Dental Public Health Risk Assessment

Focus Groups Provincial Analysis

BC Early Childhood Dental Public Health Programs Evaluation Project
This document was prepared for the Early Childhood Dental Evaluation Subcommittee.

The HELP Evaluation Team would like to thank the Early Childhood Dental Evaluation Subcommittee for their insights and input into this report.
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Dental Health Risk Assessment: Focus Groups Provincial Analysis

**Purpose**

The purpose of the present document is for the Human Early Learning Partnership (HELP) evaluation team to provide the BC Early Childhood Dental Programs Evaluation Subcommittee with an overview of the dental health risk assessment focus group project, as well as a summary of the provincial qualitative analysis in relation to two provincially-defined evaluation questions from the BC Early Childhood Dental Programs Evaluation Framework Overview:

1. **#2: Are the current dental health risk assessment/screen guidelines implemented as intended?**

2. **#4: What strategies are used in the health authorities to prevent early childhood dental disease? What is the most effective combination of strategies being provided in the health authorities to prevent early childhood dental disease?**

This report is intended to provide recommendations to inform provincial program planning for public health dental services in relation to evaluation questions #2 and #4, as well as to related sub-questions defined by health authorities. Regional-specific qualitative analysis will be reported in a separate document.

**Background**

The dental health risk assessment1 projects in BC were initiated in 1996. The objectives of the assessment were to (1) identify children at risk for tooth decay and (2) support healthy parent practices that reduce risk of tooth decay. A key component of the dental health risk assessment programs is a Caries Risk Assessment (CRA) that is carried out in a variety of ways across the health regions to determine risk for tooth decay.

Dental health risk assessment programs are Health Authority defined and delivered, and thus vary from one area of the province to another. The ToothTalk questionnaire was originally piloted in Interior Health Authority (IHA) and Northern Health Authority (NHA). Each Health Authority has since modified its own resources, such that there is no standard questionnaire or tool used BC-wide. Assessment items may include oral care, feeding practices, and prolonged exposure of teeth to sugars. Information obtained from parents is analyzed and risk for tooth decay is categorized as “high,” “medium,” or “low.”3 Parents with risk factors are identified so that information and support can be made available to them with an aim to prevent caries. Parents may be contacted for follow-up by mail and/or telephone. Information handouts related to the particular risk factors may be sent by mail (a free baby toothbrush may also be included). Follow-up provided to parents is determined by the resources (e.g., staff time, finances, educational materials, toothbrushes) available within each region.

The provincial Fluoride Varnish Program is another early intervention strategy to reduce early childhood caries (ECC), which includes CRA.4 The stated purpose of the program is to: (1) provide preventive education and counseling on ECC; (2) assess the child’s risk of developing ECC; (3) provide counseling/support to parents to make behaviour change incorporating Motivational Interviewing (MI) and knowledge of the Stages of Change; (4) reduce cavity formation through the application of fluoride varnish; (5) facilitate treatment for identified decay; and (6) promote the child’s first visit to the dentist.

In 2007, an Evaluation Framework was developed to support a provincial evaluation of BC’s early

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1 In this evaluation project, dental health risk assessment refers to caries risk assessment as well as the dental health assessment portion of early childhood health assessment. Caries risk assessment (CRA) refers to the determination of the likelihood of the incidence of caries. In BC health authorities, dental staff play a central role in caries risk assessment, while Public Health Nurses provide early childhood health assessments and make appropriate referrals to dental staff.


3 Interior Health Authority additionally uses a “regional high” category.


childhood public health dental programs. The framework includes four overarching evaluation questions: (1) Is the oral health of young children improving? By community? By vulnerability? (2) Are the current dental health risk assessment/screen guidelines implemented as intended? (3) Are health promotion interventions effective in supporting family dental health practices toward reducing early childhood caries? (4) What strategies are used in the health authorities to prevent early childhood dental disease? What is the most effective combination of strategies being provided in the health authorities to prevent early childhood dental disease?

In 2008, as part of an ongoing environmental scan of BC early childhood dental programs, HELP reviewed the dental health risk assessment tools and guidelines used in each Health Authority, as well as over 100 Health Authority handouts related to oral health and nutrition for children under age 6. Five main themes emerged from review of the handouts: dental visits, previous/family tooth decay, tooth brushing and fluoride, feeding practices, and socioeconomic status (see Appendix A). Consultations with dental staff were also conducted to identify the range of dental health risk assessment strategies used across Health Authorities. Appendix B contains an overview of program delivery and staffing by health authority.

Overview of the Focus Group Approach

Focus groups were conducted with public health dental staff across the province in order to: (1) Identify the range of dental health risk assessment strategies used in Health Authorities; (2) Understand key barriers to program reach; and (3) Reflect upon key success factors and how the programs could be improved. The focus group process was developed in collaboration with Health Authority representatives and the BC Early Childhood Dental Programs Evaluation Subcommittee. The focus group questions for dental staff explored implementation of assessment guidelines, barriers to program reach, lessons learned, and regionally-developed questions of interest (see Appendix C for focus group guide and region-specific questions). The focus groups were intended as one of multiple sources of information used to directly respond to questions 2 and 4 from the BC Early Childhood Dental Programs Evaluation Framework:

#2: Are the current dental health risk assessment/screen guidelines implemented as intended?

#4: What strategies are used in the health authorities to prevent early childhood dental disease? What is the most effective combination of strategies being provided in the health authorities to prevent early childhood dental disease?

Although the primary aim of the focus groups was to contribute specific information in relation to the above questions, this report also responds to some health authority-defined sub-questions related to the overarching Evaluation Framework. It was anticipated that the focus groups might also elicit public health dental staff opinions relating to Evaluation Questions 1 and 3: #1: Is the oral health of young children improving? By community? By vulnerability? and #3: Are health promotion interventions effective in supporting family dental health practices toward reducing early childhood caries? Selected findings in relation to these questions are summarized in the section “Overview of Focus Group Findings in Relation to the Evaluation Questions.”

In the summer of 2009, HELP’s evaluation team conducted one to two focus groups in each of the five Health Authorities, for a total of 8 focus groups (see Table 1). Sixty-one (61) people participated in the focus groups (groups ranged in size from 4 to 11 people) and one person completed an individual interview. Seven (7) participants provided additional written comments after the focus group discussion. Each focus group was facilitated by one of three evaluation team members, who asked a series of open-ended questions for the purpose of the BC Dental Health Risk Assessment Evaluation Project. Each focus group took between one to two hours to complete. Based on prior consultation with dental staff, HELP developed program implementation process diagrams for each Health Authority, which were confirmed and revised during the focus groups. The sessions were audiotaped and transcribed verbatim. Field notes were also compiled during and following the focus groups, which described each participant’s role.
within her/his workplace, level of experience in public health, relationship to other participants, as well as inter-personal dynamics during the interviews. Preliminary findings were presented to the Evaluation Subcommittee at the November 24th 2009 teleconference, and after subsequent refined analysis, complete results were presented at the March 23rd teleconference. Selected findings are presented in the pages that follow.6

Focus Group Participants

- From across the five Health Authorities, 61 participants included 33 Dental Hygienists, 24 Certified Dental Assistants, one Dentist, and three program partner staff (e.g., First Nations Health Staff).
- On average, participants had 15 years of dental public health experience (ranging from 0 to 38 years).

The criteria for participation in the focus groups were that individuals were involved in the Health Authority dental health risk assessment programs and were willing to travel to the focus group location for a one to two hour focus group. All participants were knowledgeable informers due to the perspectives gained from their personal experience and observations living and working in BC and taking part in implementation of a Health Authority early childhood dental program. Most participants had worked in dental public health for many years while a few had only recently become engaged in public health, and many reported that they also had experience working in private dental practices. The majority of participants were female.

Our data were gathered from members of a relatively small network of public health units in British Columbia, and so detailed descriptions of the participants’ characteristics (e.g., age, job title, location of health unit) are not included to protect participants’ identities. The study protocol was approved by the University of British Columbia Behavioural Research Ethics Committee.

Purposive sampling strategies were used within each Health Authority in order to select participants who could provide detailed responses to the region-specific evaluation questions. In Vancouver Coastal Health Authority (VCHA), sampling targeted the Rural Coastal area, including Powell River, a district which shows low rates of kindergarten dental decay relative to the province. Powell River North stands out in VCHA and provincially for having lower than expected kindergarten dental decay rates in relation to socio-economic status in the neighbourhood, on average.7 Thus, Vancouver Coastal was particularly interested in discovering what was working well in Rural Coastal and applying those insights to other areas. The remaining health authorities selected evaluation questions that best corresponded with the selection of a broader, region-wide sample as opposed to sampling from a particular area. As a result, individuals across each of these health authorities were invited to participate in the focus groups. Please see Table 1 for a summary of participation by health authority.

Table 1. Number of focus groups (FG), FG participants (n), and Average Years of Experience Across Health Authorities

<table>
<thead>
<tr>
<th>Health Authority</th>
<th>No. FG (n)</th>
<th>Avg Years Experience (Min-Max)</th>
<th>% of Total Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>FHA (n)</td>
<td>2 (15)</td>
<td>15 (1.5 - 25)</td>
<td>94%</td>
</tr>
<tr>
<td>IHA</td>
<td>2 (15)</td>
<td>17 (3 - 33)</td>
<td>83%</td>
</tr>
<tr>
<td>NHA</td>
<td>2 (15)</td>
<td>12 (0 - 26)</td>
<td>100%</td>
</tr>
<tr>
<td>VCHA</td>
<td>1 (8)</td>
<td>23 (11 - 37.5)</td>
<td>17%</td>
</tr>
<tr>
<td>VIHA</td>
<td>1 (6)</td>
<td>15 (1 - 35)</td>
<td>17%</td>
</tr>
<tr>
<td>BC</td>
<td>8 (57*)</td>
<td>15 (0 - 38)</td>
<td>50%</td>
</tr>
</tbody>
</table>

*Includes three program partner staff.
†Rural Coastal dental staff participants represent 100% of dental staff within Rural Coastal. Additional interviews were also conducted with two dental staff in Vancouver and two dental staff in Fraser Health.

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6 A qualitative method (grounded theory) is being used to analyze the data. The goal of this type of analysis is not to conduct counts or quantify; rather, our aim is to provide a descriptive account of participant experiences and perspectives as voiced through the focus groups. This document summarizes the outcomes of an analytic process – coding -- which aims to define and categorize all the focus group data.

7 School Districts in Vancouver Coastal follow a fairly predictable pattern: high-SES districts have low rates of dental decay and low SES districts have higher rates of decay, with the exception of Powell River, which, on average, has low SES and very low percentages of kindergartners who have ever experienced dental decay. Richmond and Vancouver have relatively high rates of dental decay, despite also having fairly high socio-economic status, on average.
Findings in Brief

Staff consistently reported that they were familiar with region-specific protocols and guidelines for dental health risk assessment. In general, staff in each Health Authority reported that dental health risk assessment guidelines were implemented as intended. There was variation in dental health risk assessment implementation activities, processes, and guidelines, such as the materials used and procedures for asking parents questions, identifying risk, and following up with families.

