### **Community Water Fluoridation**

CHARLESTON, WV NOVEMBER 16, 2016 GINA SHARPS MPH, RDH











AT. BO

- Tooth Decay Prevalence and Disparities in West Virginia
- What Is Fluoride and Where Is It Found?
- What Is Community Water Fluoridation and How Does Fluoridation Prevent Tooth Decay?
- What Are the Current Public Health Recommendations for Fluoridation?
- Is Community Water Fluoridation Cost Effective?
- Why Do Some People Oppose Community Water Fluoridation?
- Board of Health Opportunities and Best Practices







Community & School Oral Health Team

Private Practice 1993-2006

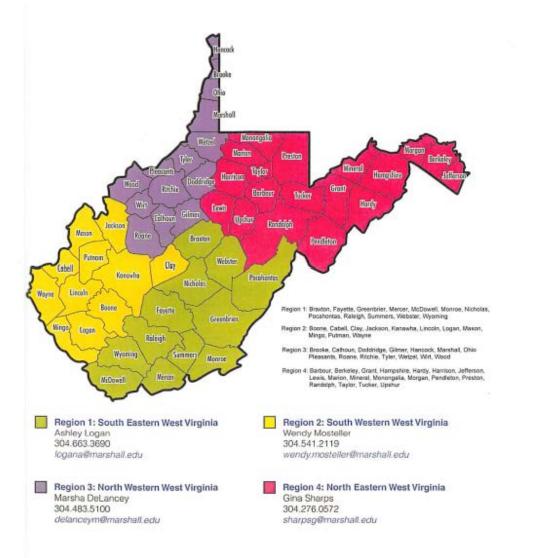


U.S. Department of Health and Human Services

Advisory Committee on Training in Primary Care Medicine and Dentistry



#### Community & School Oral Health Team



Deliverables & Activities are Based on ...

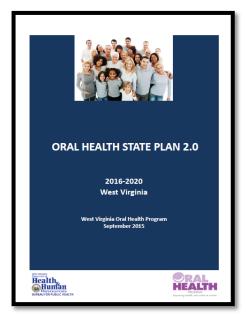
Evidence-Based Research (water fluoridation)

Best Practices Models/Protocols (i.e age 1 dental visit)

Center for Disease Control @ 2020 Oral Health Objectives

WV State Oral Health Plan

\*Population Based Health vs. Individual





### Introduction (pg.1)

- •Tooth decay is a common, chronic disease that causes pain and disability across all age groups.
- •Oral Health is essential to general health and well-being.
- •US Surgeon General's report details oral health as a "silent epidemic" and calls attention that oral diseases burdens some population groups.

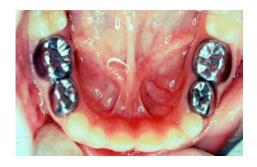




#### **Untreated Cavities Can Lead to....**

- •Extreme Pain
- •Spread of Infection
- •Difficulty chewing, poor nutrition
- •Costly dental treatment
- Missed School/Work Days
  Impaired Speech development
  Inability to Concentrate
  Reduced Self-esteem







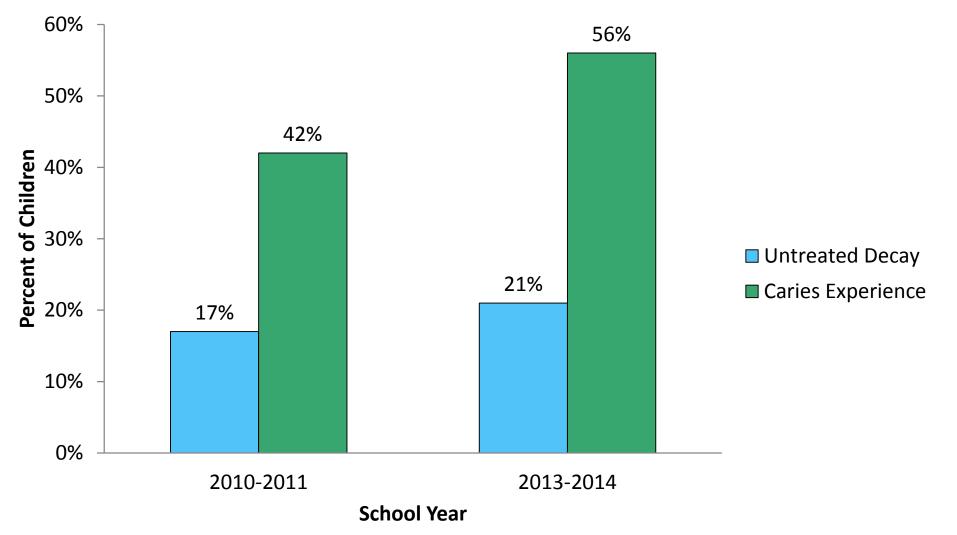
### CAVITIES: Disproportionately Distributed





