Fluoride Varnish in the Medical Home

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Vermont’s cavity problem

- Dental Caries are four times more common than asthma in Vermont
- 34% of 1st-3rd graders suffer from dental caries
- 11% of 1st-3rd graders had active untreated tooth decay
The Medicaid gap: Vermont’s children with Medicaid coverage bear the brunt of tooth decay

- 44% of children using Medicaid for dental coverage have caries, vs 27% in non-Medicaid payers.

- 55% of children on Medicaid receive preventive dental services despite universal coverage for children under the age of 18, with age 0-2 being the lowest served.

- 47% of children with special needs receive preventive dental care. These children have the highest rates of tooth decay of all groups.

- Only 69% of dentists accept new Medicaid patients, vs 92% non-Medicaid.

- 20% of uninsured children did not receive dental care because their parents could not afford it.
1.6 million US school absences were attributed to dental conditions. Not only does this put children behind in their learning but it creates financial hardships for caretakers.

Healthy teeth are required for proper nutrition and growth of a child. They aid in speech development and help build self-esteem. Baby teeth act as space holders and keep permanent teeth from drifting out of alignment.

A 2013 Cochrane review showed that varnish alone reduces dental caries in baby teeth by 38% and by 43% in permanent teeth.

The USPSTF released a B level recommendation for providing varnish twice annually to children 5 and under. The CDC and ADA have issued similar recommendations.

Only two case control studies have been done to determine the cost effectiveness of Varnish, with each showing conflicting results.

According to a 2014 Cochrane’s review, there is insufficient data to determine whether dental sealants of varnish are more effective at preventing caries. Varnish however, is much easier to apply than sealant or foam and does not require oral suction. Other studies show complementary effects of sealant and varnish and suggest that oral health programs should include as many preventive strategies as possible.
The role of the primary care physician in oral health and caries prevention

- Many young children in Vermont are not seeing a dentist. While not a substitute, a child’s primary care doctor can play a huge role in filling in the gap. In addition to fluoride varnish there are several things a PCP can help with at a well child visit:
  - Oral evaluation looking for decay, congenital deformity or injury
  - Diet and hygiene counseling
  - Systemic fluoride prescription for children with well water.
  - Referral to a dental provider

- Only 32% of new mothers reported a conversation with their doctor about tooth decay in their infants during well child check ups. Clearly we have to do better.

- Medicaid reimburses the varnish procedure in Vermont at a rate of $18. Doing this in just 5 patients per week can generate $4,680 in annual revenue. For a procedure that takes 2-3 minutes that has proven disease prevention there is no reason for physicians not to be providing this service.
Community Perspective

- Dr. Katera Hopkins, Dental Site Leader UVM Medical Center Dental and Oral Health:
  - “This is a great opportunity to develop a collaboration between dentists and physicians, where the physicians can not only provide varnish, but also screen for decay and other major dental issues.”

- “The major issue I see regarding childhood caries is not so much insurance coverage—because all kids in Vermont get dental coverage—but provider access. Many providers don’t accept Medicaid patients because the reimbursement rates are lower than overhead costs, making for a net loss in revenue.”

- “Another barrier to access is the relative scarcity of pediatric providers. Young children often require techniques and medications that not all adult dentists are comfortable providing.”

- Community Hygienist:
  - “I am glad to hear that Milton Family Practice is going to provide Fluoride Varnish. Based on what I have seen many children will greatly benefit from this service.”
Intervention and Methodology

- Physicians at Milton Family Practice identified a need to provide information to patients in the form of a poster or pamphlet about the new fluoride varnish procedure being offered at the clinic.

- As shown on the previous slide, a hygienist and dentist were interviewed to determine what barriers to expect in providing the fluoride varnish.

- A literature review was conducted looking at varnish studies and recommendations and was used in combination with provider feedback to created a pamphlet for patients.
Results

▪ A pamphlet was made identifying key information pertinent to fluoride varnish.

▪ The dental hygienist identified several concerns that parents had expressed to her about the procedure. These concerns were addressed in the pamphlet (Although it should be noted that those complaints were quite rare in her experience).

▪ The following are some of the concerns:
  ▪ Fluoride is poison
  ▪ Fluoride is in the water and toothpaste, why should you apply it on my child’s teeth?
  ▪ Does fluoride varnish have any adverse effects?
  ▪ What about fluorosis
The Pamphlet
Fluoride Varnish is approved for use twice a year in all children 5 and under and is covered by all insurance plans.

Fluoride Varnish has been shown to reduce cavities by 38-43%.

Application takes less than 5 minutes and can be done during a well-child visit.

Your child can eat soft foods and drink immediately after the procedure.

Varnish has no known side effects.
WHAT IS FLUORIDE VARNISH?
Fluoride Varnish is a concentrated fluoride paste now being offered at UVM Medical affiliates that sticks to the tooth and protects against acids that cause tooth decay. Studies show that fluoride varnish alone reduces cavities in baby teeth by 38% and 43% in permanent teeth.

WHO SHOULD GET FLUORIDE VARNISH?
All children five and under.

