Science Literacy

Vaccine Community Outreach
Train-the-Trainer Series

Funding provided by the Wisconsin Department of Health Services.

Background

- Multi-year initiative that provides training, resources, and support to community organizations and improves
  - Health Literacy
  - Science Literacy
  - Digital Health Literacy
- **Science literacy train-the-trainer**: Aid community-based organization in addressing science literacy in communicating with the populations they serve and reducing barriers to Covid-19 vaccination.

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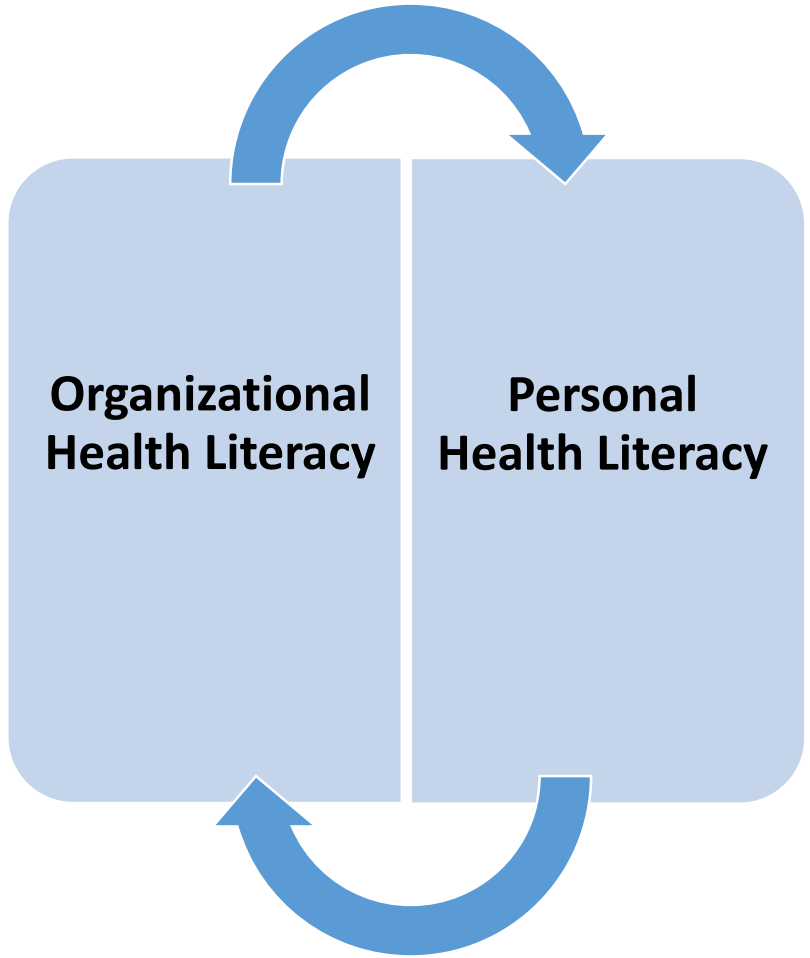
Overview

- Science and scientific literacy
- Universal precautions to improve understanding
- Six tips to communicate health information so that it is easier to understand and actionable

Health literacy

- Impacts health behaviors
- Universal precautions are needed
  - Situational and fluid
  - Difficult to assess
- Trusted messengers are needed
  - Effective engagement
  - Tailored delivery and topics



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What is Science Literacy?

The ability to find, understand, communicate, and use/act upon information about science.

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Three Dimensions of Scientific Literacy

1. The knowledge of science – knowing facts about science
2. The knowledge of scientific reasoning – public understanding of the characteristics of the scientific processes of obtaining knowledge
3. Trust in Science and it's values – how reliable do people consider scientists (their theories and institutions)

Fasce & Picó. (2019). Science & Education. 28.