Groups at high risk for dental decay were considered less likely to access dental public health services, in particular: lone-parent families, families with low income, those in rural or remote locations, recent immigrants, those of Aboriginal descent, and families with special needs. For participating families, the dental health risk assessment was considered effective in terms of identifying caries risk level; raising parental awareness about children’s oral health; and supporting healthy parent practices when used in conjunction with preventive counseling, education, or additional support. However, there is a lack of data to conclusively establish the extent of actual changes in parent health practices. In every region, public health dental staff emphasized the integration of preventive dental services with existing public health and community partner initiatives as a way to improve dental health outcomes.

Focus Group Findings

In the sections that follow, the focus group findings are presented with respect to the following:

Evaluation Question #2: Are the current dental health risk assessment/screen guidelines implemented as intended?
- Dental health risk assessment activities, processes, and guidelines

Evaluation Question #4: What strategies are used in the health authorities to prevent early childhood dental disease? What is the most effective combination of strategies being provided in the health authorities to prevent early childhood dental disease?
- Dental public health staff perspectives on:
  - Program coverage
  - Barriers to program coverage
  - Program effectiveness and outcomes
  - Program strengths and success factors
  - Program partnership as a key strategy
  - Suggestions for program improvement

Evaluation Question #2: Are the current dental health risk assessment guidelines implemented as intended?
Yes, the focus groups suggest that current dental risk assessment guidelines were implemented as intended. Staff consistently reported that they were familiar with region-specific protocols and guidelines for dental health risk assessment. In general, staff in each Health Authority reported that the tools were simple to use as part of established, routine procedures.

Dental Health Risk Assessment Activities, Processes, and Guidelines

How do Health Authorities compare in terms of dental health risk assessment activities, processes, and guidelines?
- Dental health risk assessment implementation activities, processes, and guidelines varied somewhat across BC Health Authorities. There was variation in the tools and guidelines, as well as procedures for asking parent questions, identifying risk, and following up with families (see Appendix D, Table 4).
- The ToothTalk questionnaire was originally piloted in Interior Health Authority (IHA) and Northern Health Authority (NHA). Each Health Authority has since adapted its own resources from the American Association for Pediatric Dentistry (AAPD), such that there is no standard questionnaire or tool used BC-wide.
- Although not brushing twice daily is considered “high risk” in some areas and “medium risk” in others, this risk factor consistently determined referral to the fluoride varnish program across all five health authorities.

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In IHA, families referred for fluoride varnish received a pamphlet by mail (and phone calls were discontinued), whereas in the other four health authorities, referral to fluoride varnish included a follow-up phone call. The resources (e.g., staff time, finances, educational materials, toothbrushes) available within each region determine follow-up provided to families.

In VIHA, initial screening for dental risk is done by PHNs and other health staff and then families are referred as needed to dental staff for the caries risk assessment. There were three core processes consistently identified as central to the dental health risk assessment across all Health Authorities: (1) a discussion is held with parents on a set of topics related to oral health; (2) dental staff classify dental health risk (e.g., as “high,” “medium” or “low”); and (3) follow-up is provided by phone, by mail or on site (in FHA, VIHA) for those identified as high risk. There is some variation in how each of these processes is carried out within and across Health Authorities in terms of: the target age of the child, the setting in which the questions are administered, who administers the questions, how they are administered (paper-based or face-to-face), who classifies risk-level, and the type of follow-up provided (e.g., phone call or letter).

**Target age and setting**

In IHA, NHA, and VCHA, a questionnaire is administered at the 12-month Child Health Clinic (CHC). FHA and VIHA offer the risk assessment in community settings and at the health unit for children 0-4 years old. FHA also has integrated screening programs for 18-month-old children in care as well as 3-year-old children at selected community sites (vision, dental, and developmental screening sites). VIHA integrates dental health-related questions into the health questions asked by Public Health Nurses (PHNs) at each CHC, from the 2-month through the 24-month CHC.

**How assessment is administered**

In IHA, NHA, VCHA, and Central/North VIHA, health unit volunteers, clerks, or PHNs hand out a paper-based questionnaire to parents. In some health units that have dental staff and serve smaller populations, dental staff may have a face-to-face dialogue with parents. In FHA and VIHA, dental staff discuss the topics in a face-to-face dialogue with parents. Certified Dental Assistants in FHA apply the fluoride varnish once the risk assessment has been done by the Dental Hygienist. In other regions, a mix of dental staff may classify risk level.

**Risk factors assessed**

In VIHA, dental health-related questions were integrated into the age-specific health questions used by PHNs. The VIHA 12-month Health Check included items related to three factors: daily tooth cleaning, fluoride toothpaste, and feeding practices. If PHNs identified any oral health concerns based on these three factors, PHNs then referred families to dental staff for caries risk assessment.  

Across all five health authorities, caries risk assessment tools included similar items related to four key factors from the original ToothTalk questionnaire: daily tooth brushing, fluoride toothpaste, feeding practices, and parent/sibling dental decay. CRA tools for FHA, VCHA, and VIHA included the four key factors plus items related to two additional factors: dentist visits and socioeconomic status (e.g., family dental benefits/insurance). All risk factors are adapted from the Caries Risk Assessment Tool developed by the American Association for Pediatric Dentistry (AAPD).  

**Classification of risk**

In all regions, risk level was classified as high, medium, or low. In IHA, NHA, and Rural Coastal VCHA, not brushing twice daily with fluoride toothpaste was considered “high risk,” no risk factors present was considered “low risk,” and any combination of other risk factors while using fluoride toothpaste daily was “medium risk.” In IHA, high risk level with two other risk factors present was additionally classified as regional high (formerly used also in NHA). Following the AAPD...
policy for caries risk assessment, FHA, VIHA, and West Vancouver used a broader measure of “high risk,” determined by the presence of any one of the following factors: not brushing daily with fluoride toothpaste; visible clinical conditions (e.g., more than one white spot lesion); three or more between-meal snacks a day; low socioeconomic status (e.g., eligible for Healthy Kids); parent/sibling decay, dentist visits, special needs, or general health conditions (e.g., impaired saliva flow). “Medium risk” was determined by brushing only once daily with fluoride toothpaste, mid-level socioeconomic status (e.g., no dental plan and not eligible for Healthy Kids), one or two between-meal exposures to sugar, irregular dental care, or clinical conditions (e.g., one white spot lesion). FHA dental hygienists also use professional judgment when classifying risk.

Follow-up
Using the original set of four ToothTalk risk factors, “regional high risk” families in IHA were offered fluoride varnish; while all participating families in NHA and Rural Coastal VCHA received a pamphlet and “high risk” families were offered fluoride varnish. Using the extended set of six AAPD risk factors, “high risk” and “medium risk” families were offered fluoride varnish in FHA and VIHA. However, in VIHA, families were referred for caries risk assessment if dental risk factors or concerns were identified during the Health Check or PHN screening.

Table 4 summarizes implementation processes by Health Authority (see Appendix D).

Evaluation Question #4: a) What strategies are used in the health authorities to prevent early childhood dental disease? b) What is the most effective combination of strategies being provided in the health authorities to prevent early childhood dental disease?

This section provides a summary of the current and suggested strategies that focus group participants put forward in relation to prevention of early childhood dental disease. Please note that participants’ responses were primarily descriptions of strategies (i.e., part ‘a’ of the evaluation question) and not ‘effectiveness’ of the strategies themselves. Some anecdotal findings were available through the focus groups. However, determination of effectiveness of strategies would require systematic analysis of consistently collected data about the strategies used as well as corresponding caries risk factors and rates. Given the limitations in the available data, it is not possible at this time to compare rates of dental decay in BC communities at two different points in time, or to attribute changes in decay rates to public health strategies in a quantifiable way.

Overall, with respect to participants’ descriptions of current and recommended strategies, public health dental staff in every region emphasized the integration of preventive dental services with existing public health and community partner initiatives as a way to improve dental health outcomes. Focus group participants frequently called for specific preventive strategies including the following: integration with community initiatives, community development, partnership-building, promotion of healthy preschool environments, and involvement of interdisciplinary public health teams. Research in the United States has uncovered similar findings to the extent that the U.S. Surgeon General has endorsed partnerships as a way to improve dental outcomes. Children involved with community initiatives, programs, or organizations have an increased likelihood of dentist visitation, as “community programs can serve as a vehicle to increase access to the oral health care system.”

Dental staff also referred to multiple interrelated barriers to program coverage in relation to a number of specific population groups, including lone-parent families, families with low income, those in rural or remote locations, with recent immigration, those of Aboriginal descent, and families with special needs.

The remaining strategies are described in the sections that follow with respect to program coverage, overall program effectiveness and outcomes, current strengths and success factors, program partnerships, and overall suggestions for program improvement.

12 Ibid., 231.
**Dental Public Health Staff Perspectives on Program Coverage**

*What types of groups is dental public health not reaching through the dental health risk assessment?*

- In the four health authorities that provide dental health risk assessment at 12-month immunization clinics, dental staff reported that they were not reaching families that do not access 12-month immunizations through public health. About 35% of immunizations in BC are provided by physicians (and 90% in Vancouver and Richmond).

- In FHA, dental staff expressed concern that the 3-year-old Integrated Screening was not reaching more vulnerable families.

- Dental staff described a range of groups who they felt were at high risk with respect to their dental health, yet might still not be accessing dental public health services (see Table 2).

The dental health risk assessment in IHA, NHA, Rural Coastal VCHA, and VIHA relied heavily on Child Health Clinic (CHC) immunization programs. Dental staff across these four regions discussed gaps in public health immunization coverage that limited dental health risk assessment program reach.

In 2007, about 65% of two-year-old children were up-to-date by their second birthday for all recommended vaccines. Of those immunizations that were provided for babies and young children, approximately 35% were delivered by physicians rather than public health. The dual provider system (physician and public health delivered immunizations) can impact risk assessment coverage rates, with each region having its own mixed model of immunizers. For example, in the Interior region, public health nurses deliver 100% of infant immunizations, while in Vancouver and Richmond, physicians provide 90% of infant vaccinations. However, BC immunization coverage rates do not include First Nations and Inuit children living on reserve where immunization is delivered by Band Nurses or by First Nations and Inuit Health. In addition, not all parents attending CHCs complete the CRA. PHN and CHC staff buy-in was viewed as a key factor, particularly in areas where dental staff are unable to attend CHCs. Furthermore, PHNs with limited time for immunizations may administer the questionnaire but not discuss the oral health-related content with parents.

