Final Report to IHS Leadership

IHS Periodontal Treatment Initiative

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Indian Health Service Division of Oral Health

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Background

In 1999, the IHS conducted its third national survey, following up on the 1984 and 1991 surveys. In addition to wide disparities in dental caries experience (a history of tooth decay) and untreated decay across all age groups compared to the general U.S. population, the survey also showed disparities in periodontal disease prevalence among American Indian/Alaska Native (AIAN) adults. In adults 35-44 years of age – all IHS age cohorts match those of the National Health and Nutrition Examination Survey to allow for comparison – 16.2% of AIAN adults had periodontal pockets greater than or equal to 6mm, compared to just 2.9% in the general U.S. population; 5.5 or 6.0 mm pocket depths (the pocket outside the tooth, in the gingival sulcus) is considered the marker for advanced periodontal disease. In AIAN adults over 55 years of age, this disparity persists, with 17% of AIAN adults with advanced periodontal disease compared to 7% in the general U.S. population.[i]

Why worry about periodontal disease? Periodontal disease is a complex bacterial infection that is worsened by the host response to the infection. The resulting chronic inflammation has an impact on overall health, beginning with the extraoral virulence of the pathogenic bacteria[ii], flooding the bloodstream with endotoxins and inflammatory mediators[iii], and increasing serum C-reactive protein, a measure of systemic inflammation.[iv] Periodontitis (inflammation of the periodontium) has been associated with worsening of diabetes blood sugar control in AIAN patients with diabetes[v], significantly increases risk of ischemic heart disease and renal mortality[vi], and has been implicated in the development of atherosclerotic plaque[vii], cerebrovascular ischemia[viii], adverse pregnancy outcomes[ix], chronic obstructive pulmonary disease[x], rheumatoid arthritis[xi], Alzheimer's Disease[xii], and chronic kidney disease[xiii].

In November 2014, shortly after the conclusion of the five-year IHS Early Childhood Caries Collaborative (which was resurrected as the ECC Collaborative Phase 2.0 later), Dr. Tim Ricks (who served as the Nashville and Albuquerque Area Dental Officer and who led the ECC Collaborative from 2010-2014) and Dr. Todd Smith (who served as the IHS National Periodontal Consultant, a position he has held for over 12 years) met to discuss the possibility of creating a national initiative aimed at promoting periodontal treatment throughout the IHS system. Through numerous site visits in multiple IHS Areas, Drs. Ricks and Smith noticed a troubling pattern where dental providers often didn't understand the basics of screening tools for periodontal disease, used antiquated periodontal diagnosis classifications, and had often had gaps in continuity of care in the treatment of patients with periodontal disease. Moreover, many IHS and tribal programs lacking dental hygienists offered very little in the way of periodontal diagnosis and treatment. Dr. Tim Lozon, the Director of the Division of Oral Health, approved the creation of the IHS Periodontal Treatment Initiative on November 18, 2014.

Dr. Smith and Dr. Ricks developed a national steering committee whose purposes were to develop ideas for marketing periodontal standards of care, vet all materials developed during the initiative, and to train periodontal expanded function dental assistants. The initial committee was very small with just five members, but eventually the national steering committee became a large group representing IHS and tribal programs, dentists and dental hygienists, in 11 of 12 IHS Areas (the California Area has severe limitations on expanded function dental assistants and was thus not represented). The planning committee met throughout 2015, 2016, and part of 2017, with 24 monthly conference calls and over 925 correspondence e-mails.

Purpose & Objectives

Unlike the ECC Collaborative, which aimed to reduce dental disease by directly addressing patient behaviors and treatment (access to care, dental sealants, topical fluorides, etc.), the Periodontal Treatment Initiative was designed to address provider knowledge and behavior. The overall goal of the initiative was to raise awareness and reduce the prevalence of periodontal disease in the AIAN population. Five measurable objectives were established in the beginning:

1. Reduce the prevalence of severe periodontal disease in the AIAN population by 10%;
2. Build capacity in periodontal disease education by developing knowledge and skills in training at least one periodontal educator in each IHS Area by the end of Fiscal Year 2016;
3. Promote periodontal disease treatment in underserved communities through training at least three periodontal expanded function dental assistants in at least 10 IHS Areas (a total of 30) by the end of the initiative in FY 2017;
4. Demonstrate the effectiveness of periodontal expanded function dental assistants; and
5. Establish national periodontal screening and treatment guides for IHS, tribal, and urban dental programs that promote periodontal treatment of the AIAN population.

To "brand" the initiative, Dr. Ricks created a logo that was used throughout the initiative (similar to the ECC Collaborative).

The logo, which is on the cover of this report, consists of a rising sun indicative of this periodontal initiative being the "dawn" of a new organized effort at improving periodontal health of American Indians and Alaska Natives. This is set against a blue background reflecting health care. At the top of the logo is a picture of a tooth showing both health and disease, and in the middle of the logo is our slogan, "Overall health begins with periodontal health," which emphasizes the link between systemic diseases and oral diseases.

Results: Process Measures

Build capacity in periodontal disease education by developing knowledge and skills in training at least one periodontal educator in each IHS Area by the end of Fiscal Year 2016.

One of the initial steps in building the periodontal education program was to identify and train periodontal educators to help teach. Prior to this initiative, 11 dentists and dental hygienists had been trained as educators, meaning that they had the ability to teach dental assistants periodontal expanded functions. Through this initiative, using a shadowing and co-teaching process whereby potential instructors would shadow an instructor in one course and then co-teach the next course before becoming certified, an additional 15 instructors were trained. Even though one of them has since left the IHS, the total of 26 trained and certified periodontal educators is the largest educator workforce for expanded function dental assistants ever in the IHS. This group represents 10 of the 12 IHS Areas, with California and Bemidji not represented. As previously mentioned, since the California Area does not support expanded functions (tribal programs there follow the State Practice Act, which limits expanded functions), it didn't make sense

to have an educator in that Area. For the Bemidji Area, two educators have been identified – Dr. Toby Imler and Lee Carriker, RDH from White Earth – and they will become certified later this year.

The list of periodontal educators represents both dentists and dental hygienists, both IHS and tribal programs and includes: (1) Monica Rueben, RDH (Fairbanks, Alaska Area); (2) Edwina Lee, RDH (ACL, Albuquerque Area); (3, 4) Dr. Craig Barney and Michael Moore, RDH (Ft. Belknap, Billings Area); (5) Lori Goodman, RDH (Rapid City, Great Plains Area); (6) Lisa Daniel, RDH (Sisseton, Great Plains Area); (7) Patti Flake, RDH (Choctaw, Nashville Area); (8) Jen Eng, RDH (Tuba City, Navajo Area); (9, 10, 11) Nadine Brown, RDH, Cornelia Begay, RDH, and Sharon Bydonie, RDH (Shiprock, Navajo Area); (12) Mylene Santulan, RDH (Ft. Defiance, Navajo Area); (13) Colleen White, RDH (Gallup, Navajo Area); (14) Julie Black, RDH (Claremore, Oklahoma City Area); (15) Keasha Myrick, RDH (Lawton, Oklahoma City Area); (16, 17, 18) Shannon Davis, RDH, Sharon Lang, RDH, and Dr. Todd Smith (PIMC, Phoenix Area); (19) Nida Lerch, RDH (Parker, Phoenix Area); (20) Beth Finnson, RDH (Chemawa, Portland Area); (21) Harriet Ludjin, RDH (Lummi, Portland Area); (22) Juanita Simpson, RDH (Warm Springs, Portland Area); (23) Emily Warnstadt, RDH (Yakama, Portland Area); (24, 25, 26) Ayana Blagrove, RDH, Dr. Eric Jewell, and Sylvia Carbajal-Leon, RDH (Sells, Tucson Area).

