60
Friedman et al. 1988 ³⁸	Tension-type HA	39 41 38 36	A: Butalbital with codeine 30 mg B: Butalbital alone C: Codeine alone 30 mg D: Placebo	4 hours	Percent pain relief Red. tension Red. muscle stiffness Subjects with ≥ 50% pain relief	A> B, C, and D A> B, C, and D A> B, C, and D A> B, C, and D	NA NA NA A:B 10 A:C 5 A:D 4	no	0.47
TRIPITANS									
Brennum et al. 1992 ⁴²	Tension-type HA	36 36 36	Subcutaneous injections in 3-way crossover trial: A: Sumatriptan 4 mg B: Sumatriptan 2 mg C: Saline placebo	1 hr post-injection 2 hrs post-injection	Subj. improvement Subj. improvement	A=B>C A=B>C	A:C 5 B:C 4 A:C 4 B:C 3	no	0.67
Dao et al. 1995 ⁴¹	Temporalis MFP	7	Crossover treatments over 4 episodic pain attacks: A: Oral Sumatriptan 100 mg tabs B: Placebo	4 hours post-dosing	Pain intensity Pain relief	A=B A=B	NA NA	no	0.53
GLUCOSAMINE									
Nguyen et al. 2001 ⁸⁹	TMJ pain due to capsulitis or intra-articular disorder	14 20	A: Glucosamine hydrochloride (1500mg) Chondroitin sulfate (1200 mg) B: Placebo	12 weeks	Subj. improvement Daily pain rating Mood/functioning Muscle/joint palpation pain	A=B A=B A=B A=B	NA NA NA NA	no	0.67
Thie et al. 2001 ⁹⁰	Temporalis MFP	21 18	A: Glucosamine sulfate 500 mg TID B: Ibuprofen 400mg TID	90 days	Pain-free opening Red. analgesic use 20% pain reduction during function	A=B A>B A=B	NA NA A:B10	yes	0.80
OTHER									
Ashina et al. 1999 ⁵⁷	Chronic T-T HA	16	Crossover trial using IV infusions: A: L-NMMA (6 mg/kg)* B: Placebo	2 hrs post-dosing	Reduced HA pain intensity RE: Visual Analog Scale Verbal Rating Scale	A>B A>B	NA NA	yes	0.87

Ribeiro 2000 ⁵⁸	Chronic T-T HA	34	A: 5-hydroxytryptophan (100 mg tid) B: Placebo	Post-8-week trt.	Red. HA days Red. HA intensity Red. analgesic use Subj. improvement	A=B A=B A=B (p=0.07) A=B (p=0.09)	NA NA NA NA	no	0.80
		31		2-wk FUP	Red. HA days at FUP	A>B	NA		
Lobo et al. 2004 ⁴⁹	Masseter and TMJ pain	26 26	A: Theraflex-TMJ cream B: Placebo cream	3 weeks	Pain severity	A>B	NA	no	0.60

Systematic Review of Behavioral and Psychological Therapy for Temporomandibular Disorders: 24 RCTs reviewed

Table 1. Criteria used for critical appraisal of RCTs for TMJD. These criteria are defined in the paper entitled: “Critical Appraisal of Methods in Randomized Controlled Trials for Temporomandibular Disorders” in this issue. The application of them has been determined to have adequate inter-rater reliability (intraclass correlation is 0.88).

Level	Criteria	% of behavioral and psychological therapy studies meeting criteria
Level I: Essential design criteria for Internal Validity to minimize bias	1. Measurement bias: Blinding of clinician and subjects to outcome measures	16%
	2. Selection bias: Defined and concealed randomization process with rater and subject blind of group assignment	0%
	3. Attrition bias: Drop-outs and cross-overs less than 15% and considered in analysis	56%
	4. Comparison group bias: Interventions equal between groups and include baseline comparison	96%
Level II: Additional criteria for Internal Validity	5. Relevant and reliable multi-dimensional measures used	84%
	6. Ceiling and floor effect considered. (e.g. Pain > 5/10)	32%
	7. Pre and post measures included	100%
	8. Temporal characteristics of symptoms considered	80%
	9. Follow-up schedule defined and appropriate (> 2mos)	92%
	10. Wash out period for concomitant treatments	12%
	11. Adherence for treatments monitored	12%
Validity of Statistical Conclusions	12. Power and sample size analysis	4%
	13. Complete analysis of data	60%
External Validity criteria	14. Treatment well defined and standardized	92%
	15. Clear recruitment with inclusion/ exclusion criteria	76%
Mean value		54%

Table 2. Summary of RCT evidence of Biofeedback (BFB) for Treatment of TMJD and Tension Headache

