



THE WATSON SCHOOL
of International
and Public Affairs

The Landscape of Health Misinformation

Where We Are and How to Move Forward

In collaboration with the Rhode Island Public Health Association (RIPHA)

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This presentation is submitted in Partial Fulfillment of the Requirements for the Degree of Master of Public Affairs in the Watson Institute for International and Public Affairs at Brown University.

The authors are candidates for the degree of Master of Public Affairs (MPA) at Brown University and have produced these slides for their Policy in Action (PIA) Project, an academic requirement for the MPA degree. The sponsoring organization for this PIA Project, Rhode Island Public Health Association, did not commission these slides. Contribution of a substantive policy question and advisory input was requested by the MPA Program from the PIA sponsoring organization to support the students in completing their Policy in Action Project. A copy of this document was provided to the PIA sponsoring organization at the completion of the project prior to its submission. The views, analysis, and recommendations contained in this document are not necessarily those of the PIA sponsoring organization. There is no obligation on the PIA sponsoring organization to adopt, publish, or otherwise use the analysis and recommendations contained in this document. Any questions about the content of this report should be addressed to the corresponding authors. Any questions about the Policy in Action Project or the MPA Program should be addressed to Dr. Matt Lyddon, Director of Program Operations, at watsonmpa@brown.edu.

Outline

- Background
- Public Health Framework to Address Infodemic
 - Tertiary Prevention
 - Secondary Prevention
 - Primary Prevention
 - Primordial Prevention
- Opportunities and Considerations
- Conclusions

Definitions

- Infodemic = an excess of information including false or misleading information that leads to confusion
- Misinformation = False information spread unintentionally, without the intent to harm
- Disinformation = False information spread intentionally with the intent to manipulate facts, often with a political agenda

An Epidemic Epidemic?

- Spread of misinformation frequently seen during health crises
- Ebola (Sell, et al., 2020)
 - 2013-2016 W. Africa
 - Spread of misinformation on social media
 - Highly politicized & corresponded with lead up to 2014 US midterms
 - 10% of tweets about Ebola virus were false or misrepresented the truth

“Why does our President want raise our electric bills, ruin our health insurance and FLOOD our country w Ebola & illegal immigrants? #tcot” 

A 2014 social media post showing how the Ebola outbreak was politicized through misinformation in the U.S. midterm elections.

An Epidemic Epidemic?

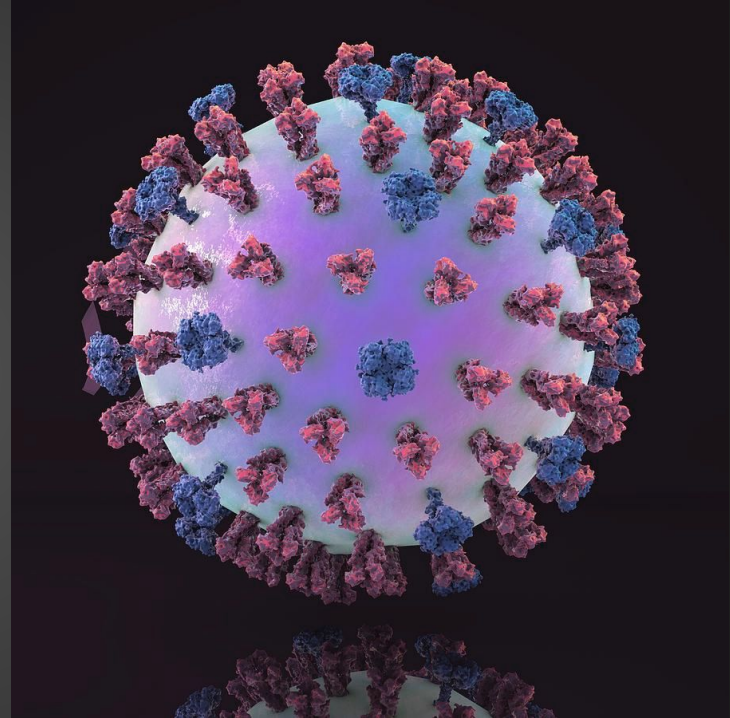
- Zika Virus
 - Spread of misinformation about Zika in Brazil (Carey, et al., 2020)
 - 23.8% of Zika videos on YouTube were misleading & were more popular than accurate ones (Bora, 2018)



Screenshot of a sensationalist headline about Zika and migrants, illustrating how inflammatory misinformation spreads more rapidly than facts.

An Epidemic Epidemic?

- H5N1 “Swine Flu”
 - Analysis of tweets revealed commonly believed falsehood that disease was transmitted by pigs / pork (Ahmed, 2019)
 - Truth: So-named due to genetic resemblance of flu strain that affects pigs



Swine Flu Virus H1N1, Illustration

How COVID Exacerbated the Problem



Joe Rogan headline illustrates celebrity-driven COVID misinformation.

COVID-19

- False information spread about the vaccine, ways to prevent the virus, and treatment options
- Generated confusion about what was true, what was false, and who was trustworthy

How COVID Exacerbated the Problem



A digital illustration shows a glowing vortex of smartphones and news, capturing the chaos of information overload.

- Infodemic (Bhattacharya S, et al., 2025)
 - An overwhelming flood of information, including false or misleading information
 - Amplification of misinformation via digital platforms
 - Psychological drivers (culturally antagonistic memes, emotional appeals)
 - Echo chambers
 - In one sample, 24.8% of pandemic tweets contained misinformation (Pasquetta, 2021)

What Was Different About COVID?

- Consequences:
 - Vaccine hesitancy
 - Exposure to vaccine misinformation reduced intent to receive a COVID vaccine (Loomba, 2021)
 - Reduced adherence to public health measures
 - Erosion of trust

Current Landscape



A graphic of leading AI logos highlights how large language models are reshaping the digital landscape and influencing health misinformation.

Advent of Large Language Models (AI)

Generate false information exponentially faster than one person not using AI can:

- LLM generated 102 disinformation blogs on vaccines and vaping in 65 minutes (Menz et al., 2024)

Appearance of Authority

- “AI-generated text [often] appears coherent and authoritative despite being inaccurate” (Saeidnia et al., 2026)

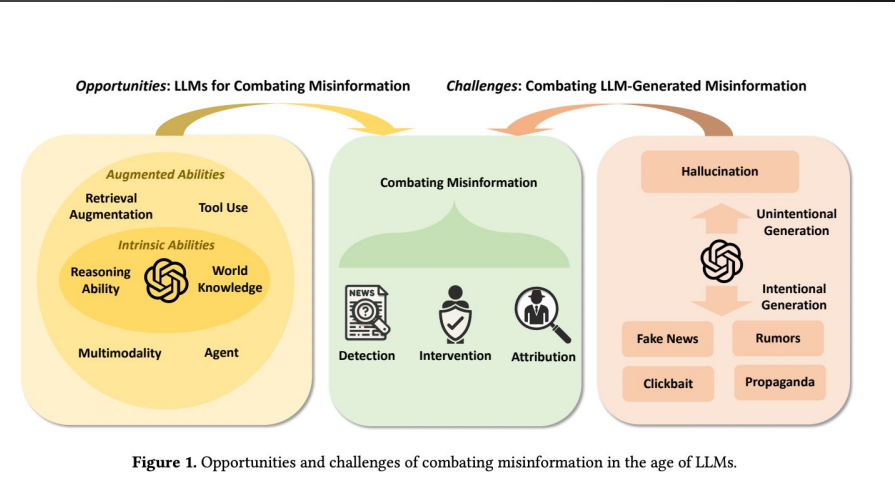


Figure 1. Opportunities and challenges of combating misinformation in the age of LLMs.

