

Apathetic to Opposed: COVID-19 Vaccine Hesitancy

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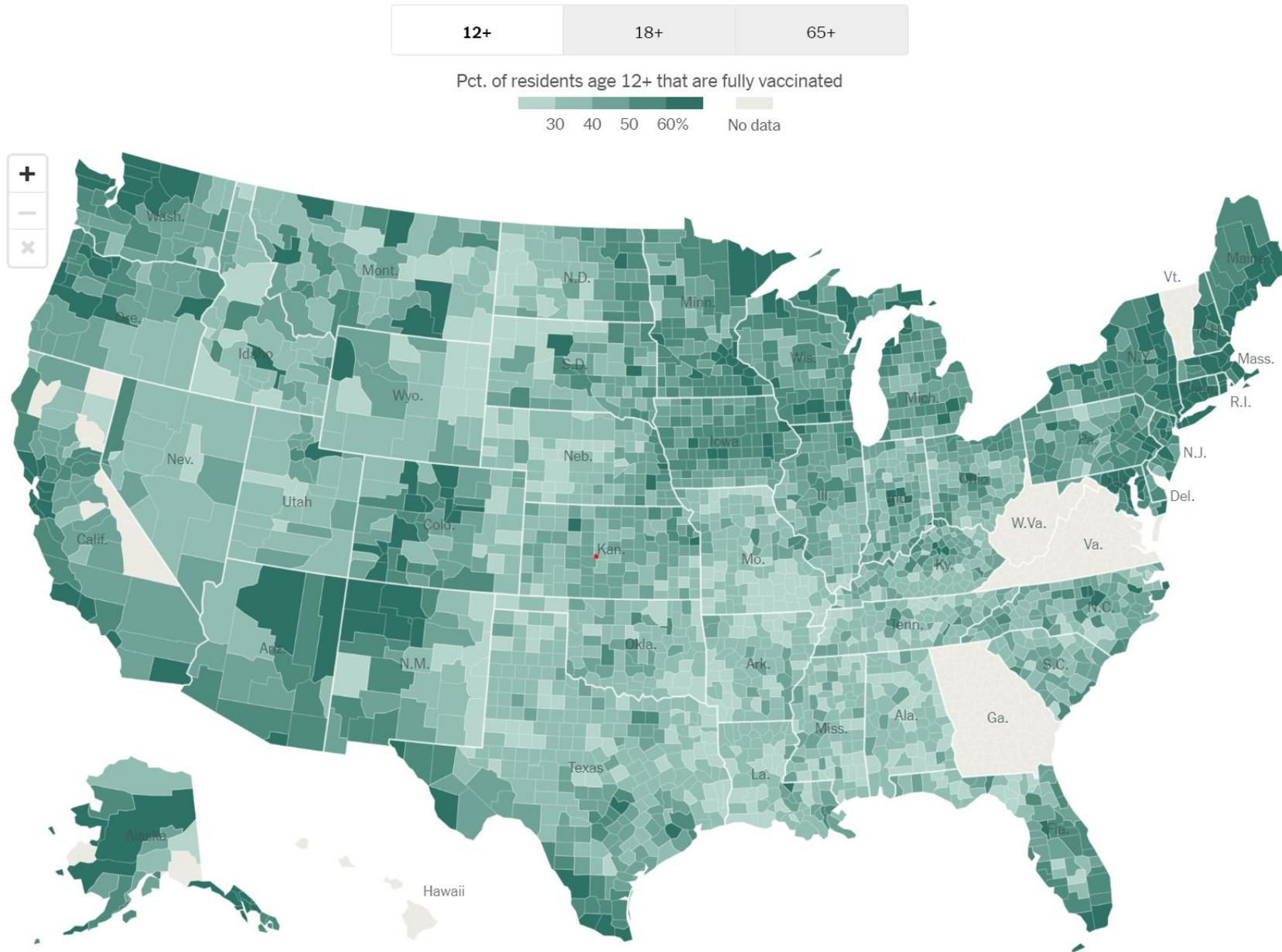
Objectives

Review current state of COVID-19 vaccine uptake

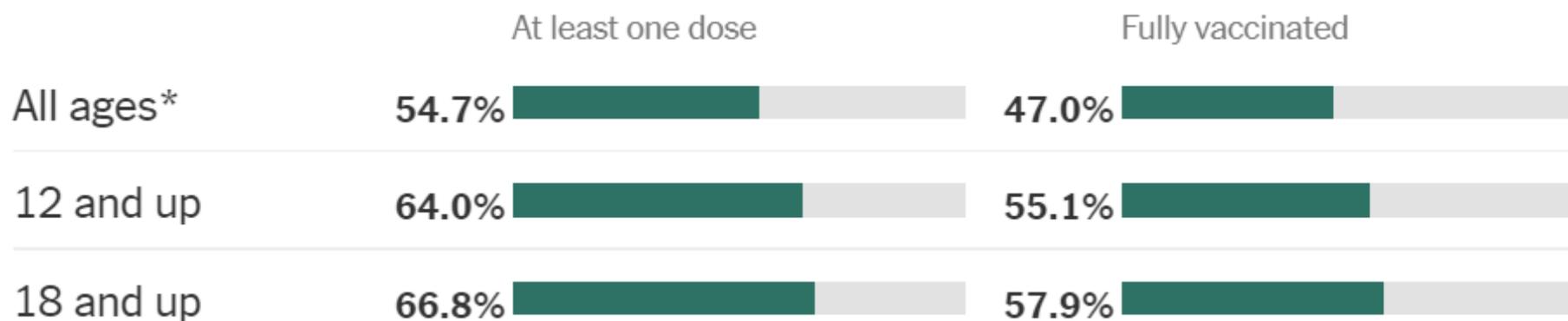
Understand the spectrum of vaccine hesitancy