Trial	Diagnosis	Group Size	Treatment	Duration of Follow-up	Measure	Outcome	NT	Minimum Criteria met	Quality Score
Placebo-like controlled studies									
Carrolles et al., 1981 ²	Tension HA	5 4	A: Frontalis BFB B: "High expectation of cure" control	4 weeks	• Improvement in HA frequency	A > B	NA	no	0.40
Rokicki et al., 1997 ²¹	Tension HA	30 14	A: BFB + Relaxation B: "Record only" control group	3 weeks	• 50% reduction in headache activity • Headache-free days • Analgesic consumption	A > B A > B (p = 0.055)	3 NA NA	no	0.47
Bussone et al., 1998 ²²	Juvenile Tension HA	20 10	A: BFB-assisted Relaxation B: "Remain calm and relaxed" control group	1 month 6 months 12 months	• Total Pain Index	A = B A > B A > B	NA	no	0.53
Other treatments as the comparison groups									
Bruhn et al., 1979 ²⁶	Severe Tension type HA	13 10	A: BFB B: Physical therapy plus meds	8 weeks	• Reduction in headache severity* • Reduction in Drug Intake:	A> B A> B	2	no	0.47
Gale and Funch, 1984 ³¹	Chronic TMJ pain	17 14 11	A: Relaxation B: BFB C: BFB + Relaxation	Post-treatment 2-year follow-up	• Pain severity	A = B = C	NA	no	0.33
Erlandsson et al., 1991 ²⁴	Tinnitus w TMJD /HA	18 13	A: BFB/ relaxation/ counseling B: TMJD treatment (stab. splint, occlusal adj, exercise)	Post-treatment	• TMJD signs • Mood	B > A A > B	NA	no	0.40
Flor and Birbaumer, 1993 ¹²	Chronic back pain (BP) and TMJD pain	19 BP + 7 TMJD in each group	A: BFB/ relax** B: Cog.-Behav. Treat. C: Medical Interventions (medications, PT, massage.)	8 weeks 6 months 2 years	• Reduction in pain severity • 2 SDs reduction in pain severity • 2 SDs reduction in pain severity	A > C A > B, C A > C	NA A:B 4 A:C 3 A:C 8	no	0.47
Turk et al., 1993 ²⁵	TMJD clinic patients	28 30 20	A: stabilization splint fulltime, B: stress management/ biofeedback C: waiting list control	6 weeks 6 months	• Pain • Muscle tenderness • Depression • Pain • Muscle tenderness • Depression	A>B>C A>B>C A>B>C A=B>C A=B>C B>A>C	NA	no	0.57
Arena et al., 1995 ³	Tension HA	8 10 8	A: Frontal BFB B: Trapezius BFB	3 months post-treatment	• 50% improvement in HA index • Secondary measures: (headache-free days,	B > A = C A = B = C	B:A 2 B:C 2	no	0.47

			C: Progressive Muscle Relax.(baseline C>A=B in HA activity)		peak headache activity, medication use)				
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* Headache Severity: headache intensity *times* headache duration

** BFB/relax: Electromyographic (EMG)-Biofeedback (BFB) plus home-based tension-perception and tension-reduction exercises.

Table 3. Summary of RCT Evidence of Relaxation Training for Treatment of TMJD and Tension Headache.

Trial	Diagnosis	Group Size	Treatment	Duration of Follow-up	Measure	Outcome	NNT	Minimum Criteria met	Quality Score
Placebo-like controlled studies									
Blanchard et al., 1990 ⁷	Tension HA	19 16 16 15	A: Prog. Muscle Relaxation (PMR) alone B: PMR + Cognitive therapy C: Placebo pseudomeditation D: HA self monitoring	Post-treatment (10-11 weekly sessions)	<ul style="list-style-type: none"> Headache Index 50% reduction in Headache Index Medication Index reduction: 	B > A = C = D A > C (p = 0.06) A > D (p = 0.07) A = B = C = D (p = 0.08) A = B = C = D (p = 0.08)	B:A 3 B:C 5 B:D 2	no	0.40
Larsson et al., 1990 ⁶	Tension HA	31 17	A: Relaxation therapy B: HA Self-monitoring	5-week-treatment	<ul style="list-style-type: none"> Headache Intensity Index Headache frequency Headache-free days Headache duration 	A = B (P = 0.08) A > B (P < 0.05) A > B (P < 0.05) A = B	NA	no	0.67
Loew et al., 2000 ⁴	Tension HA	12 12	A: Functional Relaxation B: Isotonic exercise of hand placebo	2 months	<ul style="list-style-type: none"> Reduction in total pain days Reduction of high and medium intensity pain 	A > B A > B	14	no	0.53
Wahlund et al., 2003 ¹⁹	Adolescents w/ TMJD pain	42 41 39	A: Splint + Brief Information B: Relaxation Therapy + Brief Information C: Brief Information placebo	6 months	<ul style="list-style-type: none"> 50% improvement in overall pain intensity: Improvement in mean value of pain index 	A > B = C A = B > C	A:C 3 B:C 11	yes	0.80
Larsson et al., 2005 ⁵	Tension type headache	47 44 59 57 81	A: Therapist-assisted relaxation B: Nurse-administered relaxation C: Self-help relaxation D: Attention-placebo control E: Self-monitoring	10 months	<ul style="list-style-type: none"> Headache pain intensity sum Headache-free days Peak headache intensity Headache mean duration 50% reduction in Headache pain intensity sum 	A > C,D,E; B>D,E A > C,D,E; B,C>E A > C,D,E A=B=C=D=E A > B,C,D,E	A:E 1.8 B:E 2.9 C:E 3.8 D:E 11.5	no	0.67
Other treatments as the comparison groups									

Arena et al., 1995 ³	Tension type HA	8 10 8	A: Frontal BFB B: Trapezius BFB C: Progressive Muscle Relaxation	3 months after treatment	<ul style="list-style-type: none"> • >50% of improvement in headache index score. • Secondary measures of headache activity: (headache-free days, peak headache activity, medication use). 	B > A = C A = B = C	B:A 2 B:C 2	no	0.47
Gale and Funch, 1984 ³¹	Chronic TMJ pain	17 14 11	A: Relaxation B: BFB C: BFB with Relaxation	Post-treatment 2-year follow-up	<ul style="list-style-type: none"> • Pain severity 	A = B = C	NA	no	0.33
VanDyck et al., 1991 ²⁸	Tension type HA	28 27	A: Autogenic relaxation training B: Guided imagery with Hypnosis	4 week treatment	<ul style="list-style-type: none"> • Change in Headache Index 	A = B	NA	no	0.53
Wylie et al., 1997 ³⁰	Tension type HA (only)	22 18	A: Acupuncture B: Massage + Relaxation	Post-treatment (6 sessions)	<ul style="list-style-type: none"> • Improvement in Pain Total Index • Improvement in HA Index 	A = B A = B	NA NA	no	0.40
Fichtel and Larsson, 2004 ²⁹	Tension type headache	30 33 41	A: Applied relaxation B: Relaxation with visualization C: No treatment control group	6 months	<ul style="list-style-type: none"> • Pain intensity • Headache-free days • Headache frequency • >50% reduction in headache intensity 	A = B = C A = B = C A = B = C A+B (n = 63) > C (n = 41)	(A+B):C 8	no	0.60

