Lunch & Learn
Implementing the Use of Silver Diamine Fluoride
April 25, 2018

DentaQuest INSTITUTE
Welcome!

During this webinar we will hear from a SNS expert advisor who has experience implementing the use of Silver Diamine Fluoride (SDF) in his health center.

Session Objectives:
By the end of this webinar participants will be able to:
1. Define the current problem and the need for change
2. Describe research process for solutions
3. Understand the development of Silver Diamine Fluoride acceptance in WA
4. Identify steps to initiate a transformation of care in your program
5. Describe why SDF can help bridge the current reimbursement and managed care
Q&A Logistics

• After the presentation we’ll have some time for Q&A

• Two options:
  • Use the raise hand feature and we will unmute you
  • Type your question in the chat box
Additional Housekeeping

- All lines will remain muted to avoid background noise
- A copy of the slides & a link to the recording will be shared after the webinar concludes
- In order to receive CE credit you must fill out the post-webinar evaluation, which will be shared at the end of the presentation

The DentaQuest Institute is an ADA CERP Recognized Provider. This presentation has been planned and implemented in accordance with the standards of the ADA CERP.

*Full disclosures available upon request*
More about our presenter

Dr. Mark Koday, Chief Dental Officer, Yakima Valley Farmworkers Clinic

Dr. Mark Koday graduated from the Indiana University School of Dentistry in 1978 and was a commissioned officer with the US Public Health Service from 1978 to 2000. He completed an advanced clinical dentistry residency at the Naval Dental School in Bethesda, MD in 1986 and has been the Chief Dental Officer of the Yakima Valley Farm Workers Clinic (YVFWC) since then. The YVFWC dental program consists of ten dental clinics with over 90 dental operatories. Dr. Koday served as a commission member of the Washington State Dental Quality Assurance Commission (Washington State’s dental board) from 2001 to 2011. Dr. Koday developed and serves as the director of the Northwest Dental Residency which trains AEGD residents in community health centers across Washington. He is a Fellow of the Pierre Fauchard Academy and the International College of Dentists. Dr. Koday also serves on the University Of Washington School Of Dentistry - Professionalism and Ethics Ad Hoc Task Force. In addition, Dr. Koday is the founder and manager of Dental Quality Consulting of Washington LLC.
Implementing the Use of Silver Diamine Fluoride

Mark Koday DDS
Yakima Valley Farm Workers Clinic

Our mission is to improve the oral health of all.

April 25, 2018
Webinar Objectives

• Define the current problem and the need for change
• Describe our research process for solutions
• Describe the development of Silver Diamine Fluoride (SDF) acceptance in WA
• Show how to initiate transformation of care in your program
• Describe why SDF can help bridge the current reimbursement to managed care
The Problem: Yakima County, WA
Local Oral Health Research

• Hispanic children suffered from decay rates 2-3 times higher than the national average. [Dental caries rates Among Children of Migrant Workers in Yakima](https://doi.org/10.1002/phre.4780100507), M. Koday, D. Rosenstien, G Lopez. Public Health Reports, Sept-Oct. 1990, Vol. 105 No. 5, pp. 530-533

• 29% of the Hispanic 2 year olds in Yakima County had BBTD. [Mexican American Parents With Children At Risk For BBTD: A Pilot Study At A Migrant Farm Workers Clinic](https://doi.org/10.1016/S0786-1790(92)80010-4), Wienstien, Domoto, Leroux, Koday et al. Journal of Dentistry for Children, Sept./Oct. 1992, pp. 376-383

• Yakima Valley was the site of the first published research on fluoride varnish in the United States.
Yakima County 1986

- YVFWC: 2 dental clinics; 6 Dental operatories; 3 dentists
- Neighborhood Health Clinic: One clinic; 3 operatories; one dentist
- IHS clinic: One Clinic; 5 operatories; 3 dentists
- Private practice: one pediatric dentist; about 3 clinics seeing a large # of children
Yakima County 2016

- YVFWC: 7 clinics (including three pediatric dental clinics); 56 dental chairs; 2 residency programs; 8 general dentists; 4 pediatric dentists; 6 pediatric dental residents; 4 general dental residents
- YNHC: 2 clinics; 12 dental chairs; 6 dentists
- IHS clinic: 12 chairs; 3 dentists
- Expanded Private practice access- 4 Pediatric dentists; ABCD program
Medicaid Eligible Children Dental Access

Child Enrollees with at Least One Dental Service, by County, FY 2014
We Won!!!!!!

