CADA
CANADIAN ACADEMY
OF DENTAL ANAESTHESIA

# APPLICATION FOR RECOGNITION OF

# DENTAL ANESTHESIA

# AS A SPECIALTY IN DENTISTRY

**Application submitted by:**

**THE CANADIAN ACADEMY OF DENTAL ANAESTHESIA**

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## INTRODUCTION

This submission constitutes the application by the Canadian Academy of Dental Anaesthesia (CADA) to the Canadian Dental Regulatory Authorities Federation (CDRAF) to recognize Dental Anesthesia as a specialty in dentistry.

Dental Anesthesiology satisfies all four criteria set forth by the CDRAF for specialty recognition and the fulfillment of each criterion will be expanded upon later in this application. Most importantly, in addition to Dental Anesthesia meeting the criteria, the recognition of advanced formal training in anesthesia for dentists will protect the public by ensuring:

1. Training of the individual is at the level of a certified dental specialist and,
2. Programs that train dentist anesthesiologists are accredited and will maintain the standards necessary to produce competent practitioners.

Criterion 1 states that the proposed specialty must originate from a sponsoring organization whose membership is reflective of the proposed specialty. The CADA is the sponsoring organization submitting this specialty application and all its members have completed a formal postgraduate course of training in anesthesia as it applies to dentistry. Also, many CADA members are involved with teaching, research and continuing education advancement of dental anesthesia in order to contribute to improving the standards of dental practice. Since the CADA has a membership that is reflective of the proposed specialty, Dental Anesthesia, Criterion 1 for specialty recognition has been met.

Criterion 2 states that the proposed specialty must be a distinct and well-defined field which requires unique knowledge, skills and competencies beyond the scope of practice of a general dentist and which are also substantially distinct from any currently recognized dental specialty or combination of currently recognized dental specialties. Dental Anesthesiology is the branch of dentistry pertaining to the art and science of pain, anxiety and behaviour management achieved through pharmacologic and other interventions. The knowledge and skills obtained from a postgraduate Dental Anesthesia training program is above and beyond that of a general dentist and all other dental specialists. The North American Dental Anesthesia programs are 3 years in length in order to fulfill the CODA requirements. There is no other dental specialty that spends an additional 3 years focusing on anesthesia knowledge and skills. Since the scope of the Dental Anesthesiology program is separate and distinct from the undergraduate dental program and all other recognized dental specialty programs, Dental Anesthesia meets Criterion 2 for specialty recognition.

Criterion 3 states that a proposed specialty must directly benefit and improve oral health care. Substantial public need and demand for the services of the proposed specialty must be identified. This need cannot be adequately met by general practitioners or specialists in currently recognized specialties. The proposed specialty, Dental Anesthesia, directly benefits and improves the oral health care of patients with special needs who would otherwise not seek dental care. These patients include but are not limited to:

- Dental phobics
- Children below the age of cooperation
- Children with special needs
- Adults with special needs
- Elderly patients with dementia
- Patients with severe gag reflexes
- Patients with local anesthesia problems

By providing deep sedation/general anesthesia services, Dentist Anesthesiologists can grant access of care to the above group of patients and their oral health care will not be neglected. A national survey of the Canadian population in 2005 demonstrated the need and demand for sedation/general anesthesia in the dental field.[1] In October 2013, the Canadian Institute of Health Information (CIHI) released a report entitled: *Treatment of Preventable Dental Cavities in Preschoolers: A focus on day surgery under general anaesthesia*.[2] The data further demonstrated a definite demand for anesthesia services to treat early childhood caries in Canada. As mentioned in the previous paragraph, both general practitioners and other currently recognized specialties do not have the same knowledge nor the training to provide deep sedation/general anesthesia services. Therefore, the proposed specialty, Dental Anesthesia, meets Criterion 3 by benefiting and improving oral health care, by the demonstrated need and demand for sedation/general anesthesia services in dentistry and by the inability of general practitioners or currently recognized specialists to provide such services.

Criterion 4 states that university-based education programs, at least two years beyond pre-doctoral curriculum as defined by CDAC and consistent with existing specialty programs, must exist to provide the knowledge, skills and competencies required for practice of the proposed specialty. All current Dental Anesthesia training programs, in both Canada and the United States, are 3 years in length. There is only one Canadian Dental Anesthesia Master of Science program and it is offered by University of Toronto, Faculty of Dentistry. In 2008, the Commission on Dental Accreditation of Canada (CDAC) evaluated the University of Toronto Dental Anesthesia program for the Royal College of Dental Surgeons of Ontario (RCDSO) to set the accredited Dental Anesthesia standard for the specialty of Dental Anesthesia in the province of Ontario (Appendix 1). Currently, the United States has eight (8) Dental Anesthesia postgraduate programs and Canadian residents are eligible to apply. These advanced education programs

teach deep sedation and/or general anaesthesia to competency and have specific teaching requirements described by the Commission on Dental Accreditation (CODA). Since the Canadian Dental Anesthesia program has been in existence since the 1960s and is currently a 3-year Master of Science program, the proposed specialty, Dental Anesthesia, fulfills the last criterion to be recognized as a specialty in dentistry.

As described above, the proposed specialty, Dental Anesthesia, fulfills all 4 criteria set forth by the CDRAF and CADA is confident that Dental Anesthesia, as a recognized specialty, will produce the following benefits for patients in pursuit of optimal oral health:

1. It will improve access to the complete spectrum of sedation and anesthesia care for all dental patients for all dental services, not just surgical ones.
2. It will enhance the teaching of anesthesia at undergraduate, graduate and postgraduate levels in dental schools across Canada.
3. It will encourage research and other scholarly activity in the field of anesthesia.
4. It will uphold and evolve the standard of care in the areas of pain control and sedation in dentistry as needed to ensure continued public safety.
5. It will provide a definitive voice within the broader health care context to ensure the specific needs and demands for sedation and anesthesia for dental patients are met.

It is important to note that the central component of the CADA's present submission is the 2004 decision by the Royal College of Dental Surgeons of Ontario (RCDSO) to recognize Dental Anesthesia as a dental specialty in the province of Ontario and the 2019 decision by the National Commission on Recognition of Dental Specialties and Certifying Boards (NCRDSCB) to recognize Dental Anesthesia as a specialty in the United States of America (Appendix 2A & 2B). In 2004, RCDSO circulated the proposal for specialty status to stakeholders and invited their input (Appendix 3). After a comprehensive review along with the assessment of both the proposal from the CADA and the input from stakeholders, the RCDSO determined that the recognition of Dental Anesthesia was in the best interest of the public (Appendix 4). Therefore, the RCDSO approved the proposal and forwarded it to the Ministry of Health and Long-Term Care. In 2007, the Dental Anesthesia Specialty was added through an amendment to the province of Ontario, Registration Regulation (Appendix 5) and Dental Anesthesia was formally recognized as a dental specialty in the province of Ontario. As of May 15, 2021, a total of forty-four (44) dentists have passed qualifying written and oral board examinations and are now recognized in Ontario as specialists in Dental Anesthesia.

In the US, March 2019, the newly formed National Commission on Recognition of Dental Specialties and Certifying Boards (NCRDSCB) recognized Dental Anesthesiology as a specialty. Subsequently, the

American Dental Board of Anesthesiology (ADBA) applied for recognition as the certifying board for Dental Anesthesia and in March 2020, ADBA was granted the recognition by the NCRDSCB.

This application for specialty recognition has support in both the dental academic community and the associated medical academic communities that are involved in the training of Dentist Anesthesiologists. For example, Dr. Jason T. Maynes, the Chief of Anesthesia and Pain Medicine at the Hospital for Sick Children in Toronto has provided a letter of support for specialty recognition for Dental Anesthesia. In addition, a letter of support from Dr. Desmond Lam, the Chief of Anesthesia and Pain Medicine at the Michael Garron Hospital, Toronto East Health Network, was received. These letters are included in Appendix 6.

In addition, the CADA strongly supports cooperation and collaboration with other dental specialties. An example of Dental Anesthesia participating in interdisciplinary care with other dental specialists can be seen at the Faculty of Dentistry, University of Toronto. At the Pediatric Anesthesia Surgicentre, the disciplines of Pediatric Dentistry and Dental Anesthesia work together to provide dental care for children under general anesthesia. This project was initiated in September 2005 in an effort to improve access to dental care under general anesthesia at a time when hospitals in Toronto were reducing operating room time for dentists. Currently, the Pediatric Anesthesia Surgicentre treats approximately 400 patients a year. This type of collaborative practice is similar to that currently in place in Japan where Dental Anesthesia is a specialty within dentistry and all twenty-nine dental schools have a graduate program in Dental Anesthesia.

In conclusion, Dental Anesthesia is a well-defined field and its scope of practice requires knowledge and skills well beyond those commonly possessed by general dental practitioners and other dental specialists. However, without a specific specialty of anesthesia within dentistry, there exists the concern that the function of recognizing qualifications in anesthesia for dentists may cease to be determined by dental regulatory authorities and that this function may fall to medical authorities. Therefore, for the benefit of the dental profession and to protect the public, CDRAF should approve Dental Anesthesia as a recognized specialty in dentistry. CADA is confident that the recognition of advanced formal training in anesthesia for dentists will enhance the teaching of anesthesia at undergraduate, graduate and postgraduate levels in dental schools across Canada and will encourage more funding for research and other scholarly activity in the field of anesthesia. Most importantly, the recognition of Dental Anesthesia as a specialty in dentistry will protect the public by ensuring the trained individual is at the level of a certified specialist and the programs that train Dentist Anesthesiologists are accredited and maintain standards to produce competent practitioners.

## Criterion 1: Sponsoring Organization

**Reference:**

**The proposed specialty must originate from a sponsoring organization whose membership is reflective of the proposed specialty.**

Sponsoring Organization and Historical Development:

The sponsoring organization, the Canadian Academy of Dental Anaesthesia (CADA), was founded on October 1, 1994.

The majority of graduates from the University of Toronto program and the Canadian graduates of the American programs become members of the CADA. Organizations such as the provincial dental regulatory authorities, the Commission on Dental Accreditation of Canada (CDAC) and the Canadian Dental Association (CDA) consult with CADA or its members for expert opinions on the topic of sedation or anesthesia in dentistry. CADA members have increased involvement with continuing education programs and research in Dental Anesthesia.

The membership is united in its resolve to seek recognition of Dental Anesthesia as a dental specialty. When unsuccessful at the CDA, the members voted unanimously to seek specialty status in Ontario through the Royal College of Dentists of Ontario (RCDSO). The maintenance of skills acquired in postdoctoral training and the development of new skills in concert with advances in anesthesia and pain control are of primary concern to the CADA. The services provided by dentist anesthesiologists range from mild sedation to fully intubated general anesthetics for dental treatment. Providing access to care for the uncooperative child, the special needs child and adult, the phobic patient as well as the geriatric patient with dementia are just some examples of the patients that are able to receive treatment by a dentist with advanced anesthesia training. Specialty recognition would improve the access to care that many Canadians are unable to obtain and patients will be able to be treated more effectively and more efficiently.

The mission of the CADA written in the Society's Constitution and By-laws (Appendix 7) states:

> "The mission of this Academy is to promote excellence in anesthesia in dentistry, represent dentists who have postgraduate training in anesthesia, and to support and encourage the clinical practice of anesthesia by these practitioners in order to facilitate patient pursuit of optimal oral health."

The GOALS of the CADA included in the Society's Constitution and By-laws are to:

1. Pursue excellence in the standards of practice of anesthesia in dentistry.
2. Encourage the availability of the complete spectrum of anesthesia care for dental patients.
3. Encourage the training of dentists to provide the complete spectrum of anesthesia care.
4. Develop and support the recognition of anesthesia as a dental specialty.
5. Pursue the interests of Canadian dentists who qualify as specialists in this discipline.
6. Meet for the purposes of disseminating progress in the field of advanced techniques in anesthesia, patient management and pain control.
7. Inform its members of current matters of interest related to anesthesia in dentistry.
8. Communicate matters of members' concern to other organizations, as required.

In the US, the examining board for the ASDA is the American Dental Board of Anesthesiology (ADBA). The American Dental Board of Anesthesiology oversees written and oral examination of candidates who, following successful completion, are bestowed with the status of Diplomate of the American Dental Board of Anesthesiology. The RCDSO recognizes this diplomate status as the basis to grant specialty recognition in Ontario. Since the majority of Dentist Anesthesiologists in Canada are from the University of Toronto program, the ADBA exam is used in order to eliminate bias from pre-existing relationships among candidates and examiners.

In the fall of 1994, development of a certifying board became a priority item with the ASDA and CADA. These organizations, through a core group of leaders, secured the name of its new certifying board, the American Dental Board of Anesthesiology (ADBA), and incorporated it in the State of Illinois on December 22, 1994. In March 1995, members of the CADA and the ASDA approved a provisional Constitution and By-laws for the new certifying board, which was later refined and adopted by the ADBA in March 1996. The ADBA received its designation as a "Charitable Trust" from the Illinois Attorney General in July 1996 and was granted an exemption from federal income taxes under Section 501(a) of the Internal Revenue Code in July 1996. In November 2006, the ADBA became wholly independent of the CADA and ASDA, conducting its own meetings and examinations within its own revenues. Membership in CADA or ASDA was no longer required for examination by the ADBA.

The ADBA Board of Directors has met at a minimum of two times annually since its inception.

Organization of ADBA Board of Directors

1. Adoption of a Constitution and By-laws (See Appendix 8) of the ADBA that provides for nine elected Directors at the annual Diplomates meeting of the ADBA. Three Directors are elected annually for 3-year terms, with no Director serving more than two consecutive terms. In addition, the Immediate Past President of the ASDA serves as an ex officio member without the right to vote.

2. There are five officers of the ADBA: President, Vice President I (for Oral Examinations), Vice President II (for Written Examinations), Secretary and Treasurer elected by the Board members themselves. The president is the official representative and chairperson of the Board. The vice-presidents are chairpersons of their respective examination committees, and one acts as chairperson of the Board when the president is unable to do so. The secretary maintains all documents of the Board and keeps records of Board activity, and the treasurer is responsible for the Board's financial activity.

3. A professional Executive Director was hired by the ADBA to assist the Board in coordinating examinations, scheduling meetings, ensuring proper legal and financial arrangements as well as responding to various hospitals, ambulatory surgery centers and other institutions requiring information regarding Board Certification status.

Operation of ADBA

1. Granting of board certification to 98 founding diplomates of the ADBA was based on formal postdoctoral residency training in anesthesiology and membership in good standing in the ASDA. All ADBA original diplomates had to have completed a full-time general anesthesia residency program.

2. A comprehensive written examination of 220 questions was initiated in March 1997 and has subsequently been offered at least once per year. Successful completion of the written examination allows the candidate to sit for the oral examination. In 2010, 11 candidates took the written examination with nine passing the exam.

3. Development of an oral examination process for residents was initiated in March 1998. The oral exam is offered at least annually. Examinations have been conducted by the ADBA Directors, although provisions in the Constitution and By-laws allow the use of other diplomates as consultants. In 2010, 20 candidates who had successfully completed the written examination took the oral examination with 14 passing this rigorous process.

4. Adoption of a mechanism for recertification that requires extensive continuing education devoted exclusively to anesthesiology. (See Appendix 3)

5. Establishment of relationships with all Dental Anesthesiology Program Directors regarding Board processes is ongoing.

6. A yearly implementation of the Dental Anesthesiology In-Service Training Examination is established. Results are sent to all program directors with statistical analysis of their residents' performance relative to the examined group.

7. The ADBA has created a web page <http://www.adba.org> to provide information to applicants and diplomates. The web page includes: a listing of the officers and directors; ADBA approved training programs; information and applications for board certification and recertification; schedule of meeting and testing dates; and e-mail links for further information.

Certification Requirements

1. The ADBA will only certify licensed dentists who have successfully completed a residency program accredited by Commission on Dental Accreditation (CODA) or those that meet the education requirements set forth in Standard II of the CODA Dental Anesthesiology Standards as determined by the ADBA Board of Directors.

2. Currently, the ADBA has established that written examinations may be administered after completion of an accredited or approved training program, or within 6 months prior to residency completion with approval of the program director. Oral examination may not occur until the applicant successfully completes the written examination and a minimum of 6 months has elapsed since completion of residency training.

Other Reasons for a Certifying Board

The leadership void and other liabilities created by the lack of a recognized specialty in anesthesiology are numerous and significant. A certifying board cannot address all of these needs by itself, but the ADBA has proved its potential worth over the past 25 years. Realized benefits include: (1) the identification of dentists with expertise in all aspects of anesthesiology for dentistry; (2) the establishment of a recertification process to help ensure continued state-of-the-art practice by its diplomates; and (3) providing information to program directors regarding the performance of their residents on the In-Service Examination to help promote quality resident training. Additional goals of the ADBA are to: (1) promote growth of anesthesiology training opportunities (rotations) for dentists on medical anesthesia services; (2) promote linkage of Dental Anesthesiology training programs with separate academic (MS and PhD degree) and medical school (MD degree) programs; (3) nurture the

development of a core group of academic anesthesiologists; (4) promote clinically oriented research through our residency training programs; and (5) enable diplomates to join hospital/surgicentre staffs with full privileges to provide anesthesia care for dental cases, thus lending credibility to dentistry's right to provide anesthesia services within a healthcare system controlled by medicine.

There have been numerous CADA members who have served and continue to serve on the ADBA as examiners, board members including leadership roles as past president.

Clearly, the CADA and the ASDA has brought to fruition a certifying board that is at least on par with the existing CDAC specialties in terms of quality and breadth of activity.

The CADA has experienced significant growth since 1994 and in the past two decades has demonstrated an ability to maintain a consistent and healthy membership of active clinicians despite attrition due to retirement and relocation. in the last two decades. As previously mentioned, two Dentist Anesthesiologists graduate every year from University of Toronto's Faculty of Dentistry. Furthermore, with increasing number of Dental Anesthesiology programs accredited in the United States, a number of graduates from these programs are now practicing in Canada as members of CADA.

Officers

Current CADA Officers (2021) are as follows:

Dr. Dwight Eickmeier, President
Dr. Jason Wong, Vice-President
Dr. Michelle Tang, Treasurer
Dr. Soheil Khojasteh, Secretary
Dr. Carilynne Yarascavitch, Scientific Chair
Dr. Peter Nkansah, Immediate Past President

Membership

The number of members in the CADA for each of the past ten years is as follows:

2010 – 47 members, 7 resident members
2011 – 48 members, 7 resident members
2012 – 43 members, 7 resident members
2013 – 44 members, 6 resident members
2014 – 44 members, 6 resident members
2015 – 48 members, 6 resident members
2016 – 40 members, 6 resident members
2017 – 45 members, 6 resident members
2018 – 54 members, 5 resident members
2019 – 52 members, 5 resident members
2020 – 50 members, 6 Canadian resident members, 2 US resident members

The CADA constitution recognizes Active, Resident or Honorary categories of membership and the requirements for membership are listed below.

Active Members

1. Each active member must have a DDS, DMD or BDS degree.

2. Each active member must also have successfully completed a formal postgraduate course of training in anesthesia as it applies to dentistry, consistent with Part 2 of the Association of Canadian Faculties of Dentistry Guidelines for Teaching the Comprehensive Control of Pain and Anxiety at The Advanced Education Level. The duration of training must be a minimum of 36 consecutive months (24 consecutive months prior to 2016 or 12 consecutive months prior to 1993.)

3. An annual membership fee, as established by the Executives, will be charged. Dues are payable by January 1 of each year. Members who have not paid within 60 days of this date are considered delinquent and suspended from membership.

Resident Members

Any interested individual with a DDS, DMD or BDS degree, currently enrolled in a postgraduate Dental Anesthesia program of a minimum 3-year duration, may apply for membership. The annual fee will be waived. This status is non-voting and does not allow the Resident member to hold an executive position. Otherwise, all other conditions of membership apply.

Honorary Members

1. A person who has made outstanding contributions to the field of Dental Anesthesia may be classified as an Honorary Member. Honorary members may be nominated by any active member and will be approved following a two-thirds majority vote of active members at a general meeting. This status is non-voting and does not allow the Honorary member to hold an executive position. Otherwise, all other conditions of membership apply. The annual fee will be waived.

(See Appendix 7 for CADA Constitution and By-laws.)

Research & Continuing Education Advancement

Research training is a natural outgrowth of specialty recognition and broader incorporation into the dental school educational system. Despite the lack of specialty recognition, CADA members have had a disproportionately large impact in this area. CADA members are already associated with at least 20% of the dental schools in Canada. These members have involved numerous dental students, residents and postdoctoral fellows in research through their own individual efforts, through institutional programs and through the ASDA. Research in Dental Anesthesia has been pursued by members of the CADA with the Discipline of Dental Anesthesia at the Faculty of Dentistry, University of Toronto.

List of Scientific Advances

Research has been carried out and published by members of the CADA in the following areas:

- Development of an orofacial model of inflammation.[3]
- Mechanisms of orofacial inflammation.[4]
- Local anesthetic efficacy.[5, 6]
- Survey of local anesthetic use in dentistry.[7]
- Retrospective study of paresthesia following local anesthesia in dentistry.[8]
- Efficacy of oral midazolam for sedation in pediatric dental patients.[9]
- Mortality and morbidity in anesthesia.[10, 11]
- Occupational risk to Dentist Anesthesiologists of acquiring blood-borne pathogens.[12]
- Efficacy of topical anesthesia.[13]
- Pain elicited from the 3 major mandibular block injections.[14]
- Nitrous oxide's effect on pain from local anesthetic injections.[14]
- Need and demand for sedation and anesthesia in Canada; a national survey.[1] The findings reported in the publication from this study by Chanpong, Locker and Haas in 2005 garnered international print, radio and television attention. This study also led to multiple live radio and television interviews. The manuscript from this study is included as Appendix 9.

Other Information

CADA members have been actively engaged in publishing and in presenting continuing education courses to dentists in the field of Dental Anesthesia. Members of the CADA have been active in both the academic and regulatory aspects of dentistry. The following is just an example of their involvement:

- Dr. B. Chanpong has been involved in the Sedation and Anesthesia Committee of the College of Dental Surgeons of British Columbia since 2005;
- Dr. B. Chanpong is the past Course Director for local anesthesia and sedation at University of British Columbia, past Board Director for the American Dental Society of Anesthesiology and the American Society of Dentist Anesthesiologists as well as Past President of the American Dental Board of Anesthesiology.
- Dr. S. Patodia is the Manager of the Facility Inspection Program for the RCDSO.
- Drs. P. Nksansah, D. Lee, S. Patodia, E. Wong, M. Saso are clinical instructors for the intravenous moderate sedation course in the periodontic specialty program at the University of Toronto.
- Dr. S. Zahedi is the Course Director for local anesthesia and sedation at the University of British Columbia.
- Dr. J. Wong served as a Regional Councillor for the Ontario Dental Association.
- Dr. D. Eickmeier is the former Treasurer of the American Dental Board of Anesthesiology.
- Dr. M. Tang is a member of the ad hoc Anesthesia and Sedation Working Group of the RCDSO, responsible for the development of the Standards for Sedation and General Anesthesia in Dentistry;
- Dr. M. Tang is the Assistant Chief AFK Examiner for the National Dental Examining Board of Canada (NDEB);

- Dr. M. Tang is a former Vice-President of the American Dental Board of Anesthesiology and former member of the Board of Directors for the American Dental Society of Anesthesiology and the American Society of Dentist Anesthesiologists.
- Dr. G. Garisto is the Director of Dental Education at The Hospital for Sick Children; Director of Ministry of Health Cleft Lip/Palate Craniofacial Dental Program; Member of the Hospital for Sick Children Perioperative Services Quality and Safety Committee; Member of the Hospital for Sick Children Ambulatory Advisory Committee.
- Dr. P. Nkansah is on the Editorial Board for Oral Health Journal; prior to that, Dr. M. Gardner was on the Board.
- Dr. C. Yarascavitch is an Editorial Board member for Anesthesia Progress, the official peer-reviewed publication of the American Dental Society of Anesthesiology (ADSA);
- Dr. C. Yarascavitch is an Editorial Board member for The Journal of Dental Anesthesia and Pain Medicine, an official peer-reviewed open access publication of the Korean Dental Society of Anesthesiology and the Federation of Asian Dental Anesthesiology Societies (FADAS);
- Dr. C. Yarascavitch is a Past President and current Secretary/Treasurer for the International Association of Dental Research (IADR), Dental Anesthesia and Special Care Research (DASCR) Group;
- Dr. C. Yarascavitch is the Course Director for the University of Toronto, Doctor of Dental Surgery Program Course "DEN400H Dental Anesthesia", which provides education in medical emergencies and minimal sedation, focusing on nitrous oxide and oxygen sedation.
- Dr. M. Wong is the Co-Course Director with Dr. D. Haas for the University of Toronto, Doctor of Dental Surgery Program Course "DEN300H Dental Anesthesia", which provides education in medically complex patient care and medical emergencies, including hands-on simulation training.
- Dr. D. Haas is Dean of the Faculty of Dentistry, University of Toronto;
- Dr. D. Haas is Past President of the Association of Canadian Faculties of Dentistry;
- Dr. D. Haas is a past Board Director of the American Society of Dentist Anesthesiologists;
- Dr. D. Haas is an Editorial Consultant for the Journal of the Canadian Dental Association;
- Dr. D. Haas was Chief Examiner in the Dental Sciences for the Royal College of Dentists of Canada (RCDC) from 1995 to 2000, and Councillor for Dental Sciences from 2005-2006;
- Dr. D. Haas was Chief OSCE Examiner for the National Dental Examining Board of Canada (NDEB);
- Dr. Haas is Chair of the ad hoc Anesthesia and Sedation Working Group of the RCDSO, responsible for the development of the Standards for Sedation and General Anesthesia in Dentistry.

Recent Publications by CADA Members

- **Wong, M**. (2021). Self-scheduler for dental students booking consultations with faculty during the COVID-19 pandemic, Journal of Dental Education, accepted 2021-04-28, *in press*.

- **Wong, M.** (2021). Ambulatory Anesthesia for a Case of Idiopathic Bronchiolitis Obliterans, Anesthesia Progress, accepted 2020-Oct-05, *in press*.

- **Prince, J.**, Goertzen, C., Zanjir, M., **Wong, M**., Azarpazhooh, A. (2021) Airway complications in intubated versus laryngeal mask airway-managed dentistry: A meta-analysis. Anesthesia Progress, accepted 2020-Nov-16, *in press*.

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In conclusion, criterion 1 states that in order for an area to be recognized as a specialty, it must be represented by a sponsoring organization. Our sponsoring organization, CADA, has a membership that is reflective of the specialized area of dental practice, the ability to establish a certifying board and an adequate infrastructure to sustain the specialty. In addition, the membership specializes in an area of dentistry that demonstratively contributes to substantial improvements in the standards of dental practice.

Furthermore, the CADA is a strong professional organization with the following ongoing commitments:

1. Delivery of quality continuing education for all dentists.
2. Advocacy for all patients requiring sedation or general anesthesia for dental care to improve access to dental care.
3. Advocacy for all dentists, including oral and maxillofacial surgeons, in order to maintain the privilege of administering sedation and general anesthesia with various practice models.
4. Advancement of the field of anesthesiology for dentistry through research and clinical application of current insights.
5. Collaborate within the CDA framework for the betterment of the profession.
6. Continual close ties with the American Dental Board of Anesthesiology, which maintains the highest entrance and examination standards of any credentialing body for anesthesia in dentistry.

## Criterion 2: Body of Knowledge

**Reference:**

**The proposed specialty must be a distinct and well-defined field which requires unique knowledge, skills and competencies beyond the scope of practice of a general dentist and which are also substantially distinct from any currently recognized dental specialty or combination of currently recognized dental specialties.**

### A. Definition

ANESTHESIOLOGY is a specialty of dentistry pertaining to the art and science of pain, anxiety, and behavior management achieved through pharmacologic and other interventions.

Based on this definition, the DENTIST ANESTHESIOLOGIST is a dentist who has successfully completed a postdoctoral anesthesiology residency training program for dentists that is a minimum of 36 consecutive months (24 consecutive months prior to 2016 or 12 consecutive months prior to 1993), and qualifies them to administer all levels of the continuum of sedation and anaesthesia care within the scope of their dental license.

Furthermore, by utilizing the CODA Accreditation Guidelines for Dental Anesthesiology Residencies as a template, the proposed CDAC specialty "encompasses the ability of dentists to provide, in the most comprehensive manner, the use of pharmacologic methods to manage anxiety and pain of adults, children, and patients with special care needs undergoing dental, maxillofacial and adjunctive procedures, in the dental office, ambulatory surgery center and hospital." Moreover, "the Dentist Anesthesiologist will also be qualified in the diagnosis and nonsurgical treatment of acute orofacial pain and to participate in the management of patients with chronic orofacial pain."

The intended scope of practice includes:

1. The physical evaluation, physiologic monitoring and anesthetic management of diverse dental patients during the perioperative period for surgical, operative, prophylactic and diagnostic procedures.

2. The perioperative management of:
    a. pain, fear, anxiety, phobia, and dysfunctional behavior.
    b. physiologic manifestations of emotional and physiologic stress.
    c. the patient with systemic disease, young children, and the elderly.
    d. the patient with mental, physical, or emotional special needs.
    e. alterations or disruptions of homeostasis.
    f. anesthetic and medical emergencies.

3. The nonsurgical management of acute orofacial pain.

### B. Advanced Knowledge

CDAC and provincial dental regulatory colleges have previously determined that deep sedation and general anaesthesia are beyond the scope of the predoctoral training program. Advanced education

programs that teach deep sedation and/or general anaesthesia to competency have specific teaching requirements described by the Commission on Dental Accreditation (CODA). The requirements for those advanced programs in the US represent the educational and clinical requirements for teaching deep sedation and/or general anesthesia in dentistry. Thus, whereas the need to compare and contrast standards with the predoctoral program may be appropriate for other areas of dental practice, this is not required for this application for specialty status for Dental Anesthesiology.

Differences in the level of knowledge between the specialty and predoctoral didactic biomedical sciences curricula are extensive. The following outline identifies topics from the American Dental Board of Anesthesiology (Examining Board as required from CODA) in which in-depth knowledge is required of the Dentist Anesthesiologist but no knowledge or a lesser degree of knowledge is required of the predoctoral student:

BASIC SCIENCES FOR THE DENTIST ANESTHESIOLOGIST

I. Anatomy
   A. Head and oral cavity
      1. Nasal anatomy
      2. Oral anatomy for local anesthesia
      3. Nerve supply of the face and head
   B. Neck:
      1. Airway anatomy
         (a) Hypopharynx
         (b) Larynx
         (c) Cartilages
            (1) Tracheotomy site
            (2) Cricothyroid membrane
         (d) Innervation
      2. Internal and external jugular veins
      3. Thoracic duct, carotid and vertebral arteries
      4. Stellate ganglion
      5. Cervical spine landmarks
         (a) Vertebra prominens
         (b) Chassaignac's tubercle
   C. Chest: Pulmonary lobes, cardiac landmarks, subclavian vein
   D. Extremities: Relationship of bones, nerves, and arteries
   E. General human anatomy
   F. Pediatric vs. adult comparison

II. Radiologic anatomy
   A. Chest radiograph
   B. Head and neck radiograph/CT/MRI including fascial space infections

III. Physics
   A. Gas properties
      1. Gas laws
         (a) Pressure
         (b) Temperature
         (c) Volume
      2. Partition coefficients

3. Vapor pressure
4. Flows

B. Gas storage
1. Cylinder types
2. Cylinder sizes
3. Cylinder pressures/volumes
4. Cylinder colors

IV. Physiology
A. Basic
1. Body fluid
2. Membranes
B. Cardiac
1. Electrocardiogram
2. Cardiac cycle
C. Circulatory
1. Fluids
D. Endocrinology
1. Metabolism
2. Adrenal
3. Pituitary
E. Gastrointestinal
1. Digestion
F. Hemostasis
G. Hepatic
1. Blood supply
2. Functions
3. Cytochrome p-450 system
H. Neural
1. Synapse
2. Autonomic
3. Peripheral
4. CNS and spinal
I. Renal
1. Functions
2. Hormone activity
J. Respiration
1. Acid-base balance
2. Oxygen delivery systems
(a) Carbon monoxide poisoning
(b) Methemoglobinemia
3. Pulmonary function
(a) Volumes and capacities
4. Gas transport between lung and tissue
5. Regulation of respiration
6. Oxyhemoglobin dissociation curve
K. Temperature regulation
L. Fluids
1. Surface tension
2. Pressure
(a) Osmotic

(b) Oncotic

V. STATISTICS
- A. Sample and population
- B. Probability
- C. Mean, median, and mode
- D. Standard deviation and error
- E. T-test
- F. Chi-square
- G. Nonparametric tests
- H. Regression analysis/correlation
- I. Analysis of variance
- J. Power analysis
- K. Meta-analysis
- L. Confidence limits, odds ratio, and risk ratio

PATHOPHYSIOLOGY AND CLINICAL MEDICINE
Including Anesthetic Implications

I. Pathophysiology
- A. Basic
  1. Inflammation
  2. Third spacing
- B. Immunity
  1. Type I hypersensitivity (anaphylactic type)
  2. Type II antibody-dependent hypersensitivity
  3. Type III immune complex-mediated
  4. Type IV cell-mediated hypersensitivity
- C. Tumors
  1. Treatment modalities
  2. Implications for anesthesia
- D. Cardiovascular
  1. Cardiomyopathy
  2. Conduction defects, including pacemakers
  3. Congenital heart disease
     (a) Aortic stenosis
     (b) Atrial septal defect
     (c) Coarctation of the aorta
     (d) Patent ductus arteriosus
     (e) Pulmonic stenosis
     (f) Transposition of the great vessels
     (g) Tetralogy of Fallot
     (h) Ventricular septal defect
  4. Cor Pulmonale
  5. Congestive heart failure
     (a) Right-sided
     (b) Left-sided
     (c) Biventricular
  6. Hypertensive heart disease
  7. Infective endocarditis

8. Hypertension
    (a) Essential
    (b) Secondary
9. Ischemic heart disease
    (a) Angina pectoris
    (b) Myocardial infarction
    (c) Sudden cardiac death
    (d) Atherosclerotic heart disease
10. Pericardial disease
11. Peripheral vascular disease

E. Endocrine
1. Thyroid
    (a) Hyperthyroidism
    (b) Hypothyroidism
2. Adrenal cortex
    (a) Primary hypoadrenalism
    (b) Secondary hypoadrenalism
    (c) Hyperadrenalism
3. Adrenal medulla
    (a) Pheochromocytoma
4. Diabetes mellitus
5. Diabetes insipidus
6. Pituitary disease

F. Hematology and coagulation
1. Red cell disorders
    (a) Increased red cell destruction
        (1) Sickle cell anemia
        (2) Thalassemia
        (3) Hemolytic anemia
        (4) G6PD deficiency
    (b) Anemias
        (1) Iron deficiency anemia
        (2) Megaloblastic anemia
        (3) Normocytic-normochromic anemia
        (4) Aplastic anemias
    (c) Polycythemias
2. White cell disorders
    (a) Lymphomas
    (b) Leukemias
    (c) Neutropenias
3. Hemorrhagic diatheses
    (a) Blood vessel wall disorders
    (b) Platelet disorders
        (1) Thrombocytopenia
        (2) Von Willebrand's disease
        (3) Renal-related
    (c) Coagulation disorders
        (1) Factor VIII deficiency
        (2) Factor IX deficiency
        (3) Other factors and protein deficiencies
    (d) Therapeutic anticoagulation

(e) Disseminated intravascular coagulation

G. Pulmonary
1. Acute respiratory failure
2. Chronic obstructive pulmonary disease (COPD)
(a) Chronic bronchitis
(b) Emphysema
3. Restrictive lung disease
4. Pulmonary embolus
5. Pulmonary infection
6. Adult respiratory distress syndrome (ARDS)
7. Miscellaneous
(a) Pleural effusion
(b) Hemothorax
(c) Pneumothorax

H. Gastrointestinal
1. Esophagus
(a) Atresia and stenosis
(b) Hiatal hernia
(c) Esophagitis
2. Stomach
(a) Pyloric stenosis
(b) Gastritis
(c) Ulcers
3. Bowel
(a) Inflammatory bowel disease

I. Renal
1. Glomerular disease
2. Hypertension
(a) Essential
(b) Secondary
3. Nephrotic syndrome
4. Chronic renal failure
5. Acute tubular necrosis
6. Dialysis

J. Head and neck
1. Vocal cord polyps
2. Ludwig's angina and other spreading facial/pharyngeal infections
3. Congenital anomalies

K. Musculoskeletal
1. Bones
2. Joints
(a) Arthritis
3. Muscle
(a) Atrophy
(b) Dystrophy
(c) Myasthenia gravis

L. Liver
1. Jaundice
2. Hepatitis
3. Cirrhosis

4. Failure

M. Nervous system
   1. Infections
      (a) Meningitis
      (b) Encephalitis
   2. Degenerative
      (a) Alzheimer's disease
      (b) Parkinsonism
      (c) Multiple sclerosis
   3. Epilepsy; including vagal nerve stimulators

N. Vascular
   1. Atherosclerosis
   2. Aneurysms
   3. Thrombophlebitis

O. Pain
   1. Pain neurophysiology
      (a) Gate theory (Melzack and Wall)
      (b) Pattern theory
      (c) Current concepts

II. Clinical medicine
   A. Clinical laboratory tests
      1. Complete blood count and differential
      2. Electrolytes
      3. Urinalysis
      4. Blood glucose
      5. Coagulation
      6. Renal function tests
      7. Liver function tests
      8. Drug plasma levels
   B. Cardiology
      1. Electrocardiogram
      2. Cardiac catheterization
      3. Angioplasty
   C. Pulmonology
      1. Spirometry
      2. Pulmonary function

III. Psychology
   A. Origins of dental fears
   B. Dental fears and phobias
   C. Pharmacologic management

   D. Nonpharmacologic management
      1. Hypnosis
      2. Relaxation techniques
      3. Desensitization
      4. Distraction

IV. Addiction
   A. Physiology and pharmacology
   B. Patient addiction: anesthetic implications
   C. Addiction among health care workers and anesthesiologists

ANESTHESIA DELIVERY SYSTEMS AND MONITORING

I. Anesthesia equipment
   A. Anesthesia machines
      1. Machine standards
      2. Gas delivery system (to machine)
      3. Vaporizers
         (a) Copper-kettle type
         (b) Tec-type
         (c) Effect of ambient conditions
      4. Ventilators
      5. $CO_2$ absorbers
      6. Breathing circuits
         (a) Mapleson A-F
         (b) Circle system
         (c) Bain/Jackson-Reese
         (d) High pressure jet ventilation
         (e) Heat loss and airway humidification and heating devices
         (f) Bag-valve-mask devices
         (g) $O_2$ powered breathing devices

II. Monitoring
   A. Precordial stethoscope
   B. Electrocardioscope
   C. Noninvasive blood pressure
   D. Pulse oximeter
   E. Capnometer
   F. Temperature
   G. In-line oxygen sensor
   H. Volatile gas sampling
   I. Invasive monitoring
      1. Arterial
      2. Central venous
      3. Pulmonary artery pressure
   J. Nerve stimulators
   K. Airway pressure

CLINICAL ANESTHESIOLOGY

I. Pharmacology: For all agents, the following pharmacodynamic and pharmacokinetic topics are covered, if applicable:
   A. Protein binding
   B. pKa
   C. Ionization
   D. Tissue uptake
   E. Compartmentalization and exponential models
   F. Tolerance and tachyphylaxis
   G. Termination of action

H. Elimination and biotransformation
I. Context-sensitive half-time
J. Impact of renal disease
K. Impact of hepatic disease
L. Effects of hepatic blood flow
M. Enzyme induction and inhibition
N. Drug interactions
O. Alternative and herbal medicines interactions
P. Drug-drug binding
Q. Effect on circulation
R. Effect on respiration
S. Effect on other organs
T. Indications and contraindications
U. Side effects and toxicity
V. Pregnancy effects
W. Pharmacogenetics

II. Drug categories
    A. Analgesics
        1. Non-opioid
            (a) NSAID
            (b) Acetaminophen
            (c) Others: (e.g., alpha-2 agonists, NMDA receptor antagonists)
        2. Opioid
            (a) Agonist
            (b) Agonist-antagonist
            (c) Antagonist
    B. Autonomic nervous system drugs
        1. Sympathetic agonists and antagonists
        2. Parasympathetic agonists and antagonists
        3. Vasodilators
        4. Drugs acting on the renin-angiotensin system
    C. General anesthetics: potent inhalation agents and nitrous oxide
        1. Partition coefficients
        2. Minimum alveolar concentration (MAC)
        3. Factors affecting MAC
        4. Uptake and distribution of inhalation agents
        5. Uptake and elimination curves
        6. Concentration effect
        7. Second gas effect
        8. Nitrous oxide and closed spaces
        9. Trace concentrations and OR pollution
        10. Comparative pharmacodynamics
        11. Malignant hyperthermia
    D. General Anesthetics: IV Agents
        1. Barbiturates
        2. Propofol
        3. Etomidate
        4. Ketamine
    E. Local Anesthetics
        1. Esters

2. Amides

F. Muscle relaxants
   1. Depolarizing
      (a) Including malignant hyperthermia
   2. Nondepolarizing

G. Reversal agents

H. Sedative agents: IV Agents
   1. Benzodiazepines
   2. Alpha-2 agonists
   3. Scopolamine

I. Emergency drugs

III. Clinical Anesthesia

A. Local Anesthesia

B. Sedation
   1. Enteral
   2. Inhalational
   3. Parenteral

C. General Anesthesia
   1. Ambulatory
   2. Pediatric
      (a) Induction techniques
      (b) Anesthetic effects different from adults
      (c) Effects of congenital diseases and syndromes
   3. Stages and signs of Anesthesia
   4. Awareness under Anesthesia

D. Preoperative
   1. Consultation
   2. History and physical
   3. Lab testing
   4. Sedative premedication

E. Intraoperative
   1. Fluid management
   2. General anesthetic techniques
      (a) Intravenous: bolus
      (b) Intravenous: continuous infusion
      (c) Inhalation
   3. Monitoring
   4. Patient positioning
   5. Airway management
      (a) Nasal cannula
      (b) Nasal hood
      (c) Full face mask
      (d) Laryngeal mask airway
      (e) Orotracheal intubation
      (f) Nasotracheal intubation
      (g) Awake intubation including fiberoptic technique
      (h) Combitube
      (i) Pediatric airway management
      (j) ASA difficult airway algorithm
      (k) Airway adjuncts

F. Postoperative care
    1. Pain management
    2. Recovery criteria
    3. Discharge criteria
G. Pain management
    1. Acute
    2. Chronic
H. Morbidity and mortality
I. Treatment records

IV. Complications
A. Emergencies
    1. Allergic reaction
    2. Anaphylaxis
    3. Angina
    4. Aspiration / emesis
    5. Bronchospasm
    6. Cardiac arrest
    7. Cerebrovascular accident
    8. Dysrhythmias
    9. Esophageal intubation
    10. Hypertension
    11. Hyperventilation
    12. Hypoglycemia
    13. Hypotension
    14. Hypoventilation
    15. Laryngospasm
    16. Malignant hyperthermia
    17. Myocardial infarction
    18. Pulmonary edema
    19. Pulmonary embolus
    20. Seizures
    21. Syncope
    22. Trauma
B. Adverse effects
    1. Emergence dysphoria
    2. Epistaxis
    3. Hematoma
    4. Hepatic dysfunction
    5. Hypothermia
    6. Hyperthermia
    7. Myalgias
    8. Nausea-vomiting
    9. Postextubation stridor/croup
    10. Prolonged muscle weakness and pseudocholinesterase deficiency
    11. Prolonged recovery
    12. Sore throat
    13. Thrombophlebitis
C. ACLS/PALS protocols
    1. Arrhythmia recognition
    2. Drugs

3. Airway management
4. Defibrillation
5. Pacing
6. Intravenous techniques

D. Miscellaneous
1. Airway fires
2. Laser safety
3. Venous air embolism
4. Surgical air embolism

IV. Legal considerations
A. Patient care
1. Guidelines of practice
(a) CDA guidelines
(b) ASA guidelines
(c) ASA guidelines for the non-anesthesiologist
(d) American College of Cardiology/American Heart Association Guidelines for Perioperative Cardiovascular Evaluation
(e) AAPD guidelines
2. Pre-operative evaluation
3. Informed consent
4. Anesthesia record
5. Monitoring
6. Patient recovery and discharge
7. Postoperative instructions

B. Equipment maintenance
C. Liability insurance
D. Risk management

**C. Advanced Skills**

CDAC and the Provincial Regulatory Dental Colleges have already determined that deep sedation and general anesthesia are beyond the scope of the predoctoral training program and require advanced skills and competency and/or proficiency in specialized areas.

The proposed specialty of Dental Anesthesia focuses on the use of pharmacologic methods to manage pain and anxiety. Due of the potentially serious nature of anesthesia-related problems, a high level of skill is required to use many of these techniques safely. Beginning with special skills in comprehensive patient evaluation, the Dentist Anesthesiologist must accurately assess the patient's preoperative condition in an effort to prevent or minimize intraoperative emergencies and postoperative sequelae. As a result of the insidious nature of many potentially life-threatening emergencies, the Dentist Anesthesiologist must be proficient in the early recognition and intervention required to prevent serious morbidity or mortality.

Proficiency and competency statements from CODA standards for Dental Anesthesiology programs are listed below:

Standard 2-2: Upon completion of training, the student/resident must be:

a) Able to demonstrate in-depth knowledge of the anatomy and physiology of the human body and its response to the various pharmacologic agents used in anxiety and pain

control;

b) Able to demonstrate in-depth knowledge of the pathophysiology and clinical medicine related to disease of the human body and effects of various pharmacological agents used in anxiety and pain control when these conditions are present;
c) Competent in evaluating, selecting and determining the potential response and risk associated with various forms of anxiety and pain control modalities based on patients' physiological and psychological factors;
d) Competent in patient preparation for sedation/anesthesia, including pre-operative and post-operative instructions and informed consent/assent;
e) Competent in the use of anesthesia-related equipment for the delivery of anesthesia, patient monitoring, and emergency management;
f) Competent in the administration of local anesthesia, sedation, and general anesthesia, as well as in psychological management and behavior modification as they relate to anxiety and pain control in dentistry;
g) Competent in managing perioperative emergencies and complications related to anxiety and pain control procedures, including the immediate establishment of an airway and maintenance of ventilation and circulation;
h) Competent in the diagnosis and non-surgical treatment of acute pain related to the head and neck region;
i) Familiar with the diagnosis and treatment of chronic pain related to the head and neck region; and
j) Able to demonstrate in-depth knowledge of current literature pertaining to Dental Anesthesiology.

The use of general anesthesia and deep sedation by dentists is regulated in the majority of Canadian provinces. Similarly, in the United States, the vast majority of states have implemented regulations addressing the use of general anesthesia by dentists. It is important to note that this extensive regulation of anesthesia for dentistry may have already created a de facto specialty. This is in contrast to the other recognized dental specialties, which do not have analogous standards or regulations.

In summary, the specialty of Dental Anesthesiology is clearly a distinct and well-defined field that requires unique knowledge and skills beyond those commonly possessed by dental school graduates, as defined by the predoctoral accreditation standards.

## D. Distinct and Well-Defined Field

The Commission on Dental Accreditation (CODA) provides standards for Dental Anesthesiology, which will serve as the basis for the proposed specialty, can be used to compare and contrast the standards with current CDAC recognized specialties. The approved specialties most closely linked to the management of pain, anxiety, and behavior are endodontics, pediatric dentistry, periodontics, and oral and maxillofacial surgery. Prosthodontics is reviewed in this document, however, there are no clinical requirements for any level of sedation, let alone general anesthesia. The other specialties of oral and maxillofacial pathology, oral and maxillofacial radiology, dental public health, and orthodontics are not involved in surgical dental treatment such that sedation or general anesthesia is rarely or never used by these specialists, and even local anesthesia is not used in routine practice. The previously mentioned four specialties do not have any educational standards for any level of sedation including general anesthesia and will not be reviewed in this document. Therefore, in the discussion that follows, the pertinent accreditation standards of endodontics, pediatric dentistry, periodontics and oral and maxillofacial surgery and the listing of knowledge related to the field of Dental Anesthesiology are compared and contrasted with the advanced knowledge required of the proposed specialty.

## ENDODONTICS

The Commission on Dental Accreditation of Canada (CDAC)'s ACCREDITATION REQUIREMENTS FOR ENDODONTICS PROGRAMS, last revised in November 2014, includes some specific requirements that may relate to the level of knowledge of anesthesia and pain control.

CDAC's Endodontics Standard 2.3.13 requires didactic instruction and clinical education for the resident to "recognize and manage, or prevent, odontogenic pain and associated anxiety using physical, chemical and psychological modalities". However, there is no specific requirement for knowledge of pharmacologic management of anxiety and the proficiency in behavioral techniques alone would fulfill this requirement. The use of nitrous oxide sedation is no doubt a part of endodontic programs, but there is no specific requirement for even this level of pain and anxiety control. In addition, there are no requirements for competency in inhalation sedation or intravenous moderate sedation, much less deep sedation and general anesthesia.

### Comparison with Dental Anesthesia

In the areas of head and neck anatomy, medicine, pharmacotherapeutics, and neurosciences, the only requirement is that "instruction must be provided". In other words, this standard may be met by one lecture only with some areas more comprehensively reviewed. The Dental Anesthesiology Standards, on the other hand, require proficiency in all areas of acute pain and anxiety control for dentistry, including all levels of sedation and general anesthesia. However, the knowledge of chronic pain management is to the level of familiarity only.

**Therefore, the only areas of overlap with Dental Anesthesia would be in local anesthesia, the diagnosis and non-surgical treatment of acute pain related to the head and neck region and the diagnosis and treatment of chronic pain related to the head and neck region.**

**Hence, the advanced knowledge required by Dental Anesthesia is separate and distinct from endodontics. This higher knowledge cannot be accommodated through minimal modification of the endodontics specialty program.**

## PEDIATRIC DENTISTRY

The Commission on Dental Accreditation of Canada (CDAC)'s ACCREDITATION REQUIREMENTS FOR PEDIATRIC DENTISTRY PROGRAMS, last revised in November 2013, includes some specific requirements that may relate to the level of knowledge of anesthesia and pain control.

CDAC's Pediatric Dentistry Standard of Curriculum Contents requires didactic instruction and clinical education for the resident to include several sections related to anesthesia and pain control. Only those areas that potentially overlap Dental Anesthesiology will be presented.

Pediatric Dentistry Standard 2.3.11 states that didactic instruction is to be provided at the understanding level (defined by CDAC as adequate knowledge with the ability to apply) in the following biomedical sciences:

> Pharmacology - including pharmacokinetics, interaction and oral manifestations of chemotherapeutic regimens, pain and anxiety control, and drug dependency.

Anatomy - including a review of general anatomy and head and neck anatomy with an emphasis on the growing child.

Pediatric Dentistry Standard 2.3.12 identifies the clinical sciences instructions which must be provided at the in-depth level:

2.3.12b – Behaviour Management

1. Child behaviour management in the dental setting and the objectives of various management methods, including consultations with other experts as needed to ensure optimal patient management; and

2. Principles of communication techniques, including the descriptions of and recommendations for the use of specific techniques.

2.3.12c – Informed Consent

The principles of informed consent relative to behaviour management and treatment options.

2.3.12d – Sedation and General Anaesthesia

The principles and objectives of conscious sedation, deep sedation, and general anesthesia as behaviour management techniques, including indications, contraindications and monitoring.

2.3.12j – The Prevention and Management of Medical Emergencies in the Dental Setting.

2.3.12k – Medical Conditions and the Alternatives in the Delivery of Dental Care that those conditions might require.

Pediatric Dentistry Standard 2.3.13 identifies additional instructions which must be provided at the understandings level:

2.3.13a – Fundamentals of Pediatric Medicine including those Related to Pediatric Patients with Special Health Care Needs.

Pediatric Dentistry Standard 2.3.14 states that the program must provide clinical experiences that enable advanced education residents in pediatric dentistry to achieve competency in:

2.3.14b – Pediatric Patient Management using Non-pharmacological and Pharmacological Approaches consistent with Approved Guidelines for Care.

Pediatric Dentistry Standard 2.3.16 states that residents must acquire knowledge and skills to function as health care providers within the hospital setting. The residents should participate in hospital interdisciplinary evaluation and treatment teams. Participation at lectures, seminars and conferences presented by the hospital dental or medical staff is encouraged.

Pediatric Dentistry Standard 2.3.18 asserts that residents must acquire knowledge and experience during an anesthesiology rotation to manage children and adolescents undergoing general anesthesia. The anesthesia rotation is scheduled to provide experiences such as pre-operative evaluation, risk assessment, assessing the effects of pharmacologic agents, venipuncture techniques, airway management, general anesthetic induction and intubation, administration of anesthetic agents, patient

monitoring, prevention and management of anesthetic emergencies, recovery room management, postoperative appraisal and follow up. However, there is no criteria set as for the minimum duration of this rotation.