Table 4. Summary of RCT evidence of Cognitive-Behavioral Treatment (CBT) for TMJD and Tension Headache

Trial	Diagnosis	Group Size	Treatment	Duration of Follow-up	Measure	Outcome	NNT	Minimum Criteria met	Quality Score
Placebo-like controlled studies									
Komiyama et al., 1999 ⁸	Myofascial pain + limited opening	19 18 14	A: CBT with progressive muscle relaxation+ coping B: CBT + Posture C: general information control	6 months 9 months 12 months	<ul style="list-style-type: none"> • Pain intensity at max. opening • Pain-free max. opening • Disturbance in daily activity 	<p>A > C, B > C A > C, B > C A > C, B > C</p> <p>A > C, B > C</p> <p>A = B = C</p>	NA	no	0.60
Turner et al., 2005 ¹¹	TMJD	61 65	A: CBT for pain management B: Education/attention control	10 weeks	<ul style="list-style-type: none"> • Pain • Interference • Jaw limitation 	<p>A = B A > B A > B</p>	<p>A:B 50 A:B 5 A:B 5</p>	no	0.6
Devineni and Blanchard, 2005 ¹³	Chronic headache	39 47	A: Internet-based CBT B: Self monitoring control	Post-6-week intervention	<ul style="list-style-type: none"> • 50% reduction in Headache Disability Inventory (frequency, severity, duration) • Reduction in medication use 	<p>A > B</p> <p>A > B (P = 0.08)</p>	3	no	0.67
Other treatment comparison studies									
Holroyd et al., 1991 ¹⁴	Tension HA	19 17	A: CBT (Relax + coping; visits at weeks 1, 4 and 8) B: Amitriptyline (visits at weeks 1, 3 and 5)	12 weeks	<ul style="list-style-type: none"> ➢ 33% Reduction in headache activity ➢ 66% Reduction in headache activity • Headache Index • Improvements in headache peak • Improvements in headache-free days • Reduction in somatic complaints • Decrease in locus of control beliefs 	<p>A > B A > B A > B A = B A = B A > B A > B</p>	<p>A:B 3 A:B 6</p>	no	0.60
Flor and Birbaumer, 1993 ¹²	Chronic back pain (BP) and TMJD pain	19 BP & 7 TMJD in each group	A: BFB/relax* B: CBT C: Medical Interventions (medications, PT, massage)	8 weeks 6 months 2 years	<ul style="list-style-type: none"> • Reduction in pain severity • 2 SDs reduction in pain severity <p>• 2 SDs reduction in pain severity</p>	<p>A > C A > B, C</p> <p>A > C B = C</p>	<p>NA A:B 4 A:C 3 A:C 8 B:C 100</p>	no	0.47

Turk et al., 1996 ⁹	TMJD	20 21	A: CBT (with Splint + Stress Management) B: Supportive counseling (with Splint + Stress Management)	6 months	<ul style="list-style-type: none"> • Muscle palpation pain score • Reduction in TMJ palpation pain score • Unassisted opening without pain • Unassisted opening regardless of pain • Reduction in drug usage (3 or more days per week) 	A > B A = B A = B A = B A > B	NA NA NA NA A:B 4	no	0.60
Dworkin et al., 2002	TMJD with poor psychological adaptation	59 58	A: Comprehensive care with CBT B: Usual TMJD treatment	4 months 12 months	<ul style="list-style-type: none"> • Pain reduction • Ability to control pain • Pain reduction • Ability to control pain 	A > B (4 months) A > B (4 months) A = B (12 months) A = B (12 months)	NA	yes	0.80
Foster et al., 2004 ¹⁵	Chronic headache	11 6 12	A: Trager and medication B: Attention and medication C: Medication only control	6 weeks	<ul style="list-style-type: none"> • Headache frequency, duration, intensity • Change in headache quality of life • Change in medication usage 	A = B = C A > B > C A = B > C	NA	no	0.6

* BFB/relax: Electromyographic (EMG)-Biofeedback (BFB) plus home-based tension-perception and tension-reduction exercises.

Systematic Review of TMJ Surgery and Arthrocentesis for Temporomandibular Disorders: 7 RCTs reviewed

Table 1. Criteria used for critical appraisal of RCTs for TMJD. These criteria are defined in the paper entitled: "Critical Appraisal of Methods in Randomized Controlled Trials for Temporomandibular Disorders" in this issue. The application of them has been determined to have adequate inter-rater reliability (intraclass correlation is 0.88).

Level	Criteria	type of error resulting*	% of surgery studies meeting criteria
Level I: Essential design criteria to minimize bias in all RCTs	1. Measurement bias: Blinding of clinician and subjects to outcome measures	I or II	29%
	2. Selection bias: Defined and concealed randomization process with rater and subject blind of group assignment	I or II	14%
	3. Attrition bias: Drop-outs and cross-overs less than 15% and considered in analysis	I or II	57%
	4. Comparison group bias: Interventions equal between groups and include baseline comparison	I or II	71%
Level II: Additional criteria to minimize bias in TMJD RCTs	5. Relevant and reliable multi-dimensional measures used	I or II	100%
	6. Ceiling and floor effect considered. (e.g. Pain > 5/10)	II	71%
	7. Pre and post measures included	I	86%
	8. Temporal characteristics of symptoms considered	I or II	43%
	9. Follow-up schedule defined and appropriate (> 2mos)	II	100%
	10. Wash out period for concomitant treatments	I or II	43%
	11. Adherence for treatments monitored	II	14%
	12. Power and sample size analysis	II	14%
	13. Complete analysis of data	I or II	29%
Level III: External Validity	14. Treatment well defined and standardized	Low generalizability	71%
	15. Clear recruitment with inclusion/ exclusion criteria	Low generalizability	86%
Mean value			55%

- The possibility of a Type I error (false positive) result or Type II (false negative result) is present in those studies that do not meet the criteria.

