

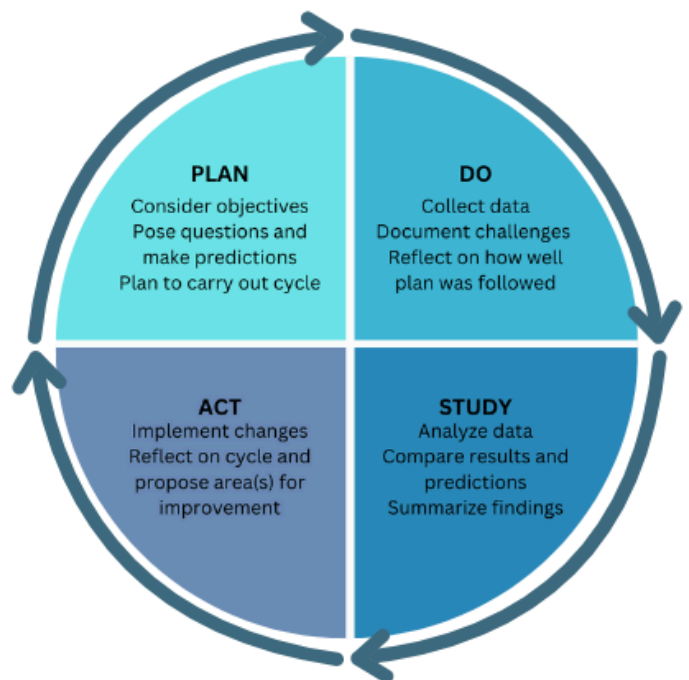
Quality Improvement Module: Applying Fluoride Varnish during Medical Visits

Purpose of this module

This module is designed for medical practices that: a) provide primary care for children under five years of age and b) would like to implement a quality improvement (QI) plan for fluoride varnish (FV) application. The American Academy of Pediatrics, American Academy of Family Physicians, and the U.S. Preventive Services Task Force (USPSTF) recommend routine FV application in primary care settings for children from first tooth eruption to five years of age, but many eligible children do not receive FV in primary care settings as recommended. Older children also likely benefit from FV application; practices that apply FV for older children may wish to include them in this QI project, but the project focuses on children under five years of age. This module is designed to meet the criteria for the American Board of Pediatrics Maintenance of Certification (ABP MOC) Part IV.

Brief description of the steps in this fluoride varnish quality improvement project

This module uses a 'Plan, Do, Study, Act' (PDSA) QI model (see here and here on the PDSA model). In a PDSA cycle, a team within the practice first identifies the percentage of eligible patients who received FV in a given time frame (rate), then identifies potential challenges to FV application, sets a goal for improvement, decides on small iterative changes in workflows or other processes related to FV application that are expected to address barriers, implements the changes, and finally measures the effect of these changes by measuring changes in FV application rates over time.



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Plan

1. Determine your practice's current FV application rate for children under five years of age (baseline rate).
2. Decide on your improvement goal using the SMART Goal (Specific Measurable Achievable Relevant Time-bound) template (see [here](#)).
3. Identify changes in the practice that could improve FV application rates and select the change(s) to be tested.

Do

1. Implement the change(s).
2. Track whether the change(s) are implemented as planned.

Study

1. Measure and chart FV application rate at two time points after changes are implemented.

Act

1. Determine whether your practice met its SMART goal and will adopt the changes made or revise them and reassess changes.
 2. Once changes are adopted, periodically assess the stability of the new FV application rate.
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Detailed guidance for this fluoride varnish quality improvement project

I. Plan

A. Form a FV QI Project Team. If your practice does not already have a QI champion or team, the project will be most successful if one or more people who feel this project is important are identified to lead the project. This person or team will play an important role in communicating with all other team members and getting buy-in on the importance of the project.

