



# Canadian Dentistry 2032

Report for the  
Dentistry Leaders' Forum  
Ottawa, ON

April 20, 2018

National Advisory Task Force  
on the Future of the Profession

The Dentistry Leaders' Forum (DLF) is an annual gathering of representatives from the Canadian dental profession, brought together to discuss dental issues and general matters of common interest. The DLF is composed of representatives from the Canadian Dental Association (CDA) and its Corporate Members (provincial/territorial dental associations), as well as representatives from the Canadian Dental Specialties Association (CDSA), the Association of Canadian Faculties of Dentistry (ACFD) and the Royal Canadian Dental Corps (RCDC). Additional representatives representing other dental organizations may also be invited to participate in the discussions.

The 2018 DLF meeting is April 20, 2018 at the Château Laurier, Ottawa, Ontario.

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## Foreword



The report you are about to read is a unique document, produced by a unique body; an independent National Advisory Task Force (“Task Force”) that was established to be an arms-length entity from the Canadian Dental Association (CDA).

The Task Force was asked to consider changes that will affect our profession, and indeed society as a whole, in the coming 15 years. What follows are four Vision Statements and an accompanying series of recommendations proposed by the Task Force, to prepare the dental profession to meet the expectations of society in 2032.

CDA has produced an annual Environmental Scan for several years. Upon reflection of this scan in 2016, the CDA Board of Directors established a Task Force to be representative of the profession and to give unbiased advice about some potentially difficult and thorny issues. The Board recognized that *“what got us here, will not get us there”* and asked that the Task Force be bold and innovative in its recommendations.

It is important for readers to note that the series of recommendations contained in this report come from the Task Force, not from CDA. The recommendations are, for the most part, designated as a call to action for *“the Canadian dental profession”* as a whole. However, the recommendations could equally be a call to action for CDA, the provincial and territorial dental associations, the dental regulatory authorities, the national and provincial specialist organizations, dental schools—or any combination of such organizations and institutions that provide services, regulation, or education for the dental profession in Canada. An important theme underpinning this report is that collaboration and coordination between organizations, both internal and external to the dental profession, will be particularly important in the years ahead.

The ultimate horizon for this report is 2032 and central to it are the four Vision Statements which aim to position the profession to provide optimal person-centered oral health care in the future. With this horizon, some 15 years from now, there may be a temptation to be complacent today, but many of these recommendations will take years to bring to reality. The time for action is now.

A handwritten signature in black ink that reads "Alastair Nicoll" followed by a period.

Dr. Alastair Nicoll  
Chair, National Advisory Task Force  
on the Future of the Profession

## Introduction

Based on a range of metrics, it can be said that Canada is among the world leaders when it comes to the overall oral health of its citizens. In addition to ranking favourably in many oral health indicators, Canadians also enjoy among the best access to oral health care in the world. Three out of every four Canadians visit a dental professional at least once a year, and over 80% of Canadians believe they have good or excellent oral health. Wait times to see a dentist and receive treatment are among the shortest in the world.

The oral health care delivery system, and the dental practice that is at the core of this system, has been functioning extremely well. As professionals, dentists have enjoyed great success, ranking highly in factors such as respectability, career interest and satisfaction, income potential, growth opportunities, and autonomy.

Although the profession is thriving, its leadership recognized the need to look to the future and identify and analyze the challenges that lay ahead. Dentistry is taking a proactive approach to ensure that the profession continues to be successful in the provision of oral health.

The Canadian Dental Association (CDA) is a federation of ten provincial and territorial dental associations. CDA's mission as the national voice for dentistry is the promotion of optimal oral health and the advancement and leadership of a unified profession. It achieves this mission primarily through knowledge, advocacy and practice support.

CDA, along with the provincial and territorial dental associations, recognizes that changes in the political, economic, social and technological landscape affecting the health care system in general, and the oral health care sector in particular, mean that the status quo in the delivery of oral health care in Canada may not be viable in the foreseeable future.

The future of the oral health care sector is being shaped by the evolution of societal expectations, economic forces, disruptive innovations, and new technologies. To manage these forces and to continue to deliver high quality care to patients, the dental profession must be bold, visionary and forward-thinking in how it prepares for the future.

CDA's annual environmental scanning exercise plays a crucial role in identifying and determining the significance of forces within the oral health care sector and in its operating environment. At its 2016 Annual Planning Session, the CDA Board of Directors recognized that the latest edition of the CDA Environmental Scan identified several forces impacting on the dental profession and their potential significance. ([Appendix](#)) However, work needed to be done to identify how the profession might position itself in the future to manage these forces and thrive in the anticipated new environment.

Within this context, the CDA Board of Directors supported the creation of a 25-person National Advisory Task Force on the Future of the Profession, with the following mandate:

1. To foster inventive thinking about the future of the dental profession in Canada.
2. To identify the critical issues, threats and opportunities that the dental profession in Canada will face over a 10- to 15-year horizon by:
  - a. considering the conclusions contained in the most recent CDA Environmental Scan;
  - b. considering the report of the CDA Board of Directors' 2016 Strategic Planning Session on scenario planning;
  - c. examining the findings of related work and studies undertaken by other organizations both within and outside Canada; and,
  - d. undertaking other studies as may be required including seeking input on the future of the profession from new and future dentists.
3. To analyze and evaluate the impact of the key critical issues, threats and opportunities on the dental profession.
4. To recommend innovative approaches to address the key critical issues identified by the National Advisory Task Force.
5. To propose elements of a long-term vision for dentistry in Canada.
6. To propose a course of action that will position the dental profession to lead, manage and influence change.

The following report (*'Canadian Dentistry 2032'*), prepared for presentation at the Dentistry Leaders' Forum on April 20, 2018 in Ottawa, outlines:

- the methods employed by the National Advisory Task Force to gather and analyze information, and make recommendations based on this information;
- the recommendations of the National Advisory Task Force grouped under four Vision Statements for the Canadian dental profession to consider for the year 2032.

## Methodology

In the autumn of 2016, the CDA Board of Directors nominated Dr. Alastair Nicoll, CDA past-president 2015-16, as Chair of a 25-person National Advisory Task Force (“Task Force”). The Board also nominated Dr. Jim Armstrong, Mr. Frank Bevilacqua, Ms. Lia Daborn, Mr. Jerod Orb and Dr. Michelle Zwicker to join Dr. Nicoll as members of a Steering Committee that would plan and oversee the activities of the Task Force.

The remaining 19 members of the Task Force were nominated either by the CDA Board, CDA corporate members, the academic community, the dental specialist community or the Royal Canadian Dental Corps. The members were selected to represent the demographic diversity of the Canadian dental profession in terms of gender, career stage, urban vs. rural practice, as well as type of practice (see Sidebar).

Two external consultants were also engaged to guide the Task Force in its deliberations: Dr. Hugh Arnold of the University of Toronto and Dr. Anthony Boardman of the University of British Columbia. CDA staff support was provided principally by Mr. Costa Papadopoulos and Dr. John O’Keefe.

The first in-person meeting of the Task Force took place in Toronto in January 2017. During that meeting, the Task Force received presentations about changes in the external environment for Canadian professions from a diverse set of experts. Task Force members considered this information and created a list of key topics (grouped into theme areas) to deliberate upon for the duration of the Task Force.

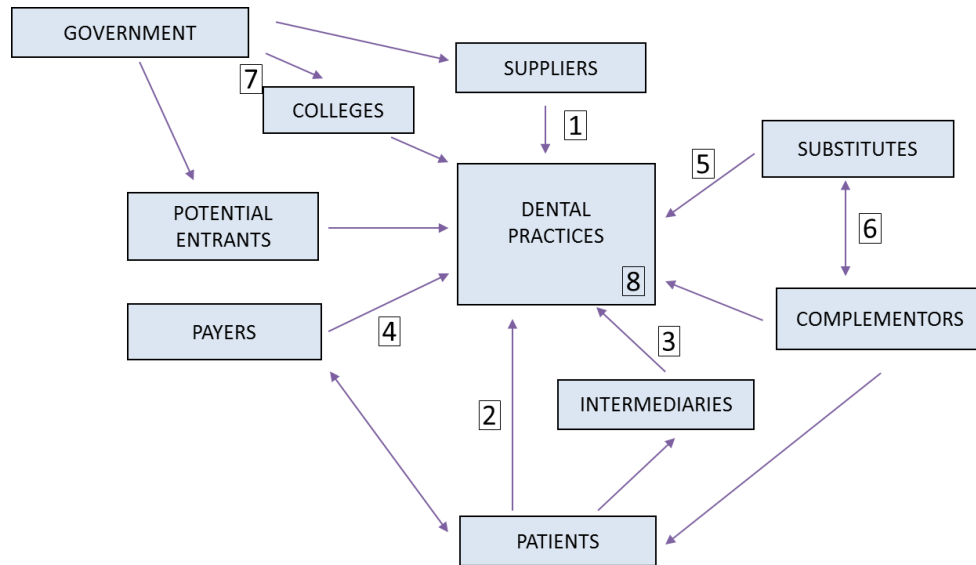
The group also received a presentation from Dr. Boardman which highlighted the forces and vectors (Porter’s Five Forces model) which influence the dental profession and the broader oral health care sector. These forces and vectors are captured in **Figure 1**.

## Members of the National Advisory Task Force on the Future of the Profession

The National Advisory Task Force membership was initially:

Dr. Jim Armstrong (BC), Mr. Frank Bevilacqua (ON), Dr. Geraldine Breau (NB), Dr. Martin Brochu (ON & RCDC), Ms. Lia Daborn (NB), Dr. Frederic Duke (BC & specialist), Dr. David Goerz (MB), Dr. Alyssa Hayes (SK & specialist), Dr. Amanda Hill (NS), Dr. Paul Hurley (NL), Dr. Heather Jones (PEI), Dr. Claire Karst (NS), Dr. Audrey McNamara (SK), Dr. Tobias Meiszingler (AB), Dr. Sanjukta Mohanta (ON), Dr. Alastair Nicoll, Chair (BC), Dr. Tony Odenbach (AB), Mr. Jerod Orb (SK), Dr. Carlos Quiñonez (ON & academia), Dr. Stacey Shiwak (NL), Dr. Christopher Sing (BC), Dr. Elisabeth Specht (Territories), Dr. Faleh Tamimi (QC & academia), Dr. Daniel Violette (NB), and Dr. Michelle Zwicker (NL).

Since the Task Force’s initial creation, Dr. Hayes was replaced by Dr. Omid Kiarash (QC & specialist), Dr. Brochu was replaced by Dr. Luc Langevin (QC and armed forces) and Dr. Specht were replaced by Dr. Jim Tennant (NWT). Dr. Shiwak resigned from the Task Force and was not replaced.



**Figure 1:** Boardman-Armstrong Direct Forces Framework illustrating forces affecting the dental profession.

At the January 2017 meeting, the Task Force was divided into four Working Groups (WG):

- WG #1 - Technology, Substitutes, Complementors and Intermediaries ([Appendix 1](#))
- WG #2 - Education, Regulation and the Social Contract ([Appendix 2](#))
- WG #3 - New Practice Models and Vulnerable Patients ([Appendix 3](#))
- WG #4 - Enhancing the Dental Practice of the Future ([Appendix 4](#))

Each WG was given the task of conducting necessary (and feasible) research, analyzing the information gathered and creating a report with recommendations for presentation at the second in-person meeting of the Task Force, held in Toronto in November 2017.

After considering key pertinent literature provided by staff and consultants, each WG identified priority areas for initial focus and proceeded to gather information about these areas through a variety of methods: further readings, interviews with over 100 experts in the priority domain areas, or commissioned briefing papers. This process resulted in the gathering and analyzing of more than 200 resources, which were housed in a shared electronic database and made available to all members of the Task Force. WGs 1 and 4 also commissioned academic research policy briefs on a variety of topics to broaden the knowledge base of its respective members.

At the November 2017 meeting, each WG produced a report which contained a detailed situation analysis and solution analysis for its assigned topic area. Each report also included a set of draft recommendations for presentation and discussion of the Task Force. These draft recommendations were designed to help the Canadian dental profession position itself for a desired future in 2032; a 15-year time horizon.



The Task Force deliberated and considered the most important issues facing the dental profession in the next 15 years. After examining these issues, the Task Force reached a consensus on a revised set of recommendations for inclusion in the current report, titled 'Canadian Dentistry 2032.' The Task Force also agreed to create an Editorial Guidance Group (EGG) (see Sidebar) to refine the wording of the recommendations and oversee the drafting of the 'Canadian Dentistry 2032' report. **Figure 2** shows a timeline of the project, with certain milestones highlighted.

The 'Canadian Dentistry 2032' report outlines the set of grouped recommendations that will enable realization of the four Vision Statements for positioning the Canadian dental profession for the future. These Vision Statements were crafted in pursuit of the following overall vision for the optimal positioning of our profession in 2032:

*“The Canadian dental profession reaffirms its commitment to the social contract between the profession of dentistry and the people of Canada. The Canadian dental profession is committed to furthering the interests of dentistry as a caring profession that is dedicated to ensuring and enhancing the oral health of the Canadian population. The concept of person-centred care is central to this vision.”*

## Members of the Editorial Guidance Group

The Editorial Guidance Group (EGG) members are:

Dr. Jim Armstrong  
Mr. Frank Bevilacqua  
Ms. Lia Daborn  
Dr. Claire Karst  
Dr. Tobias Meiszinger  
Dr. Alastair Nicoll  
Dr. Carlos Quiñonez

With the support of Drs. Hugh Arnold and Anthony Boardman, the EGG agreed to group the recommendations to support four Vision Statements for the Canadian dental profession to consider.

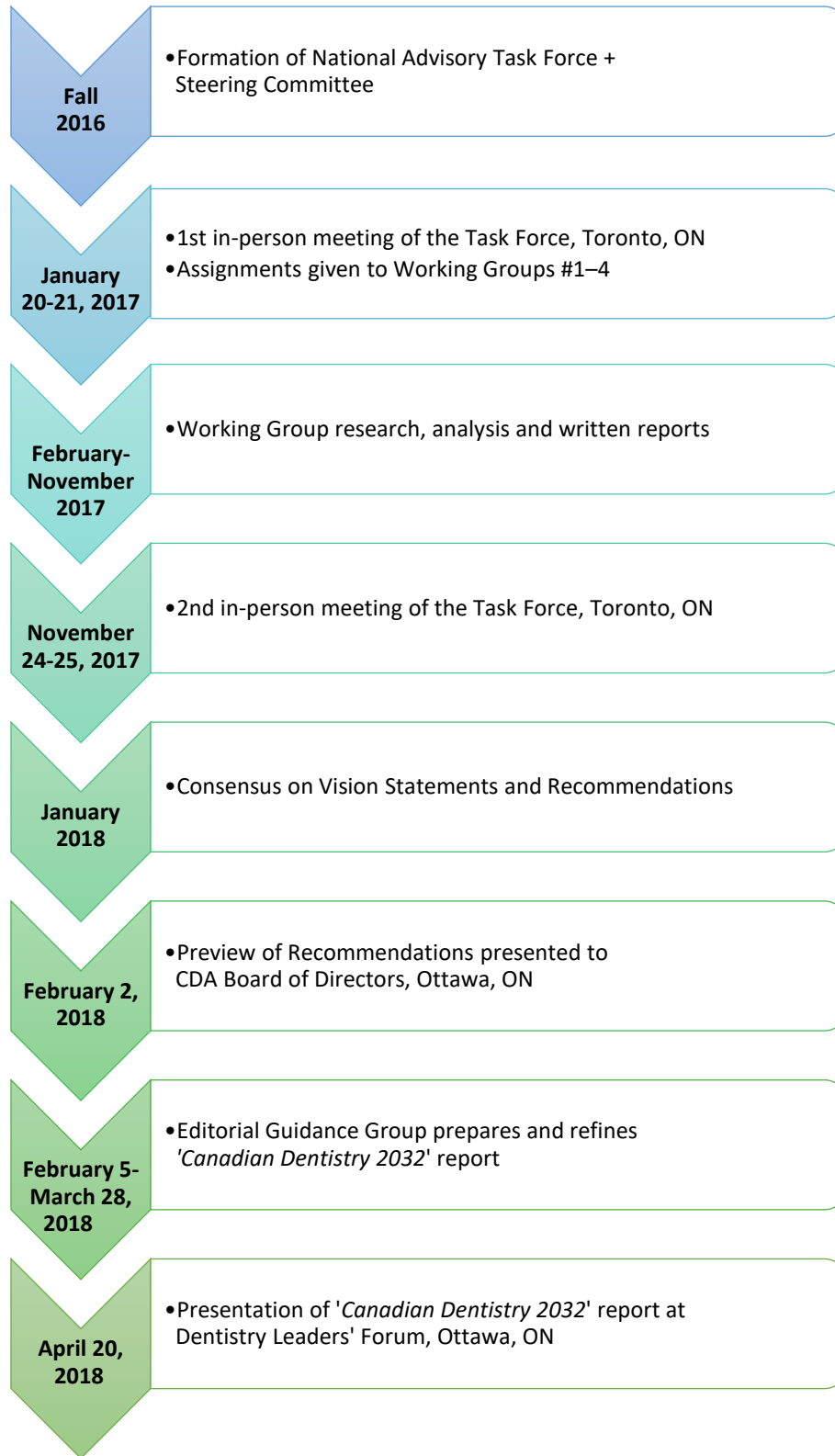


Figure 2: Milestones of the National Advisory Task Force on the Future of the Profession.

## Summary of Recommendations

Vision Statement 1: By 2032, oral health will be recognized as a valuable component of overall health.

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### *Recommendations*

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The Canadian dental profession is committed to positioning dentistry as a caring profession that is dedicated to ensuring and enhancing the oral health of the Canadian population. Oral health will be recognized as a valuable component of overall health. As such, dentists are the experts in the diagnosis of oral diseases and conditions. To ensure patients receive value-based and patient-centred care, the profession is committed to the collaboration and coordination of dental care and medical care.

In this context, the National Advisory Task Force makes the following recommendations:

- 1 The Canadian dental profession should articulate and promote a clear definition of oral health that enables the measurement of oral health and systemic health outcomes, and that helps to demonstrate the value of oral health care.
- 2 The Canadian dental profession should promote the intrinsic importance of oral health and highlight the relationship between oral health and systemic health. It is the responsibility of the dentist to lead interdisciplinary teams in the collaborative management of oral diseases and conditions.
- 3 The Canadian dental profession should advocate for funding of clinical research that examines the relationship between oral and systemic health along with health services research into collaborative models of dental and medical care.
- 4 The Canadian dental profession should embrace the inclusion of dentistry in national electronic health records and include the collection of oral health diagnostic data that facilitate the development of comprehensive and value-based outcomes for both dental care and medical care.
- 5 The Canadian dental profession should advocate and promote the medical management of oral diseases and conditions with an emphasis on diagnosis, prevention, and non-surgical treatment where applicable.

Vision Statement 2: By 2032, dentistry will fulfil its social contract through universal access to oral health care.

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*Recommendations*

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In fulfilling its responsibilities under the social contract, the Canadian dental profession is committed to the principles of universality and equity in care, and to working with other key stakeholders towards ensuring the realization of these principles in Canada.

