

# Are Manitoba Dentists Aware of the Recommendation for a First Visit to the Dentist by Age 1 Year?

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## ABSTRACT

**Background:** The Canadian Dental Association (CDA) and the American Academy of Pediatric Dentistry (AAPD) recommend that children visit the dentist by 12 months of age.

**Purpose:** To report on how Manitoba's general dental practitioners and pediatric dentists manage oral health in early childhood.

**Methods:** Mailed surveys that used the modified survey methods of Dillman were sent to 390 Manitoban general dental practitioners and pediatric dentists. The sampling frame was the Manitoba Dental Association's Membership Registry, but only those dentists who consented to the release of their mailing information were contacted. Survey data were analyzed with Number Cruncher Statistical Software (NCSS 2007). Descriptive statistics, bivariate analyses and multiple regression analyses were done. A  $p$  value of  $\leq 0.05$  was considered statistically significant.

**Results:** A total of 292 (74.9%) of the 390 practitioners responded, of whom 85.1% met the eligibility criteria and 84.6% were graduates of the faculty of dentistry, University of Manitoba. Overall, infants and preschoolers constituted  $< 10\%$  of patients in the respondents' practices. Slightly more than half (58.3%, 144/247) of participants were aware of professional organizations' recommendation about the timing of children's first visit to the dentist; 52.2% (130/249) were unaware of the existence of a standardized case definition for ECC; and 32.3% (80/248) knew that ECC was defined as the presence of at least 1 primary tooth affected by caries in children  $< 6$  years of age. On average, these participating dentists from Manitoba thought children should visit the dentist by 2 years of age.

**Conclusions:** Although early visits to the dentist are now endorsed by CDA and AAPD, a significant number of dentists in Manitoba are still unaware of the recommendation that children should first visit the dentist by 12 months of age.

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While theoretically preventable, early childhood caries (ECC) remains a significant public health problem.<sup>1</sup> The current definition of ECC is any caries in the primary dentition of a child  $< 6$  years of age.<sup>2,3</sup>

Although this classification is broad, the subtype, severe early childhood caries, which is age- and tooth-surface-specific, more accurately reflects those who develop caries at early stages of their dental development.<sup>3</sup>

Professional and specialty organizations such as the Canadian Dental Association (CDA) and the American Academy of Pediatric Dentistry (AAPD) recommend that children visit the dentist by 12 months of age<sup>4,5</sup> because this strategy establishes a preventive practice for the caregiver that has long-term benefits for the child. Moreover, it may ensure that children remain cavity-free<sup>6</sup> because age is a significant determinant of ECC.<sup>7,8</sup>

The consequences of ECC can be challenging for both the child and community. Short-term consequences include failure to thrive,<sup>9</sup> oral infection and pain, altered nutritional status<sup>10</sup> and cellulitis.<sup>11</sup> Studies have shown that children with ECC have more lost school hours,<sup>12</sup> and advanced forms often necessitate treatment under general anesthesia.<sup>11,13</sup> Long-term effects include predisposition to caries in both the primary and permanent dentitions,<sup>14-16</sup> malocclusion and the potential to affect speech and quality of life.<sup>17</sup>

ECC is a serious problem in some communities in Manitoba.<sup>8,18</sup> Prevalence data indicate that ECC is considerable, not only in northern First Nations communities, but also among those residing in disadvantaged urban centres.<sup>8,19</sup> Despite being equipped to screen infants, the currently small number of pediatric dentists cannot meet the demand of the entire infant population. General practitioners, therefore, must recognize the need for and benefits of early examinations so that they can undertake their crucial role in preventing ECC.<sup>19</sup> The purpose of this paper is to report findings of a mailed survey study about general and pediatric dentists' practice habits related to oral health in early childhood.

## Methods

Approval for the study and administration of the survey was granted by the Health Research Ethics Board, University of Manitoba, and the Manitoba Dental Association (MDA). The population investigated were general dental practitioners and pediatric dentists practising in Manitoba, Canada, during 2005. The sampling frame was the MDA Membership Registry.

At the time of the survey, there were 613 registered MDA members, of whom 223 were ineligible to participate because of restrictions about sharing provider-contact information in accordance with the Personal Information Protection and Electronic Documentation Act. Others were ineligible because their specialty did not deal with preschool-aged children, or they were nonpractising dentists or intern affiliates.