“We’re not reaching those who don’t get immunized...those who are unwilling to fill out the form who do get immunized...the families that live out of the CHC [area]...Single-parent families are often really not functioning well enough to participate in any of the programming. And the only thing which the children of these families come into contact with anybody is in kindergarten...I go back and see them in the school because the nurse...and the teacher [are] calling me and they’ve had two GA [general anesthetic] treatments. And their permanent teeth are rotting too. ....we need something else for those kids.” (IHA)

In FHA, some dental staff expressed concern that the 3-year-old Integrated Screening was not reaching more vulnerable families.

“I’ve noticed a lot of the families that come in for the 3-year-old Integrated Screening are the motivated parents, the ones that really, you know, maybe aren’t the ones we need to see. Especially when it comes to dental, because most dentists will see three-year-olds. A lot of the kids, in my experience, the kids that we’ve seen have already been to the dentist.” (FHA)

In Powell River (VCHA), 119 12-month questionnaires were completed in 2007, representing 80% of the births in 2006. Of those, 65 (55%) were classified as high risk, 27 (22%) as medium risk and 27 (22%) as low risk. Half (52%) were not using fluoride toothpaste daily, 29% never used toothpaste, and 15% were not willing to receive a follow-up phone call.

**Personalized Follow-up Procedures: Phone Calls versus Letters**

The issue of personalized follow-up procedures was raised by the majority of IHA dental staff who believed that follow-up phone calls were

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14 Ibid.

15 Statistics provided by Powell River Dental Hygienist.
more effective than letters in improving fluoride varnish rates (although phoning all the families may be more costly in urban centres than rural areas, due to differences in population size). These participants stated that the majority of parents were not responding to letters, as the following excerpt illustrates:

“They’re not phoning the health unit, for one thing, so there’s no dialogue with us…the letter is just kind of a one-way street.”

In another example:

“I feel that we are missing the people that we need to be connecting with a lot of the time with the…questionnaires. And since we stopped phoning we’re really not connecting with as many. We’re missing a huge piece.”

IHA dental staff noted that follow-up phone calls provided a point of contact in those rural areas where IHA dental staff do not attend CHCs and have limited interaction with parents. Participants across the province mentioned that phone calls worked well with some high-risk populations.

In particular, IHA dental staff reported that fluoride varnish bookings reduced after replacing follow-up phone calls with letters:

“Yeah, definitely less people are calling in, booking appointments for sure. It’s hard actually to come up with a statistic, but I don’t know. Fifteen percent? Twenty? But our [fluoride varnish] clinics are definitely not as booked as they used to be.”

In one local area that had not provided follow-up phone calls in the past, concern was also raised about the effectiveness of the follow-up letter:

“…doing the letters now, I don’t think I’ve had one phone call in to go for an [fluoride varnish] appointment. We’re just not getting any.”

Participants in NHA agreed that while sending the follow-up letter may support parent behaviour change, a follow-up phone call is beneficial for reinforcing dental messages.

These findings are consistent with the research on immunization recall and reminder systems which show that telephone contact, although costly, is more effective than letters to increase vaccination rates.\(^\text{16}\) The more personalized and frequent the contact is, the more successful it is likely to be. The research also indicates that recall and reminder systems have “spillover effects” in increasing preventive care and primary care visits.\(^\text{17}\)

**Dental Public Health Staff Perspectives on Barriers to Program Coverage**

For those eligible children who dental public health is not reaching, what are the barriers?

Dental staff referred to specific barriers to program reach in relation to a number of vulnerable demographic groups, including families with low income, lone-parent families, families residing in rural or remote locations, recent immigrant families, families of Aboriginal descent, and those with special needs (see Table 2). Dental staff described multiple interconnected barriers to oral health care for demographic groups that do not typically access public health services, including financial concerns, overriding daily stressors, lack of transportation, lack/expense of telephone, language barriers, and distrust of health professionals. Focus group discussions were largely consistent with Canadian Oral Health Strategy recommendations for improving social/cultural access to oral health (i.e., access to oral health care in a comfortable setting where the client can feel at ease from a cultural, social, and linguistic point of view).

**Competing client priorities**

An underlying factor identified for vulnerable families in general was that “dental care is low on their hierarchy of priorities” relative to overriding daily stressors (e.g., financial concerns, substance use, domestic violence).

“there’s so many factors – life is hard for a lot of our, the families of children. They might be dealing with alcoholism or drug use or physical abuse or… unhealthy situations. So…fluoride varnish? …teeth are really low on the radar” (FHA)

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Telephone contact

In addition, follow-up phone calls may be a challenge with families with low income.

“They don’t have landlines, they have pay-as-you go cell phones that have no money left... a lot of them have no phone whatsoever. So contacting... people sometimes, what we’re learning in some of our other clinics is text messaging. Especially if you have... a younger family. They may be able to accept text messages but they can’t afford to actually receive, you know [a voicemail].” (VCHA)

Distrust of Health Professionals

Participants stated that some families were not comfortable with coming to the Health Unit or school health fair because of previous negative experiences with health professionals and residential schools. This finding converges with a recent qualitative study suggesting that acknowledging the influence of parental dental experience would help ensure that parents of young children access routine care for their children.18

“A large affect can be attributed to the residential school experience of the First Nations population in the North. Also our First Nations groups had historical institutionalized traumatic experiences... [such as in] hospitals, and distrust results. Why would you access care if the last experience was traumatic?” (NHA)

“When we were talking about pulling a tooth instead of fixing it for First Nations kids... both my husband and his brother have had a whole top denture since they were about 10 or 11 and they’re only like 50, 53 years old, so things have improved, but that was, you know, what happened for them when they were young children.” (VCHA)

Barriers to Families Accessing Oral Health Care

Dental staff also discussed barriers to oral health care for demographic groups that do not typically access public health services. Although no specific questions were asked regarding access to the care of a dentist, the issue was raised in every focus group. The issues reported by dental staff were largely consistent with the “Barriers to Oral Health Care” described in the Canadian Oral Health Strategy: 19 Geographic Access, Financial Access, Social/Cultural Access, Legislative Access, and Public Programming. These key barriers to accessing oral health care are similar to those affecting other forms of healthcare. Specifically, dental staff referred to a number of barriers, including:

- Financial factors
  - Limits of public dental benefits and balance billing by dentists (the Ministry of Housing and Social Development (MHSD) fee schedule for the BC Healthy Kids Program is approximately 70 percent of the BC Dental Association’s 2007 fee guide). 20
  - Dental being a low priority relative to more basic needs (e.g., buying food).
- Transportation and scheduling factors
- Issues related to the First Nations Health Benefit program (e.g., balance billing, Interfederal Health Plan)
- Limited Access to Dental Care
  - Challenges collaborating with dentists.
  - Dentists not accepting patients under age two. 21
  - Wait lists for surgery under general anesthetic (GA).
  - Mixed messages regarding fluoride.


21 The Canadian Dental Association and the BCDA Children’s Dentistry Task Force advocate first-time dental visits at approximately one year of age. In 2009, 25% of dentists surveyed reported that they were not examining children under age 2 and 21% disagreed with the recommendation, feeling it is not necessary to see children at that age.
### Table 2. Dental Public Health Staff Perspectives on Barriers to Program Coverage by Vulnerable Population

<table>
<thead>
<tr>
<th>Vulnerable Population</th>
<th>Barriers to Program Coverage</th>
<th>Staff Suggestions for Addressing Barriers</th>
</tr>
</thead>
</table>
| Low Income             | Lack of vehicle transportation to attend CHC.  
|                        | Working hours conflict with CHC hours.                                                                                                                                                                                         | Lack of transportation to attend fluoride varnish clinic.  
|                        |                                                                                                                                                                                                                               | Difficult to contact with phone/mail-out.  
|                        |                                                                                                                                                                                                                               | Residential mobility.  
|                        |                                                                                                                                                                                                                               | Parents with low literacy may not be able to read mailout.                                                                                                                                                                                                 |
|                        |                                                                                                                                                                                                                               | Provide mobile prevention services.  
|                        |                                                                                                                                                                                                                               | Offer services in community settings to mitigate transportation concerns.  
|                        |                                                                                                                                                                                                                               | Extend the CHC’s hours of operation.                                                                                                                                                                                                                            |
| Lone Parent            | Lack of affordable childcare to attend CHCs.  
|                        | Unable to attend CHCs during working hours.                                                                                                                                                                                   | Lack of childcare to attend fluoride varnish clinic.                                                                                                                                                                                                             | Subsidize childcare costs.  
|                        |                                                                                                                                                                                                                               | Extend the CHC’s hours of operation.                                                                                                                                                                                                                            |
| Rural and Remote       | Lack of transportation to attend CHC.  
|                        | PHN and Community Champion buy-in to administer CRA and send back data to the dental programs.                                                                                                                              | Lack of childcare to attend fluoride varnish clinic.  
|                        |                                                                                                                                                                                                                               | Lack of PHN and other dental health staff availability and buy-in to facilitate fluoride varnish program referrals and bookings.                                                                                                                                 |
|                        |                                                                                                                                                                                                                               | Provide mobile prevention services  
|                        |                                                                                                                                                                                                                               | Build personalized relationships with PHN’s to facilitate buy-in.                                                                                                                                                                                             |
|                        |                                                                                                                                                                                                                               | Standardize assessment, like that done for peri-natal, to facilitate buy-in.                                                                                                                                                                                  |
| Aboriginal             | Lack of transportation to attend CHC.  
|                        | Overriding daily stressors may lead to missed appointments or getting immunizations later than recommended.  
|                        | Distrust of health professionals related to residential school system.  
|                        | Fear of being reported to MCFD if children have caries as a result of history of child apprehension.                                                                                                                           | Respond to face-to-face interaction rather than phone/mail-out.  
|                        |                                                                                                                                                                                                                               | Comfort level with entering health unit.                                                                                                                                                                                                                       |
|                        |                                                                                                                                                                                                                               | Provide staff training in cultural safety.  
|                        |                                                                                                                                                                                                                               | Provide mobile prevention services.                                                                                                                                                                                                                            |
|                        |                                                                                                                                                                                                                               | Offer services in community settings to ease transportation and comfort level issues.                                                                                                                                                                              |
|                        |                                                                                                                                                                                                                               | Allow staff time to get to know the Aboriginal families with whom they work.                                                                                                                                                                                     |
|                        |                                                                                                                                                                                                                               | Build partnerships with First Nations organizations.                                                                                                                                                                                                             |
|                        |                                                                                                                                                                                                                               | Consistently visit Aboriginal communities.                                                                                                                                                                                                                      |
| Recent Immigrants and  | May not attend immunization clinics on schedule.  
| Refugees               | Language barriers.  
|                        | Lack of awareness of the program.                                                                                                                                                                                            | May not be able to read mail-out in English.                                                                                                                                                                                                                     |
|                        |                                                                                                                                                                                                                               | Promote awareness through advertising.  
|                        |                                                                                                                                                                                                                               | Promote awareness by partnering with immigration services, e.g. SWIS workers.                                                                                                                                                                                   |
|                        |                                                                                                                                                                                                                               | Offer services in community settings that immigrant families might attend e.g., intercultural health fairs or Sikh community dinners.                                                                                                                                 |
| Special Needs          | Private nurse buy-in.  
|                        | Dental program does not always have access to this population until they are 19 years old.  
|                        | Staff do not always have expertise needed and need more support and flexibility to work with this population.                                                                                                              | No special barriers to follow-up discussed.                                                                                                                                                                                                                      |
|                        |                                                                                                                                                                                                                               | No specific suggestions to overcoming barriers were discussed.                                                                                                                                                                                                   |
Dental Public Health Staff Perspectives on Program Effectiveness and Outcomes

How effective is the dental health risk assessment in supporting healthy parent practices?