**Comparison with Dental Anesthesia**

**There are some areas of overlap with Dental Anesthesia with regard to choosing what level of sedation/anesthesia is appropriate for their patient. Pediatric dentists would also be competent in providing preoperative/postoperative instructions and informed consent with respect to sedation/anesthesia. In addition, there are some areas of overlap with respect to the diagnosis and non-surgical treatment of acute pain related to the head and neck region and to the diagnosis and treatment of chronic pain related to the head and neck region. Furthermore, there are areas of overlap in the knowledge of local anesthesia, oral sedation and psychological and behavioural techniques. Most importantly, there is no overlap with respect to deep sedation or general anesthesia.**

**Thus, the advanced knowledge required by Dental Anesthesia is separate and distinct from pediatric dentistry. This higher knowledge cannot be accommodated through minimal modification of the pediatric dental specialty program.**

**PERIODONTICS**

The Commission on Dental Accreditation of Canada (CDAC)'s ACCREDITATION REQUIREMENTS FOR PERIODONTICS PROGRAMS, last revised in November 2013, includes some specific requirements that may relate to the level of knowledge of anesthesia and pain control.

CDAC's Periodontics Standard of Curriculum Contents indicates that certain areas of knowledge in anesthesia and pain control are required. Only those areas that potentially overlap Dental Anesthesiology will be presented.

Periodontics Standard 2.3.11 states that didactic instruction is to be provided in regards to anxiety and pain control such that there is a necessary knowledge, skills, and behaviours within the scope and depth required for a specialty program.

Periodontics Standard 2.3.17 states that the educational program must provide experiences for the resident in the methods of pain and anxiety control to achieve competency in all areas of conscious sedation including nitrous oxide/oxygen inhalation sedation, oral sedation and intravenous sedation.

**Comparison with Dental Anesthesia**

It is important to note that there is no requirement for knowledge or training in deep sedation or general anesthesia.

However, there are some areas of overlap with respect to local anesthesia and moderate sedation. For moderate sedation, this includes the response and risk, the preparation of the patient both pre-operatively and post-operatively as well as in the psychological management and behavior modification as they relate to anxiety and pain control in dentistry. Furthermore, there are some areas overlap with respect to the diagnosis and non-surgical treatment of acute pain related to the head and neck region and to the diagnosis and treatment of chronic pain related to the head and neck region.

**Thus, the advanced knowledge required by Dental Anesthesia is separate and distinct from periodontics. This higher knowledge cannot be accommodated through minimal modification of the periodontics specialty program.**

## PROSTHODONTICS

The Commission on Dental Accreditation of Canada (CDAC)'s ACCREDITATION REQUIREMENTS FOR PROSTHODONTICS PROGRAMS, last revised in November 2011, includes some specific requirements that may relate to the level of knowledge of anesthesia and pain control.

CDAC's Prosthodontics Standard of Curriculum Contents indicates that certain areas of knowledge in anesthesia and pain control are required. Only those areas that potentially overlap Dental Anesthesiology will be presented.

Prosthodontics Standard 2.3.11 states that didactic instruction is to be provided in regards to anxiety and pain control such that there is a necessary knowledge, skills, and behaviours within the scope and depth required for a specialty program.

Prosthodontics Standard 2.3.13b states that through clinical instruction, graduates must be competent and given the changing demographics, programs are encouraged to work towards graduates' becoming competent in the treatment of myofacial pain.

### Comparison with Dental Anesthesia

It is important to note that there is no requirement for any knowledge and training in any type of sedation or general anesthesia. However, there are some areas of overlap in local anesthesia and the diagnosis and non-surgical treatment of acute pain related to the head and neck region.

**Thus, the advanced knowledge required by Dental Anesthesia is separate and distinct from prosthodontics. This higher knowledge cannot be accommodated through minimal modification of the prosthodontics specialty program.**

## ORAL AND MAXILLOFACIAL SURGERY

The Commission on Dental Accreditation of Canada (CDAC)'s ACCREDITATION REQUIREMENTS FOR PROSTHODONTICS PROGRAMS, last revised in November 2013, includes some specific requirements that may relate to the level of knowledge of anesthesia and pain control.

CDAC's Oral and Maxillofacial Standard of Curriculum Contents indicates that certain areas of knowledge in anesthesia and pain control are required. Only those areas that potentially overlap Dental Anesthesiology will be presented.

OMFS Standard 2.3.5 states that the residency program in oral and maxillofacial surgery must include education and training in the basic and clinical sciences, which is integrated into the training program. A distinct and specific curriculum must be provided in anesthesia, clinical medicine and surgery.

OMFS Standard 2.3.6 – Anesthesia Service:
The assignment must be for a minimum of 4 months. The student/resident must function as an Anesthesia student/resident with commensurate level of responsibility. This is further interpreted, as the OMFS resident must have the same level of responsibility to those of the anesthesia residents with a similar level of experience.

OMFS standard 2.3.7 – Medical/Surgical Service:
A minimum of eight (8) months of clinical medical/surgical experience must be provided. This experience should be achieved by rotation to the appropriate medical (minimum two (2) months)/surgical (minimum four (4) months) services, as determined by the program director. Residents should gain further experience in history and physical examination and familiarity with the diagnosis and management of medically compromised and critically ill patients. They should also gain experience in pre- and post-operative care, as well as experience in intra-operative techniques.

OMFS Standard 2.3.10 – Basic Sciences:
Instruction in the basic biomedical sciences must be provided at an advanced level beyond that of the predoctoral dental curriculum must be provided. These sciences 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.

OMFS Standard 2.3.11 – Physical Diagnosis:
Educating residents to take a complete medical history and perform a comprehensive physical evaluation are essential components of an oral and maxillofacial surgery residency program. A formally structured didactic and clinical course in physical diagnosis must be provided by individuals holding privileges to perform histories and physical examinations. Resident competency in physical diagnosis must be documented by qualified members of the medical 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.

OMFS Standard 2.3.12 states that patients admitted on the teaching service must have a complete history and physical examination performed by an oral and maxillofacial surgery resident.

OMFS Standard 2.3.15 – Ambulatory General Anesthesia and Deep Sedation:
The off-service rotation in anesthesia must be supplemented by increasingly complex experience throughout the training program in all aspects of pain and anxiety control. The clinical practice of ambulatory oral and maxillofacial surgery requires familiarity, experience and capability in ambulatory techniques of anesthesia. The outpatient surgery experience must ensure adequate training in anxiety and pain control for oral and maxillofacial surgery procedures on adult and pediatric patients. This includes competence in managing the airway. Each resident must administer general anesthesia and inhalation or intravenous sedation to a minimum of one hundred (100) ambulatory oral and maxillofacial surgery patients.

The clinical program must be supported by a comprehensive didactic program on anesthesia, sedation and other methods of pain and anxiety control. This includes Advanced Cardiac Life Support (ACLS) certification, lectures and seminars emphasizing patient evaluation, risk assessment, anesthesia and sedation techniques, monitoring, and the diagnosis and management of complications.

Documentation is required for three (3) consecutive months records of patients with anesthesia and sedations, including children. *However, there is no specific requirements for minimum age of pediatric patients or patients of special needs.*

OMFS Standard 2.3.24 states that residents must be certified in Advanced Cardiac Life Support (ACLS) and Advanced Trauma Life Support (ATLS) and hold certification records and cards.

**Comparison with Dental Anesthesia**

Oral and maxillofacial surgery is the only CDAC and CODA recognized specialty that has any meaningful overlap with the proposed specialty of Dental Anesthesia. The primary difference between the biomedical curriculum of oral and maxillofacial surgery and the proposed specialty of Dental Anesthesia is to some degree in the breadth but more so in the depth of knowledge of general anesthesia, deep sedation, and methods of pain, anxiety and behavior control. Also, another main difference between the two disciplines is the knowledge gained by a significantly increased duration of clinical experience in the delivery of general anesthesia for Dental Anesthesia residents.

In order to be able to safely and effectively deliver deep sedation for their own oral surgery patients, oral and maxillofacial surgery residents are required to spend a minimum of 4 months on a general anesthesia rotation. However, there is no specific clinical requirement for a minimum number of pediatric general anesthesia cases that oral and maxillofacial surgery residents must complete and there is no requirement for the anesthetic management of patients with special needs or the use of advanced airway modalities beyond endotracheal intubation.

CODA Dental Anaesthesia Standard 2-6 states that each Dental Anesthesia resident must complete a minimum of eight hundred (800) total cases of deep sedation/general anesthesia that fulfill the following criteria:

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. One hundred and twenty-five (125) children age seven (7) and under, and (3) Seventy-five (75) patients with special needs

2. 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.

3. Exposure to the management of patients with chronic orofacial pain.

**On the contrary, there is no minimum number of general anesthesia cases that an oral and maxillofacial surgery resident must complete during their four-month anesthesia rotation. In addition, there is no specific requirement for pediatric anesthesia cases required within the anesthesia rotation.**

**Although there are some areas of overlap in sedation and general anesthesia training, the amount of time spent within the anesthesia department is significantly different. The Dental Anesthesia resident will spend 3 times as long within the anesthesia department as compared to the oral and maxillofacial surgery resident. The dental anesthesia resident will devote a total of 24 out of 36 months to clinical training in anesthesia exclusively.**

**Thus, the advanced knowledge and clinical experience required by Dental Anesthesia is separate and distinct from oral and maxillofacial surgery. This higher knowledge and**

**clinical experience cannot be accommodated through minimal modification of the oral and maxillofacial surgery specialty program.**

## MEDICAL ANESTHESIA

The Dentist Anesthesiologist program concentrates on preparing the resident to be competent in providing deep sedation/general anesthesia services for dental patients in a private setting. There are many aspects of the physician anesthesiologist residency that require training above and beyond what is attained by the Dentist Anesthesiologist. This includes but not limited to:

Anesthesia for transplants
Anesthesia for labour and deliver
Anesthesia for cardiac and thoracic surgery
Regional anesthesia
Trauma anesthesia

In the 2019 Canadian Medical Association Survey, only 3% of physician anesthesiologists reported working in private offices in Canada.[15] On the contrary, 100% of Dentist Anesthesiologists in Canada practice in private clinics.

While the Dentist Anesthesiologist resident has exposure to anesthesia for the above areas during their training, the objective lies with exposure as opposed to proficiency in those specific topics. Therefore, the difference in the length of time for training the medical versus the dental anesthesia program is due to addition topics that physician anesthesiologists require training in.

Another difference with the medical versus the dental programs is the physician anesthesiologist training program does not specify a required number of cases to be fulfilled prior to completion of the program. However, the CODA requirements for Dental Anesthesia programs list out specific case requirements as shown below:

> 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.

The detailed requirements of providing deep sedation/general anesthesia allows the Dentist Anesthesiologist to be prepared for the type of cases that will be encountered in a private clinic. Since the physician anesthesiologist program does not include specific case requirements with providing anesthesia services for dental procedures, they may or may not have experience with such cases.

Dentistry and medicine overlap in many disciplines. For example, oral pathology overlaps with general pathology as well as oral maxillofacial surgery overlaps with plastics and ear nose throat

surgery. Therefore, it is natural that Dental Anesthesia and medical anesthesia have commonalities. However, the main difference is that the dental program (regardless of specialty) focuses on the dental patient.

## SUMMARY OF BODY OF KNOWLEDGE

It is well documented that no currently approved specialty besides OMFS teaches deep sedation and general anesthesia beyond the level of exposure. In periodontology, residents may be trained to competency in intravenous moderate sedation techniques. This level of skill enables them to meet the anesthetic needs of many of their patients; however, they are not prepared to provide a full range of anesthetic services for themselves or other practitioners. In contrast, the Dentist Anesthesiologist is trained to proficiency in intravenous moderate sedation, deep sedation and general anesthesia. Therefore, they are equipped to provide the full scope of sedation and anesthesia services on a consultation basis when the general practitioner or specialist is faced with patients who are difficult to manage due to fear, phobia, inability to cooperate because of cognitive impairment or age, or problems with local anesthesia.

The clinical practice of oral and maxillofacial surgery for ambulatory patients requires familiarity, experience and capability in providing deep sedation and general anesthesia in the outpatient setting. Their 4 months on the anesthesia service plus outpatient oral surgery clinic experience produces a resident trained in intravenous anesthetic techniques for outpatient oral and maxillofacial surgery and competency in managing the airway. Based on the CODA accreditation, the Dentist Anesthesiologist receives a minimum of 12 months on the anesthesia service plus an additional two years to enhance these skills to proficiency in outpatient settings. At the end of their residency, the Dental Anesthesia resident will be proficient in all levels of sedation and general anesthesia as it applies to dentistry.

Although many of the anesthetic skills included in the scope of oral and maxillofacial surgery are coincident with those of the proposed specialty, the limited exposure precludes the oral and maxillofacial surgery resident from achieving the same depth and breadth of skills acquired by the Dental Anesthesia resident trained in the proposed specialty. On one hand, oral and maxillofacial surgeons are experts in the sedative management of outpatient oral surgery patients with procedures of limited duration. On the other hand, Dentist Anesthesiologists are experts in general anesthesia management of dental cases, such as nasoendotracheal intubation, and long outpatient anesthetic procedures for comprehensive dentistry (2 or more hours) with a wider variety of drugs and techniques. In addition, Dentist Anesthesiologists are trained to provide anesthesia for the pediatric population (defined as 6 years of age and younger, rather than 12 or 18 years and younger), for patients with difficult airways and for those with mental and physical handicaps who need comprehensive dental treatment involving all dental disciplines rather than just surgery.

Many of the advanced skills (techniques and procedures) required for the practice of the proposed Dental Anesthesia specialty are immensely different from those of all other existing specialties. The required proficiency in advanced skills that are not included in any other specialty makes anesthesiology separate and distinct from any of the current recognized specialties. Simply making minor modifications to the current recognized specialty programs will not accommodate for these differences in higher skills.

As is the case with all CDAC currently recognized specialties, some aspects of the skills of the proposed specialty naturally overlap with general dentistry and other specialties of dental practice. For example, minimal and moderate sedation, and local anesthesia have been and will continue to be used by various specialists and general dentists to prevent pain and control anxiety. The CADA has

strongly supported these dentists in this area in the past and will continue to support them in the future. Although these modalities are components of the anesthesiology specialty, they are also essential adjuncts to the practice of all phases of dentistry and are not an exclusive domain of any one specialty. Nevertheless, a review of accreditation standards for the clinical dental specialties most heavily involved in the management of pain and anxiety demonstrates a clear differentiation between the scope of the proposed specialty in anesthesiology for dentistry and these other established specialties.[40]

Advanced education programs in periodontics, endodontics, pediatric dentistry, oral and maxillofacial surgery, and general practice residencies have developed anesthesia training guidelines pertinent to their particular disciplines and have detailed these in their respective CDAC and CODA standards. Although the goal of each residency is to train an individual in all important aspects of that particular discipline, only the CODA standards for Dental Anesthesiology programs include the statement that they are "educational programs designed to train the dental resident, in the most comprehensive manner, to use pharmacologic and nonpharmacologic methods to manage anxiety and pain of adults, children, and patients with special care needs undergoing dental, maxillofacial and adjunctive procedures, as well as to be qualified in the diagnosis and non-surgical treatment of acute orofacial pain and to participate in the management of patients with chronic orofacial pain". The intent of this training is not to dilute it with instruction in other dental disciplines or to limit its applicability to a particular dental discipline.

To this end, according to CODA, the resident in an advanced education program in pain and anxiety control must receive at least three calendar years of training, with a minimum of "24 months to be devoted exclusively to clinical training in anesthesiology". In addition, "experience in the administration of general anesthesia and other forms of pain and anxiety control for ambulatory dental patients must be provided" to ensure that the Dentist Anesthesiologist is trained to proficiency in the management of all types of dental patients for a wide variety of surgical and non-surgical dental treatment. Also, Dentist Anesthesiologists must be trained to proficiency in managing the airway and responding to emergency situations while working with practitioners trained only in basic life support measures.

The Dentist Anesthesiologist is fully trained to a level of proficiency in a multiplicity of pharmacological methods for enteral and inhalation sedation (ranging from mild to moderate to deep sedation) and general anesthesia. The Dentist Anesthesiologist is also fully prepared to manage all types of dental patients across all disciplines of dentistry. Therefore, when a greater level of sedation required is more than what the general dentist or specialist are trained to provide, it is not uncommon for them to request the services of a Dentist Anesthesiologist (where one is available).

As previously noted, of all the programs of postgraduate training recognized by the CDAC, only the advanced specialty program in oral and maxillofacial surgery devotes more than a month of formal training to the area of anesthesiology. It is clearly evident that these other specialty programs cannot incorporate the equivalent training of a 3-year program in anesthesiology without undergoing fundamental changes in the length and content of their curricula. In the case of oral and maxillofacial surgery, residents are required to receive a minimum of 4 months off-service hospital rotation experience in general anesthesia. Meanwhile, Dental Anesthesia residents devote a minimum of 24 months to clinical training in anesthesiology.

**In summary, the scope of the anesthesiology specialty is separate and distinct from any recognized specialty or combination of recognized specialties and cannot be accommodated through minimal modification of a recognized specialty or combination of recognized specialty program.**

## Criterion 3: Need and Value of Proposed Specialty

**Reference:**

**A proposed specialty must directly benefit and improve oral health care. Substantial public need and demand for the services of the proposed specialty must be identified. This need cannot be adequately met by general practitioners or specialists in currently recognized specialties.**

### A. NEED FOR DENTAL ANESTHESIA SPECIALITY

Epidemiological data for specific patient populations support the need for an organized specialty to provide the full spectrum of pain and anxiety control for all areas of dentistry. Patients with special needs include but are not limited to:

- Dental phobics
- Children below the age of cooperation
- Children with special needs
- Adults with special needs
- Elderly patients with dementia
- Patients with severe gag reflexes
- Patients with local anesthesia problems

The above patients often are neglected or do not receive the same standard of care offered to the general population because of limited access to anesthesia services.

Other patients, without special characteristics, may require anesthesia care by members of the proposed specialty when they are undergoing extensive, potentially stressful procedures, such as oral surgery, periodontal surgery, implant surgery, endodontics or extensive operative dentistry.

Dental Fear and Phobia

Numerous studies have documented a high incidence of dental fear in the general population and a deleterious influence of such fear on oral health.[15-31] The following generalizations are highlighted:

1. Dental anxiety is not strongly correlated with gender or race.
2. Dental fear is inversely related to age.
3. Perceived oral health is inversely related to anxiety.
4. Frequency of dental visits is inversely related to anxiety.
5. All aspects of the dental experience elicit fearful responses from a large percentage of the fearful population.

While there is some disagreement over the numbers of individuals who have mild, moderate, and severe apprehension, recent reports continue to demonstrate that fear of dentistry is endemic in society.

In 2002, a national telephone survey of 1,101 Canadians was conducted on the topics of fear of dentistry and demand for sedation or general anesthesia. The data were presented at the International

Association of Dental Research meeting in Sweden in June 2003, and again at the Enteral Sedation Workshop in Washington DC in October 2003. It has since been published in manuscript form in the journal, Anaesthesia Progress, in 2005 and reprinted in Oral Health in February, 2006.[1] This manuscript is included as Appendix 9. The results included the findings that estimated over 2,500,000 Canadians are definitely interested in sedation or general anesthesia for dentistry and over 8,500,000 are interested depending on the cost. However, only a small fraction of patients who desire to have sedation or general anesthesia for dental procedures actually have received it. Furthermore, over 1,500,000 Canadians have at one time missed, cancelled or avoided a dental appointment due to fear or anxiety.

In a 1988 article published in the Journal of the American Dental Association, Milgrom et al.[26] indicated that one-half of the respondents to a survey of the Seattle population reported fear of dental treatment, with about 20% being so fearful that they were unable to seek perceived needed care. Gatchel[32] also studied the prevalence of dental fear and avoidance of dental treatment in adults and adolescents. He found a similar incidence of dental phobia and anxiety in both age groups. The incidences of high dental fear and moderate dental fear were approximately 12% and 18% respectively.

In 1998, Dionne conducted a telephone survey of 400 adults across the United States.[33] Using standard questions to elicit self reports of fear; Dionne found that 35% of the sample was slightly or somewhat nervous about visiting the dentist and that 15% were very nervous or terrified. In addition, 15% of the sample had avoided making or keeping dental appointments due to fear, essentially identical to the percentage who reported that they do not visit the dentist for regular check-ups because of fear of pain during and/or after the appointment.

Dental management can often be more complex for patients with dental fear than it is for general patients who are more likely to receive routine professional care. Nonpharmacological management strategies, such as behaviour modification, distraction, desensitization, guided relaxation, biofeedback and hypnosis are effective in managing the psychological needs of many of these patients. However, the immediate necessity for dental care in the highly fearful patient, who typically has neglected treatment until an emergency arises often requires pharmacological intervention. On occasion, as the phobic patient becomes accustomed to dental care in a pain- and anxiety-free environment, mild/moderate sedation and/or nonpharmacological behavioural control methods may be introduced.

Children Below Age of Cooperation

Children who are too young to cooperate with the dentist make up a second large patient population. Even with the progressive decline in dental caries because of increased exposure to fluoride and better education, early childhood caries (nursing bottle caries) remains an important problem in these young children. There are approximately 800,000 Canadian children in the 16 to 40 month age range who may require routine restorative dentistry but are often unable to cooperate with the dentist. According to American data, the majority of these children in the United States (63.5%) require physical restraint or pharmacologic management to receive care.[34]

Dental Surgery is the most common surgical procedure requiring anesthesia in childhood and comprises nearly one-third of all children's day-surgeries in hospitals.[35] In 2010, a study reported wait times of up to 40-60 weeks for pediatric dental treatment requiring general anesthesia.[36] With such long waiting times, it is understandable that there is a need for increased outpatient dental general anesthesia services in the community. Subsequently in 2013, a report from British Columbia

investigating general anesthesia for pediatric dental treatment suggested "healthcare costs and general anaesthesia wait times could potentially be reduced if these children received dental care under general anaesthesia in alternative, less costly facilities."[37]

Children with Special Needs

Children with special needs constitute another large patient population which often requires the services of a dentist with in-depth knowledge and clinical proficiency in anesthesiology. Waldman[38] reported in the ASDC Journal of Dentistry for Children that there were nearly 11,000,000 children in the United States with developmental, emotional or behavioural problems.

Pediatric dentists are experts in managing children with special needs. However, many of these special children present an exceptional challenge for any practitioner attempting dental care. The inability to perform or cooperate with daily oral hygiene practices, abnormal dietary patterns, impaired tooth formation, neglect and lack of preventive care places many of these children at increased risk of caries. While there is little reliable information on the proportion of special needs children who may require anesthetic services to receive dental treatment, it is clear that as a group, they lack access to appropriate care and are therefore undertreated. In a survey of 1,618 handicapped children in Northern England, where subsidized dental care was available through the National Health Service (thus removing the cost barrier to care), it was found that these special needs children had more untreated caries, almost three times the number of missing teeth and two-thirds the restorations of similarly aged children without disability.[39]

Adults with Special Needs

Special needs children eventually become special needs adults. To this already large population, those who acquire disabilities from disease, drug use, physical injury and other causes are added. An important component of this group for whom epidemiological information is available are the mentally challenged. The severely mentally challenged (IQ<50) are conservatively estimated by McLaren and Bryson to comprise 0.3% to 0.4% of the adult population[40] (approximately 75,000 in Canada). In addition to the behavioural challenge offered by these patients, there are often associated medical concerns.

Elderly Patients with Dementia

It has been estimated that there are approximately 34,000,000 people in the United States and Canada who are 65 years of age or older. The yearly dental visits for this group averages 2 per year (similar to the all-age mean of 2.1 annual visits), with 43% of the group making at least one visit per year.[41] Although the majority of elderly patients require no significant modification in treatment, many presenting for dental care do require the practitioner to have special knowledge and skills to provide appropriate care. The presence of senile dementia due to Alzheimer's disease or following a cerebrovascular accident often necessitates advanced techniques in sedation or anesthesia. Their inability to understand the need for dental treatment can rule out mild/moderate sedation techniques and require deep sedation which can be provided by a Dentist Anesthesiologist.

Patients with Severe Gag Reflexes

The gag reflex is a normal defense mechanism that prevents foreign bodies from entering the trachea, pharynx, or larynx. It may be accompanied by spasm of the pharyngeal structures, retching (air forced over a closed glottis) and vomiting. Although gagging is a protective reaction to intraoral stimulation, there is a wide variation in patients' abilities to withstand intraoral stimuli. Therefore, patients with severe gag reflexes may not be able to tolerate dental procedures.[42] Moreover, a recent study estimated an overall prevalence of gagging during dental treatment to be 8.2%.[43]

Multiple interventions have been proposed for the management of gagging in patients who are to receive dental care. This included behaviour modification, relaxation, distraction, systematic desensitization, as well as use of local anesthesia. Unfortunately, there exists a minority of patients who do not respond to psychological modifications.[44] A recent Cochrane review outlined the need for centrally-acting agents, such as propofol or propofol combined with remifentanil, to manage severe gag reflex during dental treatment.[45] Although these interventions were categorized as "sedatives" in this review, it may have been more appropriate for these agents to be under a separate heading labelled “general anesthesia”. Both the use of propofol and remifentanil require advanced training and cannot be administered by a general dentist. Therefore, the management of patients with severe gag reflexes is best suited for the Dentist Anesthesiologist who is trained to administer deep sedation/general anesthetic agents.

Problems with Local Anesthesia

Dentist Anesthesiologists are regularly consulted by other dentists for therapeutic solutions for patients who present with “local anesthesia problems”. Many patients fail to obtain adequate anesthesia by standard local anesthetic techniques. Failure to achieve satisfactory local anesthesia with a single administration occurs at least 13% of the time.[46] A high percentage of these patients are quite fearful of dentistry and this is due to either previous painful experiences or because their “problem” is, in fact, a substitute for their underlying anxiety, similar to gagging in some individuals. Other patients may be resistant to local anesthesia due to anatomical or physiologic peculiarities or because of an inflammatory process such as acute pulpitis. Among the alternatives for managing these patients are special local anesthetic techniques, deep sedation or general anesthesia.

Invasive/Stressful Procedures

The patients described above have special needs that may necessitate the use of a Dentist Anesthesiologist for even routine dental procedures such as intraoral examination, dental prophylaxis, the taking of radiographs and simple operative dentistry. Individuals without special needs, however, often benefit from anesthesia services when they must undergo prolonged, invasive, or stressful surgical procedures. The majority of patients seek sedation or anesthesia for the removal of third molars. Extensive periodontal surgery and the placement of implants are two additional situations in which patients and practitioners commonly benefit from the use of anesthetic services.

The previously mentioned 2005 survey of the Canadian population[1] found that over 54% of Canadians would prefer to have sedation or general anesthesia for endodontic procedures and over 68% would prefer it for periodontal surgery. However, only a small proportion of these patients currently receive sedation for these procedures.

Furthermore, the 2005 national survey of the Canadian adult population[1] demonstrated that over 1,500,000 adult Canadians have at one time missed, cancelled or avoided a dental appointment due to fear or anxiety. Approximately 2,500,000 are definitely interested in sedation or general

anesthesia for dentistry and over 8,500,000 are interested depending on the cost. If a patient is in severe pain and requires endodontic therapy (a scenario asked in this survey), then over 4,000,000 Canadians are definitely interested in sedation or general anesthesia when in severe pain and in need for endodontics and over 9,000,000 are interested depending on the cost.

Three factors must be considered in projecting the future need for **Dentist Anesthesiologists**:

1. Current undersupply of practitioners to meet the existing needs of the population.
2. Demographic trends and disease patterns that will modify these needs in the future
3. Factors that influence clinician referral patterns for anesthesia services.

The current supply of Dentist Anesthesiologists is insufficient to meet the existing needs of the patient groups identified previously. Although these patients are more or less evenly distributed across the country, Dentist Anesthesiologists are primarily clustered in the specific location where a training program in anesthesia exists. There are 58 members of the Canadian Academy of Dental Anaesthesia with the majority of them residing in Ontario.

Demographic Trends and Disease Patterns

The highly fearful patients constitute the largest special patient group needing anesthesia services for even routine dentistry. This population continues to exist even though effective local anesthetic techniques, mild/moderate sedation methods and behavioural strategies of patient management have been available for generations. A study published in August 2003 showed that the incidence of dental fear and anxiety has remained stable over the past 50 years.[47] The phobic patient population will likely remain the largest group who require services of a Dentist Anesthesiologist which is a need not met by any other specialty within dentistry.

Children with special needs will also constitute a significant patient population needing anesthesia services in the foreseeable future. Demand for general anesthesia services for pediatric patients continues to be high. The efficacy and safety of conscious sedation for management of uncooperative young children has been questioned in recent years. This latter trend is being fueled by pediatric anesthesia guidelines limiting the use of mild/moderate sedation, deep sedation and general anesthesia by pediatric dentists and by reduced parental acceptance of physical restraint as a suitable approach to care.

The same variables influencing need in special children also affect the mentally challenged group. The biggest unknown that may alter the need for anesthesia services in this group is the issue of physical restraint. The use of physical restraints is no longer as acceptable in society as it was in the past. Use of pharmacological control methods by anesthesia-trained practitioners may increasingly be required to solve this problem for dentists, as it already has for physicians under similar circumstances.

The elderly make up the fastest growing age cohort of the population. Cognizant of a progressive reduction in mortality rates among the elderly,[48] the U.S. National Institute on Aging projected an increased proportion of the population who are elderly.[49] It is anticipated that the percentage of the elderly with severe medical and/or mental problems will be stable in the next decade. Therefore, the need for anesthesia referral services will grow with the need and demand for dental care, which is a product of the increasing number of the elderly and their increasing retention of teeth.

Patients with local anesthesia problems will continue to challenge dentists in the years ahead. Although local anesthesia problems are potentially solvable by new technologies, novel methods to

reduce the pain of operative dentistry, such as electronic administration of local anesthetic and chemical or laser-based caries removal, have not had a major impact and probably will not in the near future.

## B. DEMAND FOR DENTAL ANESTHESIA SPECIALTY

The CADA has 50 members registered as Dentist Anaesthesiologists as of May 2021. In Canada, there is only one Dental Anesthesia program and in the United States, there are currently eight. The University of Toronto program underwent changes from a 2-year to a 3-year program, beginning in 1999. Currently, all U.S. programs are also 3 years in length and exist at University of Pittsburgh, The Ohio State University, Stony Brook University, Jacobi Medical Center, St. Barnabas Hospital, Advocate Illinois Masonic Medical Center, NYU Langone Hospital and Wyckoff Heights Medical Center.

The concept of a Dental Anesthesia specialty practice arose because dentists with advanced training in anesthesia saw the need to provide the full spectrum of anesthesia services to dental patients within the dental office environment.

Regarding referral patterns, 1992 survey of Dentist Anaesthesiologists, conducted by the American Society of Dentist Anesthesiologists (ASDA) in cooperation with the American Dental Society of Anesthesiology (ADSA), examined referral patterns including who requested the services of Dentist Anaesthesiologists and the frequency of such referrals. A total of 98 respondents with at least two years of formal advanced training in anesthesiology were included in the analysis. 82 respondents characterized themselves as anesthesiologists. Of these, 61 provided anesthesia services for other dentists.

Another survey of Dentists Anesthesiologists conducted by the American Society of Dentist Anesthesiologists (ASDA) showed requests for anesthesia services came from virtually all categories of dentists (except orthodontists) directly engaged in patient care. General practitioners used the services of Dentist Anesthesiologists most often (20% of all referral cases). They were followed closely by oral and maxillofacial surgeons (18%), periodontists (16%), pediatric dentists (15%), and endodontists (14%). In descending order of importance, the primary indications for anesthesia care in the opinion of the respondents were the following:

- Anxiety or fear (adult)
- Young children
- Mental or physical handicap
- Medically compromised patient
- Extensive invasive procedure
- Extensive amount of care during single appointment
- Gagging
- Local anesthesia problem

The results of the ASDA survey showed that the most common procedure for which the Dentist Anesthesiologist provided anesthesia services was restorative dentistry, followed by periodontics, oral and maxillofacial surgery, endodontics and implants. The anesthesia services rendered included monitored anesthesia care (43% of respondents), parenteral moderate sedation (73%), intravenous deep sedation/general anesthesia (77%), and intubation anesthesia (52%).

Demand for sedation or general anesthesia was shown in the 2005 national survey of the Canadian population. [1] The proportion of the population with a preference for sedation or general anesthesia was 7.2% of the population desiring it for cleaning, 18% for fillings or crowns, 54.7% for endodontics, 68.2% for periodontal surgery and 46.5% for extraction. In each case, preference was significantly greater than the current prevalence. These data are consistent with there being a strong demand for these services in Canada.

In October 2013, the Canadian Institute of Health Information (CIHI) released a report entitled: *Treatment of Preventable Dental Cavities in Preschoolers: A focus on day surgery under general anaesthesia*.[2] The data collected from 2010 to 2012 revealed that approximately 19,000 day-surgeries are completed to treat early childhood caries (ECC) in children under the age of six take place every year in Canada. The report states that on average, a little more than one in 100 children under the age of 6 years old have treatment for ECC in hospitals and 99% of these are treated under general anesthesia (GA) in Canada. In other words, dental surgery is the most common surgical procedure requiring anesthesia in childhood and comprises nearly one-third of all children's day-surgeries in hospitals.[24] However, this report only measured for the frequency of general anesthetics for children performed in-hospital and did not take into account the thousands more cases per year of general anesthetics for preschoolers that take place in community dental clinics.[24] Therefore, the data demonstrates a definite demand for anesthesia services to treat ECC in Canada.

Appendix 10 contains editorials or articles supporting that recognition of Dental Anesthesia as a specialty. This includes an article published in Anesthesia Progress in 1994[50], 2 editorials from Oral Health published in 1996[51] and 1997[52] and an editorial in the journal, Oral Surgery Oral Medicine Oral Pathology, in 2001. An article by the Director of Oral and Maxillofacial Surgery and Advanced Pain Control at The University of Nevada Las Vegas School of Dental Medicine and Vice President of the American Association of Dental Editors, Dan Orr, succinctly lays out his argument for the creation of the specialty in 2012.[53] Both the 1994 article and 2001 editorial supportive of the specialty were written by department heads of oral and maxillofacial surgery programs.

As documented in an article by J.T. Jastak, who at the time was Head of Oral and Maxillofacial Surgery at the University of British Columbia, there has been a great decline in oral and maxillofacial surgeons authoring textbooks or articles on anesthesia.[50] This role has fallen to **Dentist Anesthesiologists**.

Similarly, it can be expected that the impetus for research in Dental Anesthesia may originate from Dentist Anesthesiologists, as anesthesia is no longer a major focus of oral and maxillofacial surgery. Therefore, only a distinct specialty in Dental Anesthesia would provide the basis for continued advancement in teaching this discipline in dentistry and advances in scholarly activity in this field. As described in the editorial by L.J. Peterson, former head of oral and maxillofacial surgery at The Ohio State University, Dental Anesthesia is distinct and oral and maxillofacial surgeons "should embrace Dental Anesthesiology and foster training programs".[54]

## SUMMARY OF NEED & VALUE OF DENTAL ANESTHESIA

It is evident that the proposed specialty, Dental Anesthesia, will benefit and improve oral health care, especially for those patients whose access to oral health care is dependent on the services provided by Dentist Anesthesiologists. Both the need and demand for anesthesia services have been identified by multiple surveys and these advanced skills cannot be adequately met by general practitioners or specialists in currently recognized specialties.

## Criterion 4: Advanced Education

**Reference:**

**University based education programs, at least two years beyond pre-doctoral curriculum as defined by CDAC and consistent with existing specialty programs, must exist to provide the knowledge, skills and competencies required for practice of the proposed specialty.**

## CANADIAN & UNITED STATES DENTAL ANESTHESIA PROGRAMS

All current dental anesthesia training programs, in both Canada and the United States, are 3 years in length.

There is only one Canadian Dental Anesthesia program. All information is current as of May 2021.

University of Toronto
Faculty of Dentistry
Department of Anaesthesia
124 Edward Street
Toronto, Ontario, Canada M5G 1G6
Michelle Wong, DDS, MSc, DADBA, EdD
Residency Program Director
Office #: (416) 864-8272

There are eight (8) programs in the United States and Canadian residents are accepted.

**Advocate Illinois Masonic Medical Center**
Department of Dentistry
Advocate Illinois Masonic Medical Center
811 W. Wellington Ave., Chicago, IL 60657
Ken Kromash, DDS
Residency Program Director
Office #: 773.871.6138

**Jacobi Medical Center**
Department of Dentistry/OMFS
1400 Pelham Parkway South
Bldg 1, Room 3NE1
Bronx, NY 10461
Mana Saraghi, DMD
Residency Program Director
Office #: (631) 404-8184

**SBH Health System Bronx (St. Barnabas Hospital)**
Department of Dentistry
Third Avenue & 183rd Street
Bronx, New York 10457
Berry Stahl, DMD
Residency Program Director
Office #: (718) 960-6498

**Stony Brook University Medical Center**
Department of Anesthesiology
Division of Dental Anesthesiology
Stony Brook School of Dental Medicine
1104 Sullivan Hall
Stony Brook, NY 11994-8700
Ralph Epstein, DDS
Residency Program Director
Office #: (516) 487-8110
NYU Langone Hospital
Department of Dental Medicine
5800 3rd Avenue
Brooklyn, NY 11220
Charles Azzaretti, DDS
Residency Program Director
Office #: (718) 630-7332

**The Ohio State University Medical Center**
Section of Dental Anesthesiology
2154 Postle Hall
305 West 12th Avenue
Columbus, OH 43210
Bryant Cornelius, DDS
Residency Program Director
Office #: 614-292-9727

**University of Pittsburgh Medical Center**
School of Dental Medicine
Department of Dental Anesthesiology
G-89 Salk Hall
Pittsburgh, PA 15261
Michael Cuddy, DMD
Residency Program Director
Office #: (412) 648-9901

**Wyckoff Heights Medical Center**
Department of Dentistry
Division of Dental Anesthesiology
374 Stockholm St.
Brooklyn, NY 11237
Camille Chiques
Residency Program Director
Office #: 718-963-7741

## GOALS OF ALL DENTAL ANESTHESIA PROGRAMS

The principal objective of advanced dental specialty education in Anesthesia is to prepare the dentist in the most comprehensive manner to manage pain and anxiety in the adult, child and special needs patients. The program must be designed to provide special knowledge and skills beyond the DDS or DMD training and must be oriented to the accepted standards of specialty practice. An additional objective of a graduate specialty program is to develop future educators and researchers in the field.

**Objectives**

Upon completion of training, the postdoctoral Dental Anesthesia student must:

1. Show proficiency in the evaluation of the patient's need for the various forms of pain and anxiety control.
2. Perform all contemporary mild/moderate sedation, deep sedation, and general anesthetic techniques, for both adult and pediatric dental patients. This includes oro- and naso-endotracheal intubation for all patients and includes use of all appropriate monitoring techniques and equipment.
3. Manage all anesthesia-related problems in postanesthetic recovery, including pain management, blood pressure control, fluid management, ventilation assessment, monitoring and assessment of fitness for discharge.
4. Provide anesthetic management for the special needs patient.
5. Perform all intraoral local anesthetic techniques.
6. Demonstrate ability in the management of the acute anesthetic emergency, with skills at least at the level of advanced cardiac life support (ACLS) and/or pediatric advanced life support (PALS).
7. Demonstrate teaching or consulting abilities to dental professionals in such a way as to advance anesthetic care for all areas or specialties of dentistry.
8. Discuss and evaluate the research literature pertaining to anesthesia in dentistry.

**Course Content**

An advanced specialty education program in Dental Anesthesia must encompass a minimum of 36 months of didactic and clinical full-time study.

**Didactic Program**

An acceptable postdoctoral program in Dental Anesthesia must provide instruction in basic sciences as well as the applied sciences. Didactic education may take the format of formal courses, seminars, conferences, reading assignments, grand rounds and teaching and research assignments. The course material presented must be designed for postdoctoral students and not a repetition of predoctoral pain and anxiety control curriculum. However, predoctoral material may be used in review as foundation for advanced concepts. Didactic instruction must include and integrate the basic and applied biomedical sciences outlined in Section B.1.b.

**Clinical Program**

Clinical education may take place in the dental school, hospital or outpatient facilities. At a minimum, 12 months should be devoted exclusively to clinical training in general anesthesia and related areas. Commitment should be full time, and each dentist must participate in all of the usual duties of an Anesthesia resident. Clinical education will progress within a specified schedule, starting with basic anesthetic management that is routine, increasing to that of extensive complexity. Over the course of the 36 months, the need for clinical supervision will decrease from direct and continuous to that of indirect and intermittent, depending on the difficulty of the case and the progress of the resident. Components of the clinical program are outlined in Section B.1.c.

**Teaching**
Experience in teaching not only prepares the student to communicate effectively with peers, but also initiates the role of providing education to other dental practitioners so that all may realize the benefits of pain and anxiety control. Opportunities should be provided for teaching predoctoral students with demonstrations and lectures. These sessions should be limited so as not to interfere with postdoctoral education and must not exceed 10% of the program.

**Research**
Participation in research activities fosters intellectual growth. It promotes a greater understanding of scientific literature and develops the ability to publish such material. An investigative research project or analysis of literature should be conducted.

The curriculum for the only Canadian program is listed below.

**UNIVERSITY OF TORONTO CURRICULUM FOR GRADUATE DENTAL ANESTHESIA**

**Dental Anesthesia Graduate Program: Curriculum**
**2021-2022**

**Research-based programs including specialty training**

M.Sc. – Thesis option is offered for dental graduates seeking advanced training in a clinical specialty as well as training in research. The program requires two to four years of full time registration, depending upon the clinical specialty, and involves completion of an original research project culminating in an oral defense of a written thesis, and completion of clinical and didactic coursework requirements as necessary to meet requirements for the degree that includes successful completion of the courses DEN1014H Clinical Epidemiology and Evidence-Based Care; DEN1015H Introduction to Biostatistics; Research Ethics (DEN1010H) and DEN1001Y Master's Seminars in Oral Health Sciences. Upon completion of all program requirements students are eligible for the graduate degree, and for Specialty, Fellowship, or Board Certification in the chosen dental specialty.

M.Sc. – Coursework only option is offered for dental graduates seeking advanced training in a clinical specialty in which additional coursework is undertaken as an alternative to a thesis. It is offered at the discretion of the Graduate Specialty Program Director. This program requires two to four years of full time registration, depending upon the clinical specialty, entails completion of all clinical and didactic coursework necessary for the chosen specialty that includes successful completion of the courses Clinical Epidemiology and Evidence-Based Care (DEN1014H); Introduction to Biostatistics (DEN1015H); Research Ethics (DEN1010H) and Master's Seminars in Oral Health Sciences (DEN1001Y) along with three half-courses (1.5 FCE) in clinical, epidemiological, or basic science research methodology appropriate for clinical or public health practice. In addition, preparation; completion; and oral defense of a one-half course weighted Research Practicum (DEN1061H). Upon completion of all program requirements students are eligible for the graduate degree. Graduands are eligible for Specialty, Fellowship, or Board Certification in the chosen dental specialty.

Enrolment to the Dental Anesthesia Graduate Program is limited and is normally 2 residents.

**DEN1001Y/DEN1100Y Seminars in Oral Health Sciences**
(CR/NCR)
Seminars in Oral Health Sciences is required as part of the program for all M.Sc. and Ph.D. students at the Faculty of Dentistry. The course is designed to demonstrate research progress, develop and enhance presentation skills to a large audience, field questions and chair a seminar session. As part of this program, students must also meet individually with an instructor from the University of Toronto Health Sciences Writing Centre, one to two weeks before their seminar to receive expert advice on presentation skills and the design of their presentation.

**Requirements**

During the course of their program, M.Sc. students are required:

- To presents one 20-minute seminar during the final year of their research.
- To submit online in Quercus a 250-words (max) abstract for their seminar at least a week ahead of their presentation to be circulated.
- To present one poster at the Faculty of Dentistry Research Day
- To complete an anonymized peer-evaluation to be submitted online in Quercus after each session attended
- To chair one session.

The presenting student supervisors are expected to attend the student seminar.

**Attendance**

For students who are undertaking concurrent clinical specialty training:

- MSc students are required to attend a minimum of 20 sessions throughout their specialty training period.

**Feedback**

All students presenting will be offered feedback on their performance by Faculty members present during the session, either directly at the end of the session or by email. All students attending the session will be asked to complete an anonymized peer-evaluation form immediately at the end of each session. This will be done directly by submitting the completed template in Quercus. An anonymized summary of the peer-evaluation can be requested by the presenters.

**Evaluation**

Proof of attendance of student attending the session will be performed using TopHat. Each student must enroll in TopHat as attendance can be taken at any time during the session or multiple times if necessary.
The evaluation of the course requirements will be based on the submission of peer-evaluation forms, submission of the abstract(s), confirmation of the attendance in individual session with the instructors from the University of Toronto Health Sciences Writing Centre before the oral presentation(s), and the confirmation of the poster presentation(s) at the Faculty of Dentistry Research Day and finally the chairing of session(s).
A grade of credit is assigned on satisfactory completion of all requirements. M.Sc. students register in DEN1001Y.
L. BOZEC

**DEN1010F Research Ethics**
This course aims to highlight ethical values and regulations in different topics that are research-related: scientific writing, confidentiality agreements, students mentoring, research with humans, animals and biological samples, etc. The course involves participation in a seminar and the fulfillment of an online course offered by the Tri-council Funding Agencies of Canada. The same seminar will be offered in two different dates and attendance in one of the sessions is mandatory. Additionally, proof of completion of the online tutorial course "Tri-Council Policy Statement 2 – Tutorial Course on Research Ethics" is required. This is a credit, non-credit course.
G.M. DE SOUZA

**DEN1014S Clinical Epidemiology and Evidence-Based Care**
Clinical Epidemiology and Evidence-Based Care is a core course in the Faculty of Dentistry. Successful completion of this course is one of the program requirements for the dental graduates seeking advanced training in a clinical specialty. This course will demonstrate the scientific basis for clinical decision-making in prognosis, causation, diagnosis and therapy following the principles of evidence- based health care. Examples from the dental literature are used to illustrate the concepts and their practical application. The specific objectives of the course are: 1) to introduce principles of epidemiology as applied to clinical research; 2) to provide Clinical Specialty Graduate students with the fundamental scientific skills in clinical epidemiology to enable them to practice evidence-based dental care; 3) to provide the students with skills in answering questions using biomedical literature; 4) to provide students with the skills needed to critically appraise a biomedical research article.
A. AZARPAZHOOH, STAFF

**DEN1015F Introduction to Biostatistics**
The Introduction to Biostatistics course is designed to provide graduate dental students with an understanding of the statistical methods necessary for data analysis and literature interpretation. The course covers: the summary of quantitative and qualitative data; normal curve principles; the t-test, one-way, factorial and repeated-measures analysis of variance; chi-square tests and other non- parametric methods; simple regression and correlation; multiple regression and ANCOVA. Special topics, such as examiner agreement and sample size estimation, are also included. In addition, the course offers an introduction to logistic regression and survival analysis. The course includes both lecture and computer lab sessions. Students are taught to create and manipulate dental datasets and conduct statistical analysis of data using commonly available computer applications (e.g.,SPSS). References from the dental literature are used extensively during the course and material covered in lectures and labs is tailored whenever possible to the particular needs of the students' research projects.
H.P. LAWRENCE

**DEN1052Y General Anaesthesia for Medical Procedures – Pediatric**
This course introduces residents to general anaesthesia for pediatric medical procedures at Michael Garron Hospital's Department of Anaesthesia and for pediatric dental procedures at the Faculty of Dentistry's anaesthesia facility. Residents engage in an immersive rotation at the Hospital for Sick Children under the direction of the Department of Anaesthesia. The objective of this course is to learn the principles and application of general anaesthesia to children in the hospital setting. This course is taken in year two.
M. WONG, J. MAYNES, M. LAM, STAFF, DEPARTMENT OF ANAESTHESIA, HOSPITAL FOR SICK CHILDREN

**DEN1055F Basic Principles of Dental Anaesthesia**
This self-directed online reading course takes place weekly in the Fall term of residency. Weekly assigned readings will cover the subjects of anatomy, respiratory and cardiovascular physiology relevant to the practice of sedation and anaesthesia. Evaluation will consist of weekly online quizzes, oral assessments, and one written assignment at the end of the course. This course is a requirement for first year dental anaesthesia residents.
C. YARASCAVITCH

**DEN1056Y Basic Concepts in Clinical Medicine**
The objective of this course is to provide dental anaesthesia residents with the clinical knowledge and skills of physical evaluation and medical risk assessment. This will build on the academic basis of the course "Foundations of Medicine as applied to Dental Anaesthesia". It will consist of a 3-hour per week clinical session for the first year in the program.
N. TENN-LYN

**DEN1071H Medical Anaesthesia Seminars I**
These seminars are conducted by members of the Department of Anaesthesia, Faculty of Medicine. Topics include equipment and monitors, patient safety, acute pain, regional anaesthesia, perioperative medicine and chronic pain. This course is taken in year one. This is a credit/non-credit based course.
C. YARASCAVITCH, L. BAHREY, DEPT. OF ANAESTHESIA, FACULTY OF MEDICINE

**DEN1072H Medical Anaesthesia Seminars II**
These seminars are conducted by members of the Department of Anaesthesia, Faculty of Medicine. Topics include include pediatric anaesthesia, cardiovascular and respiratory system physiology and anaesthesia, trauma and resuscitation. This course is taken in year two. This is a credit/non-credit based course.
C. YARASCAVITCH, L. BAHREY, DEPT. OF ANAESTHESIA, FACULTY OF MEDICINE

**DEN1073Y Dental Anaesthesia Graduate Seminars**
This weekly course consists of both Faculty-led and student-led presentations that cover a range of topics relevant to dental anaesthesia. Residents receive introductory lessons in pharmacology from Faculty. The student presentations cover the management of anaesthesia for common systemic diseases, with facilitation and feedback from Faculty. Students apply anaesthesia planning principles to case-based learning exercises.
M. WONG, A. OUANOUNOU, D. DECLOUX, STAFF

**DEN1074Y Foundations of Medicine as Applied to Dental Anaesthesia**
The objective of this course is to provide the academic basis of clinical medicine for residents in dental anaesthesia. The content will include: interpretation of complete medical histories; techniques of physical examination; interpretation of physical evaluation results; understanding the implications of systemic disease, in particular those of the cardiovascular, respiratory and endocrine systems; understanding the indications for and interpretations of laboratory studies and other techniques used in physical diagnosis and preoperative evaluation.
The course will consist of 3 hours of seminars per week, divided into 2 weekly sessions, for the fall term of the first year in the program and combined into a single weekly session in the winter term of the first year of the program.
N. TENN-LYN

**DEN1075Y General Anaesthesia for Dental Procedures – Pediatric**
This course involves clinical application of general anaesthesia for pediatric dental patients. Residents gain experience in administering general anaesthetics for children in an outpatient setting, using both intubated and non-intubated techniques. The clinics take place in the anaesthesia facility at the Faculty of Dentistry, seven half-days per week, with an additional half-day per week in pre-operative assessment consultations. Each resident will spend 6 months on this clinical assignment. A concurrent asynchronous online reading course enriches the residents' clinical experiences. Residents give a seminar on PALS and create an emergency manual for peer and Faculty feedback. Core simulations in airway and common anaesthesia emergencies is a course requirement. This course is taken in year three.
M. WONG, STAFF

**DEN1076H General Anaesthesia for Medical Procedures – Adult I**
This program involves rotations for the dental anaesthesia resident under the direction of the Department of Anaesthesia, Michael Garron Hospital. The objective of this course is to learn the principles and application of general anaesthesia to adults in the hospital setting. This is accomplished by gaining direct experience in all aspects of the administration of general anaesthesia for medical procedures. This course is taken in year one.
M. WONG, D. LAM, L. SHULMAN, STAFF, DEPARTMENT OF ANAESTHESIA, MICHAEL GARRON HOSPITAL

**DEN1077H General Anaesthesia for Medical Procedures – Adult II**
This program involves rotations for the dental anaesthesia resident under the direction of the Department of Anaesthesia, Michael Garron Hospital. The objective of this course is to further advance the principles and application of general anaesthesia to adults in the hospital setting. This is accomplished by direct experience in all aspects of the administration of general anaesthesia for medical procedures. This course is taken in year two or three.
M. WONG, D. LAM, L. SHULMAN, STAFF, DEPARTMENT OF ANAESTHESIA, MICHAEL GARRON HOSPITAL

**DEN1078H General Anaesthesia for Dental Procedures – Adult I**
This course involves clinical application of all modalities of sedation and anaesthesia for dental patients, with the focus on deep sedation and general anaesthesia. Faculty-led workshops on preoperative assessment, consultations, and electrocardiogram interpretation are given. First year residents give presentations on anaesthesia emergencies for peer and Faculty feedback. Residents gain experience in the full range of sedation and non-intubated anaesthetic techniques for adults. Clinics take place in the anaesthesia facility at the Faculty of Dentistry, five half-days per week. Residents also spend one day per week administering deep sedation to medically complex patients with mental or physical challenges in the Department of Dental and Maxillofacial Sciences at Sunnybrook Health Science Centre. Core simulations in airway and common anaesthesia emergencies are a course requirement. Emphasis is on skill acquisition.
C. YARASCAVITCH, M. WONG, P. NKANSAH, STAFF

**DEN1079H General Anaesthesia for Dental Procedures– Adult II**
This course involves clinical application of all modalities of sedation and anaesthesia for dental patients, with the focus on deep sedation and general anaesthesia. Third year residents give a seminar on ACLS for peer and Faculty feedback. Residents gain experience in the full range of sedation and non-intubated anaesthetic techniques for adults. Clinics take place in the anaesthesia facility at the Faculty of Dentistry, five half-days per week. Residents also spend one day per week administering deep sedation to medically complex patients with mental or physical challenges in the Department of Dental and Maxillofacial Sciences at Sunnybrook Health Science Centre and one half-day per week in the Department of Dentistry at Mount Sinai Hospital. Core simulation in airway and common anaesthesia emergencies are a course requirement. Emphasis is on skills refinement.
M. WONG, C. YARASCAVITCH, P. NKANSAH, D. DECLOUX, STAFF

**DEN1083Y Experiences in Clinical Medicine**
The objective of this course is to provide clinical experience in medicine for residents in dental anaesthesia. Residents complete rotations in the Department of Internal Medicine at Sunnybrook Health Sciences Centre and the Departments of Cardiology and Respirology at Women's College Hospital. Emphasis is on the application of knowledge and clinical skills in a variety of patient care contexts. This course is taken in year two.
M. WONG, Z. FEILCHENFELD, DEPT. OF INTERNAL MEDICINE, SUNNYBROOK HEALTH SCIENCES, J. MORIC, STAFF, WOMEN'S COLLEGE HOSPITAL
**DEN1084H; DEN 1085H; DEN1086H Experiences in Clinical Teaching Yrs I, II, III**

The objective of this course is to strengthen understanding of instructional pedagogy and teaching skills. Developed from the Centre for Faculty Development Teaching and Learning Collaboration workshops, this course consists of small group instruction and practical teaching assignments. Residents participate in workshops on best educational practices for learning in clinical contexts to prepare themselves for instructor roles. Mandatory teaching assignments consist of a minimum of 10 half-days per year in each of the three years of the program. Seminar facilitation and clinical supervision is carried out in the Faculty clinics for: second year undergraduate dental students local anesthetic techniques; third year dental students and dentists enrolled in continuing education for nitrous oxide and oxygen sedation techniques; fourth year dental student medical emergency seminars and simulations; peer teaching for dental anaesthesia residents. Progress is measured by a portfolio of personal reflections and objective evaluations.
C. YARASCAVITCH, STAFF

**DEN1087Y; DEN1088Y; DEN1089Y Fundamentals of Dental Anaesthesia Yrs I; II and III**

This course consists of three foundational components: Journal Review, Clinical Rounds, and Oral Examination. On a weekly basis, residents rotate in a leadership role providing formal presentations to peers and faculty. Literature applicable to the field of dental anesthesia is reviewed to exercise critical appraisal skills and inform dental anaesthesia practice. Clinical patient cases are presented to encourage reflection on practice and quality assurance in patient care. On a bi-annual basis in December and June, residents complete an oral examination in dental anaesthesia and related topics in order to assess progress and prepare for board certification.
M. WONG, C. YARASCAVITCH, P. COPP, STAFF

**PDE9094Y Clinical Conferences**
This is a seminar series with compulsory attendance for all graduate clinical students (except those in Oral Pathology & Oral Medicine specialty). Groups comprising two or three residents from different specialty programs are assigned to work together to present formal one-hour seminars. Topics of presentation should be multidisciplinary, related to current clinical issues in the individual specialty fields, evidenced-based, and serve to keep attendees abreast of current treatment philosophy in specialties other than their own. Credit for the course is based on a required minimum number of attendance. For those assigned to present, in addition to meeting attendance requirements, credit is based on the seminar presentation and submission of a written report of the case presentation to a journal. (This is a credit/ non-credit course).
S.G. GONG, G. KULKARNI, STAFF

**ELECTIVES**

**DEN3005H Head and Neck Anatomy**
The Division of Anatomy, Faculty of Medicine, together with the Faculty of Dentistry, offers a comprehensive head and neck anatomy course tailored for the specialties of Oral and Maxillofacial Surgery (OMFS) and Endodontics. The course will comprise four-week (8 hour) lecture series and prosection review, combined with an additional cadaver dissection component (32 hours) for residents of the OMFS program.
Students will have access to specially prepared material, which may be studied in the Division of Anatomy. Dissection manuals will be available for the laboratory activities. Instructors and staff will be available during the surgical dissection laboratories and on a consulting basis.
V. MENDES AND M. CAMINITI, STAFF

**DEN1098F/S Reading Course in Oral Health Sciences**
The purpose of this course is to offer instruction in specialized topics that are not part of regular graduate courses. It consists of assigned readings that are discussed in weekly meetings with the course director. Interested students should approach the graduate staff member whom they would like to direct their reading course. Staff members who agree to direct a course should submit a course outline that includes a list of papers to be discussed and the grading method to be used, to the Associate Dean, Graduate Education. The reading course must conform to regulations established by the Department and the School of Graduate Studies (Available in the Student Services Office). The Faculty will normally only consider one reading course to complete your degree requirements. In exceptional circumstances this requirement may be waived.