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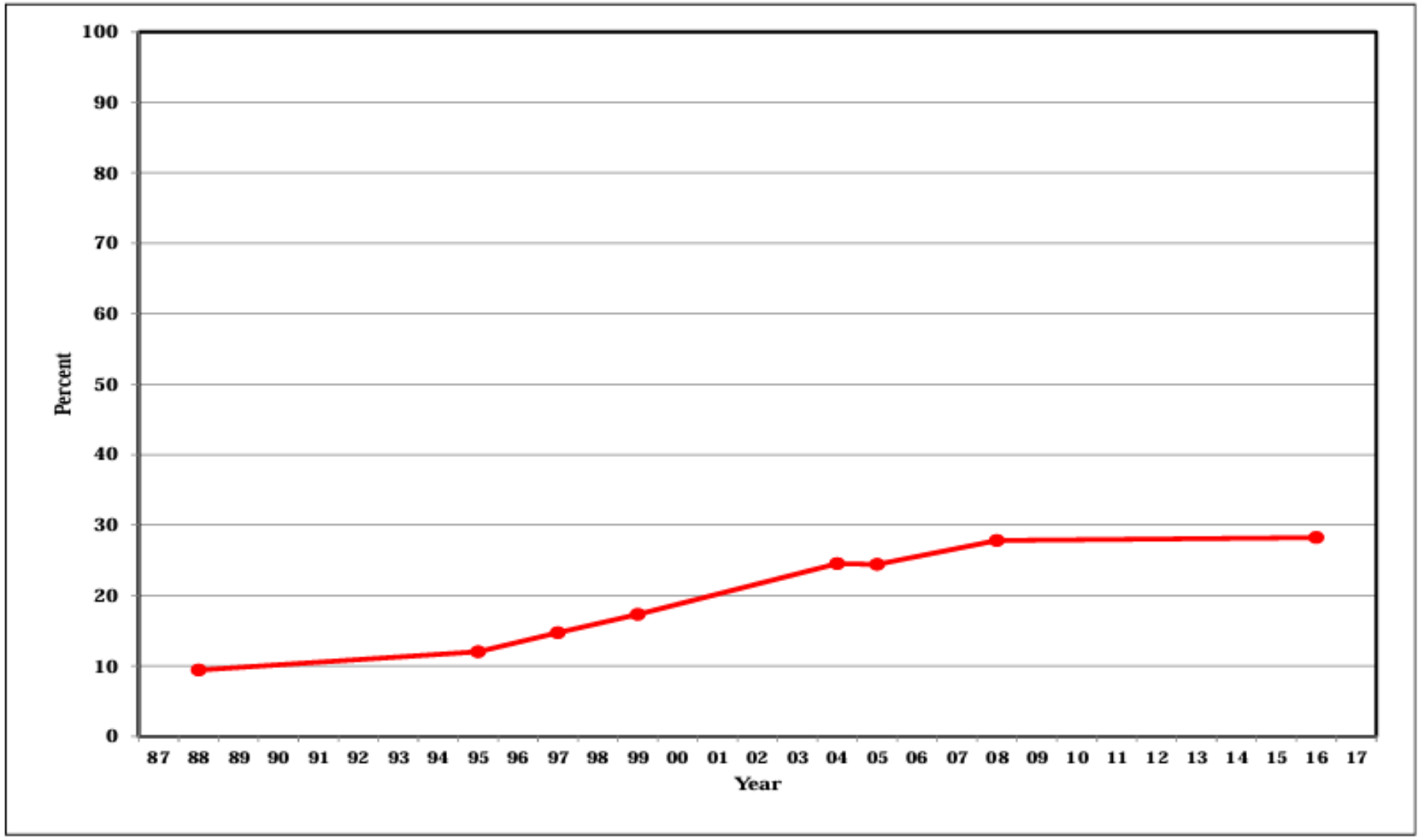
Prevalence of Science Literacy

In 2016, 28% of American adults were science literate.

Only about 1 out of every 4 American adults

Miller, J.D. Civic Scientific Literacy in the United States in 2016; International Center for the Advancement of Scientific Literacy: Ann Arbor, MI, USA, 2016.

