**OBJECTIVES**

1. Understand role and history of water fluoridation in Worcester.
2. Define the population facing barriers to oral healthcare.
3. Outline pros/cons of water fluoridation for target population.
4. Identify implications of fluoridation debate for Worcester and assess availability of other options for oral health resources.

**BACKGROUND**

**What is fluoride and where does it come from?**

- Naturally-occurring mineral found in most all water sources.
- Helps prevent cavities by making enamel more resistant to the acid attacks that cause tooth decay.
- For the past 70 years, fluoride has been added to public water supplies in some areas nationwide.
- Dental and primary care providers can apply fluoride directly.
- Mouthwash with fluoride can be used for children >6 years old.
- Prescription fluoride supplements for children 6 months to 16 years who lack adequate fluoride in drinking water.

**Access to Dental Care – A Gap Exists**

- Every $1 invested in city water fluoridation saves on average $38 in dental treatment costs.
- Safe: reaches everyone, especially children and individuals without insurance.
- Pervasive: reaches everyone, especially children and individuals without insurance.
- Precinctual: adding fluoride to water is similar to fortifying other foods or beverages, such as adding iodine to salt, vitamin D to milk, calcium to orange juice, and folic acid to bread.

**FOCUS POPULATION**

- Low income, under 18, Hispanic and Black, non-English speaking individuals and children with disabilities.
- At risk due to limited access to healthcare, insufficient insurance coverage, limited health literacy, intersecting comorbidities, and socioeconomic determinants that impede scheduling and affording appointments.
- Racial, ethnic, and linguistic minorities (especially Black and Hispanic groups) have higher prevalence of dental decay and lower annual dental care utilization.

**FLUORIDATION OF PUBLIC WATER SUPPLIES DEBATE**

**PROS**

- Effective: most effective solution to prevent tooth decay, especially in children, reducing dental decay by 20-40%.
- Efficient: every $1 invested in city water fluoridation saves on average $38 in dental treatment costs.
- Pervasive: reaches everyone, especially children and individuals without insurance.
- Research: no randomized control trials to support water fluoridation.
- Informed Consent: adding a “medication” to the public water supply without adequate consent.
- Dosage: no way to ensure that each person receives a safe dose. Child body compositions have higher total body water, which could increase body fluoride level.
- Toxin: fluoride in high concentrations is a dangerous chemical, posing an occupational hazard to those who handle it to add it to the water supply.

**CONS**

- Effective: most effective solution to prevent tooth decay.
- Efficient: every $1 invested in city water fluoridation saves on average $38 in dental treatment costs.
- Pervasive: reaches everyone, especially children and individuals without insurance.
- Research: no randomized control trials to support water fluoridation.
- Informed Consent: adding a “medication” to the public water supply without adequate consent.
- Dosage: no way to ensure that each person receives a safe dose. Child body compositions have higher total body water, which could increase body fluoride level.
- Toxic: fluoride in high concentrations is a dangerous chemical, posing an occupational hazard to those who handle it to add it to the water supply.

**REFERENCES**


**ACKNOWLEDGEMENTS**

Thanks to Concord MD, Kennedy Community Center, Family Health Center of Worcester, HeadStart, Health Alliance, MCPHS Dental Hygiene School, A Mother’s Touch Dentistry, New England Kids Dental, Quinsigamond Dental Hygiene School, Worcester Kids Dental, Drs. Ramos, McIntyre, Bharti, Chang and clerkship faculty: Dr. Hugh Sila, Susan Feeney, Patricia White.