**DEN1061H Research Practicum**
The research practicum aims to give students hands-on experience of one or more components of the research process. This can include analyzing an existing data set, undertaking a systematic review and/or meta-analysis or a review article. This type of experience will give students the opportunity to use skills in, and an appreciation of, such matters as literature searching, hypothesis setting, experimental design, methodological limitations, laboratory practice, and writing a paper for publication. Consequently, it provides a more limited exposure to the research process than research leading to a M.Sc. level thesis. The requirements for this course can be met by undertaking a research project or an essay in the form of a review article. In either case, the required outcome is a paper in a format suitable for publication. The research practicum will be undertaken with the assistance of an appropriate supervisor and examined by a committee comprised of three faculty members, at least one of whom is from the student's specialty.

**ELECTIVE – Orofacial Pain Clinics (Sunnybrook Health Sciences Centre):**

| UNIVERSITY OF TORONTO FACULTY OF DENTISTRY | **Discipline of Dental Anaesthesia Clinical Elective Program** |
|---|---|
| **Elective Title** | **Orofacial Pain Clinics (OPC)** |
| **Location** | **Sunnybrook Health Sciences Centre Department of Dental and Maxillofacial Sciences, Clinic (H1-26)** |
| **Elective Director** | **Dr. Marco Magalhaes Oral Maxillofacial Pathology and Oral Medicine Specialist, Assistant Professor, Tenure Stream** marco.magalhaes@utoronto.ca |
| **Additional Department Contact(s)** | **Dr. Veenu Mittal Postgraduate Coordinator, Department of Dental Maxillofacial Sciences** veenu.mittal@sunnybrook.ca |
| **Duration** | 4 weeks, part-time: Tuesdays 8:30AM-4:30PM |
| **Learner Level** | PGY2, PGY3, Fellowship Year |

| | |
|---|---|
| **Course Prerequisites** | Online Synchronous Seminar: 3 hours<br>Readings: de Leeuw, Reny, Klasser, Gary **Orofacial Pain: Guidelines for Assessment, Diagnosis, and Management, Fifth Edition.** Quintessence Publishing Co |
| **Additional Prerequisites** | Acceptable progress in academic and clinical prerequisites<br>Resident eligibility is at the discretion of the Dental Anaesthesia Program Director |
| **Description** | The Department of Dental Maxillofacial Sciences at Sunnybrook Health Sciences provides multi-disciplinary patient care, education, and research around chronic orofacial pain disorders. It is a referral centre for adults with chronic, non-cancer, and cancer pain disorders.<br>The Dental Anaesthesia Resident will participate in orofacial pain assessment and patient management alongside an oral and maxillofacial pathology and oral medicine specialist. The goal of this elective is to enhance the dental anaesthesia resident's understanding of chronic orofacial pain. After this elective, the resident may better understand how orofacial pain disorders may affect airway management and anaesthetic planning for these complex patients. |
| **Learning Objectives** | This elective is foundational to Dental Anaesthesia's Entrustable Professional Activity #1: "Perform preoperative assessments for adults undergoing routine, elective anesthesia."<br><br>Learners gain exposure and participate in:<br>• The assessment of complex orofacial pain patients<br>• Patient-centered interdisciplinary care<br><br>Learners will understand:<br>• Common non-surgical treatment regimens for orofacial pain.<br>• Mechanisms of pain<br>• Comprehension and compassion for the patient pain experience. |
| **Learning Outcomes** | Residents will be able to: |

| | |
|---|---|
| | 1. Differentiate chronic pain of odontogenic, musculoskeletal, and neuropathic origins.<br>2. Assess orofacial pain patients to triage and refer them for care.<br>3. Explain the pharmacological and non-pharmacological management strategies for chronic orofacial pain, including temporomandibular disorder (TMD) and neuropathic pain.<br>4. Appreciate the complexities associated with the treatment of orofacial pain from both a dental and medical viewpoint. |
| **Resident Responsibilities** | Attend Sunnybrook Department of Dental Maxillofacial Sciences, Clinic H1-26 on Tuesday mornings and afternoons from 8:30 AM-4:30 PM for 4 weeks.<br>Clinic Check-in location and times are specified by Elective Director, Dr. Magalhaes. Contact method: marco.magalhaes@utoronto.ca<br>Advise Dr. Magalhaes in advance of any unforeseen absences. |
| **Assessment** | Formal assessment of this elective is not required. Direct feedback to residents will be given at the end of the clinics.<br>Residents receive credit for this activity when complete. |
| **Faculty Contact** | *For any inquiries regarding this elective or resident participation, contact:*<br><br>Ms. Masha Gorevalov<br>Postgraduate Coordinator, Faculty of Dentistry<br>masha.gorevalov@dentistry.utoronto.ca<br>Phone: 416.864.8340<br><br>Dr. Michelle Wong<br>Assistant Professor, Teaching Stream<br>Director, Dental Anaesthesia Graduate Program<br>Faculty of Dentistry, University of Toronto<br>Email: michelle.wong@dentistry.utoronto.ca<br>Phone: 416.864.8272 |

## ADDENDUM# 1: COMPARISON WITH MEDICAL ANESTHESIA PROGRAM

*Please note: This section was added in response to the CDRAF's request for information on how the medical anesthesia program differs from the dental anesthesia program. This information does not fit in any of the 4 criteria used to determine specialty status and has been added as an addendum.*

The Dentist Anesthesiologist program concentrates on preparing the resident to be competent in providing deep sedation/general anesthesia services for dental patients in a private setting. The Dentist Anesthesiologist resident, while in the hospital, is expected to perform at same level as their physician anesthesiology resident counterparts. In many training programs, this includes being on-call, participating in morning rounds and performing other duties that the physician anesthesiology residents are expected to complete. Moreover, the Dentist Anesthesiologist resident will also have out-of-hospital/office-based experience in addition to their hospital rotations to prepare them for providing deep sedation/general anesthesia services for dental patients in a private setting. Naturally, there are many aspects of the physician anesthesiologist residency that require training above and beyond what is attained by the Dentist Anesthesiologist. This includes but not limited to:

Anesthesia for transplants
Anesthesia for labour and deliver
Anesthesia for cardiac and thoracic surgery
Regional and trauma anesthesia

In the 2019 Canadian Medical Association Survey, only 3% of physician anesthesiologists reported working in private offices in Canada.[56] On the contrary, 100% of Dentist Anesthesiologists in Canada practice in private clinics.

While the Dentist Anesthesiologist resident has exposure to anesthesia for the above mentioned areas during their training, the objective lies with exposure as opposed to proficiency in those specific topics. Therefore, the difference in the length of time for training the medical (5 years) versus the dental anesthesia program (3 years) is due to additional topics that physician anesthesiologists require training in.

Another difference with the medical versus the dental programs is the physician anesthesiologist training program does not specify a required number of cases to be fulfilled prior to completion of the program. However, the CODA requirements for Dental Anesthesia programs list out specific case requirements as shown below:

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.

The detailed requirements of providing deep sedation/general anesthesia allows the Dentist Anesthesiologist to be prepared for the type of cases that will be encountered in a private clinic. Since the physician anesthesiologist program does not include specific case requirements with providing anesthesia services for dental procedures, they may or may not have experience with such cases.

Overlap between established dental specialties exist and crossover between dentistry and medicine is inevitable. For example, oral pathology overlaps with general pathology as well as oral maxillofacial surgery overlaps with plastics and ear nose throat surgery. Therefore, commonalties between Dental Anesthesia and different dental specialties or medicine does not discount the need for a recognized Dental Anesthesia specialty.

In addition, it is important to note that Dentist Anesthesiologists are not aiming to be equivalent to our medicine counterparts by obtaining recognized specialty status. Instead, dentist anesthesiologists are demonstrating that their training is different and unique within dentistry. The specialty recognition will not only benefit the public by ensuring Dentist Anesthesiologists are properly trained, but it will also advance the development of anesthesia within dentistry.

## ADDENDUM# 2: DENTAL ANESTHESIOLOGISTS' SCOPE OF PRACTICE

*Please note: This section was added in response to the CDRAF's request for information on Dentist Anesthesiologists' scope of practice. This information does not fit in any of the 4 criteria used to determine specialty status and has been added as an addendum.*

The scope of practice for the Dentist Anesthesiologist, like all other specialties, varies based on personal preference. All Dentist Anesthesiologists are trained to provide sedation of all modalities for dental patients, including deep sedation/general anesthesia services. Since Dentist Anesthesiologists are experts in local anesthesia, some choose to remain in academics and teach local anesthesia, sedation and medical emergencies. However, similar to general practitioners and other specialists, the majority of Dentist Anesthesiologists choose to practice in a private clinic providing all levels of anesthesia for their dental patients.

It is important to note that provincial regulations dictate how Dentist Anesthesiologists can practice. In British Columbia and Alberta, the practice of providing general anesthesia and performing dental treatment concurrently is against their standards and guidelines. Therefore, Dentist Anesthesiologists that practice in British Columbia and Alberta provide general anesthesia services for other dentists and do not treat the dental patient simultaneously.

However, the practice differs in the province of Ontario. The procedural team anesthesia model is supported in Ontario. Some Dentist Anesthesiologists, as well as the oral maxillofacial surgeons, work as a team with a trained registered nurse/respiratory therapist and a dental assistant, to provide deep sedation/general anesthesia to dental patients while performing the dental treatment at the same time. Other Dentist Anesthesiologists in Ontario choose to provide anesthesia services only and do not perform dental treatment concurrently. Again, the decision to practice procedural team anesthesia or anesthesia only is a personal preference. This is similar to how some general practitioners choose to provide endodontic treatment and others prefer to refer their patients to an endodontist specialist.

Therefore, the training in Dental Anesthesia does not dictate the mode of delivery of anesthesia but instead, it sets the level of education and knowledge of anesthesia expected of a qualified Dentist Anesthesiologist.

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CADA
CANADIAN ACADEMY
OF DENTAL ANAESTHESIA

# APPENDIX 1:

Commission of Dental Accreditation of Canada (CDAC): Report of the External Evaluation of the Dental Anesthesia Education Program at the University of Toronto

**APPENDIX 1**

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C O N F I D E N T I A L

# REPORT OF THE EXTERNAL EVALUATION OF THE DENTAL ANAESTHESIA EDUCATION PROGRAM AT THE UNIVERSITY OF TORONTO

**FACILITATED BY THE COMMISSION ON DENTAL ACCREDITATION OF CANADA (CDAC) FOR THE ROYAL COLLEGE OF DENTAL SURGEONS OF ONTARIO (RCDSO)**

**September 11 and 12, 2008**

**Draft: September 22, 2008**

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## PREFACE

Recommendations and Suggestions made in this report are based upon the document "Document for the evaluation of the Dental Anaesthesiology Program at the University of Toronto (2008)" based on the CODA accreditation requirements for Dental Anaesthesia programs[1.]

In areas where a weakness and/or deficiency exists in relation to a requirement, a recommendation will be made and it is anticipated that the program will attempt to address the recommendation. Suggestions may also appear in this report and these are identified by the survey team to enhance the overall effectiveness of the program. Suggestions are meant to be helpful.

[1] Commission on Dental Accreditation, *Accreditation Requirements for Advanced General Dentistry Education Programs in Dental Anesthesiology*, 2007

## 0.0 PROGRAM INFORMATION

The Dental Anaesthesia program at the Faculty of Dentistry, University of Toronto was established in 1960. The University of Toronto operates under the Ontario Ministry of Education and Training.

The Dental Anaesthesia program accepts two qualified residents each year and is three years in length. The principal objective of this program is to prepare the dentist to provide the full range of sedation and anaesthetic techniques for dental patients with the focus on deep sedation and general anaesthesia. An additional objective is to train clinicians to be able to undertake teaching and research in dental anaesthesia.

The teaching facilities for this program are provided by the combined resources of the Discipline of Dental Anaesthesia in the Faculty of Dentistry and the Department of Anaesthesia, Faculty of Medicine. Training occurs at the Faculty of Dentistry and at teaching hospitals associated with the University of Toronto. Clinical anaesthesia training includes a minimum of 12 months at the Faculty, 8 months at Toronto East General Hospital and 6 months at the Hospital for Sick Children. Rotations in internal medicine and pre-admission clinic are also scheduled at the Toronto General, Sunnybrook Hospitals or at Toronto Western Hospital. Residents are required to complete an ACLS (Advanced Cardiac Life Support) course prior to the end of Year I. The research component of the program is incorporated into the program schedule for each resident on an individual basis.

The September 11 and 12, 2008 evaluation was conducted by the following team:
Dr. Steven Ganzberg, Columbus, OH
Dr. Mort Rosenberg, Boston, MA
Dr. Michael Gardner, representative, Royal College of Dental Surgeons of Ontario (RCDSO)
Ms. Susan Matheson, Director, Commission on Dental Accreditation of Canada (CDAC)

## 1.0 INSTITUTIONAL AND PROGRAM EFFECTIVENESS

*Requirement*

*1.1 The CDAC requires that an advanced or dental specialty program must be sponsored by a faculty/school/college of dentistry located within a university which is properly chartered and licensed to operate and offer instruction leading to a degree, diploma or certificate. All other educational programs offered by the university eligible for accreditation by the CDAC must be accredited. It is expected that the position of the program in the administrative structure will be consistent with that of other comparable programs within the institution. There must be provision for direct communication between the program and the parent institution regarding decisions that directly affect*

*the program. Faculty members should have the opportunity to participate on university committees.*

Evaluators' Observations

The Dental Anaesthesia program is sponsored by the Faculty of Dentistry at the University of Toronto and all other applicable programs within the Faculty eligible for CDAC accreditation are accredited. The Dental Anaesthesia program's position within the Faculty's administrative structure is consistent with other similar specialty programs, including communication links to the parent institution and eligibility for committee assignments. In addition, the Program Director currently oversees the clinical divisions of the Faculty as Associate Dean, Clinical Affairs.

*Requirement*

*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.*

Evaluators' Observations

The Dental Anaesthesia program receives no funding from any sponsor outside of the funds provided by the University of Toronto's Faculty of Dentistry.

*Requirement*

*1.3 The authority and final responsibility for curriculum development and approval, student/resident selection, faculty selection, and administrative matters must rest within the sponsoring institution.*

Evaluators' Observations

The authority and final responsibility for curriculum development and approval, resident selection, faculty selection and administrative matters rests within the Faculty of Dentistry. Specifically, responsibility for the Dental Anaesthesia program primarily rests with the Program Director, and this is consistent with the policies of the Faculty of Dentistry.

*Requirement*

*1.4 The financial resources must be sufficient to support the program's stated purpose/ mission and goals and objectives.*

Evaluators' Observations

The Faculty of Dentistry is a single department Faculty and does not break down its costs by specialty program. Discussions with the Dean of the Faculty of Dentistry, determined

that like any Canadian Dental Faculty, additional funds would be most welcomed; however, the Faculty does have adequate funding and overall programmatic support to cover all of its projected costs and to meet the program's stated mission and goals and objectives.

*Requirement*

1.5 *All arrangements with co-sponsoring or affiliated institutions must be formalized by means of written agreements that clearly define the roles and responsibilities of each institution involved.*

Evaluators' Observations

Dental Anaesthesia residents currently receive training with the following affiliated institutions: Sunnybrook Health Sciences; Toronto East General Hospital, the Hospital for Sick Children and the Toronto General and Toronto Western Hospitals that are part of the University Health Network.

Formalized written agreements exist with all affiliated institutions and the Faculty of Dentistry. Through these agreements, the Dental Anaesthesia residency program and other specialty programs have the legal framework to provide clinical care and other activities in affiliated institutions.

*Requirement*

1.6 *The institutional staff bylaws, rules, and regulations of sponsoring, co-sponsoring or affiliated health care institutions must ensure that dentists are eligible for staff membership and privileges including the right to:*

*a) Vote and hold office;*
*b) Serve on institutional staff committees; and*
*c) Admit, manage, and discharge patients.*

Evaluators' Observations

The institutional bylaws, rules and regulations of the affiliated health care institutions allow dentists on staff with full privileges related to voting, holding office and service on institutional committees. Dentists co-admit patients with an attending physician, if required, consistent with Ontario regulation.

*Requirement*

1.7 *The program must develop a mission statement and supporting overall program goals and objectives that emphasize:*

*a) anaesthesia for dentistry,*
*b) student/resident education, and*

*c) patient care.*
*and include training students/residents to provide dental anaesthesia care in office-based and hospital settings.*

Evaluators' Observations

The program has developed a mission statement and supporting overall program goals and objectives related to the three areas above as related to the Dental Anaesthesia program. However, some of the program goals may be difficult for applicants and residents to interpret and may be hard to quantify in the Outcomes Assessment Process. It is therefore suggested:

**SUGGESTION 1**

That the program refine its stated goals to more clearly define the specific educational goals for the Dental Anaesthesia program for the benefit of applicants, residents and faculty members.

*Requirement*

*1.8 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.*

Evaluators' Observations

Although a programmatic review does take place on a yearly basis, this is more a departmental review of the previous year's activities with suggestions for the coming year. Curricular changes have taken place but on more of an ad hoc basis. A formal Outcomes Assessment Process relating various outcome measures to the program's stated goals and objectives has not been fully developed. It is therefore recommended:

**RECOMMENDATION 1**

That the program establish a formal and ongoing outcomes assessment process that regularly evaluates the degree to which the program's stated goals and objectives are met.

## 2.0 EDUCATIONAL PROGRAM

*Requirement*

*2.1 The program must list the competency and proficiency requirements that describe the intended outcomes of students/residents' education such that students/residents completing the program in dental anaesthesiology receive training and experience in providing anaesthesia care in the most comprehensive manner using pharmacologic and non-pharmacologic methods to manage anxiety and pain in adult and child dental patients, including patients with special needs.*

Evaluators' Observations

The program has developed competency and proficiency requirements consistent with Requirement 2-2 for its residents. However, the program should consider using a curriculum management plan grid for documenting resident achievements of the proficiencies and competencies (see 2008 Suggestion 2). The program should also consider linking resident evaluations specifically to the program's list of proficiencies and competency statements (see 2008 Suggestion 3). Both of these suggestions will help provide a mechanism for both external and internal program review.

*Requirement*

*2.2 Upon completion of training, the student/resident must be:*

*a) Able to demonstrate in-depth knowledge of the anatomy and physiology of the human body and its response to the various pharmacologic agents used in anxiety and pain control;*
*b) Able to demonstrate in-depth knowledge of the pathophysiology and clinical medicine related to disease of the human body and effects of various pharmacological agents used in anxiety and pain control when these conditions are present;*
*c) Proficient in evaluating patients' physiological and psychological need for various forms of anxiety and pain control and their potential response to anxiety and pain control procedures;*
*d) Proficient in evaluating patients' physiological and psychological risks associated with the use of various modalities of anxiety and pain control;*
*e) Proficient in selecting an appropriate anxiety and pain control modality to use in relation to the specific physical and psychological status of the patient;*
*f) Proficient in patient preparation for sedation/anaesthesia, including pre-operative and post-operative instructions and informed consent/assent;*
*g) Proficient in the use of anaesthesia-related equipment for the delivery of anaesthesia, patient monitoring, and emergency management;*
*h) Proficient in the administration of local anaesthesia, sedation, and general anaesthesia, as well as in psychological management and behavior modification as they relate to anxiety and pain control in dentistry;*

*i) Proficient in managing perioperative emergencies and complications related to anxiety and pain control procedures, including the immediate establishment of an airway and maintenance of ventilation and circulation;*
*j) Competent in the diagnosis and non-surgical treatment of acute pain related to the head and neck region;*
*k) Familiar with the diagnosis and treatment of chronic pain related to the head and neck region; and*
*1) Able to demonstrate in-depth knowledge of current literature pertaining to dental anaesthesiology.*

Evaluators' Observations

The program curriculum provides the required content and residents receive training in the required competencies identified in requirement 2.2.

The program should consider using a curriculum management plan grid and linked resident evaluations for documenting resident achievements of the proficiencies and competencies to provide an overview of the program and its educational and evaluation processes. Therefore, it is suggested:

**SUGGESTION 2**

That the program consider using a curriculum management plan grid for documenting graduate achievements of the proficiencies and competencies.

**SUGGESTION 3**

That the program link resident evaluations specifically to the program's list of proficiencies and competency statements**.**

The following courses are provided as part of the program curriculum:

YEAR I
*DEN1040Y Dental Clinical Epidemiology and Biostatistics*
*PDE9044Y Dental Anaesthesia Journal Review*
*PDE9058H Basic Principles of Anaesthesia*
*PDE9059Y Basic Concepts in Clinical Medicine*
*PDE9063H Foundations of Medicine as Applied to Dental Anaesthesia*
*PDE9080Y Anaesthesia Seminars*
*PDE9099Y Dental Anaesthesia Postgraduate Seminars*

YEAR II
*PDE9080Y Anaesthesia Seminars*
*PDE9045Y Dental Anaesthesia Journal Review*

YEAR III
*DEN1001Y Seminars in Oral Health Sciences*
*PDE9046Y Dental Anaesthesia Journal Review*
*PDE9094Y Clinical Conferences*

Clinical activity is accomplished through the following courses:

YEAR I
*PDE9068Y Sedation and General Anaesthesia for Dentistry – Adult*
*PDE9071Y General Anaesthesia for Medical Procedures – Adult*

YEAR II
*Internal Medicine rotation*
*Pre-admission clinic rotation*

YEAR III
*PDE9057Y General Anaesthesia for Dentistry – Paediatric*
*PDE9069H Local Anaesthesia for Dental Procedures*
*PDE9070H General Anaesthesia for Medical Procedures – Paediatric*
*PDE9071Y General Anaesthesia for Medical Procedures – Adult*

*Requirement*

*2.3 The program must have a curriculum plan including structured didactic instruction and clinical experience designed to achieve the program's competency and proficiency requirements outlined in Requirements 2.1 and 2.2.*

Evaluators' Observations

The Dental Anaesthesia program consists of a three-year Master of Science (M.Sc.) graduate degree offered through the Faculty in collaboration with the University of Toronto School of Graduate Studies. The research component of the program is incorporated into the program schedule for each resident on an individual basis.

The teaching facilities for the program are provided by the combined resources of the Discipline of Anaesthesia in the Faculty of Dentistry and Department of Anaesthesia, Faculty of Medicine. Training occurs at the Faculty of Dentistry and at teaching hospitals associated with the University of Toronto. Educational experiences directly relate to the competency and proficiency requirements.

Clinical experience includes a six-month rotation at the Faculty of Dentistry carrying out deep sedation/GA cases on adult dental patients in the dental anaesthesia clinic. For the first month, one of the second-year residents acts as a mentor to the new resident(s). Residents spend 14 months with the Department of Anaesthesia at one of the teaching hospitals. This currently is comprised of eight months at Toronto East General Hospital (normally in two four-month blocks) and six months at the Hospital for Sick Children.

Residents return to the Faculty for a six-month period to administer general anaesthetics on paediatric dental patients on an average three days/week basis. A two-month rotation in Medicine takes place by means of one-month in Team Medicine at the Toronto General or Sunnybrook Hospitals, followed by one-month in the pre-admission clinic at Toronto Western Hospital. An additional one-month rotation in ICU or Pain Clinics can be arranged depending on resident interest and availability.

Each resident is required to complete an ACLS (Advanced Cardiac Life Support) course successfully before the end of first year. Residents also receive certification in PALS (Paediatric Advanced Cardiac Life Support) in alternate years.

In September 2006, a new dental anaesthesia clinic opened at the Faculty of Dentistry. This was an expansion from one to two operatories with an improved recovery room facility. This was made possible by cooperation with the discipline of Paediatric Dentistry that made the commitment to refer increasing numbers of their patients who require general anaesthesia. Thus the "Paediatric Dentistry Dental Anaesthesia Surgicentre" was established. This has resulted in the Paediatric dental residents gaining more experience carrying out dentistry under general anaesthesia and the Dental Anaesthesia residents gaining more experience administering general anaesthesia to children. This not only has educational benefits but was intended to reduce the wait times for these children in need of general anaesthesia.

All first-year residents are given a Graduate Anaesthesia Manual which contains schedules, relevant forms, key articles and didactic summaries used for the Dental Anaesthesia Postgraduate Seminars course (PDE9099Y).

*Requirements*

*2.4 Didactic instruction at an advanced level beyond that of the undergraduate dental curriculum must be provided and include:*

*a) Applied biomedical sciences foundational to dental anaesthesiology,*
*b) Physical diagnosis and evaluation,*
*c) Behavioural medicine,*
*d) Methods of anxiety and pain control,*
*e) Complications and emergencies,*
*f) Pain management, and*
*g) Critical evaluation of literature.*

Evaluators' Observations

Didactic instruction is at an advanced level beyond that of the undergraduate dental curriculum and points (a) to (g) in requirement 2.4 have been met by the program. See Requirement 2-2 above for the various courses which meet this requirement.

*2.5 The program must ensure the availability of adequate patient experiences in both number and variety that afford all students/residents the opportunity to achieve the program's stated goals and competency and proficiency requirements in dental anaesthesiology.*

Evaluators' Observations

Clinical activity is achieved at either the Faculty of Dentistry or one of the affiliated hospitals. The residents spend six months in their first year at the Faculty of Dentistry administering deep sedation or general anaesthesia for adult dental patients. The residents return in their third year to administer general anaesthetics for paediatric and adult dental patients. Both intubated and non-intubated general anaesthesia is provided. The clinical activity at the affiliated hospitals involves general anaesthesia for medical and dental patients, for both adults and children.

Records of the deep sedations or general anaesthetics provided at the Faculty of Dentistry can be obtained by the electronic patient record billing system. Past residents have compiled logs of their hospital rotation cases. The resident log form, introduced in May 2008, documents the residents' general anaesthesia cases during hospital assignments including information on the type of surgery, airway technique, and type of patient.

Review of these records identified the completion of patient experiences vastly exceeding the minimum requirements in both number and variety that affords residents the opportunity to achieve the program's stated goals and competency and proficiency requirements in dental anaesthesiology.

To improve and facilitate the recording of cases at both the affiliated hospitals and at the Faculty of Dentistry, as well as capturing the variety of the types of cases carried out, the same log form will be used for all sites beginning in September 2008. This will result in a more clear record of the residents' clinical activity over the residents' three years.

*Requirements*

*2.6 The following list represents the minimum clinical experiences that must be obtained by each student/resident in the program:*

- *a) Five hundred (500) total cases of deep sedation/general anaesthesia to include the following:*
  - *(1) Two hundred (200) intubated general anaesthetics of which at least fifty (50) are nasal intubations and twenty (20) incorporate advanced airway management techniques,*
  - *(2) One hundred (100) children age six and under, and*
  - *(3) Fifty (50) patients with special needs,*
- *b) Clinical experiences sufficient to meet the competency and proficiency requirements (described in Requirements 2.1 and 2.2) in managing ambulatory patients, geriatric patients, patients with physical status ASA III or greater, and patients requiring conscious sedation; and*
- *c) Exposure to the management of patients with chronic orofacial pain.*

Evaluators' Observations

All of the residents vastly exceed the minimum clinical experiences listed in requirement 2.6(a).

Although the minimum number of special needs cases (50) is vastly exceeded, interview comments from the residents and part-time faculty members identified that these experiences could be further enhanced by a greater number of cases for adult special needs patients. The treatment of special needs patients was noted to be a defined part of the practice pattern of dentist anesthetists that should be stressed at the Faculty of Dentistry. Therefore, it is suggested:

**SUGGESTION 4**

That there be increased exposure to adult special needs patients within the Dental Anaesthesia program.

In regard to Requirement 2.6(b), the patients treated by the residents at the Faculty of Dentistry are all ambulatory, as are many of the ones at the affiliated hospitals. The residents also gain adequate experience treating geriatric patients, those with physical status ASA III or greater, and those requiring conscious sedation.

In regard to Requirement 2.6(c), exposure to the management of patients with chronic orofacial pain is obtained through the chronic pain seminars provided by course PDE9080Y. A few of the residents have taken rotations at the Wasser Pain Clinic at Mt. Sinai Hospital to gain more exposure to chronic pain patients. In Canada, management of patients with chronic orofacial pain is primarily the scope of practice of specialists in Oral Pathology and Oral Medicine (a recognized specialty in Canada) and not with Dental Anaesthesia.

*2.7 At a minimum, a total of eighteen (18) months over the two-year period must be devoted exclusively to clinical training in anaesthesiology.*

Evaluators' Observations

Activity devoted exclusively to clinical training in anaesthesiology is accomplished by the following:

- six months, three days/week, at the Faculty of Dentistry treating adults
- six months, three days/week, at the Faculty of Dentistry treating children
- eight months (four months full-time and four months @ 4 days/week) at Toronto East General Hospital
- six months, full-time, at the Hospital for Sick Children

*Requirements*

*2.8 Students/residents must be assigned full-time for a minimum of twelve (12) months over a two-year period to a hospital anaesthesia service that provides trauma and/or emergency surgical care.*

Evaluators' Observations

Residents are assigned for 14 months, primarily full-time, to a hospital anesthesia service at Toronto East General Hospital and the Hospital for Sick Children, both of which provide both trauma and emergency surgical care. Due to commitments to course-work and research, on occasion some of the rotations have had to be part-time. In the latter case, the rotations were extended to give the resident the equivalent of 14 months at hospital. As much as possible, a continuous block of at least four months at Toronto East General Hospital and six months at the Hospital for Sick Children are assigned.

*2.9 Experience in the administration of deep sedation/general anaesthesia and other forms of pain and anxiety control for ambulatory dental patients must be provided.*

Evaluators' Observations

The monthly rotation schedule for the current three-year period (2007-2010) and examples of records of residents' clinical activity were provided to the evaluation team members. Deep sedation/general anaesthesia and other forms of pain and anxiety control for ambulatory dental patients are accomplished by the following rotations:

- six months, three days/week, at the Faculty of Dentistry treating adults
- six months, three days/week, at the Faculty of Dentistry treating children
- six months, full-time, at the Hospital for Sick Children, where the majority of the exposure is for ambulatory dental patients.

*Requirement*

*2.10 Students/residents must participate in at least two 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 clinic/service, and*
*f) Paediatrics.*

Evaluators' Observations

Residents spend two months on a general/internal medicine rotation which is comprised of the first month on internal medicine followed by the second month in the pre-

admission clinic. In the past, the first month was spent at the University Health Network, but on the recommendation of a new faculty member, residents now rotate to Sunnybrook Health Sciences Centre on the Team Medicine rotation.

The second month continues to be held at Toronto Western Hospital under the direction of a faculty member. The document "Teaching Manual for Anesthesia Consultation" by the Department of Anesthesia Toronto Western Hospital clearly identifies resident experiences.

In the past a few residents have also carried out a one-month rotation in the Intensive Care Unit of either Toronto East General Hospital or Mt. Sinai Hospital.

As well, a few residents have carried out a part-time two-month rotation at the Wasser Pain Clinic at Mt. Sinai Hospital to gain experience with chronic orofacial pain patients.

*Requirement*

*2.11 For each assigned rotation, or experience in another department, 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 students/residents are assigned;*
*b) Resident supervision by designated faculty who are familiar with the objectives of the rotation or experience; and*
*c) Evaluations performed by designated faculty.*

Evaluators' Observations

During the course of the site visit, it became clear that objectives of each rotation were developed with the appropriate representative of each institution. However, there did not appear to be written objectives developed for all rotations with acknowledgement from the appropriate institutional representative. The exception was the Medicine rotation which did have well developed written objectives. Faculty members at the rotations are aware of the objectives and currently provide appropriate evaluations to residents and the Program Director.

Dental Anaesthesia residents are evaluated when on rotation in Anaesthesia at the Toronto East General Hospital and Hospital for Sick Children similar to other medical residents. Currently Dental Anaesthesia residents are not formally evaluated for the Medicine rotation. Beginning in September 2008 there are plans to implement a means of such an evaluation for the residents. It is therefore suggested:

**SUGGESTION 5**

That objectives and evaluation format for each rotation at affiliated institutions be formally developed in writing and acknowledged by the appropriate institutional representative.

*Requirement*

*2.12 Students/residents must be competent to request and respond to requests for consultations from dentists, physicians, and other health care providers.*

Evaluators' Observations

The consultation correspondence carried out by the residents at the Faculty of Dentistry was available in the patient records. Examples of how to carry out an appropriate consultation request is documented in the first few pages of the "Teaching Manual for Anesthesia Consultation" by the Department of Anesthesia Toronto Western Hospital that is used by the residents. The resident evaluations incorporate this aspect as part of the pre-operative assessment and anaesthetic plan.

*Requirement*

*2.13 The program must provide instruction and clinical experience in physical evaluation and medical risk assessment, including:*

*a) Taking, recording, and interpreting a complete medical history;*
*b) Understanding the indications of and interpretations of laboratory studies and other techniques used in physical diagnosis and preoperative evaluation;*
*c) Interpreting the physical evaluation performed by a physician with an understanding of the process, terms, and techniques employed; and*
*d) Using the techniques of physical examination (i.e., inspection, palpation, percussion, and auscultation).*

Evaluators' Observations

This requirement is accomplished in a number of ways. The first-year residents take the following two courses which address physical evaluation and medical risk assessment:
*PDE9059Y Basic Concepts in Clinical Medicine*
*PDE9063H Foundations of Medicine as Applied to Dental Anaesthesia*

The Medicine rotations also cover this requirement clinically.

*Requirement*

*2.14 The program must provide students/residents with an understanding of rules, regulations, and credentialing processes pertaining to facilities where anaesthesia care is provided.*

Evaluators' Observations

This is part of the orientation provided by the respective hospitals where the residents are assigned. The requirements for dentists carrying out any level of sedation or anaesthesia in any freestanding surgical centre or private office are described in the Royal College of

Dental Surgeons of Ontario document "Guidelines for Sedation and Anaesthesia in Dentistry". All residents are familiar with this document.

*Requirement*

*2.15 Students/residents must be given assignments that require critical review of relevant scientific literature.*

Evaluators' Observations

This requirement is accomplished by the weekly journal article review that is attended by residents from all three years, through the courses PDE9044Y, PDE9045Y and PDE9046Y Dental Anaesthesia Journal Review. This allows for recognition of current progress in anaesthesia and related topics as well as development of skills of critical review of the literature. It is held Wednesdays from 4:00-6:00, Sept-June.

*Requirement*

*2.16 The program must conduct and involve students/residents in a structured system of continuous quality improvement for patient care.*

Evaluators' Observations

Quality improvement for patient care at the Faculty of Dentistry falls under the direction of the Assistant Dean and Director of Clinics. Under his direction, surveys are sent annually to patients in the Faculty of Dentistry which provides a vehicle for feedback and quality improvement. The Dental Anaesthesia program does not have an independently structured system for continuous quality improvement. Quality improvement is accomplished by reviewing the recently completed cases weekly during the "rounds" portion of the course PDE9099Y Dental Anaesthesia Postgraduate Seminars.

From a review of the materials provided and from interviews, it is evident that in addition to the surveys conducted for all programs by the Faculty of Dentistry, the Dental Anesthesia program does conduct its own internal reviews to assure quality improvement during its weekly Thursday morning seminar. However, these reviews are informal and not documented. Due to the fact that there is no written plan for quality improvement at the discipline level, it is recommended:

**RECOMMENDATION 2**

That the program conduct and involve residents in a structured system of continuous quality improvement for patient care. Resident involvement could be accomplished by written evidence of case discussions at the existing rounds conducted as part of the Dental Anesthesia Postgraduate Seminar.

*Requirement*

*2.17 The duration of a dental anaesthesiology program must be a minimum of 24 months of full-time formal training.*

Evaluators' Observations

The Dental Anaesthesia program at the University of Toronto consists of three years of full-time formal training.

*Requirement*

*2.18 Where a program for part-time students/residents exists, it must be started and completed within a single institution and designed so that the total curriculum can be completed in a period of time not to exceed twice the duration of the program for full-time students/residents.*

Evaluators' Observations

There is no part-time program available for graduate Dental Anaesthesia at the University of Toronto.

*Requirement*

*2.19 The program's student/resident evaluation system must assure that, through the director and faculty, each program:*

*a) Periodically, but at least twice annually, evaluates and documents the student's/resident's progress towards achieving the program's competency and proficiency requirements and minimum anaesthesia case requirements using appropriate written criteria and procedures;*
*b) Provides students/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 student/resident which is accessible to the student/resident and available for review during site visits.*

Evaluators' Observations

Clinical evaluation criteria for all courses, both didactic and clinical, exist and are made known to the residents. Residents normally receive feedback via a grading form and discussion with faculty members after every clinical case at the Faculty of Dentistry, after every four-month rotation at the Toronto East General Hospital, and every three months at the Hospital for Sick Children.

In addition to the above, all residents undergo an oral examination every six months, by the Program Director and one or two additional faculty members. Normally within a day

residents are provided feedback on their letter grade and recommendations for improvement, if required. This is usually done via email but not necessarily with acknowledgment or discussion from the resident. It is therefore suggested:

**SUGGESTION 6**

That the Program Director develop a formalized semi-annual resident evaluation process in which residents can provide input and response and which is acknowledged by the resident.

## 3.0 FACULTY AND STAFF

*Requirement*

*3.1 The program director must have at least a forty percent (40%) appointment in the sponsoring or co-sponsoring institution and have authority and responsibility for all aspects of the program.*

Evaluators' Observations

The Program Director has a 100% appointment at the University of Toronto Faculty of Dentistry.

The Dental Anaesthesia Program Director has the responsibility and authority for the oversight of all aspects of the graduate program in Dental Anaesthesia. This includes teaching, research and patient care. This person is responsible for:

- program administration
- development and implementation of the curriculum plan
- ongoing evaluation of program content, faculty teaching and resident performance
- evaluation of resident training and supervision in affiliated institutions and off-services rotations
- maintenance of records related to the educational program
- resident selection

*Requirement*

*3.2 The program director must be a dentist with two years formal training in anaesthesiology that is consistent with or equivalent to the training program described in Requirement 2 and have had at least three years of relevant experience following the formal training in anaesthesiology. Dentists will also qualify to be program directors who, prior to implementation of these Requirements, have completed an advanced training course in anaesthesiology that satisfied the duration requirements set forth in Part 2 of the American Dental Association's "Guidelines for Teaching the Comprehensive Control of Anxiety and Pain in Dentistry" at the time their training commenced.*

Evaluators' Observations

The Program Director completed his postgraduate dental anaesthesia training in 1983-84 at the University of Toronto when the program was 14-months in duration and has been engaged in full time academic practice of anesthesiology since that time, thus meeting the educational requirements. His current status is Professor and Associate Dean, Clinical Sciences. He is also a Diplomate of the American Dental Board of Anesthesiology.

*Requirement*

*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 dental anaesthesiology included in the program.*

Evaluators' Observations

The Dental Anaesthesia program is budgeted for 2.5 FTE positions dedicated to the program. The Dental Anaesthesia program has one full-time faculty member - the Program Director. There are also three part-time faculty members and nine part-time instructors. One of the part-time faculty members is a specialist in emergency medicine. All of the other faculty and instructors are dentists with postgraduate training in dental anaesthesia eligible for examination for recognition as a specialist in the province of Ontario. Three of the faculty members, including the Program Director, have their Diplomate status from the American Dental Board of Anesthesiology.

*Requirement*

*3.4 The number and time commitment of the faculty must be sufficient to provide didactic and clinical instruction to meet curriculum competency and proficiency requirements and provide supervision of all treatment provided by students/residents.*

Evaluators' Observations

The number and time commitment of the faculty members is sufficient to provide didactic and clinical instruction to meet curriculum competency and proficiency requirements and provide supervision of all treatment provided by residents. There is significant support from local dentist anesthesiologists in the community.

*Requirement*

*3.5 A formally defined evaluation process must exist that ensures measurement of the performance of faculty members annually.*

Evaluators' Observations

Each faculty member is formally evaluated annually by the Dean, Discipline Head and Associate Dean (for Dental Anaesthesia the latter two positions are held by the same

person). The mechanism for this is by having each faculty member fill out an "Activity Report" for PTR (Progression Through the Ranks). In addition, residents have an opportunity to provide feedback in the form of a post-graduation survey.

*Requirement*

*3.6 A faculty member must be present in the clinical care area for consultation, supervision and active teaching when students/residents are treating patients.*

Evaluators' Observations

The faculty clinic schedule shows that there are faculty members present in the clinical area, almost always on a one-on-one basis for each resident. On the assigned day or half-day, the faculty member is present in the clinical care area for consultation, supervision and active teaching when residents are treating patients.

## 4.0 EDUCATIONAL SUPPORT SERVICES

*Requirement*

*4.1 The sponsoring institution must provide adequate learning resources to support the goals and objectives of the program.*

Evaluators' Observations

The mission of the Dentistry Library is to deliver customer-focused information, services and programs to support the Faculty of Dentistry's teaching, learning, research and clinical activities. The library achieves its mission by

- Offering help and support
- Building and maintaining an up-to-date, relevant and sufficient collection
- Enhancing students' information literacy skills
- Offering facilities and quiet study areas

*Requirement*

*4.2 Specific written criteria, policies, and procedures must be followed when admitting students/residents.*

Evaluators' Observations

Materials presented including copies of the Faculty of Dentistry website, the Faculty of Dentistry admission policies and materials provided by Graduate Studies Admission staff, provided evidence to meeting this requirement.

*Requirement*

*4.3 Admission of students/residents with advanced standing must be based on the same standards of achievement required by students/residents regularly enrolled in the program. Transfer students/residents with advanced standing must receive an appropriate curriculum that results in the same standards of competence required by students/residents regularly enrolled in the program.*

Evaluators' Observations

There is no provision for the admission of advanced standing residents/students in this program.

*Requirement*

*4.4 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 competencies and proficiencies of residency training*
*c) A description of the nature of assignments to other departments or institutions*

Evaluators' Observations

The Dental Anaesthesia website is the main vehicle for dissemination of information to program applicants and all aspects are available on the site.

*Requirement*

*4.5 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.*

Evaluators' Observations

This requirement is met by the Graduate Grading and Evaluation Practices Policy of the Faculty of Dentistry.

*Requirement*

*4.6 Resident, 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 of patients and dental personnel.*

Evaluators' Observations

The program conforms with this requirement by the Faculty of Dentistry Policy on Immunization.

## 5.0 FACILITIES AND RESOURCES

*Requirements*

*5.1 Institutional facilities and resources must be adequate to provide the didactic and clinical experiences and opportunities required to fulfill the needs of the educational program as specified in these Requirements. Equipment and supplies for use in managing medical emergencies must be readily accessible and functional.*

Evaluators' Observations

The Faculty of Dentistry is an accredited institution for didactic and clinical training in dentistry. The clinical facility for graduate dental anaesthesiology at the Faculty has undergone inspection by the Royal College of Dental Surgeons of Ontario (RCDSO) and has a permit to allow general anaesthesia and deep sedation. This certificate was reviewed on site. Thus it has all of the necessary physical facilities and equipment for the delivery of anaesthesia, including emergency equipment and supplies. The description of the requirements are included within the RCDSO document "Guidelines for Sedation and Anaesthesia in Dentistry".

Additional anesthesia machines would provide a valuable backup to prevent disruption of patient flow and advanced airway equipment would be an integral part of an airway emergency rescue plan and provide additional education resources to the residents. Therefore, it is suggested:

**SUGGESTION 7**

That there be ongoing continued support for the acquisition of state-of-the-art equipment to enhance patient safety and resident education.

*5.2 In cases where off-campus locations are used in residency clinical education, the facilities, equipment, staffing, and supplies must be available in accord with all applicable accrediting bodies and state rules and regulations.*

Evaluators' Observations

There are two main off-site hospitals where the Dental Anaesthesia residents take their training: These are the Hospital for Sick Children and Toronto East General Hospital. Both are accredited with active departments of anaesthesia.

*Requirement*

*5.3 All students/residents and those faculty utilizing general anaesthesia or conscious sedation in the direct provision of patient care must be continuously recognized/certified in advanced cardiovascular life support (ACLS).*

Evaluators' Observations

All residents have certification in ACLS. Through the assistance of one of the faculty members, it has been arranged to have all residents simultaneously trained in ACLS one year, followed by training in PALS (Paediatric Advanced Cardiac Life Support) in alternate years. All faculty members are certified in ACLS. Two of the faculty members are ACLS instructors.

*Requirement*

*5.4 All other faculty (not included in requirement 5-3) and support staff involved in the direct provision of patient care must be continuously recognized/certified in basic life support for health care providers.*

Evaluators' Observations

As stated in the RCDSO "Guidelines for Sedation and Anaesthesia in Dentistry", all dentists administering sedation and anaesthesia "must have the training and ability to perform basic cardiac life support techniques". All of the Dental Anaesthesia program clinicians and faculty members are registered with the RCDSO to administer deep sedation and general anaesthesia.

Regarding support staff, the Faculty of Dentistry provides annual certification in CPR (Cardio-pulmonary Resuscitation), AED (Automated External Defibrillator) and First Aid training to clinical staff encompassing: registered nurses, dental assistants (including clinical managers and team leaders) and infection control assistants. All courses are delivered at the Faculty of Dentistry by "Link to Life Seminars Inc". It is approved by Health Canada, Workplace Safety and Insurance Board and the Heart and Stroke Foundation. The copies of records of courses are kept by the Coordinator of Clinic Policy Safety and Support.

The Dental Anaesthesia Program Director had directed all staff employed in Graduate Dental Anaesthesia to be certified annually in CPR and AED courses. This is usually carried out during the orientation week.

*Requirement*

*5.5 Secretarial and clerical assistance must be sufficient to permit efficient operation of the program.*

Evaluators' Observations

The discipline of Dental Anaesthesia is assigned one secretary who shares her duties part-time with the discipline of Oral and Maxillofacial Surgery.

*Requirement*

*5.6 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 students/residents, faculty, and appropriate support staff and be continuously monitored for compliance. Additionally, policies on blood-borne and infectious diseases must be made available to applicants for admission and to patients.*

Evaluators' Observations

The program and the Faculty of Dentistry both adhere to applicable local, provincial and national standards regarding the health issues described in requirement 5.6 and these regulations are continuously monitored for compliance and available to applicants for admission and patients.

*Requirement*

*5.7 The program's policies must ensure that the confidentially of information pertaining to the health status of each individual patient is strictly maintained.*

Evaluators' Observations

All patient information is confidentially maintained by the program.

## 6.0 RESEARCH

*Requirement*

*6.1 Students/residents must engage in scholarly activity and present their results in a scientific/educational forum.*

Evaluators' Observations

Since 1998 all residents in all specialty programs at the University of Toronto, Faculty of Dentistry must undertake research culminating in a graduate degree. This is usually a M.Sc. but can also be a Ph.D. depending on the resident's interests and abilities. The Dental Anaesthesia program shares this requirement with the other dental specialties at this Faculty. There are currently two mechanisms to carry out scholarly activity to achieve the M.Sc. One option involves a traditional Master's level thesis with defence in

addition to required graduate course work. The second option is additional coursework in place of the research project. Both options have been chosen by current residents. One resident is engaged in the Ph.D. program. Residents are encouraged to present their scholarly activity at various educational forums and the program financially supports residents in this endeavour.

## SUMMARY

This external visit was facilitated by the Commission on Dental Accreditation of Canada (CDAC). The evaluation team members wish to extend their appreciation to the administration, staff and students for the hospitality shown them during the site visit. This long-standing advanced education program has not benefited from a CDAC formal accreditation site visit due to lack of national specialty recognition. Speciality recognition with the province of Ontario by the Royal College of Dental Surgeons of Ontario (RCDSO) has now permitted the program to benefit from this external peer review process based on the American Dental Association Commission on Dental Accreditation (CODA) accreditation requirements for Dental Anaesthesia programs.

Within the University of Toronto Faculty of Dentistry, however, Dean Mock and the Faculty have supported this residency program as equal to other advanced education areas. With the pioneering efforts of the RCDSO to recognize anaesthesiology as a specialty of dentistry, it is the opinion of the peer external reviewers that this is an outstanding program that ranks in the top tier of Dental Anaesthesiology programs in North America. The support of the Faculty of Dentistry and the vision to provide quality didactic and clinical education to the residents was evident throughout this site visit. Access to care for those unable to receive dental care through routine measures, such as those with overwhelming dental phobia, special needs individuals, pre-cooperative paediatric behaviour issues, and those with pre-existing medical conditions such as Alzheimer's disease, autism and mental challenges has been substantially improved.