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B. Determine your practice's baseline FV application rate. Many practices will have some system in place for assessing performance on quality measures, such as vaccination rates, because health insurers require reporting on some quality measures. It is ideal to use existing practice structures, if they exist, to estimate baseline FV application rates, but developing a new system works as well. A few possible ways to determine the baseline rate include:

- Since many states allow billing for an additional charge for FV, asking your billing team to determine the percentage of well child visits for children ages 1 to 4 that had a FV charge over the past 6 months could be a good starting point.
- If your Electronic Health Record (EHR) has a reminder for health maintenance that includes FV, this could be used.
- Perform a manual medical record review of all well child visits for children ages 1-4 over the past 6 months for documentation of FV application. It can be helpful to see if the rates differ for different ages.

C. Decide on your FV application rate SMART goal. For example, do you want to improve by 20%? Do you want to achieve application for 75% of children ages 1-4? Did your baseline assessment suggest efforts may be best directed for children three years of age and younger? An example of a SMART Goal statement for FV application rates might read: Our practice will increase FV rates for children ages 1-4 from a baseline rate of 45% to 60% by [Date] so that we are providing the best evidence-based oral health care for children in our practice.

S.M.A.R.T. GOALS

SPECIFIC

Who and what?

MEASURABLE

By how much?

ACHIEVABLE

How?

RELEVANT

Why?

TIME-BOUND

When?

D. Decide on changes to make toward achieving your SMART goal. The final step of the Plan part of the PDSA cycle is to decide on the changes you are going to make. This usually requires some planning meetings and conversation with all members of the clinical team – front desk staff, office managers, medical assistants, nurses, and providers. This part of the planning

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will be highly specific to your practice. A sample of questions your team may wish to consider as part of your decision-making is included in the Appendix. It is generally best to keep the changes simple and within existing infrastructure and workflows. It can help to have a visible dashboard or chart, and possibly incentives, so everyone can track the progress and participate in the project.

Examples of what your practice may identify in the planning process as a change(s) the practice wants to implement and test include:

- Changing who applies FV, i.e. from the providers to the medical assistants.
- Changing when FV is applied, i.e. applying FV when vitals are being taken or patients are put in an exam room rather than waiting until the end of the visit.
- Adding FV application to the EHR health care maintenance page.
- Adding FV application to a structured checklist that the medical assistants ensure is completed, including documentation of why it was not completed if applicable.
- Holding an in-service training for all team members on oral health and FV application.

II. Do

Now you get to put your hard work from the Plan phase of the PDSA cycle into action! It can be helpful to post visual reminders of the planned changes, check in with members of the clinical team during regularly scheduled meetings about how the changes are going, and/or have a way for people to give feedback in real-time.

III. Study

Measuring the effectiveness of the changes your practice made is an important part of the PDSA cycle. Using the methods you used in the Plan cycle, assess the FV application rates monthly for children ages 1-4. At least two time points after implementation are needed for ABP MOC Part 4 credit.

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You can use a run chart [see [here](#) and [here](#)] to report the changes over time or simply track them. Three to six months is often a useful time frame to assess the effectiveness of the change and to see trends, e.g. did the rate go up at first then trend back down? Was there no change in improvement in FV application rates for a month and then the rate increased? Did the FV application rate go down? It can be helpful to share the results of the Study phase with the whole clinical team – such as through a poster, a dashboard, or other visual representation.

IV. Act

Use the results of the Study phase to decide whether your practice will keep the changes you made, whether you might want to keep some elements but adapt and measure the effect, or not keep the changes at all.

Appendix I – Considerations for determining what change(s) practice will make to improve FV application rates.

- Explore who can apply fluoride varnish in your state. Your state may (or may not) allow the following types of clinicians to apply FV: Physician, Nurse Practitioners/Advanced Practice Nurse, Physician Assistants, Registered Nurse or Licensed Practical Nurse, Certified or Registered Medical Assistant, Other
- Billing - How do we bill for this in our practice? What are state regulations on reimbursement for FV (the Affordable Care Act (ACA) requires most insurers to reimburse for preventive care that is USPSTF guideline grade B or higher, which FV is)? Are we optimizing the revenue FV application generates (see Resources)?
- Training – Is it required by our state? What external training resources exist (see Resources)? How does our practice ensure everyone who could apply FV is trained to do so and comfortable doing it? Does our training include how to provide education for parents?
- What is the current workflow for FV application and how well is it working, e.g. who orders supplies, bills, and applies the FV? Is there a

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standard workflow for well child visits? How is it determined that a child needs FV at a visit? When during the visit does FV application occur? How is it documented that it was done? What might be changed in the workflow to improve FV application rates? Is there a standard visit template for well checks for a given age that includes FV application? Is the EHR used for FV reminders or could it be used?