Summary: The goal was to train 11 educators from 11 of 12 IHS Areas, and through this initiative we trained 15 educators (with 2 more to be certified in the next two months) from 11 IHS Areas.

Promote periodontal disease treatment in underserved communities through training at least three periodontal expanded function dental assistants in at least 10 IHS Areas (a total of 30) by the end of the initiative in FY 2017.

Perhaps the biggest success of the IHS Periodontal Treatment Initiative was the enormous interest in our periodontal expanded function dental assistant ("Perio EFDA") courses. According to the IHS Dental Directory database, there are a total of 409 dental hygienists employed in IHS, tribal, and urban dental programs, or 1 hygienist per 3,978 IHS system users according to the latest user population memorandum released by the IHS.[xiv] The IHS Resource Requirements Methodology (RRM) recommends a minimum staffing level of 1 full-time equivalent dental hygienist per 3,200 system users[xv], while the Safety Net Dental Clinic Manual, a standard for public health staffing goals, recommends one dental hygienist per 1,300 visits (or approximately 2,684 users).[xvi] While these formulas may indicate that the IHS is somewhere between a 67-80% capacity for dental hygienists, they don't tell the entire story. Many larger programs employ multiple dental hygienists, while a vast majority of smaller dental programs (which comprise most of the IHS) employ only part-time, intermittent dental hygienists. Consequently, training periodontal expanded function dental assistants helps fill that void, where these staff can provide routine preventive services such as dental sealants, fluoride applications, and prophylactic cleanings as well as provide periodontal services including oral health education, gross debridements (general ultrasonic cleanings), and isolated scaling of visible calculus supra- and subgingivally.

Prior to the IHS Periodontal Initiative, the last Perio EFDA course that was open to a national audience was in 2011 at the Albuquerque IHS Dental Clinic. However, each year from 2012 to 2015 the six then-trained educators held three to five courses to train dental assistants in their own programs, and these were mostly at some of the larger programs. Through this initiative, a total of 153 dental assistants were

trained in FY 2016 and 2017 through 22 separate EFDA courses. This represents an increase of 264% in the number of trained EFDAs compared to the two previous fiscal years. Of this group, 124 have been trained in basic periodontal procedures, 19 have received advanced training (allowing them to do more scaling), and 10 assistants who were previously certified years ago have received refresher training allowing them to hone their preventive and periodontal skills. The training for periodontal EFDAs does not end with the conclusion of this initiative; courses will continue into the foreseeable future.

Summary: The goal was to train at least 3 dental assistants in at least 10 of 12 IHS Areas, and through this initiative we trained 153 dental assistants representing 11 of 12 IHS Areas.

Establish national periodontal screening and treatment guides for IHS, tribal, and urban dental programs that promote periodontal treatment of the AIAN population.

In August of 1986, the IHS released its first and only recommendations on periodontal screenings, the "Use of the Community Periodontal Index of Treatment Needs in Indian Health Programs" (Attachment 1). This guideline was based on the World Health Organization's Community Periodontal Index (CPI). In 1992, the American Dental Association, in collaboration with the American Academy of Periodontology, introduced the Periodontal Screening and Recording (PSR) index.[xvii] However, over time, we realized that there was confusion among IHS and tribal programs regarding which screening tool to use, often resulting in not using either tool. In fact, in chart reviews of over 1,700 patient records from 2006 to 2016, Dr. Ricks reported that at least 20% of the time periodontal screenings were not documented in records of Albuquerque and Nashville IHS and tribal programs.

Consequently, as part of this initiative, the IHS Division of Oral Health released the IHS Community Periodontal Index (CPI) Guide in October 2015 (Attachment 2). This guide provided background information on the index, the type of instrumentation required for the screening, and a thorough explanation of the five different screening codes. This document was laminated and over 3,000 copies were disseminated to IHS Area Dental Officers and at select meetings with the intent to place the laminated card beside the dental operatory as a reminder and guide for the dentist or dental hygienist conducting the periodontal screening separately or as part of a comprehensive oral evaluation.

Similarly, the last known national IHS periodontal treatment guide was published in 2003 as part of the IHS Dental Specialties Manual.[xviii] As part of the Periodontal Treatment Initiative, we created the Indian Health Service Periodontal Treatment Guide in October 2015 (Attachment 3). This guide uses the CPI scores to provide a treatment flow algorithm for dental providers (dentists, dental hygienists, and expanded function dental assistants), and like the CPI Guide, the document was laminated and over 3,000 copies were disseminated to IHS Area Dental Officers with the intent to place the card by each dental operatory as a guide for providers.

In addition to creating the CPI Guide and the Treatment Guide, an extensive education plan was developed to help promote periodontal screenings, periodontal diagnosis, periodontal treatment options, and the link between periodontal disease and systemic conditions. The following is a list of these education efforts:

1. Creation of the Periodontal Initiative Tab – a folder was created on the IHS Dental Portal with all of the Periodontal Initiative documents. This tab will remain after the initiative is over as there is no information that is set to expire. This folder can be accessed by IHS, tribal, and urban dental staff using the secure login at https://www.ihs.gov/DOH/index.cfm?fuseaction=perio.display.
2. Development of Periodontal Presentations – a very detailed, coordinated effort was undertaken to standardize four educational presentations for dental providers. These included (1) "Periodontal Disease Detection, Examination, and Diagnosis;" (2) "The Oral-Systemic Link;" (3) "Periodontal Disease Management/Treatment;" and (4) "The IHS Periodontal Treatment Initiative." Each presentation was originally created by Dr. Smith, edited by Dr. Ricks, and then vetted through the entire national steering committee. Presentations were completed in August 2016 following a six-month review process. In October 2016, all four presentations were modified to be offered as online continuing dental education courses. To date, a total of 65 providers have taken the four courses, each worth 1 hour of CE credit. The courses will remain active in the IHS Continuing Dental Education Catalog for a period of at least three years.

3. Periodontal Expanded Function Dental Assistant (EFDA) Fact Sheet – to help spark interest in the Perio EFDA courses, a fact sheet was developed and disseminated via the IHS Dental Listserv and the Dental Portal promoting periodontal EFDAs (Attachment 4). The document provides details on the training and how periodontal EFDAs can be used. The document at least contributed to the success of the training program that yielded 153 trained EFDAs and many more put on wait lists for future courses.

4. Release of the *IHS Dental Explorer* – in May 2015, to jumpstart the IHS Periodontal Treatment Initiative, the national steering committee released a special issue of the *IHS Dental Explorer*, a publication of the IHS Division of Oral Health (Attachment 5). This newsletter, which was disseminated on the IHS Dental Portal and through the IHS Dental Listserv, not only contained information about the different components of the program, but also featured a special patient handout, "Take the Gum Disease Quiz!," that providers could use in their programs.

5. National and Area Presentations – because of this initiative, periodontal disease was often featured at national and Area meetings. Dr. Todd Smith, serving as the IHS National Periodontal Consultant, and Dr. Eric Jewell, another IHS periodontist, were featured speakers during the 2017 IHS Dental Updates Conference held in April 2017. Dr. Smith also presented at several Area dental meetings, to local service units and tribal programs, and is scheduled to present on a national Division of Diabetes Treatment and Planning webinar in 2017.

Summary: The goal was to establish national protocols for periodontal screening and treatment, and through this initiative this goal was not only accomplished through the creation of two protocols, but also supported through an extensive continuing education program aimed at educating dental providers.