- Participants struggled to articulate explicit and specific links between dental health risk assessment and program outcomes, often stating the need for statistical data to determine program effectiveness.
- Overall, participants indicated that for participating families, the dental health risk assessment was effective in terms of identifying caries risk level, raising parental awareness about children’s oral health, and supporting healthy parent practices when used in conjunction with preventive counseling, education, or additional support.
- Dental staff across all health authorities reported difficulty reaching vulnerable populations as an issue affecting program coverage and effectiveness (see previous section “Dental Public Health Staff Perspectives on Barriers to Program Coverage”).

Most staff agreed that the dental health risk assessment was effective in raising awareness of the importance of children’s oral health among parents, as well as among Public Health Nurses. A number of dental staff observed positive changes in parent oral health practices. Some participants attributed these changes to the CRA questionnaire in and of itself, in that reading the questions may motivate a behaviour change.

“I think [the CRA] raises awareness generally because it’s raised awareness with the nursing. It’s raising awareness with the people that do come in for immunizations … to think, ‘Yes, we need to do something by that age already. Yes, we’re getting the toothbrushes at 6 months at CHCs.’”

Dental staff indicated that based on follow-up conversations with parents, parents were more likely to report switching to a fluoridated toothpaste as a result of the dental information provided. Participants also emphasized that the dialogue with parents is needed in combination with the risk assessment to support healthy parent practices.

“I don’t feel the questionnaire itself is all that effective in supporting healthy practices for the parents...It asks them a series of questions, but unless the counseling piece goes with it, they don’t understand.”

Dental Public Health Staff Perspectives on Program Strengths and Success Factors

What are the strengths of the current dental health risk assessment programs? What aspects have gone particularly well?

- Throughout the Health Authorities, dental staff described a number of key strengths of dental health risk assessment programs, including ease of use of the tool, partnerships with Public Health Nurses, and in particular, opportunities to dialogue with parents (see Table 5 in Appendix D).
- Dental staff also reported a number of key success factors related to dental health risk assessment, such as building rapport & trust with parents, building community partnerships, involvement of multi-disciplinary public health teams. Strategies to achieve this success include use of motivational interviewing, role playing, advocacy, group sessions, and knowledge of and integration with various community events (see Tables 6 and 7 in Appendix D). For example, building rapport and trust were reported as keys to gathering adequate information to accurately assess risk and effectively support healthy parent practices (see Table 8 in Appendix D).

Dental Public Health Staff Perspectives on Key Success Factors for Promoting Healthy Parent Practices

Opportunity to dialogue

Across Health Authorities, dental staff described the dental health risk assessment as a way to initiate dialogue with parents about oral health (see Table 5 in Appendix D).
“The strength of the...questionnaire it is an opportunity to open up dialogue with the parent or even the public health nurses, anyone that's involved with the questionnaires. So it is an opportunity to talk to the parent as an opening for discussion around their oral care.”

A number of staff emphasized the importance of providing dental information face-to-face. For example:

“They gain some dental knowledge and they have different questions to ask and they get the questions answered, and...they’re seeing you about every two months, the same person and...they’re getting current, up-to-date information every time they come for their immunization about dental. It’s not a brochure, it’s in-person.”

In Powell River, the dental hygienist was in a unique position employed in public health both as community dental hygienist and as a lactation consultant. Thus, she had the opportunity to discuss both feeding practices and oral health with caregivers before the babies had teeth, providing an important early intervention.

Focus group participant opinions regarding the key success factors associated with promoting healthy parent practices are summarized in Table 6 (see Appendix D).

**Building rapport with parents**

Across Health Authorities, dental staff stressed the dental health risk assessment as a way to initiate dialogue with parents and as an opportunity to provide preventive education. Staff in each Health Authority described the importance of building rapport and trust in gathering accurate information from parents; when parents open up more, the staff may more accurately assess risk.

Below is a sample excerpt from one of the focus groups:

Participant 1: Similar, basically to what [Participant Name] said. It creates a reason for contact with the parents. It opens up the dental world for us to discuss with them.

Participant 2: And I like it because, in our baby clinics we actually talk to parents at 2-, the 4-, the 6-, 12-, and the 18-month. So I like it because you’ve built that little bit of rapport with that parent and they know that you’re the dental personnel at the clinics. So, I find it, I just find it a very good tool that they know that...dental is important.

Participant 3: I think the same for, it identifies behaviors that maybe you can target when you’re talking to them, you know which things you need to zero in on to talk to them about instead of just generally giving them information. Making it more specific to them.

**Motivational Interviewing**

Dental staff in FHA, VIHA and IHA use Motivational Interviewing (MI) when administering the CRA to families, consistent with the provincial Standard Fluoride Varnish Protocol. Some staff believed that a client-centred approach such as MI is more effective in supporting oral health practices. As one staff member reported:

“[Parents] will get more out of it and they will tend to change their behaviors if it’s their idea…. I find that if they’re talking about problems then you can...figure out together... how you can solve some of these things”

**Advocacy**

In their roles as dental public health staff, many participants strived to act as advocates in facilitating access to oral health care for families in need. Advocacy efforts included working with families and community champions to facilitate access to reduced-cost services and dental access funds, phoning dentist receptionists to advocate for a client after a missed appointment, and maintaining lists of dentists and information on accessibility of dental services. As one person recounted:

“Ours was fairly detailed because we do have such a serious access issues. So we have a list of all of the dentists and all of those things: accepting new patients, wheelchair accessible, accept First Nations Non-insured Health Benefits, accepts Healthy Kids, what’s their fee schedule, balanced billing, charging
above the fee schedule, money up front, where they’ve referred to for GA [general anaesthetic]…That’s a big part of our job is...‘Ok, he’s got cavities, he’s three, he can’t sleep at night -- what do I do? Nobody will see him?’” (NHA)

Some of the VIHA staff facilitate role playing activities in parent groups, which focus specifically on how to communicate with dental receptionists when they are having difficulty obtaining an appointment (e.g., after a previous missed appointment). These staff described how role playing can assist parents to advocate for their child’s oral health, learn strategies for re-entry into the dentist clinic, and understand how missing appointments impacts the dental office.

“I sat in some dental offices where...I was appalled by how some of our high-risk mums are treated. It’s disgusting...one of the things we try and get everybody to do...is to sit in everybody else’s chair...So they’ll say, ‘Well, I’ve been kicked out of the practice.’ Right? So then I’ll play the receptionist and...I try and get them talking to each other...I’ll follow up with my high-risk moms and say, ‘Well, so how did it go?’ It’s about 50/50.”

Also, public health dental staff worked to facilitate access to the Children’s Oral Health Initiative (COHI) by encouraging and supporting Aboriginal community applications to this federal program funded by First Nations and Inuit Health.

**Dental Public Health Staff Perspectives on Key Success Factors for Increasing Community Capacity**

Focus group participant opinions regarding the key success factors associated with increasing community capacity are summarized in Table 7 (see Appendix D).

**Public Health Nurse (PHN) participation**

PHN participation was raised as a key success factor in IHA, NHA, Rural Coastal VCHA, and VIHA. These regions implement dental health risk assessment at Child Health Clinics, and so PHNs play an important role in administering the CRA to families at the “front end” (NHA, Rural Coastal VCHA, rural IHA) and in providing information packages to parents (IHA). In VIHA, PHNs play a critical role in identifying oral health concerns and referring families to dental staff for caries risk assessment.

“We are getting more referrals to our Smiles First clinics that are held in other health units. And those are referrals from nurses. Some of the nurses who are really keen are referring, [in a] very small health unit – two nurses – and get a full day booked. And we have other health units, very large, we’re getting two or three referrals. So, it just depends on the buy-in from the nurses, it really does. … we started out with hardly anything, and so in two years we’re seeing more referrals.”

In IHA, depending on the area, PHNs may be responsible for administering the CRA to families, facilitating bookings for fluoride varnish clinics, or providing information packages to parents. One urban CDA mentioned that “if they don’t buy-into it then they don’t necessarily give that package out.” In rural IHA, dental staff discussed “amazing nurses that have a really high return rate" and who “go through the questionnaire with the families.” Some PHNs have “gone the extra mile” in writing additional comments on the questionnaire before forwarding them on to dental staff for follow-up.

“…what the nurses write on the ToothTalk questionnaire and the fact that our team works really well together...buying doughnuts for the nurses...so we all seem to find ways to make it work better here together.”

This finding on PHN buy-in is consistent with the literature that identifies buy-in as a success factor influencing the adoption of an intervention program (e.g., by health organizations and providers), and thereby influencing the intervention’s reach and impact.22

**Promoting healthy preschool programs**

Dental health public staff also reported several key success factors associated with increasing community capacity for the promotion of dental health. For example, dental staff in VCHA

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observed improvements in oral health over the decades, which they linked to oral health promotion strategies targeting preschools as juice-free environments.

“I went to the daycare on the reserve…and for the first time in 37 years I didn’t seen any holes in kids’ teeth. Now that is huge…They’ve gone juice free and they’ve done a lot of things.” (VCHA)

“That’s a big change that I’ve heard at the daycare. Juice-free for about 4 years now…And that was a big push of ours. The three of us did a water thing for the last what -- seven years or so...But we had to go out physically and do that.” (VCHA)

Similarly, dental staff in VIHA observed improvements in children’s oral health alongside an increase in juice-free preschools. These staff attributed improvements in parent awareness and oral health practices to dental staff community health promotion efforts.

“Participant 1: We’re starting to measure plaque levels…and we can see that there’s an improvement clinically…And they [the parents] say that they’re offering less sweet things or not giving a bottle at bed…

Participant 2: Yeah, and we’re seeing more and more preschools adopting healthy policies about no juice and just offering water and brushing and just all kinds of positive behaviors that you can visually see.