The survey tool was pilot-tested with practising dentists, and their feedback was incorporated into the final survey. To keep respondents anonymous, codes were assigned to each. Participants were identified by a number, and a master file linking the numbers to the respondents' names was kept in a separate secure location.

The modified survey method of Dillman<sup>20</sup> was followed. Participants were mailed a cover letter, consent form, 6-page survey and a stamped return envelope. A reminder letter was sent out to all the participants 2 weeks after the initial mailing. A second mailing was sent to all the nonrespondents 4 weeks after the initial contact, and a third and final mailing was sent 6 weeks after the second.

The survey consisted of different sections, including an early childhood oral health profile and practitioners' knowledge of early childhood oral health. This questionnaire was modified from a tool developed by Prakash and Lawrence<sup>21</sup> to survey Canadian pediatricians and family physicians.

Survey data were analyzed with Number Cruncher Statistical Software (NCSS 2007; Kaysville, Utah). Descriptive statistics (frequencies and means  $\pm$  standard deviation [SD]), bivariate analyses ( $\chi^2$  and analysis of variance) and multiple regression analyses were done. A *p* value of  $\leq 0.05$  was considered statistically significant. Two separate multiple regression analyses were done with the recommended age of first visit as the dependent outcome variable. The first regression involved providers' practice characteristics, and the second included variables about their awareness, attitudes and practice habits. Stepwise regression was also used for the same outcome variable, but was restricted to those independent variables that were significantly associated with the recommended mean age of first visit from the first multiple regression analyses.

## Results

A total of 390 surveys were mailed to dentists. Of these, 5 dentists indicated their ineligibility to participate because they did not provide care for children. Overall, 292 surveys were returned, of which 249 met the eligibility criteria. Two practitioners refused to participate, and another 41 were ineligible because of their nonpractising status (e.g., recent retirement, enrolment in graduate dental studies, relocation outside of the province).

Almost 74% of respondents were male (**Table 1**) and the mean age of dentists was  $44.6 \pm 11.5$  years. On average, respondents had been practising for  $18.4 \pm 12.3$  years and most were graduates of the University of Manitoba. Only 1.6% of general practitioners limited their practices to children. Classification of main practice varied; about half (53.4%) of respondents practised in a group general practice.

On average, practitioners reported seeing  $27.3 \pm 48.2$  preschool children (range 0–400 preschool children) each month and estimated that  $32.4\% \pm 29.3\%$  of these children would normally have ECC. Overall, infants and preschoolers comprised  $< 10\%$  of the respondents' practices (**Table 2**). Of those who saw preschool children in their practices, less than a half (48.6%, 103/212) saw

**Table 1** Survey respondents' characteristics

Characteristic	No. of respondents (%)
<b>Sex (n = 247)</b>	
Male	182 (73.7)
Female	65 (26.3)
<b>Years in practice (n = 242)</b>	
< 5	45 (18.6)
5–10	27 (11.2)
11–20	64 (26.4)
> 20	106 (43.8)
<b>Dental training (n = 247)</b>	
University of Manitoba	209 (84.6)
Other Canadian or American university	22 (8.9)
Foreign-trained	16 (6.5)
<b>Type of licence (n = 248)</b>	
General practitioner	240 (96.8)
Pediatric specialist	8 (3.2)
<b>Main practice location (n = 245)</b>	
Urban	186 (75.9)
Rural	50 (20.4)
Northern	9 (3.7)
<b>Practice in fluoridated community (n = 242)</b>	
Yes	219 (90.5)
No	23 (23.5)
<b>Always practised in the same community (n = 241)</b>	
Yes	157 (65.1)
No	84 (34.9)
<b>Main practice classification (n = 247)</b>	
Group, general	132 (53.4)
Solo, general	83 (33.6)
Hospital, community, academic or university clinic	13 (5.3)
Solo or group, specialty	9 (3.6)
FNIHB contract	7 (2.8)
Other	3 (1.2)

FNIHB = First Nations and Inuit Health Branch (Non-Insured Health Benefits), Health Canada.

