MESSAGING STRATEGIES IN THE ERA OF MISINFORMATION

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Questions for the Viewer

Which public health issues are especially vulnerable to misinformation in your communities?

A. Fluoridation
B. Addiction
C. Firearm safety
D. Vaccination
E. Other (type in chat box)
I. Fluoride: Background & Research

II. Fluoride & Public Health

III. Community Water Fluoridation: Myths vs. Reality

IV. Fluoride, Politics, & the Media

PART I

FLUORIDE: BACKGROUND AND RESEARCH

Fluoride: A Naturally Occurring Mineral

- Surface earth: 13th most abundant mineral in Earth's crust
- Surface freshwater: Typically low concentrations <0.2 mg/L (ppm* in rivers
- Groundwater: Higher concentrations 0.1 – 5.0+ mg/L in wells
- Ocean water: Typically 0.8 – 1.4 mg/L

* 1 part per million (ppm) = 1 mg/L
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Dr. McKay establishes dental practice in Colorado Springs, CO

1901

1908

“Colorado Brown Stain” noted among Melong residents. Key observation: Very few cavities in this population. Correlation…?

Dr. McKay begins to investigate fluorosis in surrounding areas.

Dr. H. Trendley Dean begins first epidemiological study of fluorosis

1901

1908

Study comparing “High” and “Low” F communities

1931

1933

1939

1941

Dean launches field investigation “21 Cities” study

Finding: 1.0 mg/L fluoride led to optimal cavity reductions without brown staining

H. Trendley Dean begins first epidemiological study of fluorosis

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Finding: 1.0 mg/L fluoride led to optimal cavity reductions without brown staining

History of Fluoride Research

1931–1941: Intensive Research Begins

Four pairs of cities in the US and Canada are studied

For each pair, one city adjusted water fluoridation to 1.0 mg/L, and a second non-fluoridated city is identified as a control

Grand Rapids, MI first city to adjust public drinking water fluoride levels to 1.0 mg/L

1945

1960

In studied cities with fluoridation, cavity rates dropped by 60–70%
Why Oral Health Matters

Cavities are the most common chronic disease for children and teens. They are significantly more common than asthma, obesity, and diabetes.

- Severe pain (toothaches)
- Difficulty in chewing
- Poor weight gain
- Difficulty concentrating
- Infectious and transmissible
- Predictor of cavities later in life
- Costly to treat
- Deaths

How Fluoride Works

Topical Effect
- From the outside of the tooth
- Saliva, fluoridated toothpaste and other topical products

Systemic Effect
- From the inside and outside of the tooth
- Saliva bathes tooth enamel 24/7 every day

Adults also benefit, rather than only children (as was once assumed)
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- Low-income kids are more than twice as likely to experience tooth decay.
- Underserved communities bear a disproportionate burden of cavities.
- 39.7 million U.S. residents are living in poverty.

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The Mayo Clinic calls oral health a “window to your overall health”

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PART III
Community Water Fluoridation: Separating Reality and Myth
Community Water Fluoridation: Reality

Major cavity increases after cessation:

- Juneau, Alaska – Dental disease among preschool-age kids increased, requiring an average of 1 additional dental procedure per child, per year
- Calgary (Canada) – Cavity rates among children skyrocketed 146% in 3 years
- Windsor (Canada) – Cavity rates increased 51% in a 5-year period

Sources: J. Meyer et al., BMC Oral Health, 2018, 18:215; L. McLaren et al., Community Dentistry and Oral Epidemiology, 2016; Windsor's oral health data was referenced in a story by Brian Cross in the Windsor Star, December 18, 2018

Community Water Fluoridation: Myth

- CWF is associated with lower IQ
- No toxicological testing has been conducted on fluoride
- The ADA says it shouldn’t be used in infant formula
- Fluorosis is a sign of toxic effects
- It causes ADHD
- It causes Alzheimer’s
- It harms the kidney, the immune system and other systems
- It’s a conspiracy — the phosphate fertilizer industry is disposing of its “hazardous waste”

Research Confirms Fluoridation’s Safety

Opponents’ claim: “NRC’s 2006 report shows CWF is harmful.”

Actual findings: Is there definitive evidence at 4.0 mg/L to show that fluoride had an effect on...

- Liver
- Kidneys
- Endocrine system
- Gastrointestinal system
- Immune system
- Cancer

[ ] Musculoskeletal system
[ ] Reproduction and development
[ ] Neurotoxicity
[ ] Neurobehavioral health
[ ] Genes

[✓] Tooth enamel*
Variations in Tooth Enamel

So, what exactly is the effect of community water fluoridation on tooth enamel?

![Variations in Tooth Enamel Diagram]

- Normal Enamel
- Questionable Fluorosis
- Very Mild Fluorosis
- Mild Fluorosis
- Moderate Fluorosis
- Severe Fluorosis

Results from improper use of fluoride products
Not caused by community water fluoridation

Support for Fluoridation’s Safety: Reviews & Studies

- National Toxicology Program (2018)
- Food Safety Authority of Ireland (2018)
- Environmental Protection Agency (2017)
- National Health & Medical Research Council of Australia (2016)
- Water Research Foundation (2015)
- Royal Society of New Zealand (2014)
- Community Preventive Services Task Force (2013)
- Calif. Office of Environmental Health Hazard Assessment (2011)
- Irish Forum on Fluoridation (2002)
- U.S. Public Health Service (1991)
- Britain’s Royal College of Physicians (1976)
- Univ. of Michigan School of Public Health (1960)

Support for Fluoridation’s Safety: Organizational Consensus

- American Academy of Family Physicians
- American Academy of Pediatrics
- American Academy of Pediatric Dentistry
- American Academy of Physicians Assistants
- American Association for the Advancement of Science
- American Dental Association
- American Dental Hygienists Association
- American Medical Association
- American Osteopathic Association
- American Public Health Association
- Assoc. of Maternal & Child Health Programs
- Centers for Disease Control and Prevention
- National Academy of Medicine (formerly known as the Institute of Medicine)
- Mayo Clinic
- U.S. Surgeon General
- World Health Organization

*Sources: Some of these organizations’ positions and official statements are accessible in “In Their Own Words,” Campaign for Dental Health, American Academy of Pediatrics, 2014.*
Questions for the Viewer

How does your agency approach the intersection of scientific evidence and political advocacy?