Table 2. Summary of RCT evidence of TMJ Surgical Treatment for TMJD.

Trial	Diagnosis	n(size)	Treatment	Duration	Measures	Outcome	NNT	Met Level I RCT criteria	Quality score (0-1)
Fridrich et al. 1996 ⁸	DD (all stages)	11 9	A: Arthroscopy B: Arthrocentesis	6-24 mos	Pain: ROM: % Success?	A=B A=B A: 82% vs B:75%	14	No	0.53
Holmlund et al. 2001 ¹³	Chronic closed lock	10 10	A: Arthroscopy with lysis and lavage B: Discectomy	12 mos	Pain: improved VAS*: ROM: MFIQ**	A>B (trend) A(90%) >B(50%) A=B A=B	10	No	0.60
McNamara et al. 1996 ¹¹	DD from motor vehicle accident	10 10	A: Arthroscopy w/mid-laser B: mid-laser/splint	3 yrs	Pain: Disc position:	A=B A>B	NA	No	0.53
Miyamoto et al. 1999 ¹²	Internal derangement (Stage III or >)	35 66	A: Arthroscopy with lysis and lavage	12 mos 1 mo 12 mo	Pain: ROM ROM	A=B B>A A=B	NA	No	0.33

			B:Diskectomy anterolateral capsular release						
Petersson et al. 1994 ⁹	ADD w/o reduction	16 17	A:Arthrography B:Arthrography with lavage (arthrocentesis)	8 wks	Pain: ROM:	A=B A=B	NA	No	0.33
Schiffman, et al. 2005 (in review) ¹⁴	Chronic closed lock	23 21 23 29	A: Arthroscopic Surgery B: Arthrotomy Repair C: Non-surgical Rehab D. Medical Management	3mos 6mos 12mos > 3mos	Pain Dysfunction: Pain Dysfunction: Pain Dysfunction: Crossovers:	A=B=C=D A=B=C=D A=B=C=D, B>D A=B=C=D A=B=C=D A=B=C=D A=B=C>D	NA	Yes	1.0
Stegenga et al. 1993 ¹⁰	DD or Osteoarthritis	9 12	A:Arthroscopy and physical therapy B:home exercise and physical therapy	6 mos	Subjective Pain ROM Clinical assessment: :	A>B A>B A=B	5	No	0.53

*Number of subjects scoring < 2 on VAS scale at 1 yr. Follow up

* Mandibular Function Impairment Questionnaire

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Physical Therapy and Exercises

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Appendix IVc. A Response to:

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

**2019 Committee on Temporomandibular Disorders (TMD):
From Research Discoveries to Clinical Treatment**

**Gary M. Heir, DMD
Rutgers School of Dental Medicine
Newark, New Jersey
USA**

- **Review and estimate the public health significance of TMDs, including prevalence, incidence, burden and costs; and review challenges to data collection and reliability.**

According to the United States National Institutes of Health (NIH)/National Institute of Dental and Craniofacial Research, the prevalence of temporomandibular joint and muscle disorders ranges from 5% to 12%.ⁱ The NIH observed that the prevalence for temporomandibular disorders was three times that in women compared to men and were more likely to seek treatment. It was also observed that a younger population of patients are seeking treatment which is unusual for chronic pain conditions.

In the United States, temporomandibular disorders represent a significant public health problem affecting up to 15% of the adult population and 7% of adolescents.ⁱⁱ According to some data, temporomandibular disorders represent a significant disabling musculoskeletal disorder, second only to chronic low back pain.ⁱⁱⁱ Despite this, only 50 to 65% of patients seek treatment.

Data indicates the occurrence of temporomandibular disorders is three times more prevalent in females than males and typically affects patients in the age groups of 20 to 30 years of age.^{iv, v}

Approximately 15-18% reportedly go on to chronic orofacial pain and temporomandibular disorders. In a study performed in 2002, “18% of subjects received TMJD treatment over 20 years with a success rate of 85%.”^{vi}

According to the NIH, the cost for management of temporomandibular disorders in the United States per annum, not including imaging has reached \$4 billion.

- **Evaluate the evidence base for assessment, diagnosis, treatment, and management of acute and chronic TMD. Recognizing that TMDs are diverse and multifactorial conditions influenced by genetics, sex and gender, environmental, physiological, and psychological factors.**

Assessment and diagnosis of temporomandibular disorders has been and remains problematic. The term temporomandibular disorder, or TMD is often confused with the anatomical term TMJ, even among professionals. The lack of inclusion of standardized orofacial pain topics in the undergraduate curriculum of dental schools results in the graduation of new dentists, some with no knowledge of facial pain disorders, and others with a misconception of the problems. Many dentists inappropriately assume that all orofacial pain is of odontogenic origin or “clicking TMJs” and look for mechanistic remedies, occasionally with devastating results for the patient.

A common error in taxonomy is the bidirectional interchange of the terms TMD and TMJ as if they were synonymous. Even when reviewing articles submitted for publication, many authors will perform studies based

on subjects citing cohorts of “TMD” patients based only on the presence of orofacial pain and not a specific diagnosis. The orofacial pain community has taken the lead in rectifying this situation through efforts such as refining the research diagnostic criteria for temporomandibular disorders and the new diagnostic criteria for TMD where classification of various forms of temporomandibular disorders is possible both for research and clinical purposes. However, until a standardized classification is agreed upon and taught at the undergraduate level, confusion will continue. Fortunately, the Commission on Dental Accreditation of the American Dental Association now recognizes orofacial pain as an accredited area of advanced dental education in the United States with many states now recognizing orofacial pain as a specialty.

