Public Fluoridation and Dental Health
From the desk of H. Lauren Vogel, D.O., Medical Director

(A ballot proposal will be on the November ballot for Bronson residents to determine the continuation of fluoridation of the city water supply. The health department and the Michigan Department of Community Health support the continued fluoridation of community water supplies and encourage your support of this public health practice.)

The premise established by the American Dental Association in the 1950's was that fluoride would prevent or reduce tooth decay. Tooth decay is one of the most prevalent chronic diseases of childhood and also affects adults and the elderly. It has been estimated that tooth decay affects half of all children, two-thirds of adolescents and over 90 percent of adults. Many of the community water supplies in Branch, Hillsdale and St. Joseph counties are fluoridated. Private wells are estimated to have fluoride levels of less than 1 ppm.

Research supporting fluoride use for the reduction of tooth decay is well established. Fluoridation of the water supply is stated to be the most effective method of providing fluoride to the majority of the public. In 2010, the American Academy of Pediatrics (AAP) recommended that fluoride supplements be prescribed for children at high risk for dental caries. The United States Preventive Services Task Force recommends fluoride supplementation for children older than 6 months whose primary water source is deficient in fluoride.

Water fluoridation is recognized as one of the 10 greatest public health advancements of the 20th century. Community water fluoridation, along with school based dental sealant programs, are the two main public health measures that the CDC recognizes for reducing dental decay in populations. Data from the CDC shows that for every dollar spent on water fluoridation, $38 are saved in reduced costs for dental care. The American Dental Association (ADA) has recommended water fluoride levels of 0.7 to 1.2 ppm for optimum protection. The EPA has set 4 ppm of fluoride as the maximum, safe level. A secondary maximum level of 2 ppm was set to prevent dental fluorosis. Too much fluoride incorporated in the tooth enamel can cause white spots to appear on the teeth.

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There is evidence that drinking fluoridated water over time actually strengthens bone and may be responsible for reduced risk of bone fractures in the elderly. However, excessive amounts of fluoride can possibly make bones more brittle. According to the AAP, the prevalence of dental fluorosis is increasing due to the increased consumption of processed foods made with fluoridated water and possible overuse of fluoridated toothpastes. The AAP estimates that about 40 percent of children and adolescents have dental fluorosis. Although this manifestation is largely cosmetic, excessive amounts of fluoride consumption during tooth development years may lead to a more moderate or severe form of fluorosis. Thus, at low levels, fluoride is protective to help prevent tooth decay.

The recommendations (in part) from the American Academy of Pediatric Dentistry include dietary supplementation for infants and children whose water supplies contain less than 0.6 ppm fluoride.

Treatment with an application of topical fluorides such as fluoride varnish or gels may be an additional means of prevention. Use of a very minimal amount of fluoride tooth paste two times daily (under supervision) for children is also effective. A fluoridated community water supply is a cost effective method to reduce tooth decay and improve oral health of the public.

REFERENCES
1. http://www.agwt.org/content/fluoride-drinking-water
Recent reports have shown an uptick in Enterovirus D68 (EV-D68) in children living in the Midwest. Original reports described clusters of illness in Kansas City, Missouri. Suspected cases are being investigated in Alabama, Colorado, Georgia, Iowa, Kansas, Kentucky, Michigan, Ohio, Oklahoma and Utah.

According to the Centers for Disease Control and Prevention (CDC), Enteroviruses are fairly common and are associated with 10 - 15 million infections in the United States each year. EV-D68 was first identified in California in 1962. This particular strain is less common than other enterovirus and has been rarely seen during the past 40 years. As a result, it has been less studied and not as much is known.

EV-D68 can cause a mild to severe respiratory illness. The full spectrum of the illness is not well defined. The virus, like the flu, spreads from person to person when an infected person coughs, sneezes or touches contaminated surfaces. There is no specific treatment for EV-D68.