Participant 3: ...It is a movement in behavior in a whole community…So we have a ways to go, but some messages got to them.” (VIHA)

“Participant 1: It’s our work in the community that’s causing the changes [in oral health practices] not CHC work.

Participant 2: ...I think it’s more the work that we – at least in our areas – I think it’s more the work that we’ve done in the community.” (VIHA)

**Community partnerships—“Go to them”**

Dental staff in each Health Authority mentioned partnerships with agencies and centres already working with difficult-to-reach populations.

“Working with partnering agencies that already target those groups. So the nurses go to the…Centre, which is working with urban First Nations, and they’re taking the immunization program to their drop-in…And because they already trust the centre and they don’t have to come to our centre, they go there where they feel safe and they’ll access our services more.” (NHA)

“with the Punjabi population…every full moon the Sikh temple has a big dinner to which the whole community is invited. And so once or twice a year…we set up tables all around so sometimes the nurses will do flu shots…The nutritionist was checking for diabetes this time…We always set up a dental table and I phone the Punjabi dental assistant in town and she comes with me so that we can talk to the whole family, because in that community the grandparents take care [of children]... So that’s one way we’ve overcome that barrier, to actually go to them.” (Rural Coastal VCHA)

[Participant 1]: “bringing the program out to where people are. So, when you think about the isolated families, you know, if there are refugee support groups going someplace, if we bring our program there, you’re there where they are and you’re more likely to get them.” [Participant 2:] “Actually, dental’s really good at that, we’ve always been working in the community, so...Community partnerships are really huge, and I have to say we’re really good at that. So that works well.” [Participant 3:] “Have suitcase, will travel.” (FHA)

**Integrating public health dental activities with health fairs and community events**

One example of an activity for enhancing parents’ and children’s engagement with dental public health was the use of Tooth Fairy costumes. Some of the IHA dental staff dress up in a Tooth Fairy costume when they attend community events to promote dental public health programs and raise awareness about oral health.
“And I know it sounds really silly and not all of us are built to go put on a costume and parade around and interact with the kids that way. But I personally have found a huge impact in our community. Most of the kids in our community have seen the tooth fairy at one function or another. A lot of kids will smile and I can see their teeth without making them cry...The tooth fairy is wonderful.” (IHA)

Additional focus group participant opinions regarding the key success factors are summarized by Health Authority in Table 9 (see Appendix D).

**Program Partnership as a Key Strategy**

Who are the program partners for the dental health risk assessment and what role did they play?

Although participants were not questioned specifically on this topic, dental staff identified partners within public health, as well as a number of community partners. Staff described a number of roles they played in dental health risk assessment and dental public health (see Table 10, 11 and 12 in Appendix D)

- Key public health partners for dental health risk assessment included PHNs, Health Unit Aides, Admin Support and volunteers. They often played a key role in distributing or discussing risk assessment tools with parents.
- Community partners included First Nations health staff, Aboriginal Community partners, immigrant and refugee service organizations, prenatal and infant programs, school boards, preschool programs, parenting groups, early child development networks, and various community champions.23
- Community partnerships served generally to support early childhood dental programs in addition to the dental health risk assessment. Community partners helped to expand program coverage by providing venues for service provision, providing access to clients, and supporting healthy practices/policies, particularly with vulnerable and difficult-to-reach population groups.

For example, a refugee program coordinator in FHA worked to overcome language barriers and provide follow-up:

“We had a success story the other day... We saw 21 kids [at a refugee group]... most of them had to go to the dentist. The next day the coordinator took the child with the parent to the dentist and they were able to extract a tooth that was abscessed...[The coordinator] is going to follow up with the rest of the kids...But prior to this coordinator there was no coordinator...and there was no real follow-up with them because there was a huge language barrier.” (FHA)

**Summary of Focus Group Findings in Relation to the Evaluation Questions**

**Evaluation Question #1: Is the oral health of young children improving? By community? By vulnerability?**

The focus group participants indicated a few areas in which they had observed improvements in early childhood dental outcomes up until 2008/09. These included communities in North Vancouver Island, Powell River, and Squamish. Although the 2001/02 kindergarten survey data are not directly comparable, the rate of children with no visible dental decay appears to have increased in the North Vancouver Island Health Service Delivery Area over five years (from 54.0% to 62.4%).

The reported improvements in early childhood dental outcomes in certain communities, such as Powell River and Squamish, are consistent with findings from the Analysis & Mapping of the 2006/07 British Columbia Kindergarten Dental Survey report. The best available sources of data for understanding improvements in oral health over time are the consistently collected 2006/07 and 2009/10 kindergarten dental survey data sets. The 2006/07 kindergarten dental survey data serves as a baseline. After the 2009/10 dental survey is completed, and a comparable data set is generated, it will be possible to compare rates of dental decay in BC communities at two different points in time.

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23 Community Champions described motivated individuals already working with families, such as refugee coordinators, First Nations organization staff, Aboriginal Community Health Representatives, preschool teachers, nurses, and Infant Development Program staff.
Evaluation Question #2: Are the current dental health risk assessment/screen guidelines implemented as intended?

Staff consistently reported that they were familiar with region-specific protocols and guidelines for dental health risk assessment. In general, staff in each Health Authority reported that dental health risk assessment guidelines were implemented as intended and that the tools were simple to use as part of established, routine procedures. There was some variation in dental health risk assessment implementation protocols and guidelines, such as the assessment tools used, and procedures for asking parents questions, identifying risk, and following up with families.

In every region, staff emphasized the integration of dental health risk assessment with existing public health and community partner initiatives as a key success factor. This included Public Health Nurses, Band Nurses and community partner staff playing a key role in implementation, including use of the dental health risk assessment tool by non-dental staff. The potential for caries risk assessment to be carried out by both dental and non-dental personnel was demonstrated in the Dundee Caries Risk Model study. Among 1 500 one-year-olds, the two most significant risk indicators for the child having at least three carious teeth at age four years were (1) living in social housing and (2) the health visitor’s subjective opinion that the child was at risk for caries (sensitivity = 65%, specificity = 69%).

Evaluation Question #3: Are health promotion interventions effective in supporting family dental health practices toward reducing early childhood caries?

Although the focus groups were designed to gather information specifically about Dental Health Risk Assessment Programs, they did elicit dental staff opinions related to oral health promotion interventions in general. However, participants struggled to articulate explicit and specific links between health authority activities and program outcomes, often stating the need for statistical data to determine program effectiveness. Additional data are needed to respond to this question.

Overall, participants indicated that for participating families, the dental health risk assessment was effective in supporting healthy parent practices when used in conjunction with preventive counseling, education, or additional support. Strategies for supporting healthy parent practices perceived by dental staff included targeted group health education sessions, building rapport and trust, motivational interviewing, role playing, and tooth fairy costumes. Dental staff in VCHA and VIHA attributed improvements in parent awareness and children’s oral health to dental staff community health promotion efforts targeting preschool programs as juice-free environments. Dental staff across all health authorities reported difficulty reaching vulnerable populations as a barrier to program coverage and effectiveness in general.

A systematic review of the research concluded that strategies targeting high-risk groups within a whole population may help reduce inequalities in oral health. Mailing fluoride toothpaste to a specific “at-risk” population of children from 12 months onward also was associated with reduced caries prevalence in kindergarten children. In 2004, a Glasgow community development program in a low income area aimed to deliver consistent messages, improve diet, provide access to fluoride toothpaste, and support preschool tooth brushing programs. Over four years, this multi-strategy program was associated with significant improvements in preschool dental health. Similar to our findings, a recent US focus group study among caregivers with low incomes concluded that community-based oral health initiatives, should emphasize developing trust of caregivers with service providers.

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27 Y Blair et al., “Glasgow nursery-based caries experience, before and after a community development-based oral health programme’s implementation,” Community Dental Health 21, no. 4 (December 2004): 291-298.  
Evaluation Question #4: What strategies are used in the health authorities to prevent early childhood dental disease? What is the most effective combination of strategies being provided in the health authorities to prevent early childhood dental disease?

In every region, public health dental staff emphasized the integration of preventive dental services with existing public health and community partner initiatives as a way to improve dental health outcomes. In the focus groups, there were frequent calls for specific preventive strategies including: integration with community initiatives, community development, partnership-building, promotion of healthy preschool environments, and involvement of interdisciplinary public health teams. However, similar to the previous section related to health promotion interventions, several focus group participants described limitations in available data to determine strategy effectiveness.

During the focus groups, dental staff referred to multiple interlocking barriers to program reach in relation to a number of specific population groups, including families with low income, lone-parent families, families in rural or remote locations, families with recent immigration, families of Aboriginal descent, and families with special needs. When asked to identify priority activities for allocation of staff time, IHA dental staff ranked community-level services as priority activities they could spend more time on to have a higher impact on oral health status. In particular:

- Developing a dental program based on identified dental needs, in conjunction with the health unit team and community
- Providing delivery of dental health lessons/demonstrations for individuals, parents, classrooms and groups in community settings.
- Collaborate with or perhaps integrate dental health into inter-agency programs in the community.

A review of public health education interventions concluded that for school-aged children, health education interventions alone are insufficient to change parent health practices but can be effective when combined with environmental or legislative changes, such as changes to school meals. One-to-one dental health education has not been found to be consistently effective in changing behaviour. Similarly, one-to-one dietary advice has not been conclusively shown to prevent caries. However, one study found that preschool policies on availability of foods and snacks can lead to reduced sugar intake in the preschool and at home. This is consistent with the focus group findings on creating supportive environments, and specifically, promoting preschools as juice-free zones.

Recommendations

The focus group findings have been used as the basis to develop the following four suggested areas for provincial and regional consideration:

(1) Caries Risk Assessment Guidelines

Consider developing Provincial Caries Risk Assessment Guidelines to:

- Standardize assessment and follow-up processes (e.g., risk factors assessed, timeframe for follow-up, number of contact attempts, personalized contact methods).
- Support consistent risk classification and data collection.
- Standardize messaging and resource development (e.g. oral health-related handouts) within each Health Authority to focus on concise and consistent communication of key oral health messages to caregivers.
- Reinforce and expand best practices (e.g., community partnership, personalized services).

Note: The tools do not necessarily need to be exactly the same, but standardized risk classification and resource development should

29 Scottish Executive, Nursing for health: a review of the contribution of nurses, midwives and health visitors to improving the public’s health in Scotland (Edinburgh: The Stationery Office, 2001).
be considered. This could mean incorporating one standard assessment item (e.g., “Is this child at high risk for caries?”) or a standard set of risk factors (e.g., that include dentist visits, SES).

