



CANADIAN DENTAL ASSOCIATION
L'ASSOCIATION DENTAIRE CANADIENNE

REPORT ON
EARLY CHILDHOOD CARIES

COMMITTEE ON CLINICAL AND SCIENTIFIC AFFAIRS
April 2010

Acknowledgment

The Committee on Clinical and Scientific Affairs (CCSA) thanks the Early Childhood Caries Task Force members for the commitment of their time and their diverse expertise in the development of this report. Their collective wisdom, academic perspectives, and practical clinical experiences in a variety of settings, has contributed a depth of understanding to this complex problem and provided a pragmatic approach to the development of the recommendations contained in this report. We are also grateful to the wide network of dental colleagues who shared their views with the Task Force and helped to shape this report.

The members of the Task Force:

Dr. Clive Friedman, London - Chair
Dr. Rosamund Harrison, Vancouver
Dr. Sarah Hulland, Calgary
Dr. Robert Schroth, Winnipeg

Dr. Maryam Amin, Edmonton - observer.

Both the CCSA and the members of the Task Force acknowledge the support of staff from the Department of Clinical and Scientific Affairs— Dr. Benoit Soucy, Dr. Euan Swan and Ms. Katie Lee.

INTRODUCTION

The CDA is the national voice of dentistry, dedicated to the advancement and leadership of a united profession and to the promotion of optimal oral health, an essential component of general health. The CDA's priorities are the maintenance of a strong profession, a united dental community and a healthy public. The CDA's two core functions are advocacy and knowledge

The Committee on Clinical and Scientific Affairs (CCSA) was instructed by the Board of Directors to develop a national strategy to address the issue of early childhood caries (ECC) in Canadian children. The CCSA formed a Task Force and developed the terms of reference for the work group (Appendix A). On July 18, 2009, the Early Childhood Caries Task Force met face to face in Calgary, with the remainder of its work completed by email. The methods used by the Task Force included an extensive review of the current literature and broad consultation with colleagues and experts across the country, especially through the network of members of the Canadian Academy of Pediatric Dentistry (CAPD). The strategy was presented to the Committee on Clinical and Scientific Affairs at its meeting November 20-21, 2009 in Ottawa.

The key objective of the Task Force was development of a national early childhood caries strategy focused on public awareness, education and advocacy. The Task Force was mindful to outline the methods by which the CDA could work optimally with stakeholders to promote oral health for infants and young children and reduce risk for early childhood caries. The Task Force tried to link the purpose and function of the CDA to each strategy and policy recommendation. Furthermore, the Task Force attempted to consider what the CDA could realistically accomplish given its jurisdiction in regards to stakeholders and allied health professionals.

PROCESSES USED TO DEVELOP THE REPORT

The Task Force

1. Reviewed the reports and recommendations from recently held national conferences on ECC;
2. Reviewed some of the recent literature related to current initiatives, public health strategies (what has and has not worked), and recent reviews related to ECC;
3. Surveyed provincial dental associations to determine what early childhood oral health promotion and disease prevention activities and programs were in place;
4. Liaised with Office of the Chief Dental Officer (OCDO), Canadian Association of Public Health Dentistry (CAPHD), Canadian Academy of Pediatric Dentistry (CAPD) and the Paediatric Oral Health Section of the Canadian Paediatric Society (CPS) to determine initiatives being taken by these bodies; and

5. Based on an analysis of the recommended activities and the current status of activities and programs, developed a national strategy to promote oral health for infants and preschool children.

The Committee on Clinical and Scientific Affairs

1. Received and considered the report generated by the Task Force;
2. Determined the overarching goal for activities intended to address this serious issue;
3. Established a primary measurable outcome to gauge progress toward meeting the goal; and
4. Reviewed and approved the recommendations contained in the report and suggested mechanisms for their accomplishment.