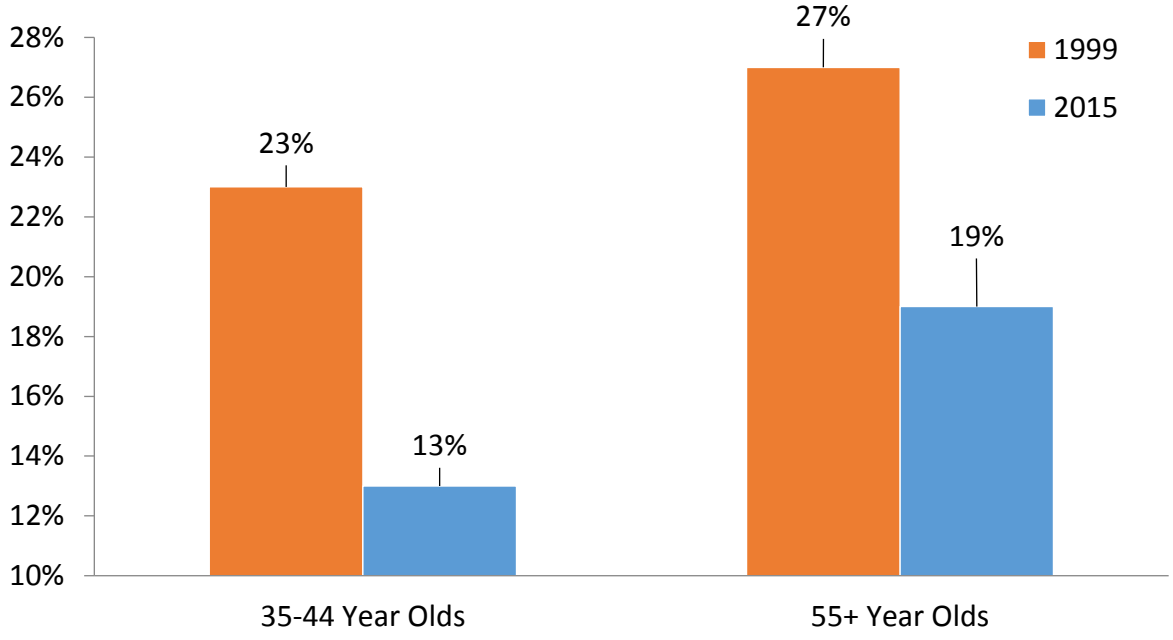
Results: Outcome Measures

Reduce the prevalence of severe periodontal disease in the AIAN population by 10%.

In 2015, as part of the IHS Oral Health Surveillance Program, 84 different programs representing all 12 IHS Areas participated in an oral health survey of AIAN adults over the age of 35 years. The sample size of 11,462 was the largest-ever sample of AIAN adults and represented almost a 200% increase over the sample size of the 1999 IHS oral health survey of 4,087 clinic patients. Because the methodology of these surveys was similar, it is possible to make direct comparisons in disease prevalence, including periodontal disease.[xix]

While this study showed that the disease disparity in AIAN adults still persists – 17% of AIAN adults have advanced periodontal disease (≥ 5.5 mm periodontal pockets) compared to 10% in the general U.S. population and 83% of AIAN adults 40-64 years have missing teeth compared to 66% in the general U.S. population – there has been significant improvement. From 1999 to 2015, the percentage of AIAN patients 35-44 years of age with deep periodontal pockets (CPI score = 4, ≥ 5.5 mm periodontal pockets) has decreased from 23% to 13%, a 43.5% drop ([23-13/23]), while the percentage of AIAN patients 55 years and over with deep periodontal pockets (CPI score = 4, ≥ 5.5 mm periodontal pockets) has decreased from 27% to 19%, a 29.6% drop ([27-19/27]). These are significant improvement in periodontal disease and the first time we can show a decrease in the prevalence of advanced periodontal disease on a national scale in AIAN adults. (Figure 1).

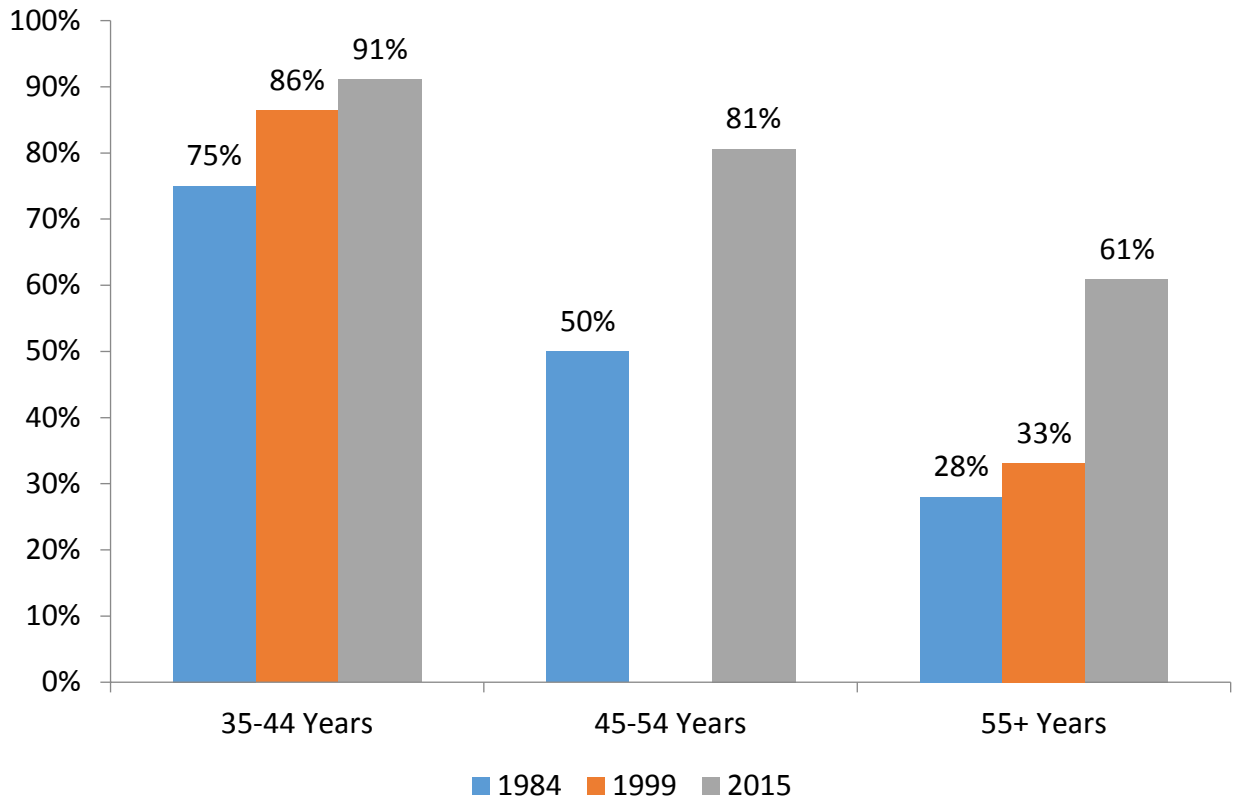
Figure 1: Percent of AI/AN Dental Patients with Deep Periodontal Pockets (CPI=4) by Age Group and Year, 1999 vs. 2015



While not all adult teeth are lost due to periodontal disease, the 2015 oral survey also demonstrated that more AIAN adults are retaining more of their teeth, a fact that inevitably aids in diet, nutrition and overall health. Compared to both the 1984 and 1999 IHS oral health surveys, there has been a significant increase

the proportion of AIAN adults 35 years and over retaining at least 20 or more of their natural teeth. (Figure 2).

Figure 2: Percent of AI/AN Dental Patients with 20+ Teeth by Age Group and Survey Year



Summary: The goal of the IHS Periodontal Treatment Initiative was to reduce the prevalence of periodontal disease. While this goal won't be actually measured until 2020 when the next oral health survey of AIAN adults will be conducted, we have seen a significant decrease in the prevalence of advanced periodontal disease since 1999, with a 29.6 43.5% drop. If this trend continues, the IHS should be able to meet the goal of decreasing the prevalence of advanced periodontal disease by 10% by 2020.