The enthusiasm and passion of the residents is noticed not only in interviews with them, but in discussion with all rotation supervisors and staff. The dedication and commitment of the part-time faculty members is one of the hallmarks of the program that makes ties to the dental community, outreach and education very unique and special. The history and driving force behind all of this is the Program Director, Dr. Daniel Haas, whose personal and professional commitment is responsible to making this program one which has met all educational and clinical criteria.

Recommendations for improvement within this report are in areas of procedure, rather than areas of educational content, but should help improve an already exceptional program. The University of Toronto Faculty of Dentistry, Canadian organized dentistry and the public served by the residents should be extremely proud of this unique accomplishment.

## LIST OF RECOMMENDATIONS

1. That the program establish a formal and ongoing outcomes assessment process that regularly evaluates the degree to which the program's stated goals and objectives are met. (requirement 1.8)

2. That the program conduct and involve residents in a structured system of continuous quality improvement for patient care. Resident involvement could be accomplished by written evidence of case discussions at the existing rounds conducted as part of the Dental Anesthesia Postgraduate Seminar. (requirement 2.16)

## LIST OF SUGGESTIONS

1. That the program refine its stated goals to more clearly define the specific educational goals for the Dental Anaesthesia program for the benefit of applicants, residents and faculty members. (requirement 1.7)

2. That the program consider using a curriculum management plan grid for documenting graduate achievements of the proficiencies and competencies. (requirement 2.2)

3. That the program link resident evaluations specifically to the program's list of proficiencies and competency statements**.** (requirement 2.2)

4. That there be increased exposure to adult special needs patients within the Dental Anaesthesia program. (requirement 2.6)

5. That objectives and evaluation format for each rotation at affiliated institutions be formally developed in writing and acknowledged by the appropriate institutional representative. (requirement 2.11)

6. That the Program Director develop a formalized semi-annual resident evaluation process in which residents can provide input and response and which is acknowledged by the resident. (requirement 2.19)

7. That there be ongoing continued support for the acquisition of state of the art equipment to enhance patient safety and resident education. (requirement 5.1)

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# APPENDIX 2A:

National Commission on Recognition of Dental Specialties and Certifying Boards (NCRDSCB):
May 9-10, 2018 – Final Meeting Minutes

# APPENDIX 2A

**FINAL MINUTES**

**NATIONAL COMMISSION ON RECOGNITION OF DENTAL SPECIALTIES AND CERTIFYING BOARDS**
**ADA HEADQUARTERS BUILDING, CHICAGO**

**MAY 9-10, 2018**

**Call to Order**: Dr. Charles Norman, interim chair, called a regular meeting of the National Commission on Recognition of Dental Specialties and Certifying Boards to order on Wednesday, May 9, 2018 at 8:30am in the Executive Board Room of the ADA Headquarters Building, Chicago.

**Roll Call**: Dr. Wayne Aldredge, Dr. Don Altman, Dr. Joseph Battaglia, Dr. James Benz, Dr. James Boyle, Dr. Ralph Cooley, Dr. Robert Delarosa, Dr. Alan Friedel, Dr. Anita Gohel, Dr. Kevin Henner, Dr. Denise Hering, Dr. William Johnson, Dr. Roger Kiesling, Dr. Andrew Kwasny, Dr. Charles Norman (interim chair), Dr. Frank Tuminelli, Dr. John Wright, and Dr. Mark Zust were present.

**Trustee Liaison**: Dr. Billie Sue Kyger, Seventh District Trustee, American Dental Association (ADA)

**Commission Staff:** Ms. Cathy Baumann, director; Mr. Nicholas Salerno, manager.

**ADA Staff (for all or portions of the meeting):** Mr. J. Craig Busey, general counsel, Ms. Karen Hart, director, Council on Dental Education and Licensure, Mr. Michael Kendall, senior associate general counsel, Dr. Kathleen O'Loughlin, executive director, Ms. Wendy Wils, deputy general counsel, and Dr. Anthony Ziebert, senior vice-president, Education and Professional Affairs.

**Preliminary Business**

**Meeting Overview**: Dr. Charles Norman welcomed the Commissioners and provided them with a brief overview of the meeting.

**Welcome Comments on Behalf of Dr. Crowley**: Dr. Billie Sue Kyger, Seventh District Trustee delivered welcome comments of behalf of American Dental Association (ADA) President Dr. Joseph Crowley.

**Adoption of Agenda**: The National Commission on Recognition of Dental Specialties and Certifying Boards adopted the agenda and authorized the chair to alter the order of agenda items as necessary to expedite business.

**Disclosure of Relationships:** Dr. Norman directed the Commission's attention to the ADA Conflict of Interest Policy and reminded commissioners of their obligation to make disclosures as appropriate. Commissioners disclosed the following affiliations during the course of the meeting:

- Dr. Mark Zust- Member, Board of Delta Dental in Missouri

**Fiduciary Reminder and Reminder of Professional Conduct Policy and Prohibition Against Harassment:** Mr. C. Michael Kendall, ADA Senior Associate General Counsel, reminded the Commissioners of their fiduciary responsibilities to the National Commission. The Commissioners were also reminded of the Professional Conduct Policy and Prohibition Against Harassment.

**Roles and Responsibilities of the National Commission**: Dr. Anthony Ziebert, Senior Vice President, Education and Professional Affairs, ADA, gave a presentation to the Commissioner's related to the roles and responsibilities of the National Commission on Recognition of Dental Specialties and Certifying Boards.

## Commission Business

**Consideration of the Rules of the National Commission on Recognition of Dental Specialties and Certifying Boards**: With adoption of Resolution 30H-2017, the ADA House of Delegates established the National Commission on Recognition of Dental Specialties and Certifying Boards. After careful consideration, the National Commission considered the proposed *Rules* of the National Commission on Recognition of Dental Specialties and Certifying Boards.

> **Commission Action:** The National Commission on Recognition of Dental Specialties and Certifying Boards adopts the proposed *Rules* presented in **Appendix 1**.

**Adoption of ADA Policies Related to Dental Specialties, Certifying Boards and Specialty Definitions**: The National Commission on Recognition of Dental Specialties and Certifying Boards considered the ADA's policy statements on recognition of the dental specialties and certifying boards and the Council on Dental Education and Licensure's (CDEL) definitions of each dental specialty. The National Commission discussed that with the implementation of the National Commission as the body that recognizes the dental specialties and certifying boards, the policy statements and definitions are now under the purview of the National Commission.

> **Commission Action:** The National Commission on Recognition of Dental Specialties and Certifying Boards adopts the policy statements recognizing each of the dental specialties as presented in **Appendix 2**.

> **Commission Action**: The National Commission on Recognition of Dental Specialties and Certifying Boards adopts the policy statements recognizing each of the dental specialty certifying boards as presented in **Appendix 3**.

> **Commission Action**: The National Commission on Recognition of Dental Specialties and Certifying Boards adopts the definitions of each of the dental specialties as presented in **Appendix 4**.

**Proposed Policies and Procedures for the National Commission on Recognition of Dental Specialties and Certifying Boards**: The National Commission on Recognition of Dental Specialties and Certifying Boards considered the proposed policies and procedures presented in the Policy and Procedure Manual as they relate to the operational functions of the National Commission. The National Commission considered the following policies and procedures:

- Policy on Development of Administrative and Operational Policies
- Policy on National Commission and Commission Meetings
- Policy on Review Committees and Review Committee Meetings
- Policy on Nomination of Public Members
- Policy on National Commission Standing Committees
- Policy on Confidentiality
- Policy on Conflict of Interest
- Policy on Simultaneous Service
- Policy on Annual Fees
- Policy on Failure to Comply with Request for Information
- Policy on Referral of Policy Matters to the Appropriate Committee
- Policy on Periodic Review of Dental Specialty Education and Practice
- Policy on Application Process for Recognition of Dental Specialty Sponsoring Organizations
- Policy on Application Process for Recognition of Dental Specialty Certifying Boards
- Policy on Third Party Comments
- Policy on Due Process
- Policy on Function and Procedures of the Appeal Board

**Commission Action**: The National Commission on Recognition of Dental Specialties and Certifying Boards adopts the proposed Policy and Procedure Manual as presented in **Appendix 5**.

**Staggering the Terms of the Inaugural Commissioners**: With adoption of Board of Trustees Report 7 to the ADA House of Delegates and Resolution 30H-2017, the House of Delegates established the National Commission on Recognition of Dental Specialties and Certifying Boards. The term of office of members of the National Commission, shall be four (4) year terms, except the terms of the inaugural Board of Commissioners shall be staggered, based on a lottery. In accordance with the ADA *Bylaws* and ADA Governance and Organizational Manual, the National Commission on Recognition of Dental Specialties and Certifying Boards conducted a lottery to establish the inaugural term of each Commissioner.

**Commission Action**: The National Commission on Recognition of Dental Specialties and Certifying Boards established the following terms of the inaugural Board of Commissioners:

| Commissioner | Term Expiration Year |
|---|---|
| Dr. Wayne Aldredge | 2021 |
| Dr. Don Altman | 2020 |
| Dr. Joseph Battaglia | 2021 |
| Dr. James Benz | 2021 |
| Dr. James Boyle | 2020 |
| Dr. Ralph Cooley | 2018 |
| Dr. Robert Delarosa | 2019 |
| Dr. Alan Friedel | 2018 |
| Dr. Anita Gohel | 2021 |
| Dr. Kevin Henner | 2019 |
| Dr. Denise Hering | 2020 |
| Dr. William Johnson | 2018 |
| Dr. Roger Kiesling | 2020 |
| Dr. Andrew Kwasny | 2020 |
| Dr. Charles Norman | 2021 |
| Dr. Frank Tuminelli | 2018 |
| Dr. John Wright | 2019 |
| Dr. Mark Zust | 2019 |

**2019 Budget**: That National Commission on Recognition of Dental Specialties and Certifying Boards considered the proposed 2019 budget with regard to the annual contribution made by the dental specialty sponsoring organizations, which is matched by the ADA. The National Commission also considered the proposed recognition application fees. The National Commission further considered correspondence from the American Association of Public Health Dentistry. The National Commission noted that the current annual sponsoring organization contribution structure may place an undue financial burden on smaller disciplines, which may create a financial barrier to all specialties participating in the National Commission.

**Commission Action:** The National Commission on Recognition of Dental Specialties and Certifying Board postpones action on the proposed 2019 budget and directs the Finance Committee to develop two (2) to three (3) best practices related to proposed fee sharing arrangements for the recognized specialties, with an update to the National Commission prior to the end of June 2018.

The National Commission further directs staff to communicate with the American Association of Public Health Dentistry upon Commission review and approval of a proposed fee sharing arrangement.

**Election of Chair and Vice Chair of the Commission**: In accordance with the *Rules* of the National Commission on Recognition of Dental Specialties and Certifying Boards, the Board of Commissioners elects a Chair and Vice-Chair who are active, life or retired member of the American Dental Association.

**Commission Action:** The National Commission elects Dr. Charles Norman to serve as its chair for 2017-2018.

**Commission Action:** The National Commission elects Dr. James Boyle to serve as its Vice Chair for 2017-2018.

**Legal Update on Specialty Recognition Matters in States**: The National Commission on Recognition of Dental Specialties and Certifying Boards considered a presentation by Mr. Craig Busey and Mr. C. Michael Kendall on litigation updates and other specialty recognition matters related to the state dental boards.

**Commission Action:** This report is informational in nature and no action was taken.

**Annual Reports of the Dental Specialty Certifying Boards**: The National Commission on Recognition of Dental Specialties and Certifying Boards considered an information report outlining the process related to the submission of the Annual Reports of the Dental Specialty Certifying Boards. Prior to 2017 and the creation of the National Commission on Recognition of Dental Specialties and Certifying Boards, the ADA delegated authority to the Council on Dental Education and Licensure (CDEL) to study and make recommendations on the recognition of dental specialties and certifying boards, based on the *Requirements for Recognition of Dental Specialties and National Certifying Boards for Dental Specialists.* In February 2018, the chairs of CDEL and the National Commission sent notification to the executive directors or the nine (9) recognized dental specialty certifying boards requesting assistance with the 2018 *Report of the ADA-Recognized Dental Specialty Certifying Boards.* Beginning in January 2019, the *Annual Survey of the Recognized Dental Specialty Certifying Boards* will be conducted by the National Commission.

**Commission Action**: This report is informational in nature and no action was taken.

**Request of the ASDA to Recognize Dental Anesthesiology as a Dental Specialty:** The National Commission on Recognition of Dental Specialties and Certifying Boards considered the request and application submitted by the American Society of Dentist Anesthesiologists (ASDA) to approve dental anesthesiology as a dental specialty. The National Commission also considered a letter from the ASDA requesting that the National Commission waive the application fee.

**Commission Action**: The National Commission on Recognition of Dental Specialties and Certifying Boards acknowledges the receipt of the American Society of Dentist Anesthesiologists (ASDA) application and fee waiver request and postpones action, directing the Review Committee on Specialty Recognition to review/revise the specialty recognition application.

The National Commission further directs that upon completion of revision of the recognition application staff contact the ASDA and other recognized organizations to notify them of the new application process and fees.

**Strategies and Communications with Dental Boards Regarding the National Commission on Recognition of Dental Specialties and Certifying Boards**: The National Commission on Recognition of Dental Specialties and Certifying Boards considered strategies in communication with the State Dental Boards related to the establishment of the National Commission. The National Commission further discussed urging the State Dental Boards to review their rules and regulations as appropriate to reference the National Commission for specialty recognition matters rather than the American Dental Association.

> **Commission Action:** The National Commission on Recognition of Dental Specialties and Certifying Boards directs staff work with legal to develop communication to the State Dental Boards related to the creation of the National Commission including its role and duties.

**Future Meeting Dates**: The National Commission on Recognition of Dental Specialties and Certifying Boards reviewed the meeting dates of the 2019 and 2020 meetings.

> **Commission Action**: This report is informational in nature and no action was taken.

**Adjournment**: The National Commission on Recognition of Dental Specialties and Certifying Boards adjourned at 8:55am, Thursday, May 10, 2018.

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# APPENDIX 2B:

National Commission on Recognition of Dental Specialties and Certifying Boards (NCRDSCB):
March 11, 2019 – Final Meeting Minutes

# APPENDIX 2B

**MINUTES**

**NATIONAL COMMISSION ON RECOGNITION OF DENTAL SPECIALTIES AND CERTIFYING BOARDS**

**ADA HEADQUARTERS BUILDING, CHICAGO**

**MARCH 11, 2019**

**Call to Order**: Dr. Charles Norman, chair, called a regular meeting of the National Commission on Recognition of Dental Specialties and Certifying Boards to order on Monday, March 11, 2019 at 8:30am in the Executive Board Room of the ADA Headquarters Building, Chicago.

**Roll Call**: Dr. Wayne Aldredge, Dr. Don Altman, Dr. Joseph Battaglia, Dr. James Benz, Dr. James Boyle (vice-chair), Dr. Renee Broughten, Dr. Ralph Cooley, Dr. Alan Friedel, Dr. Anita Gohel, Dr. Kevin Henner, Dr. Denise Hering, Dr. William Johnson, Dr. Roger Kiesling, Dr. Andrew Kwasny, Dr. Charles Norman (interim chair), Dr. Frank Tuminelli, Dr. John Wright, and Dr. Mark Zust were present. Dr. Robert Delarosa participated in the meeting via conference call.

**Trustee Liaison**: Dr. Linda Edgar, Eleventh District Trustee, American Dental Association (ADA).

**Commission Staff:** Ms. Cathy Baumann, director; Mr. Nicholas Salerno, manager.

**ADA Staff (for all or portions of the meeting):** Ms. Cathryn Albrecht, senior associate general counsel, Mr. C. Michael Kendall, senior associate general counsel, Ms. Wendy Wils, deputy general counsel, and Dr. Anthony Ziebert, senior vice-president, Education and Professional Affairs.

**Preliminary Business**

**Adoption of Agenda**: The National Commission on Recognition of Dental Specialties and Certifying Boards adopted the agenda and authorized the chair to alter the order of agenda items as necessary to expedite business.

**Disclosure of Relationships:** Dr. Norman directed the Commission's attention to the ADA Conflict of Interest Policy and reminded commissioners of their obligation to make disclosures as appropriate. No disclosures were reported.

**Fiduciary Reminder and Reminder of Professional Conduct Policy and Prohibition Against Harassment:** Ms. Cathryn Albrecht, ADA Senior Associate General Counsel, reminded the Commissioners of their fiduciary responsibilities to the National Commission. The Commissioners were also reminded of the Professional Conduct Policy and Prohibition Against Harassment.

**Mail Ballots Since Last Commission Meeting:** The Commission approved for the record, six (6) mail ballots related to commission business, which had been considered since the May 2018 meeting.

**Commission Business**

**Consideration of Electronic Survey Tool for National Commission on Recognition of Dental Specialties and Certifying Boards Annual Survey of the Recognized National Certifying Boards:** The National Commission on Recognition of Dental Specialties and Certifying Boards considered a presentation related to the implementation of an electronic reporting tool for the Annual Report of the Recognized National Certifying Boards to aid in the consistency of data collection. The National Commission determined the electronic tool would also be beneficial for the Periodic Review of Dental Specialty Education and Practice Report that will be conducted in 2020/2021.

**Commission Action:** The National Commission on Recognition of Dental Specialties and Certifying Boards directs staff work with the American Dental Association Health Policy Institute to develop the electronic survey tools for the Annual Report of the Recognized Dental Specialty Certifying Boards and the Periodic Review of Dental Specialty Education and Practice Report to be implemented in 2019.

**Consideration of National Commission on Recognition of Dental Specialties and Certifying Boards Process Related to Specialty Recognition:** The National Commission on Recognition of Dental Specialties and Certifying Boards considered proposed policy and procedures presented in the Application Process for Recognition of a Dental Specialty related to the granting of specialty recognition. The National Commission noted there is nothing specific in either the ADA and/or the National Commission governance documents related to the mechanism of increasing the number of commissioners and the timing in the appointment of commissioners. The National Commission discussed the proposed policy revisions and there were no recommendations for further modification.

**Commission Action:** The National Commission on Recognition of Dental Specialties and Certifying Boards adopts the proposed policy and procedures presented in the Application Process for Recognition of a Dental Specialty as presented in **Appendix 1**, with immediate implementation.

**Report of the Review Committee on Specialty Recognition:** The report of the Review Committee on Specialty Recognition can be found in **Appendix 2.** Below are the actions taken by the National Commission related to the Report of the Review Committee on Specialty Recognition:

***Consideration of Draft 2021 NCRDSCB Periodic Review of Dental Specialty Education and Timeline:*** The National Commission on Recognition of Dental Specialties and Certifying Boards considered the report of the Review Committee on Specialty Recognition related to the 2021 Periodic Review of Dental Specialty Education and Practice. The National Commission noted that the last Periodic Review of Dental Specialty Education and Practice was conducted by the Council on Dental Education and Licensure (CDEL) in 2010 and finalized 2011; therefore the periodic review will be conducted during 2020 with final review by the National Commission in 2021. The National Commission further noted that the modifications were mostly editorial in nature and consisted of removing references to CDEL. The National Commission discussed the proposed revisions and there were no recommendations for further modification.

**Commission Action:** The National Commission on Recognition of Dental Specialties and Certifying Boards adopts the proposed 2021 National Commission Periodic Review of Dental Specialty Education as presented in **Appendix 3**, with immediate implementation.

The National Commission on Recognition of Dental Specialties and Certifying Boards further considered the proposed timeline of the Periodic Review of Dental Specialty Education and Practice:

- The National Commission will notify the recognized specialty sponsoring organizations on **September 1, 2019** that the Periodic Review of Dental Specialty and Practice will be conducted in 2020.
- The National Commission will forward an electronic template of the report **January 1, 2020** to each of the specialty sponsoring organizations.
- Specialty Sponsoring Organizations will have have nine (9) months from the official notice to submit a draft of their report to the National Commission by **September 1, 2020**.
- The Review Committee on Specialty Recognition will review the draft reports for completeness in **late October/early November 2020**. Reports needing clarifications, additional information, and/or revision will be returned to the specialty sponsoring organization for revision with information due in **December 15, 2020**.
- Draft reports are to be finalized in **February 2021** prior to the **March 2021** annual meeting of the National Commission.

**Commission Action:** The National Commission on Recognition of Dental Specialties and Certifying Boards adopts the proposed 2021 National Commission Periodic Review of Dental Specialty Education timeline with immediate implementation.

***Consideration of Request by American Society of Dentist Anesthesiologists to Recognized Dental Anesthesiology as a Dental Specialty:*** The National Commission on Recognition of Dental Specialties and Certifying Boards considered the request and application submitted by the American Society of Dentist Anesthesiologists (ASDA) to recognize dental anesthesiology as a dental specialty. The Board of Commissioners were provided with an overview of the Review Committees review process of the application and the rationale behind the committee's recommendation that dental anesthesiology be recognized as a dental specialty. Some commissioners believed the dental anesthesiology application did not meet Requirement #3; however, many commissioners indicated during the discussion that the application had sufficient documentation to show that all the *Requirements for Recognition for Dental Specialties* were met. The National Commission voted via paper ballot and achieved the necessary 2/3rds majority to recognize dental anesthesiology as a dental specialty.

**Commission Action:** The National Commission on Recognition of Dental Specialties and Certifying Boards grants the American Society of Dentist Anesthesiologists request to recognize dental anesthesiology as a dental specialty effective immediately.

**Report of the Standing Committee on Strategic Planning and Policy Review:** The report of the Standing Committee on Strategic Planning and Policy Review can be found in **Appendix 4.** Below are the actions taken by the National Commission related to the Report of the Standing Committee on Strategic Planning and Policy Review:

***Consideration of National Commission on Recognition of Dental Specialties and Certifying Boards Rules Article II. Officers and Staff:*** The National Commission on Recognition of Dental Specialties and Certifying Boards considered proposed revisions to the *Rules* of the National Commission related to the annual election of the vice-chair who automatically succeeds to the position of chair the ensuing year. The National Commission discussed the proposed revisions and there were no recommendations for further modification.

**Commission Action:** The National Commission on Recognition of Dental Specialties and Certifying Boards adopts the proposed revised *Rules* presented in **Appendix 5** with immediate implementation.

***Consideration of Current Term Length for National Commission Chair and Vice-Chair:*** The National Commission on Recognition of Dental Specialties and Certifying Boards considered the directive from the National Commission at its August 21, 2018 conference call to provide clarification of the current term length of the National Commission Chair and Vice-Chair.

**Commission Action:** The National Commission on Recognition of Dental Specialties and Certifying Boards reaffirms that Dr. Charles Norman will serve as chair and Dr. James Boyle will serve as vice-chair until the close of the House of Delegates meeting in 2019.

The National Commission on Recognition of Dental Specialties and Certifying Boards considered proposed revisions to the *Rules* of the National Commission: Article 1, Commission, Section 3. Term of Office and Article II Officers and Staff, Section 1 Officers. The proposed *Rules* revision is related to the start and expiration of terms for Commissioners and Commission chairs and vice-chairs. The National Commission discussed the proposed revisions and there were no recommendations for further modification.

**Commission Action:** The National Commission on Recognition of Dental Specialties and Certifying Boards adopts the proposed revised *Rules* presented in **Appendix 6** with immediate implementation.

***Consideration of Draft National Commission on Recognition of Dental Specialties and Certifying Boards Mission, Vision, and Values Statements:*** The National Commission on Recognition of Dental Specialties and Certifying Boards considered the draft Mission, Vision and Values statements. The National Commission discussed the proposed Mission, Vision and Values statements and sought guidance related to transparency and what information is considered confidential. The National Commission discussed the proposed statements and there were no recommendations for further modification.

**Commission Action:** The National Commission on Recognition of Dental Specialties and Certifying Boards adopts the draft Mission. Vision, and Values statements as presented in **Appendix 7**, with immediate implementation.

***Information Report on Revised Requirements for Recognition of Dental Specialties and National Certifying Boards for Dental Specialists*:** The National Commission on Recognition of Dental Specialties and Certifying Boards considered an informational report regarding the revised *Requirements for Recognition of Dental Specialties and National Certifying Boards for Dental Specialists* that were adopted by the American Dental Association (ADA) House of Delegates in October 2018. The National Commission noted that the modifications were mostly editorial in nature and consisted of removing references to the the Council on Dental Education and Licensure (CDEL) and the ADA House of Delegates in the recognition process. The National Commission further noted substantial revisions to the *Requirements for Recognition of a Dental Specialty* Requirement requiring advanced education programs to be accredited by the Commission on Dental Accreditation and in the R*equirements for Recognition of National Certifying Boards for Dental Specialists* related to the following of Standards for Educational Psychological Testing, including validity and reliability evidence.

**Commission Action**: This report is informational in nature and no action was taken.

***Consideration of Proposed Revisions to the National Commission on Recognition of Dental Specialties and Certifying Boards Policy and Procedure Manual*:** The National Commission on Recognition of Dental Specialties and Certifying Boards considered the proposed revised policies and procedures presented in the Policy and Procedure Manual as they relate to the operational functions of the National Commission. The National Commission noted most of the revisions were housekeeping in nature to provide clearer interpretation and transparency. The National Commission noted that the policies related to Confidentiality, Application Process for Recognition of a Dental Specialty and Application Process for Recognition of a Dental Specialty Certifying Board were revised to include language related to public notice an application has been received, the receipt of two (2) or more applications for recognition and examples of a close working relationship. The National Commission discussed the proposed revisions and there were no recommendations for further modification. The National Commission considered the following revised policies and procedures:

- National Commission and Commission Meetings- Composition and Criteria
- Policy on Nomination of Public Members- Nomination Criteria
- Review Committees and Review Committee Meetings of the National Commission- Structure
- Policy on Confidentiality
- Policy on the Annual Report of the Certifying Board
- Policy on Application Process for Recognition of a Dental Specialty
- Policy on Application Process for Recognition of a Dental Specialty Certifying Board
- Due Process Related to Review Committee Special Appearances

**Commission Action:** The National Commission on Recognition of Dental Specialties and Certifying Boards adopts the revised proposed Policy and Procedure Manual as presented in **Appendix 8**, with immediate implementation.

**Report of the Standing Committee on Finance:** The report of the Standing Committee on Finance can be found in **Appendix 9.** Below are the actions taken by the National Commission related to the Report of the Standing Committee on Finance:

***Consideration of 2019 Budget Fee Allocation and Communication from the Dental Specialty Group Related to Proposed Fee Sharing:*** The National Commission on Recognition of Dental Specialties and Certifying Boards considered the October 1, 2018 communication from the Dental Specialty Group (DSG) related to the specialty sponsoring organizations decision to not consider changes to the fee-sharing arrangement that is currently in place.

> **Commission Action:** The National Commission on Recognition of Dental Specialties and Certifying Boards reaffirmed the current fee sharing structure for the recognized specialty sponsoring organizations.

The National Commission on Recognition of Dental Specialties and Certifying Boards further considered the October 1, 2018 communication from the DSG requesting an end-of-year, detailed summary of the 2018 budget versus the actual expenses for the National Commission. The National Commission determined that its budgetary information contains proprietary information that is deemed confidential; therefore, this information is not released to the communities of interest. The National Commission learned that aside from the ADA's annual contribution to the National Commission, the ADA also provides an additional yearly in-kind grant to the National Commission to cover all indirect operating costs and any budget shortfalls that may occur. The National Commission noted that each of the dental specialties have an appointee on the Board of Commissioners to communicate to the sponsoring organizations that, as Commissioners, they thoroughly review the budget on an ongoing basis and monitor whether the National Commission is conducting business in a responsible manner.

> **Commission Action:** The National Commission on Recognition of Dental Specialties and Certifying Boards denied the DSG request for detailed, annual budget information, as budget information contains proprietary information which is considered confidential.
>
> The National Commission on Recognition of Dental Specialties and Certifying Boards further directs staff to communicate with the DSG related to the National Commission decision to deny the release of the 2018 budget information.

***Consideration of Application Fees for Dental Specialty Recognition for Sponsoring Organization and Certifying Board:*** The National Commission on Recognition of Dental Specialties and Certifying Boards considered the Application Fees for Specialty Recognition of Sponsoring Organizations and Certifying Boards based on actual costs associated with the in-person review conducted in November 2018 of a recent application for recognition. The National Commission noted the current application fees were in alignment with actual costs and there were no recommendations for further modification.

> **Commission Action:** The National Commission on Recognition of Dental Specialties and Certifying Boards reaffirmed the current $15,000 Application fee for the Sponsoring Organization, $10,000 Application Fee for the Certifying Board and and the $10,000 Appeal fee.

***Consideration of 2020 Budget*:** The National Commission on Recognition of Dental Specialties and Certifying Boards considered the proposed 2020 budget. The National Commission noted the 2020 budget proposed a $363 increase in the annual fee for each of the dental specialty sponsoring organizations from $9,700 to $10,063 for a total of $90,571, which is matched by the American Dental Association (ADA). The National Commission further noted the 2020 budget reflects an increase in direct expenses projected for 2020 of $45,285 for an overall budget of $181,141. The National Commission discussed the estimated indirect costs (office space, legal, HR, IT, etc.) and the impact on the National Commission's annual budget. The National Commission learned that recently the ADA and the Commission on Dental Accreditation signed a shared services agreement and that it is the ADA's intent to develop shared services agreements with each of the other commissions, including the National Commission, by the end of 2019. The National Commission discussed its support for a shared services agreement.

**Commission Action:** The National Commission on Recognition of Dental Specialties and Certifying Board adopts the 2020 draft budget as presented in **Appendix 10.**

**Report of the Review Committee on Specialty Certifying Board Recognition:** The report of the Review Committee on Specialty Certifying Board Recognition can be found in **Appendix 11.** Below are the actions taken by the National Commission related to the Report of the Review Committee on Specialty Certifying Board Recognition:

***Consideration of 2018 National Commission on Recognition of Dental Specialties and Certifying Boards Annual Report of the Recognized Dental Specialty Certifying Boards*:** The National Commission on Recognition of Dental Specialties and Certifying Boards considered the 2018 Annual Report of the Recognized Dental Specialty Certifying Boards. The National Commission noted that while some minor inconsistencies in the data required follow-up; overall, the data reported by the nine (9) recognized dental specialty certifying boards as compared to previous reports remained relatively consistent.

**Commission Action:** The National Commission on Recognition of Dental Specialties and Certifying Boards adopts the 2018 Annual Report of the Recognized Dental Specialty Certifying Boards as presented in **Appendix 12**.

***Consideration of Draft Application for Recognition of Dental Specialty National Certifying Boards:*** The National Commission on Recognition of Dental Specialties and Certifying Boards considered the proposed draft Application for Recognition of Dental Specialty National Certifying Boards. The National Commission noted that the draft application proposed removal of language, policies and procedures related to the Council on Dental Education and Licensure (CDEL) and the insertion of language related to the National Commission's policies and procedures based on the revised *Requirements for Recognition of Dental Specialties and National Certifying Boards for Dental Specialists* adopted by the American Dental Association House of Delegates in October 2018. The National Commission further noted the insertion of examples of evidence related to determining aid in the determination of what a "close working relationship" is between the sponsoring organization and certifying board. The National Commission further noted the addition of policy related to the receipt of two (2) or more applications from the same area of dentistry to ensure the process was clear and well defined. The National Commission discussed the draft application and there were no recommendations for further modification.

**Commission Action:** The National Commission on Recognition of Dental Specialties and Certifying Boards adopts the proposed Application for Recognition of Dental Specialty National Certifying Boards as presented in **Appendix 13**, with immediate implementation.

***Consideration of 2019 National Commission on Recognition of Dental Specialties and Certifying Boards Annual Report of the Recognized Dental Specialty Certifying Boards:*** The National Commission on Recognition of Dental Specialties and Certifying Boards considered the 2019 Annual Report of the Recognized Dental Specialty Certifying Boards. The National Commission learned that four (4) of the nine (9) recognized specialty certifying boards submitted their report by the February 1, 2019 deadline and that after follow-up with the executive directors, the remaining five (5) reports were submitted; however, one (1) report remained incomplete and further follow up was required. The National Commission further learned that the Review Committee requested follow up on eight (8) of the nine (9) reports for supplemental information related to responses such as "not applicable", "uncertain" and/or blank responses so that the committee could determine whether these responses were appropriate. The National Commission discussed concerns related to the missed deadlines for the submission of the reports and the amount required follow-up. The National Commission noted that in comparison to previous reports, the data in the 2019 Annual Report remained relatively consistent.

**Commission Action:** The National Commission on Recognition of Dental Specialties and Certifying Boards adopts the 2019 Annual Report of the Recognized Dental Specialty Certifying Boards as presented in **Appendix 14**.

The National Commission on Recognition of Dental Specialties and Certifying Boards further directs the Strategic Planning and Policy Committee to develop policy related to missed deadlines.

***Consideration of the Draft 2020 National Commission on Recognition of Dental Specialties and Certifying Boards Annual Report of the Recognized Dental Specialty Certifying Boards:*** The National Commission on Recognition of Dental Specialties and Certifying Boards considered the proposed 2020 National Commission Annual Report of the Recognized Dental Specialty Certifying Boards. The National Commission noted the proposed revisions were based on the revised *Requirements for Recognition of Dental Specialties and National Certifying Boards for Dental Specialists* adopted by the American Dental Association (ADA) House of Delegates in October 2018. The National Commission further noted the insertion of expanded language related to the required submission of certification and re-certification examination content including documentation related to test construction, evaluation, validity and reliability. The National Commission noted concerns related to whether all of the certifying boards are currently collecting this type of data and if not, how long it will it take for them to come into compliance with the requirement. The National Commission further discussed the the need for the National Commission to take into consideration the granting extensions to achieve compliance.

**Commission Action:** The National Commission on Recognition of Dental Specialties and Certifying Boards adopts the proposed 2020 National Commission Annual Report of the Recognized Dental Specialty Certifying Boards presented in **Appendix 15**, with immediate implementation.

The National Commission on Recognition of Dental Specialties and Certifying Boards further directs the Strategic Planning and Policy Review Committee to develop policy related to requests for compliance extensions.

**Election of Vice Chair of the Commission**: In accordance with the *Rules* of the National Commission on Recognition of Dental Specialties and Certifying Boards, the Board of Commissioners elects a Vice-Chair who is active, life or retired member of the American Dental Association.

**Commission Action:** The National Commission elects Dr. Alan Friedel to serve as its Vice Chair for 2019-2020.

**Consideration of American Dental Association Manual, Bylaws, and Standing Rules for Councils and Commissions Changes Related to all Commissions:** The National Commission on Recognition of Dental Specialties and Certifying Boards considered a presentation related to proposed changes to the American Dental Association (ADA) Governance Manual, Bylaws and Standing Rules for Councils and Commissions as it relates to all Commissions that will be presented to the ADA Board of Trustees in 2019 for adoption. The National Commission noted that the four (4) Commissions housed within the ADA governance structure are semi-autonomous agencies with the sole authority to administer a specific program as outlined in the ADA Bylaws. Each commission administers a program that involves a public trust, which requires the programs be administered, and decisions be made, in a consistent manner that is free from bias and conflict of interest. The National Commission further noted the mechanisms that safeguard the Commissions from conflict of interest include the delegation of certain governance rights and procedures to the commissions within the ADA Bylaws, the ADA *Governance and Organizational Manual*, and the ADA *Standing Rules for Councils and Commissions*. The National Commission learned that because the commissions were each established at different points in time; the governance structure amongst each commission is not consistent and is a reflection of the understanding of controlling for conflict of interest at the time each commission was formed. This has led to a perception among some communities of interest, including the public, that the ADA has an undue influence on commission decisions. The National Commission discussed the importance that all commissions operate in a consistent manner to control for perceptions of conflict of interest and are free from bias. The national Commission supported the proposed changes without further modification.

**Commission Action:** The National Commission on Recognition of Dental Specialties and Certifying Boards supports the proposed changes to the American Dental Association Governance Manual, Bylaws and Standing Rules for Councils and Commissions.

**Future Meeting Dates**: The National Commission on Recognition of Dental Specialties and Certifying Boards reviewed the meeting dates of the 2020 and 2021 meetings.

**Commission Action**: This report is informational in nature and no action was taken.

**Adjournment**: The National Commission on Recognition of Dental Specialties and Certifying Boards adjourned at 2:19pm, Monday, March 11, 2019.

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CANADIAN ACADEMY
OF DENTAL ANAESTHESIA

# APPENDIX 3:

Article in Dispatch (Winter 2005) - RCDSO Approves the Creation of Dental Anaesthesia Specialty

presented to Council for information and comment in June 2002 by Professor Dickens. Comment was also solicited from external organizations such as the Ontario Dental Association. Membership was invited in *Dispatch* to be part of the consultation process. The draft was mailed to all members and also posted on the College's Web site.

All of the comments received were considered by the subcommittee. A revised draft Code of Ethics was presented to the Executive Committee for its review and then given to the Legal and Legislation Committee. Input was also received from legal counsel.

This subcommittee had then completed its work. So, at the November 2003 meeting, Council reaffirmed its interest in continuing the process. Council instructed Executive Committee to strike a new committee called the Ad Hoc Ethics Committee to complete the review process.

The committee members included Past President Dr. Eric Luks, chair, College President Dr. Cam Witmer, Registrar Irwin Fefergrad, and others selected by the Executive Committee. In December, the Executive Committee chose the following Council members to sit on the new Committee: Dr. Philip Watson and public members Mary Ann Labaj, Krystyna Rudko, and Stan Spencer.

"It's been a lengthy process, but the time was well spent. We now know with confidence that we have a document that will serve us and the public well for at least another decade," said the College Registrar.

If you have any questions about the new Code of Ethics, please contact:

Irwin Fefergrad
*Registrar*
phone: 416-934-5625
toll-free: 1-800-565-4591
e-mail: ifefergrad@rcdso.org

**APPENDIX 3**

# Dental Anaesthesia

## *Council approves regulation amendments needed to move to the final steps in creation of dental anaesthesia specialty.*

The necessary amendments to the professional misconduct and the registration regulations were passed by Council at its November 2004 meeting. This was the next step forward in the creation of a specialty in dental anaesthesia.

These amendments were approved in principle by Council at its June 2004 meeting and then circulated to a broad base of stakeholders in Ontario and across the country. The Oct/Nov 2004 issue of *Dispatch* contained a story on the tremendous amount of feedback received. All of the feedback was reviewed by the Legal and Legislation Committee before submitting its recommendations at the November Council meeting.

The College will now forward the regulation amendments to the Minister of Health and Long-Term care for approval and processing by the government. There is no firm timeline from the Ministry on when this will occur.

Council has directed the Executive Committee to investigate and make a recommendation on the appropriate route to pursue for national accreditation.

If you have any questions about this article, please contact:

Irwin Fefergrad
*Registrar*
phone: 416-934-5625
toll-free: 1-800-565-4591
e-mail: ifefergrad@rcdso.org

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# APPENDIX 4:

Article in Dispatch (October/November 2004) – Anaesthesia Specialty

**APPENDIX 4**

# Anaesthesia Specialty

## Large response to consultation about proposed anaesthesia specialty

MEMBERS AND OTHERS HAVE TAKEN A VERY ACTIVE INTEREST IN THE EXTENSIVE CONSULTATION PROCESS FOR THE PROPOSED REGULATORY AMENDMENT TO CREATE A SPECIALTY IN DENTAL ANAESTHESIA.

"We have received an unusually large number of letters with feedback on the proposed by-law amendments," explained College Registrar Irwin Fefergrad.

"While the overwhelming majority of letters are in support, the most important thing is that the process is open, transparent, and accessible. The feedback that is not in support is just as important."

All comments received by the deadline for comment are forwarded to the Legal and Legislation Committee. This Committee makes yet another report to Council. Council then considers all matters and decides if it wishes to proceed further. If so, a proposed regulation change must go to the Minister of Health and Long-Term Care. The Council also needs to determine whether it wishes to seek national recognition of the specialty. The Minister may then submit the requested change to stakeholders for comment. And finally, the provincial Cabinet must approve any regulation change.

*Here are some of the responses we received:*

…as a general dentist who has actively sought out and used the services of someone thus trained to help treat my patients, I can see only improvements in this service if this proposal makes it through towards government approval.

DR. VICTOR DAVEIKIS
*Waterloo*

I am writing you this letter to express my absolute and strong support for the granting of specialty status to those completing a recognized program in dental anaesthesiology. In my opinion, such highly-trained individuals are a rare but sorely needed commodity in our profession who provide a unique service.

H.C. TENEBAUM, DDS, DIP PERIO, PHD, FRCD(C), FADI
*Professor and Head, Periodontology, Association Dean, Biological and Diagnostic Sciences, Faculty of Dentistry, University of Toronto*

After listening to all sides at a special meeting of the Ontario Society of Dental Specialists on July 5, 2004, I support the dental anaesthesiologists in their application for specialty status in Ontario.

LORNE CHAPNIK, DDS, DENDO, FRCD(C)
*Toronto*

Because the College already has a sedation regulation and guideline, and issues permits, there is no need to protect the public by adding this specialty.

NAME WITHHELD

Over the past six months I have been privileged to work closely with two colleagues who were trained in the discipline of anaesthesia by the Faculty of Dentistry at the University of Toronto. We have also interacted together to prepare a revised training program in conscious sedation for the general practice residents at the University of British Columbia.

There is no doubt that my two colleagues practise anaesthesia to a very high standard. It seems anomalous that my two colleagues cannot refer to themselves as specialists in anaesthesia. In medicine, anaesthesia has been recognized as a specialty area for many years.

I offer my full support to the creation of a new specialty in dental anaesthesia.

DR. IAN MATTHEW, PHD, MDENTSC, BDS, FDSRCS (ENG & ED)
*Chair, Division of Oral and Maxillofacial Surgery, Faculty of Dentistry, University of British Columbia, Vancouver*

I have had the privilege and pleasure of working with many anaesthesiologists during my career and this has been extremely beneficial to me and my patients. As a result, we can offer treatment to patients who would otherwise not be treated.

SUZANNE CAUDRY, PHD, DDS, DIPPERIO, MSC
*Toronto*

*Continued on page 31*

# Ontario court upholds right of regulatory college to set policy as well as regulations in areas such as conflict of interest.

A recent Ontario court decision upheld the jurisdiction of governing councils of regulatory colleges to pass policies to regulate the profession, establish and maintain standards, and administer the legislation.

In this recent case, the Council of the Ontario College of Pharmacists passed a new policy stating "bonus points, loyalty points or air miles may not be awarded on prescriptions, prescription services or other professional services related to the practice of pharmacy in Ontario...."

A pharmacy chain challenged the jurisdiction of the College Council to make such a policy and stated that the change had to be made by government regulation. The Court upheld the jurisdiction of the Council to set policy in this manner and cited the mandate of the College, the *Regulated Health Professions Act, 1991*, and the College's professional misconduct regulation that prohibits inducements.

The Court also stated that whether air miles are inducements is an issue that can be determined by the College's Discipline Committee in an appropriate case.

At our College, conflict of interest prohibitions are set out in the professional misconduct regulation 853/93, made under the *Dentistry Act*. That regulation prohibits relationships and transactions that confer a rebate, credit or benefit in specified circumstances, including to a person who referred a patient to a member. Likewise, offering a rebate, credit or other benefits to a patient such as bonus points, loyalty points or air miles is not permitted.

The recent court decision for the pharmacists affirms the College's mandate to make these types of regulations and policies.

If you have any questions regarding the court case or our College's conflict of interest regulation, please contact:

**Dayna Simon**
*Assistant to Registar, Legal*
phone: 416-934-5618
toll-free: 1-800-565-4591
e-mail: dsimon@rcdso.org

**Dr. Fred Eckhaus**
*Assistant to Registrar, Dental*
phone: 416-934-5624
toll-free: 1-800-565-4591
e-mail: feckhaus@rcdso.org

# ANAESTHESIA SPECIALTY

*Continued from page 29*

There are too many specialties in dentistry as it is. This isn't even a specialty, but rather a descriptive or adjunct. It will be too confusing for the public.

NAME WITHHELD

The patients we have referred to these dentists have had complicated medical issues or heightened anxiety and most certainly were in need of specialty care. Deep sedation is often required to treat them in a safe, effective manner. This decision will make for the betterment of the profession.

DR. BRIAN MCGUIRE
DR. JOE MCGUIRE
DR. PAUL ABBOTT
*Ottawa*

I am writing this letter of support for the specialty certification for the proposed specialty of anaesthesia. The general public is, more and more, requesting to have their dental care delivered while under some form of sedation. Denying them access to care is counterintuitive to the current philosophy of making dentistry accessible to the widest group of patients possible. We see approximately 1,300 new patients per year at the University Health Network/Princess Margaret Hospital and many of these people present with oral disasters – some of whom did not seek care because of the fear of having dentistry done while awake.

R. E. (BOB) WOOD, DDS, PHD, FRCD(C)
*Staff Dentist*
*Princess Margaret Hospital/UHN*
*Associate Professor, University of Toronto*
*Chief Forensic Dental Consultant, Office of the Chief Coroner for Ontario*
*Toronto*

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# APPENDIX 5:

Excerpt from Minutes of RCDSO Council Meeting:
May 10, 2007

# APPENDIX 5

**Excerpt from Minutes of RCDSO Council meeting, May 10, 2007**

**(d) Registration Committee**

Dr. MacSween. Chair of the Registration Committee, presented the report and moved the recommendation on behalf of the committee. Dr. MacSween read Recommendation #1 from the Registration Committee before deputations were presented from Dr. Marshall Freilich and Dr. Howard Holmes.

(Transcripts of the two deputations are attached to these minutes.)

Dr. MacSween continued her report on behalf of the Registration Committee. She reminded Council that the Minister of Health and Long-Term Care, the Honourable George Smitherman had reduced the circulation period of the regulation from 60 days to 30 days. In reducing that circulation period, Minister Smitherman advised that the Ministry wishes to move forward on the College's proposed regulation to ensure that the Royal College of Dental Surgeons of Ontario and its members are compliant with the FARPA provisions.

She gave an update of what had occurred since the March 15, 2007 Council meeting where Council approved the principles of the Memorandum of Understanding. The College has consulted with Dr. Claude Lamarche (Dean of the Faculty of Dentistry, University of Montreal and Chair of the Commission on Dental Accreditation of Canada); Dr. David Mock (Dean of the Faculty of Dentistry, University of Toronto); Dr. Harinder Sandhu (Director of Dental Programs at the Schulich School of Medicine and Dentistry); and Dr. Ed Yen (Dean at the University of British Columbia). The universities currently in agreement with the general principles of the national protocol are University of British Columbia, University of Manitoba, University of Montreal, University of Laval, McGill University, University of Toronto and the University of Western Ontario.

Dr. MacSween noted that now each university would have a GAP training and assessment program of no more than one academic year, and candidates that have satisfied the credentialing requirement and the National Dental Examining Board of Canada examination will have the eligibility to enter in the assessment and GAP training program. In the initial Memorandum of Understanding this was specified, but that it would be done out of one location. Now the universities would have ownership of who is allowed into the program.

Those applicants who are accepted into the assessment GAP training would have to have credentials that are more or less equivalent to the training and standards in Canada and have passed the entry level examination. At some point during the academic year, candidates would be assessed in a specialty and would receive a

certificate of completion from a participating faculty and then they would be eligible to write the Royal College of Dentists of Canada examination. Dr. MacSween reminded Council that this would be the same examination that all candidates in that specialty area have to write.

Upon successful completion of the examination, candidates would apply for registration at the College in the province of her or her choice.

Council was reminded of the process for internationally-trained general dentists, namely, the Qualifying Program. Those candidates have to be credentialed by the university of their choice for acceptance, must pass the university's entrance requirements that include an entry level examination to establish that they have a basic knowledge of dentistry. The Qualifying Program lasts two years, following which the NDEB examinations are written and the candidates are eligible for registration in the province of their choice.

It was reported that many submissions have been received by the College from dental specialists who are criticizing it for trying to "fast track" applicants and abridging the time for circulation. The Registration Committee, together with the Executive Committee, feels that much of the criticism comes from a lack of understanding of the process. The Ministry also received some of these submissions, but the Minister of Health has remained supportive of the regulation amendments and deemed further delay as unwarranted.

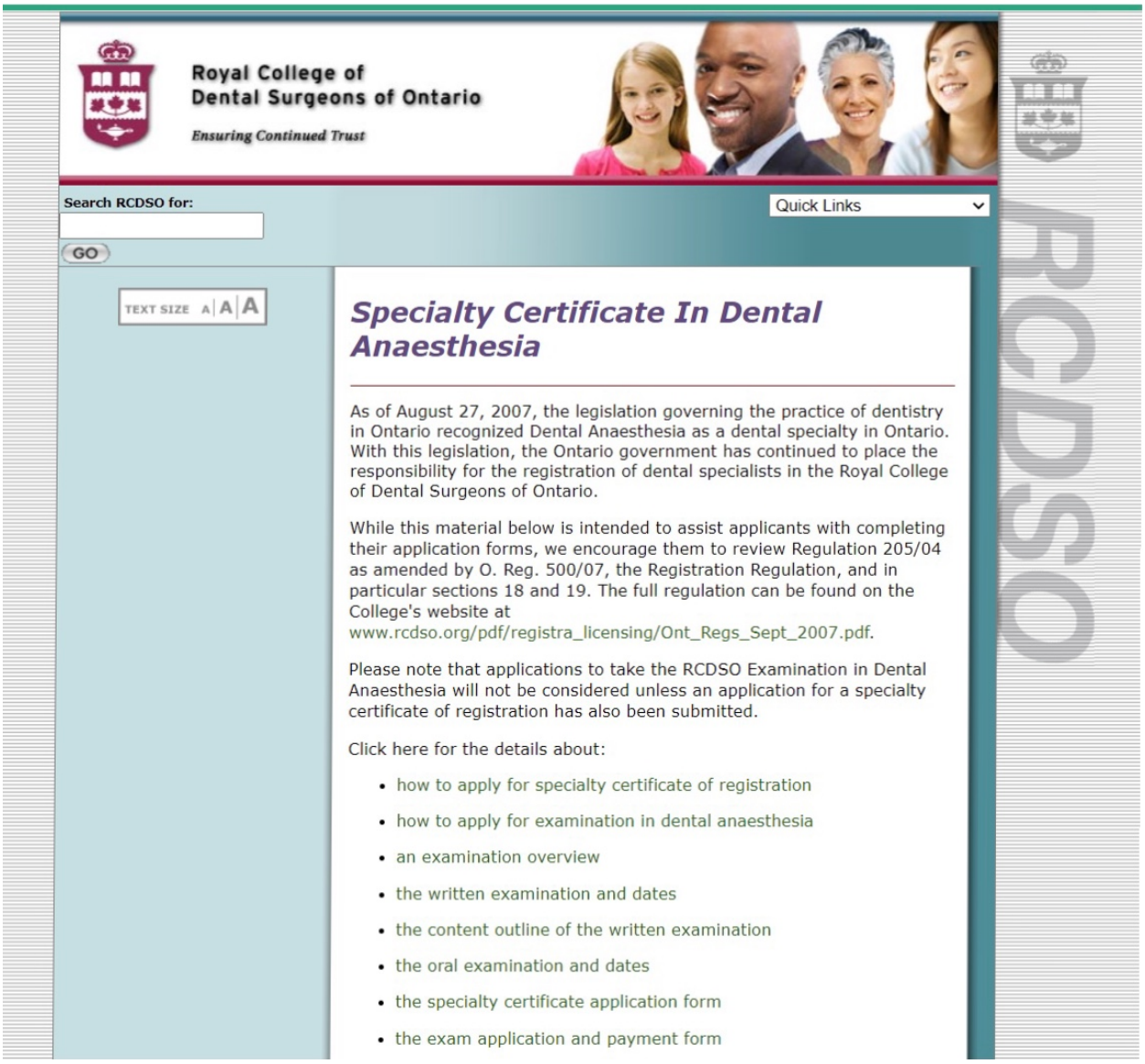
The following motion was moved:

**MOTION #1:**

**THAT Council give final approval to the amendments to Part IV of the College's General Regulation, that being Ontario Regulation 205/94 as amended ("Registration Regulation") in the manner set out in Appendix A to the Registration Report to Council,**

**AND FURTHER THAT the proposed amended Registration Regulation be forwarded to the Minister of Health and Long-Term Care in order to take such steps as are necessary to implement the amended Registration Regulation.**

**CARRIED**
*(Unanimously)*



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# APPENDIX 6:

Letters of Support from Drs. Jason Maynes and Desmond Lam

**APPENDIX 6**

SickKids
THE HOSPITAL FOR SICK CHILDREN

UNIVERSITY OF TORONTO

**Department of Anesthesia and Pain Medicine**

Jason Thomas Maynes, PhD/MD
Chief, Anesthesia and Pain Medicine
Curtis Joseph and Harold Groves Chair in Anesthesia and Pain Medicine
Associate Chief of Perioperative Services, Research

Associate Professor
Anesthesia and Biochemistry
University of Toronto

Scientist
Division of Molecular Medicine
SickKids Research Institute

Email: jason.maynes@sickkids.ca

May 5, 2021

Canadian Dental Regulatory Authorities Federation

To Whom It May Concern:

RE: Proposed Recognition of Dental Anesthesia

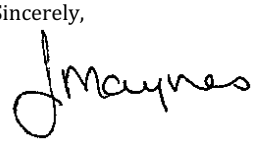
I am writing this letter to express my support for the application by the Canadian Academy of Dental Anaesthesia (CADA) to recognize Dental Anesthesia as a specialty within the profession of dentistry.