children before 1 year of age. These values rose steadily with increasing age groups: 73.7% (171/232) reported seeing children 12 to 23 months of age, 89.6% (215/240) saw children 24 to 35 months of age, 94.2% (227/241) saw children 36 to 47 months and 97.5% (237/243) saw children ≥ 48 months of age. Dentists practising in Northern regions of Manitoba were significantly more likely to see

**Table 2** Composition of respondents' practices by age grouping

Age group	% composition, mean ± SD (range)
Infants (1–23 months)	2.2 ± 3.7 (0–25)
Preschool (24–71 months)	7.6 ± 9.0 (0–80)
Children (6–12 years)	11.2 ± 8.0 (0–50)
Adolescents (13–18 years)	14.2 ± 6.6 (0–35)
Adults (19–44 years)	36.2 ± 15.7 (0–85)
Middle age and seniors (≥ 45 years)	28.6 ± 15.2 (0–75)

SD = Standard deviation

**Table 3** Proportion of Aboriginal patients in respondents' practices (n = 242)

Proportion of Aboriginal patients (%)	No. of respondents (%)
< 5	119 (49.2)
5–10	47 (19.4)
11–25	23 (9.5)
26–50	25 (10.3)
51–75	11 (4.5)
76–100	10 (4.1)
None	7 (2.9)

infants < 12 months of age ( $p = 0.007$ ; 100% versus 47.7% rural and 45.9% urban).

Aboriginal patients comprised < 5% of almost half (49.2%) of responding dentists' practices (Table 3). Dentists cited several reasons for not seeing Aboriginals in their offices, including administrative problems, lack of willingness to co-pay for their treatments, and areas of practice not inhabited by indigenous people (data not shown). However, a majority of dentists reported seeing patients with dental benefits from the Non-Insured Health Benefits (NIHB) program of the First Nations and Inuit Health Branch (91.4%, 224/245) and Employment and Income Assistance (Social Assistance) (88.7%, 219/247).

Only 58.3% (144/247) of participants were aware that CDA and AAPD recommended that children visit the dentist by 12 months of age; 52.2% (130/249) were unaware of a standardized definition for ECC; 32.3% (80/248) knew that ECC was defined as a presence of at least 1 primary tooth affected by caries in those < 6 years of age.<sup>2,3</sup> However, 61.8% (154/249) reported that they had heard of severe ECC.

About 78% (189/243) of practitioners felt comfortable preventing and managing ECC in their offices. In

**Table 4** Practitioners' use of various techniques to prevent or manage ECC

Prevention or management practice used	No. of respondents (%)
<b>Fluoride varnish (n = 247)</b>	
Yes	97 (39.3)
No	150 (60.7)
<b>Fluoride supplements prescribed (n = 245)</b>	
Yes	91 (37.1)
No	154 (62.9)
<b>Sealants on primary teeth (n = 245)</b>	
Yes	76 (31.0)
No	169 (69.0)
<b>Alternative restorative techniques (n = 245)</b>	
Yes	119 (48.6)
No	112 (45.7)
Unfamiliar	14 (5.7)
<b>Knee-to-knee positioning (n = 242)</b>	
Yes	101 (41.7)
No	83 (34.3)
Unfamiliar	58 (24.0)
<b>Chlorhexidine rinses prescribed to mothers (n = 245)</b>	
Yes	13 (5.3)
No	232 (94.7)
<b>Fluoridated toothpaste recommended (n = 245)</b>	
Always	151 (61.6)
Occasionally	87 (35.5)
Never	7 (2.9)
<b>Amount of fluoridated toothpaste recommended (n = 221)</b>	
Smear (< size of pea)	132 (59.7)
Size of pea	86 (38.9)
> Size of pea	3 (1.4)

ECC = early childhood caries.

fact, 93.9% (230/245) of practitioners reported that they counselled parents about how to prevent or manage ECC. However, 77.2% (190/246) of practitioners were unfamiliar with the term “anticipatory guidance” and 57.7% (142/246) reported unfamiliarity with “lift the lip” practices. The majority (94.7%, 233/246) believed that nurses and physicians can play a role in preventing ECC. Practitioners' use and familiarity with various prevention techniques are described in **Table 4**. Almost two-thirds (60.7%) of respondents did not use fluoride varnish to prevent decay in the primary dentition; 62.9% did not prescribe fluoride supplements; 61.6% always recommended fluoridated toothpaste.