(2) Community Partnership and Community Development

Consider developing provincially coordinated strategies to collaborate with new and existing community organizations and early learning centers to:

- Increase program reach to vulnerable populations and families who may not typically access public health services, especially in communities where immunizations occur primarily outside public health.
- Strengthen coordinated, community action towards primary and primordial prevention strategies.
- Create supportive environments (e.g. juice-free preschools) with healthy policies that focus on the determinants of early childhood dental disease and promotion of healthy parent practices.
- Support health education in community settings, particularly involving influential groups (e.g., principals, head teachers, physicians). For example, health education initiatives involving physicians could help to promote collaboration between physicians, public health nurses, and dental staff to assess child health and provide appropriate referrals.
- Promote awareness of caries prevention and prevention services.

(3) Public Health Partnership

Consider developing provincially coordinated strategies to collaborate with or integrate dental health into existing early childhood public health programs. For example, Public Health Nurses can communicate key dental health messages to families at early points of contact, particularly at Child Health Clinics for 2, 4, 6, 12, and 18 months of age. Given that approximately two-thirds of BC’s children under age two years are up-to-date in their immunizations, it is recommended that dental public health continue to develop coordinated primordial and primary prevention strategies that coincide with children’s immunization appointments. Dental staff working in community settings could also make referrals to Public Health Nurses for families who may not typically access public health services.

(4) Surveillance

Determine ongoing program data needs to support surveillance and program monitoring at a provincial and health authority level. For example, consider incorporating caries risk assessment into a coordinated and integrated model of longitudinal developmental surveillance that includes collection and recording of data at 12 months of age (or at point in time in accordance with evidence-based best practice guidelines), at 3 years of age (i.e., to coincide and integrate with existing public health initiatives, such as the 3-year-old provincial vision screening program), and at kindergarten.

Summing Up

The findings indicate that a dental health risk assessment is utilized across Health Authorities. The nature of this risk assessment and how it is implemented varies across Health Authorities. Regional guidelines are in place and, in general, dental public health staff report that these guidelines are being implemented as intended. Effectiveness in relation to the dental health risk assessment has been described in terms of influence of the program on outcomes for children in terms of their oral health status, and for parents with respect to parent engagement, awareness, practices, and access. Each Health Authority reported strengths and strategies to build upon as well as challenges related to risk assessment processes and, in particular, promoting improved access to services for high risk groups.

Next Steps

The focus groups were intended as one of multiple sources of information used to assess the types of strategies used in Health Authorities as well as their related outcomes. An environmental scan was used to document baseline information on program activities. The 2009-2010 Kindergarten Dental Survey will also be used to assess dental
health risk and early childhood caries in relation to community ‘profile’ (e.g., types and coverage of services delivered, available individual-level dental services, and demographic data). These additional sources of information will be woven together with focus group findings to inform further recommendations.

References


Appendix A: Key Messages in Oral Health-related Public Health Handouts

Five main themes emerged from a review of BC public health handouts related to oral health and nutrition for children under 6:

1) Dentist visits

Within the dental visit theme, the primary message was that a child should have the first dentist visit 6 months after the appearance of the first tooth or around age one and then see a dentist every 6 to 12 months.

2) Signs of decay

There was some overlap between the dental visit and decay themes as a key message under the decay theme was to check a baby’s mouth once monthly for signs of decay, such as white or brown spots on the teeth particularly near the gum line, and to see a dentist if decay was present. The second key message within the decay theme related to bacterial transference from caregiver to child. Handouts informed parents that bacteria, some of which cause tooth decay, begin to grow upon appearance of a child’s first tooth. Advice to reduce the risk of bacterial transmission included using separate toothbrushes and spoons as well as washing a soother in water rather than licking it to clean it. In addition, caregivers were advised to use a fluoride toothpaste themselves and to ensure that their own dental work was up to date. One health authority had handouts, which noted that when caregivers of young children chew gum containing xylitol, fewer bacteria were transmitted to children, and those children had fewer cavities.

3) Tooth brushing and fluoride

Many handouts addressed tooth brushing and fluoride toothpaste use in detail. This theme also included instructions to clean a baby’s gums twice daily with a clean, damp face cloth prior to the appearance of teeth. Once the first tooth appeared, parents were to use a soft baby toothbrush with a smear of toothpaste to brush teeth twice daily, in the morning and before bedtime after the last breast feed, bottle or food. The amount of toothpaste used was to be increased to a pea-sized amount at age 3 to 6 years as molars appeared and teeth finished coming in. Flossing was to commence when teeth were touching. Information in the handouts informed parents that children would not be able to clean their own teeth until around age 6 to 8 years, when they also gained the capability to tie their own shoe laces. By hardening teeth surfaces, the purpose of the fluoride toothpaste was noted to be prevention of cavities. Fluoride varnish was recommended for children, who had cavities in the past or current difficulties as well as children who slept with a bottle containing a liquid other than water or who did not have their teeth cleaned twice daily with a fluoride toothpaste.

4) Feeding practices

Drinking and feeding habits related to dental outcomes was another popular theme covered in many handouts. A reoccurring message was that the length of time a sugar-containing beverage or food is in contact with teeth is a factor for tooth decay. For example, many handouts commented that a child who slept with a bottle containing a liquid other than water was at risk for tooth decay. Lists of sugar-containing beverages, such as breast milk, cow’s milk, formula, fruit juice and sweetened drinks (e.g. tea, pop) were reported in numerous handouts. The use of a clean, wet cloth to wipe baby’s teeth after nursing was advised. Sticky foods, such as teething cookies and biscuits were not recommended because they remain on teeth for lengthy periods of time. Putting sugar, honey or corn syrup on a soother also was advised against. In addition, frequent sipping (liquids other than water) and eating during the daytime also was noted to be a risk for tooth decay. Because it does not cause tooth decay, water was suggested as a thirst quencher between meals with milk and juice reserved for meal and snack times. Finally, information from a number of handouts recommended switching from a bottle to a cup starting at 6 to 9 months of age with completion of the switch by 12 to 14 months of age.

5) Barriers to access

Barriers to access was a less commonly occurring theme among the handouts. For example, one health authority had a couple of handouts that described dental programs available to vulnerable populations, such as children in families on Premium Assistance through their medical plan, or clients of the Ministry of Human resources or Ministry of Children and Family Development, or Aboriginal children with a status number, or children from low-income families, who were in need of urgent care due to pain, infection or large amounts of decay.
### Appendix B: Program Delivery and Staffing by Health Authority

#### Program Staffing by Health Authority

**What resources were currently in place to support the dental health risk assessment?**

Across BC, 79 dental staff (57.9 FTE) are employed in early childhood public health programs, including 41 Registered Dental Hygienists (RDH), 37 Certified Dental Assistants (CDA), one dentist (in VCHA), and a number of casual staff (not included in table 3 below). Public health dental staff perform duties related to fluoride varnish, surveillance, administration, and community oral health promotion, as well as dental health risk assessment.

#### Table 3. Dental Staff Employed in Early Childhood Public Health Programs Across BC Health Authorities

<table>
<thead>
<tr>
<th>No (FTE)</th>
<th>FHA</th>
<th>IHA</th>
<th>NHA</th>
<th>VCHA†</th>
<th>VIHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Staff</td>
<td>16 (13.5)</td>
<td>18 (12.9)</td>
<td>15 (8.8)</td>
<td>18 (13.3)</td>
<td>11 (8.2)</td>
</tr>
<tr>
<td>RDH</td>
<td>11 (9.0)</td>
<td>8 (6.3)</td>
<td>4 (2.9)</td>
<td>9 (4.7)</td>
<td>10 (7.7)</td>
</tr>
<tr>
<td>CDA</td>
<td>5 (4.5)</td>
<td>10 (6.6)</td>
<td>11 (6.9)</td>
<td>6 (3.0 FTE)</td>
<td>1 (0.5)</td>
</tr>
</tbody>
</table>

†Rural Coastal employed 3 dental staff (1.0 FTE) (including a Powell River dental hygienist who was also employed 0.2 FTE as a lactation consultant). The Vancouver Community Dental Clinic employed 1 FTE dentist, 3.0 FTE Certified Dental Assistants, 2.0 FTE Chairside Dental Assistants, and 2.0 Receptionists/Assistants.

#### Program Delivery by Health Authority

**FHA.** FHA has an Integrated Screening program for 3-year old children (Vision, Dental and Developmental screen) as well as the Integrated Screening for Children in Care for children at 18 months of age where the same Caries Risk Assessment Tool is used. At selected community screening sites, dental staff engage in face-to-face dialogue with caregivers (including motivational interviewing). As these programs are in their infancy, the majority of their work at this time is with 0-4 year olds. In FHA, dental hygienists classify risk-level as high, medium, or low. For families assessed at high or medium risk, fluoride varnish is offered on-site by either a CDA or dental hygienist. Dental staff may also recommend that families visit a dentist for urgent treatment needs. A clerk or dental staff then phones the family for a repeat fluoride varnish after 3 to 6 months.

**IHA.** Health unit volunteers hand out a paper-based ToothTalk questionnaire to caregivers attending 12-month immunization clinics. Completed questionnaires are collected and sent to dental staff, along with any notes provided by Public Health Nurses. Dental staff then classify each completed questionnaire as provincial high, regional high, medium, or low risk. For high, regional high, and medium risk levels, a follow-up letter and Lift-the-Lip pamphlet is mailed to the family with information on the fluoride varnish program. Where resources are available, a toothbrush is also included.

**NHA.** Health unit clerks, aides or Public Health Nurses hand out a paper-based 12-Month Questionnaire to caregivers attending 12-month immunization clinics. Dental staff then classify each completed questionnaire as high, medium, or low risk. The Brush-up on Baby’s Teeth pamphlet is mailed to all families (with a toothbrush and toothpaste where resources available). For high risk levels, a clerk or dental staff will phone once to offer fluoride varnish. If there is no answer, families are contacted by mail.

**VCHA.** In Rural Coastal, volunteers or Public Health Nurses hand out a paper-based 12-Month Questionnaire to caregivers attending 12-month immunization clinics. Dental hygienists then classify each completed questionnaire as high, medium, or low risk. The Brush-up on Baby’s Teeth pamphlet and letter is mailed to all families, with relevant sections highlighted to personalize the letter to the questionnaire responses. For high risk levels, a dental hygienist phones to offer fluoride varnish and discuss relevant key oral health messages. In Vancouver, dental staff (including a dentist) engage in face-to-face dialogue (including motivational interviewing) with caregivers of children aged...
0 – 7 at the public health clinic and in community settings. Fluoride varnish is offered to all families in selected community sites with high caries rates. In Richmond, dental staff engage in face-to-face dialogue (including motivational interviewing) with caregivers of children aged 0 – 6 at the public health clinic and in community settings. Each community site is visited weekly for three consecutive weeks in order to reach more children. The hygienist also returns for repeat applications for a total of six visits per site. Fluoride varnish is offered to families assessed by the hygienist at medium or high risk. In North Shore, the dental hygienist visits community settings (e.g., drop-in groups) to offer fluoride varnish on-site for children aged 0 – 5. Each site is visited weekly for three consecutive weeks in order to reach more children. The hygienist also returns for repeat applications three months later. Where caregivers are present, the hygienist engages the caregiver in face-to-face dialogue. Where caregivers are not present, a paper-based questionnaire and fluoride varnish consent is distributed in advance (and for children with white spot lesions, visible decay, or heavy plaque, the hygienist may phone the caregiver about a repeat application). Fluoride varnish is offered to families assessed by the hygienist at medium or high risk.