Appendix II: A case study incorporating the plan, do, study, act (PDSA) cycle to target areas of improvement

Practice A is a pediatric practice in Massachusetts that serves 1000 patients between one and four years of age. It has four physicians, two of whom work part-time, two nurses, and two MAs. The practice currently offers FV at well child visits for children under age five and determined during their Plan phase that **only 30% of eligible children received FV at their well child visits.** When the practice first decided to implement FV services two years ago, the providers and one nurse did an online training on FV application. MAs are allowed to apply FV in their state, but the practice decided to have providers or a nurse apply the FV. **Dr. X feels that well child visits are often rushed and FV is often forgotten about** since it depends on the provider letting the MA know that FV is needed either before they go into the room or at the end of the visit so they can prepare supplies. They report parents nearly always accept FV when it is offered. The nurse who is trained shares that when parents ask them why their child should get FV they aren't exactly sure what to say. The one office assistant who knew how to bill patients for FV left a month ago and left some notes behind, but no one in the practice is quite sure what the billing code is for the state they practice in.

Practice A sets a SMART goal of improving FV application rates to 50% of eligible children. One of the practice owners heard from a colleague at another practice that the MAs apply FV in their practice and wants to try this out. Everyone in the practice would like to see their rates improve. They decide to test the following changes:

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Training – take advantage of existing training materials to have all clinical staff (providers, nurses, MAs) trained in FV application and have FV application added to the standard onboarding training for each of these roles;

Workflow – MAs will now offer and apply FV in the room at the start of a visit. If the provider needs to go into the room right away, the MA will leave the materials in the room and the provider will either apply it during the visit or let the MA know it needs to be applied at the end of the visit;

Workflow – the practice will add FV to their current end-of-visit checklist they use to ensure all lab work and vaccines for a given age were done;

Billing – AAP resources on billing for FV are provided to the billing team.

Finally, there is an incentive of a special lunch for all staff if the goal rate is achieved. The QI lead checks with all team members weekly about how changes are working.

Practice A sees their FV rates for one to four-year-olds climb to 40% at Month 1. When they learn one MA does not feel very comfortable applying FV for the youngest children, additional training is provided. **Rates increase to 50% at Month 2 and 60% at Month 3.** The MAs report enjoying feeling empowered to have responsibility for an intervention that helps patients, the providers are happy with the change, and FV billing is now captured for all patients. The practice is excited about the changes they have seen and are going to repeat their PDSA cycle and aim for 75%.

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Appendix III: Resources

- [Prevention of Dental Caries in Children Younger Than 5 Years: Screening and Interventions](#) – US Preventive Services Task Force
- [Fluoride Varnish and Silver Diamine Fluoride: A Resource Guide](#) – National Maternal and Child Oral Health Resource Center
- [Payment for Oral Health Services](#) (AAP resources) - includes Medicaid reimbursement rates and state-level requirements for age limits, training, etc.
- Run Charts: See guidance from the [Institute for Healthcare Improvement](#) and the [University of North Carolina School of Medicine](#)
- Trainings on Oral Health for Children and Fluoride Varnish Application
 - [Smiles for Life](#)
 - [Bright Futures Oral Health Tip Sheet](#)
 - [From the First Tooth – Resources for Medical Providers](#)
 - Training Videos
 - [Provider Training Fluoride Varnish](#) from Minnesota Oral Health Coalition
 - [Applying Fluoride Varnish with Gauze](#) – From the First Tooth

Note: Links active as of October 2024 but may change over time.

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