**Table 5** Barriers to preventing and managing ECC identified by survey respondents

Barrier	No. of respondents (%)
<b>Child behaviour (n = 240)</b>	
Yes	185 (77.1)
No	55 (22.9)
<b>Crying child (n = 237)</b>	
Yes	121 (51.1)
No	116 (48.9)
<b>Low parental awareness or interest (n = 240)</b>	
Yes	115 (47.9)
No	125 (52.1)
<b>Lack of practical resources (n = 238)</b>	
Yes	74 (31.1)
No	164 (68.9)
<b>Little reimbursement (n = 239)</b>	
Yes	71 (29.7)
No	168 (70.3)
<b>Too busy (n = 239)</b>	
Yes	47 (19.7)
No	192 (80.3)
<b>Lack of auxiliary staff (n = 240)</b>	
Yes	37 (15.4)
No	203 (84.6)

ECC = early childhood caries.

When questioned about the barriers that dentists encountered when providing care in their offices, respondents identified child behaviour and crying most often, followed by low parental interest, and lack of practical resources about promoting early oral health (**Table 5**). Respondents also noted a lack of continuing education and limited exposure to children in their practices.

The majority (91.7%, 222/242) of respondents indicated that maternal oral health could influence early childhood oral health, 94.3% (233/247) recommended regular dental care for women during pregnancy and 94.7% (233/247) reported seeing expectant women in their practices.

On average, responding dentists thought a child's first visit to the dentist should occur before 2 years of age. Analysis with *t*-tests revealed a significant difference between the age practitioners thought a child should first visit the dentist and the age they actually recommended ( $22.9 \pm 11.3$  months versus  $24.8 \pm 10.9$  months,  $p < 0.001$ ). The majority (93.5%, 230/246) of these practitioners thought that early examinations were important for preventing ECC. Pediatric specialists, female

**Table 6** Recommended age (mean ± SD) for first dental visit broken down by practitioners' characteristics

Variable	No. of respondents	Recommended age for first dental visit, mean ± SD (months)	p value
General dentist	240	25.2 ± 10.9	< 0.001 <sup>a</sup>
Pediatric dentist	8	15.0 ± 5.5	
Practice not limited to children	233	25.5 ± 10.7	< 0.001 <sup>a</sup>
Practice limited to children	12	12.0 ± 6.3	
Not aware of year 1 recommendation	103	27.7 ± 9.0	< 0.001 <sup>a</sup>
Aware of year 1 recommendation	144	22.7 ± 11.7	
Male	182	26.6 ± 10.4	< 0.001 <sup>a</sup>
Female	65	20.1 ± 10.9	
Practice location			0.024 <sup>b</sup>
Urban	186	25.4 ± 10.5	
Rural	50	25.7 ± 11.7	
Northern	9	15.2 ± 9.5 <sup>c</sup>	0.037 <sup>b</sup>
Trained in Manitoba	209	25.6 ± 10.7	
Other Canadian or American university	22	22.4 ± 11.9	
Foreign-trained	16	19.1 ± 10.3	< 0.001 <sup>b</sup>
Willingness to receive additional training			
Very willing	84	20.3 ± 10.4 <sup>c</sup>	
Moderately willing	95	25.7 ± 9.9 <sup>d</sup>	
Slightly willing	40	27.5 ± 10.1 <sup>e</sup>	
Not interested	22	33.7 ± 11.0 <sup>f</sup>	

<sup>a</sup>Obtained from independent samples t-test.

<sup>b</sup>Obtained from analysis of variance.

<sup>c</sup>Significantly differs from all other categories on Tukey-Kramer multiple comparison test.

<sup>d</sup>Significantly differs from "very willing" and "not interested" categories on Tukey-Kramer multiple comparison test.

<sup>e</sup>Significantly differs from "very willing" category on Tukey-Kramer multiple comparison test.

<sup>f</sup>Significantly differs from "very willing" and "moderately willing" categories on Tukey-Kramer multiple comparison test.

practitioners and those who received their training outside North America were more likely to recommend earlier visits ( $p < 0.05$ ) (Table 6).