LITERATURE REVIEW AND STATEMENT OF THE PROBLEM

Evidence from around the globe reveals that ECC is a growing public health problem. Defined as caries affecting the primary dentition of children under 72 months of age, ECC is a complex and multifactorial disease.¹ The prevalence of ECC has been reported for children from many developed and developing regions of the world including North America, South America, Europe, Asia, the Middle East, and Australia. Severe early childhood caries (S-ECC) is a specific subtype of ECC that is both age and pattern specific. It is this more rampant form that frequently necessitates urgent rehabilitative dental surgery under general anesthesia (GA). In addition, GA is often required for less advanced disease due to medical cofactors or management issues in very young children. Therefore, one should not dismiss early signs of caries (i.e., white spot lesions) in very young children as these initial lesions generally progress over a short period of time into larger cavities that can only be managed with fillings or extraction.

In fact, ECC may be on the rise in North America, as trends over the last 20 years indicate a significant increase in primary tooth decay rates in preschool children.² Unfortunately, no current national data is available for Canadian preschool children although the same trend is likely occurring here, as several recent studies reveal that ECC is all too common in many groups. Groups of young children that are at an increased risk of developing caries including Aboriginal children³⁻⁷, immigrants and refugees^{8,9}, those from low-income families¹⁰, and those residing in rural regions of Canada¹¹ where access to regular dental care may be limited. While indigenous Canadian preschool children are reported to have a higher burden of dental caries, it is important to note that ECC is not just an Aboriginal disease. Higher rates of dental disease are often exhibited among at-risk populations, particularly those who are economically challenged. However, ECC does not discriminate and in fact can be seen in children from all socioeconomic groups. It is common for many children to develop a cavity before their sixth birthday.

ECC is so prevalent in Canada that pediatric dental surgery under GA continues to be the most common surgical day-care procedure at most pediatric hospitals in Canada.¹² It is placing an unnecessary burden on an already stressed Canadian health care system and long wait lists for dental surgery have been reported.¹³ Nationally, there are current efforts underway to improve wait times for dental surgery as part of a Pediatric Health Care Wait Times pilot project. The ultimate goal is to reduce future demands for such surgeries through improved dental prevention.

Children affected by ECC are known to face ongoing dental disease as they grow up. Recurrent decay and new caries are very common following dental surgery under GA.^{14,15} They are also more likely to develop decay in their permanent teeth.^{16,17} Apart from dental effects of ECC, it may also impact on childhood health and well-being.¹⁸ Numerous prevention projects have taken place worldwide and in Canada. However, the problem of ECC still persists. The challenge is that there appears to be no “magic bullet” to preventing it. ECC is a complex disease involving social risk factors, in addition to the well known biomedical determinants of diet, bacterial load and host (tooth) resistance. Hence, multiple and complementary prevention strategies must be considered. While many risk factors are potentially modifiable, others cannot be easily resolved. This naturally poses a challenge to the practicing clinician. Therefore, caries risk assessment of young children is a useful means to identify risk and tailor prevention efforts to the patient, with particular emphasis on diet counselling, bacterial reduction methodologies and intensive remineralization therapy. Early dental visits for infants beginning at 12 months of age are essential as there is evidence that delayed first visits increase the risk for ECC.¹⁰

The first dental visit is a crucial piece in reducing the burden of early childhood caries in Canadian children and must be the primary focus of any early childhood oral health promotion campaign targeting both the public and the profession. Despite the fact that CDA published a Position Statement in 2001 promoting the evidence based principle that a child’s first dental visit should occur by the age of one, this recommendation has had limited uptake and many Canadian children continue to go without a first dental assessment well beyond this age. There is an urgent need to inform Canadian dentists of the importance of a first dental visit by 12 months of age and impress upon dentists who choose not to perform this vital service that they have a professional responsibility to ensure that these young children are connected with other colleagues willing to see children by this developmental milestone.