In this context, the National Advisory Task Force makes the following recommendations:

- ① The Canadian dental profession should determine what constitutes a “basket” of medically-necessary oral health care services.
- ② The Canadian dental profession should take all possible steps to ensure that the basic oral health needs of the entire Canadian population are met, regardless of geography or individual socioeconomic circumstances.
- ③ The Canadian dental profession should collaborate and create coalitions with health care and other professional groups as well as civil society groups interested in improving the oral health, overall health and social and living conditions of people in Canada.
- ④ The Canadian dental profession should improve public awareness of existing and new oral health programs, using a broad range of communications channels, to improve access to oral health care.
- ⑤ The Canadian dental profession should embrace the principle of person-centred care, and encourage the delivery of oral health care to vulnerable patient groups in locations and by delivery methods that are most appropriate for these groups.
- ⑥ The Canadian dental profession should commission a series of studies of the cost/benefit implications of various types of blended public/private dental care plans that could be implemented by 2032.
- ⑦ The Canadian dental profession should lead the development of a consortium (of provider groups, insurance providers and government) to build on the success of third-party dental plans and to guide changes to dental insurance that will have a positive impact on access to oral health care while optimizing oral health.
- ⑧ The Canadian dental profession should commission studies to demonstrate the positive return on investment (ROI) of oral health care to publicly-funded medical and hospital oral health services.

Vision Statement 3: By 2032, Canadian dentists as lifelong learners will be well-prepared to meet the changing needs of society.

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*Recommendations*

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In a country that is evolving as rapidly as Canada—in terms of demographics and societal expectations—where innovations in technology are affecting the world of professional work, the concept of a professional education being defined solely by formal programs of education and training is no longer valid. The dental student of the future will be selected based on the ability to adapt to changing societal needs and expectations. The practising dentist of the future must be a lifelong learner constantly acquiring new knowledge in a variety of settings.

In this context, the National Advisory Task Force makes the following recommendations:

- ① The Canadian dental profession should research how the cost of dental education impacts recruitment and admission to dental school and future career options, including possible careers in academia or working with vulnerable groups, which may affect access to care.
- ② The Canadian dental profession should work with pertinent stakeholders to increase the number of students from Indigenous communities as well as students from economically-challenged backgrounds admitted to Canadian dental schools.
- ③ The Canadian dental profession should ensure that all dentists licensed to practice have an excellent grounding in the principles of professionalism, ethics and empathic communication.
- ④ The Canadian dental profession should advocate for funding of education research that examines the best ways to teach and assess professionalism, ethics and communication skills, and encourage the development of learning modules for all dentists entering practice.
- ⑤ The Canadian dental profession should advocate for the establishment of residency or other postgraduate learning programs to allow new graduates to enhance their clinical skills and expose them to different models of oral health care delivery for all people living in Canada.
- ⑥ The Canadian dental profession should establish a formalized mentorship program for new graduates to facilitate the transition into professional practice and to encourage lifelong learning.
- ⑦ The Canadian dental profession should establish a national certification body for continuing dental education that assesses courses, to ensure that they are based on sound scientific evidence and free of funding bias and conflicts of interest.
- ⑧ The Canadian dental profession should promote the development of new evidence-informed methods for licensed dentists to demonstrate continuing competency in clinical and non-clinical skills.

Vision Statement 4: By 2032, Canadian dentists will be ready to embrace new technologies and models of practice.

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*Recommendations*

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The Canadian dental profession is committed to ensuring Canadian dentists have access to leading-edge technical and non-technical training, and fully utilize new technologies that contribute to the cost-effective enhancement of oral health. The dentist of the future will need to have the business skills to succeed in the type of practice in which they choose to engage.

In this context, the National Advisory Task Force makes the following recommendations:

- ① The Canadian dental profession should promote the appropriate adoption of new technologies by dentists, other oral health care providers and the public.
- ② The Canadian dental profession should advocate for funding of health care technology assessment research that will help practising dentists make wise choices when considering incorporating new technologies into practice.
- ③ The Canadian dental profession should provide education and resources to help dentists assess new and emerging technologies, and to help them develop competencies in the critical assessment of new technologies and their cost-effectiveness.
- ④ The Canadian dental profession should establish a review and certification process to ensure that technologies entering the Canadian dental care market utilize common language of communication to facilitate compatibility and interconnectivity
- ⑤ The Canadian dental profession should research and facilitate the awareness and understanding of new alternative and integrated practice models, and assess their viability and sustainability.
- ⑥ The Canadian dental profession should facilitate the provision of business education and resources for dentists that are appropriate for their chosen model of practice.
- ⑦ The Canadian dental profession should ensure that graduates are aware of the full range of career options available to them, including alternative practice models.

## Vision Statement 1

By 2032, oral health will be recognized as a valuable component of overall health.

### Context

Historically, oral health care in Canada has diverged from medical and hospital care for a variety of reasons. Some of these differences include how oral health care is funded, paid for, and delivered. As a result, there is an unfounded perception that oral health is somehow separate from overall health; that dentistry is less of a health care service profession and more of a business undertaking. Although such perceptions persist, oral health is vital to one's overall health, and research has demonstrated linkages between oral diseases and a number of systemic conditions. Thus, oral health is not only intrinsically important but also has significant implications for the overall health of Canadians.

As in many other countries in the Western world, the Canadian population is aging and people are living longer than before. Therefore, our health care system is having to treat more non-communicable diseases and chronic medical conditions. An aging population is also keeping their teeth longer than before, making oral health more important in the context of healthful aging. Dentists are treating patients that are more complex medically and personalized interventions carried out at an earlier stage are increasingly possible and will become more important. The effective management of these patients requires increased coordination between medical and dental practitioners. The benefits of such coordination of care will be felt by patients, medical and dental practitioners alike.

With a heightened awareness of the impact of oral health on systemic health, there is an increasing expectation for a greater integration between dentistry and general health, primarily because it is beneficial for patients. As medical and dental care becomes more coordinated in new types of delivery models, there are leadership opportunities for dentists in general health care. Interdisciplinary health care teams will become more prevalent and dentists are best positioned to serve as leaders of the oral health diagnosis component on these teams.

Within these models of coordinated care, understanding our patients, and their needs and expectations, is critical. Patients are more knowledgeable and expect to be part of the decision-making process. Because the information gap between professionals and patients is closing, there has been a shift from patients having blind trust in their dentist, to dentists now having to earn the trust of patients.

Our profession needs to educate society more about the importance of oral health in two domains: we need to better educate the public to ensure optimal oral and overall health of the Canadian population and we need to educate governments so they are aware of the best practices in oral health care.

Within this context, the Task Force articulated the following guiding principle to the recommendations that follow in this section:

*The Canadian dental profession is committed to positioning dentistry as a caring profession that is dedicated to ensuring and enhancing the oral health of all Canadians. Oral health will be recognized as a valuable component of overall health. As such, dentists are the experts in the diagnosis of oral diseases*

and conditions. To ensure patients receive value-based and patient-centred care, the Canadian dental profession is committed to the collaboration and coordination of dental care and medical care.

### **A clear definition of oral health**

There has been acknowledgment for many years that health is much more than just the provision of health care. The World Health Organization (WHO) defines health as “a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.”

The health care professions and the public are also embracing the concepts of prevention and wellness. Health is being viewed as a more positive state of being as opposed to a mere absence of disease. Within this broader definition of health, improving health outcomes now also include broader aims, such as addressing the social determinants of health.

Value-based health care puts what patients value at the centre of health care. It is founded on the principle of *improving the quality of care for patients*. In this system, “better health” becomes the goal, not “more treatment.” It helps ensure patients receive care which provide outcomes that patients deem important and focuses limited resources on high-value interventions.

With a greater awareness of the impact of oral health on systemic health, there is also an increasing expectation that there will be greater integration between dentistry and general health, primarily because it is beneficial for patients. Increasingly, more patients expect to receive care to maintain wellness as opposed to just treating disease.

Although CDA has its own definition of oral health, the FDI World Dental Federation’s (FDI) definition (see boxed text) is thought to be more comprehensive. The international adoption, promotion, and usage of one definition of oral health would allow governments, educators, regulators, third party payers and clinicians to align themselves for the betterment and care of their patients. A single definition would also help patients understand explicitly the value of oral health and the expertise of their health care providers.

If countries around the world (and ultimately the WHO) adopt a single definition of oral health, it would form the foundation upon which the value of oral health care will ultimately be built. This is a work in progress, but promoting the FDI definition of oral health on a global scale would be an important first step.

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#### **FDI Definition of Oral Health**

“Oral health is multi-faceted and includes the ability to speak, smile, smell, taste, touch, chew, swallow and convey a range of emotions through facial expressions with confidence and without pain, discomfort and disease of the craniofacial complex.”

See: [fdiworlddental.org/oral-health/fdis-definition-of-oral-health](http://fdiworlddental.org/oral-health/fdis-definition-of-oral-health)

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**In this context, the Task Force makes the following recommendation:**

**Recommendation 1**

*The Canadian dental profession should articulate and promote a clear definition of oral health that enables the measurement of oral health and systemic health outcomes, and that helps to demonstrate the value of oral health care.*

***Interdisciplinary teams and collaborative management***

Periodontal diseases share many risk factors with other non-communicable diseases. Research has shown a bi-directional relationship between oral health and other diseases and conditions; this provides a strong rationale for a bi-directional relationship between oral health care and primary care.

Prevention is increasingly recognized as a cost-effective means of reducing chronic disease burdens. To be effective, health promotion activities that encourage healthy living and early detection need to occur in a variety of health care settings. Oral health professionals represent an underutilized group of health care providers that can contribute to improved health of populations living with chronic diseases by broadening their scope of practice to include primary health screenings and tailored health promotion activities.

The scope of practice for dentists could be reconceptualized and expanded. Many oral and systemic diseases have common risk factors such as tobacco use and poor diet. A broad number of primary health care activities may be conducted in the dental office, such as screening for hypertension, diabetes mellitus, and dermatopathology; smoking prevention and cessation activities; and obesity interventions. Early disease detection and initiation of treatment combined with lifestyle changes can contribute to a reduction in morbidity and mortality from chronic diseases.

The development of inter-professional practice models (IPPMs) is one option for dentistry to explore. Improved collaboration between oral and general health care teams will be required to overcome dentistry's previous isolation from medical care and to promote bilateral referrals (i.e., dental-to-medical and medical-to-dental).

As more physicians and nurses become part of interdisciplinary health care teams, dentists are best positioned to be leaders of the oral health diagnosis component of these teams. With a comprehensive four-year training in dental school on oral conditions, diagnosis, nutrition and anatomy, dentists are set-up to be "physicians of the mouth" and as such, have the education and credibility to lead a diverse range of people within health care teams.

It is important for dentists to be leaders of the diagnosis process within such teams. The profession should advocate and communicate that dentists are the leaders in the diagnosis, prevention and treatment of oral diseases. With a greater coordination of oral health care and general health care, and with health care becoming more sophisticated in nature, dentists will need further leadership training to develop skills required for managing the oral health diagnosis component of interdisciplinary health care teams.

The dental profession needs to increase awareness about the importance of oral health to governments and society. We need to better educate the public to ensure optimal oral and overall health of the Canadian population and we need to educate governments so they are aware of the best practices in

oral health care. As a profession, we need to reinforce the message that, “*you can’t be truly healthy if you can’t take care of your mouth and gums.*” There should be more of an emphasis on preventive dental care, especially for underserved populations.

**In this context, the Task Force makes the following recommendation:**

### Recommendation 2

*The Canadian dental profession should promote the intrinsic importance of oral health and highlight the relationship between oral health and systemic health. It is the responsibility of the dentist to lead interdisciplinary teams in the collaborative management of oral diseases and conditions.*

### **Research on repositioning oral health**

Awareness is growing that the mouth is not separate from the rest of the body, and that oral health must be considered within an overall health care context. Changes are happening in the education of health professionals, with medical and dental schools merging curricula.

Traditionally, dentistry programs have always given dentists an educational foundation on medical issues. There needs to be an increased awareness about the oral manifestations of systemic disease at our medical and dental schools. Further, the medical management of patients undergoing dental treatment also needs to be emphasized.

Health care professionals are starting to realize that for those who rarely see a physician, basic screening for high blood pressure or elevated blood sugar during a visit to the dentist could save lives. Scopes of practice could be expanded so that physicians or nurse practitioners could check a person’s mouth during an overall health exam and then be able to refer them for more care, if needed. In other words, we need to ensure that the *right* provider is providing the *right* care at the *right* time.

With a greater awareness of the impact of oral health on systemic health, there is an increasing expectation of greater coordination between dentistry and general health care because it is beneficial for patients. There is also a perception that increasingly, patients expect to receive care to maintain wellness as opposed to just treating disease.

The current state of scientific knowledge tells us that oral diseases such as caries and periodontal disease impact the quality of life – social, physical, economic and psychological. However, there is a lack of evidence concerning the association between oral health and health-related quality of life which implies a lack of oral health data.

Internationally, work is underway to develop suitable instruments for measuring oral health. The International Consortium for Health Outcomes Management (ICHOM) is an independent, not-for-profit organization dedicated to supporting value-based health care by facilitating the measurement and comparison of health care outcomes. The ICHOM has launched a project aimed at developing a standard set of oral health outcome measures and the Canadian dental profession should continue monitoring the progress of this ICHOM initiative.

There is a need for further research to advance our knowledge of the links between oral and systemic diseases (and the impact of oral health on quality of life) and to help design optimal ways to coordinate oral health care with the general medical and health care system.

**In this context, the Task Force makes the following recommendation:**

**Recommendation 3**

*The Canadian dental profession should advocate for funding of clinical research that examines the relationship between oral and systemic health, along with health services research into collaborative models of dental and medical care.*

***EHR, diagnostic data and value-based outcomes***

With a greater awareness of the impact of oral health on systemic health comes an expectation that there will be greater integration between dentistry and general health. Despite this expectation, the fact that dentistry has not yet been fully integrated with the electronic health record (EHR) in most jurisdictions makes dentistry appear to be outside the health care sector.

There is a strong rationale for dentists to have access to the EHR because collaboration between dentists and physicians is enhanced by sharing information, optimizing screenings and coordinating prevention strategies. It will have a positive impact on the quality of care. Much of the collaborative practice in future will occur in a virtual space, likely within the EHR. However, this potential will remain unrealized if dentistry does not take advantage of this technology.

Oral health care needs to be integrated in the EHR, to tap in to a large pool of valuable diagnostic and treatment data. This data will go a long way to helping researchers, politicians and other stakeholder groups see trends, opportunities and weaknesses in the health care system, including the provision of dental care.

One particular challenge faced by dentistry in advocating with governments is the lack of data about the cost of its services and its relative impact on health. The profession must realize that the formula for decision-making in government is “data + science + the human factor.” Dentistry needs to adopt a systematic approach to data collection to identify what the issues are and how to frame them for policy makers. Areas for improvement are program evaluation, research, and data analysis to ensure that any proposed programs are evidence-informed.

Presently, the profession is only collecting treatment data. But we need greater investment in diagnostic data. This segmentation would allow a better understanding of the dentist profile (what model of practice they represent), the level of oral disease, and regions that have certain prevalence of types of oral disease. This can facilitate general practice dentists to better manage disease in their offices, through help from teledentistry technologies.

**In this context, the Task Force makes the following recommendation:**

**Recommendation 4**

*The Canadian dental profession should embrace the inclusion of dentistry in national electronic health records and include the collection of oral health diagnostic data that facilitate the development of comprehensive and value-based outcomes for both dental care and medical care.*

**Medical management of oral disease**

There has been a significant reduction in the prevalence of oral diseases in the general population because of the success of the dental profession in providing effective and appropriate preventive therapy, public health initiatives such as community water fluoridation, and health promotion about practising good oral health habits.

In the past, the treatment of disease occupied the major portion of the dentist's time, and therapeutic procedures dominated what dentists did (restoring damages of caries and periodontal disease). The need for therapeutic care is decreasing steadily and along with it, demand for the most common traditional dental services.

Much of dentistry today still has a focus on the surgical management of disease. For instance with caries, the dentist diagnoses the condition, removes the diseased portion, and fixes the tooth with a suitable material such as a crown or a filling. A shift in philosophy to a medical management of caries would include an earlier diagnosis using new tools, followed by a variety of interventions that would arrest the progress of the lesion and perhaps a remineralization of the tooth.

Changing disease patterns implies that risk assessment and diagnostic screening technologies will become more prevalent in future. This focus will allow governments and people to potentially save money by preventing oral disease at an earlier stage. This will also open more multidisciplinary care in the oral health field, potentially increasing competition in the oral health care space. These anticipated changes may be a threat to dentists if they can't adapt their practice to the changing disease demographics expected.

One path towards coordinated oral and general health care that is preventive in nature may be in recognizing that the common risk factor approach should be used to integrate oral health with national health programs. The determinants of oral disease include: diet, hygiene, smoking, alcohol, risky behaviours, all of which can lead to systemic injury and stress. There is room to develop a list of primary care activities, such as smoking cessation, diet control and obesity and diabetic monitoring that can be performed by members of the oral health care team.

Oral health should be part of a broad circle of care. We need supports to address the social determinants of health. A holistic model of care, like those at Community Health Centres, can help some patients with many aspects of health, such as referrals to food banks, community gardens/kitchens, or to other primary care and services they require—all stemming from a visit to a public dental clinic. This model has many benefits from a patient's perspective. It's a success when you can link people to a range of services that will improve a number of health outcomes. Different models may be required to address the needs of a variety of patient population groups.

The dental profession needs to be involved in integrating dentistry and medicine and to be part of the decision-making processes; this will start at the education level. Further research is needed into the viability of integrated practice units (IPUs or IPPMs), which have a dedicated team of clinical and non-clinical personnel providing a full range of care.

**In this context, the Task Force makes the following recommendation:**

**Recommendation 5**

*The Canadian dental profession should advocate and promote the medical management of oral diseases and conditions with an emphasis on diagnosis, prevention, and non-surgical treatment where applicable.*

## Vision Statement 2

By 2032, dentistry will fulfil its social contract through universal access to oral health care.

### Context

There is a social contract between dentistry and society, whereby individual dentists promise to put the oral health care needs of their patients above other considerations—and the profession, as a collective, promises to regulate itself in such a manner that benefits society.

In return for exclusive rights to title and practice, the profession ensures that only qualified and competent people practise dentistry and that they maintain competency and act ethically throughout their lifespan as a professional. Alternatively called a “social license,” a legal, political and social environment must exist that permits dentists to have these rights as professionals.

It can be argued that the social contract should support fair compensation and a well-functioning system. From the perspective of dentists, the contract works both ways; when governments reimburse dentists at a discounted rate to provide care, as in some publicly funded programs currently in place, that could be deemed a breach of the social contract.

But the concept of health equity is an increasingly important component of the conversation where the social contract between the professions and society is concerned. The question of whether governments and dentistry are meeting the expectations of society in terms of health equity is valid when a significant portion (estimated to be 20%-25%) of the Canadian population does not have reasonable access to dental care, largely because of insufficient public funding or affordability issues.

The Canadian Health Measures Survey (CHMS) showed that 1 in 3 Canadians have a dental need and 1 in 6 say they cannot afford dental care. There is a greater urgency to focus on the “1’s” in these ratios: Canadians that are having access to care issues.

According to some estimates, approximately 40% of Indigenous populations access care annually despite having 100% insurance coverage, and 75% of the general population with dental insurance or benefits visit the dentist on an annual basis. These figures show that equitable levels of care are not being adequately addressed.

In Canada, only 6% of dentistry is publicly funded, while 60%–65% of the population has access to some dental insurance or benefits (public or private). Yet, the number of people with dental insurance drops dramatically when people with employee-sponsored benefits retire and leave the workforce.

For many people, one barrier to care is governments’ inability to provide adequate funding for the programs they sponsor. Per capita funding for public dental care programs in Canada ranks poorly among OECD nations. Although the dental profession continues to provide access to care despite the existence of inadequately funded dental programs, governments at all levels must fulfil their responsibility to Canadians by renewing their commitment to adequately fund existing programs.

But the most significant barrier to accessing oral health care remains cost and affordability. Many patients (including Indigenous groups and low-income populations) are unable to pay for services up front, or for services not covered by a plan or program. Another barrier is location or distance. Many people living at or below the poverty line do not drive or own a car. They simply cannot find adequate transportation to a dental office.