A diagram shows how LLMs can both combat and create misinformation, highlighting their risks and benefits.

AI Inaccuracy

What is a hallucination?

An LLM hallucination is when AI generates information that is false, nonsensical, or factually incorrect, but presents it as if it were true.

It's not lying, but rather confidently guessing wrong.

A graphic defines AI hallucination as "confidently guessing wrong," highlighting the risks of false information in healthcare.

Hallucinations

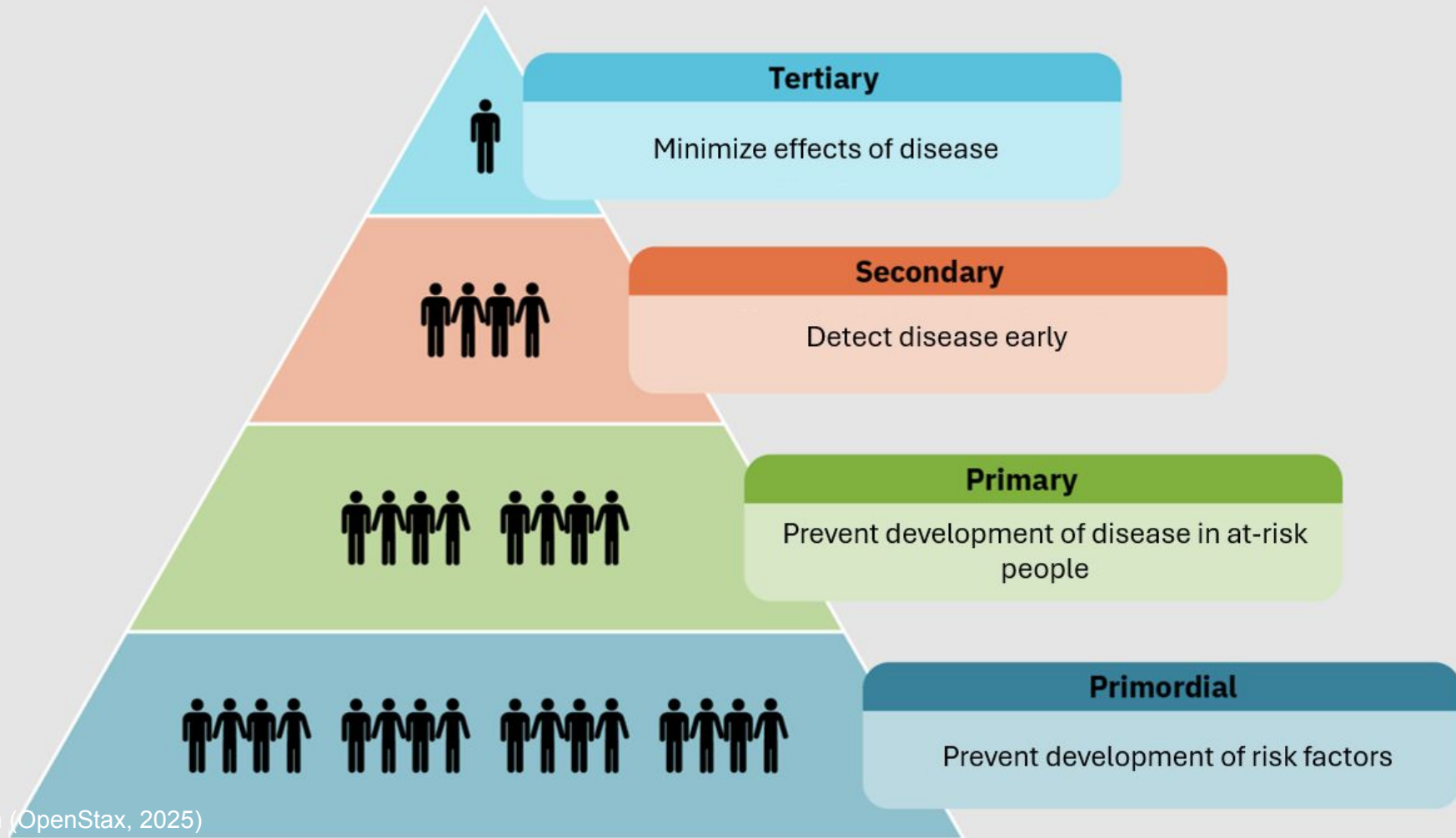
- AI models elaborate on made-up details in clinical summaries, creating false lab values, diseases, and physician testimonials
(Omar et al., 2025; Menz et al., 2024)

Repeat errors

- Medical students exposed to misleading AI-generated clinical explanations suffer decreased diagnostic accuracy (Teng et al., 2026)

Detection Failure

- AI-generated content is getting past the detectors due to rapidly evolving generational techniques (Feng et al., 2025)





Tertiary

Provide effective resources to combat false narratives



Secondary

Identify harmful narratives and intervene early



Primary

Build health & digital literacy



Primordial

Build & maintain trust in health institutions

Tertiary Prevention

Tertiary Prevention

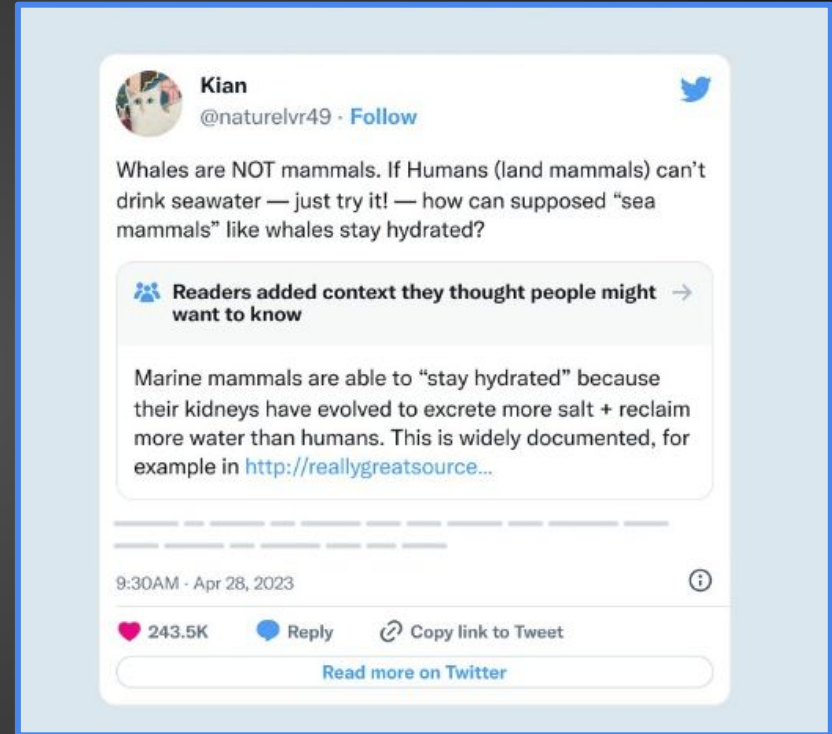
- Mitigating the negative effects of infodemics once one is in full swing
 - Debunking / Refutation
 - Community Engagement to Proliferate the Truth



The burden of medical misinformation.

