Our Program

- Twelve sites, roughly 1100 IHS eligible children
  - Seven Head Start/Early Head Start sites
  - Five schools
    - Two elementary schools
    - One middle school
    - One high school
    - One tribal k-12 school
  - Driving time from hospital to furthest sites is 50-60 min each way (in good weather)

- We joined the group because we wanted to broaden and improve our treatment options for early childhood caries.
Advantages and Challenges

Advantages of our program
• Generally easier access to the kids
• Better patient behavior
• Patients are in a lock-step cohort
• Community Dental Health Coordinator to facilitate operations, scheduling, and communication

Unique challenges that we face
• Our CEO did not allow anterior teeth
• Very limited to no face to face time with parents, decreasing OHI/diet opportunities
• Head Start compliance issues w/ post-op instructions & diet
• Space available at sites for gear setup
• Student attendance/drop out/family changes
• Distance of sites increases cost/time per child for SN vs traditional treatment
Our Silver Nitrate Kids

• Total patients treated = 33
  • Average age = 4.2 years
  • Total surfaces treated = 246

• Each site was treated/examined in lock step for efficiency

• Protocol schedule
  • Dictated by the school year
  • Patients were only seen if present the day of the team visit for their site
  • If a patient was chronically absent (missing a large number of treatments, or had charted active decay and missed a follow up), or had active decay at the end of the school year follow up visit, letters were sent home to the parents/guardians requesting that the patient be brought into the main clinic for evaluation
Outreach SN Protocol Timeline

• Initial Exams/First Treatments (33 patients)
  • Head Starts – July/August or September, 2015
  • Cass Lake Bena – September, 2015
  • Bug-O-Nay-Ge-Shig – February, 2016

• First Follow-up ~3 mos after first application (21 patients)
  • Bug-O-Nay-Ge-Shig – May, 2016
Outreach SN Protocol Timeline

• Second Follow-up ~7 mos (22 patients so far)
  • Head Starts, Cass Lake Bena – May, 2016 (last week of school)
  • Bug-O-Nay-Ge-Shig – scheduled for October, 2016

• Third Follow-up ~1 year (3 patients so far)
  • Head Starts – 3 examined at Head Start Roundup in July, will look for others at Cass Lake Bena in October, 2016
  • Bug-O-Nay-Ge-Shig – scheduled for February, 2017

• Since we have only completed 3 one year follow-up exams, we hope to have more information around October of this year
## Results

<table>
<thead>
<tr>
<th></th>
<th>Number of Patients</th>
<th>Number of Surfaces</th>
<th>Average Number of Protocol Treatments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrested</td>
<td>10 (30.3%)</td>
<td>79 (32.1%)</td>
<td>3.8</td>
</tr>
<tr>
<td>Failed to Arrest</td>
<td>9 (27.3%)</td>
<td>82 (33.3%)</td>
<td>3.5</td>
</tr>
<tr>
<td>Arrested then Recavitiated</td>
<td>4 (12.1%)</td>
<td>7 (2.86%)</td>
<td>4.3</td>
</tr>
<tr>
<td>New Caries</td>
<td>3 (9.1%)</td>
<td>8 (3.1%)</td>
<td>4.3</td>
</tr>
</tbody>
</table>

Patients lost to follow up = 6  
Patients referred for OR care = 6  
Patients requiring non-OR restorative care = 10  
Number of patients at 1 year exam with active decay = 3
Anecdotal Observations

- Seemed to work best in our program on UniViSS D2 lesion scores and below
- Lesions that trapped food and lesions in patients that were covered in plaque were more likely to fail to arrest or to arrest then recavitate
Why are we so different?

• Small one year exam pool (3/33)
• Difference in posterior teeth arrest rates
  • Fung, et al. (2016)
    • anterior teeth (63.3% @ 1yr w/annual 38% SDF)
    • posterior teeth (31.0% @ 1yr w/annual 38% SDF)
    • consistent with Fung’s SDF observations that lesion size, tooth position, and plaque level influence arrest

• Head Start
  • eating and drinking immediately after application
  • not willing to change their feeding schedule to accommodate us
  • feeding high carbohydrate foods and juices, and using candy as rewards

• Lack of parental OHI/diet education
  • outreach has little to no face time with parents
  • other sites are seeing the parents/caregivers at every appointment
Additional Concerns – Loss to Follow-up

• For 5 of our 7 Head Start sites, we lose these kids out of Outreach territory when they graduate to elementary school because we do not yet serve those schools. Those elementary schools are an hour away from the main clinic, which significantly decreases the possibility for return visits.

• *Given what we are seeing in terms of recurring caries in previously arrested decay, we cannot in good conscience leave those children without definitive restorations unless there is no other choice.*
Based on the IHS clinic goal of 10.5 patients/provider/8 hour day, we could have seen 147 patients during the time we are spending to treat 8 patients (and to be honest, we could have actually seen twice that many exams in that timeframe). That poses some significant access-to-care issues for our site.

When you multiply 14 days x 10.5 patients x $350/encounter, that equals $51,450 in third party reimbursement that our program lost while treating these 8 children. Even if they had paid as they should have, we still would have lost $36,750.
Future Options for Cass Lake

• We plan to retain silver nitrate for the following uses:
  • Treatment of children whose behavior does not allow ART or SDF
  • Caries control for teeth that will exfoliate within the next 6-8 months

• We plan to add silver diamine fluoride for the following uses:
  • Treatment of children who are waiting to go to the OR (and can tolerate the longer tooth isolation time)
  • One time placement on incipient lesions on the mesials of first molars when restoring second primary molars
  • Treatment of special needs, geriatric, or cancer patients for whom caries risk is extremely high and whose conditions impose high risk for complications during traditional dental treatment
Future Options – Patient Selection

• We plan to change our patient selection criteria
  • Parents will have to agree to bring child into main clinic if he/she is absent on the visit day, and to bring child in for definitive restoration if/when it is indicated
  • Patients that have parents/families with a high broken appointment rate will not be selected for this protocol
  • Patients at remote sites will NOT be selected for this protocol unless there is no other viable option
  • Only UniViSS D2 lesions and below will be selected unless there is no other viable option
  • A glass ionomer or stainless steel crown restoration will be placed if appropriate as soon as the protocol is complete or the situation allows
Conclusion

Outreach programs should think very carefully about the following when deciding whether to implement this protocol:

- Long term access to patients for repeat applications or restorations
- Cooperation of parents/caregivers when children need to be brought in for missed applications/restorations/OR care
- Alternative pathways for reinforcing parental education
- Impact on access to care, third party reimbursement, and program budget
- Using auxiliary staff for 2nd – 4th applications if equipment and staffing allow for working at multiple sites simultaneously
Questions?