Correlation analysis revealed that the age practitioners recommended for children's first visit to the dentist was significantly correlated with the number of years in practice ( $r = 0.407$ ,  $p < 0.001$ ). This meant that recent graduates were more likely to recommend earlier visits for young children (data not shown).

Respondents identified a lack of current information as one of the challenges they faced in their practice: 68.6% (168/245) indicated a need for additional oral health promotion materials and the majority (90.9%, 221/243) were in favour of receiving additional training. Responding dentists who were the most willing to receive additional training had been in practice for an average of 15.5 ± 1.3 years, whereas those not interested in receiving training had been in practice for a significantly longer period (27.0 ± 2.5 years;  $p < 0.001$ ). Further, female respondents (47.7%, 31/65) were very willing to receive

additional training compared with male respondents (30.3%, 54/178); more men indicated that they were moderately willing to receive additional training (40.4%, 72/178) ( $\chi^2 = 8.4$ ,  $df = 3$ ;  $p = 0.039$ ). Fifty-four percent of those who identified themselves as very willing to receive additional training recommended a first visit to the dentist by the age of 1 year. In contrast, only 3.4% of those who were not interested in receiving additional training made this recommendation.

Responding practitioners indicated that they received information from many sources, including dental journals (96.7%, 234/242), continuing education courses (67.8%, 156/230), and brochures and pamphlets (56.2%, 122/217), but only 22.2% (47/212) used the Internet as a source of information.

Provider characteristics that were statistically significantly associated with earlier recommendations for a first visit in multivariate analyses were practitioner's age, sex, number of years in practice, location of degree-granting university or institution and practice classifica-

**Table 7** Multiple regression analyses for recommended age for first visit to the dentist

Multiple and stepwise regression for recommended age for first visit to the dentist as a function of providers' characteristics				
Providers' characteristics	Multiple regression (adjusted $R^2 = 0.31$ )		Reduced model stepwise regression (adjusted $R^2 = 0.31$ )	
	Regression coefficient (SE)	<i>p</i> value	Regression coefficient (SE)	<i>p</i> value
Age	0.23 (0.10)	0.022	0.23 (0.10)	0.023
Sex	-2.88 (1.46)	0.05	-2.75 (1.43)	0.057
Type of licence	5.73 (6.17)	0.35		
Years in practice	2.08 (1.01)	0.04	2.16 (0.99)	0.028
Place of graduation	-4.41 (1.31)	0.001	-4.46 (1.22)	< 0.001
Type of practice	-1.20 (0.57)	0.037	-1.06 (0.50)	0.036
Practice location	-1.38 (1.57)	0.38		
Practice limited to children	11.44 (4.77)	0.017	9.16 (3.09)	0.003
Practice in fluoridated community	2.01 (2.63)	0.44		
Practice in same community	-0.46 (1.32)	0.73		
Multiple and stepwise regression for recommended age for first visit to the dentist as a function of the provider's knowledge, behaviour and attitudes				
Providers' knowledge, behaviour and attitudes	Multiple regression (adjusted $R^2 = 0.32$ )		Reduced model stepwise regression (adjusted $R^2 = 0.32$ )	
	Regression coefficient (SE)	<i>p</i> value	Regression coefficient (SE)	<i>p</i> value
Awareness of recommended age for first visit	2.71 (1.45)	0.063		
Awareness of ECC case definition	3.31 (1.40)	0.019	4.49 (1.28)	0.001
Comfortable caring for young children	-2.41 (1.66)	0.15		
Belief in importance of early examinations	10.47 (2.90)	< 0.001	8.37 (2.49)	0.001
Use of anticipatory guidance	0.91 (0.87)	0.3		
Use of lift the lip	-0.27 (0.73)	0.71		
Use of fluoride varnish	4.09 (1.35)	0.003	3.99 (1.25)	0.002
Use of ART	0.63 (1.33)	0.64		
Counselling of parents about ECC prevention	1.75 (2.97)	0.56		
Use of knee-to-knee positioning	2.16 (0.91)	0.019	2.69 (0.82)	0.001
Being too busy	2.07 (1.77)	0.244		
Child's behaviour a barrier	-1.79 (1.74)	0.3		
Crying child a barrier	-0.78 (1.56)	0.62		
Low or little reimbursement a barrier	-0.80 (1.53)	0.6		
Lack of practical resources a barrier	0.87 (1.40)	0.53		
Willingness to receive training	2.52 (0.70)	< 0.001	2.59 (0.66)	< 0.001