A further barrier to care is a lack of “cultural safety.” To be “culturally safe” is to keep people on a level playing field and not be patronizing. For example, the profession needs to learn more about Indigenous history and culture and listen to members of these groups’ experiences navigating through the health care system.

Vulnerable groups have specific needs and, therefore, the programs designed to meet these needs must be tailored to them. We must understand the context of a specific population in order to provide appropriate and empathic care. The concept of “person-centered care” involves looking at the patient as a person and involving them, and their families or caregivers, in a dialogue about their needs and preferences.

Currently, there is no definition of a minimum standard of oral health care. Therefore, it is difficult to create programs, provide services and train staff to provide “essential” dental care without consensus on such a definition. Once a Canadian framework that defines optimal oral health is established, we can create a basket of oral health care services (including preventive measures) to help more people attain optimal health. The dental profession has a role in determining what should be included in a publicly funded “basket of essential dental care,” that would be accessible for all.

Developing a common understanding of necessary treatment for optimizing oral health will be a multi-step process and should involve a number of groups, both from within and outside the dental profession.

To be successful, oral health must be framed as a health care issue. We need to reinforce the message that *you can’t be truly healthy if you can’t take care of your mouth and gums*. An increased emphasis on preventive dental care, especially for underserved populations, is paramount.

Within this context, the Task Force articulated the following guiding principle to the recommendations that follow in this section:

*In fulfilling its responsibilities under the social contract, the Canadian dental profession is committed to the principles of universal access and equity in care, and to working with other key stakeholders towards ensuring the realization of these principles in Canada.*

### ***Basket of medically necessary oral health care services***

Effective health care has become an essential part of civilized society and is viewed as a fundamental human right. The physician and hospital care system in Canada is a blend of public and private care with approximately 70% of health care spending publicly funded and 30% in the private sector. It can thus be claimed justifiably that health care funding in Canada is currently a *blended* public/private system.

Many key informants advocated for more public funds to be directed towards oral health care to help ensure better access to care for people in vulnerable groups, who are generally also those with the highest oral health needs. We need a significant increase in public funding for fundamental dental care that everyone should be able to access. But we need to achieve consensus on what should be included in such a publicly funded essential “basket of dental care.”

Based on the research of the Task Force, an essential “basket of dental care” (e.g. medically necessary oral health care services) could include: i) relief from pain and infection, ii) prevention of disease, and iii) maintenance or restoration of chewing function and social function. But without consensus and outright adoption of such a basket, it is hard to negotiate with governments and plan sponsors, or work with third-party payers to legitimize what basic needs must be met in society.

Currently, public oral health care programs in Canada are a patchwork, many of which cover different types of care for different population groups. Developing a common understanding of what is medically necessary treatment for optimizing oral health will be a multi-step process and should involve a number of groups, internal and external to the dental profession.

**In this context, the Task Force makes the following recommendation:**

**Recommendation 1**

*The Canadian dental profession should determine what constitutes a “basket” of medically-necessary oral health care services.*

***Meeting needs regardless of geography or socioeconomic status***

A significant portion of the Canadian population can be considered “vulnerable” in terms of oral health and access to care. These Canadians face a number of challenges to attaining optimal oral health and accessing oral health care.

Society’s most vulnerable populations do not access oral care regularly and the “working poor” (i.e. people who are in the labour force, but not earning enough to thrive) also have limited access. A 2014 Canadian Academy of Health Sciences report showed that dental care is out of reach financially for many people with fixed or low incomes and as a result these people often forego care. The cost of transportation also creates a barrier. For those living in remote northern regions, there is often no local dentist available and a fly-in service is required. Similarly, people living in remote areas often must travel to larger urban centres to obtain oral care. Low income individuals cannot afford the cost of such travel.

Affordability is not the only barrier. Even among patients with insurance or other financial means, only a certain percentage seek care on a regular basis. According to some estimates, only 40% of Indigenous populations access care annually despite having 100% insurance coverage.

Cultural barriers to care can involve an incompatibility between private practice dentists and patients from vulnerable groups. We can only provide “culturally safe” care to people in vulnerable groups if they themselves tell us so. We need to learn more about their experiences navigating through the health care system and adjust delivery models to meet these needs.

Other barriers experienced by Canadians in vulnerable groups include education: an understanding of the value of oral health and knowing where care is available. We struggle to link patients with care that



may be available, but is underutilized. In addition to helping these patients understand the value of such services, we need to support and encourage them to seek out care for themselves and their family.

Traditional clinic-based dental care delivery systems are not reaching certain segments of the population. Increasing inequalities in access to care and the resulting disparities in health outcomes are well-documented. There needs to be a move from dentist-centered care (i.e., care provided at a location and time convenient to the dentist) to person- and community-centered care, supporting different models of delivery including mobile dentistry, clinics in long-term care facilities, and teledentistry.

Where appropriate, there should be consideration given to establishing public dental offices in community centres (which can help overcome cultural or geographic barriers) or next to pharmacies (similar to medical clinics), with extended business hours. The flexibility and other conditions afforded by such models may be attractive to some dentists.

**In this context, the Task Force makes the following recommendation:**

**Recommendation 2**

*The Canadian dental profession should take all possible steps to ensure that the basic oral health needs of the entire Canadian population are met, regardless of geography or individual socioeconomic circumstances.*

***Collaborate and create coalitions***

The biggest health problem in Canada is not heart disease or cancer or mental health. Rather, it is the social determinants of health and the resulting inequities which exist in virtually every aspect of population health. Inequalities persist in Canada, and little headway has been made in reducing them when measuring factors influencing health.

The most significant vulnerable groups in Canada are those with low socioeconomic status, the un- or under-insured, the very young (<5 years), the elderly (especially those institutionalized), those with special health care needs, new arrivals to Canada and members of certain racial and ethnic minority groups, including Indigenous populations.

The main challenges for these target populations are competing priorities: food insecurity, housing, settlement challenges, language barriers and very little money. These social determinants of health could systematically explain many of the barriers to care experienced by people in the vulnerable groups.

As income inequality continues to grow, this translates to fewer Canadians being able to afford dental care. Particularly significant, middle-income earners in Canada in 2013 reported the greatest increase in cost barriers and have had the largest rise in out-of-pocket expenditures for dental care since 1978 and the lowest levels of dental insurance coverage. Dental care utilization is associated with relinquishing spending on other goods and services, making it a competing financial demand for many economically constrained adults, or the “working poor.”

Until they experience oral pain, many will choose to spend their limited resources elsewhere. An avenue for reaching out to other stakeholders and message carriers is for the dental profession to get more involved in public policy issues that don't appear at first glance to be directly relevant to dentistry. If the profession can demonstrate a willingness to engage on broader, societal-level issues, other groups may engage more readily with dentistry's issues. The dental profession's involvement in broader societal issues, such as tobacco cessation, sugar reduction, opioid crisis, and antibiotic prescribing practices, are some recent examples.

The profession needs to focus on broader societal issues that impact on vulnerable groups and become engaged in addressing the social determinants of health and poverty reduction, in order to make oral health part of the conversation. This is an effective way to foster public trust in the profession and enhance the perceived value of oral health. It would demonstrate that dentistry understands and is committed to our moral and ethical responsibilities to provide care to all Canadians. Increased trust in the profession could also lead to increased utilization of oral health care services, particularly from those vulnerable populations.

Finding like-minded partners is also important. An example of this approach is the profession's current discussions with the Assembly of First Nations about Indigenous children's oral health and finding the best alignment, in terms of priorities, for both organizations. As one informant told us: *"It doesn't resonate with decision-makers if you speak on behalf of a patient group who is not there."* To finance access to care initiatives for these groups, dentistry should seek partnerships with local community leaders and other organizations that are aligned with these causes and are also looking for support funding such as hospitals, Rotary clubs, the United Way and other non-profit organizations.

**In this context, the Task Force makes the following recommendation:**

### Recommendation 3

*The Canadian dental profession should collaborate and create coalitions with health care and other professional groups as well as civil society groups interested in improving the oral health, overall health and social and living conditions of people in Canada.*

#### **Improve public awareness of existing and new programs**

The dental profession should use a range of communications channels, in new and creative ways, in order to raise awareness among decision-makers, other health professionals and the public about the benefits to society of investing in better oral health care for vulnerable groups. For instance, the creation of an online directory of existing public programs in each province, where the public or other health care providers could check their eligibility and register for benefits, was proposed by some key informants.

Also, we could use PSAs on radio/television, using change agents and champions from the community, celebrities etc. as well as increased social media presence involving physicians to increase awareness of the importance of oral health and refer people to public health clinics or programs as required. This could help increase the general understanding among the public about the connection between oral health and general health.

Writing op-ed pieces in the newspaper, participating in radio and local media shows and community events, recruiting other voices and organizations to deliver our messages have also been suggested as avenues to explore. We need to use stories, social media, and plain language to make dentistry's message resonate with key opinion leaders and elected officials.

Dentistry should consider marketing itself more like mainstream companies to increase uptake and awareness of outreach programs. Although the use of social media is omnipresent in the corporate world, social media is ready to become a significant channel of communication between dentists and patients. Dentists will use it to build relationships with and educate members of the public. Testimonials from patients who have benefited from public dental care programs is another way to convey positive messages of the profession.

**In this context, the Task Force makes the following recommendation:**

**Recommendation 4**

*The Canadian dental profession should improve public awareness of existing and new oral health programs, using a broad range of communications channels, to improve access to oral health care.*

***Embrace person-centred oral health care***

Although health systems have traditionally been structured in a top-down approach, patients are now more aggressively seeking ways to become active participants in their personal health care experience. Some people are making increased demands for a greater role in decisions affecting their care, to ensure that the best available care is being offered according to their needs and budget.

Empowered with access to information, the public are striving to create more dialogue with their health providers and tailor treatment and care to their personalized needs. Health care providers must understand that the patient's perception of health is often based on different factors than the opinion of their physicians or dentists.

Vulnerable groups also have specific needs. The programs intended to meet these needs must therefore be tailored to them. When designing programs, there is a need to understand the patients' contexts in order to provide more empathic and appropriate "person-centred care." This means dentists must view the patient as a person and involve him or her and the family and caregivers, as may be required, in the dialogue about their needs.

A shift to a person-centred model of care can bring positive change, ensuring successful oral health practices for the new generation of dentists. In any future model of practice, understanding the person and their needs and expectations will be crucial. Employing members of vulnerable population groups in public dental clinics could bridge some of the cultural gaps and build trust.

**In this context, the Task Force makes the following recommendation:**

**Recommendation 5**

*The Canadian dental profession should embrace the principle of person-centred care and encourage the delivery of oral health care to vulnerable patient groups in locations and by delivery methods that are most appropriate for these groups.*

**Cost/benefit implications of blended public/private plans**

The focus in health care will likely shift more towards individual risk assessment and prevention with the goal of having more cost-effective treatment plans. This shift may mean greater incentives or rewards for wellness or preventive measures and the development of payment schemes that will place upper limits on costs. Dentistry can anticipate potential payment reforms and approaches tied to performance or outcomes metrics by observing changes already underway in medicine. In the future, reimbursement will likely be associated with what is done *for* patients, not what is done *to* them.

Dentistry must consider alternatives to the traditional fee-for-service private practice model, including a public/private blended approach. More research is needed on current personal spending on oral health (e.g., through premiums, private insurance companies, or out-of-pocket expenses) and how to enable a greater segment of the population to access a basket of essential dental care (which could include preventive measures, health promotion and primary care).

Those who do not currently have access to dental care often end up in hospital emergency rooms (ERs) or in doctors' offices seeking temporary pain relief. Increased investment in public programs which expand access to care for those with low income may help alleviate this situation.

Many OECD nations currently have a mix of public and private care. But Canada lags behind other countries in providing adequate public funding for its oral health care programs. We need to make sure that existing public health funds are spent effectively, making better use of our resources. But dentistry should also be advocating for increased funding for public programs, as well as reimbursement fees for treatments that are shown to be effective or reimbursing public dentists with a blend of salary/fee-for-service/complexity reimbursement based on numbers of patients seen.

Key stakeholders (including health care providers, government agencies, plan sponsors, insurance companies and patients) should be engaged to jointly work towards private/public health care reform. Such reform will be determined based on further research concerning the long-term viability of dentistry's traditional delivery models or the future suitability of alternate models of care (i.e., a two-tiered reimbursement system or a more optimal blend of private and public funding).

**In this context, the Task Force makes the following recommendation:**

**Recommendation 6**

*The Canadian dental profession should commission a series of studies of the cost/benefit implications of various types of blended public/private dental care plans that could be implemented by 2032.*

### ***Consortium to guide changes to dental insurance***

According to the CHMS, about 62% of Canadians have some form of dental insurance, which is almost exclusively in the form of employee benefits. Approximately 6% of the population has public insurance and 32% has no insurance at all.

Employer-sponsored dental insurance remains a key driver of demand for the existing dental practice model. Those with public insurance (or no insurance at all) as well as low income individuals experience a disproportionately higher burden of dental disease. Furthermore, reimbursement rates for public dental plans in some jurisdictions have deteriorated to the extent that traditional providers cannot meet the cost of providing the care, thus exacerbating access to care issues.

Currently, a significant shift in the health benefits landscape is underway: the health care environment is at a tipping point with more of the burden poised to shift to the private sector. Changes in labour market conditions, including part-time employment, contract work, temporary jobs and self-employment, result in less traditional employment-based dental insurance. While employers continue to offer traditional health benefit plans, younger employees seem to be favouring a shift to more flexible benefits and health care spending accounts. They want the flexibility to choose what, and how much, is covered. Tomorrow's employees will more often be "free agents" or contract workers and will be looking for portable dental benefits packages that can move with the individual as they move through their careers. For this reason, companies and insurers are altering their offerings to appeal to a new generation of employees and health benefit offerings will need to be even more portable in the future.

Increasingly, plan sponsors are looking at prevention and early intervention as a key part of containing costs. For these reasons, companies continue to invest in health and wellness programs. At the same time, organizations are shifting the burden of the health care benefits to employees and demanding increased vigilance of carriers to control costs.

Given that 40% of the population either has no dental benefits at all, or are beneficiaries of increasingly dysfunctional publicly funded plans, there is an opportunity to create entirely new dental benefits products.

There is a need to build a consortium to guide the pending changes to dental insurance. This consortium, led by the Canadian dental profession, should include provider groups, plan sponsors, insurance providers and government. These changes need to be supported by an information technology platform that is patient-centred and encompasses various types of data.

**In this context, the Task Force makes the following recommendation:**

#### **Recommendation 7**

*The Canadian dental profession should lead the development of a consortium (of provider groups, insurance providers and government) to build on the success of third-party dental plans and to guide changes to dental insurance that will have a positive impact on access to oral health care while optimizing oral health.*

### **Research on positive ROI of oral health care**

Dentistry's integration into primary care models will require the profession to fully embrace and incorporate health care system elements such as electronic health records, participating in effectiveness research and interdisciplinary oral health preventive interventions. The following examples show how oral health care for vulnerable groups has an impact on the publicly-funded physician and hospital care systems.

First, the cost of a patient visiting the emergency room for dental care is approximately \$500/visit in Ontario which does not resolve the oral health issue as it only provides temporary pain relief. Tax dollars are wasted when patients visit hospitals for dental emergencies. As a profession, we must advocate for change so these patients can be seen earlier in community dental care settings.

Second, there are some Community Health Centre data from Ontario which shows that for every \$1 spent, it translates to \$1.22 savings to the health care system. Such cost savings show decision-makers a good ROI on public funding. Yet, such clear examples of cost effectiveness analyses are rare in the relatively "data-free zone" that currently exists in the Canadian oral health care sector.

There is a need for more qualitative data to support the claim that there will be a greater financial benefit in enhancing or creating new publicly-funded dental programs. Several informants suggested that government decision-makers need to see more evidence of financial benefit before they will consider investing in new programs. Because the oral health sector suffers from a dearth of good quality research that can demonstrate to decision-makers the cost effectiveness of providing oral health care to vulnerable groups, there is a need for more Canadian research in this area.

**In this context, the Task Force makes the following recommendation:**

#### **Recommendation 8**

*The Canadian dental profession should commission studies to demonstrate the positive return on investment (ROI) of oral health care to publicly funded medical and hospital oral health services.*

## Vision Statement 3

By 2032, Canadian dentists as lifelong learners will be well-prepared to meet the changing needs of society.

### Context

According to demographic projections, the ethnocultural diversity of Canada's population will increase greatly by 2032. The number of foreign-born Canadians could total between 9.8 and 12.5 million in 2032, depending on immigration levels. By 2032, nearly half of Canadians aged 15 and older could be born outside of Canada or could have at least one foreign-born parent; an increasing trend from 2006. Regardless of future immigration, diversity will increase among the Canadian-born population, since the children and grandchildren of immigrants will add to Canada's diverse landscape.

The number of Canada's Indigenous populations also continues to grow at a faster rate than the rest of Canada, and the average age of individuals in these communities is relatively young. Some of this increase is due to natural growth caused by improved life expectancies and high fertility rates, but it is also due to more people self-identifying as Indigenous.

In terms of the dentist–patient relationship, it is likely we will continue to have a significant segment of the population that will engage with dentists in a deferential type of interaction. But there will also be a shift towards “person-centred care,” rather than traditional, paternalistic models of care. This is a sign of the cultural transformation currently occurring in health care; it redefines the interactions between dentists and those who come to them for care.

This transformation is growing rapidly as more people now have access to all of their health information online and will lead to a more egalitarian trend in the doctor–patient relationship. It places a greater onus on the practitioner to demonstrate transparency and highlights the importance of having excellent relationship-building skills.

Patients are bombarded with information and the dentist of the future will need to help them make sense of it all. Dentists often treat conditions people don't know they have. Therefore, dentists in future will need to educate patients so they can become active participants in their own oral health care decisions.

It is likely that social media will become an increasingly significant channel of communication between dentists and patients. Dentists will need to use social media to build relationships with, and educate, members of the public. However, any efficient and relevant social media presence will require financial and labour investments along with the development of proper protocols.

Health professionals of the future will have to be more culturally sensitive and competent to better assess, treat, and deliver health care to patients. Each patient is unique and will respond differently to care based on factors such as physiology, genetics and culture.

In this dynamic environment, the dentist of the future will need to be highly adaptable in order to survive and thrive in practice. The keys to success will be an orientation to lifelong learning, excellent interpersonal skills (as well as clinical skills) and an ability to provide culturally sensitive care. The students selected for dental school should demonstrate an aptitude for developing these skills and be taught from Day 1 about the importance of continuing education.

There are greater opportunities to deliver dental education through various digital advancements, often making education more interactive. It is highly likely that these advancements will continue in the future, changing the way dentists are taught at dental schools and thereafter.

The profession has made information available to the public about the possible choices and options when seeking care from general practitioners or dental specialists. But patients have many questions and want their encounter to be with a caring, compassionate and competent professional; they already expect that dentists will have basic clinical competencies. Additionally, patients expect dentists to approach their treatment plan from a holistic point of view. The differentiator between success and failure of a professional will be the interpersonal skills he or she exhibits.

The theme of “person-centered care” was raised by a number of key informants and by this they were referring to the centrality of relationships and caring about others in the clinical environment. Successful dentists will go out of their way to understand the health status of the patient, will learn the patient’s oral health care needs and obtain true informed consent before proceeding with any treatment.

Learning how to communicate well and develop strong relationships with patients is an essential part of dental education. Students must learn the important role that patient trust plays in the dentist–patient relationship. The profession should be perceived in a positive light by the public. Therefore, a marketing strategy needs to be established to yield improved public relations.