- Nearly 80% of cavities occur in 20% of the population
- Those in poverty bear a disproportionate burden of cavities

Prevalence of decay experience and untreated decay among children (Universal PreK) in West Virginia



### Introduction Cont'd (pg.1)

".....boards of health make necessary policy and regulatory changes to introduce or institutionalize oral health programs and services into local public health agency practices.

Board of health (BOH) members serve as advocates and liaisons with neighbors, peers, stakeholders, and other partners.

Thus, it is the BOH's responsibility to continually assure and improve the oral health of the community. "



Evidence-Based Prevention Strategies

#### **Dental Sealants**

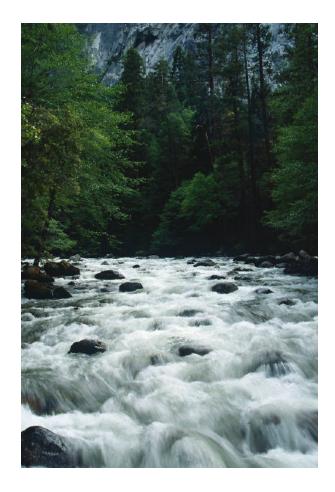


#### **Community Water Fluoridation**

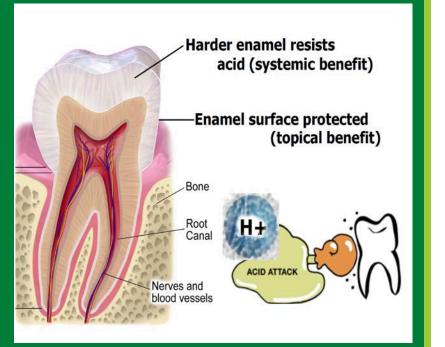


### What Is Fluoride and Where Is It Found?

- 13<sup>th</sup> most abundant mineral in the earth's crust
- Surface water (rivers) -- typically low concentrations, 0.2 mg/L (ppm) or less
- Groundwater (wells) --higher concentrations, 0.1 mg/L to over 5.0 mg/L



• Ocean water is typically 0.8 to 1.4 mg/L



•Water fluoridation has both topical and systemic benefits

•Fluoride is a vital mineral for proper bone and tooth formation

Decreased benefits below optimum

•No additional benefit above optimum



- One of ten great public health achievements of the twentieth century (CDC)
- Water fluoridation has over a 70 year history of success
- Began in in Grand Rapids, Michigan, in 1945.

What Is Community Water Fluoridation and How Does Fluoridation Prevent Tooth Decay?



Fluoridation is the adjustment of the fluoride in drinking water to the optimal level for reducing tooth decay

### Fluoridation is Effective



# Fluoridation reduces tooth decay about 25%

### Current Public Health Recommendations for Fluoridation (pg.4)

#### REPORTS AND RECOMMENDATIONS

#### U.S. Public Health Service Recommendation for Fluoride Concentration in Drinking Water for the Prevention of Dental Caries

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES FEDERAL PANEL ON COMMUNITY WATER FLUORIDATION Through this final recommendation, the U.S. Public Health Service (PHS) updates and replaces its 1962 Drinking Water Standards related to community water fluoridation—the controlled addition of a fluoride compound to a community water supply to achieve a concentration optimal for dental caries prevention.<sup>1</sup> For these community water systems that add fluoride, PHS now recommends an optimal fluoride concentration of 0.7 milligrams/liter (mg/L). In this guidance, the optimal concentration of fluoride in drinking water is the concentration that provides the best balance of protection from dental caries while limiting the risk of dental fluorids. The carier PHS recommendation for fluoride concentrations was based on outdoor air temperature of geographic areas and ranged from 0.7–1.2 mg/L. This updated guidance is intended to apply to community water systems that currently fluoridation, and is based on considerations that include:

- Scientific evidence related to the effectiveness of water fluoridation in caries prevention and control across all age groups,
- · Fluoride in drinking water as one of several available fluoride sources,
- · Trends in the prevalence and severity of dental fluorosis, and
- Current evidence on fluid intake of children across various outdoor air temperatures.