SE = standard error; ECC = early childhood caries; ART = alternative restorative techniques  
 Note: Empty cells indicate that variables were not included in the reduced model.



tion, and whether their practice was limited to children (Table 7). Predictor variables for the recommended age for a first visit to the dentist that were a function of providers' knowledge, attitudes and behaviours were awareness of the case definition for ECC, belief in early examinations, willingness to receive further training, use of fluoride varnish, and implementation of knee-to-knee examinations.

## Discussion

Results of our survey showed that a considerable number of dental practitioners in Manitoba were unaware of the current recommendations of CDA and AAPD that children should visit the dentist by 12 months of age.<sup>4,5</sup> On average, Manitoba dentists responding to our survey recommended a first visit by 24.8 months of age, 1 full year later than recommended. Respondents who were pediatric specialists, those whose practices were limited to children, which included both general dentists and pediatric specialists, and more recent graduates recommended earlier visits. This finding may be explained by their greater awareness of children's oral health and training. Analysis with *t*-tests revealed that the average age for a child's first visit recommended by all dentists who restricted their practice to children was lower than that recommended by pediatric specialists. Registration as a pediatric specialist was not significantly associated with the recommended age of first visit on multiple regression, indicating no difference between the groups (pediatric specialist versus general dentist). However, the dental profession needs to reinforce the benefits of a first dental visit by 12 months of age. Confusion over past discrepancies between organizations' policies and poor knowledge transfer has likely prohibited the dissemination of this recommendation. Recently, MDA made a significant effort to educate the public about children's first visit to the dentist through their public service announcements on television. A recent Canadian study<sup>21</sup> of pediatricians and family physicians reported that only 22.7% recommended a first visit to the dentist earlier than 2 years of age, suggesting that similar efforts should be directed toward our medical colleagues.

A recent study<sup>22</sup> indicates that dentists exposed to infants during their training are more likely to recommend dental visits before 1 year of age. Our survey results were similar: more recent graduates recommended earlier visits than their older peers. This finding may be due to some exposure to children during their undergraduate education or the younger ages of these new practitioners, combined with their patience and enthusiasm. Undergraduate programs should attempt to increase the exposure of senior students to younger preschool children and infants.

Practitioners who primarily practised in northern Manitoba were also more likely to recommend earlier

visits, perhaps because northern practitioners encounter ECC more frequently and are more aware of its devastating effects on children. Another possibility is that those practising in northern communities are simply more community-oriented. Since some northern Manitoba communities struggle with overwhelming rates of ECC,<sup>18</sup> this finding is encouraging.

Results of this study suggest limited access for young children may be a problem if the recommended age for the first visit to the dentist is used as a proxy measure (75.4% of practitioners recommended a first visit long after the first birthday). Parents may have difficulty finding dental homes for their infants and toddlers if dentists do not improve earlier access to care for this population in their offices. In our survey, infants and preschoolers constituted < 10% of respondents' practices.

An overwhelming number of respondents thought that nurses and physicians could play a key role in preventing ECC. This is a sign that Manitoba dentists may be open to medical-dental partnerships because these professionals may be in ideal positions to foster and support good oral health in early childhood. This solution does not seem pragmatic if physicians have difficulty locating dentists willing to see young children in their practices. Physicians and nurses may need to be trained in basic infant oral health promotion and ECC prevention. However, Canadian pediatricians believe that they can play a key role in promoting good oral health for young children.<sup>21</sup>

Many practitioners responding to our survey reported that they counsel parents on the steps they can take to prevent tooth decay. Unfortunately, many of these dentists were unfamiliar with "anticipatory guidance," "lift the lip" and alternative restorative techniques, all of which are recognized ways to prevent and manage ECC.<sup>1,23,24</sup> Anticipatory guidance refers to providing timely information about early childhood oral health that corresponds to key developmental milestones in the life of a child; lift the lip is the practice of lifting the child's upper lip on a regular basis to check for early signs of decay on the primary maxillary anterior teeth of infants and young children. Additionally, many responding practitioners were unfamiliar with knee-to-knee positioning, which is a way to facilitate intraoral examinations for infants and toddlers. However, since most dentists are not exposed to infants during their undergraduate training, this practice may be foreign. One explanation for our respondents' unfamiliarity with the techniques may be a problem of new terminology rather than unfamiliarity with the actual techniques. Nonetheless, some of the responsibility of awareness of these techniques lies with our educational facilities, the profession and practitioners who have a personal responsibility to stay current.