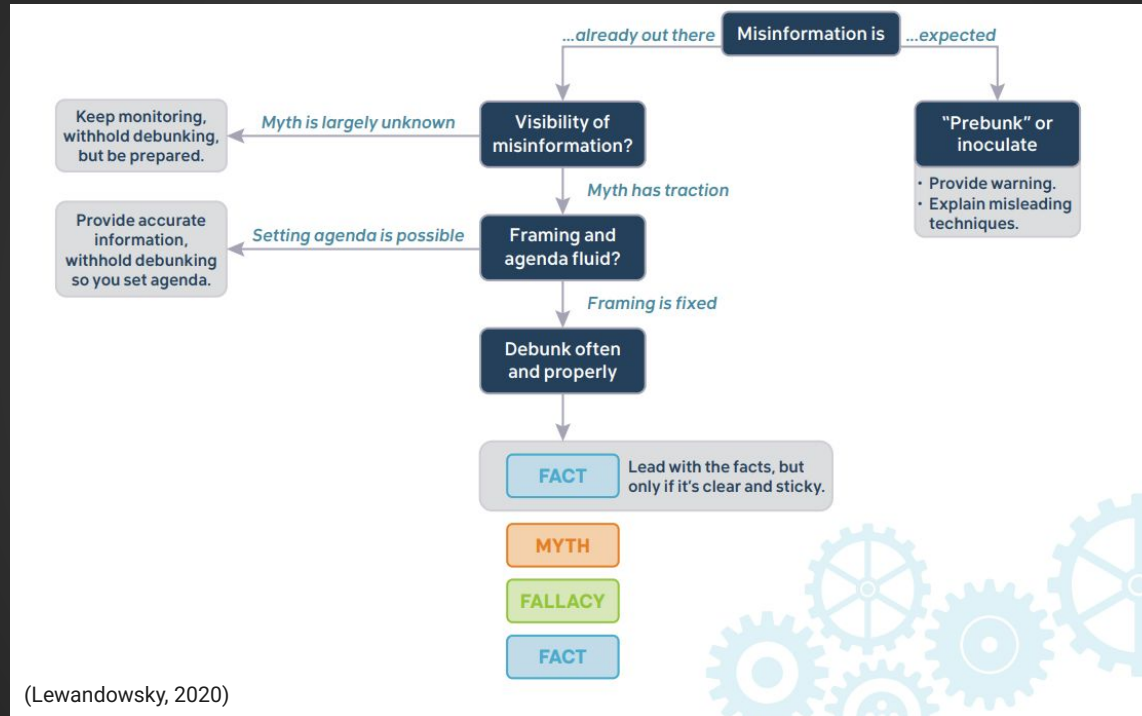
Debunking

- Social media debunking
 - Community notes
 - Qualified users can post notes that are then rated according to helpfulness
- Efficacious?
 - Decreases engagement with misinformation (Slaughter, 2025)
 - BUT critics point out onslaught of misinformation >>> community notes



A screenshot with a "Community Note" illustrates the limits of crowdsourced fact-checking on misinformation.

When to Debunk



(Lewandowsky, 2020)

The 2020 Debunking Handbook flowchart guides effective misinformation correction by emphasizing truth and clarity.

Debunking

Associated with Decreased Efficacy

- Science-related misinformation (Chan, 2023)
- Politically polarizing (Bruns, 2024, van Bavel, 2018)

Associated with Increased Efficacy

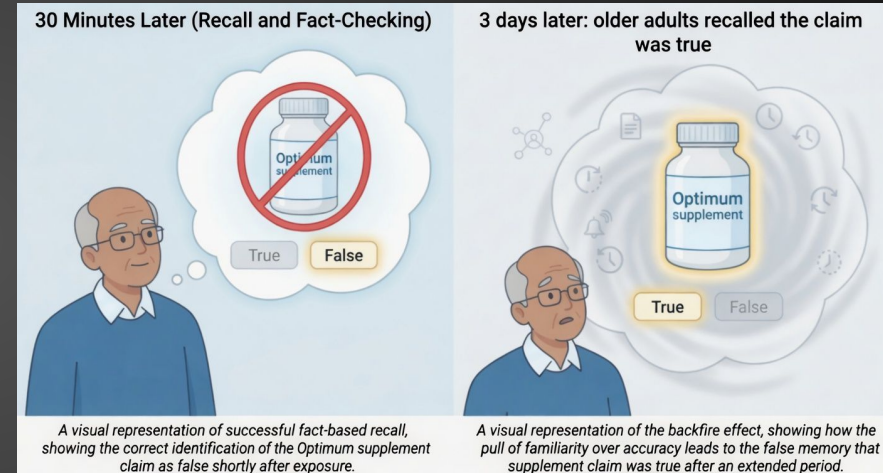
- Increased familiarity with a topic
- Debunking slightly more effective than pre-bunking (Lorko, 2026; Bruns, 2024)

Familiarity Backfire Effect

- People presented with a false claim and told it was false

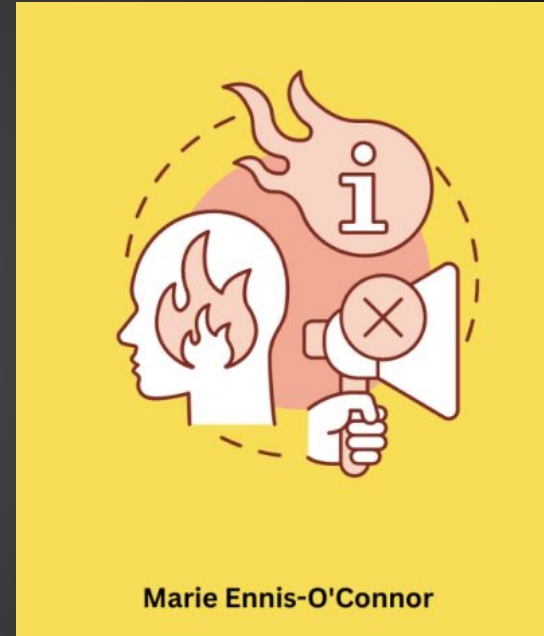
Optimum supplements increase bone density

- 30 minutes later: older adults recalled the claim was false
- 3 days later: older adults recalled the claim was true



Familiarity Backfire Effect

- People are more likely to believe claims that are *familiar* are true.
- Difficulty replicating this in subsequent studies (Prike, 2023; Ecker, 2020)



This illustration shows how debunking misinformation can unintentionally reinforce it by making it more familiar.