In response to the question in this section regarding an evidence basis for assessment, diagnosis, treatment and management of acute and chronic TMD, it has already been noted that the term TMD is unacceptable as a diagnostic term. We require a specific diagnosis in order to formulate an effective treatment. This now brings to light the need for specialty in order to address the details of this multifactorial problem.

The need for a specialty in the multifactorial problem of orofacial pain in the United States is evident. General dentists and other dental specialists require information regarding recognition of pain problems that are unresponsive to routine dental care. For example, many patients are inadvertently harmed when suffering from neuropathic pain. Healthcare providers often perform well-intentioned but needless procedures because they do not have the required special training or expertise to address these often highly complex problems. All too often our patients are seen for iatrogenic disorders that could have been avoided had they been directed to a specialist in orofacial pain. The most difficult problem for these patients is the initial complaint compounded by the iatrogenic disorder secondary to misguided treatment. Therefore, in response to the first part of this question, evidence-based diagnosis, treatment and management of acute and chronic TMD, the response is as follows:

Acute dental pain is not within the purview of the orofacial pain dentist. This typically represents dental emergencies, odontogenic pain, infections or trauma. The source of acute pain is easily identified and adequately treated by the general dentist or dental specialist in the field of the problem, e.g. endodontics, periodontics and oral surgery.

Chronic pain is within the expertise of the orofacial pain dentist. Orofacial pain is pain perceived in the face and/or oral cavity. It is caused by diseases or disorders of regional structures, by dysfunction of the nervous system, or through referral from distant sources.^{vii} Orofacial pain often mimics non-dental pain disorders in the orofacial region. Orofacial Pain dentistry is concerned with the prevention, evaluation, diagnosis and management of chronic orofacial pain disorders.

The orofacial pain dentist must have knowledge and multifactorial skills beyond those taught in the standard undergraduate curriculum leading to the DDS or DMD degree. The orofacial pain dentist must demonstrate knowledge, diagnostic skills, and treatment expertise in areas including musculoskeletal, neurovascular, and neuropathic pain disorders; sleep disorders related to orofacial pain; orofacial movement disorders; intraoral, intracranial, extracranial, and systemic disorders that cause orofacial pain and/or dysfunction.

The orofacial pain dentist must understand pain mechanisms and assume the responsibility to diagnose and treat patients in pain that is often chronic, multifactorial, and complex. It is the responsibility of the orofacial pain dentist to accurately diagnose the cause(s) of the pain and decide if treatment should be dentally, medically, or psychologically managed, and be capable of optimizing management when multispecialty management is required.

Management may consist of a number of interdisciplinary modalities including, e.g., physical medicine, behavioral medicine, and pharmacotherapy or, in rare instances, surgical interventions. Among the essential armamentarium is the knowledge and proper use of adjunctive diagnostic testing and pharmacologic agents.

Regarding the second part of this question, is the influenced of genetics, sex and gender, environmental, physiological, and psychological factors.

Numerous studies have been published not only on gender differences in response to pain, but also in gender differences in the response to analgesic medications. They are too numerous to even attempt to list in this brief response.^{viii, ix} The role of genetics, genetic predisposition, environmental factors and epigenetics has raised new awareness in the field of orofacial pain. Significant research in identifying phenotypical expression of pain disorders secondary to environmental factors including physical and emotional stress are gaining relevancy when evaluating our patients.^x However, this is not taught at an undergraduate level, and are topics found in Masters level programs at postgraduate levels of orofacial pain training. The need to support this type of research and the programs at the universities with accredited programs is evident.

One of the early theories of temporomandibular disorders was that it was a psychological condition brought on by stress. This theory still stigmatizes many patients who have organic problems related to the stomatognathic system. While pain in any part of the body can result in an increase in the activity of the stress response and hypothalamus-pituitary-interrenal axis (HPI axis) and immune response, this is an often overlooked component when treating patients with chronic pain.^{xi} Combined with genetic predisposition, sensitization of an individual secondary to a chronic pain often results in a pro-nociceptive individual who becomes more and more difficult to treat secondary to a growing inefficiency of the pain inhibitory system. The failure to recognize a systemic condition, that pain is the disease not the symptom, results and focused and ineffective treatments limited to frustration for both the clinician and the patient. If not recognized the disability and frustration that evolves becomes not only a psychosocial problem but a financial issue on the community as individuals may become more and more disabled leaving the workforce and depending on social services.

It is rare that we see true system somatoform disorders an orofacial pain practice, but not uncommon to see a patient whose chronic pain is embellished by the emotional overlay resulting from untreated pain and failed promises of success.^{xii, xiii, xiv}

- **Identify barriers to appropriate patient-centered TMD care, in the presence and absence of an evidence base, and strategies to reduce these barriers along the continuum of TMD pain.**

The most obvious barrier for patients in seeking treatment is access to care. This is the result of several factors:

1. Diversity and disparity in care paths and protocols in treatment.
Commentary: At this time the only standardized curriculum in orofacial pain and temporomandibular disorders is that which has been adopted by the postgraduate programs in orofacial pain which was published by the American Academy of Orofacial Pain (AAOP) several years ago. There is no standardized protocol for treatment nor curriculum recommended at the undergraduate or postgraduate level which has been universally adopted By the American Dental Association or dental schools throughout the United States. Therefore, depending upon the school from which an individual's dentist has graduated, they may or may not receive the same level of understanding of their problem or treatment. Many dentists perceive pain in the faces of odontogenic origin only, and therefore their diagnostic evaluation includes only the dentition and supporting structures. The lack of understanding of pain mechanisms and areas from which pain may refer to the oral cavity and perioral structures is a significant limitation in diagnosis and treatment.
2. Lack of a specialty
Commentary: In order to find specialized treatment for complex orofacial pain problems patients and professionals must first have an awareness that such a specialty exists. The fact that there is no recognized specialty in this field in the United States, despite the fact that a few states within the United States have recognized orofacial pain as a specialty, is of limited value when the American Dental