Or did we?
In Yakima CO- 240% Dental Medicaid Spending Increase in only 4 years (Ages 5 and under)

<table>
<thead>
<tr>
<th></th>
<th>ANNUAL PAYMENTS</th>
<th></th>
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<th>Increase in 4 years</th>
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<tr>
<td></td>
<td>FY 2008</td>
<td>FY 2009</td>
<td>FY 2010</td>
<td>FY 2011</td>
<td></td>
</tr>
<tr>
<td>Yakima Co</td>
<td>$3,920,613</td>
<td>$6,093,071</td>
<td>$7,086,366</td>
<td>$9,161,124</td>
<td>2.4</td>
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<tr>
<td>WA State TOTAL</td>
<td>$37,256,414</td>
<td>$47,099,141</td>
<td>$55,918,881</td>
<td>$71,350,036</td>
<td>1.9</td>
</tr>
</tbody>
</table>

WA State Health Care Authority- Dental Data
Are These Expenditures Sustainable?
Have We Improved Health?
### Smile Survey Data

<table>
<thead>
<tr>
<th>Yakima Co Smile Survey Data</th>
<th>1996</th>
<th>2010</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicaid access: Children</td>
<td>29.9%</td>
<td>67%</td>
<td>68%</td>
</tr>
<tr>
<td>Untreated Caries: 3-5 year olds</td>
<td>27%</td>
<td>13%</td>
<td>8%</td>
</tr>
<tr>
<td>Caries experience: 3-5 Year olds</td>
<td></td>
<td>40.3%</td>
<td>49%</td>
</tr>
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</table>
Why Propose Something Different?

• The current system has failed the populations we serve
• We need to find better ways to access high risk populations
• The current system’s dental spending is unsustainable
• There will be no new money coming into the system
• State and federal funding for dental is changing
WE CANNOT SOLVE OUR PROBLEMS WITH THE SAME THINKING WE USED WHEN WE CREATED THEM

-Albert Einstein
Access To Care is absolutely critical but our focus on Access alone will only continue a policy that has failed the populations we serve
Silver Diamine Fluoride - A Game Changer

• Journal of the California Dental Association Feb 2018- Dr. Frank Mendoza  Warm Springs model

• Centers for Disease Control and Prevention- Minimal Exposure Risk level: SDF Silver exposure when SDF is used topically

• FDA “Breakthrough Therapy Designation” Oct 2016

• Not a Silver Bullet
SDF Effectiveness in Arresting Decay

- Studies indicate 65% to 93% caries arrest rates after 2-3 year application period
- A 2016 systematic review and meta-analysis of clinical trials in children concluded 38% SDF applied at least once per year effectively arrested more than 65% of active caries. *
- Single application lost effect over time in the elderly. Twice per year application resulted in more arrest than once per year. **
- Secondary preventative effect- When silver diamine fluoride was applied only to carious lesions, impressive prevention was seen for other tooth surfaces. **

SDF Indications

- Treating caries in people who are unable to access dental treatment or tolerate conventional dental care
- Very young children
- Uncooperative children
- Persons with intellectual/developmental disabilities
- Older adults - root caries
- Nursing home patients
State Issues To Consider

• State dental practice act laws
  • Who is allowed to apply SDF
  • Under what supervision

• Reimbursement issues
  • Will your state Medicaid program pay for it?
  • How much and at one frequency

• Be proactive!!
Rallying the Troops For a Paradigm Change

- Don’t expect everyone to jump on board
- “Drill and fill” is an entrenched paradigm that will be difficult for dentist to let go of
- Educate staff: research, access and prevention issues
- They will fear of what the dental professionals or state boards will think
- Uncertainty of patient acceptance
- In summary - Discuss all issues with your dentists and get them answers
Questions that Arise

• Concerns of anterior discoloration and patient acceptance
• Hygienists in medical - loss of control
• Concerns of questions from our peers, state dental board etc.
• Interproximal lesions
• Failure of treatment
Getting Started

• Add SDF to your supply inventory
• Develop application and consent policies and procedures
• Set up D1354 code in your EDR
• Instruct your dentists and hygienists (where applicable) to try it out
• Ask for feedback on how they and their patients liked it
• Begin the process for full implementation
Consent

- Must have written consent
- Pictures
- Contraindications: silver allergy (rare)
- Side effects: Blackened decay; discolored decalcification!!!
- Need to know it may not work
- Follow-up needed
- Possible effects:
  - Staining of skin
  - Discoloration of other teeth (undetected decay)
- Alternatives: No tx; Fluoride varnish, restorations; GA etc.; discussion of behavioral issues effect on tx options
Silver Diamine Fluoride (SDF) has been shown to stop or slow down (arrest) cavities in primary and permanent teeth. The purpose of arresting caries is to halt or slow down cavity progression in order to minimize discomfort and potential nerve damage. Recently, Silver Diamine Fluoride (SDF) has been used in the medical management of cavities with great success. SDF is a colorless solution that is applied on a tooth surface(s) with a tiny applicator or brush.