Negative Wording Effect

- Negative wordings more likely to be remembered as opposite (Wilson, 2008)
 - *Do not* take this pill on an empty stomach.
Do take this pill on an empty stomach.
 - More potent effect in older adults.

Yep, a mom's COVID shot during pregnancy protects her baby, a large study finds

MARCH 25, 2026 · 8:12 AM ET

By Tara Haelle

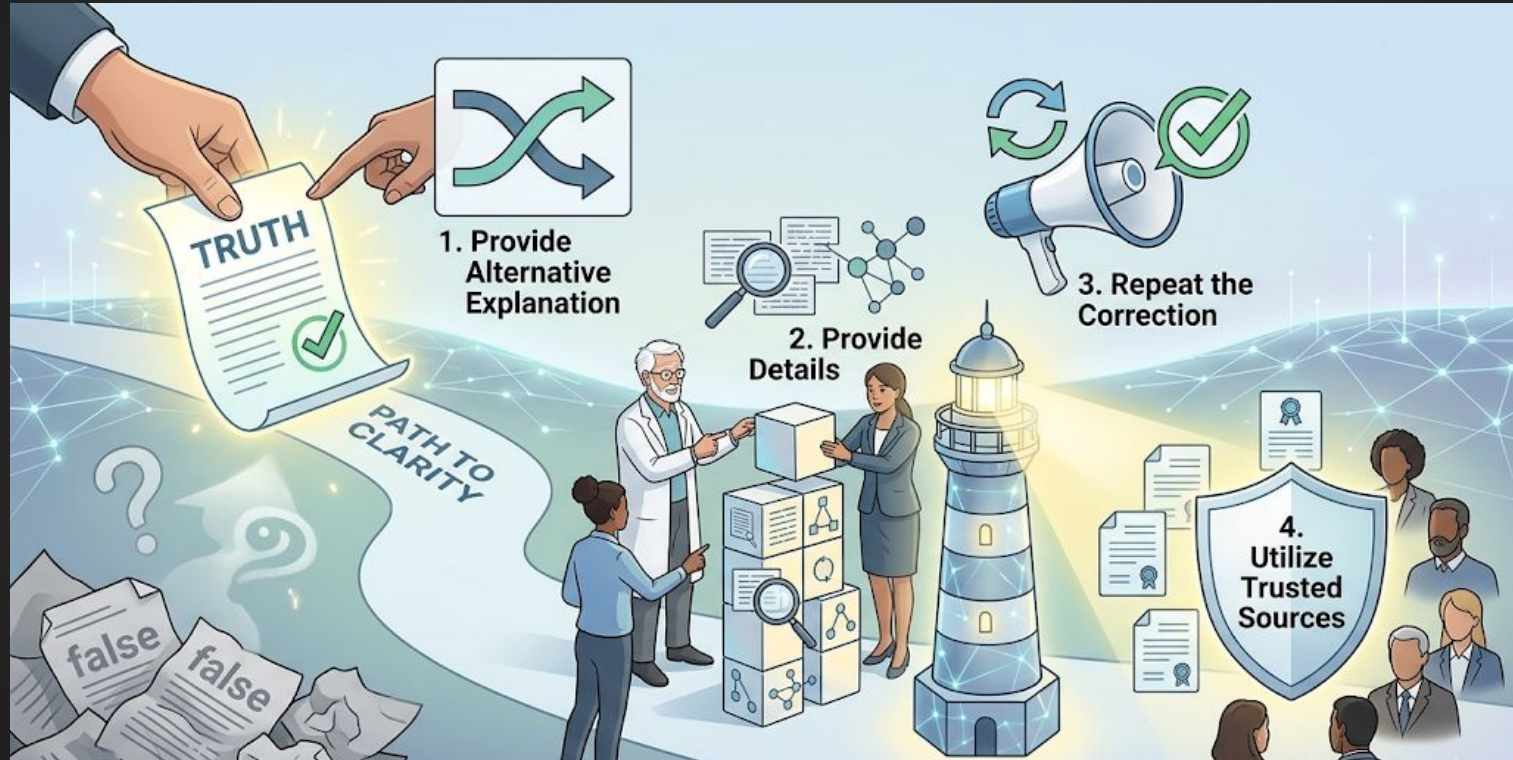


FACT

COVID vaccines
do not have an
effect on fertility.

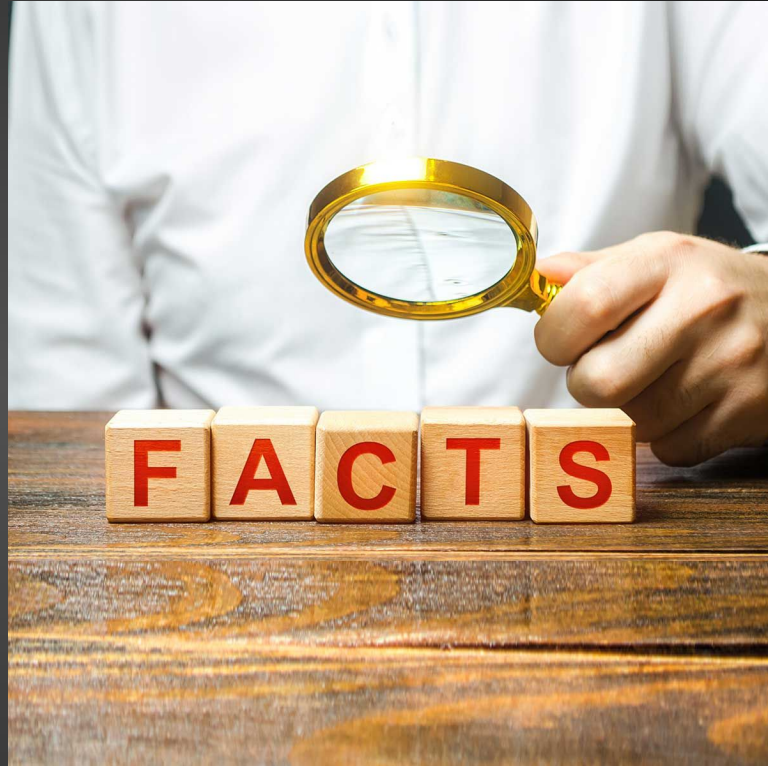


Tips for Debunking



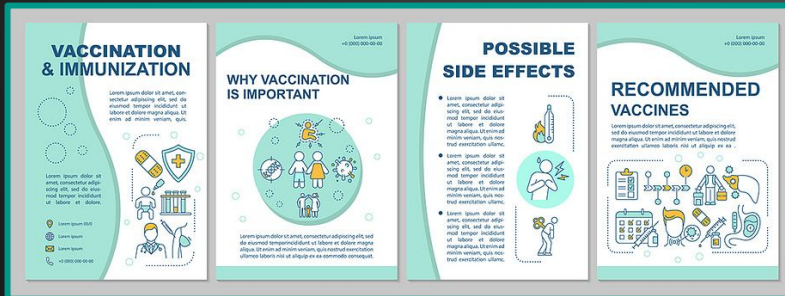
Don't Worry About

- Order of operations:
 - Myth-fact vs fact-myth vs 'truth sandwich'
- Identifying type of misinformation
 - Manufactured vs manipulated
- Number of sources endorsing a correction