A. Engage the media and public officials directly through a communications strategy
B. Encourage each person to stay informed of local issues that require scientific expertise
C. Partner with community-based advocacy groups and other experts
D. All of the above
E. Other (type in chat box)
Johnny Johnson, DMD, MS

**You are the ideal person to advise public officials**

- You care deeply about the health and wellness of your community
- You must step forward or someone else becomes “the expert” by default

**I did it — and so can you!**

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Thank you!
Presentation Overview

I. Challenges
II. Effective Communication: Clarity
III. Effective Communication: Context
IV. Effective Communication: Care

PART I

CHALLENGES
Facts are often presented without the context to make them relevant.

People tend to filter the facts to align with their preexisting beliefs, culture and values.


Challenge: Facts Alone Aren't Enough

Who is our target audience?

What are their cultures and core values?

Where do they get health information from, and how do they process it?

Key Questions To Navigate Challenges

Questions for the Viewer

What are the biggest challenges for your agency's health communication strategy?

A. Identifying the target audience
B. Identifying target audience’s culture and core values
C. Identifying how and where target audience gets health information
D. All of the above
E. Other (type in chat box)
The Three C’s of Effective Communication

Clarity  Context  Care

EFFECTIVE COMMUNICATION:
CLARITY

PART II

We want to ensure that every low-income family in Anytown has access to healthy foods and drinks.

Communicate With Clarity: Do’s

DO:
- Use plain language
- Use shorter sentences (15 – 20 words)
- Use shorter paragraphs (less than 100 words)
- Avoid “lazy” words

We want to ensure that every low-income family in Anytown has access to healthy foods and drinks.
The risk of vaccine-related injury is low. But how low?

(Don't: Leave out essential information)

Who benefits from fluoride and fluoridation? Does it only benefit children?

(Don't: Tease your reader)

Communicate with Context

The need for the MMR vaccine is enhanced if parents know:

- Some children who get measles develop encephalitis (brain swelling) that can lead to convulsions, deafness or intellectual disability
- Nearly 1 in 20 children with measles will get pneumonia
- Pregnant women who get measles are at greater risk of a miscarriage or a pre-term birth

(Part III: Effective Communication: Context)
Communicate with Context

Sharing data without context:
“A new study from Juneau, Alaska shows that after water fluoridation ended, the average Medicaid dental treatment costs for children increased by an inflation-adjusted 47%.”

Sharing data with context:
“A new study shows that dental treatment needs are higher without fluoridation. After Alaska’s capital city ended fluoridation, the average preschool-age child needed 1 extra cavity procedure each year at a cost of about $300.”

The Power of Analogy

An analogy can improve the public’s understanding because:
✓ It relates to something they already know or do
✓ It can create a mental picture

“Analogs allow patients to hang difficult concepts onto information they already know rather than having to learn from scratch.”

– Terry S. Ruhl, MD

Sample Analogy: Personal Freedom

• Many states have laws restricting a person’s freedom to use their cell phone while they drive a motor vehicle.
• Personal freedom is important — and so is the public’s health and safety. Sometimes, health and safety should take priority.
PART IV
EFFECTIVE COMMUNICATION: CARE

Communicate With Care

<table>
<thead>
<tr>
<th>Scientific Term</th>
<th>Scientific/Public Health Meaning</th>
<th>How the Public May Hear It</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Surveillance&quot;</td>
<td>Process of collecting data</td>
<td>&quot;Government monitoring&quot;</td>
</tr>
<tr>
<td>&quot;Random sample&quot;</td>
<td>A subset in which each member had an equal chance of being selected</td>
<td>&quot;They picked people without thinking carefully about it&quot;</td>
</tr>
<tr>
<td>&quot;Chemical&quot;</td>
<td>Any substance consisting of matter</td>
<td>&quot;A substance that is artificial and toxic&quot;</td>
</tr>
<tr>
<td>&quot;Intervention&quot;</td>
<td>An evidence-based health practice</td>
<td>&quot;Government exercises its authority&quot;</td>
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</tbody>
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Visual Communication Matters

Articles that included a photo of scientists with the corrective statement lowered misperceptions among all groups of participants.

Matt Jacob, BA
THANK YOU!

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QUESTIONS?

Resources

CDC Fluoridation Page
www.cdc.gov/fluoridation

American Fluoridation Society
americanfluoridationsociety.org

Campaign for Dental Health
American Academy of Pediatrics
likemyteeth.org

American Dental Association
Resources

Using Everyday Words for Public Health Communication
Centers for Disease Control and Prevention

Plain Language Medical Dictionary
University of Michigan
http://withmi.com
www.lib.umich.edu/taubman/health-sciences/library/plain-language-medical-dictionary

The Debunking Handbook
Global Change Institute
skepticalscience.com/docs/Debunking_Handbook.pdf

Successful Advocacy: A Values-Based Approach
Metropolitan Group
www.metgroup.com/Research/Advocacy/SCREEN-041513.pdf