

Introduction

The Clark County Dental Health Initiative (CCDHI) began in January 2008 and is a population-based primary prevention intervention designed to reduce dental caries in the youth of Clark County, Kentucky. Tooth decay has implications to overall health status, including quality of life, illness, chronic disease, and nutrition status. According to the Oral Health in America Report, tooth decay is the most common disease during childhood.

The CCDHI goals and objectives:

- 1) Twice-annually apply Enamel Pro Series Amorphous Calcium Phosphate (ACP) Fluoride Varnish on preschool through fifth grade students' teeth.
- 2) Annually provide all students in Clark County Public Schools with a new toothbrush and toothpaste.
- 3) Perform oral exams annually and provide an assessment report to parents.
- 4) Conduct the Decayed, Missing, Filled, Sealants survey on all sixth graders annually.
- 5) Institute an oral health education program in the schools.



Community volunteers and school nurse applying ACP Enamel Pro Series dental varnish.



Methods

In developing the CCDHI, baseline data was collected from 361 sixth grade students in the Clark County Public School System in the spring of 2008. These students were assessed with the Decayed, Missing, Filled, Sealant (DMSF) survey, a national standard for evaluating the dental health of a specific group. In total, the assessment revealed 50.4% of these students had decayed teeth.

CCDHI Methods:

- Application was conducted either in the classroom, library or gymnasium
- Only 2 school days used per calendar year
- Dental teams interrupt each class for a total of 10-20 minutes
- Dental teams visited each school twice annually to apply varnish and perform dental assessments
- Sixth graders were assessed with the DMSF survey once each year
- All parents received an assessment form detailing their child's oral health
- Follow-up was conducted for students with tooth decay

Innovation

The use of fluoride varnish has long been a successful preventive dental health practice. Once the FDA approved ACP for use in fluoride varnish, the Premier Dental Enamel Pro Series ACP Fluoride Varnish become available for public use in 2006.

ACP works by:

- 1) Enhancing the natural healing abilities of saliva,
- 2) Preventing decay through a process of remineralization, and
- 3) Creating a synergistic effect, with the ACP optimizing the effects of the fluoride and the fluoride promoting the remineralization properties of the ACP.