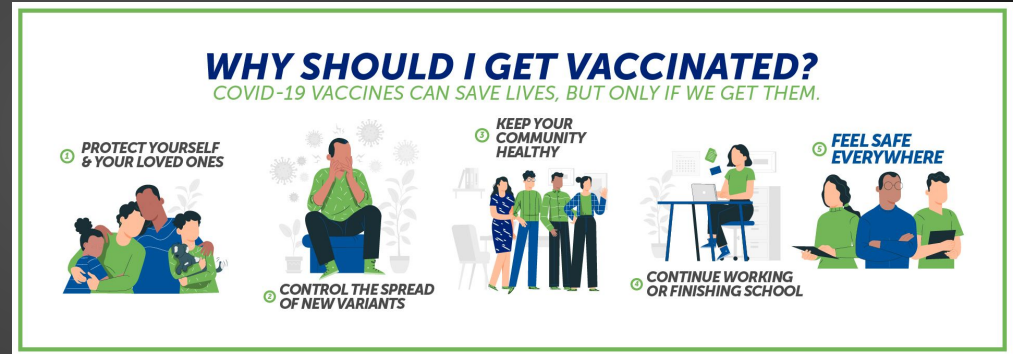
Community Engagement to Proliferate the Truth

- Mass communications
 - Billboards
 - Hotlines
 - Pamphlets
 - Press Briefings
 - Social Media



Community Engagement Recommendations

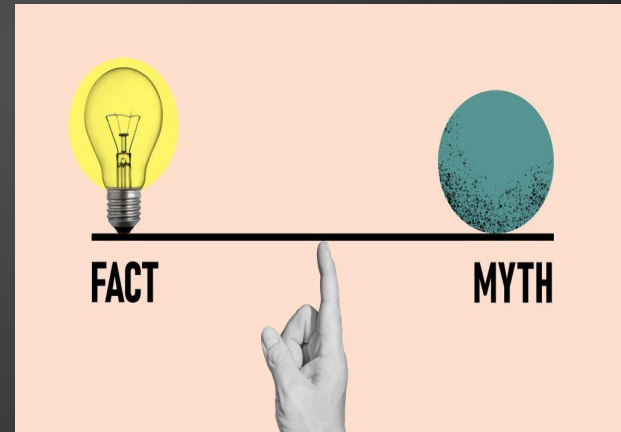
- Same as with formal debunking
- Stick with “positive wording”
- Repeat the corrected information
- Provide explanation of facts
- Utilize trusted sources



Secondary Prevention

Secondary Prevention

- Intervening on harmful narratives early & minimizing the effects of the misinformation.



Secondary Prevention

- Identification of warning signs of infodemic and early intervention (Ishizumi, 2024)
 - Pre-bunking
 - Social Listening
 - Filling information voids



Secondary Prevention



- Pre-bunking
 - Preventative measure that aims to prepare audiences to recognize and resist information risks
 - Utilizes warnings
 - Microdosing (examples of manipulative messages)
 - Refutation (pre-infodemic)

A Case Study in Pre-Bunking

- Early AI-supported Response with Social Listening (EARS)
 - A form of dashboard social listening aka info surveillance
- WHO-developed dashboard that uses Natural Language Processing (NLP) and machine learning to ‘listen’ to narratives on social media
- It processes ~3000 opinions per month (McGowan, 2022).

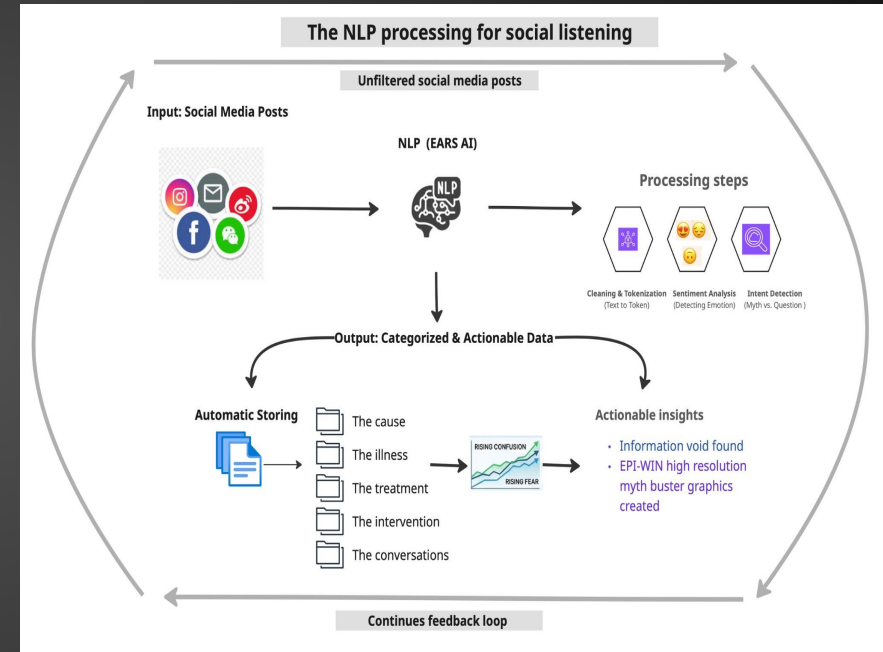
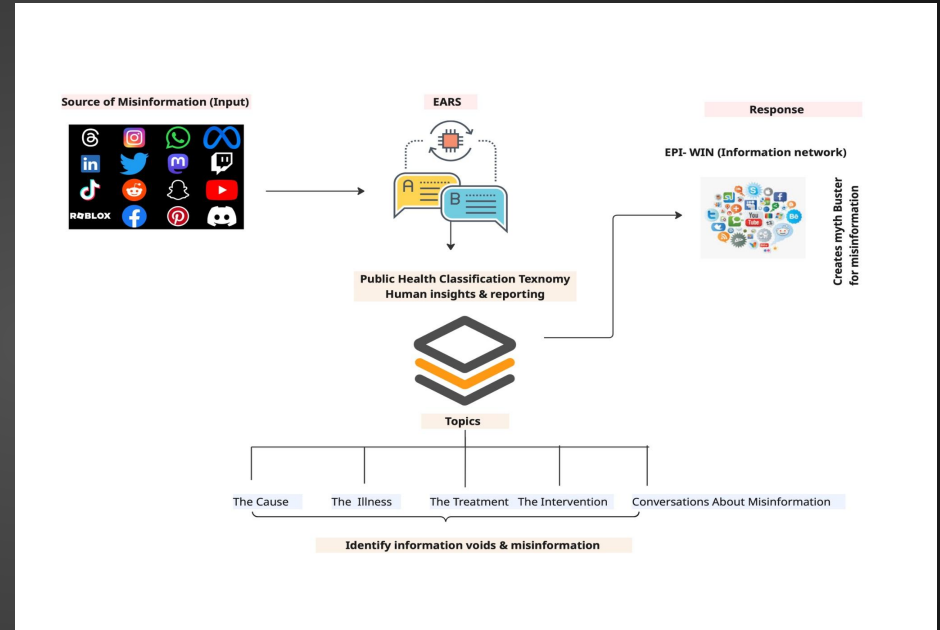


