Introduction

This report provides an overall summary of the 2010 – 2017 IHS Early Childhood Caries Collaborative, a project designed to reduce the prevalence of early childhood caries in 0-5 year-old American Indian/Alaska Native children. While the initiative is ending in 2017, the emphasis on early childhood caries prevention and early intervention remains a top priority of IHS, Tribal, and Urban dental programs.

The IHS Early Childhood Caries (ECC) Collaborative is focused on preventing tooth decay (ECC) in American Indian/Alaska Native (AI/AN) children under the age of 71 months. ECC is the most common health problem in children, almost eight times more common than childhood asthma, and can have significant consequences such as delayed speech development, missed school days, poor self-esteem, and a greater chance of tooth decay in permanent teeth. AI/AN children suffer disproportionately from this disease, with more than double the number of decayed teeth as the next highest minority population, U.S. Hispanics, and more than three times the number of decayed teeth as white children in the US.[1]

Background

The ECC Collaborative began in 2010 with the goal of reducing ECC in the AI/AN population through a coordinated nationwide collaborative utilizing not only dental programs, but also medical and community partners such as medical providers, public health nurses, community health representatives, pharmacists, Head Start teachers, and others. By the end of the first five years of this initiative, the IHS had increased access to dental care for AI/AN children under age 71 months by 7.9% and significantly increased prevention and early intervention efforts. Sealants increased by 65.0%, the number of children receiving fluoride varnish increased by 68.2%, and the number of therapeutic fillings increased by 161.0%, resulting in a net decrease of ECC prevalence from 54.9% in 2010 to 52.6% in 2014.[2] To support this initiative, the IHS conducted a nationwide surveillance of 1-5 year-old AI/AN children through two coordinated efforts of 8,451 children in 2010[1] and 11,873 in 2014. This represents the largest ever oral health surveillance sample size of this age group in the AI/AN population.[3]

ECC 2.0: "The Next Steps"

To determine the scope of involvement of the initial phase of the ECC Initiative, a survey was distributed to all IHS/Tribal/Urban dental programs. The results of the survey demonstrated that approximately 80% of IHS Clinics, 60% of Tribal, and 30% of Urban Clinics participated in the ECC Collaborative.

In 2015, the IHS ECC 2.0 Steering Committee agreed to continue promoting the ECC collaborative by placing emphasis on access for 0-2 year-olds. Gaining access to care at an early age is critical as "Two is Too Late"; with over 44% of decay history present by age 2. Also, the Steering Committee continued to promote studies relative to ECC best practices and oral health outcomes.

Two independent studies were conducted in 2015 investigating the relationship of ECC best practices and oral health outcomes data retrieved from the IHS National Oral Health Surveillance System (BSS). The initial analysis was conducted by the IHS Office of Public Health compared the implementation of the ECC Initiative at two independent Indian Health Service (IHS) facilities. The goal was to assess impacts of best practices – increased access, sealants, Interim Therapeutic Restorations (ITRs), and fluoride varnish applications – with the overarching goal of decreasing decay prevalence.

- The key "lesson learned" of this study revealed placing ITR's had a significant impact on reducing the number of teeth that were extracted due to the complications of severe ECC.

The second analysis was conducted by the IHS Division of Oral Health (DOH) to further investigate the association between the ECC best practices of access, fluoride, sealants, and ITRs to the oral health survey outcomes data for caries experience and untreated decay. For this evaluation, the IHS DOH analyzed eight clinics, with varying levels of success with meeting the highest number of ECC best practices. The results concluded that programs that committed to implementing the highest percentage of best practices showed the most improvement in ECC outcomes over the five-year initiative (figure 1). These findings were presented during a national IHS webinar to reinforce these successes and to continue to stress the importance of access to care, fluoride, sealants, and ITRs.