Association fails to recognize the need for this specialty. Countless numbers of patients, some with dire diagnoses such as intracranial neoplasms manifesting as dental or facial pain, have received dental extractions and endodontic procedures which were unnecessary and delayed an appropriate diagnosis which might have been lifesaving in many cases. There are numerous cases of cerebellar pontine angle tumors causing trigeminal pain in the distribution of the oral cavity and face which have been misdiagnosed as dental pain. Countless numbers of teeth have been extracted or treated endodontically for various forms of headache disorders. Patients with complaints based on symptom somatoform disorders have been subjected to unnecessary multiple procedures resulting in disastrous outcomes. The list goes on. Had the patients in these cases been referred by their healthcare providers to an orofacial pain specialist, the outcomes of these cases would surely be different. However, all too often the patient and the provider does not know that such a specialized field exists. Orofacial pain as a specialty spans the gap where general dental training ends and medicine begins. The failure to provide such a specialty does not serve the public and is a significant barrier to the general health of orofacial pain.

3. At this time, insurance carriers can choose to deny coverage to individuals requiring treatment for facial pain disorders arbitrarily based on the absence of a recognized specialty. This is another barrier to treatment that can readily be solved.

- **Review the state of science for TMD and provide an overview of basic, translational, and clinical research for TMD.**

The area of pain is the most underfunded of all health-related issues. Despite that, research in pain continues. There are numerous peer-reviewed journals dedicated specifically to pain and many to research and orofacial pain. The Journal of Orofacial Pain and Headache of the AAOP along with its sister academies in Europe, Asia, South America and Australia-New Zealand has a high impact and is dedicated to research in orofacial pain. The international Association for the Study of Pain (IASP) sponsors the premier journal of pain with numerous articles relevant to facial pain published annually. Worldwide, universities perform research at centers in the US, Sweden, Japan, South America, the Netherlands and centers worldwide dedicated to the relief of pain and suffering of the orofacial pain patient. Masters and PhD programs in the US and around the world published volumes of literature annually. This research is not always in the laboratory, but clinical research as well. The specific work done in Germany on neuropathic pain is remarkable, molecular biology from Japan and research on muscle disorders from the Netherlands and pain mechanisms from Israel make the community of pain researchers and clinicians a very unique family sharing information from the laboratory to the clinic on a regular basis. There are numerous students who vie for positions to study with these researchers or to learn at the chair side from world-class clinicians. The science and evidence available. The researchers are willing, and the students are able. Scientific meetings such as those held annually by AAOP and every two years by IASP bring the world's pain community together where the translation from research to clinic becomes second nature.

- **Identify opportunities and challenges for development, dissemination, and clinical implementation of safe and effective clinical treatments for TMD.**

This is the easiest of all the questions to answer; standardized undergraduate and postgraduate curricula are necessary. Standardization of care paths and the recognition of a specialty is needed.

- **Identify scientific and clinical disciplines needed to advance TMD science and the development, dissemination, and implementation of safe and effective treatments; as well as strategies to enhance education and training in these disciplines.**

The Commission on Dental Accreditation of the American Dental Association has published standards in education as a requirement for accreditation of an orofacial pain postgraduate program. The curriculum must include the following topics:

Biomedical Sciences

Formal instruction must be provided in each of the following:

- a. Gross and functional anatomy and physiology including the musculoskeletal and articular system of the orofacial, head, and cervical structures;
- b. Growth, development, and aging of the masticatory system;
- c. Head and neck pathology and pathophysiology with an emphasis on pain;
- d. Applied rheumatology with emphasis on the temporomandibular joint (TMJ) and related structures;
- e. Sleep physiology and dysfunction;
- f. Oromotor disorders including dystonias, dyskinesias, and bruxism;
- g. Epidemiology of orofacial pain disorders;
- h. Pharmacology and pharmacotherapeutics; and
- i. Principals of biostatistics, research design and methodology, scientific writing, and critique of literature.

The program must provide a strong foundation of basic and applied pain sciences to develop knowledge in functional neuroanatomy and neurophysiology of pain including:

- a. The neurobiology of pain transmission and pain mechanisms in the central and peripheral nervous systems;
- b. Mechanisms associated with pain referral to and from the orofacial region;
- c. Pharmacotherapeutic principles related to sites of neuronal receptor specific action pain;
- d. Pain classification systems;
- e. Psychoneuroimmunology and its relation to chronic pain syndromes;
- f. Primary and secondary headache mechanisms;
- g. Pain of odontogenic origin and pain that mimics odontogenic pain; and
- h. The contribution and interpretation of orofacial structural variation (occlusal and skeletal) to orofacial pain, headache, and dysfunction.

Behavioral Sciences

Formal instruction must be provided in behavioral science as it relates to orofacial pain disorders and pain behavior including:

- a. cognitive-behavioral therapies including habit reversal for oral habits, stress management, sleep problems, muscle tension habits and other behavioral factors;
- b. the recognition of pain behavior and secondary gain behavior;
- c. psychologic disorders including depression, anxiety, somatization and others as they relate to orofacial pain, sleep disorders, and sleep medicine; and
- d. conducting and applying the results of psychometric tests.

Clinical Sciences

A majority of the total program time must be devoted to providing orofacial pain patient services, including direct patient care and clinical rotations.

The program must provide instruction and clinical training for the clinical assessment and diagnosis of complex orofacial pain disorders to ensure that upon completion of the program the resident is able to:

- a. Conduct a comprehensive pain history interview;
- b. Collect, organize, analyze, and interpret data from medical, dental, behavioral, and psychosocial histories and clinical evaluation to determine their relationship to the patient's orofacial pain and/or sleep disorder complaints;
- c. Perform clinical examinations and tests and interpret the significance of the data;
- d. Function effectively within interdisciplinary health care teams, including the recognition for the need of additional tests or consultation and referral; and
- e. Establish a differential diagnosis and a prioritized problem list.