Several informants saw a need to put ‘seeds’ into the dental curriculum to help students develop a better awareness of a dentist’s responsibility to society. There is also a need to open the mindset of our profession; showing a willingness to be part of a team of health care providers and being open to new ways to delivering care.

Dental schools of the future will not look like the dental institutions we currently have, and they may not be isolated entities. Moving forward, education will need to consider an integrated curriculum with a greater focus on inter-professional care and on the community’s needs. There is room for collaboration between organized dentistry and the academic sector to improve methods of choosing dental students in the future.

Increasingly, dental education is delivered digitally and is more interactive. As technology continues to develop in the future, this will change the way dentists are taught at dental schools and throughout their career.

Dental schools in the future will involve more self-directed, inquiry-based learning and less classroom lecture time—students will learn the core material before coming to class. Case-based learning will continue to play an integral role in education, both doctoral education and continuing education. Case-based learning creates a simulation environment; people often learn better in an activity-centred curriculum. This approach creates engagement and helps with long-term retention of knowledge and serves as the foundation for lifelong professional learning and collaboration.



The dental school of the future will be technologically advanced and the transition is now starting to move from plaster and stone, to computers and simulators. More advanced treatments such as CAD/CAM and 3D imaging will be taught earlier in the general program. Imaging will play a more important role in patient diagnosis and treatment.

Mentorship training programs should be made available to both dental students and new graduates. These mentoring programs will help students and new dentists make career decisions and help them develop good habits as professionals. However, there is a need to establish standards and an accountability mechanism for these mentors.

Being lifelong education seekers and learners is a competency that students in the health professions will need for the future. We should encourage all dentists to be learners together; therefore, there should be more training and learning opportunities provided, either physical or virtual.

Within this context, the Task Force articulated the following guiding principle to the recommendations that follow in this section:

*In a country that is evolving as rapidly as Canada—in terms of demographics and societal expectations—where innovations in technology are affecting the world of professional work, the concept of a professional education being defined solely by formal programs of education and training is no longer valid. The dental student of the future will be selected based on the ability to adapt to changing societal needs and expectations. The practising dentist of the future must be a lifelong learner constantly acquiring new knowledge in a variety of settings.*

### **Tuition costs affecting recruitment, admission and future career choices**

The Task Force identified the cost of dental education as a significant challenge to overcome. High tuition costs limit who applies to dental school, as applicants generally come from higher socio-economic groups. This financial barrier particularly impacts minority groups, including Indigenous peoples.

High tuition also leads to graduates with high levels of debt, creating immediate pressure to earn as much as possible, as quickly as possible, in order to meet debt repayment schedules. This pressure forces many new graduates to seek out urban areas with high patient populations. These trends continue the cycle of limiting access to care for many vulnerable groups.

Another consequence of these pressures is that fewer early career dentists will be likely to seek careers in academia or in public health settings. This presents an opportunity to expose dental students early on to the various ways that they can contribute to society and the betterment of oral health in the population at large (i.e., private practice may not appeal to all graduates). Graduating with a high debt load may channel new graduates into career paths that may not suit them.

**In this context, the Task Force makes the following recommendation:**

#### **Recommendation 1**

*The Canadian dental profession should research how the cost of dental education impacts recruitment and admission to dental school and future career options, including possible careers in academia or working with vulnerable groups, which may affect access to care.*

### **Students from Indigenous communities or economically challenged backgrounds**

As Canadian society is becoming more diverse, the level of diversity within the profession must be monitored to determine if we are recruiting the ideal mix of people into dentistry. Our dental schools currently have a strong level of gender diversity and most ethnicities are also well-represented. However, the student population is lacking in Indigenous representation and those from lower socioeconomic backgrounds. Anecdotal evidence shows that most dental students still generally come from middle- to high-income households.

It is challenging to recruit a fully diverse group of dental students. The same groups in the population with unmet needs are often under-represented in the dental profession. This lack of diversity is problematic, as we need practitioners who will care for and understand the needs of those who are most vulnerable and have difficulty accessing care.

Recruiting a diverse range of professors and faculty for dental schools with regard to gender, ethnicity and experiences in alternative practice settings, would allow for better mentoring and leadership to inspire and motivate innovation.

**In this context, the Task Force makes the following recommendation:**

#### **Recommendation 2**

*The Canadian dental profession should work with pertinent stakeholders to increase the number of students from Indigenous communities as well as students from economically-challenged backgrounds admitted to Canadian dental schools.*

### **Professionalism, ethics and empathic communication**

In the decades ahead, many jobs will be heavily disrupted by technology and will require a skills overhaul; critical thinking, creativity, collaboration and communication as well as the ability to work with technology will be essential. The dentist of the future will need to be equipped with these skills.

Certain technical skills of dentists will be matched and replaced by technology over time. But the communication, empathy, professionalism and ethical decision-making can never be duplicated no matter how “smart” artificial intelligence (AI) or other technologies proves to be. In this light, there is a need to ensure that dental school curricula include essential skills for future success. The 2016 competency framework published by the Association of Canadian Faculties of Dentistry (ACFD) is an encouraging step in this direction, with its explicit emphasis on ethics, professionalism and empathic communication.

While many key informants articulated a certain despair about the evolution of the profession towards what they characterize as commercialization, many expressed the need to teach dentists and dental students more about the social contract and their responsibilities in this contract, as a group and as individuals.

Patients have lots of questions and want their encounter to be with a caring, compassionate and competent professional. They already expect that all dentists have basic competencies as clinicians. But the public also expects dentists to have people skills and to understand who the person actually is and

to take a holistic approach to care. The differentiator between professional success and failure will be the interpersonal skills exhibited by the professional.

Several key informants from the education sector talked about widespread adoption of the new competencies as being only at the infancy stage. Yet these informants expressed concern about how best to teach these inter-personal professional skills in an already crowded curriculum. As new competencies are adopted, there is an opportunity to conduct research that can inform the introduction of evidence-based methods for teaching these essential skills to the students of tomorrow.

**In this context, the Task Force makes the following recommendations:**

**Recommendations 3**

*The Canadian dental profession should ensure that all dentists licensed to practice have an excellent grounding in the principles of professionalism, ethics and empathic communication.*

**Recommendations 4**

*The Canadian dental profession should advocate for funding of education research that examines the best ways to teach and assess professionalism, ethics and communication skills, and encourage the development of learning modules for all dentists entering practice.*

***Residencies or other post graduate learning programs***

The Task Force acknowledges that the current dental school curricula are overcrowded, increasingly under pressure to provide students with new skills related to clinical techniques, digital dentistry, as well as interpersonal and business skills.

Several key informants spoke of the role dental schools currently play in providing access to care for vulnerable groups through outreach clinics, and the capacity of schools to increase these efforts in this area in future.

Combining these two concepts: evolving dental curricula and increasing access to care provides an opportunity to extend the educational and equivalency process prior to full registration/licensure as a dentist (sometimes referred to as “post graduate year one” or “PGY1”). This will meet the goals of providing new graduates with more of the necessary communication, interpersonal and technical skills for success as a professional, exposing them to providing care for vulnerable groups, and also improving access to care for these populations.

**In this context, the Task Force makes the following recommendation:**

**Recommendation 5**

*The Canadian dental profession should advocate for the establishment of residency or other postgraduate learning programs to allow new graduates to enhance their clinical skills and expose them to different models of oral health care delivery for all people living in Canada.*

### **Formalized mentorship programs and lifelong learning**

Historically, the passing of knowledge from colleague to colleague has been a good way to share wisdom. Besides learning in formal settings, informal learning opportunities, such as being mentored by experienced specialists and general practitioners, provides an excellent forum for young graduates to learn essential skills and develop clinical techniques crucial to success in practice. Dental associations can play a vital role in ensuring that proper mentorship networks are created and sustained. The association of the future could evolve into a “network of mentors.”

Provincial and territorial dental associations across Canada have embraced the concept of mentorship and several have established mentorship programs, primarily for the benefit of new graduates. Early results are encouraging, but there is recognition that the offerings could improve through sharing experiences and learning about best practices.

Mentorship training programs established within dental schools would enable mentoring to begin at school and continue after graduation. These mentoring programs will help students and new graduates make career decisions and learn good habits as professionals. However, there is a need to establish standards and an accountability mechanism for the mentors. Regulators could play a role in helping to vet potential mentors.

One source of mentors would be dental school alumni associations which could provide support for new graduates including advice, leadership, decision-making and support on a personal and professional level.

**In this context, the Task Force makes the following recommendation:**

#### **Recommendation 6**

*The Canadian dental profession should establish a formalized mentorship program for new graduates to facilitate the transition into professional practice and to encourage lifelong learning.*

### **National certification body for continuing dental education**

Dentists in every jurisdiction in Canada are required to take continuing education (CE) courses to maintain their license to practice. These courses are offered by numerous providers and organized by a range of organizations; from dental schools and associations to local study clubs and dental laboratories. Many of these CE events are sponsored by manufacturers, distributors and laboratories and there is a perception that some of the information conveyed in sponsored courses runs the risk of being biased or not in keeping with the best scientific evidence.

There is currently no national body in Canada that certifies CE for dentists to ensure that courses are unbiased and evidence-informed. In the US, the American Dental Association runs the CERP (Continuing Education Provider Recognition) and the Academy of General Dentistry runs PACE (Program Approval for Continuing Education) to serve this purpose.

The Royal College of Dental Surgeons of Ontario’s (RCDSO) Quality Assurance Program evaluates individual CE courses in communications, ethics and professionalism to see if they meet specific criteria to have them designated as “Core 1 Courses.” This program reviews and approves applications for study clubs based on certain criteria. The RCDSO worked collaboratively with the National Dental Examining

Board to develop this program as a learning experience, so if a dentist doesn't "pass," there is no link to registration or discipline.

A need exists for a national level program to ensure that CE offerings for dentists in Canada meet certain quality criteria. There is also potential room to help dentists learn to critically appraise the marketing claims for materials, equipment and devices that they hear or read about in their quest to keep up-to-date with new clinical developments.

**In this context, the Task Force makes the following recommendation:**

**Recommendation 7**

*The Canadian dental profession should establish a national certification body for continuing dental education that assesses courses to ensure that they are based on sound scientific evidence and free of funding bias and conflicts of interest.*

**Methods to demonstrate continuing competencies**

In the new paradigm of health care where public expectations of professionals are more exacting, where there is an onus on professionals to be more accountable and transparent, where new technologies bring new treatment modalities into play, and where the knowledge base increases rapidly, the pressures on professionals to maintain and demonstrate continuing competency are bound to increase.

Mandatory CE can be considered to be in its early stage of development in the oral health care sector, and it is not implausible that the formats for its delivery will change over time. In some branches of medicine in certain jurisdictions, there are mandatory re-licensure examinations every few years. Yet in some jurisdictions, a dental practitioner can sit passively through the prescribed number of hours in lectures and maintain a license.

Dentists will continue to be lifelong learners. Ideally, dentists will continue to reflect on past cases and qualitative data while attending CE courses. It is likely that in future there will be more pressure to actively demonstrate competency, show that learning objectives have been met, and allow for the tailoring of CE portfolios for the learning needs of individual practitioners. New communication technologies enable the presentation of micro-learning opportunities that can be consumed at the leisure of the practitioner.

The Canadian dental profession would benefit from a systematic, evidence-informed approach demonstrating continuing competence in clinical and non-clinical domains in the years ahead.

**In this context, the Task Force makes the following recommendation:**

**Recommendation 8**

*The Canadian dental profession should promote the development of new evidence-informed methods for licensed dentists to demonstrate continuing competency in clinical and non-clinical skills.*

## Vision Statement 4

By 2032, Canadian dentists will be ready to embrace new technologies and models of practice.

### Context

There are countless technologies being developed and introduced to clinical practice. Some are aimed at patients, some at dental practices, and others at the health systems level. The health care technology landscape will continue to get more complex as the pace of adoption accelerates. Technology is changing faster than dentist's knowledge of it and faster than the fee guide's ability to capture it.

Patient-focused technologies reduce information asymmetry and put the power of diagnosis and treatment planning in the hands of the patient, leading us into the era of "The patient will see you now, doctor." The dentist now has more of a "concierge" role, assisting the patient with his or her needs, wants and desires and acting more in a guidance capacity.

This rapidly evolving technological landscape will allow for other dental providers to become complementors, substitutes, or gatekeepers, taking on the concierge role of the dentist. Areas of dentistry most at risk are the diagnostic and laboratory-delivered procedures where the "supply" or "buyer" chain can be digitized. Examples of this development include orthodontic aligners being sold directly from a manufacturer to a patient or "Dr. Google" serving to bypass the dentist's diagnosis.

Personalized dentistry may be viewed as dental clinical decision-making based on the collective analysis of an individual's unique clinical, genetic, genomic, behavioral and environmental information; even including disease risk evaluated during childhood. Early genomic analysis and screening will allow for personalized prevention and specialist care strategies. Early stage disease detection will result in better prognosis and more effective treatment.

One area of rapid development has been the advent of digital technologies, such as in impression taking and the use of artificial intelligence (AI) in radiology. Approximately one-third of dentists currently use digital technologies, demonstrating a lag in adoption rates to date, but that is sure to change.

Today's graduating students will likely drive technology uptake in dental practice as they are more "tech savvy" than their colleagues who graduated before the dawn of the digital dentistry era. Another key driver of technology adoption will be corporate entities, which have more access to capital and will be looking for greater ROI. However, higher cost technologies may not always translate to an improved bottom line which could be a limiting factor in the adoption in practice.

With the availability of 3D scanners, digital impressions, and cone beam computed tomography (CBCT) imaging in dental offices, digital images are now easily obtained and custom appliances and guides can be fabricated with greater precision leading to improved patient outcomes. These technologies are becoming more affordable and thus will likely be adopted in a greater number of offices in the future.

New practice administration software that introduces practice efficiencies, allows voice recognition in the clinical setting, aids clinical diagnosis, schedules patient visits and automates inventory management

(among other functions) will revolutionize how health care practices are run. This is already occurring in other parts of the health care system.

Virtual doctor offices already exist in some large Canadian urban centres which are taking care of business (and patients) online. This “Uber for health care” approach, which claims to provide a 24/7 virtual doctor’s office, offers patients the ability to register online, type in a description of their symptoms and click to request a consultation with a doctor. Patients select a video or text chat appointment and can also share photos with the physician.

By 2016, the vast majority of Canadians had electronic health record (EHR) data available to authorized physicians across six clinical domains: client demographics, provider demographics, diagnostic images, laboratory test results, clinical reports/immunizations and drug information systems.

Of these six clinical information domains, the digital drug information system lags furthest behind in terms of availability. Canada Health Infoway has identified this as an area of focus moving forward and plans to develop a pan-Canadian electronic prescribing system. Canada continues to make strides in providing health professionals’ access to EHRs across the country—but what about patients, and what about dentists?

Traditional practice models in Canada have been centered around dentists owning and operating their own practices, working independently with their own oral health team. However, there has been a growing trend of corporate-owned practices that employ or contract dentists to operate within their management structure. These dental practice management organizations can have varying percentage ownership with non-dentist investors. There is supporting data that suggests that the percentage of corporate ownership has, and will continue, to increase over time.

The reasons for this increase could reflect a lack of business training or knowledge that is required by the young dentist, increased debt load from education that prohibits the purchase or start-up of their own practice or more new graduates looking for a better work–life balance and not having a desire to take on the responsibilities of ownership. The dentist of the future will need to have the business skills to succeed in the type of practice in which they choose to engage.

There has been a significant reduction in the prevalence of oral diseases in the general population because of dentistry’s success in providing effective and appropriate preventive therapy, including public health initiatives such as community water fluoridation and health promotion about practising good oral health habits. The type of treatment provided in dental offices is changing. In the past, the treatment of disease occupied a major portion of the dentist’s time, and therapeutic procedures dominated what dentists did (restoring damages of caries and periodontal disease). The level of required therapeutic care is decreasing steadily and along with it demand for the most common, traditional dental services is also declining.

Changing disease demographics implies that risk assessment and diagnostic screening technologies will become more prevalent in the future. This focus will allow governments and the public to save money by preventing oral disease upfront. This will also open more multidisciplinary care in the oral health field, potentially increasing competition in the oral health care domain. These anticipated changes may be a threat to dentists if they can’t adapt their practice to the changing disease demographics expected.

Within this context, the Task Force articulated the following guiding principle to the recommendations that follow in this section:

*The Canadian dental profession is committed to ensuring Canadian dentists have access to leading-edge technical and non-technical training, and fully utilize new technologies that contribute to the cost-effective enhancement of oral health. The dentist of the future will need to have the business skills to succeed in the type of practice in which they choose to engage.*

### **Appropriate adoption of new technologies**

Because an increasing focus on personalized health, person-centered care, and wellness approaches is likely to coincide with a decreasing power imbalance between dentists and patients, we can expect that patients will come to their health care appointments armed with information about treatment options and requesting specific services.

Although the democratization of knowledge will lead to the flattening of the power imbalance between patient and dentist, the new collaborative arrangement of disease co-management might well involve one or more parties that has insufficient knowledge about the efficacy, cost-effectiveness and safety of new technologies.

Dentists will have to adopt a more collaborative approach in their role with patients and technology. There will be a need for all parties to have access to science-based information about the new and exciting technologies that can be expected to prevail in the oral health care environment of the future.

The rapid development of new technologies to aid in diagnosis and treatment of oral disease requires dentists to increase capital investments to operate which increases expenditures. The focus should be for dentistry to learn how to enable, utilize and manage the technology to facilitate connections and improve the value of care. This is the primary focus for the success of teledentistry.

In this environment, dentists, other providers, and patients will all require evidence-informed guidance about the most appropriate technologies for diagnosing and treating oral conditions or related disease. “Appropriateness” refers to technologies that are safe, effective, cost-effective, improve patient care and patient outcomes, promote equity and make dental care more accessible. There is an opportunity for the dental profession to work closely with stakeholders to promote appropriate adoption and use of new diagnostic and treatment technologies, and to communicate information about these technologies to dentists, other providers and members of the public.

**In this context, the Task Force makes the following recommendation:**

#### **Recommendation 1**

*The Canadian dental profession should promote the appropriate adoption of new technologies by dentists, other oral health care providers and the public.*



### **Health care technology assessment research**

With the rapid advancement of knowledge and technology, clinicians are bombarded with information and claims about new technologies. However, most clinicians have little knowledge about the effectiveness of these new products, and they do not understand how to adequately assess them. New health care technologies are produced at an astounding rate and it is believed that the adoption of innovative medical technologies may increase health care expenditures.

Although new technologies may have been proven in efficacy studies to alter or improve patient outcomes, in many cases the assessment of the effectiveness of these technologies is available only after technologies have been widely adopted. There is still a lack of understanding as to how providers adopt and implement technology standards at their practices.

Although the adoption and use of new innovative technologies are guided by the expectation of improved clinical outcomes, these decisions are mostly based on insufficient data. It will be important for oral health care providers to understand the benefits and risks of various technologies and when a ROI will be realized. Practice owners need to know if there is sufficient demand for a new technology and whether it will benefit patients.

**In this context, the Task Force makes the following recommendation:**

#### **Recommendation 2**

*The Canadian dental profession should advocate for funding of health care technology assessment research that will help practising dentists make wise choices when considering incorporating new technologies into practice.*

### **Resources to assess new and emerging technologies**

Health care technology assessments pertinent to the oral health care sector are being conducted in Canada. Standards for inter-operability need to be communicated to relevant stakeholders and organizations within the profession to promote the responsible use of safe, effective and cost-effective technologies. The dental profession needs to augment its communications to dentists to ensure that practitioners are able to critically assess new technologies before they adopt them in practice.

The communications channels of the profession, such as CDA Oasis, can prioritize providing information to dentists about which technologies being developed have potential application in the oral health sector and which technologies being introduced to the market are safe, cost-effective and efficacious.