#### BACKGROUND

Because fluoridation of public drinking water systems had been demonstrated as effective in reducing dental caries, PHS provided recommendations regarding optimal fluoride concentrations in drinking water for community water systems in 1962.<sup>15</sup> The U.S. Department of Health and Human Services (HHS) is releasing this updated PHS recommendation because of new data that address changes in the prevalence of dental fluorois, the relationship between water intake and outdoor temperature in children, and the contribution of fluoride in drinking water to tood fluoride exposure in the United States. Although PHS recommends community water fluoridation as an effective public health intervention, the decision to fluoridate water systems is made by state and local governments.

Addross correspondence to: Barbara E Gooch, DMD, MPH, Genters for Discoar Control and Prevention, National Genter for Chronic Barnar Prevention and Health Promotion, Division of Oral Health, 4770 Barlord Hwy, NT, MS F80, Atlanta, GA 30541-3717; tol. 770-488059; fax 770-4880580; e-mail -depend-biol-field-goro.

#### Community Preventive Services Taskforce

#### **Recommendations Reaffirmed 2013:**

- 1. Community Water Fluoridation is *RECOMMENDED* based on *STRONG EVIDENCE* of effectiveness in *reducing cavities across populations*.
- 2. Evidence shows the **prevalence of** *cavities* is *substantially lower* in communities with community water fluoridation (CWF)
- 3. There is **NO EVIDENCE** that CWF results in *severe fluorosis*.



Supporting Materials

al Cancers 8

The <u>Community Preventive Services Task Force recommends</u> community water fluoridation based on strong evidence of effectiveness in reducing dental caries across populations. Evidence shows the prevalence of caries is substantially lower in communities with CWF. In addition, there is no evidence that CWF results in severe dental fluorosis.

Evidence indicates the economic benefit of CWF is greater than the cost. In addition, the benefit-cost ratio increases with the size of the community population.

Systematic Reviews: Evidence-Based

- Effect of Starting Community Water Fluoridation: 29.1% cavity reduction
- Effect from Stopping CWF:
   17.9% increase in cavities

### Enamel Fluorosis (pg.4)

•Occurs when children with developing teeth consume excessive fluoride (under 8 yr)

•Potential for enamel fluorosis increases as water content exceeds 2 mg/L



- **Dental fluorosis** is a change in the **appearance** of the tooth's enamel
- Very mild and mild forms of dental fluorosis (<u>the most common forms</u>)—teeth have scattered white flecks, occasional white spots, frosty edges, or fine, lacy chalk-like lines. These changes are **barely** noticeable and difficult to see except by a dental health care professional.
- Moderate form—teeth have larger white spots
- The *rare*, *severe* form—rough, pitted surfaces.
- Dental fluorosis **only occurs** when younger children (<8y.o.) consume too much fluoride while teeth are developing under the gums

### **Dental Fluorosis**







Normal

Questionable

Very Mild







Mild

Moderate

Severe



Does <u>NOT</u> occur from CWF

http://www.cdc.gov/fluoridation/faqs/dental\_fluorosis/index.htm

### Is Fluoridation is Cost-effective?

### Every **\$1** invested in water fluoridation



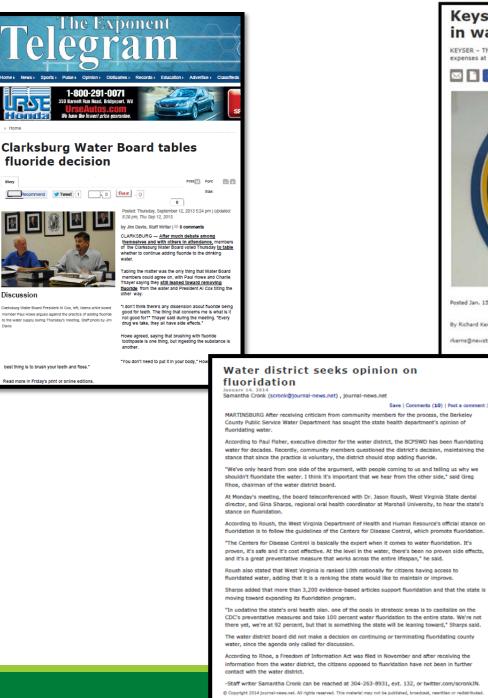
### Saves \$38 in unnecessary dental costs

Is Community Water Fluoridation Cost Effective?