The program must provide instruction and clinical training in multidisciplinary pain management for the orofacial pain patient to ensure that upon completion of the program the resident is able to:

- a. Develop an appropriate treatment plan addressing each diagnostic component on the problem list with consideration of cost/risk benefits;
- b. Incorporate risk assessment of psychosocial and medical factors into the development of the individualized plan of care;
- c. Obtain informed consent;
- d. Establish a verbal or written agreement, as appropriate, with the patient emphasizing the patient's treatment responsibilities;
- e. Have primary responsibility for the management of a broad spectrum of orofacial pain patients in a multidisciplinary orofacial pain clinic setting, or interdisciplinary associated services. Responsibilities should include:
 1. intraoral appliance therapy;
 2. physical medicine modalities;
 3. sleep-related breathing disorder intraoral appliances;
 4. non-surgical management of orofacial trauma;
 5. behavioral therapies beneficial to orofacial pain; and
 6. pharmacotherapeutic treatment of orofacial pain including systemic and topical medications and diagnostic/therapeutic injections.

Residents must :

1. Participate in clinical experiences in other healthcare services
 2. Residents must gain experience in teaching orofacial pain.
 3. The program must provide instruction in the principles of practice management.
 4. Formal patient care conferences must be held at least ten (10) times per year.
- **Identify multidisciplinary/interdisciplinary research approaches necessary in the short- and long-term to advance basic, translational, and clinical TMD research and improve the assessment, diagnosis, treatment, and management of TMDs.**

The best way to respond to this question is by example. In order to expeditiously respond to this request, I attach a bibliography of some of the topics performed at one US based university by its residents after graduations and / or faculty.

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Appendix V. Letters from each institution's chief executive officer verifying sponsorship of the program

EASTMAN

INSTITUTE FOR ORAL HEALTH



Medicine of the Highest Order

March 20th, 2019

National Commission on Recognition of Dental Specialties and Certifying Boards
American Dental Association
211 E. Chicago Avenue
Chicago, IL 60611
Phone: 800-621-8099 or 312-440-2687
Attention: Catherine Baumann, director, 312-440-2697
baumannca@ada.org

Dear Ms. Baumann and NCRDSCB Commissioners;

This letter is to verify the sponsorship of the Advanced Education Program in Orofacial Pain at Eastman Institute for Oral Health at the University of Rochester.

The program has been reviewed and approved by the commission for Dental Accreditation's Standards for Advanced Specialty Education Programs in Orofacial Pain and is actively training residents.

We are also in full support of approving Orofacial Pain as a dental specialty. Thus, we believe the National Commission on Recognition of Dental Specialties and Certifying Boards should support Orofacial Pain as a dental specialty. This support will improve recognition of the complexity of orofacial pain conditions and improve access to quality care for patients with orofacial pain conditions.

Sincerely,

A handwritten signature in blue ink that reads "Eli Eliav".

Eli Eliav DMD, MSc, PhD
Professor & Director, Eastman Institute for Oral Health
Vice Dean for Oral Health
School of Medicine and Dentistry

625 Elmwood Avenue Box 683 Rochester, NY 14620
585.275.5688 585.256.3154 fax Eli_Eliav@URMC.Rochester.edu www.urmc.rochester.edu



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ukhealthcare.uky.edu

March 20th, 2019

National Commission on Recognition of Dental Specialties and Certifying Boards
American Dental Association
211 E. Chicago Avenue
Chicago, IL 60611
Phone: 800-621-8099 or 312-440-2687
Attention: Catherine Baumann, director, 312-440-2697
baumannca@ada.org

Dear Ms. Baumann and NCRDSCB Commissioners;

This letter is to verify the sponsorship of the Advanced Education Program in Orofacial Pain at our College of Dentistry.

The Kentucky program was fully accredited by CODA, the first year this accreditation was offered. This year the program was re-accredited without reporting. The program currently has six full time residents and fully meets the commission for Dental Accreditation's Standards for Advanced Specialty Education Programs in Orofacial Pain.

We are also in full support of approving Orofacial Pain as a dental specialty. Thus, we believe the National Commission on Recognition of Dental Specialties and Certifying Boards should support Orofacial Pain as a dental specialty. This support will improve recognition of the complexity of orofacial pain conditions and improve access to quality care for patients with orofacial pain conditions.

Thank you for participating on the Commission.

Sincerely,

A handwritten signature in black ink, appearing to read 'Larry Holloway', written over a light blue horizontal line.

Larry Holloway, Vice Provost
Interim Dean, University of Kentucky College of Dentistry
State Director, Kentucky DOE EPSCoR
TVA Professor of Electrical and Computer Engineering



School of Dental Medicine

Cecile A. Feldman, DMD, MBA
Dean

Office of the Dean
Rutgers, The State University of New Jersey
110 Bergen Street – Room B815
Newark, NJ 07101

feldman@sdm.rutgers.edu

p. 973-972-4634
f. 973-972-3689

March 22, 2019

National Commission on Recognition of Dental Specialties and Certifying Boards
American Dental Association
211 E. Chicago Avenue
Chicago, IL 60611
Phone: 800-621-8099 or 312-440-2687
Attention: Catherine Baumann, director, 312-440-2697
baumannca@ada.org

Dear Ms. Baumann and NCRDSCB Commissioners;

This letter is to verify the sponsorship of the Advanced Education Program in Orofacial Pain at our School of Dentistry.

The program has been reviewed and approved by the commission for Dental Accreditation's Standards for Advanced Specialty Education Programs in Orofacial Pain and is actively training residents.

We are also in full support of approving Orofacial Pain as a dental specialty. Thus, we believe the National Commission on Recognition of Dental Specialties and Certifying Boards should support Orofacial Pain as a dental specialty. This support will improve recognition of the complexity of orofacial pain conditions and improve access to quality care for patients with orofacial pain conditions.