**In this context, the Task Force makes the following recommendation:**

#### **Recommendation 3**

*The Canadian dental profession should provide education and resources to help dentists assess new and emerging technologies and to help them develop competencies in the critical assessment of new technologies and their cost-effectiveness.*

### **Review and certification process**

For new and promising technologies in any domain to be transformed into clinical reality, an industry standard must be designed and implemented. Currently, different software and hardware are being supported by different companies and these new technologies often don't communicate with one another. This lack of communication and standardization is problematic for the dental team, dentist and patient, as it wastes time and reduces practice efficiencies.

There is a potential role for the dental profession in either creating a review process to test the interoperability of new technologies (like the CDA Seal of Validation Program), or else we can advocate for the adoption of standards created by other organizations such as the International Standards Organization (ISO).

**In this context, the Task Force makes the following recommendation:**

#### **Recommendation 4**

*The Canadian dental profession should establish a review and certification process to ensure that technologies entering the Canadian dental care market utilize common language of communication to facilitate compatibility and interconnectivity.*

### **Alternative and integrated practice models**

Control of health care costs will require approaches by providers aimed at early detection of disease and at lifestyle risk factors not currently rewarded by fee-for-service payment. Dentists will increasingly need to show more value for their services and evaluation of outcomes as demanded by employers and third-party payers. The evolution of dental treatments towards an emphasis on quality and value will drive further changes in the health care delivery model for dentists and may not generate accustomed revenue.

New emerging practice models will provide new choices in how to best serve the population. Person-centred care needs to be the main focus in any practice model in which a dentist chooses. Increasing the value of dentistry within the health profession by promoting a more holistic team approach with medicine and ensuring the ability of dentists to maintain ownership of the diagnosis aspect of oral disease, will be the basis for this approach.

A range of key informants had suggestions about where oral health care could be delivered in the future to benefit those in vulnerable groups. When we move from dentist-centered care (care at a location and time convenient to the dentist) to person- and community-centered care, delivery of care can be enhanced.

The health care industry is also becoming more inter-professional. In addition to a trend towards preventative care delivered by non-dentists, there is a movement underway to more fully integrate dentistry and general health. The dental profession must prepare and learn to take advantage of other health care providers, to promote both the oral health and overall health of the patient. In this light, there will be a need to open the mindset of our profession, to be more willing to be part of a team of health care providers and to be open to new ways of delivering care.

A shift to value-based, person-centered models can bring positive change, ensuring successful oral health practices for the younger generation of dentists. Some dentists may face challenges in sustaining the traditional private dental office and we can expect to see more organization of large group practices in Canada between now and 2032.

**In this context, the Task Force makes the following recommendation:**

**Recommendation 5**

*The Canadian dental profession should research and facilitate the awareness and understanding of new alternative and integrated practice models, and assess their viability and sustainability.*

***Business education and resources for practice models***

Traditional practice models in Canada have been centered around the dentist owning and operating their own practices, working independently with their own oral health team. The independence allows dentists to set their own hours of practice, to be flexible in their personal schedule, and to determine the size and makeup of the office support staff. There are variations within this basic model which includes multiple dentists in a partnership agreement or multiple dentists owning their own practice and having a facility cost share.

Data shows that this traditional practice mindset is changing (albeit very slowly) as the percentage of dentists who own their own practice has been decreasing. There has been a trend over the past few years of corporate-owned practices that employ or contract dentists to operate within their management structure. These dental practice management organizations can have varying percentage ownership with non-dentist investors. The percentage of corporate ownership has increased over time.

Although still in its infancy in Canada, “Corporate Dentistry” is a growing phenomenon in the United States. The Association of Dental Service Organizations (ADSO), the advocacy organization for Corporate Dentistry, now comprises more than 40-member companies and more than 100 industry partners.

The reasons for these increases could reflect the lack of business training or knowledge that is required by the young dentist, increased debt load from education that prohibits the purchase or start-up of their own practice and perhaps more new graduates looking for a better work–life balance and not having a desire to take on the added responsibilities that come with ownership.

Given that knowledge of the business skills required to run a dental practice is not heavily emphasized in dental school, resources and business education could be compiled as a cohesive set of courses developed by our dental associations providing all dentists nationwide access to the same information. Dentists entering the profession will be faced with difficult choices when trying to determine how to set up and operate their potential practices. While the ownership of a dental practice is still dictated by legislation in Canada, there are different models that could exist in which would be in compliance with the law. The dentist of the future will need business skills appropriate to the model of practice in which they choose to engage.

**In this context, the Task Force makes the following recommendation:**

**Recommendation 6**

*The Canadian dental profession should facilitate the provision of business education and resources for dentists that are appropriate for their chosen model of practice.*

**Full range of career options**

It is conceivable that the dental graduate of the future will have a desire to focus more time on individual patient care and clinical dentistry, and less time on practice management. This can be achieved by outsourcing business and office management duties to dental support organizations or joining independent practice organizations.

Rising student debt loads upon graduation and inflated costs of start-up dental practices may lead new dental graduates to seek guaranteed employment and salaries outside of the traditional solo-practice dental office model.

Shifting economic trends and market forces, as well as patient demands may see the emergence of more multi-speciality dental practices, and interdisciplinary clinics, where patients will prefer to go for all their treatment needs.

Mobile dental clinics and teledentistry may gain more attention in the future in an effort to deal with growing issues related to access to timely oral health care. This specifically relates to vulnerable populations such as seniors in long-term care facilities or those living in remote and rural areas.

The integration of general health and oral health care in the future has the potential to dramatically change how patients are treated and how all health care professionals practice. Inter-professional and collaborative practices, in a value-based system of care, may see an increase in popularity in years to come.

Emerging practice models offer choices on how to best serve the population. The “person-centred care model” should be central in any of the models we choose to adopt. Increasing the value of dentistry within the health profession by promoting a more holistic team approach with medicine while emphasizing (and preserving) our ability to diagnose oral disease, will be the basis for this approach.

With all these forces in play, the newly graduating dentist of the future will have a range of career options to consider, that their peers graduating today are not equipped to assess in an objective manner. There is a need to educate new and future dentists about the various practice models to help new dentists decide on their career path.

**In this context, the Task Force makes the following recommendation:**

**Recommendation 7**

*The Canadian dental profession should ensure that graduates are aware of the full range of career options available to them, including alternative practice models.*

## Next Steps

In creating this report and putting forward the recommendations, the Task Force envisages that the profession is at the starting point of a process, rather than an end point.

This report was never conceived as being an exercise in predicting the future. Rather, it was to generate a series of recommendations that could be useful for key organizations of the profession as they approach future rounds of strategic planning.

Historically, the organizations within the profession have conducted their planning processes in isolation. However, the magnitude of the opportunities and challenges facing dentistry over the next decade and beyond require a new approach to collaboration.

Although the recommendations in this report are aimed at *“the Canadian dental profession,”* it is envisaged that some recommendations will require concerted collaboration between a variety of organizations over a sustained period of time to see them come to fruition.

There are encouraging signs that collaboration is flourishing among organizations in dentistry, and first steps are being taken to coordinate strategic planning exercises. The Canadian dental profession has historically been able to seize on opportunities and weather challenges.

The phrase that resounded when the decision was made to create this Task Force was *“what got us here, will not get us there.”* These words, which inspired us at the beginning of the process still rings true today, as we enter the next phase of planning a future dedicated to delivering person-centred oral health care for all in Canada.

**Working Group 1**  
**Technology, Substitutes, Complementors & Intermediaries**  
**Executive Summary**

**Technological Innovation: A Disruptive View of the Future**

**Working Group's Definition of Technology:**

The practical application of organized knowledge and skills in the form of devices, techniques, procedures and systems developed to achieve an objective related to provision of dental care, such as: solving a health problem, improving quality of care, improving quality of life, improving access to care, or increasing efficiency and productivity.

- Technology is changing faster than the dentist's knowledge of technology, need to be ahead of the curve on this. Technology is also changing faster than fee guide's ability to capture it.
- Global mega trends include: shifting demographics, increase in government interventions, emerging economies, pace of technology, global interconnectivity.
- Democratization of knowledge- flattening of power imbalance between patient and dentist. Information asymmetry will continue to rapidly decrease. Dentists will be forced to adopt a more collaborative approach or a concierge role. "The patient will see you now, doctor".
- Patients become central to health care and the democratization of health data, health information, and sensors will come to fruition. An end to medical paternalism.
- In healthcare, everything is done essentially at the population level, which doesn't recognize the individuality of people. Medicine and dentistry have basically lived in a 'cocoon' and this approach is fundamentally flawed and we now have the tools to do much better.
- Increasing focus on personalized medicine, patient-centered care, health and wellness.
- Personalized medicine led by identification of biomarkers.
- The open health movement, patient-centered care, and value-based payments are inextricably linked.
- Medical and dental costs are largely about location, time and people. Intelligent networks will allow place, time and people to become more distributed.
- Because of the democratization of medical and dental knowledge, innovation will come from all sorts of new places.
- Patients may ultimately be better at understanding risks than many physicians/dentists.
- Diagnosis algorithms, and treatment algorithms will increase power of smart devices and put u-commerce power in the hands of the consumer.

- Digitization of the supply and buyers chain will continue, which reduces the simultaneity of production and consumption in any procedure that requires a lab component, and all back-end operations in a dental office (booking, insurance, payments). This will allow large corporate players outside of the dental space to enter a significant portion of dental services and deliver services directly to patients. The effect will be less revenues or increased costs or both for dental offices.
- Rivalry between specialists and GP dentists and rivalry between new entrants and incumbents will intensify due to digitization and reduced information asymmetry. Not all areas affected equally, most at risk are orthodontics, sleep dentistry, removable appliances (partials, dentures), crown and bridge, oral medicine, all diagnosis.
- Technological changes favor the young, and new entrants (with new production functions).
- Individual dentists and organized dentistry must pivot at both the low end of scope and the high end of scope.
- Regulatory control will weaken as production and delivery of dental services direct to patients will involve corporations outside of Canada some in the dental industry and some outside. This will affect both dental colleges and provincial dental associations negatively.
- There are many risks with technological change. These changes are inevitable however security and privacy may be roadblocks. Also, there are many perverse incentives and difficult design challenges along the way that will keep us from getting to high-quality tech-enabled care at a reasonable price. Technologies could get so sophisticated that dentistry will no longer be relevant.
- Currently dentists do a non-diagnostic approach: they basically treat all patients the same. Example: recall cleaning every 3-6 months. Model from the 1940's. Dentists- repair vs. diagnose. This will change drastically.
- What's going on in the mouth gives an overview of the body- dental and medicine will blur. Sleep apnea, diabetes, gum disease- all can be taken over by physicians through new technologies.
- Sensor probes will be big. Sensor technologies will become smaller, lower cost, more prevalent use. Could have sensors that look at tooth probe, saliva etc.
- Dentists have only protected diagnosis with x-rays but there are many other ways to diagnose today for example fluorescence, infrared and anybody can use these and that is problematic.
- Some high impact disruptive technologies include: data analytics, nanotechnology, 3D printing, big data, Internet of Things, sensor technologies, saliva testing to identify disease.

The following table summarizes current and future dental technologies. They are grouped according to the likely timing of their impact from short term (within 5 years) to long term (10 to 20 years). It also shows where each technology fits in the dental technology framework, which is discussed later.

## Summary of Dental Technologies

Current to Short Term (5 Years)		
TECHNOLOGY	DENTAL TECHNOLOGY FRAMEWORK	STAKEHOLDER IMPACT
Tele dentistry	3B	Strong impact on allied providers. This will be synergistic with other technological advances. Congestion in cities can make it as hard to get to a clinic as distance in rural areas. The use of smart phones by patients and providers- can lead to the virtual practice. This will eliminate geographic barriers, reduce the information asymmetry and empower the consumer.
Mobile Dentistry (iPhone-based, mobile radiographs)	1A 2A	Strong impact on allied providers.
Robotics for tele dentistry	3B	As long as the technology costs remain high, it will benefit clinics more than standalone practitioners, and it will increase the benefits of capital aggregation and managerial skills.
Offsite diagnosing: wearables	1B	Moderate impact.
Offsite diagnosing swallowables	1B	Moderate impact
CT diagnosing	2A	Light to moderate impact. Digitization of x-ray and intraoral images should be part of focus, plays into other technologies
AI (artificial intelligence)	3A	If insurers can use evidence based dentistry, they could exert more control on dentists and governments may make certain procedures universal. For example, periodontal treatments to reduce the risk of cardiovascular or Alzheimer's disease.
Silver diamine	3B	Clinics could benefit more than stand alone dentists, and could be taken away by pharmacists, physicians, nurses or dental auxiliaries in delivery.
iPhone, e-commerce, u-commerce	1A, 2A 3B	Has power to be very disruptive, if the right app/service comes along.
Apps for rating and finding dentists	2B 3B	
Mobile referral apps	2B	
Aligners	2A	Has power to be very disruptive. This will be synergistic with other technological advances.
Aligners direct	2A 3B	Has power to be very disruptive. It needs to be regulated by CDAs.
Augmented and virtual reality: drug information	3A	Moderate.
Augmented and virtual reality: patient comfort (anxiety, procedure info)	3A	Light.
3D printing additive	2A	Moderate to strong.
3D printing subtractive	2A	Moderate to strong.
Robotics: cleaning/ sanitation	3B	Moderate.
Nanotechnology: new composites	3A	Moderate.



<b>Mid Term (5 to 10 Years)</b>		
<b>TECHNOLOGY</b>	<b>DENTAL TECHNOLOGY FRAMEWORK</b>	<b>STAKEHOLDER IMPACT</b>
Alternatives to silver diamine	3B	Strong impact on all providers.
Big Data	3A	
Augmented and virtual reality: training	3A 3B	Moderate.
Nanotechnology- New biomaterials for endodontics	3A 3B	Moderate.
Nanotechnology- New composites	3A 3B	Moderate.
Robotics- Assistance with clinical care	3B	Strong.
Personalized Medicine- Gene therapy	1B	Potentially strong in specific situations but light-moderate initially.
Personalized Medicine- Genomics	1B	Potentially strong in specific situations but light-moderate initially.
<b>Long Term (10–20 Years)</b>		
<b>TECHNOLOGY</b>	<b>DENTAL TECHNOLOGY FRAMEWORK</b>	<b>STAKEHOLDER IMPACT</b>
Personalized Medicine- Proteomics	1B	Potentially strong in specific situations but light-moderate initially.
Personalized Medicine- Metabolomics	1B	Potentially strong in specific situations but light-moderate initially.
Personalized Medicine- Stem Cell Therapy	1B	Potentially strong in specific situations but light-moderate initially.
Robotics- Clinical interventions such as drug injection, drilling, extraction)	2B 3B	Strong.

Other technologies not considered above include:

- Vaccine to control oral disease? A possibility.
- Artificial organs in medicine will grow- look at dentin, enamel in dentistry.
- X-ray imagery- invasive- need to get away from this. New non-invasive technologies such as MRI (will become cheaper) for dentistry.
- Mini-robots to clean your teeth.
- pH will be measured regularly to know when to brush teeth, measure caries risk.
- Auto biosensors will be used (via oral cavity) to diagnose.

### Grouping Technologies and Assessing Their Impacts

There are endless technologies that are constantly being developed, evolved and introduced to clinical practice. This will only continue to get more complex as the velocity of adoption accelerates. For these reasons, our approach has been to develop a system that tries to explain, assess and describe technologies and their potential impact on dentistry. We have done so using a static model – dental technology framework (Fig. 1) as well as a dynamic model- Boardman Armstrong direct forces framework (Fig. 2).

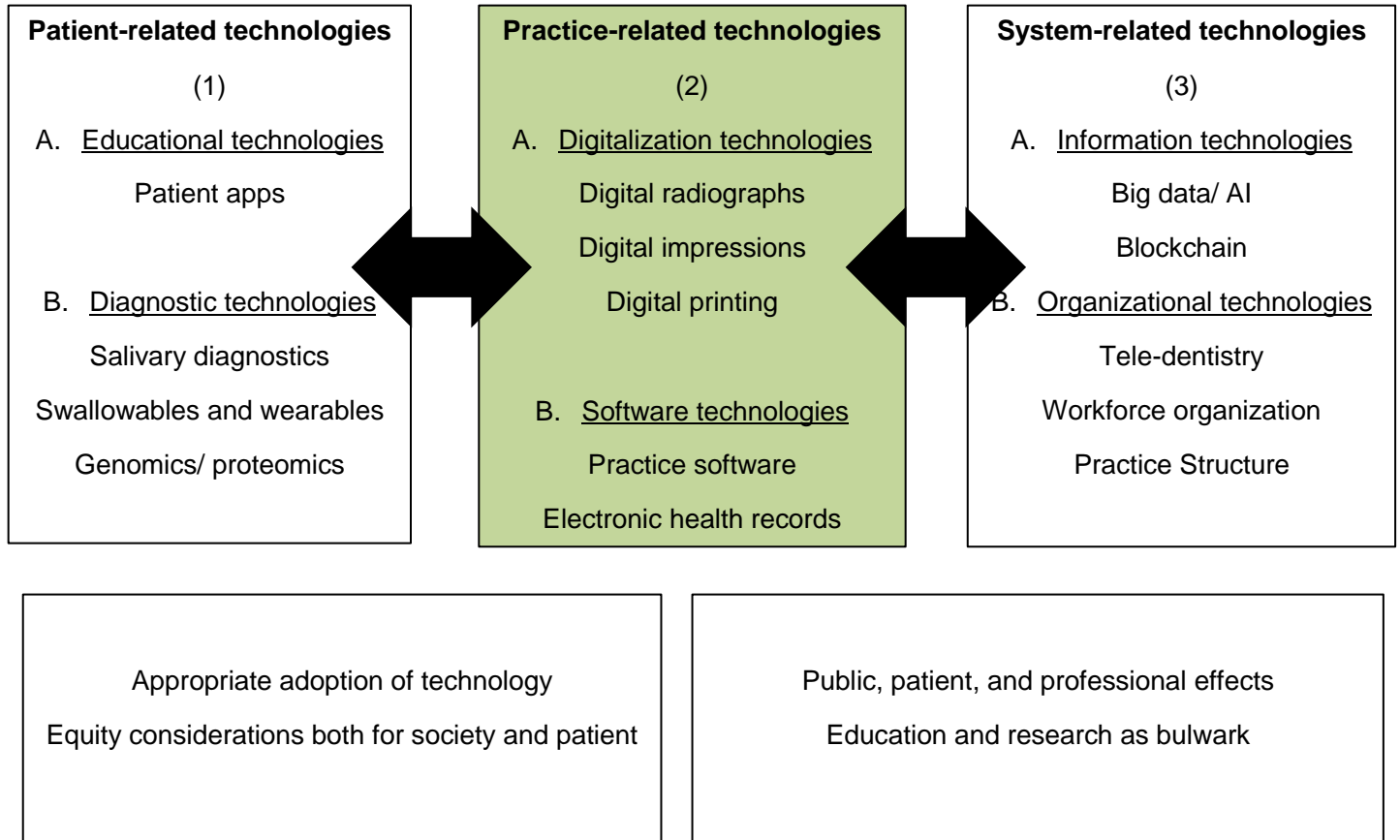
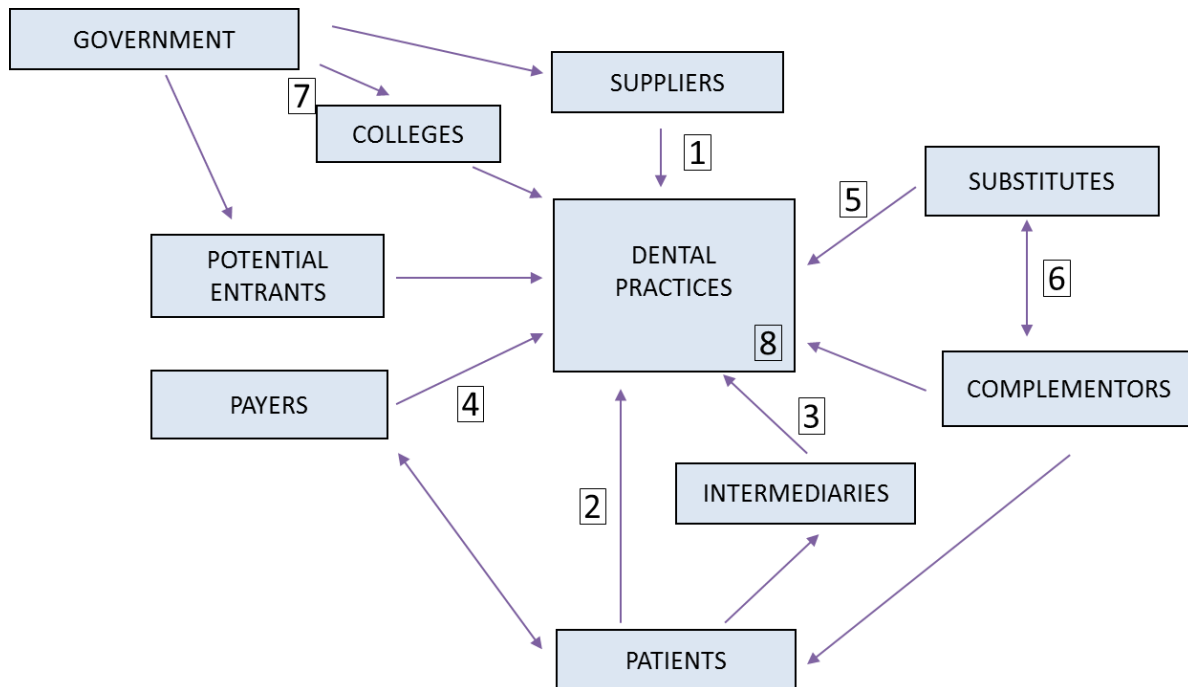