Demonstrate the effectiveness of periodontal expanded function dental assistants.

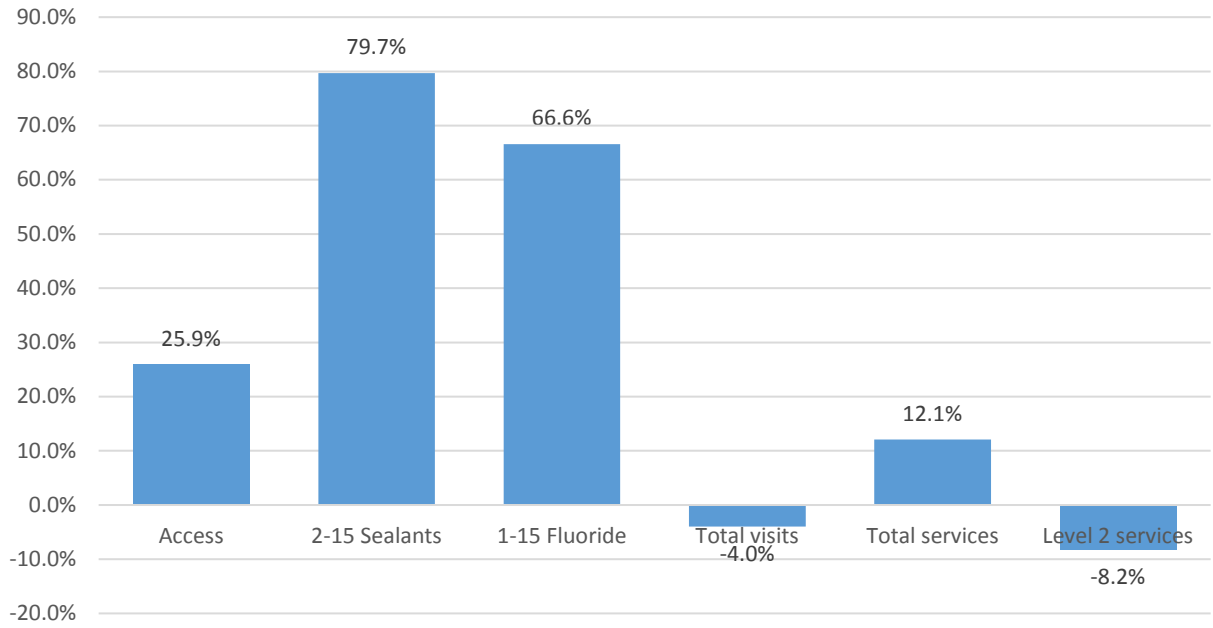
The most difficult goal of the IHS Periodontal Treatment Initiative was to measure the impact or effectiveness of the periodontal expanded function dental assistant model. While the IHS does utilize a National Dental Data Mart to collect and analyze productivity data through a series of 16 different reports, it is impossible at the national level to collect individual productivity data, especially for dental assistants who are not unique providers but rather work under the indirect or general supervision of a supervising dentist. Measuring the impact of the periodontal expanded function dental assistant model was

important in two ways: (1) to help promote training courses and utilization of this model in IHS and tribal programs, especially those programs that had no or limited dental hygiene services; and (2) to help provide data in support of alternative dental workforce models in advance of a proposed Community Health Aide Program (CHAP) expansion throughout IHS in the near future.

In late 2016, the IHS Division of Oral Health contracted with Johns Hopkins University's Bloomberg School of Public health to measure the impact of multiple different alternative dental workforce models, including periodontal expanded function dental assistants, using 10 different productivity and efficiency indicators available through the National Dental Data Mart reports.[xx] The analysis of periodontal EFDAs consisted of only three programs that responded to a national questionnaire – Red Lake, MN; Whiteriver, AZ; and Zuni-Ramah, NM – had other limitations as well including inability to isolate different alternative models, the inability to isolate increases by specific dental procedures in many cases, and the low number of programs studied.

Results of this analysis were promising. Compared to sites that self-identified as using a "traditional" dental workforce model, in FY 2016 sites using periodontal EFDAs had 25.9% more patients accessing dental care, presumably because while the periodontal EFDAs were able to treat basic preventive and periodontal needs, the dentist and/or dental hygienist were able to treat additional patients, although surprisingly there was a decrease of 4.0% in total patient visits compared to traditional model sites. Preventive services greatly increased with sites using periodontal EFDAs, with these sites providing 79.7% more dental sealants in patients 2-15 years of age and 66.6% more topical fluoride applications in patients 1-15 years of age than traditional model sites. Finally, while there was an unexpected decrease of 8.2% in level 2 dental services (the level that encompasses many preventive and periodontal services that a periodontal EFDA would use), there was an overall increase of 12.1% in total dental services for sites employing the periodontal EFDA model compared to traditional model sites. (Figure 3).

Figure 3: % Change, Perio EFDA Model vs. Traditional Model, FY 2016



Summary: The goal of the IHS Periodontal Treatment Initiative was to demonstrate impact of periodontal EFDAs. An initial study showed that this model increases access to dental services by over 25%, increases preventive treatments in children by over 65%, and increases total services by over 10% compared to traditional model sites.

Summary & Future Implications

After three years, the IHS Periodontal Treatment Initiative is coming to an end. All five of the initial goals have been met, although evaluation will need to continue both in both decreases in periodontal disease prevalence and the impact of periodontal expanded function dental assistants. The next oral health survey of AIAN adults will occur in 2020 and we'll be able to better measure the impact of this initiative on provider behavior and subsequent improvements in the delivery of periodontal services. Further study is also needed to evaluate the impact of periodontal expanded function dental assistants, and this is planned as a separate project for FY 2017 and FY 2018 (along with an evaluation of restorative expanded function dental assistants).

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Attachment 1

USE OF THE COMMUNITY PERIODONTAL INDEX OF TREATMENT NEEDS IN INDIAN HEALTH PROGRAMS

POLICY

Initial (0110) and periodic (0120) oral examinations should include an assessment of periodontal status based upon the COMMUNITY PERIODONTAL INDEX OF TREATMENT NEEDS (C.P.I.T.N.). Findings must be documented in the patient record to include a C.P.I.T.N. score for each sextant of the mouth. The definition of sextant is 2nd molar to 1st bicuspid and cuspid to cuspid. The teeth included in each sextant are listed by tooth number in FIGURE ONE.

FIGURE ONE.

UR	UA	UL
2-5	6-11	12-15
31-28	27-22	21-18
LR	LA	LL

FIGURE TWO.

UR	UA	UL
3	8	14
30	24	19
LR	LA	LL

THE EXAMINATION

For adults, age 20 years or older:
All teeth should be examined on adults. Third molars are not included in C.P.I.T.N. assessments unless they function in the place of missing second molars. A sextant must have at least two functioning teeth to be scored. If only one tooth remains in the sextant, the findings for that tooth should be included with the score for the nearest adjacent sextant. The criterion for a functioning tooth is that it is not indicated for extraction.

For children and adolescents, age 7 to 19 years:
False pockets associated with normal tooth eruption frequently yield unreliable C.P.I.T.N. scores. Thus, probing to determine pocket depth is not recommended for patients under 12 years of age and for patients age 12 to 19 years, probing is restricted to the six index teeth listed in FIGURE TWO. If an index tooth is missing, the sextant should be assessed only for gingival bleeding, coronal calculus, and overhangs of restorations. The documentation of periodontal status using the C.P.I.T.N. is not required for patients under 7 years of age.