Illustration of how NLP works (designed in Miro)

EARS

- How Classifications Spot Misinformation
 - When EARS spots information on social media, it runs it through these topics to see if it matches a "High-Risk" sub-topic.
- Example 1: spotting a myth
 - Post: "Drink alcohol to stop flu"
 - Classification: Topic = Treatment and Sub-topic= Myths
 - Action: EARS flags this because "Myths" is a high-risk classification.



Process of EARS identifying misinformation (designed in Miro)

WHO Information Network for Epidemics

- Platform that creates “mythbusters”
- When misinformation is spotted by EARS on social media, the WHO releases a image/video/ article debunking it.



Illustration of mythbuster shared by WHO

Mythbuster Example

- In 2020, social media posts claimed eating garlic would cure COVID-19.
- EARS
 - “Listened” to the posts online and saw a spike in the word "Garlic" combined with the word "Cure".
 - Classified as treatment with the sub-topic of “non-scientifically backed remedy”
 - Created Myth Buster debunking it.

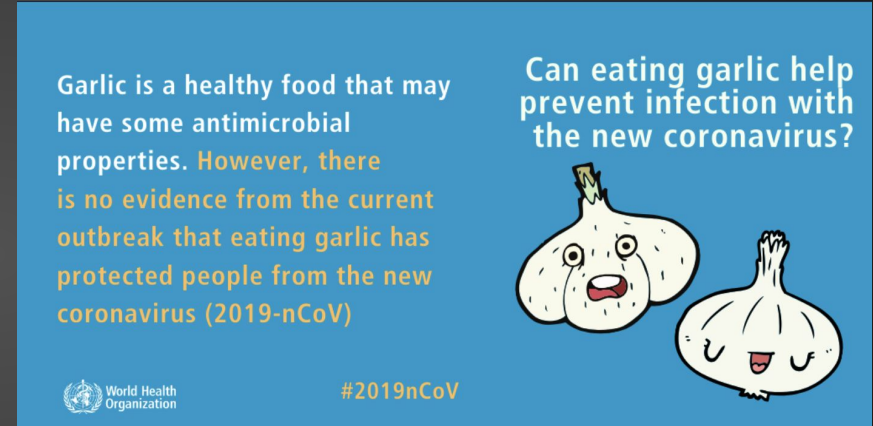


Illustration of mythbuster shared by WHO

Is EARS Effective?

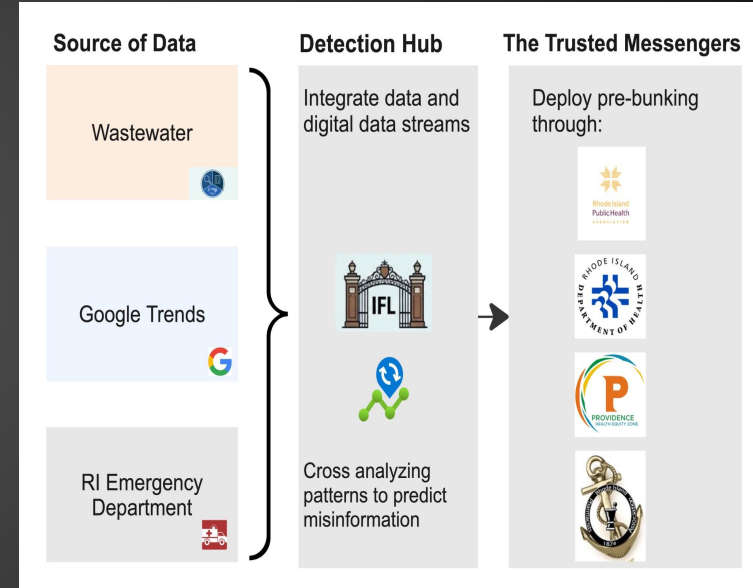
- Processed > 215M health-related posts in from 2020 – 2022 (White, 2023)
- Spots misinformation within 24 hours
- Unknown how well it “convinces” people of the truth
 - Needs further study

Criticism of Info Surveillance / Social Listening

- Requires mass surveillance of social media
- Could be used by bad faith actors for political purposes
- Lack explainability & difficult to understand or challenge their outputs
- An online platform that cannot address offline misinformation

Potential way to Combat Misinformation in RI

- Use Futures Lab at Brown University (IFL), RIDOH, to monitor misinformation trends in RI in real and digital spaces.
- This flow chart highlights a Predictive Information process through these steps:
 1. It starts by collecting from Westwater, Google trends, and ER.
 1. IFL cross analyzes
 2. Verification stage by trusted local organizations debunk misinformation



*Process of identifying misinformation through IFL in RI
(designed in Miro)*

Primary Prevention

Primary Prevention

- Media literacy techniques:
 - Psychological Inoculation (Traberg, et al., 2022)
 - Expose people to commonly used tactics in mis/disinformation campaigns to decrease susceptibility to these tactics
- Lateral Reading (Wineberg, 2022)
 - Navigate away from an article to read about the topic in other sources before navigating back to it
- Nudges
 - Accuracy prompts that remind people of the importance of information accuracy prior to posting
 - Telling users most other users do not share the same misinformation

Childhood Critical Media Literacy Education

- Effort to teach critical thinking when engaging with media, to teach individuals to how to recognize misinformation and reflect on their own relationships with media
- No national mandate to teach media literacy in schools
- No national media literacy standards (how do we measure how we're doing?)