SDF therapy is painless, simple, and is an alternative preventive treatment to conventional invasive cavity management, especially among patients who are too young for conventional dental care or those with special needs, or those with difficulty accessing conventional dental care.

Given this information and with the patient's best interest in mind, Yakima Valley Farmworkers Clinic would like consent to perform the following procedure:
1. Dry Teeth
2. Apply Silver Diamine Fluoride 38% to appropriate teeth with visible cavities in very small amounts using a micro brush. Each treatment will typically consist of 5-6 teeth.

Contraindications:
- Silver Allergy (very rare)

Side Effects:
- A cavity will likely turn black once Silver Diamine Fluoride (SDF) has been applied, thus turning part of the tooth black. This is an indication that the infection in the tooth (cavity) is dying (will not stain healthy teeth).

Possible Side Effects:
- If Silver Diamine Fluoride (SDF) comes into contact with skin and or gums, temporary discoloration will occur, lasting 2-3 days.
- If Silver Diamine Fluoride (SDF) is placed on a tooth that has a tooth colored filling, discoloration may occur.
- Silver Diamine Fluoride (SDF) placed on teeth with demineralized enamel (white spot lesions) will cause discoloration (black/brown).

If you notice other effects not listed above, contact your dentist or doctor. This caries arrest/cavity treatment does not prevent the need for regular fillings or crowns in the future.

Alternatives to Silver Diamine Fluoride:
- No treatment, which may lead to continuation of the decay process and destruction of the tooth and its appearance.
- Depending on the size of the decay and where it is, other treatment may include placing fluoride varnish, a filling, a crown, an extraction, or the need for other advanced care.
- Depending on the child's age, ability to cooperate, and medical condition other dental treatments may or may not be possible.
Marketing SDF

• Move away from general anesthesia as a first choice treatment
• Marketing health vs ultimate aesthetics
• New mantra: “No shots/no drill’
SDF and Glass Ionomers

• For anterior esthetics, SDF could be followed by glass ionomer prior to restorative treatment further reducing risk of caries re-occurrence. *

• Using a contemporary bonding system, silver diamine fluoride had no effect on composite bonding to noncarious dentin using either self-etch or full-etch systems **

• Silver diamine fluoride decreased dentin bonding strength of resin-based crown cement by approximately one-third. ***


Churning Potential

- Document, Document, Document
- Risk assessment
- Caries classification
- Recall plan

WARNING
CHURNING
Harmful Your To
CHC’s Health
YVFWC Transformation Plan
A Path to Care Transformation

• **Component One:**
  • RDH/Community Dental Health Coordinator in medical
  • Case management/prevention outside the clinic walls

• **Component Two:**
  • Utilization of new prevention/Caries arresting procedures i.e. Silver Diamine Fluoride
  • Reevaluating “drill and fill’ as the first choice for care

• **Medical/Dental integration**

• **Prepares for new reimbursement systems that are now in play**
Embed RDH/CDHC In the Primary Care Medical Team:

Qualis Health- Oral health: An Essential Component of Primary Care
Case Management: Community Dental Health Coordinator (CDHC)

The CDHC’s focus is on reducing the oral health disparities by targeting social determinants of oral disease and improving access to dental care

PRIMARY PREVENTION
CDHC Training

• Work in clinics, schools, private practices, and public health settings in accordance with state laws and regulations
• Collect information to assist dentists in triaging patients
• Address social, environmental, and health literacy issues
• Provide dental health education and help people develop goals to enhance their oral health
• Coordinate care in accordance with a dentist’s instructions
• Help patients navigate the complexities of the health care system
• Provide limited clinical services, including:
  – Screenings
  – Fluoride treatments
  – Placement of sealants
  – X-rays
The CDHC curriculum
Hygienists Embedded in the Primary Care Medical Team

- **Case management:** Community Dental Health Coordinated training; referrals to dental by risk
- **Primary prevention:** Oral Assessment, disease risk assessment; oral health education; fluoride varnish application
- **Secondary prevention:** SDF application; glass ionomers (Oregon)
A New Way of Viewing Caries

### American Dental Association Caries Classification System

<table>
<thead>
<tr>
<th>Clinical Presentation</th>
<th>Sound</th>
<th>Initial</th>
<th>Moderate</th>
<th>Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No clinically detectable lesion</td>
<td>Easiest clinically detectable lesion compatible with mild demineralization. Lesion limited to enamel or to superficial demineralization of cementum/dentin. Most forms are detectable only after drying. When established and active, lesions may be white or brown and enamel has lost its normal luster.</td>
<td>Visible signs of enamel breakdown or the dentin is moderately demineralized.</td>
<td>Enamel is fully calcified and dentin is exposed. Dentin lesion is deeply/ severely demineralized.</td>
</tr>
<tr>
<td>Infected Dentin</td>
<td>None</td>
<td>Unlikely</td>
<td>Possible</td>
<td>Present</td>
</tr>
</tbody>
</table>