## Why Do Some People Oppose Community Water Fluoridation?

- FREEDOM OF CHOICE-LIMITING INDIVIDUAL FREEDOM
- BELIEF THAT FLUORIDE IS HARMFUL TO HEALTH
- BELIEF THAT FLUORIDE IS HARMFUL TO ENVIRONMENT
- MISINTERPRETATION OF THE SCIENCE BEHIND FLUORIDATION
- CONCERN ABOUT TECHNICAL ENGINEERING ISSUES
- BELIEVE THE COST OF FLUORIDATING SMALL WATER SYSTEMS ARE TOO HIGH



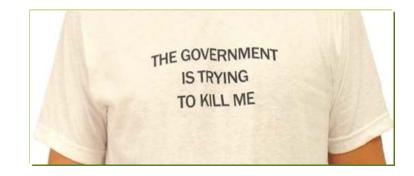


#### \*Key Takeaway\*

\*Can <u>one person</u> influence the decisions of a board/city council without the dental/public health communities being aware?

### Scientific Illiteracy

- Alarming allegations/Junk science can drive public policy
- "Its really terrifying the scientific illiteracy that supports these suspicions" - Dr. Marie McCormick, Institute of Medicine, 2004









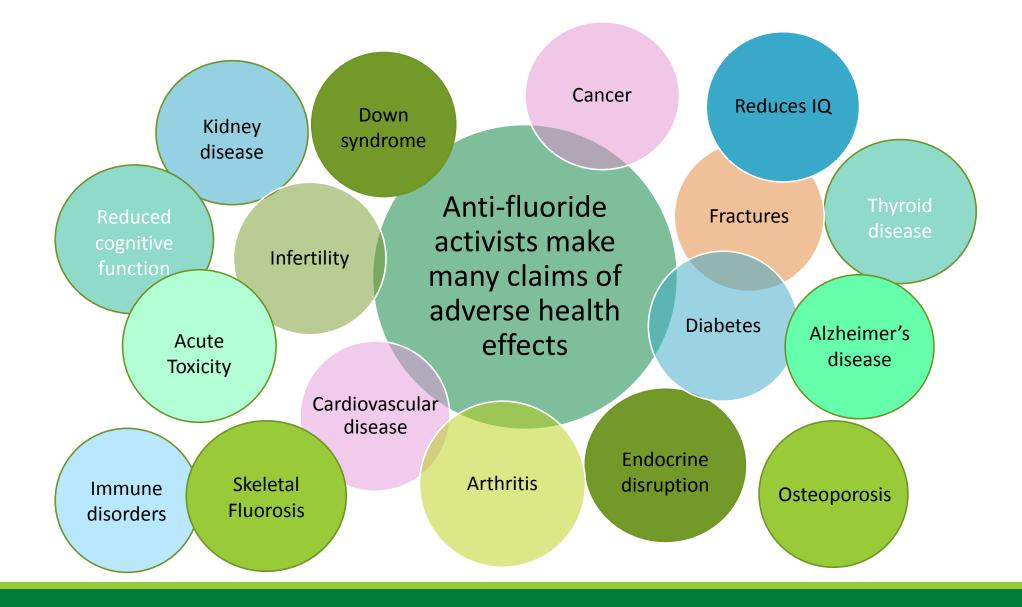
"Everyone is entitled to their own opinion but not to their own facts." - Daniel Patrick Moynihan