Figure 1: Dental Technology Framework



**Figure 2:** Forces Affecting the Profession: A Technology Framework

### 1. Suppliers

- Some technologies can now be marketed directly to consumer and can cut out dentist altogether.
- The cost of 3D printers is dropping fast, and original patents are expiring this will facilitate other disruptive companies to enter marketplace.
- Online access to information, algorithms and technology can empower patients to perform their own treatments (i.e. build their own aligners; you tube video).
- Diagnosis and treatment planning are easily unbundled and performed separately by dentists and non-dentists in other countries in situations where the clinical service involves offsite product manufacturing (reduction of simultaneity).
- Lab procedures could be manufactured at either world labs or, with drop in 3-D printing costs, in small local labs connected to diagnosis/treatment planning centers through internet “clouds”.
- Allow hygienists and dental technicians to pivot (to take different roles—they go from a complementor to a substitute). They may take much of dental practice with them.

### 2. Buyers (patients)

- All diagnosis is at risk of wedges between patient and practitioner (includes oral pathology/oral cancer diagnosis).
- All back-end services (the business office services) are at risk of wedges (booking, payment, insurance claim submission, etc). Can be tied to new insurance products like flexible plans.
- Dentists need mind-set change; dentists no longer have monopoly on knowledge, patients are now better informed (they can look up-dental procedures on the internet), they are doing more “shopping”, and with more information they have, greater bargaining power.
- Dentists are becoming facilitators of knowledge. They empower patients. Ultimately, patients chose the diagnosis and treatment options. The patient will see you now doctor.

### 3. Intermediaries

- All intermediaries insert a wedge between dentists and patients, dentist is no longer the “gate-keeper”.
- Other healthcare providers, such as hygienists, have been the traditional intermediaries between patient and dentist, but new technologies can change this.
- On-line referrals provide information about location, cost, quality which gives patients more bargaining power.

### 4. Payers (insurance)

- Simultaneously, patients and payers (tax payers/insurers/plan purchasers) want better, more value.
- New online payment options could link prevention to reimbursement rates.
- Digitization is creating wedges between dentists and patients.
- Self-insurance will increase, spending accounts will increase, decrease in traditional dental insurance.
- Patient-centric health care- both insurers and patients are going to demand value in health care and a focus on health.
- Preventive dentistry would be pressured to be included under provincial medical service plans.

### 5. Substitutes

- Due to the new technologies, some specialists could become substitutes for traditional GPs and vice versa GPs for specialists—less referring out.
- Dental tourism could become a substitute to local dentists.
- Dentists are not really needed for the following: application of fluoride varnish; caries detection; treating open caries lesions; orthodontic alignment; fabricating TMJ appliances; scaling and root planning.
- Dental procedures currently delivered by dental therapists in the US.
- Independent hygiene, medicine, pharmacy models will be competitive substitutes to dental practice and “mid-level” providers in US (advanced hygienists, therapists, nurses, etc.) can become substitutes to dentists in certain procedures.

### 6. Role reversal between complementors and substitutes

- There are opportunities for dentists to become wedges “into” some of procedures part of cosmetic medicine (botox, facial fillers, etc.)
- Degree of complementarity and switching costs for patients are key to dentist retaining gate keeper status.

Evolution and expansion of para-professionals:

Examples: Dental Therapists- success in the USA will have effect on Canadian marketplace. Dental Technicians- ability to pivot to become providers if coupled with improvements in digital imaging and digital printing. Hygienists - ability to pivot, large numbers (greater than dentists in some provinces). Some dental practices “ask” the hygienist if there are problems – hygienist is doing the exam and diagnosis and thus is gatekeeper. Role reversal – hygienists up front, dentist in back.

Medicine and pharmacy hiving off preventive procedures and part of dental team:

Examples: Physicians are restricted now by what they can bill by governments. However, if you are an entrepreneurial physician, you can put medical and dental care under one roof- and start private billing for dental care. This can be a new route for people to access dental care. Cardiologists in some states hiring hygienists as some research on statins suggests that oral health care may be more effective than statins long term. Drug store chains starting with oral cancer clinics with one dentist as figurehead and run by para-professionals. Medicine and dentistry both going towards preventive- less costly- money ends up being a motivator.

## **7. Government**

- Government regulates health technologies.
- Regulates health providers and what technologies they can use.

## **8. Dental Practices and Other Forces inside existing dental practices (dental profession)**

- Who can/will deliver these modern technologies? What will be the scope of practice? Perhaps the hygienist will diagnose the cavities and will inform the patient. No need for a dentist.
- “Causal” linkage between periodontal disease and systemic health conditions (eg. heart disease/pancreatic cancer and oral organisms/ periodontal disease process) will elevate the role of the hygienist and possibly assist them becoming a substitute, not a complementor. Pressure on government to make hygiene part of provincial health insurance plans.

## **Recommendations**

1. Any analysis by the Canadian Dental Association (CDA) or provincial dental associations (PDAs) in relation to technologies must put as its primary concern social value and equity.
2. Any analysis should bear in mind the context: personalized medicine, patient-centered care, health and wellness.
3. CDA and PDAs should communicate that dentists are the leaders in the diagnosis, prevention and treatment of oral diseases.
4. CDA and PDAs should help dentists integrate technologies that facilitate or improve patient care, such as patient apps for providing reminders automatically to patients. Compliance is not happening well. This will be key for overall outcomes.
5. Dentists education should shift from a surgical model to a medical model with more emphasis on diagnosis, prevention and non-surgical treatment.
6. Need for more training (in school or by PDAs) on the use of diagnostic tools (eg. saliva testing) that have an impact beyond the oral cavity or to be in a position to refer or expand the treatment plan of a patient.
7. Dental schools and/or PDAs need to remain active in promoting the appropriate adoption of new technologies and investigating the avenues for their delivery. CDA and PDAs can share an environmental scan on which technologies look promising to reduce the risk of dentists buying wrong products. Design and implement best practices for the appropriate adoption of technology by providers.
8. Consider restructuring dental education training to better prepare dentists for the future demands of the oral health care market, including new technologies.

9. Dental research in Canada is really suffering and diminishing, need to change this quickly. Increase funding for dental research on technologies' impact on oral health care. Dental research in Canada needs more funding, especially to allow for universities to keep up with technological advances. There needs to be more collaboration between academia and business to foster more research. Dental schools need to produce dental epidemiologists who could synthesize and do synopsis of best available evidence of dental technologies.
10. Accreditation bodies are super conservative and this needs to change to better reflect the quickly changing technological environment we live in. They need to raise the ceiling given the rapid pace of technological change.
11. There needs to be collaboration amongst all dental schools, particularly in cost-sharing of the most advanced, expensive technologies so they could be more rapidly integrated into practice. As well, there needs to be shared lecturing of technology and techniques online.
12. Dentistry needs to develop "centres of excellence" for joint pooling of all resources for assessment, research and adoption of the latest technologies.
13. Use NCOHR (Network of Canadian Oral Health Research) to fund knowledge dissemination.
14. CDA or PDAs need to support, fund, be part of the development of some chemical and biochemical markers to be able to perform personalized dentistry with simple and economical chairside tests.

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## Working Group 2

### Education, Regulation and the Social Contract

#### Executive Summary

Members of this Working Group were tasked with exploring trends in the relationship between the profession and society (the social contract) and how the education of dentists and the regulation of the profession are likely to evolve between now and 2032. The purpose of examining trends in these domains was to help generate a set of draft recommendations for consideration by the Task Force, as a whole.

Initial brainstorming led the group to identify the following five areas that seemed to warrant particular investigation:

1. What will be the public expectations of the dental profession in 10 to 15 years' time?
2. What is being taught in the schools in terms of public trust & value and knowledge of the social contract? How do the schools align and why might they not align?
3. What are past and future trends for licensure of foreign-trained dentists? Role of NDEB in ensuring standards of professionalism and ethics among foreign trained dentists? Are they schooled and examined in social contract/trust and value the same way that Canadian grads are? Is there concern with oversupply, leading to overtreatment? Has the influx improved access to care or have they located in big cities? How can the soft skills be assessed?
4. How can we ensure that the dentists of the future will communicate in a manner that generates trust and demonstrates value? What is being taught in schools? How are communication skills assessed? Are there any ongoing requirements for dentists to show competency as communicators?
5. How can we better educate government about how the profession of dentistry regulates in the public interest? How do we demonstrate transparency? How do we initiate proactive relationship development? How do we develop effective channels of communication with key people in government – public service & politicians? How can we align with other professions? How are dental hygienists perceived by the government and public?

In terms of the social contract, some of the major trends raised by the key informants, and other issues that resonated with the members of the Working Group, were as follows:

1. There is a social contract between the dental profession and society, but it is evolving.
2. There are pressures impacting on the social contract.
3. The expectations of individual patients are evolving.
4. The perceived cost of oral health care makes it inaccessible for some groups.
5. The types of settings for care provision are evolving - especially with the advent of group practice.
6. Oral health care is off the radar screen of decision makers (for the most part).
7. There is an evolving relationship between medicine as a profession and society.
8. There is an evolving relationship between the individual physician and the individual patient.
9. Medicine gets heard by decision-makers.

10. Dentistry has its own way of getting heard.
11. While similar in some ways, dentistry is apart from the rest of health care in many ways.
12. There is a formula for success for dentists in dealing with patients (no matter what the setting).
13. However, there appears to be an increasing commercialization of dentistry.

Strategic suggestions based on these trends:

1. We must be prepared for a new range of care provider–care recipient relationships.
2. We must recognize how decision-makers will likely perceive oral health and oral health care in the future.
3. Our collective communication needs to be public-centred and focused on optimal health.
4. We need to help dentists stay in touch with the concerns of an increasingly diverse population.
5. We will satisfy the social contract by being generous to people at the margin of society.

Based on these considerations, the following recommendations have been made to enhance the social contract between society and the dental profession in the year 2032.

#### Recommendation 1

Thought leadership organizations in the Canadian dental profession should collaborate to educate dental students and dentists about the social contract between the profession and society and the importance of dentists being sensitive to the needs of a diverse society, with an emphasis on providing patient-centred care and using all communications media responsibly.

#### Recommendation 2

The leading organizations of the Canadian dental profession should commission a series of detailed studies of the cost-benefit implications of various types of blended public/private dental care plans that could be implemented by the year 2032.

#### Recommendation 3

Thought leadership organizations in the Canadian dental profession should pool resources and collaborate to create new stories about key public policy issues with a view to advancing the cause of oral health and dentistry.

#### Recommendation 4

Dental organizations in Canada should encourage a new and more diverse leadership cohort to become involved in leadership positions in organized dentistry, and ensure that this new cohort of leaders gets a good education in modern leadership knowledge, skills and attributes.

#### Recommendation 5

Dental organizations in Canada should commission a series of studies into how they can conduct business in new ways that will allow flexibility around involvement for new cohorts of emerging leaders.



In terms of education, some of the major trends raised by the key informants and other issues that resonated with the members of the working group were as follows:

1. A range of new tools is being used to choose dental students.
2. Today's dentistry students are talented and different from those who went before them.
3. Organizations like the Association of Canadian Faculties of Dentistry (ACFD), the Commission on Dental Accreditation of Canada (CDAC), the National Dental Examining (NDEB) and the Dental Regulatory Authorities (DRAs) are re-focusing the competencies for new graduates.

Strategic suggestions based on these trends:

1. Student selection for dental school can be improved.
2. We need to attract the right types of teachers for the dental school of the future.
3. Professionalism and empathic communication are essential competencies and they can be modeled and taught.
4. More time is needed to learn how to treat patients competently: both technically and humanly.
5. Tomorrow's dental school will look different from today's version.
6. Continuing education needs to change based on the needs of the life-long learner.
7. Let us educate dentists for different practice models in future.
8. Internationally-trained dentists need to get a good grounding on how things are done in Canada.

Based on these considerations, the following recommendations have been made to enhance dental education by the year 2032.

#### Recommendation 6

Organized dentistry and academic dentistry in Canada should work closely together to foster research into finding better tools for improving the dental student selection process that will help in choosing mature empathic candidates for dental school.

#### Recommendation 7

Organized dentistry and academic dentistry in Canada should work closely together to find ways to attract new teachers with new skills to become involved with teaching dental students.

#### Recommendation 8

Organized dentistry and academic dentistry in Canada should work closely together to encourage the rapid implementation of the new ACFD competency framework, so that all new dentists entering practice in Canada benefit from the new emphasis on professionalism, ethics and communications as soon as possible.

#### Recommendation 9

Organized dentistry and academic dentistry in Canada should work closely together to encourage research into finding effective new and interactive methods of teaching professionalism, ethics and empathic communication, so that all new dentists entering practice in Canada will have an excellent grounding in these crucial subjects.

#### Recommendation 10

Organized dentistry and academic dentistry in Canada should advocate for publicly funded residency programs to allow dental students and new graduates extra time to learn how to treat patients

competently. A particular focus of these programs should be to get dental students and new graduates out into under-serviced/rural areas as a way of improving access to care.

Recommendation 11

Organized dentistry and academic dentistry in Canada should work closely together to research the reasons for the high levels of indebtedness among new dental graduates and seek effective new ways to reduce the cost of a dental education and lower the indebtedness of new dental graduates.

Recommendation 12

Organized dentistry in Canada should advocate with academic dentistry about ensuring that the dental school of tomorrow is closely aligned with other health sciences schools and adopts an integrated curriculum with a focus on inter-professional care.

Recommendation 13

Dental associations, dental regulatory authorities and academic dentistry in Canada should work closely on designing the next generation of continuing education programs so that dentists are adequately prepared to succeed in the dental practice environment of the future.

Recommendation 14

Dental associations, dental regulatory authorities and academic dentistry in Canada should work closely on ensuring that the dental school curriculum of tomorrow prepares new graduates to succeed in a variety of dental practice environments in the future.

Recommendation 15

Organized dentistry in Canada should advocate that internationally-trained dentists coming into practice through the NDEB equivalency program undergo a comprehensive course on professionalism, ethics and communication skills and that they be assessed on their competency in these topics.

Recommendation 16

Organized dentistry, dental regulatory authorities and academic dentistry in Canada should work closely together to find effective new, evidence-based, methods for licensed dentists to demonstrate continuing competency in clinical and pertinent non-clinical skills.

In terms of regulation, the key trend raised by the key informants which resonated with the members of the working group was that:

- The concept of “self-regulation” is evolving

Strategic suggestion based on this trend:

- We need to be proactive in our regulation of dentists.

Based on these considerations, the following recommendations have been made to enhance dental regulation by the year 2032.

**Recommendation 17**

Organized dentistry and dental regulatory authorities in Canada should collaborate to ensure that all possible measures will be taken in future to ensure that the regulation of the dental profession will be proactive, transparent, in the public interest, equitable, fair to dentists and to ensure that patient safety is paramount.

**Recommendation 18**

Organized dentistry, dental regulatory authorities and academic dentistry in Canada should collaborate in the interest of promoting patient safety, access to care for vulnerable groups and enhanced continuing competence for dentists.

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## Working Group 3

### New Practice Models and Vulnerable Patients

#### Executive Summary

What is the future of the dental profession in 15 years, in year 2032? While we strive to improve the oral health of Canadians, how do we help those who cannot get dental care due to geographical, cultural, social, and financial barriers? While the majority of Canadians have private dental benefits, and visit a traditional dental clinic, others do not have access to funds or the type of care they need, including: people with low-incomes, refugees, immigrants, those without dental insurance, seniors in institutions, Indigenous people, those with disabilities and people in rural areas.

The Canadian Academy of Health Sciences (CAHS) 2014 report provides the “5 A’s of Access” model to summarize the barriers to care which are: affordability, accommodation, acceptability, accessibility, and availability. How can we help vulnerable groups overcome these barriers so they can access dental care and improve their health?

While the majority of Canadians rank their oral health as good and have private dental benefits to pay for care, about 25-30% have inadequate access. Government funding of oral health programs is poor, only financing 6% of oral health care in Canada - one of the lowest per capita funding in the world amongst countries in the Organization for Economic Co-operation and Development (OECD). The programs are poorly utilized, have low reimbursement rates for dentists, have gaps in coverage for services and do not help all low-income groups. We need alternate ways of making dental care affordable besides public and private dental benefits. We also need to improve the value of oral health and obtaining care. This will increase the utilization of benefits and improve self-care. How do we get the government to spend more on oral health care? We have to show the return on investment in spending on oral health care to advocate for increased funding. How do we get the public to utilize the services and programs available? We have to share stories, educate, promote prevention and provide an environment where people feel comfortable. There has to be a variety of ways to access services, and various providers must be able to deliver services.

The Canadian Dental Association’s (CDA) Future of the Profession Task Force was divided into four working groups. Our group, Working Group 3, focused on improving the oral health of vulnerable groups. We explored trends and barriers to oral health care experienced by members of society’s most vulnerable groups and proposed new and creative ways to reduce those barriers, improve access to care and provide pathways to better oral health for these groups.

Our Working Group summarized the current problems into 5 areas of focus, noted in the schematic below, and we listed recommendations for each area throughout the document. We can achieve our vision for 2032 if we start working together now.



The barriers of optimal oral health and access to care include those that are patient-related, society/government related and health care provider related.

#### **Patient-related barriers**

- In rural areas, particularly with significant Indigenous populations, the number one barrier is cost. Many Indigenous patients can't afford to pay for services not covered. The number two barrier is distance. Many live at or below the poverty line and don't drive or own a car. They simply can't make it to the dentist's office. The number three barrier is a lack of "cultural safety." How do we know that we are providing culturally safe care to a First Nation client? We only know we've been successful at that when the person tells us that. To be culturally safe is to keep people on a level playing field. Don't patronize them. Learn more about First Nations history and culture. Listen to their experiences navigating through the health care system.
- For people living with HIV/AIDS there are specific barriers – often related to acceptability.
- For Indigenous and refugee populations- oral health is very much neglected.