VIHA
Dental health-related questions are integrated into the age-specific health questions administered by Public Health Nurses to parents attending child health clinics at 2-, 4-, 6-, 12-, 18-, and 24-months. In South Vancouver Island, the Public Health Nurse has a face-to-face dialogue with the parent, whereas in Central and North Vancouver Island, health unit aides or volunteers hand out the paper-based Health Check questionnaires which are then reviewed by the PHN during the CHC. In Central /North a toothbrush is offered at the 6 month CHC. Public Health Nurses refer parents to public health dental staff if they identify any oral health concerns. Dental hygienists then administer a caries risk assessment (which may include motivational interviewing) and classify risk as high, medium, or low. For high and medium risk levels, the dental hygienist offers fluoride varnish on-site and phones the family for recall.
Appendix C: Dental Staff Focus Group/Interview Guide: Open-Ended Questions

**Purpose**
The purpose of the dental staff focus group/interview is:
- To understand the key barriers to program reach.
- To reflect upon key success factors and how the programs could be improved.
- To identify the range of dental health risk assessment strategies used in Health Authorities by comparing data from province-wide focus groups.

The general purpose of a focus group is to gain a deeper understanding of the participants’ views and experiences (both shared and diverging) through group interaction. A mix of perspectives provides fuller topic coverage and a more rounded portrayal of the dental programs, contributing to cluster methodology and generating information needed for decision-making. Note that for 2008/09, there may be one to two staff focus groups per Health Authority.

It is also expected that participants will describe resources, activities/processes, and community partners as they respond to the focus group questions. However, if further information is needed in any of these areas, then the following questions may be covered by individual interview with Health Authority or HSDA dental program representatives and/or review of gap analysis documents:
- What resources are currently in place to support the dental health risk assessment?
- Who are your program partners for the dental health risk assessment and what role did they play?
- How do your HSDAs compare in terms of dental health risk assessment activities & processes?

<table>
<thead>
<tr>
<th>Topic</th>
<th>Examples: Open-ended questions</th>
<th>Examples: Probes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opening Round</td>
<td>What aspects of the [specific name of dental health risk assessment program (e.g., Caries Risk Assessment, 12 Month Questionnaire, Health Check)] do you think have gone particularly well?</td>
<td>What do you see as real strengths of your current dental health risk assessment program?</td>
</tr>
<tr>
<td>Activities</td>
<td>Does your region have a common set of dental health risk assessment/screen guidelines?</td>
<td>How is that going for you?</td>
</tr>
<tr>
<td></td>
<td>If so, can you describe those common guidelines?</td>
<td>Any challenges?</td>
</tr>
<tr>
<td></td>
<td>Do you think that the current dental health risk assessment/screen guidelines are implemented as intended?</td>
<td>Any facilitators?</td>
</tr>
<tr>
<td>Program Reach</td>
<td>In your view, how effective is the dental health risk assessment in supporting healthy parent practices?</td>
<td>Are there particular subgroups of the child population that you think are more vulnerable to caries? What strategies do you currently use to reach these subgroups?</td>
</tr>
<tr>
<td></td>
<td>For those eligible children who dental public health is not reaching, what do you believe are the barriers?</td>
<td>To what extent do you feel that you are reaching these groups through your dental health risk assessment?</td>
</tr>
<tr>
<td></td>
<td>What do you think might overcome these barriers?</td>
<td>Which populations might be missed? How are you finding out?</td>
</tr>
<tr>
<td>Lessons Learned</td>
<td>When you think about the range of dental services that you and your team provide to young children and their families, what do you think has worked particularly well (e.g., in areas that have the intended outcomes)? Can you describe any lessons learned that you think could help to improve the [specify regional dental program] in the future?</td>
<td>Given your experiences with the dental health risk assessment this past year, would you do anything differently next year? What would you do?</td>
</tr>
<tr>
<td></td>
<td>What do you think didn’t work? (e.g., in areas that did not have intended outcomes).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Do you have any suggestions for changes and/or improvement?</td>
<td></td>
</tr>
</tbody>
</table>
### Region-specific Open-ended Questions

<table>
<thead>
<tr>
<th>Health Authority</th>
<th>Region-specific Open-ended questions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fraser</strong></td>
<td><strong>Program reach</strong></td>
</tr>
<tr>
<td></td>
<td>To what extent do the Fluoride Varnish applications reach young children?</td>
</tr>
<tr>
<td><strong>Explaining patterns of vulnerability</strong></td>
<td>What types of trends in early childhood caries have you observed after reviewing kindergarten survey outcomes over time?</td>
</tr>
<tr>
<td></td>
<td>To what extent do you observe differences in kindergarten survey outcomes by geographic location?</td>
</tr>
<tr>
<td></td>
<td>What community factors may be influencing these observed differences?</td>
</tr>
<tr>
<td></td>
<td>What aspects of your dental program may have influenced the observed similarities of differences in kindergarten survey outcomes over time?</td>
</tr>
</tbody>
</table>

| **Interior**     | **Program reach**                   |
|                  | What is the reach of the 1) one-on-one and 2) community-level preventive services with respect to the target population(s) by geographic area? (i.e., for those children eligible for ToothTalk, how many did you administer the questionnaire to?) |
|                  | Probe re: Special needs, Aboriginal, Lower SES, Working poor (2 full-time working parents not on social assistance who can’t afford basic needs such as dental) |
|                  | **Lessons learned** (for each of prevention, promotion, and surveillance) |
|                  | What could you do more of and have a greater impact on oral health status? |
|                  | What additional resources or training do you think could help improve the program? |

| **Northern**     | **Activities**                      |
|                  | How do your HSDAs (NW, NI and NE) compare in terms of dental health risk assessment processes, outcomes, challenges, opportunities, areas for improvement? |
|                  | What dental health risk assessment tool/questions should be used for children aged 0–5 (including kindergarten entry)? |
|                  | At what age(s) should these be administered? Who should administer the dental health risk assessment? What guidelines and follow-up should be used? |

<table>
<thead>
<tr>
<th><strong>Vancouver Coastal</strong></th>
<th><strong>Program reach (priority topic)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>For those eligible 12 month old children who the dental health risk assessment is not reaching, what are the barriers?</td>
</tr>
<tr>
<td></td>
<td>What might overcome the barriers for those children who could most benefit?</td>
</tr>
<tr>
<td></td>
<td>Probe re: young moms, First Nations, immigrants, food bank clients.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Vancouver Island</strong></th>
<th><strong>Activities</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Do you think that the current dental health risk assessment/screen guidelines are implemented as intended?</td>
</tr>
<tr>
<td></td>
<td>Are you aware of your practice guidelines? Are you able to follow them consistently?</td>
</tr>
<tr>
<td></td>
<td>Are you aware of the PHN Guidelines/Health Checks?</td>
</tr>
<tr>
<td></td>
<td>Are parents/caregivers consistently receiving information/screening as per the guidelines?</td>
</tr>
<tr>
<td></td>
<td>Are appropriate dental referrals being made?</td>
</tr>
<tr>
<td></td>
<td>How are you identifying families that aren’t referred from PHN Guidelines/Health Checks?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th><strong>Program Reach</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Do you think parents have changed their behaviour as a result of the messages received at the CHCs? Do you think parents have changed their behavior as a result of dental risk assessment strategies?</td>
</tr>
</tbody>
</table>
### Appendix D: Tables

#### Table 4. Implementation Processes in BC Health Authorities

<table>
<thead>
<tr>
<th>Sub-theme</th>
<th>FHA</th>
<th>IHA</th>
<th>NHA</th>
<th>VCHA (Rural Coastal)</th>
<th>VIHA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Materials Used</strong></td>
<td>Tool Used</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0–4-year Old†</td>
<td>Tooth Talk (12 Mos. Questionnaire)</td>
<td>12 Mos. Questionnaire</td>
<td>12 Mos. Questionnaire</td>
<td>CVI/NVI Health Check/ SVI PHN Guidelines</td>
</tr>
<tr>
<td></td>
<td>Caries Risk Assessment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Guidelines</strong></td>
<td>Classification grid on the tool</td>
<td>IHA Standard Operation Protocol</td>
<td>NHA Protocol Fluoride Varnish Counseling Notes</td>
<td>Rural Coastal Protocol</td>
<td>Classification grid on the tool PHN Practice Guidelines</td>
</tr>
<tr>
<td><strong>Other Comments</strong></td>
<td>CDA concern that only RDHs may classify risk level</td>
<td>Guidelines recently revised Perceived purpose varies</td>
<td>Minor exceptions (e.g., parent expected to change practice)</td>
<td>Not up-to-date PHN's also have some available for baby clinics</td>
<td>Implementation based on PHN buy-in</td>
</tr>
<tr>
<td><strong>Discussing dental topics with parents</strong></td>
<td>Age</td>
<td>3-year old†</td>
<td>12 Mos.</td>
<td>12 Mos.</td>
<td>2–24 Mos.</td>
</tr>
<tr>
<td></td>
<td>Setting</td>
<td>Community sites</td>
<td>CHC</td>
<td>CHC</td>
<td>CHC</td>
</tr>
<tr>
<td></td>
<td>Who</td>
<td>Dental staff</td>
<td>Volunteer</td>
<td>Clerk/Aide/PHN</td>
<td>Volunteer or Volunteer/Aide/PHN</td>
</tr>
<tr>
<td></td>
<td>How</td>
<td>Face-to-face dialogue (or phone)</td>
<td>Paper-based version (with PHN notes)</td>
<td>Paper-based version</td>
<td>Paper-based version</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Paper-based version/face-to-face dialogue with PHN. Referrals to dental staff based on risk</td>
</tr>
<tr>
<td><strong>Classifying risk</strong></td>
<td>iPHIS entry</td>
<td>H, M, L</td>
<td>H and Regional H</td>
<td>H, M, L</td>
<td>varies</td>
</tr>
<tr>
<td><strong>Follow-up with families</strong></td>
<td>Follow-up</td>
<td>H/M: Offer FV on-site</td>
<td>All: Mail ‘Brush Up’ pamphlet. Some: Mail toothpaste</td>
<td>All: Mail ‘Brush Up’ pamphlet</td>
<td>H/M: Offer FV on-site</td>
</tr>
<tr>
<td></td>
<td>Phone call</td>
<td>H/M: Clerk or dental staff phones for FV recall</td>
<td>None (previously, dental staff phone to discuss)</td>
<td>H: Dental hygienist phones to discuss</td>
<td>H/M: Dental hygienist phones for FV recall</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*H High; M Medium Risk; L Low Risk