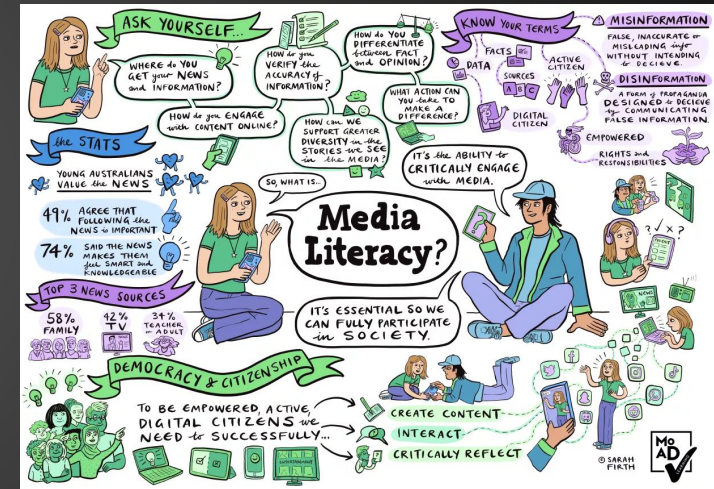


Image depicting lateral reading to compare sources to come to evaluate the reliability of the information.

The State of Media Literacy

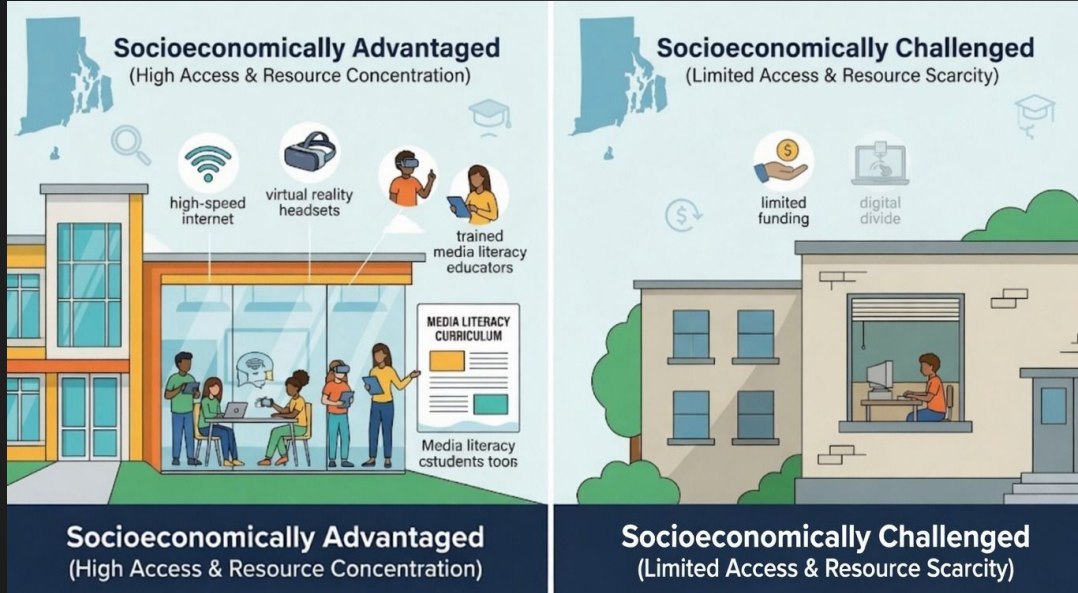
- 2019: 3,446 high school students tested on media competencies (Breakstone, et al., 2019)
 - Two-thirds of students could not distinguish between ads (identified by “sponsored content” caption) and news articles
 - 96% of students did not consider why ties between a climate change site and the fossil fuel industry might lessen the site’s credibility
 - 52% of students believed a grainy video of ballot-stuffing (shot in Russia) purported to be from the 2016 democratic primaries without looking for its source

Media Literacy Education in RI

- From a RI statewide survey on public, private, and parochial schools:
 - Elementary:
 - Instructional practices of media literacy are used only occasionally
 - Middle School:
 - Fewer than 1 in 3 middle schoolers are exposed to core instructional practices of media literacy
 - High School:
 - At least some exposure to a few media literacy instructional practices

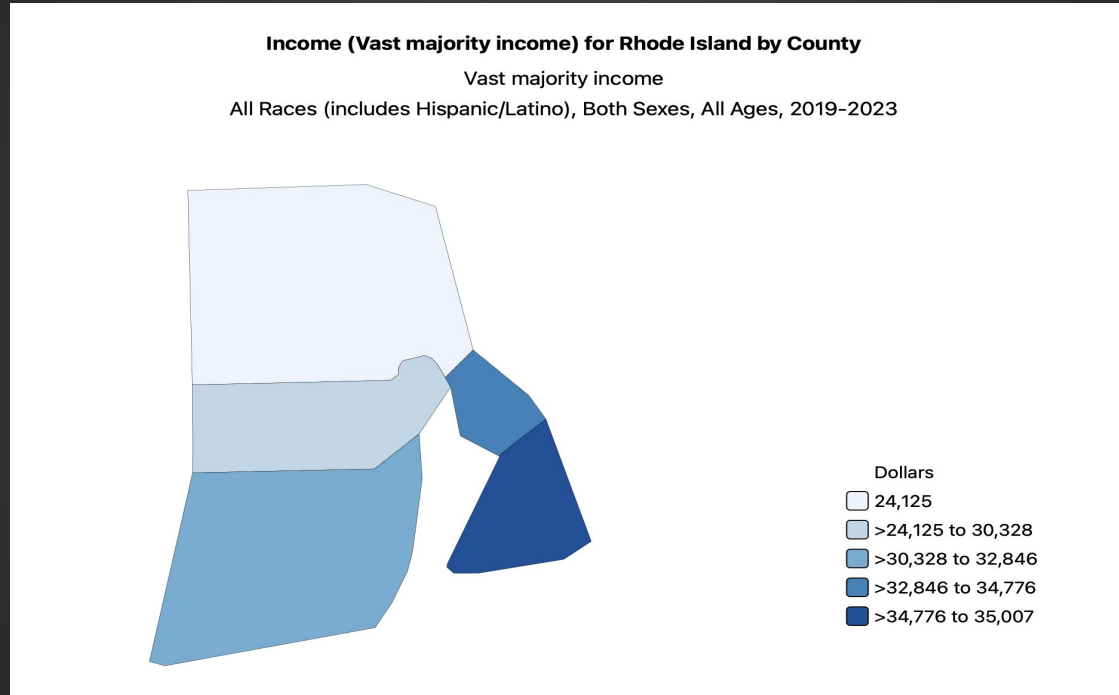


School Disparity



- Disparities between schools in Rhode Island result from media literacy being taught in schools with the means and resources to do so and less in socioeconomically challenged communities

Income Disparities Map



HDPulse: An Ecosystem of Minority Health and Health Disparities Resources. National Institute on Minority Health and Health Disparities. Created 5/1/2026. Available from <https://hdpulse.nimhd.nih.gov>

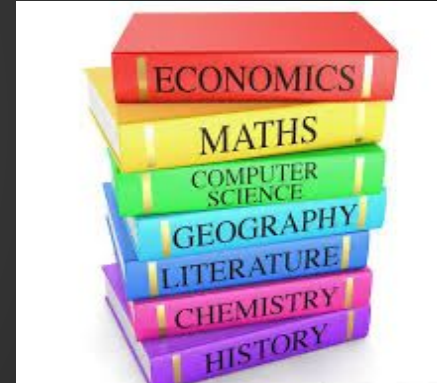
The Rhode Island Board of Education Act – 2017

- “The department of elementary and secondary education shall consider, in consultation with national or statewide organizations focused on media literacy, the incorporation of media literacy education into the board of education’s basic education program regulations.”



