Non-Operative Approach to Caries in Children

26-27 SEPTEMBER 2013
HOOD RIVER, OREGON

R. ANTHONY BASS, DMD
CHIEF DENTIST,
YELLOWHAWK TRIBAL HEALTH CENTER
Practice History

- I have practiced general dentistry, including treatment of children, as:
  - An associate
  - Solo practitioner
  - In a large group practice

- Reimbursement models I have worked with:
  - Fee-for-service
  - Capitation
  - Oregon Health Plan (Oregon Medicaid).
In July 2011 I began working at the Umatilla Indian Reservation near Pendleton, Oregon.

Some families have fluoridated water—others do not.

I was immediately surprised by the severity of caries in the children.
Our Current Practice at YTHC

- We have three dentists (over 70 years of general dental practice)
- We have used all the ‘right’ preventive measures (frequent prophys, fluoride applications, sealants, xylitol products, diet and home care counseling...)
- ...with limited success in children.
- We do not use a formal Caries Risk Assessment for children.
“The definition of insanity is trying the same thing over and over and expecting a different result.”
Albert Einstein
The Dilemma: What Should We Do When the ‘Right’ Stuff Doesn’t Work?

- We learned that Dr. Steve Duffin was utilizing silver nitrate to arrest caries in children, with reportedly good results.
- He came to our clinic and described his protocol, its safety and effectiveness.
- We felt the potential benefit far outweighed the potential risk of using it.
Any Programmatic Change at Our Clinic Requires Approval of the Yellowhawk Health Commission

- I developed and presented a Policies and Procedures to explain the “why” and the “how”.
- Explained the historical use and safety.
- Created an info sheet for parents.
- I gave my professional opinion this might help.
Typical First Visit for a Child Who Presents with Cavitated Caries

- Explain to the parent how caries develops
- Review diet and home care
- Discuss our preventive measures
- Discuss treatment options (SN or conventional)
- Obtain written consent
- Begin treatment that visit
Dentrix Was Not Useful for Tracking Clinical Outcomes for Our Silver Nitrate Program, So...
Back to the Future Database
with Steve Duffin, GV Black, Percy Howe et al.
# Back to the Future: Treatment Data Entry Form

## Child Identifier and Treatment Data Entry

<table>
<thead>
<tr>
<th>Child ID#</th>
<th>FirstName</th>
<th>LastName</th>
<th>DOB</th>
<th>Parent ID#</th>
</tr>
</thead>
<tbody>
<tr>
<td>10011</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Site:** Yellowhawk  
**Enroll Date:** 6/18/2013  
**Status:** Active  
**Next Due:** 8/20/2013

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Before TX</th>
<th>6 Mo After TX</th>
<th>1 Yr After TX</th>
<th>2 Yr After TX</th>
<th>3 Yr After TX</th>
<th>4 Yr After TX</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Treatment</strong></td>
<td>Before TX</td>
<td>6 Mo After TX</td>
<td>1 Yr After TX</td>
<td>2 Yr After TX</td>
<td>3 Yr After TX</td>
<td>4 Yr After TX</td>
</tr>
<tr>
<td>1</td>
<td>6/18/2013</td>
<td>25AgN+FV</td>
<td>Tony</td>
<td>None</td>
<td>GI filling-func</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>7/2/2013</td>
<td>None</td>
<td>Tony</td>
<td>None</td>
<td>None</td>
<td>Other</td>
</tr>
<tr>
<td>3</td>
<td>7/9/2013</td>
<td>25AgN+FV</td>
<td>Tony</td>
<td>None</td>
<td>Extract-Pathc</td>
<td>None</td>
</tr>
<tr>
<td>4</td>
<td>7/23/2013</td>
<td>25AgN+FV</td>
<td>Other</td>
<td>None</td>
<td>Other</td>
<td>None</td>
</tr>
</tbody>
</table>

* | | | | | | |
**Exam Data Entry Form**

**Child Identifier and Before Treatment Caries Examination Data**

- **Child ID#**: 10011
- **FirstName**: 
- **LastName**: 
- **DOB**: 
- **Enroll Date**: 6/18/2013
- **Status**: Active

**Treatment**
- **Before TX**

**Exam date**: 6/18/2013

<table>
<thead>
<tr>
<th>3</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
<th>f</th>
<th>g</th>
<th>h</th>
<th>i</th>
<th>j</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mesial</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Occlusal</strong></td>
<td>p</td>
<td></td>
<td>p</td>
<td>f</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Distal</strong></td>
<td></td>
<td>f</td>
<td>c</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td><strong>Buccal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lingual</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

**30**

<table>
<thead>
<tr>
<th>30</th>
<th>t</th>
<th>s</th>
<th>r</th>
<th>q</th>
<th>p</th>
<th>o</th>
<th>n</th>
<th>m</th>
<th>l</th>
<th>k</th>
<th>19</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mesial</strong></td>
<td></td>
<td>c</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Occlusal</strong></td>
<td>p</td>
<td></td>
<td>p</td>
<td>f</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Distal</strong></td>
<td></td>
<td>f</td>
<td>c</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td><strong>Buccal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lingual</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

**dmfat**: 9

**dmfas**: 18

**# teeth w/ active caries**: 7

**# surfaces w/ active caries**: 8

**# teeth arrested**: 0

**# surfaces arrested**: 0
### My 6-month Outcome Data
#### 2012-2013 (n=24)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Pre-Tx</th>
<th>Post-Tx</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total dmfas</td>
<td>313</td>
<td>327</td>
</tr>
<tr>
<td># surfaces w/ active caries</td>
<td>161</td>
<td>57</td>
</tr>
<tr>
<td># of surfaces arrested</td>
<td>0</td>
<td>78</td>
</tr>
<tr>
<td>% carious surfaces arrested</td>
<td></td>
<td>48</td>
</tr>
<tr>
<td>% of carious teeth arrested</td>
<td></td>
<td>52</td>
</tr>
</tbody>
</table>
### My 12-month Outcome Data 2012-2013 (n=10)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Pre-Tx</th>
<th>Post-Tx</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total dmfas</td>
<td>103</td>
<td>141</td>
</tr>
<tr>
<td># surfaces w/ active caries</td>
<td>56</td>
<td>33</td>
</tr>
<tr>
<td># of surfaces arrested</td>
<td>0</td>
<td>24</td>
</tr>
<tr>
<td>% carious surfaces arrested</td>
<td></td>
<td>43</td>
</tr>
<tr>
<td>% of carious teeth arrested</td>
<td></td>
<td>32</td>
</tr>
</tbody>
</table>
Tracking our Referrals to the Pediatric Dentist

- 2011   Referred 34 children. 16 received restorations and extractions under general anesthesia (GA)
- 2012   Referred 9 children. Only 3 received GA
- 2013   Referred 6 to date. Two have received GA.
- I believe this change is due to:
  (a)  The addition of new docs who are more skilled in treating kids in our clinic.
  (b)  The use of silver nitrate to control active caries in children.
What have we learned about SN use?

- It is very safe, fast, easy to use.
- It is technique-sensitive.
- I find it effective in slowing and often arresting decay.
- In some cases, teeth that have been treated with silver nitrate can be restored without anesthetic.
- Is it effective in preventing future caries?
- On review...
- Is it a panacea?
John Locke, English philosopher and physician, Father of Enlightenment thinking, 1632-1704

“New opinions are always suspected, and usually opposed, without any other reason but because they are not already common.”
Thank You

FOR YOUR TIME AND CONSIDERATION