### Appearance of Occlusal Surfaces (Pit and Fissure)

- ICDAS 0
- ICDAS 1
- ICDAS 2
- ICDAS 3
- ICDAS 4
- ICDAS 5
- ICDAS 6

### Accessible Smooth Surfaces, Including Cervical and Root

### Radiographic Presentation of the Approximal Surface

- EP^a or BD^a: No radiolucency
- E2^a or B2^a: Radiolucency may extend to the dentinoenamel junction or outer third of the dentin. Radiographs are not reliable for mild occlusal lesions.
- D1^a or R3^a: Radiolucency extends into the middle one-third of the dentin.
- D2^a or R4^a: Radiolucency extends into the inner one-third of the dentin.

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^a Photographs of extracted teeth illustrate examples of pit-and-fissure caries.

^b The ICDAS notation system links the clinical visual appearance of occlusal caries lesions with the histologically determined degree of dental penetration using the evidence collated and published by the ICDAS Foundation over the last decade; ICDAS also has a menu of options, including 3 levels of caries lesion classification, radiographic scoring and an integrated, risk-based caries management system (ICCM). (Pitts NB, Ekstrand K. International Caries Detection and Assessment System (ICDAS) and Its International Caries Classification and Management System (ICCM): Methods for staging the caries process and enabling dentists to manage caries. Community Dent Oral Epidemiol 2011;39[1]:e1-e82. Pitts NB, Ismail AI, Maruggi S, Ekstrand K, Douglas GAW, Longbottom C. ICCMS Guide for Practitioners and Educators. Available at: https://www.iccms.org/uploads/ICCMS-Guide_Full_Guide_US.pdf. Accessed April 13, 2015.)

^c “Cervical and root” includes any smooth surface above or below the anatomical crown that is accessible through direct visual/tactile examination.

^d Radiographs are sensitive in detection but less specific in identifying the location of lesions.

^e BD2, D1-D3 notation system.

In-Clinic Transformation

• Dentists will classify caries
  • Sound surfaces - ICDAS code 0)
  • Initial stage caries - ICDAS codes 1 or 2).
  • Moderate stage caries - ICDAS code 3 and 4)
  • Extensive stage caries - ICDAS code 5 and 6

• Protocols for SDF as the treatment of choice for Caries Classification 1, 2 and some 3s

• Protocols emphasizing SDF/glass ionomers for some classification 4 of primary teeth

• Will need to test out various esthetic fixes as needed
Metrics - Tracking Progress

• Caries at Recall
• Risk Assessment changes
• Decreased referrals to pediatric dentists
• Decreased referrals for GA
• Increased access
• Recall % both in the medical portion and dental components of the project
What Results Do We Need to See

“What if we don’t change at all ... and something magical just happens?”
Triple Aim

- Better Health for the Population
- Better Care for Individuals
- Lower Cost through Improvement
Better Health for Populations

• Increase access through the medical setting
• Improve individual and population health
• Lower risk scores over time
• Lower Caries rates over time
Better Care For Individuals

• More convenient access for patients
• Well accepted - Mantra: No drill/no shots
• An answer to health concerns with General Anesthesia and children under 3 years old
• Cost savings for children with no insurance or under insured
• Promise of healthy permanent dentition
Lower Costs Through Improvement

• Decreased pediatric dental referrals = lower costs
• Decreased general anesthesia = lower costs
• Treating disease early should decrease the costs of major care
• Ideal for risk based managed care contracts
Bridge to Future Reimbursement

- Uncertainty in future federal funding capacities
- Managed Care
- Value based reimbursement
- Risk based managed care
- Must find ways in our current reimbursement system that can bridges the current gap to future reimbursement
Future

• DX codes
• Risk assessment that accurately targets individual risk
• Dental biopharmaceuticals to impair biofilms
• Peptide-based biogenic products to rebuild enamel
It’s Time To Take a Different Path

I shall be telling this with a sigh
Somewhere ages and ages hence:
Two roads diverged in a wood, and I —
I took the one less traveled by,
And that has made all the difference

Robert Frost
The Road Not Taken
Post-Webinar Evaluation

https://www.surveymonkey.com/r/XSCSSJL

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Next Lunch & Learn Webinar

Tracking Broken Appointments & Improving Hygiene
Scheduling Protocols

Wednesday, June 13, 2018 | 12-1 p.m. CT

Presenter: Dr. Isaac Zeckel, Dental Director, HealthLinc

[Click here to register]

*1 CE credit available
Partnering to Strengthen and Preserve the Oral Health Safety Net