The US Preventative Services Task Force (USPSTF), the Center for Disease Control (CDC) and the American Dental Association (ADA) recommend that all children five and under receive varnish application at least twice a year. If your child is at high-risk for developing cavities your provider may recommend up to four treatments per year. If your child is six or older, talk to your physician about the possible risks and benefits of fluoride varnish.

*Children may be considered high-risk if they do not have access to fluoridated water or fluoride pills, if they have previous cavities or if they have plaque on their teeth in addition to several other risk factors.

WHAT HAPPENS DURING THE APPOINTMENT?
A medical provider will dry your child's teeth with a gauze pad, then apply varnish with a small brush. The whole process takes 3-4 minutes.

WHAT ABOUT AFTER THE APPOINTMENT?
Your child may eat and drink immediately after the procedure but should not eat any sticky or hard foods for the rest of the day. Do not brush your child's teeth until tomorrow morning. If your child is prescribed fluoride pills, stop taking them for 2 days after the varnish is applied. On the third day continue as prescribed.

DOES INSURANCE COVER IT?
Yes.
All insurances must pay for the varnish at least twice a year for children until their 6th birthday. Check with your insurance if your child requires more than two treatments annually or is 6 or older.

DOES VARNISH HAVE ANY SIDE EFFECTS?
Fluoride varnish is not known to have any adverse side effects.

It has been proven to be safe by both the CDC and the USPSTF. The amount of fluoride swallowed during the application is similar to the amount swallowed when brushing with a fluoride toothpaste. Although swallowing excessive amounts of fluoride may cause fluorosis (harmless white spots on the teeth), fluoride varnish has not been shown to cause this problem. It may cause temporary yellowing of the teeth for a few days following application. If your child has open sores the procedure will need to be rescheduled to prevent any local irritation. No allergies to fluoride have been documented. Rarely, allergic reactions may occur in people sensitive to colophony/resin. Consult with your physician if your child has had a reaction to cosmetics, plastics, chewing gum or during a dental procedure.

WHY ARE MY CHILD'S BABY TEETH IMPORTANT?
Healthy teeth are required for proper nutrition and growth of your child. They aid in speech development and help build self-esteem. Baby teeth also act as space holders and keep permanent teeth from drifting out of alignment.

CAN VARNISH BE SUBSTITUTED FOR FLUORIDE TABLETS?
No.
Fluoride pills and fluoridated water are systemic treatments that allow fluoride to penetrate the whole tooth, giving you lasting protection. Varnish works by sitting on the surface of the tooth where it acts as a protective barrier against corrosive acids. It eventually wears off, which is why it must be applied at least twice a year. Fluoride varnish can be combined with systemic fluoride and fluoride to obviate the need for periodic topical fluoride applications.

DOES MY CHILD STILL NEED TO GO TO THE DENTIST?
Absolutely.
The varnish applied at your doctor's office is one of many things you can do to prevent cavities in your kids. Brushing regularly, flossing, using prescription fluoride tablets if necessary, minimizing sweets, juice or soda and visiting your dentist regularly are all key things you can do to promote good oral health in your children.
Effectiveness and Limitations

Effectiveness:

▪ Feedback on the pamphlet was given by several providers and changes were made accordingly. Wording was changed to make it easier for patients to understand and formatting with the UVM brand was done so that it can be used at multiple sites.

▪ It will take time to determine how patients respond to the information. We will likely print a limited amount and see if any other issues come up in the next several months. Additional information/concerns can easily be added to a future reprint.

Limitations:

▪ Pamphlet is only currently available in English, but if demand requires it could be translated into other languages.

▪ No direct feedback from patients was elicited. This was originally part of the plan but the limited number of pediatric well child visits was restrictive to completing a survey with a reasonable sample size. It will likely take several months to get the proper amount of feedback from parents.
Future Interventions

▪ Determine how frequently fluoride varnish is being applied at Milton Family Practice and/or other primary care offices

▪ Provide pamphlet access to other non-UVM affiliated sites.

▪ Create an instruction guide for physicians showing both the components of a fluoride varnish visit (Oral evaluation, diet and hygiene counseling, fluoride varnish, systemic fluoride Rx and referral to a dental provider), the cost (1-4 dollars) vs reimbursement ($18) and how to code.

▪ Conduct a formal survey on caregiver attitudes toward fluoride varnish and how likely they are to use it.
References

- USPSTF Final Recommendation Statement on Dental Caries in Children from Birth Through Age 5 Years: Screening May 2014.

- CDC Community Water Fluoridation. 2013.
  - http://www.cdc.gov/fluoridation/fluoride_products/


- Alliance for a Cavity Free Future

  - https://www.cda-adc.ca/jcda/vol-74/issue-1/73.pdf


- Dental Action Plan Template for Medicaid in Vermont. 2015

Consent form

- Dr. Katera Hopkins

Thank you for agreeing to be interviewed. This project is a requirement for the Family Medicine clerkship. It will be stored on the Dana Library ScholarWorks website. Your name will be attached to your interview and you may be cited directly or indirectly in subsequent unpublished or published work. The interviewer affirms that he/she has explained the nature and purpose of this project. The interviewee affirms that he/she has consented to this interview. Yes ___x___ / No _____