- For persons with special needs- dentists often lack competencies in culturally appropriate and trauma-informed care, with a scope of clinical competencies reflecting the core oral health needs of vulnerable populations.
- For seniors- barriers are mobility constraints, cognition concerns, and the need for care provided at home with mobile equipment. Dental offices don't always meet the criteria of "universal design" to enable access. Financial burden for this group is also a big barrier.
- Vulnerable groups have specific needs and therefore, the programs to meet these needs must be tailored to them. When designing programs, there is a need to understand the context these patients are coming from in order to provide more empathic care that is appropriate in nature. The concept of "person-centered care" was reinforced. Person-centered care involves looking at the patient as a person and involving them and their families in the dialogue about their needs. The old top-down approach to designing programs is no longer seen to be appropriate.

**Society/Government Related Barriers.** The "social determinants of health," could systematically explain many of the barriers experienced by people in the vulnerable groups. Society and government are perceived to place a low value on oral health and oral health care: "Society places relatively low value on oral health and considers it a benefit, rather than a health issue." This low perceived value may partly explain the fact that just 6% of dental care spending in Canada comes from the public purse.

**Health Care Provider-Related Barriers.** For oral health care providers, challenges include: (1) navigating a system that is hard to understand (e.g. federal health benefits) and a lack of a single port of entry for practitioners to enter the system, (2) understanding what good oral health is; "What exactly is the standard that we're trying to achieve in order to define whether we're making progress in vulnerable groups having access?" and (3) lack of data on oral health of vulnerable populations.

## Five Areas of Focus

### 1. Improve Affordability of Care

- We need to look beyond the private practice model, perhaps to some sort of blended approach to funding.
- We need to find affordable, sustainable ways of providing dental care.
- Need to experiment with new payment models.
- We need a universal dental plan to ensure children, in particular, have access to dentists, regardless of who you are or your income.
- Working poor and seniors are two groups that don't typically receive welfare so therefore they can get missed in terms of receiving oral health benefits. Make sure benefits are tied to income levels instead. Reframe the discussion as a health, not welfare cost.
- Is it possible to standardize existing provincial programs and come up with national-level programs to improve continuity of public dental care across the country?

### 2. Improve Accessibility of Oral Health Care

#### a) Expand who provides the care

Different health workers could be involved in new and creative ways to improve access to care.

Ideally, oral health should be part of a broad circle of care. We need supports to address the social determinants of health. The holistic model at CHCs can help with many aspects, such as referral to food banks, community gardens/kitchens (e.g. food security issues).

“Provide more education about oral health for vulnerable groups to primary care providers and other professionals (educators, parenting groups, community leaders, religious leaders), including application of preventive measures like fluoride varnish and a billing code for it.”

Consider utilization of internationally trained dentists (even if they have not yet completed their Canadian accreditation). Provide opportunities for these dentists to provide care to vulnerable population groups under the close supervision of a Canadian licensed dentist.

“Consider the value of patient navigators/health counsellors/community health workers/case managers who reduce barriers by providing transportation, helping patients complete forms, making appointments, etc. Programs that train community dental health coordinators are an exemplary example of initiatives that can improve access to care; they teach coordinators how to enroll patients in insurance programs they may be unaware they are eligible for; and how to coordinate care and make appointments for patients.”

#### **b) Expand where the care is delivered**

Appropriate care is seen as being delivered when we “move from dentist-centered care (care at a location and time convenient to the dentist) to patient and community-centered care.” There were regular calls for, “different models of delivering care including mobile dentistry and tele-dentistry.”

“We need to make care available in non-traditional settings, too. We have to go to our patients. More outreach, education, and linking patients with other providers. Mobile clinics should be used where appropriate.”

“To address barriers, consider: (1) settings: establish screening and treatment programs for oral health in settings where people already go because other services are available (e.g. CLSC in Quebec, First Nations health centres, community health centres), (2) human resources: clarify roles for people involved in integrated health care centres so they can be properly trained, moving away from territoriality, and (3) rethink the organization of dental offices. In medicine, physicians take a bigger multidisciplinary approach, work in teams. Medicine has certainly got away from sole practitioners.”

### **3. Define Essential Oral Health Care**

Some of those interviewed stated that there is no definition of the minimum standard of oral health care, therefore it is difficult to create programs, provide services and train staff to provide essential care. A common call can be summed-up in the way this interviewee put it. “We need a significant increase in public funding for fundamental dental care that everyone should have access to, and we need to determine what should be included in that publicly funded “basket of dental care” as part of our public medical system.”

There is no definition of the minimum standard of oral health care, therefore it is difficult to create programs, provide services and train staff to provide essential care. A common call can be summed-up in the way this interviewee put it. “We need a significant increase in public funding for fundamental dental care that everyone should have access to, and we need to determine what should be included in that publicly funded basket of dental care as part of our public medical system.”

### **4. Enhance the Perceived Value of Oral Health Care**

A myriad of historical, social, and political events have caused “dental care” to be placed in a separate category from “health care.” In order to successfully advocate for increased access to dental care, there must first be agreement from the public and governments that oral health has inherent value. Our

working group proposed that oral health awareness campaigns be targeted to three levels of society as a means to organize/maximize our efforts: 1) Government, 2) The Public, and 3) Healthcare Professionals.

We need to “create partnerships with various groups beyond oral health to send consistent messages to government. We all need to agree on the best path forward.”

Members of the public can be the best message carriers of all for the cause of advancing oral health matters as, “the perceptions of patients and patient groups are important; we need to build real relationships with all of them. We must attract attention to the importance of oral health for vulnerable populations, particularly the attention of young moms who “tend to be the quarterbacks of the family healthcare system.”

“Only when the profession is working with other health professions and patient groups will the government feel compelled to act. We need to show that the problem fits with other health problems. We need to be part of a package, and be flexible enough to work within that package. We have to educate physicians about the value of oral health.

## **5. Improve Acceptability of Vulnerable Groups**

A cultural disconnect exists between much of the vulnerable population in Canada and the private practice model which is the most popular way to receive dental care in Canada. Private practices have by and large been created to serve the needs and interests of Canadians who have private dental benefits. If we are motivated to provide dental care deemed “acceptable” by our vulnerable population groups, we must first engage with them through partnerships with social organizations already advocating for poverty reduction, food security, stable housing, and health equity. After coming to better understand the unique needs and barriers to care of the vulnerable, the dental profession can begin to appropriately adjust its internal culture to better accommodate them. The opportune time to begin crossing the cultural divide is during dental school.

CDA can act as a national voice and intermediary to ensure current graduates meet the needs of dental care such that services can be provided to the public regardless of location. This would require discussions with the Association of Canadian Faculties of Dentistry (ACFD), the Canadian Dental Regulatory Authorities Federation (CDRAF) and the Commission on Dental Accreditation of Canada (CDAC) to ensure that newly graduating dentists have a broader social/world view but more importantly are better skilled clinicians.

This report provides a snapshot of the many barriers faced by vulnerable populations in Canada as they seek out dental care and also provides a way forward for all Canadians to obtain optimal oral health. It focuses on helping vulnerable groups obtain dental services and to be satisfied with their oral health. The goal is oral health equity and the strategy is to increase the perceived value of oral health care, define essential oral health care and improve: affordability, accessibility and acceptability. To see meaningful improvements in the oral health of Canada’s vulnerable by 2032, will require educators, regulators, government officials, health care providers, dental associations, private sectors, community groups and the public to work together. This working group is confident that with creativity, courage to try new approaches, and interdisciplinary collaboration the vulnerable will soon enjoy equitable access to oral health care.



## Summary of Recommendations

### To Improve Affordability for Oral Health Care:

1. Include dental care in Medicare.
2. Offer alternative remuneration strategies for providers (fee for services adjusted for complexity of patient/treatment, salary, capitation, pay for performance, blended models, etc...).
3. Track the return on investment of prevention – major savings for government and healthcare spending by improving oral health of citizens. Use this data to advocate for increased government funding.
4. Investigate alternative public funding (patient co-payments, health care spending accounts for low-income people, tax credits, centralized processing).
5. Work with government to reallocate existing funding programs to be more effective, rather than asking for increased funding.
6. Investigate alternative private funding (crowd funding, social entrepreneurship, bartering, corporate donations, and mandatory health benefits for all employees).
7. Provide incentives and pay providers appropriately to care for vulnerable groups.
8. More transparent pricing. Have basic care clinics with low fixed advertised prices so people know the fees.
9. Changing tax models – taxing health benefits to create funding for dental needs for others (with monitoring to ensure this money is not reallocated).
10. Consolidate and standardize publicly funded programs to decrease administrative costs. Centralize the processing system for processing claims to ALL public dental programs.

### To Improve Accessibility of Oral Health Care:

1. Identify, train, and equip a diverse range of providers who can deliver preventative and basic dental care to vulnerable populations.
  - Post-Graduate Year (PGY-1) dentists
  - Internationally trained dentists working under supervision
  - Dental therapists
  - Medical personnel, personal support workers, community peer helpers, school staff, social aid workers
2. Expand the number of settings where basic/preventative dental care is offered to the vulnerable.
  - Community centres, schools, medical offices, pharmacies, hospitals, places of worship, shelters, food banks
  - Mobile dentistry
  - Tele-dentistry
  - Community health centres, public health units
  - Private offices (coupon system)
3. Improve the accessibility of existing public dental care programs.
  - Create a national online directory of existing programs in each province where the public can easily check their eligibility and register for benefits
  - Centralize the administrative system for processing claims to ALL public dental programs in order to streamline/simplify the process for providers
  - Utilize “dental navigators” who can assist in connecting the public to dental programs

**To Define Essential Oral Health Care:**

1. Ask CDA to define essential oral health care.
2. Determine which dental services (basket of goods) should be in publicly funded oral health programs using a research group.
3. Create standards for public health care using the definition of essential oral health care and dental services.

**To Enhance the Value of Oral Health:**

1. Classify oral disease as chronic disease.
2. Dentistry must aim to develop meaningful coalitions with those who are advocating for poverty reduction, health equity, and other social reforms.
3. Promote link between oral health with overall health, employability, self-esteem, school performance for children, nutrition/development of children.
4. Use patient “stories” to demonstrate the implications of poor oral health. Share these stories via social media and/or other mediums.
5. Initiate public health campaigns with plain language - different models for different target groups.
6. Use current hot topics to get the attention of policy makers - such as opioid use and multi-drug resistant organisms.
7. Focus on a return of investment the government can expect from investment in oral health (e.g. use data to quantify the impact of funding oral health programs vs. emergency hospital visits).
8. Considering drafting a letter/petition and forwarding it to MP’s - similar to the “Don’t tax my health benefits” campaign. Demonstrate a unified stance regarding the value of oral health and access to care from multiple stakeholders.

**To Improve Acceptability of Vulnerable Groups:**

1. Learn from community representatives, leaders, and health care workers about the various groups of people in a given community and their unique needs. Be engaged in community health equity initiatives/discussions.
2. Invest in dental service models located where vulnerable groups are, such as community health centres.
3. Have community representatives working or volunteering at dental clinics.
4. Train peers in oral health promotion who can then educate the community.
5. Select dental students from diverse backgrounds who are socially-minded.
6. Expose dental students to vulnerable groups in their community.
7. Teach dental health care providers cultural sensitivity.

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## Working Group 4

### Enhancing the Dental Practice of the Future

#### Executive Summary

#### **Emerging Practice Models**

Traditional practice models in Canada have been centered around the dentist owning and operating their own practices, working independently with their own oral health team. The independence allows the dentist to set their own hours of practice, allowing flexibility in his or her own personal schedule, and to determine the size and makeup of the office support staff. There are variations within this basic model which would include multiple dentists in a partnership agreement or multiple dentists owning their own practice and doing a facility cost share. Data from the United States show that the culture created by this traditional practice mindset is changing, albeit very slowly, as the percentage of dentists who own their own practice has decreased slightly between 1991 (91%) and 2012 (86%). There has certainly been a growing trend over the past few years of corporate owned practices that employ or contract dentists to operate within their management structure. These dental practice management organizations can have varying percentage ownership with non-dentist investors. There is much supporting data that suggests that the percentage of corporate ownership has increased over time.

The reasons for this increasing trend could reflect the lack of business training or knowledge that is required by the young dentist, increased debt load from education that prohibits the purchase or startup of their own practice and perhaps more new graduates looking for a better work–life balance and not having the desire to navigate through “headaches” of ownership. Research is showing that as the number of millennials grows within the workforce, the culture and expectations of employment are changing. This age group will be focused on their own personal needs, keeping work–life balance and positive employer brands, high on their agenda. By 2020, 50% of the workforce will be millennials. Gender, race and urban /rural location could also play a critical role in the employment choice of the younger graduate.

The rapid and changing development of modern technologies that aid in diagnosis and treatment of oral disease requires a dentist to increase capital investments to operate, thus driving expenses up. The benefits of pooling resources and cost sharing can exist in the dental group practice model or multispecialty type practices. The dental group practice model is a single legal entity that is owned by two or more dentists in partnership. Group practices can be small, operating out of a single location or expand to include many partners operating out of multiple locations. In the United States, where group practices are well established in both medicine and dentistry, it has been shown that the average number of patients seen in a group practice on an annual basis maybe higher when compared to a solo practice, thus keeping costs of operations lower. There are, however, conflicting opinions on whether the consolidation into larger practices are actually more cost efficient.

The multispecialty practice consists of general practices that are expanding their scope of services by integrating specialists into their office, providing care across almost all treatment plans in one location. This model allows the practice to establish a niche and distinguish itself, as well as create more efficient

communication and financial operations. The overall patient experience may also be improved as they potentially will not have to travel to additional offices for specialty care.

These models, described previously, have been in place throughout Canada. One model may be better than others depending on the location (urban vs rural), age and gender of the dentist, and the population demographics of the practice. Some newer, emerging models of practice that have been started elsewhere like the United States include:

- Automated micro practice
- Independent practice association
- Inter-professional practice
- Managed care private practices (Dental support organizations)
- Walk-in dental clinics
- Teledentistry
- Mobile dentistry

The future of dentistry is being challenged. An oversupply of dentists competing for a limited amount of restorative procedures that will continue to decline is creating a turbulent environment that perhaps many in our profession, are unaware of. Emerging practice models gives us choice on how we can best serve the population. The critical choice of a practice model is the “Patient Centred Care Model”. This needs to be the focus in any of the models we choose to practice in. Increasing the value of dentistry within the health profession by promoting a more holistic team approach with medicine and protecting our ability to diagnose oral disease, will be the basis for this approach. A shift to this value based, patient centered model can bring positive change, ensuring successful oral health practices for the younger generation of dentists. Understanding the growing increase of preventative procedures within practice models will allow viable variations within the model structure. With any future model of practice, understanding our patients and their needs and expectations will be critical.

### **Alternative Ownership Models**

Dentistry in Canada is currently undergoing an economic and demographic change at an unprecedented rate. Further analysis is recommended to determine the impact corporatization will have on the future of the dentistry profession.

The term ‘corporatization’ is a matter of debate. Internationally, this term is often used by public policy experts to describe the conversion of state assets into independent commercial companies. At an extreme, corporatization could apply to non-dentists purchasing dental practice and hiring dentists as employees. While this is indeed permissible in certain jurisdictions, this is not a widespread practice. In Canada there generally are restrictions on ownership of dental practices. In all jurisdictions, laws dictate that the majority ownership and control of dental corporations must be by dentists.

Corporate dentistry in Canada can be defined by non-clinical practice services being provided via contract with a third-party organization that is not controlled by the practicing dentist. The third-party organization can be funded by investors who are not engaged in the clinical practice of dentistry. The corporatization of dentistry, therefore, formally establishes two parties with different primary motivations: the dentist, ultimately responsible for providing care; and the third-party, responsible for maximizing profit. The fundamental implication being that the corporate interests may somehow come into conflict with the clinical practice of dentistry. Corporate dentistry appears to be a continuously shifting environment, with numerous variations in practice models that are constantly evolving.

Solo-practitioners face many challenges. They need to lead in a variety of different roles, from CEO to human resources manager to chief financial officer to clinician, and more. Thus, the appeal in corporate dentistry lies in the pragmatisms of the practice – the ability to relieve dentists of these ‘burdens’. Corporate dentistry may also be particularly alluring for new graduates and young dentists, especially as there have been drastic increases in dental school tuition in Canada. To add fuel to the flame, with the high costs of opening a new practice, many young dental professionals are finding it more difficult to pay off their student debt as well as purchase a practice. It is crucial to note that it is not only the students that are being affected; rather, older dentists, who are often delaying retirement, whom have reported difficulty finding younger practitioners who can afford to buy their practice.

Definitional issues aside, the reality is that corporate structures do exist in Canada. While the driving forces behind any trends are multifactorial, the simple reality is that dentists are choosing to enter into these arrangements. For those considering these arrangements, they should choose a model which best fits their goals and lifestyle. Ultimately, this may be a subjective choice rather than a ‘one-size-fits-all’ approach.

The healthcare industry is also becoming more inter-professional. In addition to a trend towards preventative care delivered by non-dentists, there is a movement underway to more fully integrate dentistry and general health. The profession must prepare themselves and learn to take advantage of other healthcare providers, to promote both the oral health and overall health of the patient.

Further research on healthcare trends is warranted to better understand both the implications to the profession of dentistry, and the degree to which the profession is prepared to meet the changing needs and attitudes of Canadians.

### **Value Based Healthcare**

There has been acknowledgment for many years that health is much more than just the provision of healthcare. The World Health Organization defines health as ‘a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity’. Improving health includes broader aims, such as tackling the social determinants of health, allowing people the ‘freedom to lead lives they have reason to value’. The value-based care movement involves greater recognition of what patient's value when defining health and care outcomes and allocating limited resources.

- Canadian current system is similar to US Healthcare system – based on what providers can do rather than what the patient needs. Medical system in the US is chaotic, unreliable, inefficient and crushingly expensive.
- Current fee based system leads to potential for overtreatment, lowered quality of care.
- High debt loads following graduation equates to a need for high production.
- Change from present fee based system to a value based system will encounter resistance from providers. Clinicians will need to prioritize patients’ needs and patient value over the desire to maintain their traditional autonomy and practice patterns.
- Engaging key stakeholders, including healthcare providers, government agencies, insurance companies, and patients, to come together and work towards a system of health care reform. The very foundation of how health care is financed and delivered will change under a value-based system, and input from all sides will be required.
- Comprehensive reform will require simultaneous progress in all the components of a value-based care system because they are mutually reinforcing. However, a health care strategy will involve a sequence of small steps over an extended period rather than an attempt to change everything at once.

Value-based health care is founded on the principle of improving the quality of care for patients. At its core is increasing the overall value for patients, that is, attaining the best possible health outcomes while maintaining the lowest possible costs. In this system, better health becomes the goal, not more treatment. Changing to a value-based healthcare system, will mean changing the way a patient receives care. Value-based healthcare puts what patients value at the center of healthcare. It helps ensure that they receive the care that can provide them with outcomes they think are important and that limited resources are focused on high-value interventions.