Science Literacy in the U.S. 1988 -2016



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Literacies and Hesitancy

- Low health literacy is associated with less use of preventive behaviors such as immunization, this is especially true the more complex the information is and the more steps needed to do the behavior [Castro-Sanchez et al. (2016) Health literacy and infectious diseases: why does it matter? Int J Infect Dis 2016; 43:103-10]
- Those with lower scores on scientific literacy tend to show negative attitudes toward vaccines (Rutjens, et al (2018). *Pers. Soc. Psychol. Bull.* 44 (3), 384–405)
- Vaccine literacy includes knowledge about vaccines AND creating easy-to-use systems to communicate about and offer vaccines. [Luigi Roberto Biasio (2017) Vaccine hesitancy and health literacy, Human Vaccines & Immunotherapeutics, 13:3, 701-702]

6 Tips for Talking about Science

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1. Make It Relatable

- Know you audience – so you can work out what is going to be most relevant to them and highlight that.
- Make it into a story –

When we hear a story that we relate to

Levels of the feel-good hormone oxytocin in our bodies

Builds connections of trust and empathy

2. Don’t Get Bogged Down in Details

- Focus on the need to know – drop “nice to know” details and only discuss them if asked.
- Think about what your audience will want to know and share that… without the jargon.
- Think about what emotions you want your audience to experience at each point during your story! Emotions help words to stick!

3. Use Images and Props

- Use visuals when you can
- Choose images that help explain your concept or process
- Keep them simple and not too busy
- Don’t choose ones that use jargon

4. Think about the tone of voice and language that you use

- Always think about the way you speak to people. Could it put them off?
- Avoid being perceived as condescending.
- Focus on having a normal conversation.

5. Ask Open-Ended Questions

- Science communication is part of a conversation with your audience.
- It is a great way to gauge what your audience already knows.
- It allows your audience to contribute to the discussion and lets you know where you can build on their knowledge
- Be sure to practice active listening!!!

6. Find A Good Analogy

- Analogies are strong ways to share information about science
- Find one that is relatable to your audience.
- Use analogies for numbers when possible
  - Instead of 90% say 9 out of 10 people
  - For size:
    - 100 million corona virus could fit on a pinhead
    - All the COVID-19 viruses in the world could fit into a coke can

Why should I get a booster?

You probably know that if you are out all day in the sun, one application of sunscreen will not protect you the whole day.

You should apply sunscreen multiple times throughout the day to protect your skin.

The COVID vaccine works the same way.

The vaccine's effectiveness does not last as long as you need it to.

So, you must "reapply" or get another dose.

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Why should I get vaccinated if I've already had COVID?

Think about your favorite pair of gloves or winter jacket.

These pieces have probably been well-worn and loved, but likely don't work quite as well as they did when you first got them.

Throughout the years, they've thinned and have started to let cold air in and water seep through.

They no longer provide the best protection, so you need to get new, better clothing!

The same goes for your body and COVID. Over time, your body's ability to protect you from COVID weakens, and you can get COVID again.

Vaccines and boosters are basically the new gear needed to keep you protected.

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Isn’t COVID like the flu?

We all know there are multiple leagues for the same sport.

For example, when it comes to football, we have the NFL and the NCAA College Football Conference.

All the teams play the same game, but because they’re in different leagues, they have some different rules, plays, and seasons.

This is kind of like COVID and the flu.

They both play the game of making people sick, but they are not in the same virus “league”.

Because of this, they have different rules (like who gets sick), different plays (like how they make you sick), and different seasons (like when you get sick).

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Isn’t COVID like the flu?

While all hurricanes are storms, they don’t have the same impact or risks.

For example, Category 1 hurricanes have mild winds and storm surges, and damage is typically minimal.

On the other hand, Category 5 hurricanes have very intense winds and storm surges, and the damage can be devastating.