As the Chief of Anesthesia and Pain Medicine at The Hospital for Sick Children in Toronto, I am familiar with the training of dentists who would qualify to be recognized as potential specialists in this field. The education these trainees gain through their time within our Department, along with the vital experiences gained at other academic hospitals in the Greater Toronto Area, as well as at the Pediatric Surgicentre at the Faculty of Dentistry, University of Toronto, solidify their pediatric anesthesia training during their 3-year residency.

It is clearly in the public's interest to be able to identify who is appropriately trained to administer general anesthesia, allowing for informed choices by patients and their families. The formal recognition of those dentists with advanced anesthesia training will protect the public and should facilitate the effort to gain accreditation of such programs.

I encourage the Canadian Dental Regulatory Authorities Federation (CDRAF) to accept the request to recognize Dental Anesthesia as a specialty within the profession of dentistry. This recognition will be beneficial for all Canadian patients who are in need of this valuable service.

Sincerely,



Jason Maynes, PhD/MD
Chief, Anesthesia and Pain Medicine
Curtis Joseph and Harold Groves Chair in Anesthesia and Pain Medicine

I am writing this letter to express my support for the application by the Canadian Academy of Dental Anaesthesia to recognize Dental Anesthesia nationally as a specialty within the profession of dentistry.

For over 20 years, the residents of Dental Anaesthesia Graduate Training Program at the University of Toronto, Faculty of Dentistry have spent 8 months of their 3-year training program at Michael Garron Hospital (Toronto East Health Network). The dental anaesthesia residents gain knowledge and skills to provide anesthesia care for healthy and medically compromised patients. Their daily schedule includes joining our morning rounds with the medical anesthesia residents followed by their assignment to provide anaesthesia care to adult or pediatric patients. They gain experience providing differing depths of anesthesia for sedation as well as for general anesthesia and become quite accomplished with advanced airway management. During their 2 years of clinical training, they also become proficient at recognizing and responding to uncommon complications that can occur during surgery and general anesthesia.

As the Chief of Anesthesiology and Pain Medicine, I strongly believe that the dental anesthesia residents who graduate from the Dental Anaesthesia Graduate Training Program become proficient in both knowledge and skills to provide anesthesia care for their dental patients. Their training is unique and cannot be compared to any other sedation training that other dental specialty programs receive, thus making them sub-specialists in providing the highest standards of dental anesthesia.

Sincerely,

Dr. Desmond Lam, FRCPC

Lecturer University of Toronto
Co-Medical Director Surgical Services,
Chief of Anesthesiology and Pain Medicine, Michael Garron Hospital

CADA

CANADIAN ACADEMY OF DENTAL ANAESTHESIA

# APPENDIX 7:

CADA Constitution and By-laws

**APPENDIX 7**

CADA
CANADIAN ACADEMY
OF DENTAL ANAESTHESIA

# CONSTITUTION & BY-LAWS

7A - 2387 Trafalgar Road, Oakville, ON L6H 6K7

CADA
CANADIAN ACADEMY OF DENTAL ANAESTHESIA

# Constitution and By-Laws

## ARTICLE 1: NAME

This organization shall be known as the Canadian Academy of Dental Anaesthesia.

## ARTICLE 2: MISSION STATEMENT

The mission of this Academy is to promote excellence in anaesthesia in dentistry, represent dentists who have postgraduate training in anaesthesia, and to support and encourage the clinical practice of anaesthesia by these practitioners in order to facilitate patient pursuit of optimal oral health.

## ARTICLE 3: ORGANIZATION and DISSOLUTION

This academy is a non-profit corporation organized under the laws of Canada. If this corporation is dissolved at any time, no part of its funds, or property, shall be distributed to, or among, its members. After the payment of all indebtedness of the corporation, the remaining funds or properties shall be used to foster the art and science of dental anaesthesia in a manner to be determined by the then governing body of the corporation.

## ARTICLE 4: GOALS

The goals of the Academy are to:

1. Pursue excellence in the standards of practice of anaesthesia in dentistry.
2. Encourage the availability of the complete spectrum of anaesthesia care for dental patients.
3. Encourage the training of dentists to provide the complete spectrum of anaesthesia care.
4. Develop and support the recognition of anaesthesia as a dental specialty.
5. Pursue the interests of Canadian dentists who qualify as specialists in this discipline.
6. Meet for the purposes of disseminating progress in the field of advanced techniques in anaesthesia, patient management and pain control.
7. Inform its members of current matters of interest related to anaesthesia in dentistry.
8. Communicate matters of members' concern to other organizations, as required.

## ARTICLE 5: MEMBERSHIP

The members of this academy shall be classified as either Active, Resident or Honorary. Applications for membership must use the current application form, must be accompanied by the annual membership fee, and shall be referred to the executive for approval.

## ACTIVE MEMBERS:

1. Each active member must have a DDS, DMD or BDS degree.

2. Each active member must also have successfully completed a formal postgraduate course of training in anaesthesia as it applies to dentistry, consistent with Part 2 of the Association of Canadian Faculties of Dentistry Guidelines for Teaching the Comprehensive Control of Pain and Anxiety at The Advanced Education Level. For those who completed their training after 1984, the duration of this training must be a minimum of 24 months. For those who completed their training in or prior to 1984, the duration of this training must be a minimum of 12 months.

3. An annual membership fee, as established by the executive, will be charged. Dues are payable by January 1 of each year. Members who have not paid within 60 days of this date will be considered delinquent and suspended from membership.

## RESIDENT MEMBERS:

Any interested individual with a DDS, DMD or BDS degree, currently enrolled in a postgraduate dental anaesthesia program of a minimum 2-year duration, may apply for membership. The annual fee will be waived. This status is non-voting and does not allow the Resident member to hold an executive position. Otherwise, all other conditions of membership apply.

## HONORARY MEMBERS:

1. A person who has made outstanding contributions to the field of dental anaesthesia may be classified as an Honorary Member. Honorary members may be nominated by any active member and will be approved following a two-thirds majority vote of active members at a general meeting. This status is non-voting and does not allow the Honorary member to hold an executive position. Otherwise, all other conditions of membership apply. The annual fee will be waived.

## ARTICLE 6: EXECUTIVE COMMITTEE

1. The executive committee shall consist of the following 5 officers:

   (i) President
   (ii) Vice-President
   (iii) Scientific Chair
   (iv) Secretary
   (v) Immediate Past-President
   (vi) Treasurer

2. The executive committee shall be responsible for the general business administration and all programming of the Academy. The executive shall share the workload as required.

3. The term of each office is one year. In addition to the above, the specific duties of the individual officers are as follows:

   (i) President: The President is responsible for the overall direction of the Academy in consultation with the other executive members. The President calls and presides at all general and executive meetings.

   (ii) Vice-President: The Vice-President assumes the responsibilities of the President in his/her absence and assists other executive members in their duties.

   (iii) Scientific Chair: The Scientific Chair is responsible for the continuing education programs.

   (iv) Secretary: The Secretary is responsible for correspondence, including the newsletter.

   (v) Immediate Past-President: The Immediate Past-President shall be available to act as an advisor for the executive committee.

   (vi) Treasurer: The Treasurer is responsible for the financial record-keeping of the Academy and is the custodian of all moneys. The Treasurer shall submit an annual accounting to the general membership.

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CANADIAN ACADEMY OF DENTAL ANAESTHESIA

## ARTICLE 7: NOMINATIONS AND ELECTIONS

1. Elections for the executive shall be held annually, no later than the month of January of the year the positions take effect. Voting will be carried out at a general meeting or may be submitted by written proxy.

2. Any active member may be nominated. Nominations must be in writing and may come from any other active member. The consent of each nominee must be obtained prior to the nomination.

3. The tenure of each office shall be one year.

4. With the exception of Treasurer, the other executive members for each term shall automatically progress through the rank from Secretary to Vice-President, Vice-President to President, and then President to Immediate Past-President.

5. The Treasurer may be re-elected annually.

6. Therefore, elections will be held annually for the position of Secretary and Treasurer.

7. A majority of votes cast shall elect a nominee to office.

## ARTICLE 8: MEETINGS

1. The executive committee shall meet as necessary to conduct the business of the society.

2. There shall be an annual meeting of the general membership. Additional meetings may be called for as determined by the executive.

## ARTICLE 9: AMENDMENTS

1. The constitution may be amended by publishing a notice of motion to the membership at least 30 days prior to a general meeting or prior to a mail-ballot.

2. A two-thirds majority vote is required at the general meeting or mail-ballot to pass the amendment. Members may vote by written proxy submitted to the executive by the meeting date.

## ARTICLE 10: SPECIALTY STEERING COMMITTEE

1. The purpose of this committee is to prepare the application to the Council on Education of the Canadian Dental Association for dental anaesthesia to be recognized as a new specialty, and then oversee the implementation the specialty.

2. Its membership will comprise the current executive and additional members who have accepted the invitation to participate by the executive.

3. The chair of this committee will be selected by its members.

4. This committee shall report its progress to the general membership on a regular basis.

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CANADIAN ACADEMY
OF DENTAL ANAESTHESIA

# APPENDIX 8:

ASDA Constitution and By-laws

**APPENDIX 8**

# *Constitution*

# *and*

# *Bylaws*

# American Dental Board of Anesthesiology

**effective date:**
**March 7, 1996**

**and as amended:**
**September 27, 1996**
**March 7, 1998**
**November 20, 2006**
**February 27, 2008**
**October 17, 2008**
**March 12, 2009**
**April 14, 2010**
**April 26, 2011**
**May 1, 2012**
**April 21, 2015**
**June 8, 2018**
**January 23, 2019**
**April 23, 2019**
**July 23, 2019**
**July 3, 2020**
**December 1, 2020**
**March 23, 2021**

**Table of Contents**

# Certificate of Incorporation

File Number 5812-646-2

State of Illinois
Office of the Secretary of State

Whereas, Articles of Incorporation of the American Dental Board of Anesthesiology of Illinois have been filed in the Office of the Secretary of State as provided by the General Not for Profit Corporation Act of Illinois, in force January 1, A.D. 1987.

Now Therefore, I, George H. Ryan, Secretary of State of the State of Illinois, by virtue of the powers vested in me by law, do hereby issue this Certificate of Incorporation and attach hereto a copy of the Application of the aforesaid corporation.

In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of the State of Illinois, at the City of Springfield this 22nd day of December A.D. 1994 and of the Independence of the United States the two hundred and 19th.

George H. Ryan, Secretary of State

# *Articles of Incorporation*

To: George H. Ryan, Secretary of State

Pursuant to the provisions of "The General Not for Profit Corporation Act of 1986", the undersigned incorporator(s) hereby adopt the following Articles of Incorporation.

Article 1. The name of the corporation is the **American Dental Board of Anesthesiology**

Article 2. The name and address of the initial registered agent and registered office are:

| | |
|---|---|
| Registered Agent: | Michael S. Higgins |
| Registered Office: | 1047 Bishop Court<br>Palatine, IL · (Cook County) |

Article 3. The first Board of Directors shall be four in number, their names and residential addresses being as follows:

| | | |
|---|---|---|
| Ralph H. Epstein | 5 Edgewood Avenue | Glen Head, New York 11545 |
| James Chancellor | 8714 Teal Way | San Antonio, Texas 78239 |
| James Snyder | 5282 Dawes Ave. | Alexandria, Virginia 22311 |
| Michael Higgins | 1047 Bishop Court | Palatine, Illinois 60067 |

Article 4. The purposes for which this corporation is organized are:

·Professional Association
·To recognize dentists with advanced formal education in anesthesiology

Article 5. Other provisions: none

# Constitution

Article I: NAME

The name of this organization shall be the American Dental Board of Anesthesiology, hereinafter referred to as "the Certifying Board."

Article II: SPONSOR

The official sponsor of the Certifying Board shall be the American Society of Dentist Anesthesiologists, hereinafter referred to as "the Society."

Article III: OBJECTIVES AND RESPONSIBILITIES

The objectives of the Certifying Board shall be to elevate the standards and advance the art and science of anesthesiology in dentistry, thereby optimizing patient care. To accomplish these objectives, the responsibilities of the Certifying Board shall be to establish the qualifications for Diplomate status of the American Dental Board of Anesthesiology; to determine the eligibility of applicants for examination; to examine candidates seeking Diplomate status; to confer Diplomate status upon those candidates who successfully complete the examination process; and to establish criteria for maintenance of Diplomate status.

Article IV: ORGANIZATION

Section 10. Incorporation: The Certifying Board is a not-for-profit corporation organized under the laws of the State of Illinois. No part of its property or earnings shall inure to the benefit of any member thereof. If this corporation shall be dissolved at any time, no part of its funds or property shall be distributed to, or among, its members but, after payment of all indebtedness of the corporation, its surplus funds and properties shall inure to the American Society of Dentist Anesthesiologists to be used for education and research in anesthesiology in dentistry in such manner as the then governing body of the Society may determine.

Section 20. Administrative Office: The location of the administrative office shall be designated by the Board of Directors, and may be changed at its discretion.

Section 30. Registered Office: The location of the registered office shall be designated by the Board of Directors in accordance with provisions as set forth in the *General Not for Profit Corporation Act* of the State of Illinois.

## Article V: BOARD OF DIRECTORS

The membership of the Certifying Board shall be its Board of Directors whose qualifications, method of election, terms of office, powers and duties shall be established in Chapter I of the **Bylaws**.

## Article VI: OFFICERS

Section 10. Elective Officers: The elective officers of the Certifying Board shall be a President, a Vice-President of Written Examinations, a Vice-President of Oral Examinations, a Secretary, and a Treasurer, each of whom shall be elected by the Board of Directors as provided in Chapter II of the **Bylaws**.

Section 20. Appointive Officer: The appointive officer of the Certifying Board shall be an Executive Director who shall be appointed by the Board of Directors as provided in Chapter III of the **Bylaws**.

## Article VII: AMENDMENTS

This **Constitution** may be amended at any regular or special session of the Board of Directors of the American Dental Board of Anesthesiology by the affirmative vote of six (6) members of the Board, provided that all members of the Board shall have been notified of the proposed amendment at least thirty (30) days in advance of the session at which the amendment is to be considered, or with the unanimous consent of the Board of Directors to waive prior notification, at the session at which the amendment is to be considered.

## Chapter I: BOARD OF DIRECTORS

Section 10. Composition: The membership of the Board of Directors of the American Dental Board of Anesthesiology shall consist of nine (9) directors elected at the annual Diplomate Meeting of the Certifying Board and the Immediate Past President of the American Society of Dentist Anesthesiologists who shall be an *ex officio* member of the board of directors without the right to vote. The Board shall annually elect from its members, excluding the ASDA Immediate Past President, a President, a Vice-President of Written Examinations, a Vice-President of Oral Examinations, a Secretary, and a Treasurer who together with the remaining four (4) directors shall constitute the voting membership of the Board of Directors. The President may only exercise the right to vote when the vote is by ballot or when one more vote could alter the outcome.

A. In the event the ASDA Immediate Past President is not a Diplomate, an alternate ASDA Board member who is a Diplomate will be provided by the ASDA Board of Directors.

Section 20. Eligibility: Only a Diplomate in good standing of the American Dental Board of Anesthesiology as defined in Chapter VI, Section 80 of these **Bylaws** shall be eligible to serve as a director. No less than five (5) directors shall be primarily engaged in private practice involving the administration of anesthesia services.

Section 30. Term of Office: The term of office of a director shall be three (3) years. The tenure of a director shall be limited to two (2) consecutive terms of three (3) years.

Section 40. Nominations:

A. An open director position is defined as a position for which no director is seeking re-election to a second consecutive term of office or a recently vacated position following the conclusion of a director's second term.

B. Between November 1st and December 31st of the year prior to any election, any ADBA Diplomate in good standing may submit, to the Executive Director a candidate for consideration as a nominee for election to the Board of Directors.

By January 15th in the year of the election, the Executive Director will confirm that each candidate is eligible to serve on the Board of Directors and obtain a curriculum vitae, a completed application and a statement from the candidate verifying that they will serve if elected.

C. The Committee on Nominations shall select one candidate for each open director position from the eligible submissions sent to the Executive Director and make its selections known to the Diplomates by posting them on the ADBA's web site no later than fourteen (14) days prior to the upcoming elections. Additional nominations may be made from the floor provided they previously have been duly submitted to and confirmed as eligible by the Executive Director.

D. If there is more than one nominee per open Director position, each nominee or their designee will be invited to address the Diplomates for two (2) minutes at the annual Diplomate Meeting prior to the elections. Following the candidate speeches, no debate will be permitted on nominees. This rule prohibiting debate may be suspended by a two-thirds vote of the Diplomate body.

Section 50. Election to the Board of Directors:

A. Date and Time of Election: The Directors shall be elected at an annual Diplomate Meeting of the Certifying Board. The Diplomate meeting shall take place during an agreed upon time at the Annual Scientific Session of the American Society of Dentist Anesthesiologists, in those years in which the Annual Scientific Session is held. If the Annual Scientific Session is not held in any given year, the Board of Directors shall notify the Diplomates ninety (90) days prior to the date for the annual Diplomate Meeting determined by the Board of Directors.

B. Meetings Held Electronically: Except as otherwise provided in these Bylaws, the annual Diplomates' Meeting may be ordered by the Board to be held electronically, by a two-thirds vote with previous notice of a motion to do so having been given. Electronic meetings shall be conducted through use of Internet meeting services designated by the President that support anonymous voting and support visible displays identifying those participating, identifying those seeking recognition to speak, displaying (or permitting the retrieval of) the text of pending motions, and displaying the results of votes. These electronic meetings of the Diplomates shall be subject to all rules adopted by the Board, which may include any reasonable limitations on, and requirements for, Diplomates' participation and which shall specify how motions may be submitted in writing via the Internet. Any such rules adopted by the Board shall

supersede any conflicting rules in the parliamentary authority, but may not otherwise conflict with or alter any rule or decision of the Certifying Board.

An anonymous vote conducted through the designated Internet meeting service shall be deemed a ballot vote.

C. Eligible Voting Members and Quorum: Only Diplomates in good standing, as defined in Chapter VI, section 80 of these **Bylaws,** are eligible to vote. For the purpose of election of Directors of the Certifying Board, a quorum is defined as the number of Diplomates in good standing present at the annual Diplomate Meeting when voting takes place.

D. Election Procedure: The President of the Board of Directors of the Certifying Board, or his/her designee, shall preside over these elections. Each Director seeking re-election shall run unopposed; a majority of ballots in favor of re-election shall elect. A position for which a Director seeking re-election fails to gain a majority in favor of election shall be declared open. All open Director positions shall be considered simultaneously. When the number of open Director positions equals or exceeds the number of duly placed nominations, the nominees will be considered elected to office. When the number of open Director positions to be elected is exceeded by the number of duly placed nominations, the election shall be by ballot. Every eligible Diplomate's ballot shall consist of up to one (1) vote for each open Director position. A plurality of the ballots cast shall elect.

E. For the purposes of this section, a plurality shall be defined as a number of votes cast for a single candidate who receives more than any other candidate but does not necessarily receive an absolute majority. When two or more positions are open, those candidates receiving the highest number of votes will then be deemed to have a plurality. The ADBA President is a nonvoting member except that in the event of a tie the ADBA President will cast the tie-breaking vote.

Section 60. Installation: Each Director shall assume the responsibilities of office upon election.

Section 70. Removal for Cause: The Board of Directors may remove a Director for cause in accordance with procedures established by the Board, which procedures shall provide for notice of the charges and an opportunity for the director in question to be heard in his or her defense. The affirmative vote of six (6) members of the Board of Directors is required to remove a Director from office. If the Board of Directors elects to remove a Director, that action shall create a vacancy which shall be filled in accordance with Chapter I, Section 80 of these **Bylaws**.

Section 80. Vacancy: In the event of a vacancy in the office of Director, a Diplomate in good standing shall be appointed by the Board of Directors to fill such office for the remainder of that term. If the new Director filling a vacancy serves less than fifty percent (50%) of a full three (3) year term, that term shall not be considered in determining the overall tenure of the Director in accordance with Chapter I, Section 30 of these **Bylaws**. If the new Director filling a vacancy serves fifty percent (50%) or more of a full three (3) year term, that term shall be considered in determining the overall tenure of the Director in accordance with Chapter I, Section 30 of these **Bylaws**.

Section 90. Powers:

A. The Board of Directors shall be the supreme authoritative body of the American Dental Board of Anesthesiology.

B. It shall possess the legislative powers.

C. It shall be the managing body of the Certifying Board, vested with full power to conduct all business of the Certifying Board, subject to the laws of the State of Illinois, the *Articles of Incorporation*, and the **Constitution and Bylaws**.

D. It shall determine the policies which shall govern the Certifying Board in all of its activities.

E. It shall have the power to adopt, amend and repeal the **Constitution and Bylaws** of the Certifying Board. The Diplomates will be notified of any Constitution and Bylaws changes enacted by the Board of Directors of the Certifying Board no later than at the Diplomate Meeting which immediately follows any of these changes.

F. It shall have the power to establish rules and regulations not inconsistent with these **Bylaws** to govern its organization and procedure.

G. It shall have the power to determine eligibility requirements; develop applications; conduct certification examinations; award certificates; develop and implement a recertification process; and suspend or revoke certificates for Diplomate status in the American Dental Board of Anesthesiology.

H. It shall have the power to appoint an Executive Director of the Certifying Board.

I. It shall have the power to establish application, examination and annual registration fees as provided in Chapter VI of these **Bylaws**.

J. It shall have the power to create special committees of the Certifying Board.

K. It shall have the power to establish requirements for continuing education in anesthesiology for Diplomates.

L. It shall have the power to approve all memorials, resolutions or opinions issued in the name of the Certifying Board.

M. It shall have the power to penalize and discipline Diplomates for violations of these **Bylaws** and/or decorum as set forth in the parliamentary authority which shall be the latest edition of the AIP *Standard Code of Parliamentary Procedure*. Said penalties and discipline are described in Chapter VI, Section 90.

Section 100. Duties: It shall be the duty of the Board of Directors:

A. To elect the elective officers.

B. To determine the date and place for convening each meeting of the Board.

C. To cause to be bonded by a surety company, the President, the Treasurer and the Executive Director.

D. To provide guidelines and directives to govern the Treasurer's custody, investment and disbursement of Certifying Board funds and other property; and to cause all accounts of the Certifying Board to be reviewed by a certified public accountant at least once a year, and be fully audited by a certified public accountant once every eight (8) years.

E. To prepare and adopt an annual budget for carrying on the activities of the Certifying Board for each ensuing fiscal year.

F. To determine and announce the date and place for examination of candidates seeking Diplomate status.

G. To receive the report of the Committee on Examinations indicating the outcome of candidates who have completed the examination for Diplomate status, and to grant Diplomate status to those candidates who have satisfied all requirements thereof.

H. To maintain strict confidentiality regarding those applicants seeking but not attaining Diplomate status.

I. To maintain a current roster of Diplomates of the American Dental Board of Anesthesiology.

J. To prepare and submit a report of Board activity and new Diplomates at the annual Diplomate Meeting of the Certifying Board.

K. To approve continuing education programs in anesthesiology for maintenance of Diplomate status.

L. To review the reports of all standing committees and special committees of the Certifying Board and act upon such reports.

M. To engage such other individuals as may be required to assist the Certifying Board in carrying out its goals and purpose.

N. To perform such other duties as are prescribed by these **Bylaws**.

Section 110. Sessions:

A. Regular Sessions: The Board of Directors shall hold a minimum of two regular sessions each calendar year.

B. Special Sessions: Special sessions of the Board of Directors may be called at any time either by the President or at the request of four (4) voting members of the Board, provided notice is given to each member ten (10) days in advance of the session.

C. Special Meetings Via Telephone: The members of the Board of Directors may participate in and act at a meeting of the Board of Directors called by the President on matters of the Certifying Board requiring immediate attention through the use of conferences via telephone and other communications equipment. Such conferences and any actions taken shall be governed by the rules of the Board of Directors. These Conferences are considered as meetings which shall be recorded and made part of the action of the Board of Directors.

D. Mail, Fax and Electronic Ballots: A simple mail, fax or electronic ballot may be used to approve minutes of any regular or special session of the Board of Directors. All other actions required to be taken at a meeting of the Board of Directors may be taken without a meeting using the means of a mail, fax or electronic ballot if a consent in writing, setting forth the action to be taken,

shall be signed by all members of the Board of Directors entitled to vote. Mail, fax or electronic ballots shall be submitted to the members of the Board of Directors in the form of a resolution, which shall be accompanied by evidence of the emergent need for action and by sufficient information to permit an intelligent vote. Mail, fax or electronic votes may be initiated by the Executive Director or by any member of the Board of Directors. Fax or electronic ballots must be received within five (5) days. Mail ballots must be postmarked within fifteen days from the date of mailing from the Administrative Office. Late ballots will not be counted. A simple majority vote shall be necessary for the approval of a mail, fax or email vote. All mail, fax or electronic votes shall be recorded in the minutes of the next regular session of the Board of Directors. The President may vote on a mail, fax or electronic ballot.

Section 120. Quorum: Two-thirds of the voting members of the Board of Directors shall constitute a quorum for the purposes of resolutions on Constitution and Bylaws changes. A simple majority of the voting members shall constitute a quorum for all other business of the Board.

Section 130. Officers:

A. Chairperson and Secretary. The officers of the Board of Directors shall be the President of the Certifying Board who shall be the Chairperson, and the Secretary of the Certifying Board who shall be the Secretary.

In the absence of the President, the office of Chairperson shall be filled by the Vice-President of Written Examinations or, in the absence of the Vice-President of Written Examinations, by the Vice President of Oral Examinations.

In the absence of the Secretary, the Chairperson shall appoint a Secretary *pro tem*.

B. Duties:

a. Chairperson. The Chairperson shall preside at all meetings of the Board of Directors, determine the order of business for all meetings subject to the approval of the Board of Directors, and perform such other duties as custom and parliamentary usage require. The Chairperson may only exercise the right to vote when the vote is by ballot or when one more vote could alter the outcome. When a vote by ballot results in a tie, the Chairperson cannot break the tie by voting a second time.

b. Secretary. The Secretary shall serve as the recording officer of the Board of Directors and as the custodian of its records. The Secretary shall cause a factual record of the proceedings to be published as the official transactions of the Board.

Section 140. Order of Business:

A. The order of business shall be that order of business adopted by the Board of Directors in conformity with Chapter II, Section 130Ba.

Section 150. Rules of Order:

A. The rules contained in the current edition of the American Institute of Parliamentarians **Standard Code of Parliamentary Procedure** shall govern the deliberations of the Board of Directors in all cases in which they are applicable and not in conflict with the standing rules or these **Bylaws**.

## Chapter II: ELECTIVE OFFICERS

Section 10. Title: The elective officers of the Certifying Board shall be President, Vice-President for Written Examinations, Vice-President for Oral Examinations, Secretary, and Treasurer.

Section 20. Eligibility: Only a voting member of the Board of Directors shall be eligible to serve as an elective officer.

Section 30. Nominations: A nomination for the offices of President-elect, Vice-President for Written Examinations, Vice-President for Oral Examinations, Secretary and Treasurer may be made by any member of the Board of Directors at which officer elections take place.

Section 40. Election Procedure: The elective officers shall be elected annually at the session of the Board of Directors immediately after the election of the open positions of the Board of Directors at the Annual Diplomate Meeting. Voting shall be by ballot, except, where there is only one candidate for an elective office, such candidate may be declared elected by the Presiding Officer.

a. The order of elections shall be President, Vice-President for Written Examinations, Vice-President for Oral Examinations, Secretary, and Treasurer.
b. Only one elective office will be considered at any one time. When an office is to be elected, and more than one candidate has been nominated, the majority of the ballots cast shall elect. In the event no candidate receives a majority of the votes cast on the first ballot, the two (2) candidates receiving the greatest number of votes shall be balloted again.

Section 50. Term of Office: The elective officers of the Certifying Board shall serve for a term of one (1) year. The President shall be limited to serve three (3) elected terms of one (1) year. However, in the event the office of President is filled as a result of vacancy, the unexpired portion of that term shall not be considered in determining the limitations of the President's term of office.

Section 60. Installation: Each officer shall assume the responsibilities of office upon election.

Section 70. Vacancy: In the event the office of President becomes vacant, the Vice-President for Written Examinations shall become President for the unexpired portion of the term. In the event the office of Vice-President, Secretary or Treasurer becomes vacant, a voting member of the Board of Directors shall be appointed by the President to fill such office until a successor is elected at the next session of the Board of Directors for the remainder of the unexpired term.

Section 80. Duties:

A. President. It shall be the duty of the President:

a. To serve as an official representative of the Certifying Board in its contacts with governmental, civic, business and professional organizations for the purpose of advancing the objectives and policies of the Certifying Board.
b. To serve as Chairperson of the Board of Directors.
c. To call special sessions of the Board of Directors as provided in Chapter I of these **Bylaws.**
d. To submit appointments to the Board of Directors for all standing Committees at the session of the Board of Directors immediately following election as President.
e. To submit an annual report to the Board of Directors.
f. To preside over the Annual Diplomate Meeting.
g. In the absence of an Executive Director, to perform such duties as are delegated to the appointive officer as described in Chapter III, Section 30 of these **Bylaws.**
h. To perform such other duties as may be provided in these **Bylaws.**

B. Vice-President for Written Examinations. It shall be the duty of the Vice-President for Written Examinations:

a. To assist the President as requested.
b. To serve as Chairperson of the Committee on Written Examinations.
c. To hire a statistician to analyze and issue a report on the written examination results and review that report with the Board of Directors.
d. To review initial applications for Diplomate status.
e. To succeed to the office of President as provided in Chapter II, Section 70 of these **Bylaws.**

B1: Vice-President for Oral Examinations. It shall be the duty of the Vice-President of Oral Examinations:

a. To assist the President as requested.
b. To serve as Chairperson of the Committee on Oral Examinations.
c. To perform such other duties as are prescribed by the Board of Directors or these **Bylaws.**

C. Secretary. It shall be the duty of the Secretary:

a. To assist the President as requested.
b. To serve as Secretary of the Board of Directors.
c. To receive and act upon correspondence submitted to the Certifying Board.
d. To act as custodian of all minute books, records, papers, recordings, documents, official seal and all other papers, archives and property of the Certifying Board.
e. To execute or cause to be executed all authorized documents and certificates bearing the imprimatur of the Certifying Board.
f. To maintain the roster of Diplomates of the Certifying Board.
g. To evaluate the credentials of all individuals applying for recertification as Diplomates in the American Dental Board of Anesthesiology.
h. To perform such other duties as are prescribed by the Board of Directors or these **Bylaws.**

D. Treasurer. It shall be the duty of the Treasurer:

a. To assist the President as requested.
b. To prepare an annual financial report.
c. To submit and oversee an audit of the organization’s finances every 8 years.

d. To serve as custodian of all monies, securities, and deeds belonging to the Certifying Board which may come into the Treasurer's possession and to hold, invest and disburse same, subject to the discretion of the Board of Directors.
e. To perform such other duties as are prescribed by the Board of Directors or these **Bylaws.**

## Chapter III: APPOINTIVE OFFICER

Section 10. Title: The appointive officer of the Certifying Board shall be the Executive Director, as provided in Article V of the **Constitution**.

Section 20. Salary: The Board of Directors shall determine the salary of the Executive Director.

Section 30. Duties: The duties of the Executive Director shall be:

A. To report to the Board of Directors.

B. To act as executive head of the Administrative Office and all of its branches.

C. To engage all employees except as otherwise provided in these **Bylaws**.

D. To supervise and coordinate the activities of all committees with regard to their specific assignments, and systemize the preparation of their reports.

E. To implement the decisions of the Board of Directors and any of its committees.

## Chapter IV: COMMITTEES

Section 10. Name: The standing Committees of the Certifying Board shall be:
Committee on Budget and Finance
Committee on Constitution and Bylaws
Committee on Examinations
Committee on Nominations

Section 20. Appointments and Members:

A. The composition of the standing Committees of the Certifying Board shall be as follows:

The Committee on Budget and Finance shall be composed of the President, the Treasurer and one (1) additional voting member of the Board of Directors. The Executive Director shall serve as an *ex officio* member. The Chairperson of the Committee shall be the Treasurer.

The Committee on Constitution and Bylaws shall be composed of the President, the Secretary and one (1) additional voting member of the Board of Directors.

The Executive Director and the ASDA Immediate Past President shall serve as *ex officio* members. The Chairperson of the Committee shall be the Secretary.

The Committee on Examinations shall be composed of the Vice-President of Written Examinations, the Vice-President of Oral Examinations, one (1) additional voting member of the Board of Directors and additional Diplomates of the American Dental Board of Anesthesiology as needed. The Chairperson of the Committee shall be the Vice-President of Written Examinations.

The Committee on Nominations shall be composed of four (4) Board members and three (3) Diplomates in good standing. The Board members shall be appointed by the President and the Diplomates shall be elected at the annual Diplomate meeting. The Chairperson of the Committee shall be elected by committee members.

Appointments for all other standing committees of the Certifying Board shall be made by and serve at the pleasure of the President for a concurrent term of office, except as otherwise provided in these **Bylaws**.

B. There shall be a mandatory annual review of all committee appointments by the President. All committee appointments shall be submitted by the President at the session of the Board of Directors immediately following election as President.

Section 30. Eligibility:

All members of standing committees must be Diplomates in good standing of the Certifying Board except as otherwise provided in these **Bylaws**.

Section 40. Chairpersons: The chairperson of each standing committee shall be a voting member of the Board of Directors who shall be appointed by the President except as otherwise provided in Chapter IV, Section 20 of these **Bylaws**.

Section 50. Term of Office: The term of office of members of committees shall be one (1) year except as otherwise provided in these **Bylaws**.

Section 60. Quorum: A majority of the members of any committee shall constitute a quorum.

Section 70. Annual Report and Budget:

A. Annual Report. Each committee shall submit an annual report to the Board of Directors.

B. Proposed Budget. Each committee shall submit to the Board of Directors, a proposed itemized budget for the ensuing fiscal year if indicated.

Section 80. Duties:

A. Committee on Budget and Finance. The duties of the Committee on Budget and Finance shall be:

a. To maintain the financial solvency of the Certifying Board.

b. To receive quarterly reports of all financial activities of the Certifying Board.

c. To meet no less than two (2) times a year, in advance of regular sessions of the Board of Directors, to prepare an annual budget for approval by the Board of Directors, with consideration for anticipated expenditures.

d. To maintain a reserve fund consisting of all monies unspent at the end of a fiscal year.

B. Committee on Constitution and Bylaws. The duties of the Committee on Constitution and Bylaws shall be:

a. To review the articles of the **Constitution** and **Bylaws** in order to keep them consistent with the Certifying Board's program and purpose.

b. To recommend editorial corrections in the **Bylaws**.

c. To draft or approve the proposed text of all amendments to the **Constitution** and **Bylaws** prior to their submission to the Board of Directors for action.

C. Committee on Examinations. The duties of the Committee on Examinations shall be:

a. To develop and administer an examination for Diplomate status in the American Dental Board of Anesthesiology.

b. To evaluate the credentials of all applicants for Diplomate status in the American Dental Board of Anesthesiology.

c. To evaluate the results of all candidates completing the examination for Diplomate status in the American Dental Board of Anesthesiology, and

to report the outcome to the Board of Directors.

d. To monitor the credibility of the examination for Diplomate status in the American Dental Board of Anesthesiology.

D. Committee on Nominations. The duties of the Committee on Nominations shall be:

a. To select nominees whose experience and qualities meet the needs of the Certifying Board.

b. To contact prospective nominees and obtain their consent to serve if elected.

c. To prepare and submit a report, which may include the reasons for the selection of the nominees.

## Chapter V: SPECIAL COMMITTEES

Appointment and Term: Special committees of this Certifying Board may be created at any session by the Board of Directors or, when the Board is not in session, by the President for the purpose of performing duties not otherwise assigned by these **Bylaws**. Such special committees shall serve until the duties assigned to that committee have been completed.

## Chapter VI: BOARD CERTIFICATION

Section 10. Classification: Individuals seeking and/or attaining certification by the American Dental Board of Anesthesiology shall be classified as follows:

Board Eligible Candidate
Applicant
Diplomate

Section 20. Qualifications:

A. Board Eligible Candidate. To be a board eligible candidate for certification by the American Dental Board of Anesthesiology, a dentist shall have graduated from a dental school approved or recognized by the Commission on Dental Accreditation of the American Dental Association, or the Commission on Dental Accreditation of Canada, or a dental school approved by the Board of Directors; be licensed to practice dentistry within the United States, its territories and possessions or in Canada; have successfully completed a Commission on Dental Accreditation accredited Dental Anesthesiology residency program, or an

equivalent anesthesiology residency program as determined by the board; and have met such other qualifications as may be established by the Board of Directors.

B. Applicant. The candidate who has completed and submitted an officially designated application form together with the appropriate application fee in accordance with policies and procedures established by the Board of Directors, is eligible for examination by the American Dental Board of Anesthesiology, upon evaluation and approval of the application by the Committee on Examinations, in accordance with Chapter IV, Section 80 of these **Bylaws**.

C. Diplomate. An individual who has satisfied the requirements established by this Certifying Board for initial certification, maintenance of certification and/or recertification, may be classified as a "Diplomate" of the American Dental Board of Anesthesiology.

Section 30. Application Procedure:

A. Application for Examination.

a. Candidates shall complete an application form designated by the Board of Directors, and submit the form accompanied by the appropriate documentation to the Executive Director, within the time limitations established by the Board.

b. All applications shall be accompanied by an appropriate application fee as may be established by the Board of Directors.

B. Appeal Mechanism for Denied or Deferred Applications. Individuals, whose applications are denied or deferred, may appeal this decision to the Board. The appeal must be in writing and must be made within thirty (30) days of notification of denial or deferral.

Section 40. Examination Procedure:

A. Time and Notice. The annual examination shall be held at such time and place(s) as the Board may determine. Notification of the time and place of all examinations shall be officially announced by the Certifying Board no less than six (6) months prior to the date of the examination.

B. Eligibility. Individuals whose applications have satisfied the requirements of the Certifying Board are eligible for examination.

C. Examination Fees. Applicants for examination shall submit a fee in an amount prescribed by the Board of Directors.

D. Scope of Examination. The examination shall be comprehensive in nature and shall encompass the full spectrum of anesthesiology for dentistry. The methodology of the examination shall be determined by the Board of Directors.

E. Re-examination. The Board shall determine the requirements and qualifications for re-examination and its decision shall be final.

F. Appeal Mechanism for Unsuccessful Applicants. An applicant failing the examination for certification by the American Dental Board of Anesthesiology has the right to appeal. The appeal must be in writing and must be made within thirty (30) days of notification of failure.

Section 50. Certification:

A. Certificate. An appropriately executed certificate bearing the imprimatur of the Certifying Board shall be issued to each Diplomate who successfully completes the examination procedure of the American Dental Board of Anesthesiology. The actions and decisions of the Board of Directors shall be final. The certificate shall remain the property of the American Dental Board of Anesthesiology.

B. Limitations on the Use of the Certificate. A certificate issued by the Certifying Board may have limitations on its use as may be determined by the Board.

C. Use of the Designation "Diplomate of the American Dental Board of Anesthesiology": The designation, Diplomate of the American Dental Board of Anesthesiology may only be used by a Diplomate in good standing.

Section 60. Maintenance of Certification and Recertification: Diplomates of the American Dental Board of Anesthesiology must comply with maintenance and recertification requirements as may be prescribed by the Board of Directors.

Section 70. Annual Registration and Fees:

A. Diplomates must annually register with the Certifying Board.

B. An annual registration fee for Diplomates who have not fulfilled the qualifications of Section 70C of this Chapter of the **Bylaws**, shall be assessed in the amount prescribed by the Board of Directors.

C. Diplomates no longer earning income from the performance of service as a member of a faculty of a dental school or hospital, as a dental administrator or consultant, or as a practitioner of any activity for which a license to practice

dentistry is required may be classified as a retired Diplomate upon application and approval by the Board of Directors. The annual registration fee and recertification requirements for retired Diplomates shall be waived.

Section 80. Definition of "In Good Standing": A Diplomate of the Certifying Board whose annual registration fee for the current fiscal year has been paid and who has completed recertification requirements as prescribed by the Board of Directors shall be in good standing. A retired Diplomate shall be considered in good standing.

Section 90. Penalties for Improper Conduct by a Diplomate; Suspension and Revocation of Diplomate Certification:

A. Grounds for penalizing a Diplomate. The Board of Directors shall have the authority to penalize a Diplomate if the Diplomate demonstrates conduct unbecoming to a Diplomate, conduct injurious to the reputation of the Board or another Diplomate, and/or conduct which is unethical or otherwise contrary to the mission of the ADBA. Penalties may include, but are not limited to, the following:

a. Sanctions. Possible sanctions may include removing the Diplomate's ability to attend, participate and vote at a Diplomate meeting (or meetings) for some period of time.
b. Censure. The Board may censure a Diplomate and the censure may be made public by the Board.
c. Fines. Possible fines may be imposed in an amount up to two times the annual dues of a Diplomate.
d. Requirement to retract statements and/or apologize. A Diplomate may be required to submit retractions and/or apologize in writing or in public to the Board Chair, the Board, the ADBA membership, or to another Diplomate.

This section may only result in the penalties listed above; nothing in paragraph A allows the Board to suspend or revoke a Diplomate's certificate. A majority vote of the Board members present and voting is required to enact such penalties.

B. Grounds for suspension or revocation of Diplomate certification. The Board of Directors shall have the authority to suspend or revoke any certificate issued by the Certifying Board if the Diplomate:

a. Fails to annually register or submit the annual registration fee in accordance with Chapter VI, Section 70 of these **Bylaws**. Any Diplomate whose annual registration fee has not been paid by the beginning of the second quarter of the current fiscal year will be considered delinquent in the payment of the registration fee. If the annual registration fee remains unpaid by the beginning of the third quarter of the current fiscal year, the

Diplomate may have his/her certificate revoked.
b. Has a state license(s) to practice dentistry revoked for any reason.
c. Has a state license(s) to practice dentistry suspended while under investigation.
d. Voluntarily surrenders a state license(s) to practice dentistry while under investigation.
e. Has a state certificate(s) or permit(s) to administer anesthesia/sedation revoked for any reason.
f. Has a state certificate(s) or permit(s) to administer anesthesia/sedation suspended while under investigation.
g. Voluntarily surrenders a state certificate(s) or permit(s) to administer anesthesia/sedation while under investigation.
h. Fails to meet the recertification requirements established by the Board.
i. Is suspended or expelled from a recognized professional dental organization because of unethical or immoral conduct.
j. Is convicted of a felony.

A majority vote of the Board members present and voting is required to enact suspension. A two-thirds vote of the Board members present and voting is required to enact revocation.

C. Hearing and Notice. Except in the case of failure to annually register or submit the annual registration fee, no certificate shall be suspended or revoked without the Diplomate being given notice of the grounds for suspension or revocation and the availability of a hearing before the Board of Directors. Thirty (30) days written notice of the suspension or revocation shall be sent to the last known address of the Diplomate. The notice shall advise the Diplomate of the stated grounds for suspension or revocation. Should the Diplomate wish to appeal the suspension or revocation, the Diplomate must submit a written request for hearing. The written request must be submitted within thirty (30) days of the dated suspension or revocation notice. The Diplomate shall be entitled to appear at the hearing. The hearing may be held at any meeting of the Board. The affirmative vote of six (6) voting members of the Board of Directors shall be required to suspend or revoke a Diplomate's certificate.

D. Reinstatement. The Board may reinstate a suspended, revoked, **expired** or returned certificate. The Board has sole jurisdiction to determine whether the evidence is sufficient to warrant reinstatement of any certificate issued by the Board and whether such reinstatement requires further examination as a condition of reinstatement.

a. Nonpayment of registration fee: Any Diplomate whose certificate has been revoked for non-payment of annual registration fees may be reinstated upon payment of all annual registration fees that are in arrears plus an administrative fee to be determined by the board of directors as

well as compliance with all recertification requirements for the period of non-payment.

b. Suspension or revocation: For suspension or revocation of certification for causes other than non-payment of the annual registration fees, the Board has sole jurisdiction to determine whether the evidence is sufficient to warrant reinstatement of any certificate issued by the Board and whether such reinstatement requires further examination, training, compliance with recertification requirements, continuing education or payment of back registration and administrative fees, as a condition of reinstatement.

c. Failure to Submit Annual Registration Fee. Any Diplomate whose annual registration fee has not been paid by the beginning of the second quarter of the current fiscal year will be considered delinquent in the payment of the registration fee. If the annual registration fee remains unpaid by the beginning of the third quarter of the current fiscal year, the Diplomate may have his/her certificate revoked. Reinstatement of the certificate may be secured upon payment of all annual registration fees that are in arrears by a former Diplomate plus an administrative fee to be determined by the Board of Directors.

d. Expiration of Certificate: A certificate that has been suspended will become expired if a Diplomate fails to satisfy the reinstatement requirements as determined by the Board prior to the Diplomate's next recertification date.

Section 100. Waiver of Annual Registration Fees for Diplomates Who Suffer Severe Financial Hardship: Those Diplomates who have suffered hardship due to catastrophe, medical illness, or other circumstances shall be excluded from the payment of the annual registration fee upon application and approval by the Board of Directors. The Board may at its discretion require documentation on an annual basis, to substantiate a claim of severe hardship.

Section 110. Resignation: A Diplomate may resign his/her Diplomate status without prejudice, by returning his/her certificate to the Certifying Board.

## Chapter VII: FINANCES

Section 10. Fiscal Year: The fiscal year of the Certifying Board shall begin January 1 of each calendar year and end December 31 of the same year.

Section 20. General Fund.

The General Fund shall consist of all monies received other than those specifically allocated to other funds by these **Bylaws**. This fund shall be used for defraying all expenses incurred by this Certifying Board not otherwise provided for in these **Bylaws**. The General Fund may be divided into Operating and Reserve Divisions at the discretion of the Board of Directors.

Section 30. Other Funds.

The Certifying Board may establish other funds, at the discretion of the Board of Directors, for activities and programs requiring separate accounting records to meet governmental and administrative requirements. Such funds shall consist of monies and other assets received or allocated in accordance with the purpose for which they are established. Such funds shall be used for defraying all expenses incurred in their operation, shall serve only as separate accounting entities and continue to be held in the name of the American Dental Board of Anesthesiology.

Section 40. Financial Viability.

Diplomates in good standing may obtain, upon written request to the Board, a report regarding the financial viability of the Board.

## Chapter VIII: INDEMNIFICATION

Each director, officer, committee member, employee and other agent of the Certifying Board shall be held harmless and indemnified by the Certifying Board against all claims and liabilities and all costs and expenses, including attorney's fees, reasonably incurred or imposed upon such person in connection with or resulting from any action, suit or proceeding, or the settlement or compromise thereof, to which such person may be made a party by reason of any action taken or omitted to be taken by such person as a director, officer, committee member, employee or agent of the Certifying Board, in good faith. This right of indemnification shall inure to such person whether or not such person is a director, officer, committee member, employee or agent of the Certifying Board at the time such liabilities, costs or expenses are imposed or incurred and, in the event of such person's death, shall extend to such person's legal representatives. To the extent available, the Certifying Board shall insure against any potential liability hereunder.

## Chapter IX: AMENDMENTS

Section 10. These **Bylaws** may be amended at any regular or special session of the Board of Directors of the American Dental Board of Anesthesiology by the affirmative vote of six (6) members of the Board, provided that all members of the Board shall have been notified of the proposed amendment at least thirty (30) days in advance of the session at which the amendment is to be considered, or with the unanimous consent of the Board of Directors to waive prior notification, at the session at which the amendment is to be considered

Section 20. The secretary is authorized to correct article, chapter, and section designations; grammar; punctuation; and cross-references; and to make other similar technical and conforming changes as may be necessary to reflect the intent of the Board in connection with these **Bylaws**.

CADA
CANADIAN ACADEMY
OF DENTAL ANAESTHESIA

# APPENDIX 9:

Article Demonstrating Need and Demand for Anesthesia in Dentistry in Canada

APPENDIX 9



# Need and Demand for Sedation or General Anesthesia in Dentistry: A National Survey of the Canadian Population

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The aim of this study was to assess the need and demand for sedation or general anesthesia (GA) for dentistry in the Canadian adult population. A national telephone survey of 1101 Canadians found that 9.8% were somewhat afraid of dental treatment, with another 5.5% having a high level of fear. Fear or anxiety was the reason why 7.6% had ever missed, cancelled, or avoided a dental appointment. Of those with high fear, 49.2% had avoided a dental appointment at some point because of fear or anxiety as opposed to only 5.2% from the no or low fear group. Regarding demand, 12.4% were definitely interested in sedation or GA for their dentistry and 42.3% were interested depending on cost. Of those with high fear, 31.1% were definitely interested, with 54.1% interested depending on cost. In a hypothetical situation where endodontics was required because of a severe toothache, 12.7% reported high fear. This decreased to 5.4% if sedation or GA were available. For this procedure, 20.4% were definitely interested in sedation or GA, and another 46.1% were interested depending on cost. The prevalence of, and preference for, sedation or GA was assessed for specific dental procedures. The proportion of the population with a preference for sedation or GA was 7.2% for cleaning, 18% for fillings or crowns, 54.7% for endodontics, 68.2% for periodontal surgery, and 46.5% for extraction. For each procedure, the proportion expressing a preference for sedation or GA was significantly greater than the proportion having received treatment with sedation or GA ($P < 0.001$). In conclusion, this study demonstrates that there is significant need and demand for sedation and GA in the Canadian adult population.

**Key Words:** Sedation; General anesthesia; Canada; Adults; Dental fear; Dental anxiety.

## INTRODUCTION

Fear and anxiety of dentistry are common findings.[1–17] Although related, they differ in that fear may be considered the physiological process that occurs in the body when threatened by danger, whereas anxiety is the anticipation of the possibility of danger and is perceived to be less immediate in nature.[18,19] Their presence in dental patients may lead to avoidance of appropriate care and therefore an impairment of their oral health.[1,9,12,20–22]

Fear and anxiety in dentistry have been estimated in various populations across the world, with various estimates shown in Table 1. Dental anxiety levels have been reported to be in the range of 4.2% to 20.9%.[8,9] Even within the same population, different levels of anxiety have been found when using different measures.[23] In Canada, prevalence rates ranging from 4.4% to 16.4% have been reported.

A number of scales have been used to determine the level of fear and anxiety.[24] The most widely used is Cor-

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**Table 1.** Prevalence of Dental Fear/Anxiety Internationally*

| *Country* | *Level of High Dental Fear/Anxiety* |
|---|---|
| Japan | 20.9% |
| Singapore | 7.8%–20.8% |
| Denmark | 4.2% |
| Iceland | 4.8% |
| Netherlands | 3.9%–10.8% |
| Sweden | 3.9%–6.7% |
| Australia | 13.7% |
| New Zealand | 12.5%–21.1% |
| United States | 10%–19% |
| Canada | 4.4%–16.4% |

* Reported prevalence of fear and anxiety from previous studies is shown. The Canadian data are from populations within specific cities and are not national in nature.

ah's Dental Anxiety Scale (DAS).[25] Others include Gatchel's 10-point scale,[1] which uses a scale of 1–10 to gauge the level of anxiety towards dental treatment. Milgrom's single-item scale[2] asks the respondent "How do you rate your own feelings toward dental treatment?" and uses a 5-point response scale. Kleinknecht's Dental Fear Survey (DFS) is a 20-item measure which assesses the subject's avoidance behaviors, fears, and physiological responses experienced during dental treatment.[26] Spielberger's State-Trait Anxiety Inventory (STAI) consists of 40 statements to distinguish whether the anxiety is general or specific in nature.[27] The Dental Belief Scale (DBS) is a 15-item survey that considers four areas of the dentist-patient relationship: communication, belittlement, lack of control, and trust.[28]

One of the difficulties in assessing fear and anxiety is the use of different cutoffs to signify a dentally anxious person. For example, using the DAS, a number of studies report a highly dentally anxious person if their score is 13 or above;[21,29] while others choose to use a cutoff of 15.[7,8,11] Milgrom's single-item scale, which asks the subject to self-report their dental anxiety, uses the 5-item response: not at all afraid, a little afraid, somewhat afraid, very afraid, and terrified.[2] In grouping responses into a dichotomy for ease of statistical analysis, Milgrom et al choose to group the last 3 choices into the highly anxious group. They state that those who report being "somewhat afraid" are 1 standard deviation above the norm and show tendencies to avoid dental care.[2] However, studies comparing Milgrom's single-item scale to others have shown evidence to the contrary. In a study comparing the DAS, DFS, and Milgrom's single-item scale, Moore et al[8] showed that a group consisting of just the "very afraid and terrified" subjects correlated well with the DFS and the DAS. Locker et al[23] showed that when subjects were categorized using just the 2 groups mentioned previously, there was better agreement between Milgrom's single-item scale and the DFS.

**Table 2A.** Age Demographics

| *Age in Years* | *Weighted Percentage* |
|---|---|
| 18–24 | 12.0 |
| 25–34 | 17.3 |
| 35–44 | 22.0 |
| 45–54 | 19.1 |
| 55–64 | 12.4 |
| 65 or over | 16.7 |
| Did not answer | 0.5 |

For the study described herein, to assess the level of dental anxiety within the Canadian population, the choice was made to use Milgrom's single-item scale. It has the advantage of being succinct and has been shown to be well correlated to the DAS and the DFS.

