Title: Increasing Fluoride Varnish Application: A Quality Improvement Project

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PROBLEM STATEMENT

- Dental caries are one of the most common chronic diseases among children in the United States
- If left untreated, dental caries can cause pain and infection that can impede eating, language development, and school attendance.
- Dental caries is a preventable disease that can be minimized with fluoride varnish.
- Between January 2023 and March 2023, only 6.6% (N = 90) of children aged 18 months to four years received fluoride varnish application (FVA) during their well visit at a primary care office.

PROJECT PURPOSE

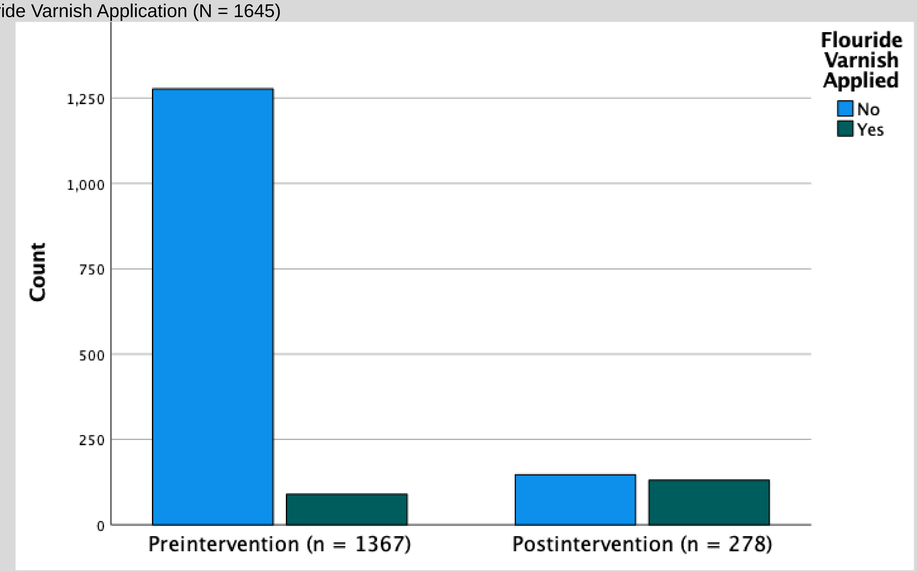
- To implement the U.S Preventative Service Task Force (USPSTF) grade B recommendation, stating children younger than five years of age should have fluoride varnish applied to their primary teeth by their primary care provider.
- Project goal is to increase FVA in children who are eligible at a primary care office.
- Will adding a fluoride varnish application care set to the well visit templates of children aged 18 months to four years increase fluoride varnish application over three months, compared to the preceding three months of patients without a fluoride varnish application care set?

MODEL:

- Quality improvement (QI) seeks to improve current standards and processes through the use of literature reviews and data.
- The QI model was chosen for the DNP project to improve outcomes for patients and healthcare systems.
    - Accomplished with the Plan, Do, Study, Act

RESULTS

Figure 1. Fluoride Varnish Application (N = 1645)



- After IRB determination, records were reviewed for 1645 total patients, including 1367 before and 278 after implementation. Before implementation, fluoride varnish was applied during 6.6% (n = 90) of visits.
- After implementation, fluoride varnish was applied during 47.1% (n = 131) of visits. The observed increase in fluoride varnish application was of 40.5%, a statistically significant improvement ($\chi^2 = 326.4$, $p < .001$; see figure 1).

DISCUSSION

- Fluoride varnish application improved after intervention was established during PDSA cycle 1
- Results provided to all stakeholders and all in agreement with continuing current PDSA intervention without further modifications
- Office manager provided individual performance results to all stakeholders to aid in further improvement and sustainability of project

METHODS

- **Subjects (Participants):** Children with primary teeth eruption from age 18 months to four years
- **Setting:** Outpatient Pediatric Primary Care
- **Instruments/Tools:**
    - FVA is an in-office procedure with a current procedural terminology code (CPT), 99188.
    - Process outcome is observable and measured by auditing encounters of all patients 18 months to four years, undergoing a well child visit for the CPT code
- **Intervention and Data Collection**
    - Stakeholders educated on USPSTF recommendations
    - Well child templates modified to include new care set: FVA procedure was added under office procedures in the template and CPT code 99188 was pre-populate under procedure and coding for billing purposes.
    - While rooming the patient, medical assistants identified eligible patients by asking parents about dental visits. They also made FVA supplies available for provider.
    - Data collected monthly using CPT code 99188

IMPLICATIONS FOR ADVANCED NURSING PRACTICE

- Implementing a fluoride varnish application care set at a pediatric primary care office improves quality of care to patients. As previously mentioned, dental caries are one of the most common chronic diseases in childhood. Fluoride varnish can prevent one- third (33%) of cavities (CDC, 2022). Thus, using a care set, fluoride varnish application rate is increased, and patient outcomes are improved.

REFERENCES

SCAN ME

Key findings: Fluoride varnish application did increase after implementation of an evidence-based fluoride varnish care set for well child templates of children aged 18 months to four years.

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