†FHA has an Integrated Screening program for 3-year old children (Vision, Dental and Developmental screen) as well as the Integrated Screening for Children in Care for children at 18 months of age where the same Risk Assessment tool is used. As these programs are in their infancy, the majority of their work at this time is with 0-4 year olds. However, the focus groups questions specifically asked about the Integrated 3-year Old Screening Program.
Table 5. Dental Public Health Staff Perspectives on Strengths of the Dental Health Risk Assessment in BC Health Authorities

<table>
<thead>
<tr>
<th>FHA</th>
<th>IHA</th>
<th>NHA</th>
<th>VCHA)</th>
<th>VIHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-disciplinary</td>
<td>Initiates dialogue</td>
<td>Initiates dialogue and behaviour change</td>
<td>Initiates dialogue</td>
<td>Initiates dialogue, awareness</td>
</tr>
<tr>
<td>Community partnership</td>
<td>Tool easy to use PHNs “go extra mile”</td>
<td>PHN partnership</td>
<td>Routine and concise 95% of 12-mos olds</td>
<td>Tool comprehensive PHN referrals</td>
</tr>
<tr>
<td>Decision-making tool</td>
<td></td>
<td></td>
<td>PHN partnership</td>
<td></td>
</tr>
<tr>
<td>Relationship-building</td>
<td></td>
<td></td>
<td>PHN partnership</td>
<td></td>
</tr>
</tbody>
</table>

Table 6. Dental Public Health Staff Perspectives on Key Success Factors for Promoting Healthy Parent Practices

<table>
<thead>
<tr>
<th>Success Factor</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Rapport and Trust</td>
<td>Building rapport and trust as key to gathering adequate information to accurately assess risk and support healthy parent practices.</td>
</tr>
<tr>
<td>Motivational Interviewing (MI)</td>
<td>Motivational interviewing as a successful strategy. This finding is consistent with the literature finding MI has been used successfully in a variety of health conditions, including diet behaviours and diabetes.</td>
</tr>
<tr>
<td>Advocacy</td>
<td>References to advocacy work including: maintaining lists of dentists, phoning dentist receptionists to advocate for client after a missed appointment, and working with families and community champions to facilitate access to reduced-cost services and dental access funds.</td>
</tr>
<tr>
<td>Role playing</td>
<td>Role playing with parents as a part of health education (e.g. in one area, role playing phone call with dental clinic receptionist to make an appointment).</td>
</tr>
</tbody>
</table>

Table 7. Dental Public Health Staff Perspectives on Key Success Factors for Increasing Community Capacity

<table>
<thead>
<tr>
<th>Success Factor</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHNs and other Public Health Partners</td>
<td>Existing partnerships with PHNs, health unit aides, clerks, volunteers, as contributing to program effectiveness, as well as to multidisciplinary teams and other partnerships within public health. Also includes specific references to nursebuy-in as a key facilitator.</td>
</tr>
<tr>
<td>Promoting Healthy Preschool Programs</td>
<td>Oral health promotion strategies targeting preschool programs such as juice-free environments.</td>
</tr>
<tr>
<td>Community Development and Partnership-building (existing)</td>
<td>References to community development and partnership as an existing overarching approach/process including community development as a way to target high risk groups. This includes descriptions of building partnerships, whether organically or more actively (e.g., a public health nurse leader happened to sit on the board of StrongStart, recruitment of community champions).</td>
</tr>
<tr>
<td>Health Fairs, Community Events</td>
<td>Integration of dental activities with community events (e.g., health fairs, Inter-cultural health fairs, dressing up as the tooth fairy, 3-year rodeo, kindergarten round-up, community festivals and parades, Sikh temple dinners).</td>
</tr>
<tr>
<td>Group Sessions in Community Settings</td>
<td>Experiences and processes within group sessions in community settings (e.g., going to them, outreach, StrongStart, Nobody’s Perfect, etc) - what happens in group sessions as a mechanism through which community partnerships may contribute to health education.</td>
</tr>
</tbody>
</table>

Table 8. Building Rapport with Parents As a Key Success Factor

<table>
<thead>
<tr>
<th>FHA</th>
<th>IHA</th>
<th>NHA</th>
<th>VCHA (Rural Coastal)</th>
<th>VIHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building trust keeps families coming back which allows for repeated messages and higher likelihood of changing behaviours.</td>
<td>Building trust w/ clients brings them back for more services, gets them ready for dentist — better care for children.</td>
<td>Building trust w/ clients gets them comfortable with dental staff, the programs/services. It also invites them to get more involved and ask more questions.</td>
<td>Need stability for trust to form; not continually changing program/services/staff. It takes a long time to build trust.</td>
<td></td>
</tr>
</tbody>
</table>

Table 9. Dental Public Health Staff Perspectives on Strategies and Success Factors in BC Health Authorities

<table>
<thead>
<tr>
<th>FHA</th>
<th>IHA</th>
<th>NHA</th>
<th>VCHA (Rural Coastal)</th>
<th>VIHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partnering w/ StrongStart and school districts Seeing families repeatedly Motivational Interviewing Community partnerships (e.g. with refugee coordinator.)</td>
<td>Building relationships w/ First Nations centres Partnering with groups and school districts Motivational Interviewing Tooth fairy costumes Using CHCs as a vehicle for CRA PHN buy-in</td>
<td>Building relationships w/ First Nations centres Networking with agencies Seeing families at multiple ages (12 and 18 mos) Arranging transportation Lining up/facilitating dental payments Adapting CRA for lower literacy populations and multiple languages</td>
<td>Relationship building and building trust Outreach with groups like Ages and Stages Face-to-face interaction Community partnership (e.g., Sikh temple dinner)</td>
<td>Relationship building and building trust Partnering with groups Group education sessions Role playing with parents Promoting water instead of juice Bringing education sessions and clinics to high-risk communities (e.g., on-reserve) PHN buy-in</td>
</tr>
</tbody>
</table>

Table 10. Key Public Health Partners and Role Played in Dental Health Risk Assessment

<table>
<thead>
<tr>
<th>Key Public Health Partners</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Health Nurses</td>
<td>Using dental health risk assessment tools with parents at Child Health Clinics Dicussing dental and nutrition topics with parents Referring parents to dental staff as needed Partnering with dental staff to deliver integrated screening</td>
</tr>
<tr>
<td>Health Unit Aides</td>
<td>Using caries risk assessment tools with parents</td>
</tr>
<tr>
<td>Health Unit Volunteers</td>
<td>Using caries risk assessment tools with parents</td>
</tr>
<tr>
<td>Health Unit Admin Support</td>
<td>Phoning parents for fluoride varnish recall</td>
</tr>
<tr>
<td>Dental Program Staff</td>
<td>Partnering with the vision, hearing, and development programs to deliver integrated screening and health promotion in community setting (e.g., health fairs).</td>
</tr>
</tbody>
</table>
Table 11. Key Community Partners and Role Played in Dental Public Health

<table>
<thead>
<tr>
<th>Key Community Partners</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aboriginal Community Partners</td>
<td>Using dental health risk assessment tools in on-reserve Aboriginal communities where immunization is delivered by First Nations and Inuit Health or by the communities themselves.</td>
</tr>
<tr>
<td>- First Nations Band Nurses</td>
<td>Facilitating dental staff participation in health fairs, group education sessions, caries risk assessment, and fluoride varnish clinics</td>
</tr>
<tr>
<td>- Aboriginal Community/Health Centres</td>
<td>Reinforcing key dental messages and promoting healthy practices in their communities.</td>
</tr>
<tr>
<td>- First Nations organization staff</td>
<td>Delivering preventative services and treatment in remote First Nations communities.</td>
</tr>
<tr>
<td>- Children’s Oral Health Initiative (COHI) Dental Providers and Dental Therapists</td>
<td></td>
</tr>
<tr>
<td>Immigrant and Refugee Service Organizations</td>
<td>Providing families with assistance in accessing treatment and overcoming language barriers.</td>
</tr>
<tr>
<td>Prenatal/Infant Programs</td>
<td>Providing a point of access for dental staff to provide parent group education sessions.</td>
</tr>
<tr>
<td>School boards</td>
<td>Facilitating dental staff participation in health fairs, Ready, Set, Learn, StrongStart Programs and Kindergarten Fairs. These provide an opportunity for oral health education and carries risk assessment.</td>
</tr>
<tr>
<td>Parenting groups</td>
<td>Providing venues for group education sessions, building relationships with families, fluoride varnish clinics and integrated screening.</td>
</tr>
<tr>
<td>Early Childhood Development Networks</td>
<td>Raising awareness about oral health among early childhood sector staff, reinforce key dental messages and obtain referrals from participating agencies.</td>
</tr>
<tr>
<td>Community Champions</td>
<td>Reinforcing key dental messages and promoting health practices in their communities. Building relationships and trust with families and facilitate access to both public health dental services as well as treatment by dentists.</td>
</tr>
</tbody>
</table>

Table 12. Specific Community Partners Across BC Health Authorities

<table>
<thead>
<tr>
<th>FHA</th>
<th>IHA</th>
<th>NHA</th>
<th>VCHA (Rural Coastal)</th>
<th>VIHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>StrongStart; healthy baby programs; school district programs; Ready, Set, Learn; West Coast Families; family resource groups; keen group coordinators; Parks and Rec; Pregnancy outreach programs; ESL programs w/ daycares; transition houses (Maxxine Wright home); Young parent support groups; food bank programs.</td>
<td>Children’s Oral Health Initiative, COHI Aides/ community champions/ advocates, social workers; Dental therapists, Early Childhood roundtable, kindergarten screenings/ fairs/roundups, preschool roundups, family wellness/ birthday party days, Head Start, Pregnancy outreach.</td>
<td>Aboriginal Promoting Friendship Centre, community champions, educational centres. Want to partner w/: First Nations community health nurses; Project Parent; dental therapists.</td>
<td>Prenatal post natal group, Aboriginal daycares, Sikh temple dinners, kindergarten fairs, community resource centers. Want to partner w/: Orca Bus, a Success by Six initiative in Powell River, is a refurbished school bus that brings children’s activities to remote areas. Public health is hoping to send staff for a small prevention activity.</td>
<td>Best Babies, parenting groups, school staff, Band Council staff, Early Years, community champions, reserve preschools and daycares, Strong Start.</td>
</tr>
</tbody>
</table>

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34 Community Champions described motivated individuals already working with families, such as refugee coordinators, First Nations organization staff, Aboriginal Community Health Representatives, preschool teachers, nurses, and Infant Development Program staff.