In addition, broader prevention strategies should also engage communities in identifying practical ways of promoting early childhood oral health. The fact that far too many Canadian children are afflicted with ECC warrants attention. The real challenge is to identify effective and sustainable ways to prevent ECC in Canadian children from all walks of life. A national strategy to address ECC in Canada is needed. This will require participation from dental professionals, communities, researchers, and policy-makers.

Although a number of innovative multidisciplinary programs have been developed in Canada, these occur in relative isolation and are not widely known. These initiatives need to be identified, recognized, supported and, most importantly, leveraged to

implement successful strategies across many populations by a variety of health care professionals.

There is a lack of evidence, communication and agreement between pediatric dentists, public health dentists, general dentists, dental hygienists and allied health professionals, including general practitioners, pediatricians and family doctors, as to the most appropriate methods to reduce a child's risk of early childhood caries. Currently, no central information bank containing evidence-based information about early childhood caries is available to professionals and the public. There are insufficient community-based initiatives to target the disease and those that do exist are often not well supported by professionals and the public. Furthermore, new forms of media(e.g. social networking sites) could be better utilized to educate the public about the disease and the main steps that can be taken to reduce a child's risk.

This lack of awareness and understanding extends beyond the public and the profession to the academic environment. At present, and for a variety of reasons, dental and allied dental professional students have variable exposure to pediatric dentistry, limited instruction on the rationale and significance of the one-year dental visit, and insufficient opportunity to interact with the very young child.

As a result of the comprehensive literature review by the Task Force, a number of knowledge gaps were identified where research is needed.

These include:

- i. The relationship between ECC, overall health, toxic stress, and other social determinants;
- ii. Community-based participatory research with high risk communities; and
- iii. Risk-reduction initiatives.

RECOMMENDATIONS FOR A NATIONAL ECC STRATEGY

1. Goal of CDA's ECC Strategy

The overarching goal of CDA's strategy to combat ECC is :

To eliminate the disease, early childhood caries, in Canadian children.

In choosing such an audacious goal, the committee recognizes that this disease will never be completely eliminated. However, the committee believes that the bar needs to be set this high, to avoid complacency when a lesser goal has been reached. We believe that work to eliminate this disease will be ongoing at all levels –local, provincial and national –for a long time. We realize that the ability of CDA and others to commit human and financial resources to fighting this disease will vary both regionally and temporally. Nevertheless, we believe this goal must remain on

the table until it can be established that the goal has been achieved to the greatest extent possible.

2. Measurement of Success

The metric to measure success of the achievement of this goal is:

Elimination of the need for hospital-based general anesthesia for the treatment of early childhood caries in Canadian children.

This outcome measure was selected because:

- Reliable before and after data can be obtained;
- The need for hospital-based general anesthesia is a reasonably valid surrogate measure of prevalence of serious dental disease in young Canadian children;
- Reducing hospital-based GA is an important quality of care and patient safety issue; and
- This metric will resonate with various stakeholders, including politicians.

3. Specific recommendations

The Committee on Clinical and Scientific Affairs recommends that the following strategies be undertaken. The committee recognizes that some recommendations may have limited impact, but can be easily accomplished in a short time frame by the committee or support staff, whereas others will require a concerted collaborative effort by CDA and its corporate members and will be more resource intensive.

1. Refinement and Implementation of the Outcome Measure

CDA should seek advice from content (pediatric dentists familiar with OR case management and wait times) and methodology experts, to determine the best way to design and implement this outcome measure.

The committee understands that the need for hospital-based GA for the treatment of ECC will never be entirely eliminated and that incremental, time-related and patient population-specific goals for this metric will need to be established. If deemed appropriate by a methodology expert, additional data may be gathered on outpatient GA and wait times for treatment of ECC, with the recognition that despite inherent biases in such data, they will supplement our understanding of the problem.

Suggested Action: A small working group of content/methods experts be struck to address this recommendation in a timely fashion at the beginning of the ECC strategy.