Although sufficient evidence about the benefit of fluoride varnish exists,<sup>25,26</sup> many Manitoba practitioners

responding to our survey did not recognize it as an effective means of preventing ECC. Only 39.3% of these practitioners indicated that they apply fluoride varnishes. This may be because many senior clinicians still believe that such chemotherapeutics are used to treat root sensitivity. The lack of a fee code for fluoride varnish because some dental insurance schemes do not cover this service may be another explanation for this practice.

Dental journals were the most popular source of information for practitioners responding to our survey, whereas they used the Internet infrequently. This finding was related to practitioners' age: younger practitioners were more inclined to use the Internet than older practitioners. Since we are now in an electronic era, this behaviour may have a significant effect on the dissemination of new recommendations to practising professionals.

The most common explanations for not seeing young children in dental practices among respondents to our survey were related to the behaviour of young children and their tendency to cry. A number of respondents also indicated that low parental interest in preschool oral health hinders them from caring for this population. This behaviour may be a significant barrier because parents need to be equal participants in early caries prevention and promotion of oral health for their children. Another potential barrier that surfaced from this survey was the lack of resources promoting early childhood oral health. A majority of responding practitioners thought that they had not received enough current information about how to prevent and deal with decay at early developmental stages of childhood. Recently, information about how to secure locally produced resources was sent to all members of MDA ([www.wrha.mb.ca/healthinfo/preventill/oral\\_child.php](http://www.wrha.mb.ca/healthinfo/preventill/oral_child.php)). The need for additional information and resources that promote early childhood oral health identified in this survey parallels findings from a survey<sup>21</sup> of pediatricians and family physicians, the vast majority of whom indicated that they required oral health resources.

Aboriginal peoples constituted < 5% of the patient base in nearly half of the dental offices surveyed. Interestingly, respondents indicated that they saw patients with NIHB dental benefits from First Nations and Inuit Health Branch as well as Employment and Income Assistance (provincial social assistance). Since many Aboriginals receive benefits from these sources, their low representation in our respondents' practices was disappointing, but not surprising, given that, according to the 2004/05 NIHB Annual Report,<sup>27</sup> only a third of First Nations people have a dental visit in Canada each year. In Manitoba this figure is about 20%,<sup>27</sup> which may indicate that access issues are considerable for these Manitobans. However, the dental profession must realize their duty to care for those in need, despite their well-recognized

frustration with the administrative components of these programs.

Although similar surveys<sup>21,28,29</sup> have had problems obtaining high response rates, this study had a relatively good response rate (63.8% [249/390]), excluding those who did not qualify to participate in the study because of their nonpractising status. Another potential limitation of this study was the timing of the mailings, which occurred during the summer. Further, a number of questions asked dentists to estimate their practice traits, which may have been subject to a recall bias. Such bias can result in responses that are not solely dependent on the correct answers, but also on respondents' memories. Respondents may have remembered more recent cases, rather than provided an actual overview of their practices. Another limitation was the possibility that those with a greater knowledge of and familiarity with pediatric dentistry were more inclined to respond.

## Conclusions

ECC is a theoretically preventable public health problem that affects the youngest members of our population who are dependent on others for their oral hygiene and whose access to prevention of early decay is limited. Although early dental visits are strongly promoted, a significant number of Manitoba dentists responding to our survey still believe that "early" means by 2–3 years of age. Providers must familiarize themselves with all measures along the continuum of early childhood development that can prevent ECC, such as reaching out to professional organizations like MDA and CDA for educational resources or establishing a network that would allow easy communication among those interested in treating younger children whose ultimate goal is to find timely care for those in need. ♦

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