### **Organized anti-fluoride activists**

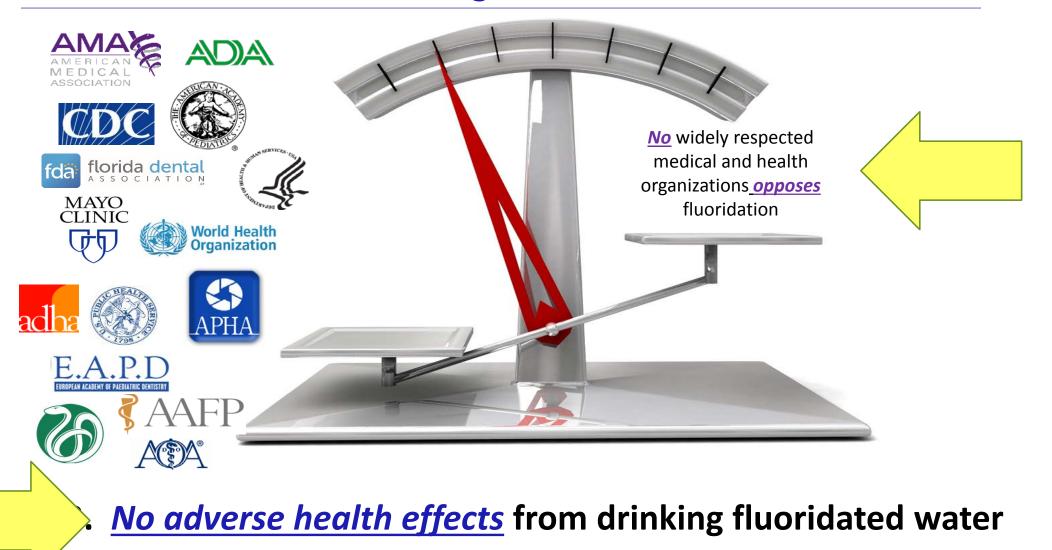
Relatively small group with strong internet presence

Distort research Misrepresent others' views Ignore scientific evidence Spread fear and misinformation

#### Anti-Fluoridationists claim that fluoride causes adverse health effects



### The Weight of Science



### AWWA Policy Statement

### American Water Works Association

Dedicated to the World's Most Important Resource™

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MEMBERSHIP	CONFERENCES & EDUCATION	RESOURCES & TOOLS	PUBLICATIONS	LEGISLATION & REGULATION	Search awwa.org	GO
ABOUT US	Home > Abo	Home > About Us > Policy Statements > Policy Statement Fluoridation of Public Water Supplies The American Water Works Association (AWWA) supports the recommendations of the World Health Organization (WHO), American Medical Association (AMA), Canadian Medical Association (CMA), Centers				
HISTORY	Fluorida					
LEADERSHIP						
STRATEGIC PLAN	other profe	for Disease Control (CDC), American Dental Association (ADA), Canadian Dental Association (CDA), and other professional organizations in the medical community, for the fluoridation of public water supplies				
FIND US	reliable ma	as a public health benefit. AWWA supports the application of fluoride in a responsible, effective, and reliable manner that includes monitoring and control of fluoride levels mandated by provincial, state, and/or federal laws and that is subject to community acceptance through applicable local decision-				
GOVERNANCE	making pro	making processes. AWWA is committed to regular reviews of the most current research on fluoride and the positions of the medical and dental communities.				
WORK WITH US	Adapted by	Adopted by the Board of Directors Jan. 25, 1976, reaffirmed Jan. 31, 1982, revised Jan. 20, 2002, revised Jan. 21, 2007, and revised Jan. 22, 2012.				
POLICY STATEMENTS	Inn 21 20					
CONTACT US						
WORK WITH US	Adopted by	Adopted by the Board of Directors Jan. 25, 1976, reaffirmed Jan. 31, 1982, revised Jan. 20, 2002, revised				

#### **Community Water Fluoridation**

"...one of the 10 great public health achievements of the twentieth century."



#### Oral Health in West Virginia: A Fact Sheet

#### Tooth Decay is a Problem!

#### Oral health is integral to general health. Although preventable, tooth decay is a chronic disease affecting all age groups. In fact, it is the most common chronic disease of childhood. The burden of disease is far worse for those who have limited access to prevention and treatment services. Left untreated, tooth decay can cause pain, tooth loss, and even death. Among children, untreated decay

- In the U.S., tooth decay affects<sup>7</sup>:
- ✓ 1 in 3 preschool children
- ✓ 1 in 2 school age children
- ✓ 2 in 3 adolescents
- ✓ 9 out of 10 adults

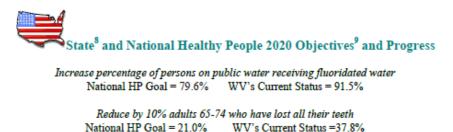
has been associated with difficulty in eating, sleeping, learning and proper nutrition. Among adults, untreated decay and tooth loss can also have negative effects on an individual's selfesteem and employability.<sup>2</sup>

#### **Community Water Fluoridation Prevents Tooth Decay**

Fluoride in community drinking water, adjusted to a concentration of 0.7 parts per million<sup>3</sup>, continues to be a safe, inexpensive and extremely effective method of preventing tooth decay.<sup>4</sup>