2. Education

a. A position statement on early childhood caries should be developed that addresses:

- i. first visit by 12 months of age (as per the present guideline)*
- ii. caries risk assessment*
- iii. caregiver counseling about reducing risk to ECC*
- iv. preventive/therapeutic interventions*
- v. the need for shifting the paradigm of thinking, in regards to terminology; in lieu of addressing prevention, professionals should speak of risk-reduction*

Suggested Action: A position statement, developed by CCSA (Appendix B), should be circulated to corporate members for feedback.

b. Once a position statement is approved, it must be disseminated to allied professionals and incorporated into respective educational and promotional material.

Suggested Action: Collaborative implementation by staff of CDA and provincial dental associations.

c. Relevant stakeholders, for example provincial dental organizations and dental faculties, should be lobbied to reinforce the rationale behind the concept of an age one dental assessment.

- *The CDA should advocate for provincial dental regulatory bodies to make continuing dental education concerning the first dental visit mandatory.*
- *Commission on Dental Accreditation of Canada (CDAC) should be asked to change the wording of the accreditation requirement 2.4.1 for Doctor of Dental Surgery/Doctor of Dental Medicine programs which reads, “for patients of all ages,” so that it reads, “for patients of all ages, from infancy to old age.”*

Suggested Action: Implementation by CDA staff

d. CCSA, CAPD and CAPHD should work with the CDA publications staff to explore opportunities for education of the profession in the diagnosis, prevention and management of ECC, through JCDA and electronic publication of relevant material

Suggested Action: CCSA and CDA staff to engage in discussion with the Editor, JCDA

2. Public Health

a. The OCDO should be lobbied to provide a resource specific to early childhood caries and the importance of dental assessment by age one on the Health Canada website. Health Canada should also be lobbied for the development and inclusion of a policy statement on age one dental assessment.

Suggested Action: CCSA, CAPD and CDA staff to advocate for and work with the OCDO on issues related to ECC

3. Advocacy

a. Insurance companies, provincial employment schemes, and other regulatory and government bodies should be lobbied and educated about the importance of caries risk assessment and interventions that reduce a child's risk to ECC : diet counseling intensive remineralization technologies e.g. fluoride varnish, and bacterial reduction methodologies. Such approaches should be covered by private and public insurance plans and programs.

Suggested Action: Collaborative effort between CDA and corporate members (for details, please see Appendix C - Ad Hoc National Expert Panel)

b. Professional health care associations should be lobbied to promote oral health policy through maternal and child health networks.

The Canadian Pediatric Society (CPS) is currently working in concert with CAPD to develop an educational program for its members. CDA should support this initiative and help co-ordinate a similar initiative with the Canadian Medical Association, the Canadian Nurses Association, the College of Family Physicians of Canada, the Canadian Association of Midwives and other relevant organizations.

Suggested Action: CDA staff should assist CAPD in its work in a co-ordination role and leverage their work with other relevant organizations.

c. CDA should continue to remind the dental profession of the moral and ethical responsibility to treat people of all ages and backgrounds.

Suggested Actions:

1. CCSA, together with CAPD should develop a publication strategy with the Editor of JCDa to promote the ethics of inclusivity in the treatment of all patients.

2. CDA should update and review its Code of Ethics, with the recognition that there is no one "right" Code, and that there is value to more than one Code of Ethics for Canadian dentists, all of which will promote the same ethical values, looking at issues through a slightly different lens.

d. Discussion with Aboriginal communities and organizations to foster collaboration on

i. increasing the interest in oral health education and careers amongst Aboriginal youth.

ii. developing oral health initiatives to eliminate ECC in Aboriginal children

Suggested Action: Collaborative effort between CDA and corporate members (for details, please see Appendix C - Ad Hoc National Expert Panel)

e. Explore innovative ways to seek or provide support for the proposed Canadian Early Childhood Oral Health Collaborative, especially with respect to exploring ways to fund a project manager for this important initiative

In September 2007, more than 250 allied professionals and community stakeholders participated in a conference, *Partnering to Reverse the Trend: Early Childhood Caries*, hosted in Calgary by the Calgary Health Region and the Canadian Academy of Pediatric Dentistry. Details and outcomes of the conference can be seen on the website www.ecc-calgary.ca/. One of the key strategic end results of this conference was the proposal of the Canadian Early Childhood Oral Health Collaborative (CECOHC). To move this collaborative forward requires funding for the creation of a part time Project Manager position.