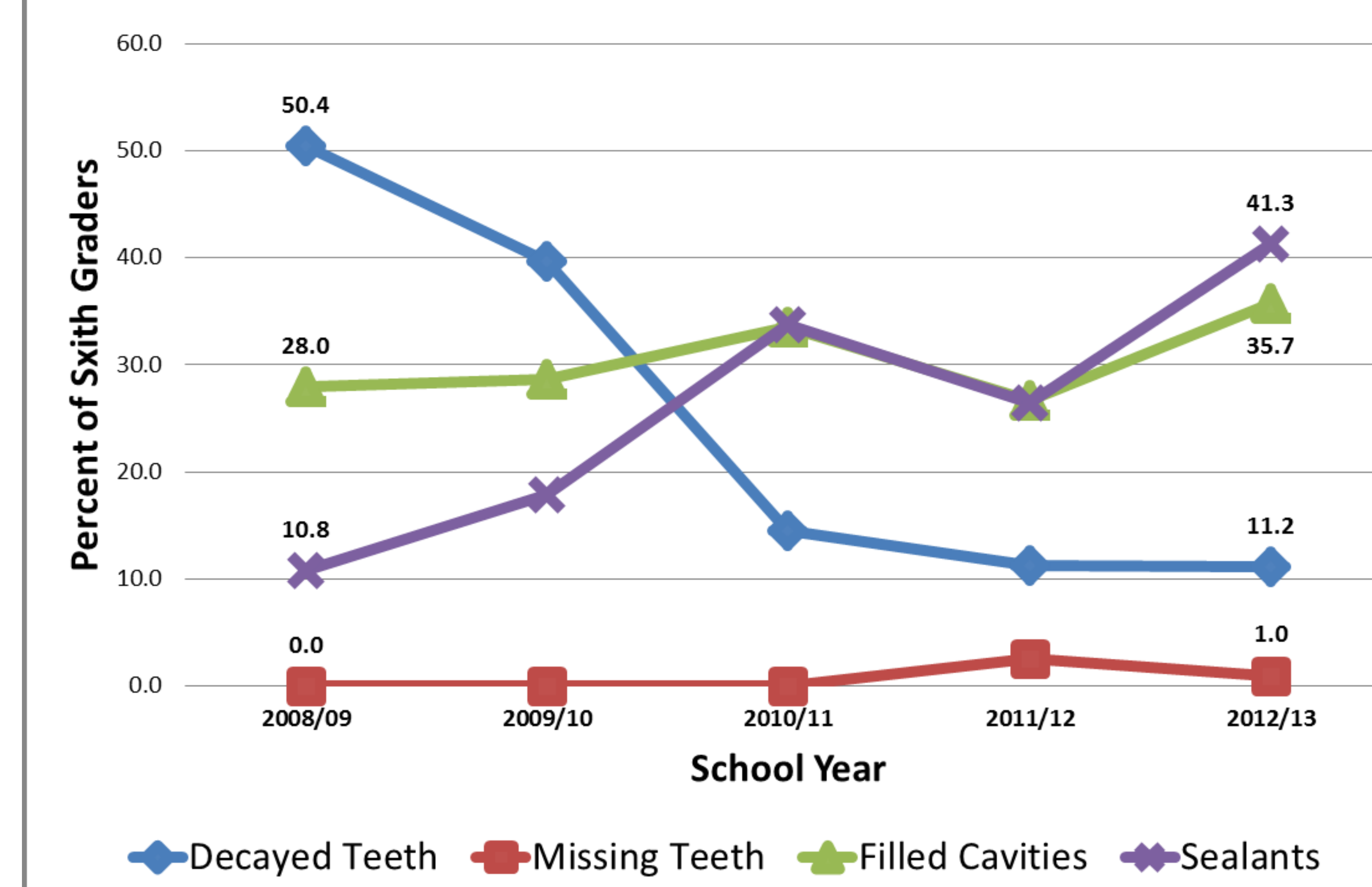
According to research by Drs. Schemehorn et al. this varnish has been found to release more fluoride and promote more fluoride uptake by the enamel when compared with conventional fluoride varnishes containing the same amount of fluoride. The CCDHI practice differs from the traditional practice of using fluoride varnish alone, by using an innovative product which may remineralize tooth enamel and provide increased uptake of fluoride.



Process for formation of dental caries and remineralization.

Results

Decayed, Missing, Filled, Sealants Survey Results for Sixth Graders in Clark County Public Schools 2008-2013



After the final application year, the dental decay rate for sixth graders in Clark County was 11.2%, a 77.8% decrease in decay rate over 5 years.

FACTORS TO SUCCESS

- ❖ Spearheaded by a **community champion**
- ❖ **Number of dentists volunteering:** by program end **vast majority** of dentists in community were participating
- ❖ **Delegation of responsibilities** to several community partners
- ❖ Change in Year 2 to **Opt-Out format** for students
- ❖ **Follow-up** with parents of children with tooth decay
- ❖ **Local media support** following project
- ❖ **Minimal class disruption:** 10-20 minutes per classroom
- ❖ Program materials delivered to **school nurses**, rather than dentists



A happy student after application!



A volunteer dental team goes to work with Dr. Rankin Skinner.

Sustainability

In 2011, due to the positive oral health outcomes found through this practice, the Governor and First Lady of Kentucky, Steve and Jane Beshear, made this practice a priority for underserved children in Eastern Kentucky Appalachian counties. The Commonwealth implemented the "KY Smiling Schools Oral Health Project". This program, replicating the pilot program CCDHI, is predicted to provide preventive oral health services for 25,000 children.

Due to the enormous community response and the decreased rate of tooth decay in Clark County's youth, we believe there is sufficient stakeholder commitment to sustain the gains made through this model practice. The Public Health Director and key partners are planning Phase II of the CCDHI and are looking to improve the practice and continue serving the children of Clark County, KY.

For more information on the CCDHI and resources used in this practice, please contact the Clark County Health Department in Winchester, KY. Contact information at www.clarkhealthdept.org.