Fluoride Update

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Outline

- Brief History
- EPA Regulations
- NAS-NRC Report
- Recent Events
Brief History

- **2001-2002 Customer Survey**
  - 51% **Support** drinking water fluoridation
  - 12% **Oppose** *(4% due to health concerns)*
  - 37% **No opinion**
2003 Board Review of Fluoridation Information

- Drinking water fluoridation supported by CDC, FDOH, ADA and other health organizations
- U.S. Surgeon General agrees, “Fluoridation of drinking water is one of ten great public health achievements of the twentieth century.”
- Majority of the population served by public utilities receive fluoridated water
- Significant dental health benefits observed
- Significant adverse health effects not observed
BCC approved drinking water fluoridation August 26, 2003
Fluoridation implemented July 7, 2004
Target rate 0.8 mg/L (optimal range: 0.7-1.2 mg/L)
FY12 Chemical cost budget: $154,860 + ~$50,000 labor, equipment maintenance, etc.
Cost of ~$0.25 per person per year
EPA Study: Public health cost avoidance of $16-$19 per person per year
EPA Regulations

- Fluoride
  - Primary MCL = 4.0 mg/L
  - Secondary MCL = 2.0 mg/L
- Primary Maximum Contaminant Level (MCL): based on potential adverse health effects
- Secondary Maximum Contaminant Level: based on potential aesthetic effects
- EPA is required to review primary MCLs every six years
2003: EPA requests NAS-NRC* review new health and exposure information for orally ingested fluoride

*NAS-NRC, National Academy of Sciences – National Research Council
“Fluoride in Drinking Water: A Scientific Review of EPA Standards”

- Recommended EPA update its public health goals to be protective of pitting of tooth enamel, clinical Stage II skeletal fluorosis and bone fractures
- Recommended EPA update fluoride risk assessment to include new data on health risks and better estimates of total exposure
- Current primary MCL of 4.0 mg/L not protective against severe tooth enamel pitting in children (0-8 yrs)
Majority of panel concluded weight of evidence supported a link between fluoride levels at or above 4.0 mg/L and increased frequency of bone fractures

“Tentative and mixed” evidence of link to osteosarcoma; more research needed

2007 Board was updated regarding the NAS-NCR Report
Recent Events

- **2010**: EPA undertakes risk assessment update as part of a six-year MCL review
- U.S. Dept. of Health & Human Services proposes an optimum level of fluoride in drinking water of 0.7 mg/L
- **January 2011**: EPA announces intent to review drinking water regulations for fluoride to determine whether revisions are appropriate
- No further action by EPA to date
Recent Events (continued)

- **July 2011:**
  Harvard University School of Dental Medicine,
  "An Assessment of Bone Fluoride and Osteosarcoma"

- Study design approved by National Institutes of Health, National Cancer Institute

- Latest analytical techniques used

- Study results reviewed by Harvard Medical School, Medical College of Georgia and nine hospitals involved in the study
“Best science to date and shows no association between fluoride in bone and osteosarcoma risk.”

~Dr. Helen Welton, International Association for Dental Research
Pinellas County Department of Health

- Dr. Haychell Saraydor
- Dr. Christopher Beach
Questions

www.pinellascounty.org/utilities/fluoridation.htm