- Community water fluoridation benefits everyone in the community, regardless of age and socioeconomic status.
- Fluoridation provides protection against tooth decay in populations with limited access to
  prevention services.
- For every dollar spent on community water fluoridation, up to \$38 is saved in dental treatment cost.<sup>5</sup>

The Task Force on Community Preventive Services, a national independent, nonfederal, multidisciplinary task force appointed by the director of the Centers for Disease Control and Prevention (CDC), recently reviewed their systematic review of studies of community water fluoridation. They reconfirmed, in communities initiating fluoridation, the decrease in childhood decay was almost 30 percent over 3–12 years of follow-up.<sup>6</sup> Communities have fluoridated the water since 1945. In West Virginia water has been fluoridated since 1950.



#### What is West Virginia doing to meet the goals?

West Virginia has: instituted an oral health surveillance system to guide the planning, implementation, and evaluation of programs to prevent and control disease, implemented a standardized education curriculum, promoted inter-professional training with dental non-dental providers on appropriate fluoride supplement programs, maintained resources on well-water testing, recognized water systems maintaining optimal levels of fluoride, and utilized fluoride data from water systems.

#### Strategies for West Virginia's Future

- ✓ Encourage fluoride supplements and/or fluoride treatments for those at increased risk for decay who are not receiving fluoridated drinking water, along with daily brushing with fluoride toothpaste morning and night.
- ✓ Promote accurate, scientific information about fluoride.
- ✓ Encourage the use of dental sealants and school-based dental disease prevention programs

#### Endorsed by

Community Water Fluoridation is endorsed by the following organizations who support good oral health.



### Board of Health Opportunities and Best Practices

- EDUCATION
- SUPPORT POLICY
- COLLABORATION
- FINANCIAL RESOURCES

### Education



The best way to address concerns, and to inoculate people against misinformation about fluoride, is

to engage them in conversation, keeping it open and flowing

Related Sites

#### What Critics of Fluoride Say & What the Facts Say

Opponents of water functivation make a lot of claims that are at order with the facts. This document provides examples of what critics say, followed up with what the facts say. For each topic, a "Learn more" link can provide you with more detailed information.

#### 1. Critics Say: "The FDA has never approved fluoride's use in drinking water."

THE FACTS: The FDA does not have the authority to regulate fluoride in public drinking water. The Environmental Protection Agency (EPA) performs this role, and it sets firm suidelines for the amount of fluoride. The concentration of fluoride used for water fluoridation is far below the limit established by the EPA. Learn more

#### 2. Critics Say: "A Harvard study showed that fluoride lowers IQ scores for children."

THE FACTS: It wasn't a Harvard study. It was a group of studies from China and Iran, where water fluoridation isn't even practiced. These studies were seriously flawed for several reasons-mostly because they measured fluoride levels that were far higher than the levels we use for fluoridation in America. A far better study with a much larger sample was published in 2014 by the American Journal of Public Health, and this study showed there was no link at all between fluoride in water and IQ scores. Learn more

#### 3. Critics Say: "We deserve natural water. Nothing should be added to our water supply in order to medicate us."

THE FACTS: Fluoride is a mineral that exists naturally in water supplies. Many U.S. communities choose to add a little more fluoride to reach a level that has been proven to reduce the rate of cavities for children and adults. Fluoride isn't a medication. Medications are typically designed to treat disease or its symptoms. Fluoride is a mineral used to prevent dental disease from creating a cavity or even a more serious infection. Learn more

#### 4. Critics Say: "The warning label on the back of toothpaste tubes proves that fluoride

THE FACTS: You can find warning labels on many products, including some vitamins and minerals. Parents should consider this notice as a reminder that they should monitor their young children when they use fluoride toothpaste. The fluoride in toothpaste is roughly 1,000 times more concentrated than the fluoride in water, so health officials want to make it less likely that children will accidentally swallow toothpaste. PolitiFact, an independent fact-checking service, examined the claim made by critics and found that it was deceptive.

#### 5. Critics Say: "The fluoride that is added by many communities to drinking water is not safe because it is not a pharmaceutical grade of fluoride."