### **Practice Efficiencies**

Running a successful and profitable dental practice is not an easy task. Although dentists excel at providing patients with quality oral health care, it is easy to be overwhelmed with the day to day operations and office management required for a productive dental practice. There is a constant need to recruit new patients, keep present patients happy, increase production and reduce practice related overhead costs. These are tasks which dentists are not formally trained to do well. Efficiency is the foundation to profitability and so it is always worthwhile to analyze how various policies and systems are serving this goal. Dentists have a long history of increasing their efficiency by delegating tasks to other health providers such as dental assistants, dental hygienists, and dental laboratory technicians. However, the current practice landscape and market forces present today's dental professional with many unique challenges. These can include:

- A lack of formal training in practice management and financial planning.
- The rising costs of purchasing existing dental practices.
- The need for ongoing investment into new and costly dental equipment and/or technologies.
- A desire for many professionals to achieve work-life balance, flexible schedules and a solid income.
- Non-traditional competition to dental practice such as independent dental hygienist practices and corporately owned offices.
- Established dentists looking at extending their careers while decreasing work hours and maintaining ownership.

To be competitive in today's market, dentists will need to systematically evaluate the way they practice and search for innovative ways to increase productivity and efficiency while keeping their overall overhead low. Five factors determine the overall size and growth of the profession: the number of dentists, the availability of staff, population, disposable income, the extent of dental insurance and the level of dental fees.

Dentistry is a relationship based business first and foremost. There is a need to get a higher ratio of preventative services in practice - leads to more relationships in office. Increasing the scope of practice and variety of services offered in a dental practice will have an impact on productivity. Oral health is an important component of general health and dental professionals are in an ideal position to be involved with the diagnosis and management of chronic diseases such as diabetes, hypertension, and obstructive sleep apnea.

Labour costs represent about 25-32% of total production. Relationship building is the biggest asset of the independent practice, focusing on improving this and patient centred care is the greatest strength and will yield excellent results. Allied or auxiliary dental personnel can include dental assistants, community dental health coordinators, dental hygienists, and dental therapists. In some jurisdictions,

they may additionally have an expanded or wider scope of practice allowing them to carry out therapeutic treatments and procedures which have traditionally been reserved for licensed dentists.

Effective management of inventory is important for decreasing the overhead costs of a dental practice. Inventory costs are related to storing and maintaining material over a certain period. Ordering in bulk or excess quantity may result in savings during purchasing, reduce shipping fees and less replenishment costs, however this can result in higher carrying costs and the need for increased storage space and so a proper balance must be achieved.

Present efficiencies within the practice, industry and interindustry could be improved upon, but there is also the question of whether we are being effective and efficient. New measurement standards may change how we measure efficiency and may not necessarily be to maximize shareholders value but to maximize patients' health.

### **Future of Health Insurance and Benefits Landscape**

The current benefits landscape is both complex and diverse. At present some 62% of Canadians have some form of dental insurance, which is almost exclusively in the form of an employee benefit. Around 6% have public insurance and 32% have no insurance at all.

Employer sponsored dental insurance remains a key driver of demand for the existing model of dental practice. Amongst those with public insurance and amongst many of those with no insurance low income is an important issue and this group of Canadians experience a disproportionately high burden of dental disease. Furthermore, in some jurisdictions reimbursement rates for the public dental plans have deteriorated to the extent that traditional providers cannot even meet the cost of providing the care, thus exacerbating access to care issues.

Currently there is a significant shift in the health benefits landscape underway and this is driven by multiple factors. This means that the healthcare environment is at a tipping point of a major shift with more of the burden shifting to the private sector.

- There are five generations in the workforce with rapidly evolving expectations and an aging population driving rising costs.
- Private sector health benefit costs are expected to rise by 130% over the next 8 years.
- Whilst employers continue to offer traditional style benefits, millennials favour a shift to more flexible benefits and healthcare spending accounts. Customers want the flexibility to choose what and how much is covered. For this reason, companies and insurers are altering their offerings to appeal to a new generation of employees.
- Changes in labour market conditions, including new part-time employment, contract work, temporary jobs and self-employment result in less traditional employment based dental insurance. Tomorrow's employees will more often be free-agents, well paid contract workers who do not work in the same job for an entire career. For tomorrow's worker health benefits need to be more portable.
- Increasingly, organizations are looking at prevention and early intervention as a key part of containing costs. For these reasons companies continue to invest in health and wellness programs. At the same time organizations are shifting the burden of the healthcare benefits to the employees and demanding increased vigilance of carriers to control costs.

As these trends unfold there is danger that dental benefits will enter into a "death spiral". This is a phrase adopted from the arguments used by proponents of the Affordable Health Care Act in the US. In the context of Canadian dental benefits, it refers to the combination of a decreasing number of workers



who have access to traditional benefits due to changing employment patterns combined with the emergence of more individualized flexible defined contribution plans.

Given that 40% of the population either have no dental benefits at all or beneficiaries of the increasingly dysfunctional government plans there is an additional opportunity for an entirely new dental benefits product. Increasing the size and diversity of the insured population would broaden the risk pool and spread the costs, making it possible for the first time to have truly useful individual plans. Such plans would need to be adaptable as healthcare shifts from the traditional fee-for-service model to a value based model based on outcomes.

### **Paradigm Shift in Oral Health Care**

Healthcare is undergoing significant changes; dentistry, although distinct from much of our healthcare system, is not immune from these trends. Today, there is increasing focus on prevention of disease and maintaining good health overall. Presently, one of the most promising practices to bridge the gap between medical and clinical dentistry is gene therapy. Moreover, gene therapy may yield greater precision and preventative practices as opposed to invasive surgery. However, despite past successful trials additional studies and clinical trials are necessary before applying gene therapy to patients. Changes that must take place in order to support and yield an effective prevention strategy for oral health must be approached from a more altruistic perspective; that there will need to be an increase in financial incentives, an extension of scope for dental office staff such as hygienists and dental assistants playing an increasing role in patient treatment and planning, educated and responsible patients, as well as an enhancement of an effective governing regulatory strategy. What can be taken away from the literature on the evolution of dental treatments is that an emphasis on quality and value will drive further changes in the healthcare delivery model for dentists.

The healthcare industry is also becoming more inter-professional. In addition to a trend towards preventative care delivered by non-dentists, there is a movement to more fully integrate dentistry within general health. The paradigm shift in dentistry may require a greater role for the dental education community in technology transfer and in the dissemination and implementation of new practice models, since the dental community is best poised to adopt a leadership role in shifting the practice paradigm to prevention. In doing so, the dental community would be accepting the rationale for entrenching evidence-based dentistry within clinical decision making to yield the highest quality of care. The fundamental role of research in the dental community and oral healthcare is imperative to sustaining the vision of the profession as the beacon of oral health advancement. Nevertheless, a thorough analysis of the role the dental education community can have in maintaining evidence-based health policy to the profession would be critical to understand the impact and yield of such an initiative on the profession.

### **Summary of Recommendations**

1. CDA, along with the PDAs, need to clarify and promote the definition of oral health.
2. We need to promote public awareness about the relationship between oral health and systemic disease, and that dentists are the experts in diagnosing oral disease.
3. Develop a list of primary care activities, such as smoking cessation, diet control and obesity and diabetic monitoring.
4. Support the value based, patient centered model by enhancing the scope of practice for dentists and allied dental personnel.
5. CDA along with PDAs need to be active in developing a national, universal electronic health record that includes dentistry.



6. Associations need to be active in encouraging further development of data collection processes, including diagnostic data. This will provide the ground work to fuel the success of tele-dentistry, thereby lowering the costs of and increasing the value of dentists.
7. Diagnosis needs to be a regulated act.
8. Further research concerning the future of “fee for service” and other reimbursement alternatives (including a two-tiered reimbursement system, private/public) for dentistry.
9. Need to establish a national practice management center that all licensed dentists can access via their provincial associations.
10. All provincial regulatory bodies need to review their existing standards of practice ownership (including corporatization) that will best promote the patient centered model of care.
11. The profession and associations need to be involved in integrating dentistry and medicine and to be part of the decision-making processes; this will start at the education level. CDA should consider further research into integrated practice units (IPUs or IPPMs) in which a dedicated team of clinical and non-clinical personnel provide the full range of care for the patient.
12. Dentists must prepare themselves to be collaborative with other healthcare providers in order to promote the oral health and the overall health of the patient.
13. Need to educate new and future dentists about various practice models to help new dentists decide on their path.
14. Further analysis is recommended to determine the impact corporatization will have on the future of the dentistry profession.
15. The Canadian Dental Association and its Corporate Members could choose to adopt policy positions and dedicate themselves to supporting their membership by providing general education on the roles and responsibilities of member-dentists.
16. Analyze the role the dental education community has in the paradigm shift of the profession which is critical in understanding future trends in the profession. Further research on healthcare trends is warranted to better understand both the implications to the profession of dentistry, and the degree to which the profession is prepared to meet the changing needs and attitudes of Canadians.
17. Explore the use of complementary dental personnel (therapists, extended duty hygienists, assistants) with emphasis on prevention.
18. Researching the rewards for quality of care/ value monitored (production/ patient satisfaction).
19. Consider changing the profession’s name – “Dentist” implies that the practitioner’s skills are limited to teeth. Perhaps changing the professional designation to something on the lines of “Doctor of Oral Health” would broaden the appreciation of both practitioners and patients.
20. Change the expectations of new graduates entering the profession towards quality of care and patient needs.
21. Examine initiatives to reduce the cost of dental education. For example, subsidize dental faculty fees and examine the need for a pre-dental degree.
22. Dentists need more training in ways to improve dental practice efficiencies, possibly while in dental school.
23. Increase practice management courses at university or through PDAs. For example, modules on employment legislation, work safety legislation, economics of running a practice, leases, setting up business structure.
24. PDAs or CDA to look at bulk purchasing for equipment and sundries.
25. There is a need to build a consortium to guide the changes to dental insurance as we know them. This consortium needs to include provider groups, led by CDA, insurance providers and government. These changes need to be supported by an information technology platform that is patient centered and encompasses all types of data.

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## Summary of the 2016 CDA Environmental Scan

### 2016 Environmental Scan

The purpose of the environmental scan is two-fold: to identify emerging issues and trends and assess their positive and negative impacts within the dental profession. In 2017, the CDA identified several mega-trends which impact dentistry.

- Changing landscape of dental benefits
- Evolution of alternative dental delivery models
- Growing income inequality affecting access to care
- Integration of internationally-trained dentists
- Perception of increasing commercialization in dentistry
- Expansion of alternative providers
- Changing care needs for an aging population
- Rise of empowered consumers
- Exploration of financing reform for oral health care
- Changing educational competencies

### Changing Landscape of Dental Benefits

While presently 62% of Canadians have private dental insurance, current data suggest that employer-sponsored benefits are declining. Over one-third of employees do not receive medical or dental benefits and within this group, low income workers and women are most often excluded. The key driver for dental spending in Canada remains employer-sponsored benefit plans. Thus, any changes to these plans will have a significant impact on downstream effects especially, dental utilization.

The number of self-employed individuals in the Canadian labour force is 15% and rising. Similarly, temporary positions and part-time employment rates are increasing. Interestingly, there are also generational preferences whereby, the Millennials are opting to drop health benefits in lieu of other perks of employment unlike the Baby Boomers.

Within the industry, benefit plans are also expanding their selections for the consumer. Insurance companies and businesses are altering health plans to appeal to a new generation of employees. This may be a direct reflection of the impact of the millennials and their desire for choice and flexibility in their benefits package. Some benefit plans are flexible and do not allocate a specific amount for dentistry. Instead, plans are being designed to reward health-supporting behaviours.

The health insurance industry, in general, is attempting to contain escalating costs. In the pharmaceutical sector, drug review panels have been instituted and there is a push towards the use of preferred pharmacy networks and the use of generic medications. Similarly, prescriptions are scrutinized more carefully than previously. Several initiatives have also been rolled out to control costs in the dental industry. As a result, there are more audits and adjudications of dental providers and dental providers are being profiled by insurance companies. There is also a bigger emphasis on fraud prevention.

## **Evolution of Alternative Dental Delivery Models**

Cost-containment pressures from payers are driving value-based purchases, including quality initiatives and incentive programs. Similarly, employers are demanding more cost-effective administration of benefits such as efficiencies, coordination and accountability of care. As such, the delivery of dental care is becoming a function of what insurance carriers will cover and not necessarily, what treatment is required by the patient.

The delivery of dental care is also significantly influenced by the socio-economic realities that the dental workforce faces. Dental school tuition fees are amongst the highest in post-secondary education which means increase debt levels upon graduation. Coupled with the costs associated with purchasing an existing practice or starting a new dental practice, many new graduate dentists or recent graduates are not able to operate a solo private practice. Additionally, with increasing feminization and the millennial generation, work-life balance is a priority. As such, many younger dentists opt to associate in a corporately-owned dental practice.

The oversaturation by dentists in large urban centres also makes it difficult for dentists to maintain a profitable practice. Similarly, suboptimal returns on investments along with lower resale values results in older dentists extending their careers.

Non-traditional dental delivery models including teledentistry, mobile dentistry and home care have recently been initiated. In other instances, some individuals become “dental tourists” in other countries where dental fees may be lower and more affordable.

As the correlation between oral health and general health continues to be published, dentists are well-positioned to detect the early onset of diseases given their competencies. Provincial ministries are amalgamating the faculties of health education to facilitate learning and inter-professional collaboration amongst dental, medical, nursing students etc.

## **Growing Income Inequality Affecting Access to Care**

The social determinants of health are similar for both general and oral health. Virtually every measure of population health in Canada is worse in poor areas compared to those in wealthier areas. The emergency room visits are higher for less educated or poorer individuals for various conditions.

There has been an increase in the growing income inequality in Canada. As an example, over the last decade, the top 20% of Canadian income earners saw their average market income rise by 28.9%; whereas, those who fall in the bottom 20% experienced a 22.5% reduction in their incomes. This is further substantiated by the findings of the Conference Board of Canada which concluded that there is a large gap between the top 10% earners of Canadians and rest of population. As such, the Standing Committee of Finance has deemed this growing gap to be an urgent issue. To add more complexity to this issue, the poverty rate amongst Canada’s elderly is rising along with other age groups including children and those of working age.

Canadian households are spending an increasing share of their incomes on health care which is not publicly covered. As the income disparity grows, more and more lower- and middle-class families require access to public dental programs. As such, provincial governments are increasing the number of eligible participants but, the programs are still underfunded. This results in lower reimbursement fees for public programs which are passed to dentists which makes it difficult for them to sustain their practices.

Studies have shown that the likelihood of Canadians visiting a dentist has a high correlation to household income. 37% of the population who do not visit the dentist state that cost is the primary issue. Patients who have dental benefits will not make an appointment that is recommended by the dentist if it is not covered by a plan. The middle-income Canadian population (48.7%) has the lowest levels of dental insurance coverage and report the greatest increase in cost-barriers to oral health.

### **Integration of Internationally-Trained Dentists**

From 2010 to 2015, there were 7110 applicants from more than 100 countries applying for the NDEB equivalency process. Currently, less than half of newly certified dentists in Canada are graduating from a Canadian dental school and there is every indication that this trend will continue. CDAC's mutual recognition agreements for dentistry programs also influences the number of foreign-trained dentists that are able to practise in Canada.

The upward trend in internationally-trained dentists has been facilitated by the calls for dedicated Health Human Resources (HHR) in Canada and other nations. Health Care Innovation Group and other "think tanks" recommend that HHR be a priority. As such, provincial governments are developing databases and strategies for HHR planning. Although dentistry was listed as an eligible occupation on the list of the Federal Skilled Workers Program, it has since been removed. However, the current government's support of the Trans-Pacific Partnership Agreement and other multinational agreements may impact the mobility of foreign-trained dentists.

### **Perception of Increasing Commercialization in Dentistry**

The public perceives dentistry to be increasingly more commercial in nature and this is compounded by the fact that dentistry and oral health is categorized as private care unlike general health care which is publicly funded. The assumed interest of the dental professions to continue to provide oral care privately also feeds this perception.

To meet the challenges of an increasingly competitive marketplace, many practice owners are employing well-respected and widely employed business and marketing strategies to increase market share. As these practices become more prominent, dentistry is viewed less as a health care profession in the public's eye. Currently, approximately one third of Canadians feel that dentists are focused on making money more than providing health care. They also perceive that dentists recommend treatment based on earning a profit.

### **Expansion of Alternative Providers**

In medicine, the Canadian Medical Association (CMA) supports the integration of physician assistants. Other alternative providers who work with in medicine include pharmacists with expanded roles which include ordering tests and interpreting diagnostic test results and nurse practitioners (whose numbers have doubled in the past 5 years). Some clinics are staffed with only nurses. Additionally, the scope of practice of paramedical professionals are also under review in several provinces. The federal government has been studying the best practices and federal barriers which are related to the scope of practice and skills training of healthcare professionals in order to support the Canadian population and its health needs. It is conceivable that prevention of and maintenance of oral health care provided by mainstream providers in Canada, including physicians, pediatricians, nurses and pharmacists will expand, in the future. With respect to dentistry, the evolution of independent dental hygiene providers continues across all provinces.

Internationally, the numbers of hygienist therapists who perform restorative procedures in the UK are increasing. There is also a similar increase in oral health therapists (combined hygienist/therapist) in Australia and dental therapists in New Zealand. The latter are responsible for providing the majority of oral care to children under the age of 18. Dental therapists are employed in varying degrees in 54 nations worldwide. In the US, advanced dental therapist providers in some states are allowed to provide basic restorative services to patients. International models which encompass alternative oral care providers have shown positive outcomes for their population. As such, it is feasible that these providers will continue to use access to care issues to justify their demands for an increased scope of practice.

### **Changing Care Needs of an Aging Population**

As the Canadian population ages, the delivery of oral care for seniors will increasingly occur in non-traditional settings and be provided by alternate providers. This will occur in concert with the pressures on governments to develop more viable health care strategies for this vulnerable group including increased funding, expansion of scope of practice for physicians, nurses and others with advanced geriatrics training within the public health care system.

### **Rise of Empowered Consumers**

Knowledge is easily accessible to everyone. As consumers increase their awareness and “research” issues, events and health matters, the knowledge gap between health care providers and patients decreases. Canadian consumers are concerned with making good, ethical decisions and the millennial generation places a high emphasis on health and wellness. Additionally, as the cost of dental care increases potentially, patients will be more inclined to evaluate their dental needs. This will drive patients to make decisions based on their rights and towards the personalization of health care.

Unfortunately, it is difficult for consumers of knowledge to determine what information may be biased, credible or incredible based on sound scientific evidence. As such, dental professionals may be required to manage the beliefs and expectations of their patients more actively. However, the use of online/digital communication and apps may be beneficial in allowing health care providers to connect with existing, new and potential patients and provide a deeper level of engagement.

### **Exploration of Financing Reform for Oral Health Care**

In order to reduce costs and the already taxed health care system in Canada, the government is looking for payment models to address chronic conditions and preventive care. There will likely be changes to the physician remuneration models in Canada with a shift away from fee-for-service. The movement towards larger numbers of salaried physician will likely influence payment models for other fee-for-service healthcare providers. Calls for various tax reforms and cost-sharing to expand private health coverage will continue.

Internationally, taxation policies with respect to supplemental benefits will continue to evolve as well as patient co-payments. There will be an increased focus on encouraging preventive care and improving health care systems and may include imposing value-based contracts, quality assurance as well as performance metric-based payments on health care providers. In Canada, the rise in privatization of health care will generate more competition in the insurance industry.

### **Changing Educational Competencies**

With respect to dental education, there are variations in provincial policies for funding education. Lack of funding compromises the ability of dental faculties. Currently, the framework of dental education is undergoing major change and this is also impacted by the speed and evolution of technology and society.

Unfortunately, the cost of dental education often limits the quality and diversity of the candidate pool. Equally important is the fact that it is increasingly difficult to recruit dental faculty members and members especially without rewards or incentives to balance alternative career choices.

The trend towards the amalgamation of health sciences faculties will continue and will lead to greater opportunities for academia and research. However, dental faculties may play a lesser role in decision-making.

## Key Informants

The Task Force thanks the following people who generously shared their insights and expertise.

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