This is like COVID and the flu. Both are viruses, but the flu is like a Category 1 hurricane with moderate winds and damage. Only a small area is impacted, and weathering the storm is manageable for most people; however, it can cause complications for some.

COVID is like a Category 4 or 5 hurricane with intense winds, heavy rains, and flooding. This impacts a lot more people, causes severe structural damage, and leads to many injuries and deaths.

What are variants? Why do they matter?

In small groups, discuss the following…

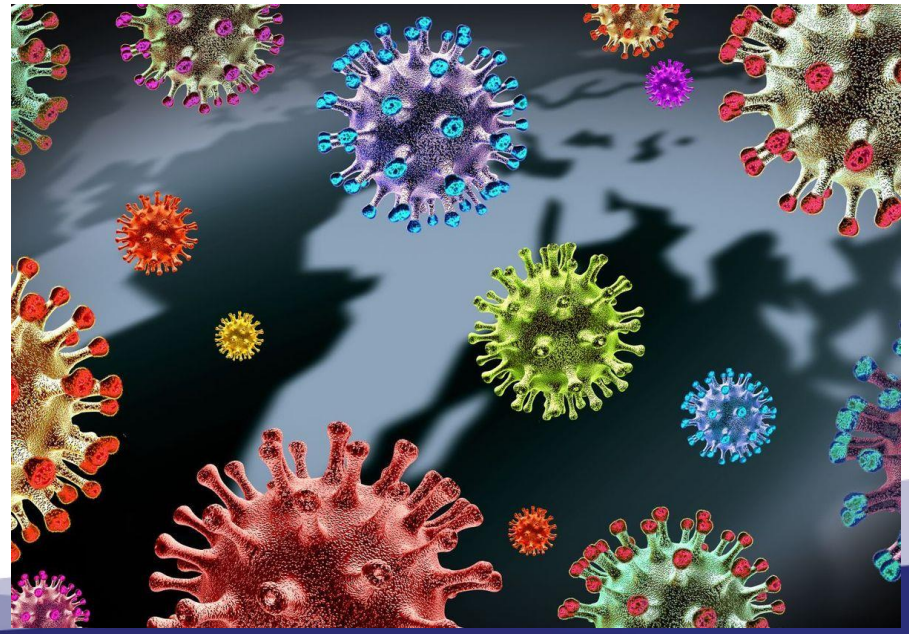
- How would you describe a variant?

Over time, the coronavirus adapts, mutates, and discovers new ways to beat the body's defenses. Each version of the coronavirus is called a variant. Some of the commonly known variants you've probably heard of are Delta and Omicron because they caused huge, devastating outbreaks.

What are variants? Why do they matter?

In small groups, discuss the following…

- What analogies could you use to describe variants…
  - To a farmer?
  - To a college age male?
  - To a young parent?



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What are variants? Why do they matter?

As the season progresses, sports teams evolve and update the plays in their playbooks. The goal to beat their opponent remains the same but coming up with new and fresh plays that opponents won't anticipate, makes it easier to win.

The same goes for COVID. While the original variant's plays are still in use, the virus has mutated and adapted as time has passed. The overall objective of COVID is still to get you sick, but variants are constantly popping up with new ways to trick your immune system.

What are variants? Why do they matter?

Imagine that you check the weather next week, and you see that it's supposed to snow. You know that snow can be dangerous, but you don't know what type of snow to expect. Flurries? A squall? A full blizzard? While you can try and predict the type, timing, and severity of the snow, it's hard to do, so you just have to prepare the best you can and hope that the snowstorm is mild.

The same goes for COVID variants. We know that COVID is here to stay, but we don't know the type, timing, or severity of the next variant. We all have to do our best to prepare for each type of variant, hope the impact is mild, and—most importantly—prepare by staying up to date with vaccines and other recommendations.

If you only remember 3 things:

Practice and use

1. Ask open-ended questions and practice active listening
2. Focus on the “need to know”
3. Use analogies

Thank you!

What questions do you have?

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