Many patients are unable to benefit from appropriate dental care due to their fear and anxiety.[1,20,21] Treatment options to help these patients include behavioral modification, systematic desensitization, hypnosis, and guided relaxation.[30] Nevertheless, for many individuals these techniques are insufficient and they may require sedation or general anesthesia (GA) in order to undergo dental procedures.

Whereas it may be assumed that there is a need for these services based on the presence of fear and anxiety, what is not clear is whether there is a demand for sedation or GA. There are few reports in the literature investigating demand for this service. A survey conducted in the United Kingdom published in 1987 showed that 31% of those interviewed preferred sedation or GA during dental treatment.[31] In 1998, Dionne et al carried out a telephone survey of a random sample of the American population.[12] Of the 400 respondents interviewed, 2.8% were receiving either intravenous sedation or GA for dentistry, but 8.6% would prefer either if available. In 2001, a published survey of young Saudi adults found that 13.9% preferred "being put to sleep" and 9.8% preferred sedation for their dental treatment.[22]

To date there has not been a national study of the Canadian population assessing their level of dental fear

**Table 2B.** Education Demographics

| | *Weighted Percentage* |
|---|---|
| Primary school | 1.6 |
| High school without graduation | 13.9 |
| High school with graduation | 27.9 |
| Community college equivalent | 25.9 |
| University degree (bachelors equivalent) | 23.2 |
| Graduate degree | 7.0 |
| Did not answer | 0.5 |

**Table 3A.** Time Since Last Dental Visit

| | *Percentage* |
|---|---|
| Less than 1 year ago | 7.8 |
| Between 1 and 5 years ago | 20.3 |
| Between 5 and 10 years ago | 2.1 |
| More than 10 years ago | 2.8 |
| Total | 100.0 |

**Table 3B.** Reasons for Avoiding Dental Visits

| | *Percentage of All Respondents* | *Percentage Distribution for Those Who Have Avoided the Dentist in the Past Year* |
|---|---|---|
| Cost | 7.7 | 30.7 |
| Lack of time | 3.7 | 14.9 |
| Teeth haven't been bothering | 10.3 | 40.7 |
| Fear or anxiety | 2.0 | 7.8 |
| Something else | 1.5 | 5.9 |
| Total | 25.2 | 100.0 |

and anxiety or their demand for sedation and GA in dentistry. The objective of this investigation was to determine their presence by means of a national survey. The level of fear and anxiety, and both the current prevalence of, and preference for, sedation or GA for various dental procedures were investigated through the use of a random sample survey of the adult Canadian population.

## METHODS

The professional call center SOM of Montreal was contracted to carry out a random digit dialing telephone survey utilizing a stratified 2-stage sample design. Each respondent was asked 14 questions on the topics of fear and anxiety in dentistry and demand for sedation or anesthesia services. These questions also obtained information on age, gender and language, to allow comparison to the most recent Canadian census of 2001 and thereby permitting weighting of the results so that the sample more closely resembled the true population. Only dentate individuals were asked to complete the questionnaire. To prevent potential response bias, the interviewers used a strict format outlined on the questionnaire which alternated the order of response options for each respondent.

The target population was all persons 18 years of age or older in Canada that had at least one natural tooth remaining. To achieve a sampling error of 3% for the estimated population of Canada of 30,000,000, the required sample size was 1067, using the sample size calculation of Neter et al.[32] After rounding up, the sample size of this study aimed for 1100 completed interviews. The population distribution within Canada was broken down into 13 strata proportional to the population size for that area. The sizes of the strata varied from 9 to 253. For the first stage SOM used random digit dialing methodology to select households. The second stage randomly selected individuals within a household based on the Kish method.[33] It is acknowledged that those without telephones, which approximates 1.4% of the population based on a 1997 Statistics Canada publication, would not have been available for this survey.[34]

Data analysis was performed using the statistical software package SPSS version 11.0, with all cross-tabulations confirmed using the statistical software Stata (Stata Corp LP, College Station, Tex). The use of a sampling error of 3% in the sample size calculation was based on the assumption that a simple random sample was to be used. As this survey was not a simple random sample but rather a 2-stage stratified random sample, the calculated sampling error for this survey was 3.31%, based on the estimate variances of the Jack-knife method.[35] Calculation of the design effect for this study was 1.26. Chi square analysis was used to test for differences in proportions and the binomial test was used to compare an observed proportion (ie, the proportion preferring sedation for various techniques) with an expected proportion (ie, the proportion having had sedation for those techniques). All tests used the value $P < 0.05$ as being significant.

## RESULTS

The final sample was 1101 respondents achieved by initially contacting 4478 phone numbers, of which 2817 were usable. The estimated nonresponse was 14.6%, the refusal rate 39.5% and the estimated response rate 45.9%. The gender distribution of the unweighted sample was 39.6% male and 60.4% female. After weighting to reflect the Canadian Census of 2001, there were 49.3% male and 50.7% female. All subse-

**Table 4A.** Level of Dental Fear

| | *Frequency* | *Percentage* |
|---|---|---|
| Not at all afraid | 703 | 63.9 |
| A little afraid | 228 | 20.7 |
| Somewhat afraid | 108 | 9.8 |
| Very afraid | 22 | 2.0 |
| Terrified | 39 | 3.5 |
| Did not know or answer | 1 | 0.1 |
| Total | 1101 | 100.0 |

**Table 4B.** Dichotomized Grouping of Dental Fear

| | *Frequency* | *Percentage* |
|---|---|---|
| No fear/Low fear | 1039 | 94.4 |
| High fear | 61 | 5.5 |
| Did not know or answer | 1 | 0.1 |
| Total | 1101 | 100.0 |

quent data reports are based on weighted data of those dentate respondents who completed the survey. The distributions of the respondents by age is shown in Table 2A and distributions by education of the respondents are shown in Table 2B.

The results regarding time since last dental visit are shown in Table 3A. It can be seen that 25.2% had not been to the dentist in over one year, with the main reasons summarized in Table 3B. Fear of dentistry was the reason why 7.8% of the respondents had not been to the dentist in the past year, which equated to 2.0% of all respondents.

Prevalence of dental fear or anxiety was assessed by the responses to the question "How would you rate your feelings toward having dental treatment done?". The results are shown in Table 4A, and these were then dichotomized according to their self-reported level of anxiety. Those that answered that they were either not at all afraid, a little afraid, or somewhat afraid would be grouped together as having no fear or a low level of fear, while those that reported that they were either very afraid or terrified were grouped together as having a high level of fear (Table 4B).

Overall, 5.5% reported high levels of fear. Females were more than 2.5 times as likely to report having high fear towards dental treatment (7.9% vs 3.1%), which was statistically significant (chi-square, $P < 0.001$). The distribution by age is shown in Table 5, and it can be seen that there was no difference among the age groups and fear (chi-square, $P > 0.05$). There was also no relation with education level (chi-square, $P > 0.05$). A total of 63.2% of respondents indicated that they were covered by dental insurance, which made no difference with regard to the level of dental fear (chi-square, $P > 0.05$).

As shown in Table 6A, when asked, "Have you ever missed, cancelled, or avoided a dental appointment because of fear of anxiety?," 7.6% of the respondents indicated yes. This compares with the 2.0% who did so in the past year alone, as described above. The cross-tabulation of level of dental fear with avoidance is shown in Table 6B. Of those with a high level of fear, 49.2% had indicated that they had at some point missed, cancelled or avoided a dental appointment because of fear or anxiety, which was significantly different from the 5.2% in the no or low fear group ($P < 0.001$). This table also shows that 64.3% of those who avoided the dentist because of fear or anxiety self-reported themselves as having no or a low level of dental fear.

Respondents were asked about their interest in having either sedation or GA for their dental treatment. Sedation or GA was defined as "having an intravenous needle in the arm and medications administered in order to be anywhere from lightly asleep to totally asleep." These results are shown in Table 7A. When cross-tabulated with their level of fear regarding dental treatment, 31.1% of those with high fear are definitely interested in sedation or GA with another 54.1% possibly interested depending on the cost (Table 7B). Only 14.8% of those with high fear were not interested. For those with no or low fear many were not interested, yet 42.3% were interested depending on the cost and 11.4% were definitely interested.

The respondents were then asked to imagine a scenario in which they had a toothache, were in severe pain and had to visit the dentist the next morning for endodontic treatment. They were then asked about their feelings about having this treatment. The results are seen in Table 8A. Similar to the classifications used in Table 4B, those in the "Very afraid" and "So terrified that would not have it done" were grouped into the high fear category (Table 8B). When this was done, 12.7% reported high fear regarding this specific procedure, an increase compared to the 5.5% of those with high fear towards dental treatment in general.

The respondents were then presented with the same scenario of severe pain and need for endodontics, but now with the availability of sedation or GA. The results,

**Table 5.** Cross-tabulation Between Level of Dental Fear or Anxiety and Age

| | *Age, Years* | | | | | | |
|---|---|---|---|---|---|---|---|
| | *18–24* | *25–34* | *35–44* | *45–54* | *55–64* | *65 or Over* | *Total* |
| No or low fear | (142) | (203) | (256) | (199) | (111) | (123) | (1034) |
| | 95.9% | 94.9% | 95.2% | 91.7 | 93.3% | 96.9% | 94.5% |
| High fear | (6) | (11) | (13) | (18) | (8) | (4) | (60) |
| | 4.1% | 5.1% | 4.8% | 8.3% | 6.7% | 3.1% | 5.5% |
| Total | (148) | (214) | (269) | (217) | (119) | (127) | (1094) |
| | 100% | 100% | 100% | 100% | 100% | 100% | 100% |

**Table 6A.** Avoidance of Dental Visits

| *Ever Missed, Cancelled, or Avoided a Dental Appointment* | *Frequency* | *Percentage* |
|---|---|---|
| Yes | 84 | 7.6 |
| No | 1016 | 92.3 |
| Did not know or answer | 1 | 0.1 |
| Total | 1101 | 100.0 |

as shown in Table 9, were that 20.4% were "definitely interested" in sedation or GA, an increase from the 12.4% definitely interested when asked regarding dental treatment in general.

With the availability of sedation or GA for this root canal treatment, respondents were assessed regarding level of fear. The results, as seen in Table 10A and B, show that the high fear group dropped to 5.4% compared with 12.7% when sedation or GA were not available. Of those 12.7% with high fear when faced with a root canal, 73.2% of them then reported themselves as having no or a low level of fear when the option of sedation or GA was offered for the procedure (Table 10C). There is a significant difference between these 2 groups (chi-square, $P < 0.001$).

The prevalence and preference for sedation or GA was then assessed. When asked if they had ever had sedation or GA for a dental procedure, 29.1% of the respondents answered positively. These same respondents were then read a list of 5 dental procedures in order to identify those for which they had received sedation or GA, with the results shown in the Figure. They were then asked if they would prefer to have sedation or GA for each of these same procedures. As seen in the Figure, there were large increases in preference compared to prevalence for each procedure. These increases were 3.8-fold for cleaning; 2.8-fold for fillings or caps; 9.6-fold for root canal; 15.9-fold for periodontal surgery; and 2.2-fold for extraction. The preference for sedation or GA was significantly greater than the current prevalence for each given dental procedure (binomial test, $P < 0.001$).

## DISCUSSION

This is the first published study investigating fear and anxiety in Canada on a national level. The results are consistent with those found internationally. The 5.5% in the high fear group is within the range of other reported studies from Canada and Europe, although somewhat lower compared to the studies done in Asia and the United States. Possible explanations for this apparent discrepancy include the different anxiety scales used to determine high fear and this study did not include the edentulous population. It has been shown that the edentulous tend to have a higher level of dental fear than the dentate population.[4,21]

Milgrom's single-item scale[2] was used in this study because of its simplicity and having a good correlation to Corah's DAS.[8] It was shown that 2.0% of the respondents felt very afraid while 3.5% felt terrified. In grouping the very afraid and the terrified into a high fear group, the total in this study is 5.5%. If the "somewhat afraid" group had been included, as Milgrom advises,[2] the total for the high fear group would be 15.3%. However, according to Moore,[8] those that indicate that they are "very afraid" or "terrified" correlate well with those that score 15 or above on Corah's DAS as well as with those who scored between 8 to 10 on Gatchel's FS. It was decided in this study to take the more restrictive approach as described, with fewer being considered in the "high fear" group.

The finding that females were more than 2.5 times more likely to report themselves as having a high level of dental fear is consistent with the majority of published reports,[2,7,8,15,20,27,36,37] although others have indicated there is no difference between gender and dental fear.[16,21] When the level of dental fear was compared to those with or without dental insurance coverage it was shown that there was no difference, similar to the findings of Milgrom in a survey of Seattle residents.[2] This shows that even though an individual is covered by dental insurance, a dental appointment may still be either missed, cancelled or avoided because of fear or anxiety.

The presence of fear appears related to avoidance. Almost half (49.2%) of those who were in the high fear

**Table 6B.** Level of Dental Fear Related to Avoidance of Dental Visits

| *Level of Dental Fear or Anxiety* | Ever Missed, Cancelled, or Avoided a Dental Appointment because of Fear or Anxiety | | | | *Total* |
|---|---|---|---|---|---|
| | *No* | *Yes* | *No* | *Yes* | |
| No or low fear | (984) 96.9% | (54) 64.3% | (984) 94.8% | (54) 5.2% | (1038) 100.0% |
| High fear | (31) 3.1% | (30) 35.7% | (31) 80.8% | (30) 49.2% | (61) 100.0% |
| Total | 100.0% | 100.0% | | | |

**Table 7A.** Interest in Sedation or General Anesthesia during Dental Visits

| | *Percentage* |
|---|---|
| Not interested | 43.9 |
| Possibly interested depending on cost | 42.3 |
| Definitely interested | 12.4 |
| Did not know or answer | 1.4 |
| Total | 100.0 |

**Table 8A.** Level of Dental Fear Related to Endodontics

| | *Percentage* |
|---|---|
| Not at all afraid | 38.1 |
| A little afraid | 32.0 |
| Somewhat afraid | 16.5 |
| Very afraid | 8.5 |
| So terrified would not go to the dentist | 4.2 |
| Did not know or answer | 0.7 |
| Total | 100.0 |

group had either missed, cancelled or avoided a dental appointment because of fear or anxiety compared to only 5.2% of those in the no or low fear group. The finding that almost 64.3% of those with avoidance patterns self-reported themselves as having no or a low level of dental fear could be due to a number of reasons. The cutoff point separating the high fear group from the no or low fear group may have been set too high or there may be a general underestimation or denial of one's own level of dental fear.

Using the expanded weighting that was provided by SOM, calculated using the demographics of this study and compared to the Canadian census of 2001, the results may be extrapolated to the dentate Canadian population of 18 years of age and older. This represents over 20,000,000 Canadian adults (20,127,558). Extrapolation of these data show that over 400,000 people (402,551) did not visit the dentist in this past year because of dental fear or anxiety. Over 1.5 million people (1,529,694) have at one time missed, cancelled or avoided a dental appointment due to fear or anxiety.

Based on the similarity in the prevalence of fear, anxiety and avoidance internationally, we may make the assumption that the prevalence is similar in the US as in Canada, acknowledging that such an extrapolation has its limitations. The US Census Bureau estimated that there were over 211,000,000 persons 18 years and over in the US as of July 2003.[38] If we extrapolate the percentages found in this study to the US adult population, we find that fear or anxiety has been the reason why over 15,000,000 Americans have missed, cancelled or avoided a dental appointment, with over 4,000,000 Americans avoiding the dentist for this reason in the past year alone.

This is also the first published study of the Canadian population's demand for sedation or GA for dentistry. The question assessing demand for sedation or GA for dentistry made it clear that the procedure was to take place in a dental office as opposed to a hospital. The description of sedation made it clear that it was parenteral as opposed to oral or inhalational. Therefore the results should be assessed within this context.

The 12.4% that were definitely interested in sedation or GA is consistent with the results of previously reported surveys.[12,22,31] When combined with those who may be interested in this service depending on the cost, Table 7 shows that over half of the adult population is interested. If these results are extrapolated to the dentate Canadian population of 18 years of age and older (20,127,558), it may be seen that approximately 2,500,000 are definitely interested in sedation or GA for dentistry and over 8,500,000 are interested depending on the cost.

It is noteworthy that 11.4% of those in the no or low fear group were definitely interested in sedation or GA and 42.3% interested depending on cost, as shown in Table 7. This suggests that either the respondents underestimated their dental fear level or that the demand to have sedation or GA for dentistry encompasses other reasons besides fear or anxiety. One may speculate that this could be for such things as overall comfort, anticipation of prolonged dental procedures, or for those with severe gagging reflexes.

The question describing the presence of pain with need for a root canal was used as it was assumed that this may be a procedure that many consider aversive. In this case the proportion of those in the high fear group more than doubled, 12.7% vs. 5.5%, compared with fear of dentistry in general. With the availability of sedation or GA, the high fear group dropped from 12.7% down to 5.4%. The cross-tabulation shown in

**Table 7B.** Level of Dental Fear Related to Interest in Sedation or General Anesthesia

| | *Responses* | | | |
|---|---|---|---|---|
| | *Not Interested* | *Interested Depending on the Cost* | *Definitely Interested* | *Total* |
| No or low fear | 46.3% | 42.3% | 11.4% | 100.0 |
| High fear | 14.8% | 54.1% | 31.1% | 100.0 |

**Table 8B.** Level of Dental Fear Related to Endodontic Treatment Grouped by Low or High Fear

| | *Percentage* |
|---|---|
| Low fear | 86.6 |
| High fear | 12.7 |

Table 10 demonstrates that of those who self-reported a high fear level with the thought of having a root canal, 73.2% shifted into the no or low fear group when faced with the thought of a root canal with sedation or GA. Conversely, of those who previously had no or low fear towards having a root canal done, 2.4% switched into the high fear group at the prospect of having a root canal carried out with sedation or GA. There could be a number of reasons to explain this finding. These include previous negative experiences with sedation or GA or fear of anesthesia itself. If an individual has had previous negative experiences such as nausea or vomiting, this may make a choice for sedation or GA less likely. Therefore these results suggest that the patient's preference for sedation or GA may change depending on the procedure performed. As well, fear and anxiety are lowered with the availability of sedation or GA for dental treatment.

In an attempt to gauge the preference of the public for sedation or GA for different dental procedures, the broad scope of dentistry was simplified into 5 procedures with varying degrees of invasiveness. In order to quantify the preference for sedation or GA in dentistry it was considered important to first assess the prevalence that currently exists within the profession. The second step was to assess the level of preference for sedation or GA in dentistry and compare it to the current prevalence level.

The results, as shown in the Figure, showed a substantial increase in the preference for sedation or GA from the current prevalence for all 5 dental procedures. The ratio of prevalence to preference for sedation or GA for tooth extraction was the smallest of all of the dental procedures. This should not be surprising considering that oral and maxillofacial surgeons are trained to administer parenteral sedation and GA. Nevertheless, it can be seen that even with this training, less than half of those who wish to have sedation or GA for extractions have actually had it (21.5% vs 46.5%). The preference for sedation or GA for endodontics and periodontal surgery were much higher than originally anticipated. It is also noteworthy that even for the relatively non-invasive procedure of cleaning, 3.8 times as many people would prefer sedation or GA than are receiving it. For all of the procedures assessed, the large differences in prevalence and preference suggest that there is a large unmet demand for these services.

As calculated above, if we extrapolate these data to the adult dentate Canadian population, over 4,000,000 Canadians are definitely interested in sedation or GA when in severe pain and in need for endodontics and over 9,000,000 are interested depending on the cost.

As above, extrapolation of these results to the US population may be considered. The US Census Bureau estimated that there were over 211,000,000 persons 18 years and over in the US as of July 2003.[38] If we extrapolate the percentages found in this study to the US adult population, we see that approximately 25,000,000 Americans would be definitely interested in sedation or GA for dentistry and approximately 85,000,000 Americans would be interested depending on the cost. Over 40,000,000 Americans would be definitely interested in sedation or GA when in severe pain and needing a root canal treatment, with over 90,000,000 Americans interested depending on the cost.

In conclusion, this study shows that there is significant fear and anxiety in dentistry in the Canadian adult population, at levels similar to those found internationally. Its presence leads to patients avoiding dental treatment,

**Table 9.** Interest in Sedation or General Anesthesia for Endodontics

| | *Percentage* |
|---|---|
| Not interested | 32.9 |
| Possibly interested depending on the cost | 46.1 |
| Definitely interested | 20.4 |
| Did not know or answer | 0.6 |
| Total | 100.0 |

**Table 10A.** Level of Dental Fear Related to Endodontic Treatment with Sedation or General Anesthesia

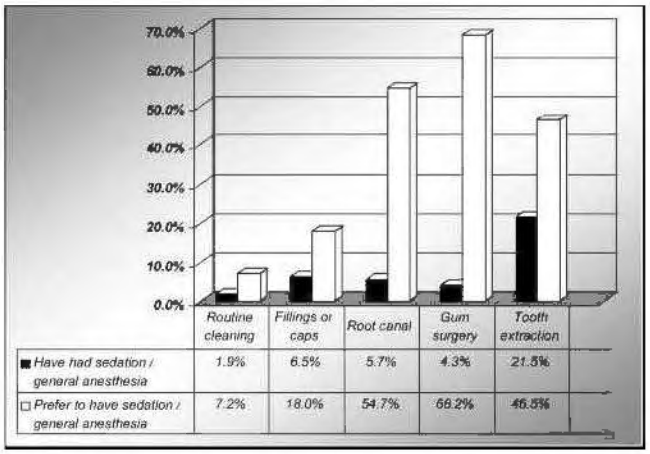
| | *Frequency* | *Percentage* |
|---|---|---|
| Not at all afraid | 517 | 46.9 |
| A little afraid | 355 | 32.3 |
| Somewhat afraid | 154 | 14.0 |
| Very afraid | 36 | 3.2 |
| So terrified would not go to the dentist | 24 | 2.2 |
| Did not know or answer | 15 | 1.4 |
| Total | 1101 | 100.0 |

**Table 10B.** Level of Dental Fear Related to Endodontic Treatment with Sedation or General Anesthesia, Grouped by Low or High Fear

| | *Frequency* | *Percentage* |
|---|---|---|
| No or low fear | 1026 | 93.2 |
| High fear | 60 | 5.4 |

**Table 10C.** Level of Dental Fear Related to Root Canal Treatment with Sedation or General Anesthesia, Grouped by Level of Fear of Endodontic Treatment

| *Level of Fear for Root Canal Treatment* | *Level of Fear When Sedation or General Anesthesia Available* | | |
|---|---|---|---|
| | *No or Low Fear* | *High Fear* | *Total* |
| No or low fear | (921) 97.6% | (23) 2.4% | (944) 100.0% |
| High fear | (101) 73.2% | (37) 26.8% | (138) 100.0% |
| Total | (1022) 94.5% | (60) 5.5% | (1082) 100.0% |




Comparison of the prevalence with the preference of sedation or GA for each of the listed dental procedures.

thereby jeopardizing their ability to optimize their oral health. These results are also consistent with the contention that there is need and demand for sedation and GA services for dentistry. Therefore, it can be concluded that the evidence shows that there is both significant need and significant demand for sedation and anesthesia services for dentistry.

## ACKNOWLEDGMENTS

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cations for pharmacological research. *Anesth Prog.* 1998; 45(2):62–67.

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# APPENDIX 10:

Articles Supporting Dental Anesthesia as a Specialty

APPENDIX 10

Anesth Prog 41:31–34 1994

COMMENTARY

# The Changing Relationship of Oral and Maxillofacial Surgery to Anesthesia

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Since shortly before the submission of an application for specialty recognition by the American Society of Dentist Anesthesiologists (ASDA) in June 1993, there has been much discussion about the need for a specialty in dental anesthesia and the importance of anesthetic practice to oral and maxillofacial surgeons. Indeed, as a result of this discussion, organized oral and maxillofacial surgery officially opposed the establishment of the specialty of dental anesthesia.

While the ability to use various anesthetic agents during surgical procedures is a justifiably important part of the practice of oral and maxillofacial surgery and will likely continue to remain so in the future, there has been a significant shift in interest and emphasis within oral and maxillofacial surgery over the past 40 yr. Today, residency training and resulting surgical practice emphasize major procedures, including orthognathic, reconstructive, and arthroplastic surgery, to a much greater extent than was possible in the 1950s and 1960s. Moreover, with the large number of residency programs now offering a medical degree option, significant numbers of oral and maxillofacial surgeons continue their education and become doubly qualified and in some cases boarded in both oral and maxillofacial surgery and a related medical specialty. Even in surgical programs not offering the medical degree option, the breadth of off-service rotations, including medicine, cardiology, general surgery, and many others, is remarkable considering the lack of availability of such training just a few years ago. Indeed, for many oral surgery programs in the 1960s, a 6- to 12-mo rotation in anesthesia was the only off-service training available, and as a result, many surgeons trained in that era had their principal exposure to patient evaluation, medicine, and a sense of how other surgical disciplines functioned (in addition to the important subject of anesthesia itself) exclusively from the time spent in the operating room. This almost singular reliance upon anesthesia for nonsurgical training has long since changed for the better, even before the recent addition of a mandatory fourth year of residency enshrined various off-service rotations. Today, anesthesia remains a vital part of the training of an oral and maxillofacial surgeon, but its importance is shared among several other equally significant medical disciplines and lacks the preeminence it once had.

This beneficial change of emphasis has had unanticipated side effects. For instance, it is no longer common for an oral and maxillofacial surgeon desiring an academic dental career to have a major emphasis in anesthesia and pain control. While well-trained in certain areas of anesthesia, the broad scope of interest is of less importance than in various surgical subdisciplines.

Much of this change in emphasis has evolved gradually. It is reflected in the proportion of scientific articles and clinical case reports dedicated primarily to anesthesia in the premier American oral surgical journal, the *Journal of Oral and Maxillofacial Surgery* (*JOMS*). In the early 1960s over 20% of all articles published in the *Journal of Oral Surgery, Anesthesia and Hospital Dental Service** were primarily dedicated to local anesthesia, general anesthesia, or sedation. However, by 1968 and into the decade of the 1970s this proportion had dropped to a narrow range of approximately 3% to 7%, and since 1987 this has further dropped to an average of less than 3% of all published papers (Figure 1).

This diminished emphasis occurred despite a substantial increase in dental school departments of oral and maxillofacial surgery, a greatly enlarged membership of the American Association of Oral and Maxillofacial Surgeons, and increased numbers of oral and maxillofacial surgery residencies. Moreover, many of the anesthesia-related articles published in *JOMS* and other journals are no longer authored by oral and maxillofacial surgeons but by individuals primarily identifying themselves as dentist anesthesiologists. Similarly, examination of the 20 major teaching texts published in the United States since

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* *JOMS* has been known variously as the *Journal of Oral Surgery*, the *Journal of Oral Surgery, Anesthesia and Hospital Dental Service*, and finally the *Journal of Oral and Maxillofacial Surgery*.

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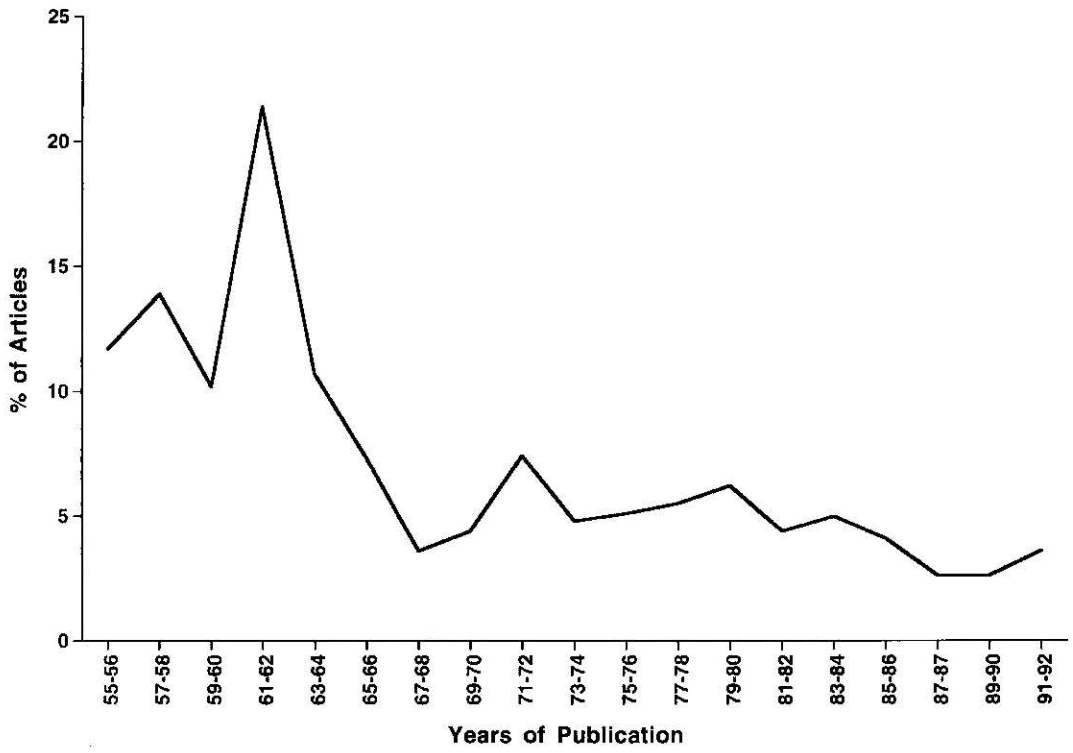


**Figure 1.** Percent of total articles primarily devoted to local anesthesia, general anesthesia, or sedation in the *Journal of Oral and Maxillofacial Surgery* and its predecessors from 1955 to 1992.

1960 and generally used for predoctoral, graduate, and postgraduate instruction in the areas of local anesthesia, sedation, and general anesthesia reveals that only two oral and maxillofacial surgeons are represented, both of whom actively support the establishment of a specialty in dental anesthesia. The remaining authors are individuals who identify themselves as anesthesiologists or who have significant interest and training in that discipline (Table 1).

This marked shift in emphasis has highly significant implications for the future education of dentists in North America. While a large portion of anesthesia instruction at US and Canadian dental schools still remains the respon-

**Table 1.** Major Teaching Textbooks in Local Anesthesia, General Anesthesia, and Sedation in Dentistry Since 1960

1. Allen, G. D. Dental Anesthesia and Analgesia, Williams & Wilkins, 1972, 1979, 1984.
2. Allen, G. D., and Hayden, J., Jr. Complications of Sedation and Anesthesia in Dentistry, PSG Publishing Co., 1988.
3. Bailenson, G. The Relaxed Patient: A Manual of Sedation Techniques, J.B. Lippincott Co., 1972.
4. Bennett, C. R. Monheim's Local Anesthesia and Pain Control in Dental Practice, C.V. Mosby Co., 1974, 1978, 1983.
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10. Jorgensen, N. B., and Hayden, J., Jr. Premedication, Local and General Anesthesia, Lea and Febiger, 1967, 1972.
11. Jorgensen, N. B., and Hayden, J., Jr. Sedation, Local and General Anesthesia in Dentistry, Lea and Febiger, 1980, 1983.
12. Langa, H. Relative Analgesia in Dental Practice, W.B. Saunders Co., 1968, 1976.
13. Malamed, S. Handbook of Local Anesthesia, C.V. Mosby Co., 1980, 1986, 1990.
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15. Monheim, L. General Anesthesia in Dental Practice, C.V. Mosby Co., 1968.
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17. Shane, S. M. Principles of Sedation, Local and General Anesthesia in Dentistry, Charles C Thomas, 1975.
18. Spiro, S. Pain and Anxiety Control in Dentistry, Jack K. Burgess, 1981.
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20. Trieger, N. Pain Control, Quintessence, 1974, 1994.

sibility of oral and maxillofacial surgery departments, this appears to be a historical remnant. In the absence of a strong separate discipline in dental anesthesia with primary interests in research, clinical activity, and education of predoctoral students, specialty residents (including oral and maxillofacial surgeons), and in continuing education for the large numbers of practicing dentists who are not specialists, it can be expected that anesthesia practice in dentistry will decline.

Two recent and opposing historical examples verify this point. In Great Britain, an extensive report on anesthesia delivery during dental treatment was recently published. It is known as the Poswillo report after its chairman David Poswillo (a professor of oral and maxillofacial surgery), but the working committee included eight other individuals, including practicing dentists, medical anesthetists, and health department officers with dental training.[1] It examined both the educational basis for training dentists in anesthesia in England as well as the safety concerns inherent in the delivery of anesthetic services. It called for enhanced education in anesthesia for dentists, but in the absence of a formal discipline or specialty of dental anesthesia in the UK, no ability to provide such training evolved. Moreover, without a medical degree, a dentist in the UK cannot now rotate onto a hospital anesthesia service. This ultimately resolved itself into a recommendation that dentists should only utilize local anesthesia and conscious sedation limited to a single agent (eg, diazepam). This is, in fact, the practice of dentistry in Great Britain today; oral and maxillofacial surgeons are also restricted to single-drug conscious sedation and local anesthesia.

Lest anyone be so naive as to think that this occurred because British dentists were less talented or had a significantly higher anesthetic morbidity/mortality rate than their American counterparts, a careful comparison of contemporaneous anesthetic mortality rates between American and British practice groups reveals analogous results (Table 2). Indeed, many British dentists were surprised that curtailing of the practice of anesthesia occurred, since their mortality-morbidity statistics were very good when compared with hospital anesthesia data, a situation remarkably similar to the current circumstances in the United States. By contrast, in Japan there has been for some time now a recognized specialty of dental anesthesia. Scholarly activity, instruction, and clinical anesthesia service in that country are increasing in both scope and sophistication and have had the effect of preserving the heritage of anesthesia for dentistry.

In a related issue, a recent publication by the American Society of Anesthesiologists (ASA) also makes interesting reading.[2] This article, based on the deliberations of a task force on "Analgesia and Sedation by Non-anesthesiologists," includes among a number of medical groups both dentistry and oral surgery. While many of the goals of the task force are laudable, oral and maxillofacial surgeons and dentists are listed with urologists, gastroenterologists, cardiologists, and others as individuals with limited (read insufficient) training to determine the difference between conscious sedation and unconsciousness. Incidentally, by general agreement within the anesthesia community, whatever guidelines this ASA task force produces *do not* apply to medical anesthesiologists, since their "skills in airway management and knowledge of the relevant pharmacology minimize the risks associated with inadvertent transition from the conscious to the unconscious state." Considering that members of the ASA cooperate with dentistry in the training of oral and maxillofacial surgeons and others in general anesthesia, and most medical anesthesiologists have an extremely limited understanding of the type of anesthetic techniques used by dentists and oral and maxillofacial surgeons, their official comments have profound implications, especially for the practice of oral and maxillofacial surgery in the near future.

In 1953, the *founding purposes* of the American Dental Society of Anesthesia were to (a) "encourage the study of anesthesiology," (b) "encourage specialization in anesthesiology," and (c) "foster higher standards of education in dental schools."[3] At the same time, no less a figure in oral and maxillofacial surgery than the late Fred Henny

**Table 2.** Comparison of Mortality Rates for General Anesthesia/Sedation in Great Britain and the United States

| *Source* | *Year of Publication* | *Practice Type* | *Mortality Ratio* |
|---|---|---|---|
| Lytle | 1974[a] | S. Calif. Oral Surgeons | 1:432,000 |
| ASOS | 1974[b] | US Oral Surgeons | 1:349,407 |
| Lytle & Stamper | 1988[c] | S. Calif. Oral Surgeons | 1:673,000 |
| Coplans & Curson | 1982[d] | UK Oral Surgeons | 1:317,000 |
| | | UK Community Dental Services | 1:490,000 |

[a] Data from 1968 to 1972.
[b] Data from 1972 survey.
[c] Data from 1968 to 1987.
[d] Data from 1970 to 1979.

recognized the importance of establishing departments of anesthesia in dental schools and expanding the training of dentists in this area. His perspective in an editorial published in the *Journal of Oral Surgery*[4] was that this would aid in the training of oral and maxillofacial surgeons and not create a hindrance for surgery.

In 1972, an ad hoc committee under the auspices of the National Institutes of Health addressing observed deficiencies in dental education at that time recommended several changes in the way anesthesia and pain control were incorporated into dental education. These recommendations included that an independent unit be established in dental schools for research, teaching, and clinical training in pain and anxiety control. Indeed a majority of committee members reported a need for a dental specialty in anesthesia.[3,5]

In conclusion, over the past 30 yr there have been several important groups and many individuals who have recognized the need for a specialty in dental anesthesia, if for no other reason than to preserve a basis from which all dentists could receive didactic education and clinical experience in a highly technical area. With this in mind, the establishment of a specialty in dental anesthesia will not adversely affect the practice of oral and maxillofacial surgery or any other practice of dentistry. It will, in fact, preserve the practice of anesthesia in dentistry and permit a strong academic and clinical basis for anesthesia education, clinical service, and scholarly activity necessary for the delivery of dental care.

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# DO WE NEED ANOTHER SPECIALTY?

Mel Gardner, BS, PhD, DDS

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The Canadian Academy of Dental Anesthesia (CADA) has applied to the Canadian Dental Association for specialty status for dental anaesthesia; who are these people and why are they doing this?

The CADA is an organization of dentists with special interest and advanced training in the areas of anaesthesia, pain control, and patient management; its members have been actively engaged in research, continuing education, formal training programs, advising regulatory bodies, and providing anaesthesia and sedation services for Canadian dental patients for a wide range of procedures.

The University of Toronto has had a program for training these dentists since 1960 and it has been a two-year program since 1984. It is the only such program in Canada but others are available in the United States. Furthermore, regulations in many provinces prohibit dentists who have not had this advanced training from providing the full spectrum of anaesthesia and sedation services, and so the group which has had advanced training now functions much like a de facto recognized specialty. For several reasons the CADA now wishes to legitimize this status.

**1. Need:** The need for advanced pain control, patient management, anaesthesia and sedation services has been well established in several studies in the United States, United Kingdom, Sweden, Finland, Japan, and China. Potential beneficiaries include:

- THE FIVE TO 20 PERCENT OF THE POPULATION WHO ARE SO FEARFUL OF DENTISTRY THAT THEY AVOID TREATMENT COMPLETELY
- PATIENTS WITH COGNITIVE IMPAIRMENT, SUCH AS MENTALLY CHALLENGED PATIENTS OR THOSE WITH ALZHEIMER'S DEMENTIA
- PATIENTS WITH MOTOR DYSFUNCTION, SUCH AS CEREBRAL PALSY OR PARKINSONISM
- DIFFICULT TO MANAGE PEDIATRIC PATIENTS
- PATIENTS WHO LACK THE PHYSIOLOGIC RESERVE TO TOLERATE THE STRESS INDUCED BY EVEN A MINIMAL LEVEL OF ANXIETY, FOR EXAMPLE, PATIENTS WITH ISCHEMIC HEART DISEASE, HYPERTENSION, OR STRESS-INDUCED ASTHMA

**2. Public service and protection:** When a patient needs anaesthesia or sedation services beyond what his or her general dentist provides he or she would have access to a highly trained specialist. In order to be recognized as a specialist in dental anaesthesia, this dentist must have completed a program which has met the accreditation standards of the Canadian Dental Association and must have passed examinations for the specialty set by the Royal College of Dentists of Canada.

**3. Preservation of the status of anaesthesia in dentistry:** In an editorial in Anaesthesia Progress, Yagiela states that dentistry is at a crossroads in anaesthesia. Specialty status will increase access to anaesthesia and sedation for all dental patients who require it; it will insure a pool of highly trained dental specialists in the area of anaesthesia; it will improve the training of all dentists via access to the pool of experts; and it will encourage scholarly research. Failure to attain specialty status may very well have the opposite effects.

Sykes has documented the decrease in availability of anaesthesia and sedation in Great Britain following curtainment of training programs there. Poswillo examined anaesthesia and sedation in dentistry in Great Britain and recommended enhanced education in these areas for dentists; however, without a formal discipline or speciality in anaesthesia in dentistry, the ability to provide this education was lacking. Matsuura has documented the contrasting situation in Japan: the recognition of anaesthesia as a specialty in dentistry was followed by significant growth in departments of anaesthesia, an increase in the number of dentists with advanced training in anaesthesia and advances in dental anaesthesia research.

**4. Historical reasons:** Dentists have had an illustrious history of contributions to the field of anaesthesia, including the discovery of general anaesthesia. In the 1840s Horace Wells and William Morton were largely responsible for the introduction of nitrous oxide and ether respectively. S. L. Drummond-Jackson pioneered the use of intravenous anaesthesia in the 1930s and Harold Krogh and Adrian Hubbell developed the use of thiopental in the 1940s.

In summary, the CADA strongly believes that anaesthesia in dentistry is a distinct and well defined field which requires knowledge and skills well beyond those commonly possessed by general practitioners. Recognition of anaesthesia as a specialty will improve access to the complete spectrum of anaesthesia and sedation services for dental patients for all types of dental procedures; it will enhance the teaching of this discipline at the undergraduate, graduate, and postgraduate levels in dental schools across Canada; it will encourage research and scholarly activity in this field; and it will raise the standard of care in anaesthesia and sedation in dentistry. All of these will benefit those dental patients who need anaesthesia or sedation in their pursuit of optimum oral health.

So my answer to the question posed in the title is a definite yes: specialty status for anaesthesia in dentistry will benefit all dentists in Canada and their patients.

# Do We Need Another Specialty?

## *(Part II)*

*by Mel Gardner, PhD, DDS*

Dr. Gardner is the consultant on Pain Control and Pharmacology for the Editorial Advisory Board of Oral Health. He maintains a private practice in Toronto, Ont. with emphasis on anesthesia in dentistry.

The Canadian Academy of Dental Anesthesia (CADA) was established as a national organization in 1994 for the purpose of advancing dental anesthesia as a specialty; it is an outgrowth of the Ontario Dental Society of Anesthesiology which was established in 1960. The CADA has members in Ontario, British Columbia, Alberta, and Nova Scotia. Its members teach at Canadian universities; give continuing education courses across Canada and in the United States; publish articles in *Anesthesia Progress* (the official journal for the American Dental Society of Anesthesiology and for the CADA), national and provincial dental journals and of course, *Oral Health*; are active in research; and serve on editorial boards and advisory committees.

In May of 1996, the Council on Education of the Canadian Dental Association reviewed the application submitted by the CADA for specialty status for dental anesthesia. The Council agreed that dental anesthesia meets the CDA's five criteria for specialty status. The Council therefore has recommend to the CDA Board of Governors that at their August 1997 meeting they approve dental anesthesia as a specialty; they further recommended that in the meantime those proposing the new specialty, namely the CADA, take steps to increase understanding of the reasons for specialty status.

Many of the reasons were set out in last February's editorial under the headings: Need; Public Service and Protection; Preservation of the Status of Anesthesia in Dentistry and Historical Reasons. In the discussions at various levels some thoughtful concerns were expressed regarding anesthesia and sedation: do we really need it; is it safe; who should do it.

1. NEED: As pointed out in last February's editorial, studies in several countries have documented the existence of groups who would benefit from anesthesia and sedation in dentistry; these include, among others, the 5% to 20% of the population who are so fearful of dentistry that they avoid treatment completely as well as those who are mentally challenged. A 1996 study by Locker, Shapiro, and Liddell found, as expected, a similar incidence of significant dental anxiety in a Canadian setting.

2. SAFETY: Several large epidemiological studies of medical anesthetic mortality have demonstrated that the mortality rate for the outpatient setting is far lower than the rate for the inpatient setting; this is mainly due to healthier patients and less invasive procedures in the outpatient setting. Further studies in the US and Ontario have shown that the mortality rate for anesthetics administered by dentists, including oral and maxillofacial surgeons, is about the same as the rate for the outpatient setting.

In this context another question arises as to the adequacy of training. The above statistics indicate the training is adequate, at least as far as preventing mortality is concerned, but why does medical anesthesia require four years of training while dental anesthesia requires only two? The four year program provides the medical anesthetist with the ability to manage anesthesia for very complex cases: cardiovascular surgery, neurosurgery, high-risk obstetrics on possibly very ill patients. Dental procedures are far less invasive and are usually carried out on fairly healthy patients. Interestingly, the majority of medical anesthetics administered outside of large cities in Canada are for fairly routine procedures and are carried out by physicians who have had only one year of residency training in anesthesia. Thus there is evidence from the medical community that a one year program is appropriate training for anesthesia for routine procedures on basically healthy patients.

3. WHO: The obvious answer is those who have had proper training. For the specialist this means one who has completed a program which meets the accreditation standards of the Canadian Dental Association and has passed examinations for the specialty as set by the Royal College of Dentists of Canada; this high level of certification can only occur if dental anesthesia becomes a specialty. It is important that specialty status not be construed to limit the rights of other dentists or specialists to practice sedation or anesthesia to the level for which they have been trained, provided they meet the requirements and practice within the regulations of their licensing bodies.

The question remains whether the practice of anesthesia and sedation can work in Canada.

There is good evidence that it can—the example is Ontario, where the discipline has the longest history and is most highly developed. Dental anesthesia has been practiced in Ontario since 1957; the only Canadian postgraduate program in anesthesia is at the University of Toronto; the majority of dental anesthetists practice in Ontario; the Royal College of Dental Surgeons of Ontario (RCDSO) has developed detailed regulations governing the practice of anesthesia and sedation and has implemented an office inspection and permit system; the RCDSO and the Ontario Dental Association have both passed motions supporting specialty status for dental anesthesia; the Ontario Dental Society of Anesthesiology (ODSA) has been active in promoting anesthesia and sedation and in providing continuing education courses for all dentists and staff who have an interest in the discipline. The ODSA exemplifies the excellent relationship between the members of the CADA and those dentists who practice sedation at other levels.

Dental anesthesia can and should be a specialty. It works well in Ontario and it can work well throughout Canada, thereby facilitating access to dental care and improving oral health for the significant number of Canadians who cannot otherwise enjoy the benefits dentistry has to offer.

ORAL SURGERY
ORAL MEDICINE
ORAL PATHOLOGY

## EDITORIAL

# Anesthesiology and oral and maxillofacial surgery

One of the most important skills possessed by oral and maxillofacial surgeons (OMFSs) is the ability to provide high-quality pain and anxiety control for their patients. For most office patients, this means either deep sedation or general anesthesia. Before the introduction of the benzodiazepines in the early 1970s, the primary method of anxiety control was through the administration of an ambulatory general anesthetic by means of the ultra–short-acting barbiturates, a skill possessed primarily by OMFSs.

After the introduction of benzodiazepines, dentists other than OMFSs began using sedation to provide anxiety control. (Today, several other dental specialties actually require that resident trainees be given instruction in sedation).

In response, many OMFSs became defensive. Many believed that the ability to control pain and anxiety was an important, if not the only, advantage OMFSs had over competing dental specialists. Thus, the attempt by other dental groups to become as well trained in sedation and general anesthesia as OMFSs was viewed as a threat to their practices.

At about this time, the dental anesthesiologist had an increasing presence. These specialists had a clearly defined 2-year training program, which made them expert in outpatient sedation and anesthesia. Because their services are not provided for hospitalized patients, but rather for ambulatory patients, dental anesthesiologists usually see patients in the office of the individual surgeon or dentist. This has led to the derogatory term "itinerant anesthesiologist."

Dental anesthesiologists are highly skilled and trained. They use the most modern equipment and the newest and best drugs to achieve the desired goal, and they have high-level skills in the management of the medically compromised patient. When they are allowed to practice as they are qualified to do, their schedules quickly fill up and the waiting time for a patient to be seen by them might be weeks. Why does this happen? The answer is that the demand for the services of a dental anesthesiologist outstrips the availability of the dental anesthesiologists. The primary dental groups that use dental anesthesiologists are (in rank order) OMFSs, pediatric dentists, periodontists, endodontists, and a few general dentists. Oral surgeons and pediatric dentists account for about 65% to 75% of the total caseloads of dental anesthesiologists.

OMFSs use anesthesiologists for osteotomies, bone grafts, and other procedures that are commonly performed in the hospital operating room but that do not require the patients to be hospitalized. In today's world, many procedures cannot be performed in the hospital setting because of limitations set by insurance companies and HMOs. But these procedures become affordable if done in the office setting rather than in the hospital. Oral surgeons also enlist the dental anesthesiologist's assistance in the management of patients who are severely medically compromised.

Pediatric dentists benefit from the services of dental anesthesiologists for children with severe behavior problems on whom they perform complete mouth rehabilitation in a single appointment in an outpatient setting. This is especially important in the case of a patient for whom management in a hospital setting is not available.

Periodontists employ dental anesthesiologists to help with sedation in long periodontal surgical procedures or in patients whose anxiety is so great as to prevent the procedure from being accomplished without sedation.

Dentists who enlist the aid of a dental anesthesiologist usually do not expand the scope of the surgical procedure just because the patient is asleep. The ultimate benefactor in these situations is the patient.

Dental anesthesiologists understand outpatient ambulatory anesthesia. At the end of the procedure, the patient awakens quickly and is safely discharged early. This is because the dental anesthesiologist uses contemporary drugs such as sevoflurane, remifentanil, and propofol with skill and finesse, as well as with an eye toward rapid recovery. Office patients can be discharged in about the same time, or less, it takes for hospital patients to be discharged from the recovery room to go to their hospital rooms.

OMFSs need ambulatory anesthesia that is effective, efficient, and safe. Highly trained and skilled dental anesthesiologists can provide this service in the areas

where they practice. The only real problem is that there are too few of them in only a handful of communities in the United States.

With an eye to the future, we in organized oral and maxillofacial surgery should embrace dental anesthesiology and foster training programs so as to increase the number of trained personnel available to us and our patients. Additionally, OMFSs should use their influence to encourage state dental boards to write rules and regulations that will foster the development of an active group of dental anesthesiologists.

Anesthesiology is truly a part of dentistry. No one will help us maintain its rightful position in dentistry more than dental anesthesiologists.

*Larry J. Peterson, DDS, MS*
*Editor, Oral Surgery Section*

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# Dear 2012 American Dental Association House of Delegates

By Daniel L. Orr II, DDS, MS (anesth), PhD, JD, MD

In 1985, the American Dental Society of Anesthesiology (ADSA) Past President and Oral and Maxillofacial Surgeon (OMS) Norman Trieger quoted findings from the National Institute of Dental Research in his paper *The Specialty of Anesthesiology in Dentistry*, "It is one of history's ironies that the dental profession continues to bear the onus of pain in many people's minds when, in fact, it was the dental profession that pioneered the development and use of the first effective anesthetics."[1]

Many dentists are weary of the profession being the genesis of ubiquitous comedy skits. Audiences routinely roar visceral approval about the "funny" aspects of others dealing with the anxiety, pain, and suffering popularly associated with dentistry. As reported in the *Journal of the American Dental Association*, humorists from Mark Twain to W.C. Fields, to Bob Hope and Bill Cosby, to Steve Martin and even an animated Nemo, have dental material ready to go prn.[2] Relatively few practicing dentists avail themselves of advanced techniques that render even the most challenging patient's anxiety, pain, and suffering a nonissue.

One hundred years ago, Edgar "Painless" Parker was the target of organized dentistry's criticism, in part, for his then-controversial advocacy for the routine administration of local anesthesia. According to Parker, a main reason patients avoided the dentist was fear of pain.[3] The Centers for Disease Control and Prevention, the U.S. Surgeon General, the ADA, and others, have confirmed Parker's opinion that millions upon millions of potential patients fearfully avoid dentistry.[4-6] 2012 research continues to document that: "…dental anxiety…should never be downplayed."[7]

In 1983, ADSA founding member and OMS Morgan Allison recalled the work required to establish the ADSA with a "…cautious American Dental Association, disinterested American Association of Dental Schools, an antagonistic American Association of Oral Surgery, and an aloof and condescending American Society of Anesthesiologists (ASA)."[8] Some things never change, and anesthesia in dentistry has not progressed as it has in other professions. With regard to the ADA, certainly at times it is good to proceed cautiously, but does dentistry's gift to the world, enthusiastically accepted and developed elsewhere, really need more scrutiny before dentistry itself fully incorporates it? Even veterinary medicine has a specialty in anesthesiology. We all love our pets, but do animals deserve more anesthesia expertise than humans?

Dentist anesthesiologists have greatly profited all the health professions, even if for only a relatively small number of fortuitous dental patients at the end of the day. Beginning in the 1970s, students at the University of Southern California School of Dentistry learned advanced pain control techniques from new professor and dentist anesthesiologist (DA) Stanley Malamed. We did not realize how fortunate we were to have someone so uniquely qualified to teach control of anxiety and pain. In the decades since, even Malamed's local anesthesia continuing education courses have drawn standing-room only audiences, evidencing that dentists are generally not taught other than the most basic levels of pain control in dental school.

Primary purposes of the nascent ADSA, supported by preeminent OMS members such as future AAOMS Presidents Harry Seldin, Fred Henny, Edward Thompson, Daniel Lynch, Daniel Laskin, and William Wallace, included fostering much greater numbers of quality anesthesia education opportunities at both undergraduate and the graduate levels. Vol. 1, No. 1 of the *ADSA News* emphatically mentioned the establishment of a specialty to advance these purposes…three times in the first three paragraphs. Today, a significant majority of dental schools still do not have dedicated DA professors.