THE FACTS: Fluoride additives for water are subject to tough standards that include independent testing for quality and purity. These standards would be weakened by using pharmaceutical grading. In fact, the Centers for Disease Control and Prevention (CDC) has

### Recommended Resources

**ADA Fluoridation Facts** 

http://www.ada.org/sections/newsAndEvents/pdfs/fluoridation\_facts.pdf

American Public Health Association, Policy Statement 2008, 2011 <u>http://www.apha.org/advocacy/policy/policysearch/default.htm?id=1373</u>

Armfield, J M; When public action undermines public health: a critical examination of antifluoridationist literature : Aust New Zealand Health Policy. 2007; 4:25 <u>http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2222595/</u>

Fluoride and IQ and other good responses to anti-fluoridation myths at Campaign for Dental Health *Life Is Better with Teeth* website

http://www.ilikemyteeth.org/fluoridation/dangers-of-fluoride/fluoride-iqs/



Community Water Fluoridation: A Vital 21<sup>st</sup> Century Public Health Intervention Dec 17, 2014 CDC Public Health Grand Rounds http://www.cdc.gov/about/grand-rounds/archives/2013/december-17-2013.htm

CDC Water Fluoridation Additives , updated 2012 <u>http://www.cdc.gov/print.do;jsessionid=B6C2750D24A031966FF0BD454618E7AA.node1?url=http</u> <u>%3A%2F%2Fwww.cdc.gov%2Ffluoridation%2Ffact\_sheets%2Fengineering%2Fwfadditives.htm</u>

## Support Policy

8.2. Public water systems that plan to make long term changes in the method being used to artificially adjust fluoride levels, such as a change in the chemical composition or the dosage rate, shall notify the Commissioner prior to implementing the proposed change. The commissioner shall approve the change in writing before the public water system may begin implementation of the changes.

## Collaboration

From: WV Oral Health Coal <vvvralhealthcoalition@gmail.com> Date: August 17, 2016 at 5:47:12 PM EDT To: undisclosed-recipients;;

Subject: West Virginia Community Water Fluoridation (CWF) Coalition <u>Rapid Response ALERT</u> – Wellsburg, WV-Brooke County-8/17/2016

Dear Coalition Members,

Today, we just learned that the Wellsburg Water and Sanitary Board voted on discontinuing the use of fluoride in the city water supply at their August meeting. The Board cited studies that show the ingestion of fluoride as being detrimental to the health and well-being of those served in their community. The Board further stated that "the decision is quite simple....after having full knowledge that it may cause several health problems" that community water fluoridation is "improper and unethical."

The board voted unanimously to cease the addition of fluoride into the water supply.

The city of Wellsburg is located in Brooke County and the water system serves approximately 3,468 individuals.

(Wellsburg, WV-Brooke County) Rapid Response ALERT:

Please contact your respective targets (e.g., local water operators, local dentists and dental hygienists, local municipalities, etc.) immediately to alert, organize and <u>demand reversal</u> on the recent decision by the City of Wellsburg. In addition, encourage these individuals to write letters in support of CWF to the City of Wellsburg.

Wellsburg City Manager is Mr. Stephen Maguschak, His contact info is: Mr. Stephen Maguschak City Manager 70-7<sup>h</sup> Street Wellsburg, WV 26070 304-737-2104-Office 304-737-3004-Fax

Please consider sharing the Fluoridation Myths and Facts document attached to this email or the following information links below.

Resources:

www.ilikemyteeth.org

http://www.ilikemyteeth.org/wp-content/uploads/2011/12/Fluoride-Myths-Facts.pdf (document attached)

#### CITY OF

#### WELLSBURG

COMBINED WATER AND SANITARY BOARD 70 TOWN SQUARE WELLSBURG, WV 26070 (304) 737-2104 FAX (304) 737-3004

Wellsburg Water Dept.

April, 1 2016

PWSID# 3300517

Subject: fluoridation

Wellsburg Water Dept. is currently on our last drum of H.S.F. When it runs out, we will no longer be feeding fluoride. We are aware that we will be required to test for lead and copper because of this change, and are already scheduled to sample for lead and copper this summer.

Richard P. Stewart

Superintendent

Columber A Street

WELLSBURG WYTER PL

## 3 Key Messages

FLUORIDATION IS A COMMUNITY HEALTH MEASURE THAT BENEFITS PEOPLE OF ALL AGES.

FLUORIDATION IS **SAFE** AND IS SUPPORTED BY CREDIBLE SCIENTIFIC EVIDENCE.

FLUORIDATION IS BOTH COST EFFECTIVE AND COST EFFECTIVE .



Gina Sharps, MPH, RDH Regional Oral Health Educator Marshall University <u>sharpsg@marshall.edu</u> 304.276.0572