USE OF A PERIODONTAL PROBE

The use of a graduated periodontal probe is necessary. The recommended instrument is the C.P.I.T.N. probe. The working end of this probe is shown in FIGURE THREE. Two important characteristics of the probe are it's ball-tip and the color-coded segment between the 3.5 and 5.5mm marks. The small spherical tip aids in the detection of calculus from any angle and it reduces the risk of over-measurement in pocket depth, particularly when the base of the pocket is inflamed. The color-coded segment allows direct reading of pocket depth to correspond with C.P.I.T.N. scoring as shown in FIGURE FOUR. Note that pocket depth is measured from the gingival crest and not from the cemento-enamel junction (C.E.J.), even when gingival recession has occurred. Thus, the treatment need (and the C.P.I.T.N. score) is determined by pocket depth rather than by loss of tissue attachment.

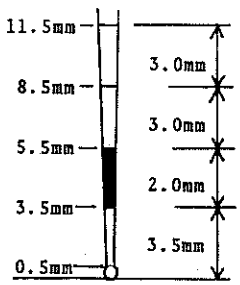


FIGURE THREE.

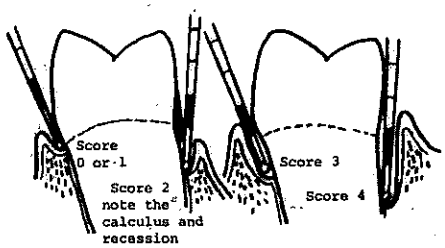


FIGURE FOUR.

Probing should be conducted in the following manner:

- Hold the probe gently, so that it could be removed easily from the examiner's hand by another person.
- Use a hand or finger rest which is distant from the tooth/teeth being examined.
- Use a 45-60 degree angulation of the probe from the long axis of the tooth during insertion into the pocket. Then move the probe parallel to the long axis of the tooth to measure pocket depth.
- Maintain the tip of the probe in contact with the tooth surface during probing.
- Use tactile sense only and avoid "scraping" of the tooth surfaces.
- Detect "solid" resistance from subgingival calculus and "soft" resistance at the base of the pocket.
- When necessary, probe around supra- or subgingival calculus to reach the base of the pocket.
- When gently retracting the probe, the apical ledge of subgingival calculus can be detected with the ball tip of the probe.

Probing should not cause discomfort to the patient. (no more than 25gm pressure should be placed on the tip of the probe). The light probing pressure required should be practiced in front of a mirror using an examiner's own teeth before examinations are conducted on dental patients. Assistance is available from the Indian Health Service in obtaining and learning to use the C.P.I.T.N. probe. Contact the Area Dental Office which serves your local program.

SCORING BY SEXTANT

The C.P.I.T.N. classifies the need for therapy in each sextant into codes using only the "worst" finding (or highest score) observed in the sextant. Thus, only one score is recorded for every sextant examined. The C.P.I.T.N. codes, diagnostic features, and the recommended therapies are given in the following table:

CPITN SCORE	DIAGNOSTIC FEATURES	RECOMMENDED THERAPY
0	Healthy tissues	None
1	Bleeding upon gentle probing	Education to promote effective "self-care"
2	Presence of calculus or overhangs and no pockets deeper than 3mm	Education + prophylaxis
3	At least one pocket which is 4-5mm deep	Education + prophylaxis + root scaling/planing
4	At least one pocket of 6mm or deeper	Education + prophylaxis + deep scaling + surgery(prn)
X	Less than two teeth are functioning in the sextant	Excluded from separate needs assessment

A general rule for scoring is: if doubt exists, assign the lesser score. When heavy extrinsic staining is present in the absence of calculus or pockets, the sextant may be scored as 2 if professional services are needed to remove the stains.

The use of the C.P.I.T.N. does not replace the need for a thorough charting of pockets when periodontal therapy is planned for patients who have one or more sextants with pathologic pockets (4mm or greater). Examiners should also bear in mind that some sextants which are scored as a 3 or 4 upon an initial examination may be found to have a C.P.I.T.N. score of 0 or 1 after prophylaxis/deep scaling are completed.

USES OF THE C.P.I.T.N. DATA

The recording of C.P.I.T.N. scores on a periodic basis provides a general guide for treatment planning and for the evaluation of therapy. The scores can be used to make dental patients aware of disease and the effectiveness of their "self-care" practices. The data also can be aggregated among patients to estimate the type and amount of resources required to support periodontal therapy as well as to monitor general trends in the periodontal health of a given population.

IHS RELEASE DATE: AUGUST,1986.

Attachment 2

Community Periodontal Index (CPI) Guide for IHS, Tribal, and Urban Dental Programs

History

The Community Periodontal Index (CPI, formerly called the Community Periodontal Index of Treatment Needs or CPITN) was created in 1978 by the World Health Organization (WHO) to provide a global standard for screening periodontal disease in populations. In 1992, the Periodontal Screening and Recording (PSR) index was created by the American Dental Association in collaboration with the American Academy of Periodontology. However, these two indices are essentially the same and form the cornerstone of periodontal screening prior to diagnosis and treatment.

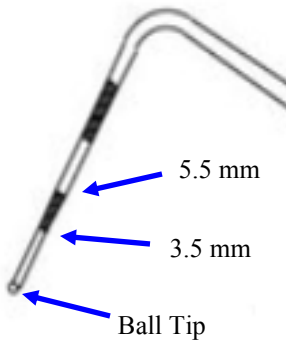
What is meant by an index?

An index is a screening only. It does not replace the need for a comprehensive periodontal examination when indicated. A periodontal examination should be completed on any patient where periodontal therapy such as scaling and root planning (SRP) is planned.

What kind of probe should I use?

The CPI probe has a ball tip and a color coded segment between 3.5mm and 5.5mm. The small spherical tip aids in the detection of calculus and limits penetration through the epithelium at the bottom of the sulcus. As described on the next page, **if the first black band is partially visible, the sextant is scored a "3," and if the first black band is not visible, the sextant is scored a "4."**

CPI Probe



3-6-9-12 Probe

If a CPI probe is not used, then any probe may be used, realizing that you will need to estimate probing depths of 3.5 and 5.5 mm.. For example, **with the 3-6-9-12 probe if the first black band is partially visible but more than 1/2 mm into the sulcus, the sextant is scored a "3," and if the first black band is not visible or is only barely visible (just a 1/2 mm), the sextant is scored a "4."** The diagrams on the next page are for the CPI probe, but are very similar to the 3-6-9-12 probe.

What are the IHS standards regarding the CPI?

- All patients over the age of 15 with teeth should receive a CPI as part of their dental examination; and
- For patients who have at least two (2) sextants with a CPI score of 3 or at least one (1) sextant with a CPI score of 4, a full periodontal examination is recommended.

Overall Health begins with Periodontal Health!

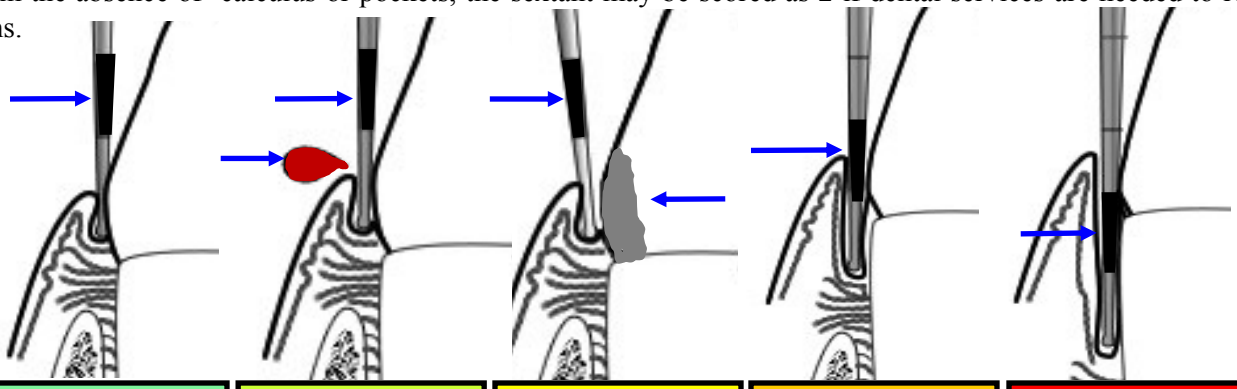
IHS Division of Oral Health, 2015

How do I score using the CPI?