Thank you for participating on the Commission.

Sincerely,

Cecile A. Feldman, DMD, MBA
Dean, Rutgers School of Dental Medicine



March 20th, 2019

National Commission on Recognition of Dental Specialties and Certifying Boards
American Dental Association
211 E. Chicago Avenue
Chicago, IL 60611
Phone: 800-621-8099 or 312-440-2687
Attention: Catherine Baumann, director, 312-440-2697
baumannca@ada.org

Dear Ms. Baumann and NCRDSCB Commissioners;

This letter is to verify the sponsorship of the Advanced Education Program in Orofacial Pain at our School of Dentistry.

The program has been reviewed and approved by the commission for Dental Accreditation's Standards for Advanced Specialty Education Programs in Orofacial Pain and is actively training residents.

We are also in full support of approving Orofacial Pain as a dental specialty. Thus, we believe the National Commission on Recognition of Dental Specialties and Certifying Boards should support Orofacial Pain as a dental specialty. This support will improve recognition of the complexity of orofacial pain conditions and improve access to quality care for patients with orofacial pain conditions.

Thank you for participating on the Commission.

Sincerely,

A handwritten signature in black ink, appearing to read "Huw F. Thomas".

Huw F. Thomas, B.D.S., M.S., Ph.D.
Dean
Tufts University School of Dental Medicine

March 27, 2019

National Commission on Recognition of Dental Specialties and Certifying Boards
American Dental Association
Attention: Catherine Baumann, Director
211 E. Chicago Avenue
Chicago, IL 60611
baumannca@ada.org

Dear Ms. Baumann and NCRDSCB Commissioners:

This letter is to verify the sponsorship of the Advanced Education Program in Orofacial Pain at the UCLA School of Dentistry.

Our program was recently reviewed and reaccredited by the commission for Dental Accreditation's Standards for Advanced Specialty Education Programs in Orofacial Pain (February 2019) and we continue to actively train residents.

We are also in full support of approving Orofacial Pain as a dental specialty. Thus, we believe the National Commission on Recognition of Dental Specialties and Certifying Boards should support Orofacial Pain as a dental specialty. This support will improve recognition of the complexity of orofacial pain conditions and improve access to quality care for patients with orofacial pain conditions.

Thank you for your consideration and support.

Sincerely,



Paul H. Krebsbach, D.D.S., Ph.D.
Dean and Professor

UNIVERSITY OF MINNESOTA

Twin Cities Campus

*Dean's Office
School of Dentistry
Academic Health Center*

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April 8, 2019

National Commission on Recognition of Dental Specialties and Certifying Boards
American Dental Association
211 E. Chicago Avenue
Chicago, IL 60611
Phone: 800-621-8099 or 312-440-2687

Attention: Catherine Baumann, director, 312-440-2697; baumannca@ada.org

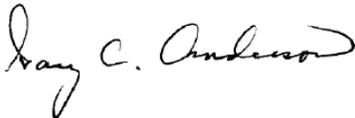
Dear Ms. Baumann and NCRDSCB Commissioners;

This letter is to verify the sponsorship of the Advanced Education Program in Orofacial Pain at the University of Minnesota School of Dentistry,

The program has been reviewed and approved by the commission for Dental Accreditation's Standards for Advanced Specialty Education Programs in Orofacial Pain and is actively training residents.

We are also in full support of approving Orofacial Pain as a dental specialty. This will result in improved access to quality care for patients with these complex conditions. If there is any further input I can provide to aid your consideration please contact me.

Sincerely,



Gary C. Anderson, DDS, MS
Dean and Professor
Department of Developmental and Surgical Sciences



UNC
SCHOOL OF DENTISTRY

THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

OROFACIAL PAIN CLINIC

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March 20th, 2019

National Commission on Recognition of Dental Specialties and Certifying Boards
American Dental Association
211 E. Chicago Avenue
Chicago, IL 60611
Phone: 800-621-8099 or 312-440-2687
Attention: Catherine Baumann, director, 312-440-2697
baumannca@ada.org

Dear Ms. Baumann and NCRDSCB Commissioners;

This letter is to verify the sponsorship of the Advanced Education Program in Orofacial Pain at our School of Dentistry. Our program has been reviewed and approved by the Commission On Dental Accreditation's Standards for Advanced Specialty Education Programs in Orofacial Pain and is actively training residents.

We are in full support of approving Orofacial Pain as a dental specialty by the National Commission on Recognition of Dental Specialties and Certifying Boards. This support will recognize the complexity of orofacial pain conditions and improve access to quality care for patients in need of pain management services.

Yours sincerely,

Pei Feng Lim, BDS, MS
Diplomat, American Board of Orofacial Pain
Director, Oral & Maxillofacial Pain Program

Scott S. De Rossi, DMD, MBA
Dean and Professor



HARVARD
School of Dental Medicine
OFFICE OF THE DEAN

April 9, 2019

National Commission on Recognition of Dental Specialties and Certifying Boards
American Dental Association
211 E. Chicago Avenue
Chicago, IL 60611
Attention: Catherine Baumann, Director

Dear Ms. Baumann and NCRDSCB Commissioners.

This letter is to verify the sponsorship of the Advanced Education Program in Orofacial Pain at our School of Dental Medicine.

The program has been reviewed and approved by the commission for Dental Accreditation's Standards for Advanced Specialty Education Programs in Orofacial Pain and is actively training residents.

We are also in full support of approving Orofacial Pain as a dental specialty. Thus, we believe the National Commission on Recognition of Dental Specialties and Certifying Boards should support Orofacial Pain as a dental specialty. This support will improve recognition of the complexity of orofacial pain conditions and improve access to quality care for patients with orofacial pain conditions.

Thank you for participating on the Commission.

Sincerely,

Bruce Donoff, D.M.D., M.D.
Dean and Walter Guralnick
Distinguished Professor of Oral and Maxillofacial Surgery