

No. 8, Winter 2007

To: **State Water Fluoridation Programs, State Dental Directors,
State Drinking Water Programs**

Subject: **Program Update—CDC Community Water Fluoridation**

The Centers for Disease Control and Prevention (CDC) Community Water Fluoridation Program periodically issues this update on program activities and resources for water fluoridation specialists, engineers with state drinking water programs, and state oral health officials. Please feel free to forward this communication to anyone who might benefit from it.

Water Fluoridation Update at NOHC

If you are attending the National Oral Health Conference in Denver, April 30–May 2, be sure to plan to attend the CDC Water Fluoridation session on Monday afternoon, April 30. This is your chance to hear about the recent developments in water fluoridation and ask questions that concern your program. This Monday afternoon session will start at 5:15 during the poster session. It replaces the CDC Tuesday morning breakfast, which many people could not attend because of other meeting conflicts.

Water Fluoridation Training

The CDC-sponsored course on basic community water fluoridation, **Water Fluoridation: Principles and Practices**, will be conducted next in Murfreesboro, TN, during the week of October 22–26, 2007. The course is intended to build the skills needed to manage and operate a state water fluoridation program and to train engineers in fluoridation engineering principles. Now is the time to begin planning which person from your staff should attend the training this year.

Fluoride Additives Supply Update

Over the past several years, the fluoride additive supply has been disrupted several times. Most recently, over the past several months, some water systems have had difficulty getting timely deliveries of fluorosilicic acid. The most recent supply disruption is unrelated to previous events, but the combined effect has discouraged some users.

The outlook for the fluoride additives market is improving. A couple of new producers of fluorosilicic acid have recently been NSF-certified, and the largest producer, Mosaic, has recently upgraded recovery equipment at two production locations, increasing the fluorosilicic acid available capacity.

The most recent issue, which is now resolved, was a function of apatite ore quality. Roughly 94% of the fluorosilicic acid supply is a co-product of phosphate fertilizer production using apatite ore. In the past year, some of the apatite ore available to Mosaic has yielded lower fluoride and phosphate production. Mosaic continued to use the ore because it expected the operating problems would be eventually addressed, but during

January and February 2007, Mosaic decided to switch to a higher-grade ore. Although this has increased yields, the national supply depots for fluorosilicic acid are exhausted, and it will take several months to replenish stocks at water systems and regional distribution depots. Since summertime tends to be a period of increased demand, local supply and distribution disruptions likely will continue until autumn.

New NSF Fact Sheet on Fluoridation Additives

NSF International publishes *NSF/ANSI Standard 60* concerning the purity and quality of water treatment chemicals. Most water fluoridation chemicals are certified by NSF in accordance with Standard 60, and a smaller portion are certified by Underwriters Laboratory (UL) in accordance with Standard 60. NSF periodically tests samples and issues the results as part of the certification process. It has recently issued a fact sheet on the quality of the 245 samples tested during 2000–2006. To read this analysis, see *NSF Fact Sheet on Fluoridation Chemicals* at http://www.nsf.org/business/water_distribution/pdf/NSF_Fact_Sheet.pdf.

Upgrade to Proficiency Testing Program

Proper measurement of fluoride in water requires diligence and attention to detail. Most states require split samples for water systems so that state reference laboratories can verify the methods used by water systems. Since 1979, CDC has operated the Water Fluoride Laboratory Proficiency Testing Program to confirm the fluoride analysis methods of the state reference laboratories. After an extensive review and assessment of the program operations, CDC has worked to address some longstanding problems with the old system. In Spring 2007, CDC is launching an online system for submitting and reporting results. This system will provide improved information and reports to reference laboratories, state dental directors, and state drinking water administrators.

Water Fluoridation and Infant Formula

Fluoridation of community drinking water has been practiced in the United States for more than 60 years. It has proved to be a safe, healthy, and effective public health practice for people of all ages, and the past five surgeons general have recommended that communities fluoridate their water. Questions on the use of water fluoridation periodically arise, and a recent question concerns the use of fluoridated drinking water and infant formula. Recent evidence suggests that mixing powdered or liquid infant formula concentrate with fluoridated water as the primary source of nutrition may increase the chance of a child's developing the faint white markings of very mild or mild enamel fluorosis. Enamel fluorosis is a change within the outer surface of the tooth and is not an adverse health effect. Typically, very mild or mild fluorosis is barely noticeable or unnoticeable. Studies have not shown that teeth are likely to develop more noticeable forms of fluorosis, even with regular mixing of formula with fluoridated water.

The American Dental Association has issued an interim statement that recommends that parents of infants whose main source of nutrition is formula mixed from powder or liquid concentrate consider using water that is low in fluoride for mixing formula. Go to the

ADA Web site at

http://www.ada.org/prof/resources/positions/statements/fluoride_infants.asp to read the full statement.

Most infants consume breast milk or a combination of breast milk, formula, and solid food. In communities with fluoridated water, such children would typically not have fluoride exposure that exceeds levels recommended for limiting enamel fluorosis. Parents should follow the advice of the formula manufacturer and their child's doctor for the type of water appropriate for the formula they are using. If formula is prepared from concentrate, exposure to fluoride can be lessened by mixing the formula with low-fluoride water most or all of the time. Such water may be tap water, if the public water system is not fluoridated.

If tap water is fluoridated or has substantial natural fluoride (0.7 mg/L or higher), a parent may consider using a low-fluoride alternative water source. Bottled water known to be low in fluoride is labeled as purified, deionized, demineralized, distilled, or prepared by reverse osmosis. Ready-to-feed (no-mix) infant formula typically has little fluoride and may be preferable at least some of the time. Go to http://www.cdc.gov/fluoridation/safety/infant_formula.htm for more information on the use of fluoridated drinking water in infant formula.

Historically, a low prevalence of the milder forms of enamel fluorosis has been accepted as a reasonable and minor consequence when balanced against the substantial protection from tooth decay gained by drinking water containing an optimal concentration of fluoride. CDC will continue to assess the science regarding the use of fluoride in preventing tooth decay while limiting enamel fluorosis and will modify its recommendations if new information shows that a change is appropriate. CDC believes that community water fluoridation is safe and healthy and promotes its use for people of all ages.

Please Contact Us with Questions or Comments

The Community Water Fluoridation Program is administered by CDC's Division of Oral Health, National Center for Chronic Disease Prevention and Health Promotion. If you have any questions or require assistance related to community water fluoridation, please use the "Contact Us" link at www.cdc.gov/Fluoridation.