Using a graduated probe the CPI classifies the sextant using only the "worst" finding (or highest score) observed in the sextant. Thus, only one score is recorded for every sextant examined. Each sextant of the mouth is given an index score. The sextants are 2nd molar to 1st bicuspid and cuspid to cuspid. Pocket depth is measured from the gingival crest and not the cemento-enamel junction, even when gingival recession has occurred. Using light probing pressure, walk (bob) the tip of the probe around the tooth and into the sulcus until it meets resistance at the base of the pocket. When probing the interproximal surfaces of the tooth, slant the probe slightly allowing the tip to reach under the contact while in the sulcus. A sextant must have at least 2 teeth to be scored. If only one tooth remains in the sextant, the findings for that tooth should be included with the score for the nearest adjacent sextant.

2-5	6-11	12-15
31-28	27-22	21-18

For sextants with less than two teeth, use code "X" for that sextant; otherwise, code as indicated below. A general rule for scoring is: <u>if doubt exists, assign the lesser score.</u> When heavy extrinsic stain is present in the absence of calculus or pockets, the sextant may be scored as 2 if dental services are needed to remove the stains.



Code 0	Code 1	Code 2	Code 3	Code 4
No pockets ≥3.5mm (black band **fully visible**)	No pockets ≥3.5mm Bleeding on probing (black band **fully visible**)	No pockets ≥3.5mm Calculus present (black band **fully visible**)	Pocket ≥3.5mm but < 5.5 mm (black band **partially visible**)	Pocket ≥5.5mm (black band **not visible**)

A limitation of the Community Periodontal Index is that a score of 3 or 4 denotes probing depth present, but gives no information on the presence or absence of bleeding on probing or calculus. Thus, someone on recall with 4mm or 5mm probe depths in all sextants would still be scored with 3's though no calculus or bleeding may be present. Also, the index does not assess bone levels and recession, so a patient with a history of severe periodontitis and advanced recession could have all sextants with scores of 0, 1, and 2's. Examiners should also bear in mind that some sextants which are scored as a 3 or 4 upon initial examination may be found to have a CPI score of 0 or 1 after prophylaxis/deep scaling is completed.

What's next after the CPI?

Full perio evaluation, if possible

None	Oral Hygiene Instructions	Oral Hygiene Instructions + Prophylaxis	OHI + Scaling & Root Planing	OHI + SRP Surgery prn

Attachment 3

Indian Health Service Periodontal Treatment Guide ¤

Dental Examination/Screening
(Include CPI on all patients ≥ 15)

CPI = 0

Recall patient based on caries risk ¥*

CPI = 1

Recall patient based on caries risk or annually ¥

CPI = 2

Scaling with ultrasonic/ sonic and/or hand instruments

Recall patient depending on perio and caries risk ¥

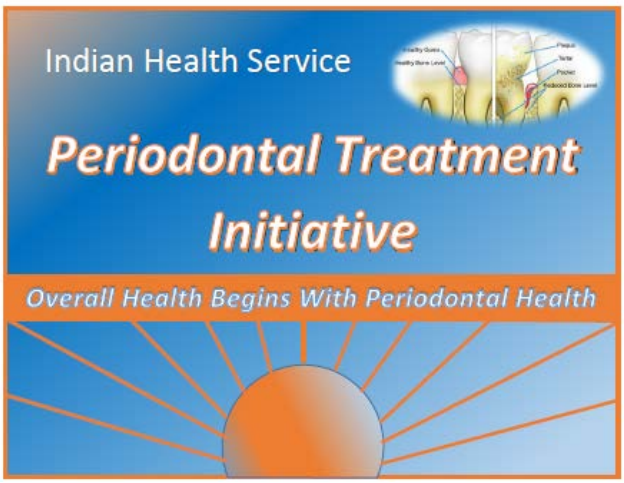
CPI = 3

CPI = 4

Scaling & Root Planing (SRP)
Extract hopeless teeth
Recommend antimicrobials

Initial recall/re-probing at 6-12 weeks
(or longer if poor healing, diabetic)

Antimicrobials for unresolved pockets?
Periodontal surgery?
Recommend/document need to see a periodontist?
Recall 3-6 months as needed



Attachment 4

IHS Periodontal Treatment Initiative
EFDA Fact Sheet

History and Need of Expanded Function Dental Assistants

Traditionally, periodontal services have been provided by a licensed dentist and/or a licensed or registered dental hygienist. However, the Indian Health Service was one of the first governmental agencies or organizations that adopted the model of expanded function dental assistants (EFDAs). Starting in 1961, the IHS initially used EFDAs in providing basic restorative services to augment the services provided by dentists, and over the past several decades, EFDAs have increasingly been used to provide basic periodontal services to American Indian/Alaska Native (AI/AN) patients to augment the care provided by dentists and dental hygienists.

Access to oral health care is not evenly distributed in the United States or in Indian Country. While urban areas and larger IHS or tribal dental programs often employ one or more dental hygienists to provide preventive care and periodontal therapy to AI/ANs, many smaller programs located in more isolated areas do not have that luxury. While the IHS does employ over 400 dental hygienists as of 2015, more than two thirds of these hygienists are located in the largest (in terms of AI/AN population served) IHS-funded dental clinics. The last oral health status survey (2014) showed that 17% of AI/AN adults over the age of 35 suffer from severe periodontal disease (with pockets $\geq$ 5.5 mm) compared to a prevalence of just 10% for the U.S. overall, and an evaluation of data from the National Health and Nutrition Examination Survey (NHANES) in 2014 showed that prevalence of periodontal disease may even be higher, especially among those older than 35, minority populations, those at or below the federal poverty level, those with less formal education, and current smokers. With a low access to dental care in the IHS (around 25%), not enough dental hygienists in underserved areas, and many patients with some of the social and economic contributing factors leading to periodontal disease, **expanded function dental assistants ("Perio EFDAs") are a great option to help meet the periodontal needs of AI/ANs.**

"Perio EFDAs" undergo an intensive hands-on curriculum through formal IHS continuing dental education to provide basic periodontal therapy to AI/AN patients. This fact sheet will detail that curriculum and provide IHS, tribal, and urban dental programs with information on how your program, too, can benefit from trained Perio EFDAs providing quality periodontal care for your patients.

Overall Health begins with Periodontal Health!

EFDA Fact Sheet—continued

Perio EFDA Training

Periodontal Expanded Functions—Basic

Most dental assistants who are Perio EFDAs have been trained to provide basic periodontal services. The IHS offers a one-week basic course to develop or improve skills in ultrasonic scaling. Learning objectives for this course include:

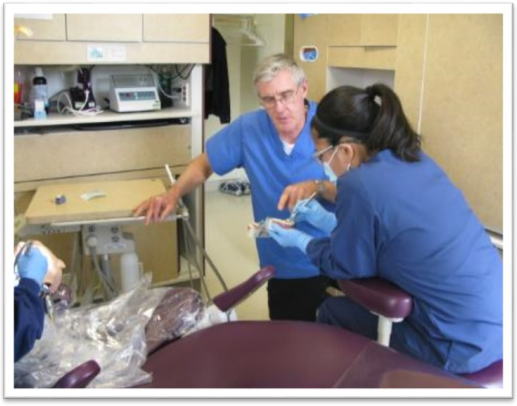
1. Relate Community Periodontal Index (CPI) scores to a need for periodontal treatment.
2. Detect disease, supra- and sub-gingival calculus.
3. Accurately code for periodontal and hygiene procedures with IHS/ADA coding.
4. Remove visible calculus through ultrasonic scaling of teeth.
5. Recommend effective toothpastes, mouthrinses and oral hygiene aids to patients.
6. Motivate patients to improve plaque removal and periodontal health.
7. Identify those at risk for periodontal breakdown.