Suggested Action: collaborative effort between CDA and Corporate Members (for details, please see Appendix C - Ad Hoc National Expert Panel)

4. Knowledge Transfer

a. An online clearing house with early childhood caries related resources for professionals and the public should be created and managed.

- This will include promotional and educational videos, pamphlets, posters, evidence based studies, and links to current websites and existing educational programs.
- A means of monitoring and updating the site, as well as reviewing new material for the site needs to be devised.

Suggested Action: Collaborative effort between CDA and corporate members (for details, please see Appendix C - Ad Hoc National Expert Panel)

5. Research

a. Funding and infrastructure support is needed for multidisciplinary research focused on early childhood caries, especially in the areas of identified knowledge gaps.

Suggested Action: CDA should develop a strategy, through its Public Affairs Department, to engage in ongoing advocacy with government and federal funding agencies, to raise awareness for the need for funding of research into dental diseases.

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Appendix A



CANADIAN DENTAL ASSOCIATION
L'ASSOCIATION DENTAIRE CANADIENNE

TERMS OF REFERENCE

Early Childhood Caries Task Force

Key Objective

To facilitate the development of a national dental strategy to address the issue of early childhood caries, with a focus on public awareness, education and advocacy.

Outcomes

The Task Force will provide the Committee on Clinical and Scientific Affairs (CCSA) with a report as soon as reasonably possible and not later than October 2009 that provides a strategy to as to how best CDA can work with stakeholders to promote oral health for infants / children and to prevent early childhood caries.

Composition

The Task Force will consist of a Chair and 3 additional members:

Dr. Clive Friedman, London - Chair
Dr. Rosamund Harrison, Vancouver
Dr. Sarah Hulland, Calgary
Dr. Robert Schroth, Winnipeg

Dr. Maryam Amin, Edmonton, was invited to participate as an observer.

Duties

The Task Force will:

1. Review the reports and recommendations from recently held national conferences on ECC;
2. Survey provincial dental associations to determine what health promotion and disease prevention activities and programs are in place;

3. Liaise with Office of the Chief Dental Officer (OCDO), Canadian Association of Public Health Dentistry (CAPHD), Canadian Academy of Pediatric Dentistry (CAPD) and the Pediatric Oral Health Section of the Canadian Paediatric Society.
4. Based on an analysis of the recommended activities and the current status of activities and programs, develop a national strategy to promote oral health for infants/children and to prevent early childhood caries.

The Task Force will be supported by CDA staff from the Clinical and Scientific Affairs Department.

Meetings

The Task Force will a maximum of two times during its term subject to the availability of resources. The first meeting will focus on work plans and assignment of responsibilities. A second meeting, if necessary, will analyze the data collected, discuss the findings and develop the reporting process.

Between meetings, the Task force will conduct business throughout the term via electronic communications. The need for conference calls or additional meetings will be determined in consultation with senior CDA support staff.

Reporting

The Task Force will provide progress reports at the request of the Committee on Clinical and Scientific Affairs. The Task Force will submit its final report to the Committee on Clinical and Scientific Affairs as soon as is reasonably possible and not later than October 2009.

Approved by the Committee on Clinical and Scientific Affairs 2009-03-27

Appendix B

CDA Position on Early Childhood Caries (DRAFT)

The Canadian Dental Association (CDA) recognizes that early childhood caries (ECC) is a complex and multifactorial chronic disease that is heavily influenced by both biomedical (diet, bacteria, and host) and social determinants of health. ECC is defined as the presence of one or more decayed (noncavitated or cavitated lesions), missing (due to caries) or filled tooth surfaces in any primary tooth in a preschool-age child, i.e., between birth and 71 months of age. While the advanced form of this disease, severe early childhood caries (S-ECC), has raised concern with health professionals and the public, S-ECC should be considered the end stage of this disease, with overall management strategies devised to provide early assessment, prevention and treatment.