The motivation for the establishment of the ADSA and a specialty in 1953 is informative. Dentistry was then, as it is now, under constant scrutiny, and cyclical attack, with regard to the provision of anesthesia. For instance, in 1983 serious misinformation about anesthesiology in dentistry was promulgated by two *20/20* programs, resulting in a wave of significantly more unwarranted patient anxiety across the country. Dentistry has always needed articulate anesthesiology trained spokespersons to respond to such diatribe. *20/20* investigators and much of the lay public were surprised that anesthesiology was not deemed important enough by the ADA to be a specialty (even the National Institutes of Health had recommended specialty status in 1972).[9] Until 1950, dentists trained in anesthesiology were accepted as unrestricted members of the ASA, thus providing the profession a recognized forum from which to opine.[10, 11] When the ASA affiliation was rescinded, planning for another authoritative society, the ADSA, had to begin immediately so that dentistry's interests were effectively proffered from a bona fide anesthesia entity.

Continues ➲

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*Continued* ➲

Today, dentistry needs an anesthesia specialty more than ever. For the most part, U.S. dentistry has been fortunate to survive sensational media assaults and, sadly, regular criticism from sister professions. As but two examples, the American Association of Nurse Anesthetists actually questioned dentistry's competence in the administration of $N_2O/O_2$.[12] Further, the Ohio component of the ASA sponsored legislation that would have prohibited any dentist from administering $N_2O/O_2$ without a second dentist monitoring the patient.[13]

Since 2000, the not-so surprising growth of groups such as the Dental Organization for Conscious Sedation (DOCS) has clearly demonstrated the overwhelming need and demand for advanced pain control in dentistry.

OMS has effectively developed and defended its own singularly successful office-based team anesthesia model. Anesthesia in OMS is well-founded, safe, and universally appreciated by dentistry's patients. Anesthesia in dentistry, including any future specialty, will stand to a degree on the shoulders of the OMS archetype. For this reason at least, those who practice the OMS paradigm should be qualified as sub-specialists, if you will, without the standard requirement of two or more years of anesthesiology residency training. In 1977, ADSA President and OMS Daniel Laskin's support for the specialty effort was based in part on the logical inclusion of OMS within the specialty's structure.[14]

But, anesthesia in dentistry needs to be much more than the safe administration of local anesthesia, $N_2O/O_2$, p.o. Rx's, or the OMS office-based niche in order to meet the demands of an ever-more sophisticated and complex patient population.

Dentistry introduced safe, reproducible, anesthesia to the world in 1844. Dentists have provided innumerable anesthetics in even the most challenging circumstances such as the theaters of the Civil War, World Wars I and II, Korea, and Vietnam.[15, 16] Dentists have directed cardiac anesthesia units and chaired anesthesia residencies. When President Grover Cleveland needed surgery, dentist Ferdinand Hasbrouck was chosen to administer the anesthetic.[17]

I vividly recall a day in 1975, while a resident in anesthesiology at the University of Utah, our faculty's excited revelation at rounds that the state now had its first outpatient surgery center. This was a place patients could go to have a procedure done under general anesthesia and then return home the very same day! I also remember being the cause of disillusionment throughout the room after sharing that dentistry had been doing the same thing, in private offices, for more than 100 years. Although medicine is now very comfortable with its adoption of part of dentistry's nearly 170 year-old outpatient paradigm, it is just now investigating the concept of nonoperating room-based delivery.[18]

No entity has more expertise in anesthesia for dentistry than dentistry itself. Medical anesthesiology often involves a prolonged general anesthetic in paralyzed patients, while dental anesthesia requires the continuous negotiation of lighter planes of consciousness, an entirely different challenge. All dentists, students, residents, and of course our patients, deserve the considerable advantages a specialty in anesthesiology will bring.[19]

In 1997 the specialty application failed by only five votes in the ADA House of Delegates. In 1999 the House approved four of five criteria but, narrowly, not the requirement of "need and demand." One year later our patients (and now nearly 20,000 DOCS graduates and millions of doses of DOCS protocol anxiolysis), began to vividly demonstrate their disagreement with the ADA House's determination of no need or demand for more anesthesia options.

Since there is an obvious need and demand by our patients, why isn't anesthesiology a specialty in dentistry already? Anesthesia history often graphically demonstrates positive and not-so-positive aspects of basic human nature. At its very inception, Horace Wells felt anesthesia should be as accessible as the air we breathe, while William Morton sought to restrict access to anesthesia, patenting his "invention" (ether fragranced with perfume). I do not wish to offend, but in my opinion anesthesiology is not a dental specialty because of historical selfishness, economic and otherwise, on the part of organized dentistry at several levels.

It is tragically incongruous, in fact inconceivable, that ethical health professionals would argue against increasing the qualitative and quantitative ability to relieve pain and suffering, yet that is exactly what organized dentistry has done for decades.

While comedians mockingly remind the public of the anxiety, pain, and suffering persistently associated with dentistry, perhaps in 2012 the ADA will determine to no longer facilitate the jokes. Dentistry developed as a recognized profession in large part because of its anesthesia pioneers.[20] It is time for dentistry to begin to seriously develop the art it bestowed on mankind two centuries ago by creating a specialty of anesthesiology. ◆

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CADA
CANADIAN ACADEMY
OF DENTAL ANAESTHESIA

# APPENDIX 11:

## RCDSO Guidelines:
## Use of Sedation and General Anaesthesia in Dental Practice

APPENDIX 11

# STANDARD OF PRACTICE

Approved by the College – November 2018

This is replacing the document last published in April 2015.

# Use of Sedation and General Anesthesia in Dental Practice

## CONTENTS



### NOTE TO READER

Effective April 1, 2020, all dentists administering minimal sedation, including nitrous oxide and oxygen sedation and oral minimal sedation, must have authorization from the RCDSO to do so. In addition, all facilities where minimal sedation is administered, including nitrous oxide and oxygen sedation and oral minimal sedation, will be subject to random on-site inspections and evaluation by the RCDSO.

Visit our website for more information about the implementation of this Standard.


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## INTRODUCTION

The Standards of Practice of the Royal College of Dental Surgeons of Ontario describe the minimum requirements that all dentists must meet in a particular area of clinical practice to maintain patient safety. On a regular basis, the RCDSO reviews and revises Standards to address any changes that are required. We urge all dentists to achieve excellence in every aspect of their work. They must ensure they are always up-to-date with the latest knowledge.

Sedation and general anesthesia are often beneficial and sometimes essential for our patients. This Standard is one of the most important documents we have because it literally concerns matters of life or death.

The use of sedation and general anesthesia carries an element of risk. Mitigating this risk requires advanced training, planning and assessment during administration. These extra levels of care and diligence are needed before, during and after a dental procedure that requires sedation or general anesthesia.

The RCDSO requires that a properly trained sedation or anesthetic team is in place to administer and monitor deeper levels of sedation and general anesthesia. Each member of the team must be trained for specific duties. A team composed of a minimum of three individuals in three different roles must be in the operatory at

all times when general anesthesia, deep sedation or parenteral moderate sedation is administered. Concerns for patient safety are always the first priority and the team must continuously monitor, assess and address how their patient is responding to sedation or general anesthesia.

Certain patient groups need greater attention; children, the elderly and medically-compromised people face particular challenges when receiving sedation or general anesthesia. Children under 12 years of age - especially under 3 years of age - require even more diligent monitoring; they have reduced physical reserves and impairment may occur rapidly. In particular, it can be difficult to diagnose hypoventilation and airway obstruction quickly.

A key goal with this Standard is to identify what will provide patient safety with a wide enough margin to meet unforeseen circumstances and still ensure success. Safety is dependent on training, careful patient selection and preparation, monitoring, equipment and emergency drugs, as well as continuing education on all of these elements.

This revision of the Standard on the Use of Sedation and General Anesthesia in Dental Practice sets enhanced requirements and higher standards throughout. The RCDSO is committed to continuous improvement in every area of clinical practice. Recent advancements in training, technology and knowledge are represented in this version of the Standard.

Properly equipped sedation and general anesthesia facilities are critical. The RCDSO operates a robust inspection and review program to ensure that all sedation and general anesthesia facilities in dentistry meet the required Standard.

Contravention of this or any Standard of the RCDSO may be considered professional misconduct. Dentists employing any modality of sedation or general anesthesia must be familiar with its content, be appropriately trained and regulate their practices accordingly. It must be read in conjunction with the by-laws of the RCDSO, which form part of this Standard.

# Use of Sedation and General Anesthesia in Dental Practice

Sedation or general anesthesia may be indicated to:

- treat patients with fear or anxiety associated with dental treatment;
- enable treatment for patients who have cognitive impairment or motor dysfunction that prevents adequate dental treatment;
- treat patients below the age of reason; or
- treat patients for traumatic or extensive dental procedures.

**These techniques are to be used only when indicated, as an adjunct to appropriate non-pharmacological means of patient management**.

Sedation and general anesthesia are produced along a continuum, ranging from the relief of anxiety with little or no associated drowsiness (i.e. minimal sedation), up to and including a state of unconsciousness (i.e. general anesthesia).

## DEFINITIONS:

**Minimal sedation** is a minimally depressed level of consciousness, produced by a pharmacological method that retains the patient's ability to independently and continuously maintain an airway and respond *normally* to tactile stimulation and verbal command. Although cognitive function and coordination may be modestly impaired, ventilatory and cardiovascular functions are unaffected.

**Moderate sedation** is a drug-induced depression of consciousness during which patients respond *purposefully* to verbal commands, either alone or accompanied by light tactile stimulation. No interventions are required to maintain a patent airway, and spontaneous ventilation is adequate. Cardiovascular function is usually maintained.

**The inherent safety of minimal and moderate sedation is dependent on the patient remaining clearly conscious throughout**.

**Deep sedation** is a drug-induced depression of consciousness during which patients cannot be easily aroused but respond purposefully following repeated or painful stimulation. The ability to independently maintain ventilatory function may be impaired. Patients may require assistance in maintaining a patent airway, and spontaneous ventilation may be inadequate. Cardiovascular function is usually maintained.

**General anesthesia** is a drug-induced loss of consciousness during which patients are not arousable, even by painful stimulation. The ability to independently maintain ventilatory function is often impaired. Patients often require assistance in maintaining a patent airway, and positive pressure ventilation may be required because of depressed spontaneous ventilation or drug-induced depression of neuromuscular function. Cardiovascular function may be impaired.

See Appendix III - Characteristics of the Levels of Sedation and General Anesthesia

It is not always possible to predict how an individual patient will respond and, at times, it can be difficult to precisely define the end-point of one level of sedation and the starting point of a deeper level of sedation. Therefore, the drugs and techniques used for sedation must carry a margin of safety wide enough to render loss of consciousness highly unlikely.

Practitioners intending to produce a given level of sedation must be able to diagnose and manage the physiological consequences (rescue) for patients whose level of sedation becomes deeper than initially intended. For all levels of sedation, the practitioner must have the training, skills, drugs and equipment to identify and manage such an occurrence until either assistance arrives (e.g. emergency medical service) or the patient returns to the intended level of sedation without airway or cardiovascular complications.

The following are the **minimum** standards for the use of sedation and/or general anesthesia in dentistry. For the purposes of this document, these standards are divided into the following sections:

- General standards for all modalities of sedation or general anesthesia
- Specific standards for the following modalities:
  - Minimal sedation
    - Administration of nitrous oxide and oxygen
    - Oral administration of a single sedative drug
  - Moderate sedation
    - Oral administration of a sedative drug, with or without nitrous oxide and oxygen
    - Parenteral administration of a sedative drug (intravenous, intramuscular, subcutaneous, submucosal or intranasal)
  - Deep sedation
  - General anesthesia

# General Standards For All Modalities of Sedation or General Anesthesia

## PROFESSIONAL RESPONSIBILITIES

The following professional responsibilities apply to all modalities of sedation or general anesthesia.

1. Successful completion of a training program designed to produce competency in the specific modality of sedation or general anesthesia utilized is mandatory.

2. The dental facility must comply with all applicable building codes, including fire safety, electrical and access requirements. The size and layout of the facility must be adequate for all procedures to be performed safely and provide for the safe evacuation of patients and staff in case of an emergency.

3. The dental facility must be suitably staffed and equipped for the specific modality(ies) practiced as prescribed in this document.

4. An adequate, clearly recorded current medical history, including present and past illnesses, hospital admissions, current medications and dose, allergies (in particular to drugs), and a functional inquiry or review of systems (ROS), along with an appropriate physical examination must be completed for each patient prior to the administration of any form of sedation or general anesthesia. For medically compromised patients, consultation with their physician may be indicated. This must form a permanent part of each patient's record, consistent in content with Appendix I. Additionally, the medical history must be reviewed for any changes at each sedation appointment. Such a review must be documented in the permanent record.

5. A determination of the patient's American Society of Anesthesiologists (ASA) Physical Status Classification (see Appendix II), as well as careful evaluation of any other factors that may affect a patient's suitability for sedation or general anesthesia, must be made prior to its administration. These findings will be used as a guide in determining the appropriate facility and technique used.

6. In general, when it is indicated, the administration of sedation or general anesthesia in out-of-hospital dental facilities is most appropriate for patients who are ASA I and ASA II. Patients who are ASA III and/or present with other medical concerns (e.g. difficult airway) may not be acceptable for treatment by practitioners who are qualified to administer minimal and/or moderate sedation only. Such patients must be carefully assessed and consideration should be given to referring them to a more qualified practitioner.

7. Patients who are under 12 years of age are not acceptable for the administration of parenteral moderate sedation in out-of-hospital dental facilities, except by those practitioners who are qualified to administer deep sedation or general anesthesia.

8. Patients who are under 3 years of age **OR** under 15 kilograms are not acceptable for the administration of oral sedation, with or without nitrous oxide and oxygen, except by those practitioners who are qualified to administer deep sedation or general anesthesia, and by those practitioners who have completed a formal post-graduate program in pediatric dentistry suitable for certification in the Province of Ontario.

9. Patients who are ASA IV and above are not acceptable for the administration of deep sedation or general anesthesia in out-of-hospital dental facilities. The administration of nitrous oxide and oxygen may be considered for these patients. Other modalities for minimal and moderate sedation may be considered **only** by those practitioners who are qualified to administer deep sedation or general anesthesia.

10. Only the following persons may administer any sedative or general anesthetic agent in the dental setting:

- A dentist currently registered with the Royal College of Dental Surgeons of Ontario (RCDSO);
- A physician currently registered with the College of Physicians and Surgeons of Ontario (CPSO);
- A nurse practitioner (NP) currently registered with the College of Nurses of Ontario acting under the direction of a dentist or a physician, currently registered in Ontario;
- A registered nurse (RN) currently registered with the College of Nurses of Ontario acting under the required order and the direct control and supervision of a dentist or a physician, currently registered in Ontario;
- A respiratory therapist (RT) currently registered with the College of Respiratory Therapists of Ontario acting under the required order and the direct control and supervision of a dentist or a physician, currently registered in Ontario;
- **For minimal sedation only**, a registered practical nurse (RPN) currently registered with the College of Nurses of Ontario, who has completed an enhanced medication course in the administration and monitoring of minimal sedation, acting under the required order and the direct control and supervision of a dentist, currently registered in Ontario.

11. All dentists and dental office staff must be prepared to recognize and treat adverse responses using appropriate emergency equipment and appropriate and current drugs when necessary. All dentists and clinical staff must have the training and ability to perform basic life support (BLS) techniques. It is strongly recommended that all dentists maintain current* BLS certification (CPR Level HCP), and that all dental offices are equipped with an automated external defibrillator (AED). All dentists providing minimal and/or oral moderate sedation must, as a minimum, maintain current* BLS certification (CPR Level HCP), which must include a hands-on component. All dentists providing oral moderate sedation to patients who are under 3 years of age **OR** under 15 kilograms must also maintain current* Pediatric Advanced Life Support (PALS) certification or current* Pediatric Emergency Assessment, Recognition and Stabilization (PEARS) certification, which must include a hands-on component. All dentists providing parenteral moderate sedation, deep sedation and/or general anesthesia must also maintain current* Advanced Cardiac Life Support (ACLS) certification, which must include a hands-on component. All dentists providing parenteral moderate sedation, deep sedation and/or general anesthesia to patients who are under 12 years of age must also maintain current* PALS certification, which must include a hands-on component. Dentists should establish written protocols for emergency procedures and review them with their staff regularly.

** For the purposes of fulfilling this requirement, "current" is defined as within 2 years.*

The following table outlines the six basic drugs that must be included in the emergency kit of every dental office. All dental offices providing sedation and/or general anesthesia are required to have additional emergency drugs and armamentaria, as described in the sections dealing with specific modalities.

| DRUG | INDICATION | INITIAL ADULT DOSE | RECOMMENDED CHILD DOSE |
|---|---|---|---|
| **Oxygen*** | Most medical emergencies | 100% inhalation | 100% inhalation |
| **Epinephrine** (at least 2 sources)** | Anaphylaxis | 0.3-0.5 mg i.m.*** or 0.01-0.1 mg i.v. | 0.01 mg/kg |
| | Asthmatic bronchospasm which is unresponsive to salbutamol | 0.3-0.5 mg i.m.*** or 0.01-0.1 mg i.v. | 0.01 mg/kg |
| | Cardiac arrest | 1 mg i.v. | 0.01 mg/kg |
| **Nitroglycerin** | Angina pectoris | 0.3 mg or 0.4 mg sublingual | Not indicated |
| **Diphenhydramine** | Allergic reactions | 50 mg i.m.*** or i.v. | 1 mg/kg |
| **Salbutamol inhalation aerosol** | Asthmatic bronchospasm | 2 puffs (100 micrograms/puff) | 1 puff |
| **ASA (non-enteric coated)** | Acute Myocardial Infarction | 160 to 325 mg | Not indicated |

* *An E-size cylinder is required. The unit must be portable and have an appropriate regulator and flowmeter, as well as connectors, tubing and reservoir bag, to allow use of a full face mask for resuscitative ventilation.*

** *At least 2 sources of 1:1,000 epinephrine are required, such as 2 ampules, 2 auto-injectors or a combination of ampules and auto-injectors.* ***If children under 30 kg are treated and auto-injectors are used, the pediatric formulation is required.***

*** *The dose suggested for the i.m. route is also appropriate for sublingual injections.*

*The total pediatric dose should not exceed the adult dose.*

12. All dentists providing sedation and/or general anesthesia must be able to satisfy the RCDSO of their continuing competence and are expected to pursue continuing education related to the modality(ies) they use.

**In addition to maintaining life-support certification at the required level(s)**, dentists must satisfy the following requirements:

| | |
|---|---|
| **For minimal sedation** | • a minimum of 5 cases must be performed per year; **and**<br>• if patients under 12 years of age are treated, a minimum of 5 cases involving patients under 12 years of age must be performed per year |
| **For oral moderate sedation** | • a minimum of 6 hours of continuing education (or 6 CE points) related to oral moderate sedation must be completed per 3-year period*; **and**<br>• a minimum of 5 cases** must be performed per year; **and**<br>• if patients under 12 years of age are treated, a minimum of 5 cases involving patients under 12 years of age must be performed per year |
| **For parenteral moderate sedation** | • a minimum of 12 hours of continuing education (or 12 CE points) related to parenteral moderate sedation must be completed per 3-year period*; **and**<br>• a minimum of 10 cases must be performed per year |
| **For deep sedation and/or general anesthesia** | • a minimum of 12 hours of continuing education (or 12 CE points) related to deep sedation and/or general anesthesia must be completed per 3-year period*; **and**<br>• a minimum of 10 cases must be performed per year; **and**<br>• if patients under 12 years of age are treated, a minimum of 10 cases involving patients under 12 years of age must be performed per year |

* *For the purposes of fulfilling this requirement, courses in the management of medical emergencies are accepted. Courses to acquire or maintain life-support certification (BLS, ACLS, PALS and PEARS) are NOT accepted.*

** *For the purposes of fulfilling this requirement, minimal sedation cases are also accepted, provided that the cases are managed as if they are oral moderate sedation cases, including documentation of sedation records.*

**At the time of renewal of their authorization, dentists who have not completed the required number of CE points and/or performed the required number of cases to maintain their competence will be expected to provide an explanation for their shortfall.**

13. Dentists must take into account the maximum dose of local anesthetic that may be safely administered, especially for children, elderly and medically compromised patients.

14. All dentists providing sedation or general anesthesia must monitor and report any serious adverse event (Tier One Event) or other incident (Tier Two Event) to the RCDSO, as described below.

| | |
|---|---|
| **Tier One Events:**<br>Serious adverse events must be reported to the RCDSO in writing within 24 hours of knowledge of the event. | • Death of a patient within the facility.<br>• Death of a patient within 10 days of a procedure performed at the facility.<br>• Transfer of a patient from the facility directly to a hospital for care. |
| **Tier Two Events:**<br>Other incidents must be reported to the RCDSO in writing within 10 days of knowledge of the event. | • Unscheduled treatment of a patient in a hospital within 10 days of a procedure performed with sedation or general anesthesia.<br>• Any use of a benzodiazepine or opioid antagonist.<br>• Any serious cardiac or respiratory adverse event requiring administration of a medication for its management. |

Dentists using sedative and/or general anesthetic agents must take reasonable precautions to prevent the unauthorized use of these substances by staff and other individuals with access to the office. Drugs stored in a dentist's office must be kept in a locked cabinet. Dentists are advised to avoid storing drugs in any other location, including their homes, and never leave drug bottles or vials unattended. A drug register must be maintained that records and accounts for all narcotics, controlled drugs, benzodiazepines and targeted substances that are kept on-site. The register should also be kept in a secure area in the office, preferably with the drugs, and reconciled on a routine basis, depending on the nature of the practice and reasonable clinical judgment.

Whenever drugs in the above-mentioned classes are used or dispensed, a record containing the name of the patient, the quantity used or dispensed, and the date must be entered in the register for each drug. Each entry must be initialed or attributable to the person who made the entry. In addition, this same information must be recorded in the patient record.

When dispensing monitored drugs for home use by patients, dentists are also required to record appropriate patient identification (e.g. OHIP number) in the drug register, as well as in the patient record.

Dentists are required to report within 10 days of discovery the loss or theft from their office of controlled substances, including opioids and other narcotics, to the Office of Controlled Substances, Federal Minister of Health.

Dentists should use staff training sessions and meetings to discuss the dangers of drug and substance abuse, to remind staff of the safeguards and protocols in the office to prevent misuse of supplies, and to provide information about resources that are available to dental professionals to assist with wellness issues.

There is no provision for dentists or their staff to access in-office supplies of drugs that normally require a prescription for their own use or by their family members.

# Specific Standards For Particular Modalities Part I – Minimal and Moderate Sedation

**Minimal sedation** is usually accomplished by the following modalities:
1. administration of nitrous oxide and oxygen
2. oral administration of a single sedative drug

**Moderate sedation** is usually accomplished by the following modalities:
3. oral administration of a sedative drug, with or without nitrous oxide and oxygen
4. parenteral administration of a sedative drug (intravenous, intramuscular, subcutaneous, submucosal or intranasal)

## PROFESSIONAL RESPONSIBILITIES FOR ALL MODALITIES OF MINIMAL AND MODERATE SEDATION

In addition to the General Standards listed previously, the following professional responsibilities apply to all modalities of minimal and moderate sedation:

i) Successful completion of a training program designed to produce competency in the use of the specific modality of minimal or moderate sedation, including indications, contraindications, patient evaluation, patient selection, pharmacology of relevant drugs, and management of potential adverse reactions, is mandatory. The training program must be obtained from one or more of the following sources:

- Ontario Faculties of Dentistry undergraduate and post-graduate programs
- other Faculties of Dentistry undergraduate and post-graduate programs, approved by the RCDSO
- Ontario Faculties of Dentistry continuing education programs
- other continuing education courses approved by the RCDSO which follow the general principle that they must be:
  - Organized and taught by dentists certified to administer anesthesia and sedation as they apply to dentistry, supplemented as necessary by persons experienced in the technique being taught.
  - Held in a properly equipped dental environment which will permit the candidates to utilize the techniques being taught on patients during dental treatment.
  - Followed by a recorded assessment of the competence of the candidates.

ii) Dentists whose training does not exceed that described as necessary for the administration of minimal or moderate sedation are cautioned not to exceed the level of depression for which they are authorized to administer. Administration of a single sedative drug in a carefully considered dose is a prudent approach to minimal or moderate sedation. Successful completion of additional training, as outlined elsewhere in this document, is required if more than one sedative drug is to be used.

iii) Should the administration of any drug produce a level of depression beyond that for which the dentist is authorized to administer, the dental procedures should be halted. Appropriate support procedures must be administered until the level of depression is no longer beyond that for which the dentist is authorized to administer or until additional emergency assistance is obtained.

iv) Sedation techniques require the patient to be discharged to the care of a responsible adult. Nitrous oxide and oxygen sedation is the only modality for which a dentist may exercise discretion as to whether a patient may be discharged unaccompanied. All patients must be specifically assessed for fitness for discharge as described elsewhere in this document.

# (A) MINIMAL SEDATION

- administration of nitrous oxide and oxygen
- oral administration of a single sedative drug

**In all cases where the intention is to achieve moderate sedation using any modality of sedation, including the oral administration of a single sedative drug, the dentist must adhere to the standards for moderate sedation. This includes the professional responsibilities of obtaining authorization and a facility permit from the RCDSO.**

## 1. NITROUS OXIDE AND OXYGEN SEDATION

In addition to the General Standards and professional responsibilities listed above, the following professional responsibilities apply when nitrous oxide and oxygen sedation is being administered:

### Additional Professional Responsibilities

1. All dentists administering nitrous oxide and oxygen sedation must have authorization from the RCDSO to do so, effective April 1, 2020.

2. All facilities where nitrous oxide and oxygen sedation is administered are subject to random on-site inspections and evaluation by the RCDSO, effective April 1, 2020.

3. Gas delivery systems used for the administration of nitrous oxide and oxygen sedation:

*a.* Must have a fail-safe mechanism such that it will not deliver an oxygen concentration of less than 30% in the delivered gas mixture.

*b.* Must have pipeline inlet fittings, or pin-indexing, that do not permit interchange of connections with oxygen and nitrous oxide.

*c.* Must be checked regularly for functional integrity by appropriately trained personnel, function reliably and accurately, and receive appropriate care and maintenance according to manufacturer's instructions or annually, whichever is more frequent. **A written record of this annual maintenance/servicing must be kept on file for review by the RCDSO as required.**

*d.* Must have a reserve supply of oxygen that is ready for immediate use. For a portable gas delivery system, the reserve supply of oxygen must be connected to the system (i.e. a "4-yoke" system). For a centrally plumbed gas delivery system, two oxygen cylinders must be connected to the system at all times.

*e.* Must be equipped with a scavenging system installed per manufacturer's specifications.

In addition to installing a scavenging system, dentists must ensure adequate ventilation of the facility to minimize occupational exposure to nitrous oxide and maintain acceptable air quality.

4. In addition to the gas delivery system, an emergency supply of oxygen is required (i.e. a "wheel-out"), as described in the above table of six basic drugs that must be included in the emergency kit of every dental office.

5. Nitrous oxide and oxygen sedation must be administered by:

*a.* an appropriately trained dentist **OR**

*b.* an appropriately trained nurse practitioner acting under the direction of an appropriately trained dentist, or an appropriately trained registered nurse, respiratory therapist or registered practical nurse acting under the order of an appropriately trained dentist, provided that:

- an appropriately trained dentist is present at all times in the facility and **immediately** available in the event of an emergency;
- nitrous oxide and oxygen sedation has been previously administered for the patient by the dentist;
- appropriate dosage levels have been previously determined and recorded by the dentist in the patient record.

**IMPORTANT: The administration of nitrous oxide and oxygen sedation is a controlled act. Dental hygienists and dental assistants are NOT authorized to perform it.**

6. Consent must be obtained prior to the administration of nitrous oxide and oxygen sedation, which should be documented.

7. Patients should be given instructions not to eat or drink for 2 hours prior to their appointment.

8. Patients receiving nitrous oxide and oxygen sedation must be supervised by an appropriately trained dentist, or an appropriately trained nurse practitioner acting under the direction of a dentist, or an appropriately trained registered nurse, respiratory therapist or registered practical nurse acting under the order of a dentist, and must never be left unattended during administration.

9. Patients must be monitored by an appropriately trained dentist, or an appropriately trained nurse practitioner acting under the direction of a dentist, or an appropriately trained registered nurse, respiratory therapist or registered practical nurse acting under the order of a dentist, by direct and continuous clinical observation for level of consciousness and assessment of vital signs, which may include heart rate, blood pressure and respiration pre-operatively, intra-operatively and post-operatively, as necessary.

10. The practitioner must not be alone while treating a sedated patient.

11. Recovery status post-operatively must be specifically assessed and recorded by the dentist, who must remain in the facility until that patient is fit for discharge. Only fully recovered patients can be considered for discharge unaccompanied. If discharge occurs with any residual symptoms, the patient must be accompanied by a responsible adult.

**Nitrous oxide and oxygen sedation is the only modality for which a dentist may exercise discretion as to whether a patient may be discharged unaccompanied. All patients must be specifically assessed for fitness for discharge.**

12. Records of the sedation procedure must be kept that, as a minimum, include the following information:

- pre-operative review of the patient's medical history for any changes;
- pre-operative blood pressure and pulse;
- total flow of nitrous oxide and oxygen;
- percentage and duration of administration of nitrous oxide;
- duration of administration of 100% oxygen at the end of the sedation procedure;
- notation regarding the patient's tolerance of the sedation procedure.

13. Any Tier One or Tier Two Event must be reported to the RCDSO in writing.

## 2. ORAL MINIMAL SEDATION

In addition to the General Standards and professional responsibilities listed above, the following professional responsibilities apply to the oral administration of a single sedative drug (which includes the sublingual route of administration) for minimal sedation.

### Additional Professional Responsibilities

1. All dentists administering oral minimal sedation must have authorization from the RCDSO to do so, effective April 1, 2020.

2. All facilities where oral minimal sedation is administered are subject to random on-site inspections and evaluation by the RCDSO, effective April 1, 2020.

3. All dentists administering oral minimal sedation for patients under 12 years of age must provide care that meets all requirements for oral moderate sedation. This includes the professional responsibilities of obtaining authorization and a facility permit from the RCDSO to do so, regardless of whether minimal or moderate sedation is intended or achieved.

4. For the administration of oral minimal sedation for patients under 3 years of age **OR** under 15 kilograms, the following training is required:

- dentists who qualify for the administration of deep sedation and general anesthesia, as outlined in Part II of this document; **OR**

- dentists who have successfully completed a formal post-graduate program in pediatric dentistry suitable for certification in the Province of Ontario, incorporating adequate training in sedation, such that the individual competence has been specifically evaluated and attested.

5. Oral administration of a **single** sedative drug, specifically a benzodiazepine, is a prudent approach to minimal sedation. No additional drugs with sedative properties (e.g. opioids, anti-histamines) are permitted to be administered by any route in the peri-operative period. Non-sedative agents may be administered as deemed appropriate.

Table 1

**ADULT DOSE RANGES OF ORAL SEDATIVES FOR MINIMAL SEDATION**

**Appointment 2 hours or less**

- triazolam 0.125 to 0.25 mg

**Appointment longer than 2 hours**

- triazolam 0.25 mg OR
- diazepam 10 to 15 mg OR
- temazepam 15 mg OR
- oxazepam 10 to 15 mg

**Appointment longer than 3 hours**

- lorazepam 0.50 to 1.0 mg OR
- alprazolam 0.25 mg

These dose ranges are approximations only. Reduced doses should be considered for elderly and medically compromised patients.

The maximum dose of an oral sedative for minimal sedation must not be exceeded, unless the dentist provides care that meets all requirements for oral moderate sedation. This includes the professional responsibilities of obtaining authorization and a facility permit from the RCDSO to do so, regardless of whether minimal or moderate sedation is intended or achieved.

**For the purposes of minimal and/or moderate sedation, the oral administration of an opioid and/or chloral hydrate is NOT permitted.**

6. A dose of an oral sedative used to induce minimal sedation should be administered to the patient in the dental office, taking into account the time required for drug absorption.

**Elderly and medically compromised patients, including those who are taking prescribed medication with sedative properties, require appropriate adjustment of the dose of the oral sedative drug to ensure that the intended level of minimal sedation is not exceeded. Continuous monitoring with pulse oximetry is strongly recommended for these patients. If a pulse oximeter is used for continuous monitoring of sedated patients (including the immediate recovery phase), it must have a Health Canada medical device license and be used in accordance with the manufacturer's 'intended use' (i.e. for continuous monitoring). The pulse oximeter must have variable pitch tone, clearly audible alarms, appropriately set and NOT permanently silenced.**

7. There are two rare situations in which the patient may need to take an oral sedative prior to arrival to the dental office. One indication is if the practitioner has determined that the patient requires an oral sedative to facilitate sleep the night prior to the dental procedure. The second indication is when the patient's anxiety is such that sedation is required to permit arrival to the dental office. Such situations, however, should be the exception and not common practice, and may be subject to scrutiny by the RCDSO. In addition to the requirements in paragraph 6 above, the following additional requirements apply in these two situations:

- Each patient must be screened by the dentist at a prior appointment, with an appropriate medical history, as described in the General Standards in this document.
- If a prescription sedative drug is required, only a benzodiazepine may be prescribed.

- The dose of the benzodiazepine must not exceed the maximum dose for minimal sedation (See TABLE 1).
- The patient must be instructed not to drive a vehicle and must be accompanied to and from the dental office by a responsible adult.
- In each case, clear written instructions must be given to the patient or guardian explaining how to take the medication, the need for accompaniment and listing the expected effects from this sedative drug.

8. Patients should be given instructions not to eat or drink for 2 hours prior to their appointment.

9. Consent must be obtained prior to the administration of any oral sedative, which should be documented.

10. Patients must be monitored by clinical observation of the level of consciousness and assessment of vital signs, which may include heart rate, blood pressure and respiration.

11. The patient may be discharged once he/she shows signs of progressively increasing alertness and has met the following criteria:

- conscious and oriented
- vital signs are stable
- ambulatory

12. The patient must be discharged to the care of a responsible adult.

13. The patient must be instructed to not drive a vehicle, operate hazardous machinery or make important decisions. In addition, the patient must be cautioned about consuming alcohol and other drugs with sedative properties for a minimum of 18 hours or longer if drowsiness or dizziness persists.

14. If a reversal agent is administered before discharge criteria have been met, the patient must be monitored beyond the expected duration of action of the reversal agent to guard against re-sedation, and a Tier Two Event must be reported to the RCDSO in writing.

15. Records of the sedation procedure must be kept that, as a minimum, include the following information:

- pre-operative review of the patient's medical history for any changes;
- verification of accompaniment for discharge;
- pre-operative blood pressure and pulse;
- name and dose of the oral sedative administered;
- time of administration of the oral sedative;
- time that discharge criteria are met;
- notation regarding the patient's tolerance of the sedation procedure.

16. The practitioner must not be alone while treating a sedated patient.

17. Any Tier One or Tier Two Event must be reported to the RCDSO in writing.

18. Emergency equipment and drugs must be available at all times. Drugs must be current and stored in readily identifiable and organized fashion (i.e. labelled trays or bags). It is the dentist's responsibility to ensure that the dental office in which oral minimal sedation is being performed is equipped with the following:

- full face masks of appropriate sizes and connectors
- current drugs in appropriate amounts for management of emergencies, including:
  - oxygen (an E-size cylinder is required)
  - 1:1,000 epinephrine (at least 2 doses are required, ampules or auto-injectors)
  - nitroglycerin
  - parenteral diphenhydramine
  - salbutamol
  - flumazenil
  - acetylsalicylic acid (ASA, non-enteric coated)

## (B) MODERATE SEDATION

It is assumed that this will be accomplished by either:

- oral administration of a sedative drug, with or without nitrous oxide and oxygen;
- parenteral administration of a sedative drug (intravenous, intramuscular, subcutaneous, submucosal or intranasal).

**However, in all cases where the intention is to achieve moderate sedation using any modality of sedation, including the oral administration of a single sedative drug, with or without nitrous oxide and oxygen, the dentist must adhere to the standards for moderate sedation. This includes the professional responsibilities of obtaining authorization and a facility permit from the RCDSO.**

### 1. ORAL MODERATE SEDATION

In addition to the General Standards, this section outlines standards specific to any sedation technique utilizing the oral administration of a sedative drug, with or without nitrous oxide and oxygen, for moderate sedation.

### Additional Professional Responsibilities

1. All dentists administering oral moderate sedation must have authorization from the RCDSO to do so.

2. All facilities where oral moderate sedation is administered must have a permit from the RCDSO. Such permit will be granted subject to training and conformance with all aspects of the Standard and subject to satisfactory on-site inspections and evaluation by the RCDSO.

3. The following training is required:

- dentists who qualify for the administration of deep sedation and general anesthesia, as outlined in Part II of this document; OR
- dentists who qualify for the administration of parenteral moderate sedation, as outlined later in this document; OR
- dentists with formal training in a post-graduate specialty program that has specifically incorporated the teaching of techniques using any modality to produce moderate sedation, as well as appropriate airway management, and has evaluated and attested to the competency of the candidate; OR
- dentists who have successfully completed continuing education training that has specifically incorporated the teaching of techniques using any modality to produce moderate sedation, as well as appropriate airway management, followed by a formal evaluation of the competency of the candidate; OR
- dentists with other training and/or experience who received approval from the RCDSO prior to December 31, 2012.

4. Oral administration of a **single** sedative drug, specifically a benzodiazepine, is a prudent approach to moderate sedation. Successful completion of additional training, as outlined below, is required if more than one oral sedative drug is to be used. Otherwise, no additional oral drugs with sedative properties (e.g. opioids, anti-histamines) are permitted to be administered in the peri-operative period. Non-sedative agents may be administered as deemed appropriate.

5. If an oral sedative has been administered and nitrous oxide/oxygen is used, the latter must be slowly titrated to achieve the signs and symptoms of moderate sedation, with vigilant assessment of the level of consciousness.

6. For the oral administration of two sedative drugs, specifically a benzodiazepine and an anti-histamine, the following training is required:

- dentists who qualify for the administration of deep sedation and general anesthesia, as outlined in Part II of this document; OR
- dentists who qualify for the administration of parenteral moderate sedation, as outlined later in this document; OR
- dentists who have successfully completed a formal post-graduate program in pediatric dentistry suitable for certification in the Province of Ontario, incorporating adequate training in sedation, such that the individual competence has been specifically evaluated and attested.

7. For the administration of oral moderate sedation for patients under 3 years of age **OR** under 15 kilograms, the following training is required:

- dentists who qualify for the administration of deep sedation and general anesthesia, as outlined in Part II of this document; OR
- dentists who have successfully completed a formal post-graduate program in pediatric dentistry suitable for certification in the Province of Ontario, incorporating adequate training in sedation, such that the individual competence has been specifically evaluated and attested.

8. All dentists administering oral moderate sedation for patients under 3 years of age **OR** under 15 kilograms must be able to satisfy the RCDSO that they have appropriate training and experience to possess the knowledge, skills and judgment necessary for the care of such patients. In addition, current PALS or PEARS certification is required.

Table 2

**ADULT DOSE RANGES OF ORAL SEDATIVES FOR MODERATE SEDATION**

**Appointment 2 hours or less**

- triazolam 0.375 to 0.50 mg

**Appointment longer than 2 hours**

- triazolam 0.50 mg OR
- diazepam 20 to 30 mg OR
- temazepam 30 mg OR
- oxazepam 20 to 30 mg

**Appointment longer than 3 hours**

- lorazepam 2 to 3 mg OR
- alprazolam 0.50 mg

These dose ranges are approximations only. Reduced doses should be considered for elderly and medically compromised patients, and when nitrous oxide and oxygen will be administered.

In rare situations, the dentist may consider exceeding the maximum dose of triazolam for adults, described above, provided the dose does not exceed 0.75 mg for 1 appointment. The dentist is expected to exercise reasonable professional judgment in determining when this is justified, and the rationale for doing so must be documented in the patient record. Such situations, however, should be the exception and not common practice, and may be subject to scrutiny by the RCDSO.

For the administration of oral moderate sedation to patients under 12 years of age, the use of oral midazolam, diazepam or hydroxyzine may be considered by those dentists who have successfully completed additional training in their use. The dose of the oral sedative drug must be calculated, based on the weight of the patient:

- For oral midazolam, the dose must not exceed 0.5 mg/kg, with a maximum dose of 15 mg for 1 appointment.
- For oral diazepam, the dose must not exceed 0.5 mg/kg, with a maximum dose of 15 mg for 1 appointment.
- For oral hydroxyzine, the dose must not exceed 1.0 mg/kg, with a maximum dose of 30 mg for 1 appointment.

In rare situations, an appropriately trained specialist in pediatric dentistry may consider exceeding the maximum dose of oral midazolam for patients under 12 years of age, described above, when used as a single oral sedative (i.e. no additional oral sedatives are administered), provided the dose does not exceed 0.75 mg/kg, with a maximum dose of 20 mg for 1 appointment. Similarly, in rare situations, an appropriately trained specialist in pediatric dentistry may consider exceeding the maximum dose of oral hydroxyzine for patients under 12 years of age, described above, when used as a single oral sedative (i.e. no additional oral sedatives are administered), provided the dose does not exceed 2.0 mg/kg, with a maximum dose of 50 mg for 1 appointment. The pediatric dentist is expected to exercise reasonable professional judgment in determining when this is justified, and the rationale for doing so must be documented in the patient record. Such situations, however, should be the exception and not common practice, and may be subject to scrutiny by the RCDSO.

With the exceptions noted above, the maximum dose of an oral sedative must NOT be exceeded, unless the dentist is authorized by the RCDSO to administer deep sedation or general anesthesia.

**For the purposes of minimal and/or moderate sedation, the oral administration of an opioid and/or chloral hydrate is NOT permitted.**

The administration of a single dose of an oral sedative is a prudent approach to either minimal or moderate sedation. **The administration of multiple doses of an oral sedative until a desired effect is reached (i.e. "incremental dosing") is strongly discouraged and if used, must be carried out with great caution**. Knowledge of the oral sedative's time of onset, peak response and duration of action is essential to avoid over-sedation. Before administering an additional dose of an oral sedative, the dentist must ensure that the previous dose has taken full effect. **The maximum dose of an oral sedative must not be exceeded at any one appointment.**

**Children, elderly and medically compromised patients, including those who are taking prescribed medication with sedative properties, require appropriate adjustment of the dose(s) of the oral sedative drug(s) to ensure that the intended level of moderate sedation is not exceeded.**

**Dentists, who use the services of another dentist who is qualified to administer oral moderate sedation, share the responsibility of complying with the Standard. However, the ultimate responsibility rests with the facility permit holder to ensure that:**

- **the dentist administering oral moderate sedation is authorized by the RCDSO to do so;**
- **the dentist has no term, condition or limitation on his or her certificate of registration relevant to the administration of sedation or general anesthesia; and**
- **all required emergency and other equipment is available and emergency drugs are on-site and current.**

**With the exception of oxygen, EITHER the facility permit holder OR the dentist administering oral moderate sedation MUST provide all required emergency equipment and drugs. The shared provision of emergency equipment and drugs is NOT allowed.**

## OFFICE PROTOCOL AND FACILITIES

The facility must permit adequate access for emergency stretchers and have auxiliary powered backup for suction, lighting and monitors for use in the event of a power or system failure.

### 1. Patient Selection

An adequate, clearly recorded current medical history, including present and past illnesses, hospital admissions, current medications and dose, allergies (in particular to drugs), and a functional inquiry or review of systems (ROS), along with an appropriate physical examination must be completed for each patient and must form a permanent part of each patient's record. For medically compromised patients, consultation with their physician may be indicated. This assessment should be consistent in content with Appendix I.

The patient's ASA Classification (see Appendix II) and risk assessment must then be determined. These findings will be used to determine the appropriate facility and technique used.

### 2. Sedation Protocol

1. The medical history must be reviewed for any changes at each sedation appointment. Such a review must be documented in the sedation record for the appointment.

2. The patient must have complied with the minimum duration of fasting prior to appointments that is consistent with the following minimum requirements:

- 8 hours after a meal that includes meat, fried or fatty foods;
- 6 hours after a light meal (such as toast and a clear fluid), or after ingestion of infant formula or nonhuman milk;
- 4 hours after ingestion of breast milk; and
- 2 hours after clear fluids (such as water, fruit juices without pulp, carbonated beverages, clear tea, and black coffee, but NOT alcohol).

Possible exceptions to this are usual medications or pre-operative medications, which may be taken as deemed necessary by the dentist.

**To avoid confusion, some dentists may wish to simplify their pre-operative instructions to patients regarding fasting requirements. For example, patients might be instructed not to have any solid food for a minimum of eight hours, and that they may ingest clear fluids up until two hours before the appointment. Such instructions would be consistent with the minimum fasting requirements.**

3. Consent must be obtained prior to the administration of any oral sedative, which should be documented.

4. A dose of an oral sedative used to induce moderate sedation should be administered to the patient in the dental office, taking into account the time required for drug absorption.

5. There are two rare situations in which the patient may need to take an oral sedative prior to arrival to the dental office. One indication is if the practitioner has determined that the patient requires an oral sedative to facilitate sleep the night prior to the dental procedure. The second indication is when the patient's anxiety is such that sedation is required to permit arrival to the dental office. Such situations, however, should be the exception and not common practice, and may be subject to scrutiny by the RCDSO. In addition to the requirements in paragraph 4 above, the following additional requirements apply in these two situations:

- Each patient must be screened by the dentist at a prior appointment, with an appropriate medical history, as described in the General Standards in this document.
- If a prescription sedative drug is required, only a benzodiazepine may be prescribed.
- The dose of the benzodiazepine must not exceed the maximum dose for minimal sedation (See TABLE 1).
- The patient must be instructed not to drive a vehicle and must be accompanied to and from the dental office by a responsible adult.
- For patients under 12 years of age, it is strongly recommended that the patient be accompanied to and from the dental office by two responsible adults, so that one adult can focus on the patient during transport.
- In each case, clear written instructions must be given to the patient or guardian explaining how to take the medication, the need for accompaniment and listing the expected effects from this sedative drug.

6. Clinical observation must be supplemented by the following means of monitoring throughout the sedation administration, including into recovery:

- continuous pulse oximeter monitoring of oxyhemoglobin saturation, recorded at a minimum of 15 minute intervals;
- blood pressure and pulse must be taken and recorded pre-operatively and throughout the sedation period at appropriate intervals, not greater than every 15 minutes;
- continuous observation of respiration, with rate recorded at a minimum of 15 minute intervals.

7. A sedation record must be kept that includes the recording of vital signs as listed above.

8. Alarm settings and their audio component on monitoring equipment must be used at all times.

**In cases where the dentist has determined that the use of a blood pressure cuff and/or pulse oximeter would be an impediment to the management of an individual patient, and the patient is clearly conscious throughout the procedure, a decision may be made not to use these monitors. In these isolated cases, a notation explaining the reason for not using these monitors must be recorded in the chart. Furthermore, these monitors (pulse oximeter, stethoscope and sphygmomanometer) must be present in the office and readily available for use.**

9. The patient may be discharged once he/she shows signs of progressively increasing alertness and has met the following criteria:

- conscious and oriented
- vital signs are stable
- ambulatory

10. The patient must be discharged to the care of a responsible adult.

**For patients under 12 years of age, it is strongly recommended that the patient be discharged to the care of two responsible adults, so that one adult can focus on the patient during transport. Alternatively, the patient should not be discharged until the patient has demonstrated the ability to remain awake for at least 20 minutes in a quiet environment.**

11. Written post-sedation instructions must be given and explained to both the patient and accompanying adult. The patient must be instructed to not drive a vehicle, operate hazardous machinery or make important decisions. In addition, the patient must be cautioned about consuming alcohol and other drugs with sedative properties for a minimum of 18 hours or longer if drowsiness or dizziness persists.

12. If a reversal agent is administered before discharge criteria have been met, the patient must be monitored beyond the expected duration of action of the reversal agent to guard against re-sedation, and a Tier Two Event must be reported to the RCDSO in writing.

13. The practitioner must not be alone while treating a sedated patient.

14. Any Tier One or Tier Two Event must be reported to the RCDSO in writing.

**3. Sedation Equipment**

Emergency equipment and drugs must be available at all times. Drugs must be current and stored in readily identifiable and organized fashion (i.e. labelled trays or bags). All automated monitors must receive regular service and maintenance by qualified personnel according to the manufacturer's specifications or annually, whichever is more frequent. **A written record of this annual maintenance/ servicing must be kept on file for review by the RCDSO as required.**

**Equipment that is used for continuous monitoring of sedated patients (including the immediate recovery phase) must have a Health Canada medical device license and be used in accordance with the manufacturer's 'intended use' (i.e. for continuous monitoring). All equipment must have audible alarms, appropriately set and NOT permanently silenced.**

It is the dentist's responsibility to ensure that the dental office in which oral moderate sedation is being performed is equipped with the following:

- portable apparatus for intermittent positive pressure resuscitation
- pulse oximeter with clearly audible, variable pitch tone
- stethoscope and sphygmomanometers of appropriate sizes
- full face masks of appropriate sizes and connectors
- portable auxiliary systems for light, suction and oxygen
- current drugs in appropriate amounts for management of emergencies, including:
  - oxygen (an E-size cylinder is required)
  - 1:1,000 epinephrine (at least 2 doses are required, ampules or auto-injectors)
  - nitroglycerin
  - parenteral diphenhydramine
  - salbutamol
  - flumazenil
  - acetylsalicylic acid (ASA, non-enteric coated)

## 2. PARENTERAL MODERATE SEDATION

Parenteral moderate sedation may be accomplished using any one of the following routes of administration: intravenous, intramuscular, subcutaneous, submucosal or intranasal. For the purposes of this document, these standards also apply when the rectal route of administration is utilized.

In addition to the General Standards, this section outlines standards specific to any sedation technique utilizing the parenteral administration of a sedative drug for moderate sedation.

## Additional Professional Responsibilities

1. All dentists administering parenteral moderate sedation must have authorization from the RCDSO to do so.

2. All facilities where parenteral moderate sedation is administered must have a permit from the RCDSO. Such permit will be granted subject to training and conformance with all aspects of the Standard and subject to satisfactory on-site inspections and evaluation by the RCDSO.

3. The following training is required:

- Dentists who qualify for the administration of deep sedation and general anesthesia, as outlined in Part II of this document.
- If not qualified for the administration of deep sedation or general anesthesia, then the following training is required:
- Successful completion of a course of instruction in parenteral moderate sedation that is held where adequate facilities are available for proper patient care, including drugs and equipment for the handling of emergencies, and meeting the didactic and clinical requirements outlined below. A certificate or other evidence of satisfactory completion of the course and a description of the program signed by the course director must be submitted to the RCDSO for consideration. Completion of such a course will be entered onto the dentist's record.

*Didactic requirement:* The training must include a minimum of 40 hours of lecture and seminar time presented by dental anesthesiologists, dentists/dental specialists formally trained at the post-graduate level in anesthesia and sedation as they apply to dentistry or physicians formally trained in anesthesia. Dentists in a hospital internship or general practice residency program, recognized by RCDSO, may be given credit for one-half of this didactic requirement, provided that documentation of formal training is obtained from the program director.

*Clinical Requirement:* The training must include supervised application of parenteral moderate sedation concurrent with dental treatment, performed on a minimum of 20 individually managed patients. Active participation in the above is required. Observation alone is not sufficient.

4. All dentists administering parenteral moderate sedation must maintain current ACLS certification.

5. Parenteral administration of a **single** sedative drug, specifically a benzodiazepine (e.g. midazolam or diazepam), is a prudent approach to moderate sedation. Accordingly, intravenous titration of a single **benzodiazepine** alone may be used by those with the training specified immediately above. No additional drugs with sedative properties (e.g. opioids, anti-histamines) are permitted to be administered by **any** route in the peri-operative period. Non-sedative agents may be administered as deemed appropriate.

**For the purposes of moderate sedation, the parenteral administration of two benzodiazepines (e.g. midazolam and diazepam) is NOT permitted. For the purposes of moderate sedation, the parenteral administration of an opioid is NOT permitted, except by those dentists described immediately below.**

Other than the single parenteral sedative, specifically a benzodiazepine, no additional sedative agents are permitted to be used by any route of administration unless the dentist:

- qualifies for the administration of deep sedation or general anesthesia, as outlined in Part II or this document; **OR**
- received approval from the RCDSO prior to December 31, 2004 **AND** meets the following additional professional responsibilities:
  - only 2 sedative drugs are permitted, specifically:
    - parenteral administration of a benzodiazepine with nitrous oxide and oxygen; **OR**
    - parenteral administration of a benzodiazepine and an opioid;
  - the sedation team must meet the same requirements as for an anesthetic team, including at least 2 individuals with current ACLS certification;
  - the sedation equipment and emergency drugs must meet the same requirements as for deep sedation or general anesthesia.

There are two rare situations in which the patient may need to take an oral sedative prior to arrival to the dental office. One indication is if the practitioner has determined that the patient requires an oral sedative to facilitate sleep the night prior to the dental procedure. The second indication is when the patient's anxiety is such that sedation is required to permit arrival to the dental office. Such situations, however, should be the exception and not common practice, and may be subject to scrutiny by the RCDSO. The following requirements apply in these two situations:

- Each patient must be screened by the dentist at a prior appointment, with an appropriate medical history, as described in the General Standards in this document.
- If a prescription sedative drug is required, only a benzodiazepine may be prescribed.
- The dose of the benzodiazepine must not exceed the maximum dose for minimal sedation (See TABLE 1).
- The patient must be instructed not to drive a vehicle and must be accompanied to and from the dental office.
- In each case, clear written instructions must be given to the patient or guardian explaining how to take the medication, the need for accompaniment and listing the expected effects from this sedative drug.