This course, which includes online, didactic and clinical components, includes a lab with ultrasonic instrumentation on a typodont with simulated calculus. Those enrolled will also clean each other's teeth for a ½ day before seeing patients for at least 1 ½ days. Following the training, students must satisfactorily complete 20 patient cleanings at their home dental clinic within 6 months after course completion, evaluated by a preceptor, before receiving a course completion certificate by the IHS Division of Oral Health.

Periodontal Expanded Functions—Advanced

The advanced course is also a one-week course offered by the IHS for EFDAs who have previously taken the basic course. In addition to the learning objectives from the basic course, students also learn the following in this course:

1. Use universal scalers efficiently and atraumatically.
2. Sharpen scalers correctly and efficiently.



Like the basic course, students must complete 20 patient cleanings at their home dental clinic, documented through training progress records evaluated by a preceptor, before receiving a course completion certificate by the IHS Division of Oral Health.

Starting in FY 2016, new courses will be provided for interested dental assistants in multiple areas of the IHS. **Please check the IHS DOH CDE site for offerings.**

Overall Health begins with Periodontal Health!

EFDA Fact Sheet—continued

How can Perio EFDAs be utilized in our programs?

How are Perio EFDAs being used now?

Many IHS, Tribal, and Urban dental programs across the country currently utilize Perio EFDAs. In a recent survey of chief dentists and program managers, 98.5% of trained Perio EFDAs are being used routinely in that capacity.

How can a Perio EFDA be used in your facility?

Even in programs with dental hygienists, Perio EFDAs can serve a vital role. While dental hygienists can focus on treating the patients with periodontal disease, the Perio EFDAs can provide services such as routine preventive prophlaxis cleanings, periodontal maintenance (working with the hygienist), oral hygiene instructions, and other preventive services (fluoride applications, sealants, dietary counseling, etc.). By using the EFDA in this way, it maximizes efficiency for both the assistant and the dental hygienist.

For programs without a dental hygienist, or with too few dental hygienists, the EFDA can provide basic scaling using ultrasonic and sonic scalers, or, if they have completed the advanced course and have demonstrated competency, they can remove visible calculus through hand scaling. By using the Perio EFDA in this way, it ensures that patients are receiving at least basic periodontal services in your facility. Perio EFDAs work under the supervision of a dentist or hygienist, and the dentist or hygienist provides a "check in" and "check out" on each patient treated by a Perio EFDA.

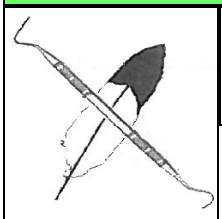
How much could a Perio EFDA save our clinic?

If your program is unable to hire a dental hygienist due to costs, the annual salary of a federal GS-5 Civil Service or equivalent tribal hire EFDA is approximately only 40-50% that of a dental hygienist. In addition, considering the costs of referring patients out of your program to specialists for basic periodontal care, the costs of an EFDA to take care of the basic periodontal needs of your patients is minimal.

Perio EFDAs are a cost effective resource that will help your dental program provide quality basic periodontal services to the AI/AN population you serve.

Overall Health begins with Periodontal Health!

Attachment 5



The IHS Dental Explorer

A publication of the IHS Division of Oral Health

May 2015

Division of Oral Health announces new Perio Initiative

The IHS Division of Oral Health announces the creation of a new national initiative, the ***IHS Periodontal Treatment Initiative***. With the continuation of the IHS Early Childhood Caries (ECC) Collaborative for another two years, the new perio initiative is the second nationwide clinical initiative for IHS, tribal, and urban dental programs.

Name: **The IHS Periodontal Treatment Initiative**

Overall Goal: Increase focus on the diagnosis and treatment of periodontal diseases in IHS, tribal, and urban dental programs.

Theme: ***Overall Health begins with Periodontal Health***

Program Components:

- Screening Guide: CPI Guide (see pages 2-3) designed to remind providers of how to use the Community Periodontal Index (CPI) to screen patients for periodontal disease.
- Treatment Guide: Periodontal Treatment Flow Sheet (to be developed later) will serve as a guide for clinicians in treating many patients with periodontal disease.
- Overview of Detection, Diagnosis and Treatment Planning—Power Point presentation providing a broad overview and a common sense, public health approach to managing periodontal disease.
- Oral-Systemic Link—another Power Point presentation for all dental staff showing the links between oral conditions such as periodontal disease and systemic health problems [supports the initiative theme of "Overall Health begins with Periodontal Health"].
- Periodontal Patient Management Overview—a more detailed Power Point presentation for providers in managing periodontal disease patients.

Resources: Information on the IHS Periodontal Disease Initiative is provided in this newsletter, but more details, including the screening guide, treatment protocol, and presentations are available online on the IHS Dental Portal at www.ihs.gov/doh/hpdp (click on the periodontal disease tab under the "resources" section).

Periodontal disease is a major cause of tooth loss in adults and has an effect on nutrition and overall health. According to 2010 data from the National Health and Nutrition Examination Survey, almost half of adults over the age of 30 have periodontal disease, and the prevalence may even be higher in American Indians and Alaska Natives. This initiative is important and timely in helping address this disease, and I hope that you will embrace the new IHS DOH initiative.

Timothy L. Lozon, DDS
Director, IHS Division of Oral Health

Overall Health begins with Periodontal Health!

Use of the Community Periodontal Index (CPI) in IHS, Tribal, and Urban Dental Programs

History

The Community Periodontal Index (CPI, formerly called the Community Periodontal Index of Treatment Needs or CPITN) was created in 1978 by the World Health Organization (WHO) to provide a global standard for screening periodontal disease in populations. In 1992, the Periodontal Screening and Recording (PSR) index was created by the American Dental Association in collaboration with the American Academy of Periodontology. However, these two indices are essentially the same and form the cornerstone of periodontal screening prior to diagnosis and treatment.

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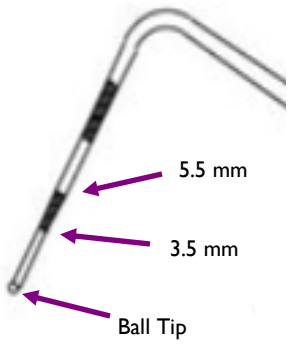
What kind of probe should I use?

The CPI probe has a ball tip and a color coded segment between 3.5mm and 5.5mm. The small spherical tip aids in the detection of calculus and limits penetration through the epithelium at the bottom of the sulcus. As described on the next page, **if the first black band is partially visible, the sextant is scored a "3," and if the first black band is not visible, the sextant is scored a "4."**

CPI Probe



3-6-9-12 Probe

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What are the IHS standards regarding the CPI?

- All patients over the age of 15 with teeth should receive a CPI as part of their dental examination; and
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Overall Health begins with Periodontal Health!

Overall Health begins with Periodontal Health!

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Using a graduated probe the CPI classifies the sextant using only the "worst" finding (or highest score) observed in the sextant. Thus, only one score is recorded for every sextant examined. Each sextant of the mouth is given an index score. The sextants are 2nd molar to 1st bicuspid and cuspid to cuspid. Pocket depth is measured from the gingival crest and not the cemento-enamel junction, even when gingival recession has occurred.