- The key "lesson learned" of this study revealed utilizing a multi-factorial approach to implementing best practices produced the best outcomes in reducing the prevalence of Early Childhood Caries. (Figure 1)

Figure 1: Early Childhood Caries Initiative: 2010 – 2014

Dental Program	ACCESS		FLUORIDE		SEALANTS		ITRs			ORAL HEALTH OUTCOMES	
	0 to 2 years old	3 to 5 years old	0 to 2 years old	3 to 5 years old	0 to 2 years old	3 to 5 years old	0 to 2 years old	3 to 5 years old	Full ECC Implement	Caries Experience	Untreated Decay
7	**+**	**+**	**+**	**+**	**+**	**+**	**+**	**+**	**YES (8 of 8)**	**- 16.8**	**- 26.8**
3	**+**	**+**	**+**	**+**	**+**	**+**	**-**	**+**	**YES (7 of 8)**	**- 1.2**	**- 9.6**
1	-	-	-	-	+	+	+	+	(4 of 8)	+ 0.1	- 16.0
6	-	-	-	-	+	+	+	+	(4 of 8)	+ 6.9	- 17.8
8	-	-	+	+	-	-	-	+	No (3 of 8)	- 3.6	- 5.1
5	-	-	-	-	+	-	+	+	No (3 of 8)	- 4.5	+ 6.1
4	-	+	-	-	+	-	-	-	No (2 of 8)	- 4.8	+ 8.8
2	-	-	-	-	-	+	-	+	No (2 of 8)	+ 2.7	- 5.8

The ECC Collaborative: "Moving Forward"

The ECC Initiative has been a primary focus of the IHS DOH for seven years (Phase 1 2010-14, ECC 2.0 2015-16). Although this initiative has promoted institutionalizing the best practices learned, this is best done by transferring ownership of the ECC Collaborative to Area and local level dental programs. The Steering Committee also recommends continuing to promote the IHS ECC Collaborative through the following activities:

- Utilize the IHS National Oral Health Promotion/Disease Prevention committee to promote the ECC Collaborative by maintaining the ECC Collaborative web page and by disseminating information to Area/Local dental programs through the quarterly HP/DP calls.
- Utilize the IHS National Pediatric Consultants to develop ECC Collaborative policies and to review innovative approaches to caries prevention and management.
- Utilize Area Dental Officers and Dental Support Centers to promote the ECC Collaborative and its best practices throughout the 11 IHS Areas.
- Utilize Continuing Education Events (IHS National Dental Updates, IHS webinars, etc.) to disseminate information on innovative approaches to caries management and updates to best practices. Topics at the 2017 National Dental Updates include:
    - ✓ Early Childhood Caries Collaborative: The Next Steps
    - ✓ Minimally Invasive Dentistry
    - ✓ Caries Arresting agents: Silver Ion Antimicrobials

The IHS DOH will continue to prioritize the goal of reducing the prevalence of ECC in AN/AN children by promoting best practices in primary prevention and innovative approaches to dental caries management. The theme of the IHS ECC Collaborative has always been "Together, We CAN Make a Difference." This seven-year initiative has shown this to be true, and we encouraged IHS, Tribal, and Urban dental programs to continue to prioritize the oral health of children in future years.

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- Mr. Bob Bialis, National Head Start Program
- Dr. Patrick Blahut, former Deputy Director, IHS Division of Oral Health
- Dr. Craig Bruce, IHS National Pediatric Dental Consultant *
- Dr. Bonnie Bruerd, Co-Chair, IHS ECC Collaborative 2010-14 *
- Dr. Rick Champany, Navajo Area
- Mr. Travis Fisher, RDH, Co-Chair, IHS ECC Collaborative 2015-17 *
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- Dr. Jim Schaeffer, Deputy Director, IHS Division of Oral Health *
- Dr. Pat Sewell, Albuquerque Area
- Mr. John Shutze, Nashville Area
- Dr. Greg Whelan, former IHS National Pediatric Dental Consultant
- Dr. John Zimmer, Great Plains Area

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