In order to assist with venipuncture, it is permissible to administer EITHER an oral sedative OR nitrous oxide and oxygen:

- For an oral sedative: ONLY a benzodiazepine, preferably triazolam, may be administered for this purpose. The dose of the benzodiazepine must not exceed the maximum dose for minimal sedation.
- For nitrous oxide and oxygen: Once the intravenous line is established and BEFORE the first administration of the parenteral sedative, the nitrous oxide and oxygen must be discontinued.

**Patients who are under 12 years of age are not acceptable for the administration of parenteral moderate sedation in out-of-hospital dental facilities, except by those practitioners who are qualified to administer deep sedation or general anesthesia.**

Table 3

**ADULT DOSE RANGES OF PARENTERAL SEDATIVES FOR MODERATE SEDATION**

**Midazolam**

**Appointment 1 hour or less:**

- midazolam 1 to 5 mg, administered in 1 to 2 mg increments with 2 to 3 minutes between doses and titrated for effect

**Appointment longer than 1 hour:**

- additional 1 to 5 mg per hour

OR

**Diazepam**

- diazepam 2 to 20 mg at one appointment, administered in increments with 2 to 3 minutes between doses and titrated for effect

These dose ranges are approximations only. Reduced doses should be considered for elderly and medically compromised patients.

In rare situations, the dentist may consider exceeding the dose of 5 mg midazolam during the first hour of an appointment for adults, described above, provided the dose does not exceed 10 mg. The dentist is expected to exercise reasonable professional judgment in determining when this is justified, and the rationale for doing so must be documented in the patient record. Such situations, however, should be the exception and not common practice, and may be subject to scrutiny by the RCDSO.

The following **maximum doses** of a parenteral sedative must NOT be exceeded, unless the dentist is authorized by the RCDSO to administer deep sedation or general anesthesia:

**Midazolam**:
- for an appointment 1 hour or less = 10 mg
- for an appointment longer than 1 hour = additional 5 mg per hour, up to a **cumulative maximum dose** of 20 mg for that appointment

**Diazepam:**
- **cumulative maximum dose** not to exceed 20 mg for 1 appointment

6. Pre-operative instructions must be given in writing to the patient or responsible adult. Patients should be given instructions regarding the minimum duration of fasting prior to appointments that is consistent with the following minimum requirements:
- 8 hours after a meal that includes meat, fried or fatty foods;
- 6 hours after a light meal (such as toast and a clear fluid), or after ingestion of infant formula or nonhuman milk;
- 4 hours after ingestion of breast milk; and
- 2 hours after clear fluids (such as water, fruit juices without pulp, carbonated beverages, clear tea, and black coffee, but NOT alcohol).

Possible exceptions to this are usual medications or pre-operative medications which may be taken as deemed necessary by the dentist.

**To avoid confusion, some dentists may wish to simplify their pre-operative instructions to patients regarding fasting requirements. For example, patients might be instructed not to have any solid food for a minimum of eight hours, and that they may ingest clear fluids up until two hours before the appointment. Such instructions would be consistent with the minimum fasting requirements.**

7. Written consent must be obtained prior to the administration of any parenteral sedative.

8. The patient must never be left unattended following administration of the sedative until fit for discharge.

9. Sedation and monitoring equipment must conform to current appropriate standards for functional safety.

10. A dentist qualified for this sedative technique and responsible for the patient must not leave the facility until that patient is fit for discharge.

## THE SEDATION TEAM

Parenteral moderate sedation for ambulatory dental patients must be administered through the combined efforts of the sedation team. This team is composed of a minimum of 3 individuals, who must be in the operatory at all times during the administration of parenteral moderate sedation. There are 2 common formats of this team, as follows:

In one format, the sedation team includes, as a minimum:

- a dentist, who is qualified and responsible for the sedation and dental procedures
- a sedation assistant
- an operative assistant

In the other format, the sedation team includes, as a minimum:

- a dentist, who is responsible for the dental procedures only
- another dentist or a physician, who is qualified and responsible for the sedation procedures only
- an operative assistant

In addition to the dentist or physician who is qualified and responsible for the sedation procedures, the sedation team must include at least 1 individual who has successfully completed a provider course in ACLS and maintains current BLS certification (CPR Level HCP), as a minimum.

### Sedation Team for Format 1:

The use of this sedation team allows a qualified dentist to provide sedation services simultaneously with dental procedures. The sedation team must consist of the following individuals:

The **dentist,** who is qualified and directly responsible for the sedation, the sedation team and the dental procedures.

The **sedation assistant**, who must be a nurse practitioner currently registered with the College of Nurses of Ontario, a registered nurse currently registered with the College of Nurses of Ontario, a respiratory therapist currently registered with the College of Respiratory Therapists of Ontario, or a dentist or physician currently registered in Ontario. In addition, the sedation assistant must provide evidence of successful completion of a provider course in ACLS and maintain current BLS certification (CPR Level HCP), as a minimum.

It is the responsibility of the dentist to ensure that the sedation assistant is adequately trained to perform their duties. The dentist must ensure that this assistant has or develops the skills necessary for their responsibilities, as described below. This assistant's primary function is to provide assistance, under the direction of the dentist, by:

- assessing and maintaining a patent airway
- monitoring vital signs
- keeping appropriate records
- venipuncture
- administering medications as directed
- assisting in emergency procedures

The **operative assistant**, whose primary function is to keep the operative field free of blood, mucous and debris.

The **recovery supervisor**, who under the dentist's supervision has the primary function of supervising and monitoring patients in the recovery area, as well as determining, under the direction and responsibility of the dentist, if the patient meets the criteria for discharge, as outlined below. This person must have the same qualifications as described for the sedation assistant. **The sedation assistant may act as recovery supervisor if not required concurrently for other duties. One cannot perform both duties simultaneously**.

In addition, an **office assistant** should be available to attend to office duties, so the sedation team is not disturbed.

### Sedation Team for Format 2:

The use of this sedation team requires a qualified dentist or physician to provide sedation services. The sedation team must consist of the following individuals:

- a **dentist**, who is responsible for the dental procedures only
- another **dentist or a physician**, who is qualified and responsible for the sedation procedures only
- an **operative assistant**, whose primary function is to keep the operative field free of blood, mucous and debris.

Where there is a separate dentist or physician solely providing the parenteral moderate sedation, then a sedation assistant or a recovery supervisor is not required, provided that this individual fulfills these duties. **This dentist or physician may act as a recovery supervisor if not required concurrently for other duties. One cannot perform both duties simultaneously**.

In addition, an **office assistant** should be available to attend to office duties, so the sedation team is not disturbed.

**Dentists, who use the services of another dentist or a physician who is qualified to administer parenteral moderate sedation, share the responsibility of complying with the Standard. However, the ultimate responsibility rests with the facility permit holder to ensure that:**

- **the dentist or physician administering parenteral moderate sedation is authorized by or has approval from the RCDSO to do so;**
- **this dentist or physician has no term, condition or limitation on his or her certificate of registration with his or her respective regulatory College, relevant to the administration of sedation or general anesthesia; and**
- **all required emergency and other equipment is available and emergency drugs are on-site and current.**

**With the exception of oxygen, EITHER the facility permit holder OR the dentist / physician administering parenteral moderate sedation MUST provide all required emergency equipment and drugs. The shared provision of emergency equipment and drugs is NOT allowed.**

## OFFICE PROTOCOL AND FACILITIES

The facility must permit adequate access for emergency stretchers and have auxiliary powered backup for suction, lighting and monitors for use in the event of a power or system failure.

### 1. Patient Selection

An adequate, clearly recorded current medical history, including present and past illnesses, hospital admissions, current medications and dose, allergies (in particular to drugs), and a functional inquiry or review of systems (ROS), along with an appropriate physical examination must be completed for each patient and must form a permanent part of each patient's record. For medically compromised patients, consultation with their physician may be indicated. This assessment should be consistent in content with Appendix I.

The patient's ASA Classification (see Appendix II) and risk assessment must then be determined. These findings will be used to determine the appropriate facility and technique used.

### 2. Sedation Protocol

1. The medical history must be reviewed for any changes at each sedation appointment. Such review must be documented in the sedation record for the appointment.

2. The patient must have complied with the minimum duration of fasting prior to appointments that is consistent with the following minimum requirements:

- 8 hours after a meal that includes meat, fried or fatty foods;
- 6 hours after a light meal (such as toast and a clear fluid), or after ingestion of infant formula or nonhuman milk;
- 4 hours after ingestion of breast milk; and
- 2 hours after clear fluids (such as water, fruit juices without pulp, carbonated beverages, clear tea, and black coffee, but NOT alcohol).

Possible exceptions to this are usual medications or pre-operative medications, which may be taken as deemed necessary by the dentist.

**To avoid confusion, some dentists may wish to simplify their pre-operative instructions to patients regarding fasting requirements. For example, patients might be instructed not to have any solid food for a minimum of eight hours, and that they may ingest clear fluids up until two hours before the appointment. Such instructions would be consistent with the minimum fasting requirements.**

3. Laboratory investigations may be used at the discretion of the dentist or physician responsible for the sedation procedures.

4. Clinical observation must be supplemented by the following means of monitoring throughout the sedation administration:

- continuous pulse oximeter monitoring of oxyhemoglobin saturation, recorded at a minimum of 5 minute intervals;
- blood pressure and pulse must be taken and recorded pre-operatively and throughout the sedation period at appropriate intervals, not greater than every 5 minutes;

- continuous observation of respiration, with rate recorded at a minimum of 15 minute intervals.

5. A sedation record must be kept consistent with Appendix IV.

6. When intravenous sedation is used, an intravenous needle or indwelling catheter must be *in situ* and patent at all times during the procedure. An intermittent or continuous fluid administration must be used to ensure patency.

7. Alarm settings and their audio component on monitoring equipment must be used at all times.

## 3. Recovery Protocol

1. As described below, recovery accommodation and supervision is **mandatory** when parenteral sedation is administered.

2. The recovery area or room must be used to accommodate the post-sedation patient from the completion of the procedure until the patient meets the criteria for discharge. Oxygen and appropriate suction and lighting must be readily available. The operatory can act as a recovery room.

3. A sufficient number of such recovery areas must be available to provide adequate recovery time for each case. Caseload must be governed accordingly.

4. Continuous supervision and appropriately recorded monitoring by the recovery supervisor must occur throughout the recovery period, until the patient meets the criteria for discharge. **The minimum ratio of recovery supervisors to patients is one to two**. Pulse oximeter monitoring of oxyhemoglobin saturation, blood pressure and heart rate must be recorded at a minimum of 15 minute intervals.

5. The patient may be discharged once he/she shows signs of progressively increasing alertness and has met the following criteria:

- conscious and oriented
- vital signs are stable
- ambulatory

6. The patient must be discharged to the care of a responsible adult.

7. Written post-sedation instructions must be given and explained to both the patient and accompanying adult. The patient must be instructed to not drive a vehicle, operate hazardous machinery or make important decisions. In addition, the patient must be cautioned about consuming alcohol and other drugs with sedative properties for a minimum of 18 hours, or longer if drowsiness or dizziness persists.

8. If a reversal agent is administered before discharge criteria have been met, the patient must be monitored beyond the expected duration of action of the reversal agent to guard against re-sedation, and a Tier Two Event must be reported to the RCDSO in writing.

9. Any Tier One or Tier Two Event must be reported to the RCDSO in writing.

## 4. Sedation Equipment

Emergency equipment and drugs must be available at all times. Drugs must be current and stored in readily identifiable and organized fashion (i.e. labelled trays or bags). All automated monitors must receive regular service and maintenance by qualified personnel according to the manufacturer's specifications or annually, whichever is more frequent. **A written record of this annual maintenance/ servicing must be kept on file for review by the RCDSO as required**.

**Equipment that is used for continuous monitoring of sedated patients (including the immediate recovery phase) must have a Health Canada medical device license and be used in accordance with the manufacturer's 'intended use' (i.e. for continuous monitoring). All equipment must have audible alarms, appropriately set and NOT permanently silenced.**

It is the dentist's responsibility to ensure that the dental office in which parenteral moderate sedation is being performed is equipped with the following:

- portable apparatus for intermittent positive pressure resuscitation
- pulse oximeter with clearly audible variable pitch tone
- stethoscope and sphygmomanometers of appropriate sizes
- automated blood pressure monitor with programmable alarm settings and audio component
- tonsil suction (Yankauer) adaptable to the suction outlet
- full face masks of appropriate sizes and connectors
- adequate selection of endotracheal tubes or laryngeal mask airways and appropriate connectors
- laryngoscope with an adequate selection of blades, spare batteries and bulbs
- Magill forceps
- adequate selection of oral airways
- portable auxiliary systems for light, suction and oxygen
- apparatus for emergency tracheotomy or cricothyroid membrane puncture
- defibrillator (either an automated external defibrillator [AED] or one with synchronous cardioversion capabilities)
- intravenous indwelling catheters and needles
- current drugs in appropriate amounts for management of emergencies, including:
  - oxygen (an E-size cylinder is required)
  - epinephrine (at least 4 sources are required, such as 4 ampules 1:1000 epinephrine, 4 syringes 1:10,000 epinephrine or a combination of ampules and syringes)
  - nitroglycerin
  - parenteral diphenhydramine
  - salbutamol
  - parenteral vasopressor (e.g. ephedrine)
  - parenteral atropine
  - parenteral corticosteroid
  - flumazenil
  - appropriate intravenous fluids
  - acetylsalicylic acid (ASA, non-enteric coated)

# Part II – Deep Sedation and General Anesthesia

## DEFINITION

In addition to the General Standards, this section outlines standards specific to any technique that has depressed the patient beyond moderate sedation, as defined in Part I.

## ADDITIONAL PROFESSIONAL RESPONSIBILITIES

In addition to the General Standards listed in Part I, the following responsibilities apply:

1. All dentists administering deep sedation or general anesthesia must have authorization from the RCDSO to do so. All physicians administering deep sedation or general anesthesia must have approval from the RCDSO to do so.

2. All facilities where deep sedation or general anesthesia is administered must have a permit from the RCDSO. Such permit will be granted subject to training and conformance with all aspects of the Standard and subject to satisfactory onsite inspections and evaluation by the RCDSO.

3. Deep sedation or general anesthesia must only be performed in the dental office by a professional qualified according to the following standards.

- Dentists who hold a specialty certificate in Dental Anesthesiology in Ontario.
- Dentists who have successfully completed a post-graduate anesthesia program in a university and/or teaching hospital over a minimum of 24 consecutive months. The program must have specifically evaluated and attested to the competency of the individual.
- Dentists who had successfully completed a post-graduate anesthesia program in a university and/or teaching hospital over a minimum of 12 consecutive months prior to 1993 and have continued to practice these modalities since that time. The program must have specifically evaluated and attested to the competency of the individual.
- Dentists who have successfully completed a formal post-graduate program in oral and maxillofacial surgery suitable for certification in the Province of Ontario.
- Physicians currently registered with the College of Physicians and Surgeons of Ontario (CPSO) who can provide evidence satisfactory to the RCDSO that they hold a designation as a specialist in anesthesia with the Royal College of Physicians and Surgeons of Canada (RCPSC) **OR** one of the following:
  - Completion of a 12-month rotation in a program accredited by the College of Family Physicians of Canada (CFPC) under the category of "Family Medicine Anesthesia".
  - Recognition by the CPSO as a specialist in anesthesia.
  - Satisfactory completion of all CPSO requirements for a physician requesting a change in their scope of practice **AND** active privileges to support similar procedures at a hospital.

4. All dentists and physicians administering deep sedation or general anesthesia must maintain current ACLS certification.

5. All dentists and physicians administering deep sedation or general anesthesia for patients under 12 years of age must be able to satisfy the RCDSO that they have appropriate training and experience to possess the knowledge, skills and judgment necessary for the care of such patients. In addition, current PALS certification is required.

6. When the operating dentist is not administering the anesthetic, they share the responsibility to ensure that these standards are followed.

7. All facilities where deep sedation or general anesthesia is administered must have written policies and procedures, including checklists for the management of emergencies. The facility's written policies and procedures must be reviewed with staff regularly, which must be documented.

8. Pre-operative instructions must be given in writing to the patient or responsible adult. Patients should be given instructions regarding the minimum duration of fasting prior to appointments that is consistent with the following minimum requirements:

- 8 hours after a meal that includes meat, fried or fatty foods;
- 6 hours after a light meal (such as toast and a clear fluid), or after ingestion of infant formula or nonhuman milk;
- 4 hours after ingestion of breast milk; and
- 2 hours after clear fluids (such as water, fruit juices without pulp, carbonated beverages, clear tea, and black coffee, but NOT alcohol).

Possible exceptions to this are usual medications or pre-operative medications, which may be taken as deemed necessary by the dentist.

**To avoid confusion, some dentists may wish to simplify their pre-operative instructions to patients regarding fasting requirements. For example, patients might be instructed not to have any solid food for a minimum of eight hours, and that they may ingest clear fluids up until two hours before the appointment. Such instructions would be consistent with the minimum fasting requirements.**

9. Written consent must be obtained prior to the administration of any parenteral sedative or general anesthetic.

10. Anesthetic and monitoring equipment must conform to current appropriate standards for functional safety.

11. The patient must never be left unattended by a dentist or physician qualified for this sedative/anesthetic technique during the administration of the sedative or general anesthetic.

12. A dentist or physician qualified for this sedative/anesthetic technique and responsible for the patient must not leave the facility until that patient is fit for discharge.

## THE ANESTHETIC TEAM

General anesthesia or deep sedation for ambulatory dental patients must be administered through the combined efforts of the anesthetic team. This team is composed of a minimum of 3 individuals, who must be in the operatory at all times during the administration of general anesthesia or deep sedation. There are 2 common formats of this team, as follows:

In one format, the anesthetic team includes, as a minimum:

- a dentist, who is qualified and responsible for the anesthesia and dental procedures
- an anesthetic assistant
- an operative assistant

In the other format, the anesthetic team includes, as a minimum:

- a dentist, who is responsible for the dental procedures only
- another dentist or a physician, who is qualified and responsible for the anesthesia procedures only
- an operative assistant

In addition, the anesthetic team must include at least 2 individuals with current ACLS certification and, if providing care for patients under 12 years of age, current PALS certification.

### Anesthetic Team for Format 1:

The use of this anesthetic team allows a qualified dentist to provide anesthesia services simultaneously with dental procedures. The anesthetic team must consist of the following individuals:

The **dentist**, who is qualified and directly responsible for the anesthesia, the anesthetic team and the dental procedures.

The **anesthetic assistant**, who must be a nurse practitioner currently registered with the College of Nurses of Ontario, a registered nurse currently registered with the College of Nurses of Ontario, a respiratory therapist currently registered with the College of Respiratory Therapists of Ontario, or a dentist or physician currently registered in Ontario. In addition, the anesthetic assistant must maintain current ACLS certification and, if providing care for patients under 12 years of age, current PALS certification.

It is the responsibility of the dentist to ensure that the anesthetic assistant is adequately trained in peri-operative care (e.g. documented work experience in emergency care, ICU, PACU and/or the operating room environment or training to a similar level) and able to perform their duties. The dentist must ensure that this assistant has and further develops the skills necessary for their responsibilities, as described below. This assistant's primary function is to provide assistance, under the direction of the dentist, by:

- assessing and maintaining a patent airway
- monitoring vital signs
- keeping appropriate records
- venipuncture
- administering medications as directed
- assisting in emergency procedures

The **operative assistant**, whose primary function is to keep the operative field free of blood, mucous and debris.

The **recovery supervisor**, who under the dentist's supervision has the primary function of supervising and monitoring patients in the recovery area, as well as determining, under the direction and responsibility of the dentist, if the patient meets the criteria for discharge, as outlined below. This person must have the same qualifications as described for the anesthetic assistant. T**he anesthetic assistant may act as recovery supervisor if not required concurrently for other duties. One cannot perform both duties simultaneously**.

In addition, an **office assistant** should be available to attend to office duties, so the anesthetic team is not disturbed.

**IMPORTANT: Patients under 12 years of age have reduced physical reserves and impairment may occur rapidly. In particular, it can be difficult to diagnose hypoventilation and airway obstruction in a timely manner. The supervision of such a patient must be vigilant throughout the recovery period and utilize appropriate monitoring, including capnography. The recovery supervisor for such a patient must be adequately trained in peri-operative care, have both current ACLS certification and current PALS certification, and possess the knowledge, skills and judgment to recognize and respond to an emergency. Continuous supervision and appropriately recorded monitoring by the recovery supervisor must occur throughout the recovery period, until the patient meets the criteria for discharge.**

## Anesthetic Team for Format 2:

The use of this anesthetic team requires a qualified dentist or physician to provide anesthesia services. The anesthetic team must consist of the following individuals:

- a **dentist**, who is responsible for the dental procedures only
- another **dentist or a physician**, who is qualified and responsible for the anesthesia procedures only
- an **operative assistant**, whose primary function is to keep the operative field free of blood, mucous and debris.

Where there is a separate dentist or physician solely providing the deep sedation or general anesthetic, then an anesthetic assistant or a recovery supervisor is not required, provided that this individual fulfills these duties. **This dentist or physician may act as a recovery supervisor if not required concurrently for other duties. One cannot perform both duties simultaneously**.

In addition, an **office assistant** should be available to attend to office duties, so the anesthetic team is not disturbed.

**Dentists, who use the services of another dentist or a physician who is qualified to administer deep sedation or general anesthesia, share the responsibility of complying with the Standard. However, the ultimate responsibility rests with the facility permit holder to ensure that:**

- **the dentist or physician administering deep sedation or general anesthesia is authorized by or has approval from the RCDSO to do so;**
- **this dentist or physician has no term, condition or limitation on their certificate of registration with their respective regulatory College, relevant to the administration of sedation or general anesthesia; and**
- **all required emergency and other equipment is available and emergency drugs are on-site and current.**

**With the exception of oxygen, EITHER the facility permit holder OR the dentist / physician administering deep sedation or general anesthesia MUST provide all required emergency equipment and drugs. The shared provision of emergency equipment and drugs is NOT allowed.**

## OFFICE PROTOCOL AND FACILITIES

The facility must permit adequate access for emergency stretchers and have auxiliary powered backup for suction, lighting and monitors for use in the event of a power or system failure.

### 1. Patient Selection

An adequate, clearly recorded current medical history, including present and past illnesses, hospital admissions, current medications and dose, allergies (in particular to drugs), and a functional inquiry or review of systems (ROS), along with an appropriate physical examination must be completed for each patient and must form a permanent part of each patient's record, prior to the administration of deep sedation or general anesthesia. For medically compromised patients, consultation with their physician may be indicated. This assessment should be consistent in content with Appendix I.

The patient's ASA Classification (see Appendix II) and risk assessment must be determined. These findings will be used to determine the appropriate facility and technique to be used.

### 2. Anesthesia Protocol

1. The medical history must be reviewed for any changes at each deep sedation or general anesthetic appointment. Such review must be documented in the anesthetic record for the appointment.

2. The patient must have complied with the minimum duration of fasting prior to appointments that is consistent with the following minimum requirements:

- 8 hours after a meal that includes meat, fried or fatty foods;
- 6 hours after a light meal (such as toast and a clear fluid), or after ingestion of infant formula or nonhuman milk;
- 4 hours after ingestion of breast milk; and
- 2 hours after clear fluids (such as water, fruit juices without pulp, carbonated beverages, clear tea, and black coffee, but NOT alcohol).

Possible exceptions to this are usual medications or pre-operative medications, which may be taken as deemed necessary by the professional responsible for the administration of the sedation or general anesthetic.

**To avoid confusion, some dentists may wish to simplify their pre-operative instructions to patients regarding fasting requirements. For example, patients might be instructed not to have any solid food for a minimum of eight hours, and that they may ingest clear fluids up until two hours before the appointment. Such instructions would be consistent with the minimum fasting requirements.**

3. Laboratory investigations may be used at the discretion of the dentist or physician responsible for the anesthesia procedures.

4. Clinical observation must be supplemented by the following means of monitoring performed at a minimum of 5 minute intervals throughout the deep sedation or general anesthetic administration and until the patient is no longer deeply sedated, including into recovery, if necessary:

- continuous pulse oximeter monitoring of oxyhemoglobin saturation
- blood pressure and pulse

- continuous observation of respiration
- continuous electrocardiogram monitoring
- continuous capnography monitoring
- if non-intubated, a pre-tracheal/pre-cordial stethoscope is also recommended
- if intubated or a laryngeal mask airway is used, monitoring by oxygen analyzer is required
- if a volatile inhalational anesthetic agent is used to maintain anesthesia (e.g. isoflurane, sevoflurane, desflurane), an anesthetic agent analyzer is required

5. If triggering agents for malignant hyperthermia are being used (volatile inhalational general anesthetics or succinylcholine), measurement of temperature and appropriate emergency drugs, as outlined below, must be readily available.

6. An anesthetic record must be kept consistent with Appendix IV.

7. An intravenous needle or indwelling catheter must be *in situ* and patent at all time during the procedure. An intermittent or continuous fluid administration must be used to ensure patency.

8. Alarm settings and their audio component on monitoring equipment must be used at all times.

## 3. Recovery Protocol

1. As described below, recovery accommodation and supervision is mandatory where deep sedation or general anesthesia is administered.

2. The recovery area or room must be used to accommodate the patient from the completion of the procedure until the patient meets the criteria for discharge. Oxygen and appropriate suction and lighting must be readily available. The operatory can act as a recovery room.

3. A sufficient number of such recovery areas must be available to provide adequate recovery time for each case. Caseload must be governed accordingly.

4. Continuous supervision and appropriately recorded monitoring by the recovery supervisor must occur throughout the recovery period, until the patient meets the criteria for discharge. In addition to continuous pulse oximetry, monitors must be immediately available for recovery use, including sphygmomanometer, electrocardiogram and capnograph. Requirements for monitoring during recovery are as follows:

### RECOVERY PERIOD MONITORING

| | |
|---|---|
| **Patient meets criteria for deep sedation/general anesthesia** | **The minimum ratio of recovery supervisors to patients is one to one.** Continuous pulse oximetry and capnography is required and must be recorded at a minimum of 5 minute intervals. In addition, blood pressure and heart rate must be recorded at a minimum of 5 minute intervals. |
| **Patient meets criteria for moderate or minimal sedation** | **The minimum ratio of recovery supervisors to patients is one to two, provided both patients meet the criteria for moderate sedation or lighter.** Pulse oximetry, blood pressure and heart rate must be recorded at a minimum of 15 minute intervals. Consideration should be given to continuous capnography for patients who are under 12 years of age, as well as patients who are obese or have a history of sleep apnea. |

**IMPORTANT: Patients under 12 years of age have reduced physical reserves and impairment may occur rapidly. In particular, it can be difficult to diagnose hypoventilation and airway obstruction in a timely manner. The supervision of such a patient must be vigilant throughout the recovery period and utilize appropriate monitoring, including capnography. The recovery supervisor for such a patient must be adequately trained in peri-operative care, have both current ACLS certification and current PALS certification, and possess the knowledge, skills and judgment to recognize and respond to an emergency. Continuous supervision and appropriately recorded monitoring by the recovery supervisor must occur throughout the recovery period, until the patient meets the criteria for discharge.**

5. The patient may be discharged once he/she shows signs of progressively increasing alertness and has met the following criteria:

- conscious and oriented
- vital signs are stable
- ambulatory

6. The patient must be discharged to the care of a responsible adult.

**For patients under 12 years of age, it is strongly recommended that the patient be discharged to the care of two responsible adults, so that one adult can focus on the patient during transport. Alternatively, the patient should not be discharged until the patient has demonstrated the ability to remain awake for at least 20 minutes in a quiet environment.**

7. Written post-sedation/anesthetic instructions must be given and explained to both the patient and accompanying adult. The patient must be instructed to not drive a vehicle, operate hazardous machinery or make important decisions. In addition, the patient must be cautioned about consuming alcohol and other drugs with sedative properties for a minimum of 18 hours or longer if drowsiness or dizziness persists.

8. If a reversal agent is administered before discharge criteria have been met, the patient must be monitored beyond the expected duration of action of the reversal agent to guard against re-sedation, and a Tier Two Event must be reported to the RCDSO in writing.

9. Any Tier One or Tier Two Event must be reported to the RCDSO in writing.

## 4. Deep Sedation/General Anesthetic Equipment

Emergency equipment and drugs must be available at all times. Drugs must be current, in sufficient supply for caseload and stored in readily identifiable and organized fashion (i.e. labelled trays or bags). All anesthetic and monitoring equipment must receive regular service and maintenance by qualified personnel according to the manufacturer's specifications, or annually, whichever is more frequent. **A written record of this annual maintenance/ servicing must be kept on file for review by the RCDSO as required.**

**Equipment that is used for continuous monitoring of sedated or anesthetized patients (including the immediate recovery phase) must have a Health Canada medical device license and be used in accordance with the manufacturer's 'intended use' (i.e. for continuous monitoring). All equipment must have audible alarms, appropriately set and NOT permanently silenced.**

1. Gas delivery systems used for the administration of nitrous oxide and oxygen must meet the following requirements:

- a nitrous oxide and oxygen gas delivery system that meets the requirements for such equipment as described in the previous section of this document under Minimal Sedation; **OR**
- a general anesthesia gas delivery system that has been approved by Health Canada and:
  - must be equipped with connectors and tubing which allow use of a full face mask for resuscitative ventilation with 100% oxygen;
  - must have readily available a reserve supply of oxygen ready for immediate use. This should be portable, an "E" size cylinder as a minimum and attached with appropriate regulator, flowmeter and connectors as described previously;
  - must be equipped with a scavenging system installed per manufacturer's specifications.

2. If a vaporizer is fitted to the gas delivery system, then:

- It must have an agent-specific, keyed filling device.
- The connection of the inlet and outlet ports of the vaporizer to the gas machine must be such that an inadvertent incorrect attachment cannot be made.
- All vaporizer control knobs must open counterclockwise and be marked to indicate vapour concentration in volume percent. It must mark and lock the control in the "off" position.

- The vaporizer must be connected to the scavenging system. Where multiple vaporizers are used, an Interlock System must be installed.

3. If the patient is intubated or a laryngeal mask airway is used, an oxygen analyzer is required.

4. If a volatile inhalational anesthetic agent is used to maintain anesthesia (e.g. isoflurane, sevoflurane, desflurane), an anesthetic agent analyzer is required.

5. It is the dentist's responsibility to ensure that the dental office in which deep sedation or general anesthesia is being performed is equipped with the following:

- portable apparatus for intermittent positive pressure resuscitation
- pulse oximeter with clearly audible variable pitch tone
- stethoscope and sphygmomanometers of appropriate sizes
- automated blood pressure monitor with programmable alarm settings and audio component
- tonsil suction (Yankauer) adaptable to the suction outlet
- full face masks of appropriate sizes and connectors
- adequate selection of laryngeal mask airways and appropriate connectors
- adequate selection of endotracheal tubes and appropriate connectors
- laryngoscope with an adequate selection of blades, spare batteries and bulbs
- Magill forceps
- adequate selection of oral airways
- portable auxiliary systems for light, suction, and oxygen
- apparatus for emergency tracheotomy or cricothyroid membrane puncture
- electrocardiogram monitor with programmable alarm settings and audio component
- defibrillator (either an automated external defibrillator [AED] or one with synchronous cardioversion capabilities)
- capnometer/capnograph with programmable alarm settings and audio component
- intravenous indwelling catheters and needles
- current drugs in appropriate amounts for management of emergencies, including:
  - oxygen (an E-size cylinder is required)
  - epinephrine (at least 4 sources are required, such as 4 ampules 1:1000 epinephrine, 4 syringes 1:10,000 epinephrine or a combination of ampules and syringes)
  - nitroglycerin
  - parenteral diphenhydramine
  - salbutamol
  - parenteral vasopressor (e.g. ephedrine)
  - parenteral atropine
  - parenteral corticosteroid
  - flumazenil
  - naloxone
  - appropriate intravenous fluids
  - parenteral muscle relaxant to support the management of laryngospasm
  - succinylcholine, if inhalation induction is used
  - parenteral amiodarone
  - parenteral beta-blocker
  - parenteral morphine or fentanyl
  - dantrolene, if triggering agents for malignant hyperthermia are being used (consistent with MHAUS guidelines)
  - insulin and D50W
  - acetylsalicylic acid (ASA, non-enteric coated)

## APPENDIX I

### Medical History and Patient Evaluation

An adequate, current, clearly recorded and signed medical history must be made for each patient. The history is part of the patient's permanent record. It forms a database upon which appropriate sedation or anesthetic modality is determined. The medical history must be kept current. This information may be organized in any format that each dentist prefers provided that the scope of the content contains the **minimum information described in this section**.

### Vital Statistics

This includes the patient's full name, date of birth, weight in kilograms and the name of the person to be notified in the event of an emergency. In case of a minor or a mentally disadvantaged patient, the name of the parent or guardian must be recorded.

### Core Medical History

The core medical history must fulfill the following two basic requirements:

- It must elicit the core medical information to enable the dentist to assign the correct ASA Classification (see Appendix II) in order to assess risk factors in relation to sedation or anesthetic choices.
- It must provide written evidence of a logical process of patient evaluation.

This core information should be a system-based review of the patient's past and current health status. It can be developed from the RCDSO's sample medical history questionnaire, supplemented with questions relevant to the use of sedation or general anesthesia (e.g. family history of adverse anesthetic outcomes, alcohol and other substance use, screening for sleep apnea).

### Core Physical Examination

A current, basic physical examination, suitable for determining information that may be significant to sedation and anesthesia and appropriate to the modality being used, must be carried out for each patient. At a minimum, all modalities of sedation or general anesthesia require the evaluation and recording of significant positive findings related to:

- general appearance, noting obvious abnormalities;
- an appropriate airway assessment;
- the taking and recording of vital signs, i.e. heart rate and blood pressure.

**This can be carried out by most general practitioners and specialists.**

If a more in-depth physical examination is required involving:

- auscultation (cardiac or pulmonary)
- examination of other physiologic systems, or,
- other assessments

This examination **must be performed** by a physician or by a dentist who has received formal training in a post-graduate anesthesiology program or an oral and maxillofacial surgery program.

The core physical examination may include an order for and assessment of laboratory data if indicated.

## APPENDIX II

### American Society of Anesthesiology Physical Status Classification System

**ASA I:** A normal healthy patient

**ASA II:** A patient with mild systemic disease

**ASA III:** A patient with severe systemic disease that limits activity but is not incapacitating

**ASA IV**: A patient with incapacitating systemic disease that is a constant threat to life

**ASA V:** A moribund patient not expected to survive 24 hours with or without operation

**ASA VI:** A declared brain-dead patient whose organs are being removed for donor purposes

**ASA E:** Emergency operation of any variety; E precedes the number, indicating the patient's physical status

## APPENDIX III

### Characteristics of the Levels of Sedation and General Anesthesia

| | MINIMAL SEDATION | MODERATE SEDATION | DEEP SEDATION | GENERAL ANESTHESIA |
|---|---|---|---|---|
| **CONSCIOUSNESS** | maintained | maintained | obtunded | unconscious |
| **RESPONSIVENESS** | to **either** verbal command **or** tactile stimulation | may require either one of or BOTH verbal command and tactile stimulation | response to repeated or painful stimuli | unarousable, even to pain |
| **AIRWAY** | maintained | no intervention required | intervention may be required | intervention usually required |
| **PROTECTIVE REFLEXES** | intact | intact | partial loss | assume absent |
| **SPONTANEOUS VENTILATION** | unaffected | adequate | may be inadequate | frequently inadequate |
| **CARDIOVASCULAR FUNCTION** | unaffected | usually maintained | usually maintained | may be impaired |
| **REQUIRED MONITORING** | basic | increased | advanced | advanced |

## APPENDIX IV

### Sedation Record for Oral Moderate Sedation

A sedation record must contain the following information:

- patient's name, date of birth, weight in kilograms
- date of procedure
- review of medical history, including allergies and medications
- verification of NPO status
- verification of accompaniment for discharge
- pre-operative blood pressure, heart rate, oxygen saturation, respiration rate
- ASA status
- names of all drugs administered
- doses of all drugs administered
- time of administration of all drugs
- names and doses of all local anesthetics administered
- record of systolic and diastolic blood pressure, heart rate, oxygen saturation and respiration rate at a minimum of 15 minute intervals. If the monitors used provide an automated printout, this printout may be attached in lieu of handwritten recording of these signs
- record of level of sedation (LOS) at a minimum of 15 minute intervals
- time of the start and completion of the dental procedure
- recovery period must be clearly documented
- discharge criteria met: oriented, ambulatory, vital signs stable (record of blood pressure, heart rate, oxygen saturation)
- time that discharge criteria are met
- name and designation of the professional responsible for the case
- a notation of any Tier One of Tier Two Event

## APPENDIX V

### Sedation Record for Parenteral Moderate Sedation

An anesthetic/sedation record must contain the following information:

- patient's name, date of birth, weight in kilograms
- date of procedure
- review of medical history, including allergies and medications
- verification of NPO status
- verification of accompaniment for discharge
- pre-operative blood pressure, heart rate, oxygen saturation, respiration rate
- ASA status
- names of all drugs administered
- doses of all drugs administered
- time of administration of all drugs
- names and doses of all local anesthetics administered
- if used: intravenous type, location of venipuncture, type and volume of fluids administered
- list of monitors used
- record of systolic and diastolic blood pressure, heart rate and oxygen saturation at a minimum of 5 minute intervals. If the monitors used provide an automated printout, this printout may be attached in lieu of handwritten recording of these signs
- record of respiration rate at 15 minute intervals
- record of level of sedation (LOS) at a minimum of 5 minute intervals
- time of the start and completion of the administration of the sedation
- time of the start and completion of the dental procedure
- recovery period must be clearly documented
- discharge criteria met: oriented, ambulatory, vital signs stable (record of blood pressure, heart rate, oxygen saturation)
- time that discharge criteria are met
- names and designations of all members of the sedation team
- a notation of any Tier One or Tier Two Event

## APPENDIX VI

### Anesthetic Record for Deep Sedation or General Anesthesia

An anesthetic record must contain the following information:

- patient's name, date of birth, weight in kilograms
- date of procedure
- review of medical history, including allergies and medications
- verification of NPO status
- verification of accompaniment for discharge
- pre-operative blood pressure, heart rate, oxygen saturation, respiration rate
- ASA status
- names of all drugs administered
- doses of all drugs administered
- time of administration of all drugs
- names and doses of all local anesthetics administered
- if used: intravenous type, location of venipuncture, type and volume of fluids administered
- list of monitors used
- record of systolic and diastolic blood pressure, heart rate, oxygen saturation and end-tidal carbon dioxide levels (ETCO2) at a minimum of 5 minute intervals. If the monitors used provide an automated printout, this printout may be attached in lieu of handwritten recording of these signs
- record of respiration rate at 15 minute intervals
- confirmation of continuous electrocardiogram monitoring
- if triggering agents for malignant hyperthermia are being used (volatile inhalational general anesthetics or succinylcholine), record of temperature at a minimum of 15 minute intervals
- time of the start and completion of the administration of the deep sedation/general anesthetic
- time of the start and completion of the dental procedure
- recovery period must be clearly documented
- discharge criteria met: oriented, ambulatory, vital signs stable (record of blood pressure, heart rate, oxygen saturation)
- time that discharge criteria are met
- names and designations of all members of the anesthetic team
- a notation of any Tier One or Tier Two Event

## APPENDIX VII

### Safe Handling of Injectable Drugs

The transmission of blood-borne viruses and other microbial pathogens to patients may occur due to unsafe and improper handling of injectables (e.g. local anesthetics, drugs and solutions for sedation).

The following practices should be adhered to when preparing and administering injectable drugs.

**Aseptic Technique**

- Perform hand hygiene prior to accessing supplies, handling vials and IV solutions, and preparing or administering drugs.
- Prepare drugs and supplies in a clean area on a clean surface.
- Use aseptic technique in all aspects of parenteral drug administration, drug vial use and injections. Limit access to select trained individuals, if possible.
- Never administer a drug from the same syringe to more than one patient, even if the needle is changed between patients.
- Never store needles and syringes unwrapped, as sterility cannot be assured.
- If an administration set is prepared ahead of time, all drugs should be drawn up as close to use as possible to prevent contamination. Once set up, an administration set should be covered.
- Do not use intravenous solution bags as a common source of supply for multiple patients.

**Single Dose Vials**

Single dose vials, intended for single patient use, typically lack preservatives. The use of these vials for multiple patients carries substantial risk for bacterial contamination and infection.

- Do not reuse single dose vials.
- Always use a sterile syringe and needle/cannula when entering a vial. Never enter a vial with a syringe or needle/cannula that has been used on a patient.
- Never combine or pool the leftover contents of single dose vials.

**Multi-dose Vials**

Any error in following protocols for the correct use of multi-dose vials can result in the transmission of both bacterial and blood-borne viral pathogens. Transmission of HBV, HCV and HIV has been associated with the use of multi-dose vials.

The use of multi-dose vials for injectable drugs increases the risk of transmission of blood-borne pathogens and bacterial contamination of the vial **and should be avoided**. Patient safety should be prioritized over cost when choosing between multi-dose and single dose vials.

If multi-dose vials are used, the following practices must be followed each time the multi-dose vial is used:

- NEVER re-enter a vial with a used needle OR used syringe.
- Once medication is drawn up, the needle should be IMMEDIATELY withdrawn from the vial. A needle should NEVER be left in a vial to be attached to a new syringe.
- Use a multi-dose vial for a single patient whenever possible and mark the vial with the patient's name.
- Mark the multi-dose vial with the date it was first used and ensure that it is discarded at the appropriate time.
- Adhere to aseptic technique when accessing multi-dose vials. Multi-dose vials should be accessed on a surface that is clean and where no dirty, used or potentially contaminated equipment is placed or stored. Scrub the access diaphragm of vials using friction and 70% alcohol. Allow to dry before inserting a new needle and new syringe into the vial.
- Discard the multi-dose vial immediately if sterility is questioned or compromised or if the vial is not marked with the patient's name and original entry date.
- Review the product leaflet for recommended duration of use after entry of the multi-dose vial. Discard opened multi-dose vials according to the manufacturer's instructions or within 28 days, whichever is shorter.

**The use of multi-dose vials increases the risk of transmission of blood-borne pathogens and bacterial contamination. Single dose vials are ALWAYS preferred.**

## APPENDIX VIII

### Sample Pre- / Post-Operative Instructions for Oral Minimal Sedation

**Pre-Operative Instructions:**

1. You will not be able to drive home. You must be accompanied by a responsible adult, and may travel by private vehicle or taxi.

2. Do not eat or drink for 2 hours prior to your appointment.

3. Take all regular medications at their usual time with sips of water, unless you have been instructed otherwise by your dentist or physician.

4. Wear loose comfortable clothing. Do not wear nail polish.

5. Report any health changes prior to your appointment.

**Post-Operative Instructions**

1. After your appointment, you must not operate a motor vehicle or hazardous machinery for at least 18 hours. You may be drowsy for the remainder of the day and should not consume alcohol and other drugs with sedative properties or make important decisions.

2. Depending on your dental treatment, you may need to modify your diet. This will be reviewed with you prior to leaving the office.

3. If you have any concerns following the appointment, contact the office for advice.

## APPENDIX IX

### Sample Pre- / Post-Operative Instructions for Oral Moderate Sedation, Parenteral Moderate Sedation, Deep Sedation and General Anesthesia

**Pre-Operative Instructions:**

1. You will not be able to drive home. You must be accompanied by a responsible adult, and may travel by private vehicle or taxi.

2. Do not eat for 8 hours prior to your appointment. Clear fluids may be taken up to 2 hours before the appointment. This includes water, clear juice and black coffee or tea (no dairy). For afternoon appointments, a light meal may be consumed 6 hours prior to the appointment.

3. Take all regular medications at their usual time with sips of water, unless you have been instructed otherwise by your dentist or physician.

4. Wear loose comfortable clothing. Do not wear nail polish.

5. Report any health changes prior to your appointment.

**Post-Operative Instructions**

1. After your appointment, you must not operate a motor vehicle or hazardous machinery for at least 18 hours. You may be drowsy for the remainder of the day and should not consume alcohol and other drugs with sedative properties or make important decisions.

2. Depending on your dental treatment, you may need to modify your diet. This will be reviewed with you prior to leaving the office.

3. If you have any concerns following the appointment, contact the office for advice.

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CADA
CANADIAN ACADEMY
OF DENTAL ANAESTHESIA

# APPENDIX 12:

## American Dental Association:
## Requirements for Recognition of Dental Specialties and National Certifying Boards for Dental Specialists

**APPENDIX 11**

ADA American Dental Association®
America's leading advocate for oral health

# Requirements for Recognition of Dental Specialties and National Certifying Boards for Dental Specialists

Adopted as Amended by the ADA House of Delegates, October 2018

## Introduction

A specialty is an area of dentistry that has been formally recognized by the National Commission on Recognition of Dental Specialties and Certifying Boards as meeting the "Requirements for Recognition of Dental Specialists" specified in this document. Dental specialties are recognized to protect the public, nurture the art and science of dentistry, and improve the quality of care. It is the Association's belief that the needs of the public are best served if the profession is oriented primarily to general practice. Specialties are recognized in those areas where advanced knowledge and skills are essential to maintain or restore oral health. [1]

Not all areas in dentistry will satisfy the requirements for specialty recognition. However, the public and profession benefit substantially when non-specialty groups develop and advance areas of interest through education, practice and research. The contributions of such groups are acknowledged by the profession and their endeavors are encouraged.

The sponsoring organization must submit to the National Commission on Recognition of Dental Specialties and Certifying Boards a formal application which demonstrates compliance with all the requirements for specialty recognition.

Following recognition of a specialty by the National Commission on Recognition of Dental Specialties and Certifying Boards a national board for certifying diplomates in accordance with the "Requirements for National Certifying Boards for Dental Specialists" may be established as specified in this document.

[1] Association policies regarding ethical announcement of specialization and limitation of practice are contained in the *ADA Principles of Ethics and Code of Professional Conduct*.

# Requirements for Recognition of Dental Specialties

A sponsoring organization seeking specialty recognition for an area must document that the discipline satisfies all the requirements specified in this section.

(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.

(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.

(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.

(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 of which the specialty applicant must demonstrate would not be satisfactorily met except for the contributions of the specialty applicant.

(5) A proposed specialty must directly benefit some aspect of clinical patient care.

(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.

# Requirements for Recognition of National Certifying Boards for Dental Specialists

In order to become, and remain, eligible for recognition by the National Commission on Recognition of Dental Specialties and Certifying Boards as a national certifying board for a dental specialty, the specialty shall have a sponsoring organization that meets all of the elements of Requirement (1) of the Requirements for Recognition of Dental Specialties. A close working relationship shall be maintained between the sponsoring organization and the certifying board. Additionally, the following requirements must be fulfilled.

**Organization of Boards:**

(1) Each Board shall have no less than five or more than 12 voting directors designated on a rotation basis in accordance with a method approved by the National Commission on Recognition of Dental Specialties and Certifying Boards. Although the Commission does not prescribe a single method for selecting directors of boards, members may not serve for more than a total of nine years. Membership on the board shall be in accordance with a prescribed method endorsed by the sponsoring organization. All board directors shall be diplomates of that board and only the sponsoring organizations of boards may establish additional qualifications if they so desire.

(2) Each board shall submit in writing to the National Commission on Recognition of Dental Specialties and Certifying Boards a program sufficiently comprehensive in scope to meet the requirements established by the American Dental Association for the operation of a certifying board. This statement should include evidence of sponsorship of the board by a national organization that meets all the elements of Requirement (1) of the Requirements for Recognition of Dental Specialties.

(3) Each board shall submit to the National Commission on Recognition of Dental Specialties and Certifying Boards evidence of adequate financial support to conduct its program of certification.

(4) Each board may select suitable consultants or agencies to assist in its operations, such as the preparation and administration of examinations and the evaluation of records and examinations of candidates. Consultants who participate in clinical examinations should be diplomates.

**Operation of Boards:**

(1) Each board shall certify qualified dentists as diplomates only in the special area of dental practice approved by the National Commission on Recognition of Dental Specialties and Certifying Boards for such certification. No more than one board shall be recognized for the certification of diplomates in a single area of practice.

(2) Each board, except by waiver of the National Commission on Recognition of Dental Specialties and Certifying Boards, shall give at least one examination in each calendar year and shall announce such examination at least six months in advance.

(3) Each board shall maintain a current list of its diplomates.

(4) Each board shall submit annually to the National Commission on Recognition of Dental Specialties and Certifying Boards data relative to its financial operations, applicant admission procedures, and examination content and results. Examination procedures and results should follow the Standards for Educational Psychological Testing, including validity and reliability evidence. A diplomate may, upon request, obtain a copy of the annual technical and financial reports of the board.

(5) Each board shall encourage its diplomates to engage in lifelong learning and continuous quality improvement.

(6) Each board shall provide periodically to the National Commission on Recognition of Dental Specialties and Certifying Boards evidence of its examination and certification of a significant number of additional dentists in order to warrant its continuing approval by the National Commission on Recognition of Dental Specialties and Certifying Boards.

(7) Each board shall bear full responsibility for the conduct of its program, the evaluation of the qualifications and competence of those it certifies as diplomates, and the issuance of certificates.

(8) Each board shall require an annual registration fee from each of its diplomates intended to assist in supporting financially the continued program of the board.

**Certification Requirements:**

(1) Each board shall require, for eligibility for certification as a diplomate, the successful completion of an advanced education program accredited by the Commission on Dental Accreditation of two or more academic years in length, as specified by the Commission.

Although desirable, the period of advanced study need not be continuous, nor completed within successive calendar years. An advanced educational program equivalent to two academic years in length, successfully completed on a part-time basis over an extended period of time as a graduated sequence of educational experience not exceeding four calendar years, may be considered acceptable in satisfying this requirement. Short continuation and refresher courses and teaching experience in specialty departments in dental schools will not be accepted in meeting any portion of this requirement.

Each board may establish an exception to the qualification requirement of completion of an advanced specialty education program accredited by the Commission on Dental Accreditation for the unique candidate who has not met this requirement per se, but can demonstrate to the satisfaction of the certifying board, equivalent advanced specialty education. A certifying board must petition the National Commission on Recognition of Dental Specialties and Certifying Boards for permission to establish such a policy.

(2) Each board shall establish its minimum requirements for years of practice in the area for which it grants certificates. The years of advanced education in this area may be accepted toward fulfillment of this requirement.

(3) Each board, in cooperation with its sponsoring organization, shall prepare and publicize its recommendations on the educational program and experience requirements which candidates will be expected to meet.

CADA
CANADIAN ACADEMY
OF DENTAL ANAESTHESIA

# APPENDIX 13:

CADA Latest Financial Statements

**APPENDIX 13**

Grant Thornton

# Financial Statements

(Unaudited - see Notice to Reader)

## The Canadian Academy of Dental Anaesthesia

December 31, 2020

# Contents

Grant Thornton

# Notice to Reader

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On the basis of information provided by management, we have compiled the statement of financial position of The Canadian Academy of Dental Anaesthesia as at December 31, 2020 and the statement of operations and changes in net assets for the year then ended.

We have not performed an audit or a review engagement in respect of these financial statements and, accordingly, we express no assurance thereon.

Readers are cautioned that these statements may not be appropriate for their purposes.

Grant Thornton LLP

Waterloo, Canada
March 5, 2021

Chartered Professional Accountants
Licensed Public Accountants

# The Canadian Academy of Dental Anaesthesia
# Statement of Operations and Changes in Net Assets

(Unaudited - see Notice to Reader)

| Year ended December 31 | **2020** | **%** | 2019 | % |
|---|---|---|---|---|
| Revenues | **$ 11,200** | *100.00* | $ 42,800 | *100.00* |
| Expenditures | | | | |
| Advertising and promotion | **3,500** | *31.25* | 12,294 | *28.72* |
| Professional fees | **1,685** | *15.04* | 1,103 | *2.58* |
| Office | **1,046** | *9.34* | 1,679 | *3.92* |
| Insurance | **794** | *7.09* | 794 | *1.86* |
| Interest and bank charges | **61** | *0.54* | 59 | *0.14* |
| | **7,086** | *63.27* | 15,929 | *37.22* |
| Excess of revenues over expenditures | **4,114** | *36.73* | 26,871 | *62.78* |
| General Fund Balance, beginning of year | **60,703** | | 33,832 | |
| General Fund Balance, end of year | **$ 64,817** | | $ 60,703 | |

# The Canadian Academy of Dental Anaesthesia
# Statement of Financial Position

(Unaudited - see Notice to Reader)

| December 31 | **2020** | 2019 |
|---|---|---|
| **Assets** | | |
| Current | | |
| Cash | **$ 65,517** | $ 61,403 |
| **Liabilities** | | |
| Current | | |
| Accounts payable and accrued liabilities | **$ 700** | $ 700 |
| **General Fund Balance** | **64,817** | 60,703 |
| | **$ 65,517** | $ 61,403 |

On behalf of the board

_____ Member _____ Member