2-5	6-11	12-15
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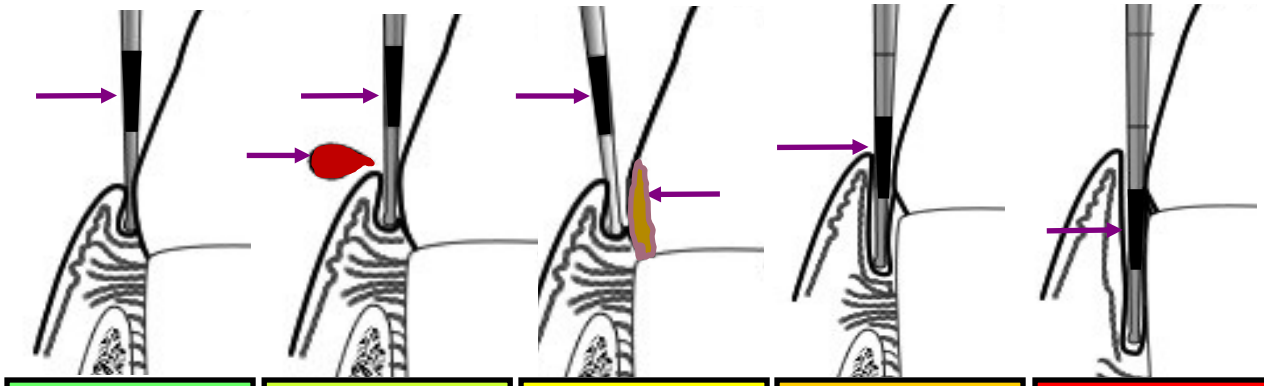
A sextant must have at least 2 teeth to be scored. If only one tooth remains in the sextant, the findings for that tooth should be included with the score for the nearest adjacent sextant. For sextants with less than two teeth, use code "X" for that sextant; otherwise, code as indicated below. A general rule for scoring is: if doubt exists, assign the lesser score. When heavy extrinsic stain is present in the absence of calculus or pockets, the sextant may be scored as 2 if dental services are needed to remove the stains.



Code 0	Code 1	Code 2	Code 3	Code 4
No pockets ≥ 3.5mm (black band **fully visible**)	No pockets ≥ 3.5mm Bleeding on probing (black band **fully visible**)	No pockets ≥ 3.5mm Calculus present (black band **fully visible**)	Pocket ≥ 3.5mm but < 5.5 mm (black band **partially visible**)	Pocket ≥ 5.5mm (black band **not visible**)

A limitation of the Community Periodontal Index is that a score of 3 or 4 denotes probing depth present, but gives no information on the presence or absence of bleeding on probing or calculus. Thus, someone on recall with 4mm or 5mm probe depths in all sextants would still be scored with 3's though no calculus or bleeding may be present. Also, the index does not assess bone levels and recession, so a patient with a history of severe periodontitis and advanced recession could have all sextants with scores of 0, 1, and 2's. Examiners should also bear in mind that some sextants which are scored as a 3 or 4 upon initial examination may be found to have a CPI score of 0 or 1 after prophylaxis/deep scaling is completed.

What's next after the CPI?

Full perio evaluation, if possible

None	Oral Hygiene Instructions	Oral Hygiene Instructions + Prophylaxis	OHI + Scaling & Root Planing	OHI + SRP Surgery prn

Overall Health begins with Periodontal Health!

Impact of diabetes on periodontal status

Diabetes is a significant risk factor for periodontal disease. The age of onset of type 2 diabetes often occurs in the third and fourth decades of life. Therefore, diabetes becomes an important oral health issue during adult life. The presence of periodontal disease, like other infections, can contribute to higher blood sugar levels and poorer blood sugar control in patients with diabetes. The risk of periodontal disease also increases with both the severity (poor blood sugar control) and the length of time or duration since the diagnosis of diabetes. [1999 IHS Oral Health Survey]

Epidemiologic studies in Pima Indians (Shlossman et al) reveal some startling statistics: (1) patients with diabetes had three times greater attachment loss than patients without diabetes; (2) destructive periodontitis occurred much earlier in life in patients with diabetes; (3) patients with poorly controlled diabetes have 11 times the risk of those with controlled diabetes in progressive bone loss; and finally (4) patients with diabetes were 15 times more likely to lose all of their teeth compared to those without diabetes.

The success of periodontal therapy is higher in those patients with well-controlled diabetes, making diabetes management an important aspect of periodontal disease management.

Diabetes Facts

(from IHS Division of Diabetes Treatment and Prevention)

2.3 times higher	Likelihood of American Indian and Alaska Native adults to have diagnosed diabetes compared with non-Hispanic whites (16.1% vs. 7.1%; 2009)
9 times higher	Likelihood of American Indian and Alaska Native youth aged 10-19 to have diagnosed type 2 diabetes compared to non-Hispanic whites (1.74 per 1000 vs. 0.19 per 1000; 2001)
110%	Percent increase in diagnosed diabetes from 1990 to 2009 in American Indian and Alaska Native youth aged 15-19 years (3.24 vs. 6.81 per 1000)
1.6 times higher	Death rate due to diabetes for American Indians and Alaska Natives compared with the general U.S. population (34.5 vs. 21.8 per 100,000; 2008)

Overall Health begins with Periodontal Health!

Impact of tobacco use on periodontal status

Tobacco use, especially cigarette smoking, is another known risk factor for periodontal disease. As with diabetes, periodontal disease risk increases with the length of time and the amount an individual has smoked or used smokeless tobacco. [1999 IHS Oral Health Survey]

But tobacco use isn't just a risk factor for *developing* periodontal disease; it is also an independent risk factor for the extent and *severity* of periodontal disease and, more importantly, for the *success of periodontal disease treatment* [Borojevic, Smoking and Periodontal Disease].

Smoking Facts

(from the NW Portland Area Indian Health Board)

33% of adult American Indians and Alaska Natives are smokers—this is the highest rate of commercial tobacco use among every age, ethnic, and gender category in the U.S.
Cardiovascular disease is the leading cause of death among American Indians. Lung cancer is the leading cause of cancer death among American Indians. Tobacco use is a major risk factor for both diseases.
The prevalence of smokeless tobacco use is higher among American Indians and Alaska Natives than any other ethnic group in the U.S.
Current smoking among high school students at BIA high schools is 56%, more than double the smoking prevalence rate among all U.S. high school students.

Smoking especially weakens the immune response to disease, but its effect on periodontal disease and therapy is much more complex than that. The Centers for Disease Control summarizes the effects of smoking as follows: (1) the risk of developing periodontal disease for smokers is twice that of nonsmokers; (2) there is a dose-response relationship, meaning that the more cigarettes a patient smokes, the greater their risk for developing periodontal disease; (3) the longer a patient smokes, the greater the risk of developing periodontal disease; (4) periodontal therapy is not as effective for smokers; and (5) tobacco use in any form—cigarettes, pipes, and smokeless (spit) tobacco—raises a patient's risk of developing periodontal disease.

Consequently, just like diabetes, it is important for dental providers to address smoking/tobacco use with their patient before, during, and after periodontal therapy. For more information on these topics and more related to periodontal disease, visit our website at www.ihs.gov/doh/—click on the "Perio Initiative" tab after logging in to the Portal.

Special Patient Handout—Print or tear out this page and place it in your waiting room, in medical exam rooms, or hand it to patients.

Take the Gum Disease Quiz!

- Do your gums bleed, especially when you brush or floss your teeth?
- Are any of your teeth loose?
- Do you have bad breath, or been told you have bad breath?
- Do you have a bad taste in your mouth that won't go away?
- Do you have pain or discomfort when chewing?
- Do you smoke?
- Do you have diabetes?
- Do your gums look like any of the following pictures?

If you answered yes to ANY of these questions, you could have gum disease. Please call your dentist or clinic to schedule an appointment today!

Overall Health begins with Periodontal Health!