Symptoms of EV-D68 infection can include wheezing, difficulty breathing, fever, hypoxia and racing heart rate. While some infected individuals will experience mild and self-limited illness and respond well to the treatment of symptoms; others may develop severe respiratory illness and require hospitalization. No known anti-viral medications are effective for treating EV-D68.

The Michigan Syndromic Surveillance Syndrome has detected an increase in emergency department visits over this past weekend due to respiratory illness in children ages 5-17. A number of healthcare facilities have also reported suspect cases or clusters of illness in Michigan. Healthcare professionals should be aware that EV-D68 is circulating and understand that it is a potential cause of clusters of severe respiratory illness, particularly in young children.

Please consider testing respiratory specimens for enteroviruses when the cause of infection in severely ill patients is unclear. The CDC requests NP swabs (preferred), serum (1/2 to 1 mL), and CSF (if the child has neurologic signs). All specimens will be processed by the MDCH Bureau of Laboratories but submissions must first be approved by MDCH Bureau of Disease Control, Prevention and Epidemiology. All clusters of illness are to be reported as well. Please contact 517-335-8165.

The health department is currently monitoring the incidence of colds through its online communicable disease surveillance system. Because EV-D68 is not a reportable disease in Michigan, it is not currently tracked through the Michigan Disease Surveillance System. However, the health department will keep the community posted with information as it becomes available.

Prevention is key, as there are no vaccines for EV-D68. The health department offers the following risk reduction suggestions: Wash hands often with soap and water for 20 seconds; Avoid touching eyes, nose and mouth with unwashed hands; avoid kissing, hugging and sharing cups or eating utilizes with people who are ill; Disinfect frequently touched surfaces, such as toy and doorknobs, especially if someone is sick.
Updates for 2014-15 Influenza Season

For the 2014-15 season, U.S. influenza vaccines will contain the same vaccine virus strains as those in the 2013-14 vaccine. Trivalent influenza vaccines will contain hemagglutinin (HA) derived from an A/California/7/2009 (H1N1)-like virus; an A/Texas/50/2012 (H3N2)-like virus, and a B/Massachusetts/2/2012-like (Yamagata lineage) virus. Quadrivalent influenza vaccines will contain these antigens and also a B/Brisbane/60/2008-like (Victoria lineage) virus. For 2014-15, the Advisory Committee on Immunization Practices recommends:

1. All persons > 6 months should receive influenza vaccine annually.
2. When immediately available, Live Attenuated Influenza Vaccine (LAIV) should be used for healthy children aged 2 through 8 years who have no contraindications or precautions. If LAIV is not immediately available, Inactivated Influenza Vaccine (IIV) should be used.
3. LAIV should not be used in the following populations:
   a. Persons < 2 years or >49 years;
   b. Those with the following contraindications:
      1. Children aged 2 through 17 years who are receiving aspirin or aspirin containing products;
      2. Persons who have experienced severe allergic reactions to the vaccine or any of its components, or to a previous dose of any influenza vaccine;
   c. Pregnant women;
   d. Immunosuppressed person;
   e. Persons with a history of egg allergy;
   f. Children 2 through 4 years who have asthma or who have had a wheezing episode in the last 12 months or for whom parents reported that a health care provider stated that they had wheezing or asthma within the last 12 months.
4. In addition to the groups for whom LAIV is not recommended above, person of any age with asthma might be at increased risk for wheezing after administration of LAIV. Also the safety of LAIV in person with other underlying medical conditions that might predispose them to complications has not been established. These conditions, in addition to asthma in persons aged>5 years, should be considered precautions for use of LAIV.
5. Persons who care for severely immunosuppressed persons who require a protective environment should not receive LAIV, or should avoid contact with such person for 7 days after receipt, given the theoretical risk of possible transmission. For more information on the Advisory Committee on Immunization Practices Recommendations for 2014-15 influenza vaccine, check out the CDC’s Morbidity and Mortality Weekly Report: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6332a3.htm.