ECC is an infectious, transmissible, diet-dependent disease that may begin soon after dental eruption and that may progress rapidly. It has a lasting detrimental impact on both primary and permanent teeth. ECC is the most common childhood disease and is often accompanied by serious comorbidities affecting children, their families, the community and the health care system. Some of the potential consequences of ECC are acute and chronic pain; interference with the child's eating, sleeping and proper growth; tooth loss and malocclusion; increased expenses for dental care throughout life; and compromise of general health. Despite continued efforts to better understand the etiology of ECC and despite advances in prevention, the prevalence of ECC in Canadian preschool children is a growing concern. Dental surgery for ECC under general anesthesia is the most common day surgery procedure at most pediatric hospitals in Canada.

Combined efforts, including early dental visits (i.e., by 1 year of age), timely risk assessment, appropriate therapeutic interventions and preventive counselling of parents (to provide anticipatory guidance), are essential in reducing the risk of ECC.

CDA encourages dental assessments of infants within 6 months of eruption of the first tooth and no later than 1 year of age. At the first dental visit, the infant's risk of caries should be assessed and discussed with a parent or caregiver. Appropriate preventive interventions need to be planned to take into account any social challenges that the family may be experiencing and must be culturally appropriate. Health care professionals and all other stakeholders in children's oral health should support the identification of a "dental home" for all infants by 12 months of age. Dentists should recognize the importance of a first dental visit by 12 months of age. Dentists who choose not to perform this vital service have a professional responsibility to ensure that young children are connected with colleagues willing to see them by the time they reach this developmental milestone. CDA recommends a multidisciplinary approach to controlling ECC. Health care providers who detect ECC should refer the patient to an appropriately trained dental professional for further diagnosis, risk assessment and management. Immediate care is necessary to reduce further damage and prevent subsequent health problems. Preventive and therapeutic measures such as optimizing home care, interim therapeutic restoration, more frequent dental visits with regimented applications of topical fluoride (e.g., fluoride varnish) and full crown coverage are often necessary. The patient's developmental level and comprehension

skills, as well as the extent of the disease process, must be assessed to determine the need for advanced behaviour guidance techniques, sedation or general anesthesia.

CDA encourages an understanding of health care as something to be provided to the individual throughout the life span, with early childhood oral health providing a foundation for lifelong oral health. CDA recommends the use of a variety of educational sources and tools, including social networking media to inform the public, dental professionals and allied health professionals about ECC. CDA supports existing public dental health programs directed at young children, as well as sustainable community-initiated approaches that assess better oral health and encourage better oral health practices for high-risk expectant mothers, infants and toddlers.

Appendix C

Ad Hoc National Expert Panel(s)

The committee recognizes that for CDA to meet its goal to eliminate ECC in Canadian children, knowledge, expertise and commitment is needed from organized dentistry across the country. Therefore, a number of “mega” issues have been identified which will require collaboration between CDA and its corporate members in order to tackle them.

These include:

Recommendation 3a. Advocacy with private and public insurance plans and programs to provide coverage for risk assessment and prevention strategies.

Recommendation 3d. Collaboration with Aboriginal communities and organizations to develop oral health initiatives and to encourage Aboriginal youth to consider and pursue careers in the oral health sciences.

Recommendation 3e: Exploration of innovative ways to seek or provide support for the Canadian Early Childhood Oral Health Collaborative

Recommendation 4: Drawing upon local and provincial contacts and expertise, develop an online clearing house and searchable database of early childhood caries related resources for professionals and the public, and determine a mechanism for its’ maintenance and updating.