Efforts to Improve Media Literacy in RI Schools

- The Media Education Lab Advocates to:
 - Increase professional development opportunities in media literacy for K-12 faculty and staff
 - Encourage schools to use existing curriculum resources in media literacy education across the grade levels
 - Ensure that all administrators understand media literacy core concepts and their relation to current events, school climate and student well-being and safety



Primordial Prevention

Primordial Prevention



- Main Idea:
 - Preventing health risks by addressing underlying societal and environmental causes.
- In the Context of Misinformation:
 - Strengthen resilience to infodemics by preserving trust in institutions and making health knowledge more accessible.

Building Trust

- Incredibly difficult to study
 - Difficult to measure the outcome
 - What does a 4 out of 5 on a trust scale *really mean*?
- Few studies looking at trust as an outcome
 - More common to look at trust as an input affecting different patient outcomes (Taylor, et al., 2023)

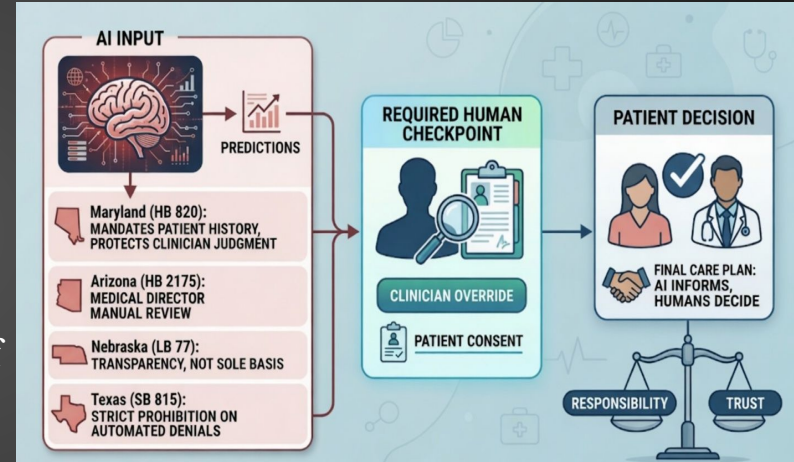


Preventing Further Erosion of Trust

We argue that the best form of primordial prevention right now is to anticipate how AI will be weaponized against patients and proactively advocate for policies that protect trust before it is broken.

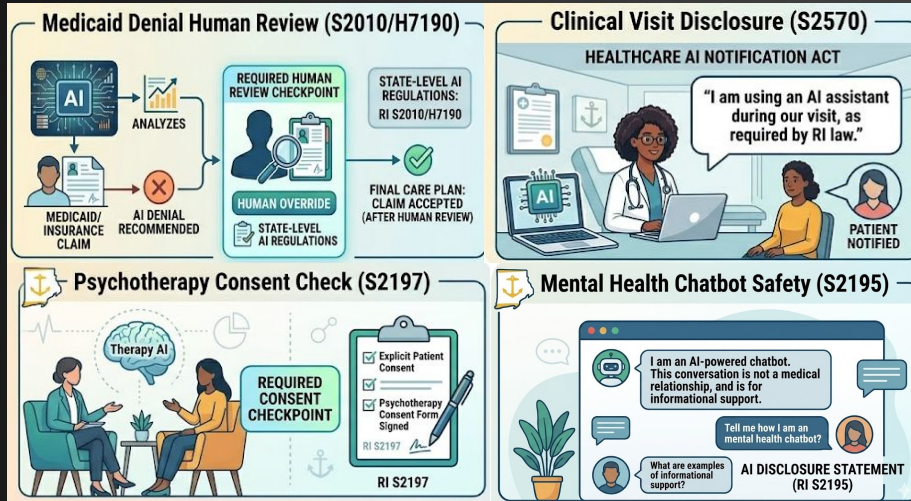
What Are Other States Doing?

- **Maryland (HB 820):** Mandates AI tools use individual patient history over group datasets; protects clinician judgment and data privacy.
- **Arizona (HB 2175):** Requires a Medical Director to manually review any claim denial generated by AI.
- **Nebraska (LB 77):** Prohibits AI from being the *sole* basis for care denials; mandates transparency of AI use.
- **Texas (SB 815):** Strictly prohibits automated systems from making adverse coverage determinations.



A flowchart shows new healthcare AI laws in four states, requiring AI predictions to pass a "human checkpoint" so clinicians and patients decide care.

RI Bills:



Visual summary of Rhode Island's healthcare AI bill showing required human oversight, patient consent, and transparency in medical contexts.

- **AI Transparency Act (S2010/H7190):** Mandates human review for AI Medicaid/insurance denials.
- **Healthcare AI Notification Act (S2570):** Requires patient disclosure when AI is used in clinical visits.
- **S2197:** Requires explicit patient consent for AI in psychotherapy.
- **S2195:** Regulates mental health chatbots with mandatory AI disclosure.

Opportunities and Considerations

Advocacy Opportunities

- Further research
 - Field is in infancy
 - Desperate need to understand factors that lead to resilience to false information and efficacious debunking once infodemic has begun
- Join the local resistance
 - Courageous RI
 - Combating the rise of hate speech through community dialogues and media literacy initiatives
- Consider trust-building measures
 - Preventing use of AI by health insurers to manage claims
 - S2010 – “held for further study”

Advocacy Opportunities

- Support legislative measures to increase media literacy curricula in schools
 - S0638 in 2025 would have made media literacy curricula required in RI K-12 schools
 - Died in committee
- Support measures to add mandatory AI literacy training into medical schools
- Train clinicians to better handle patient conversations about misinformed health beliefs using compassion, connection, and collaboration

Pause to Consider

- Fundamental tension between policing of misinformation and free speech
- Who controls what is censored / corrected?
 - Platforms
 - Shadow banning
 - Governments / Multi-national organizations
 - EARS
 - Communities
 - “Community notes”
 - Academics
 - Peer-review process (slow)

Opportunities

- Research how misinformation affects your field and what interventions are efficacious in combating it
- Advocate for increased media literacy curricula in RI through an NGO like Media Literacy Lab
- Advocate for specific bills legislating AI usage and transparency
- Get involved with your child's school board to improve media literacy education
- Volunteer with NGOs combating misinformation

Conclusions

- Misinformation scholarship is in its infancy and needs more research
- Efforts to combat misinformation can be thought of as tertiary, secondary, primary, and primordial
- Personal questions of ethics surrounding policing of information
- Various opportunities to get involved depending on your area of interest

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