Identify and address misinformation related to COVID-19 vaccines

Updated July 2, 2021



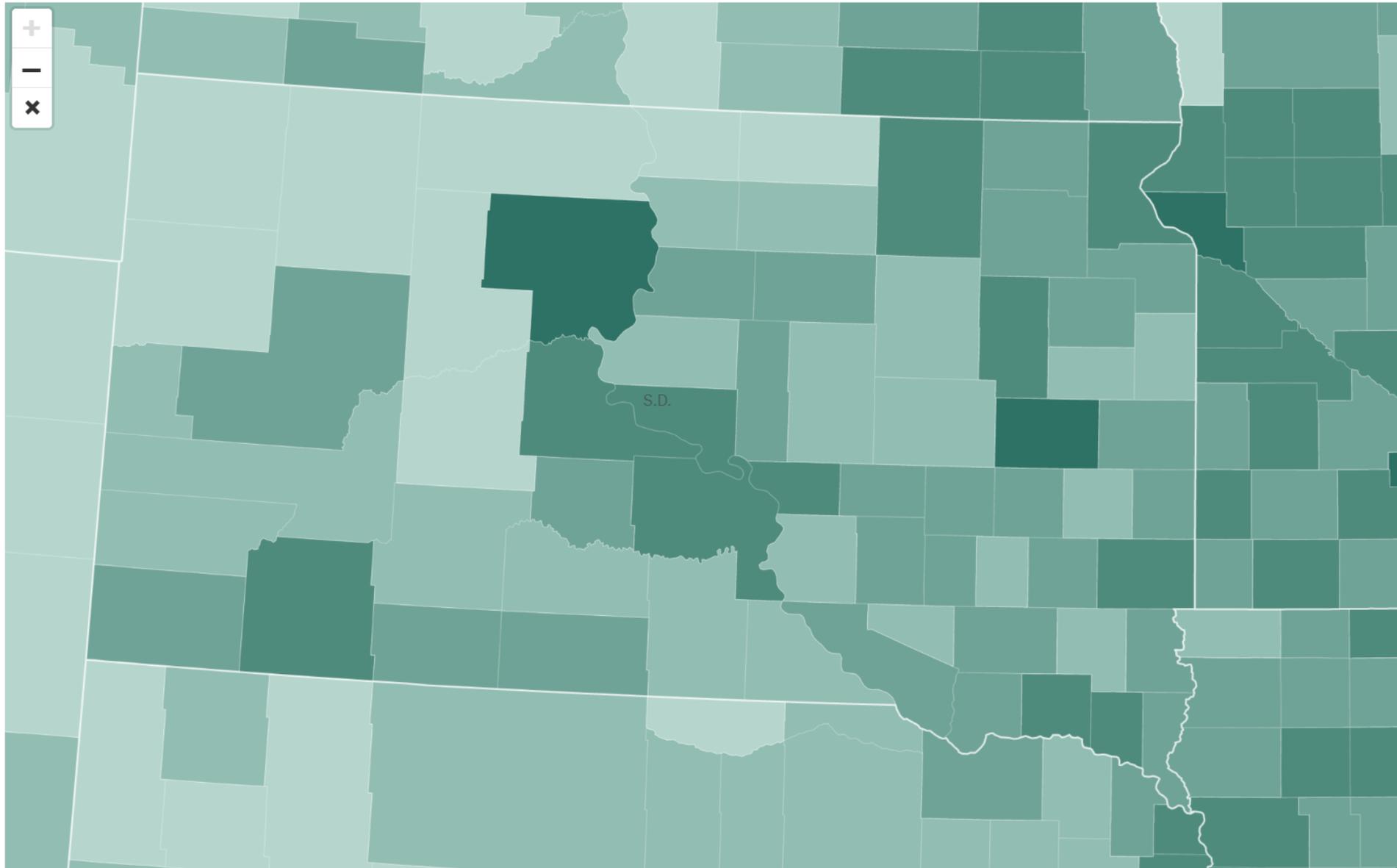
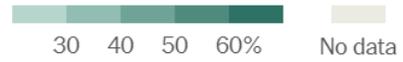
United States vaccinations



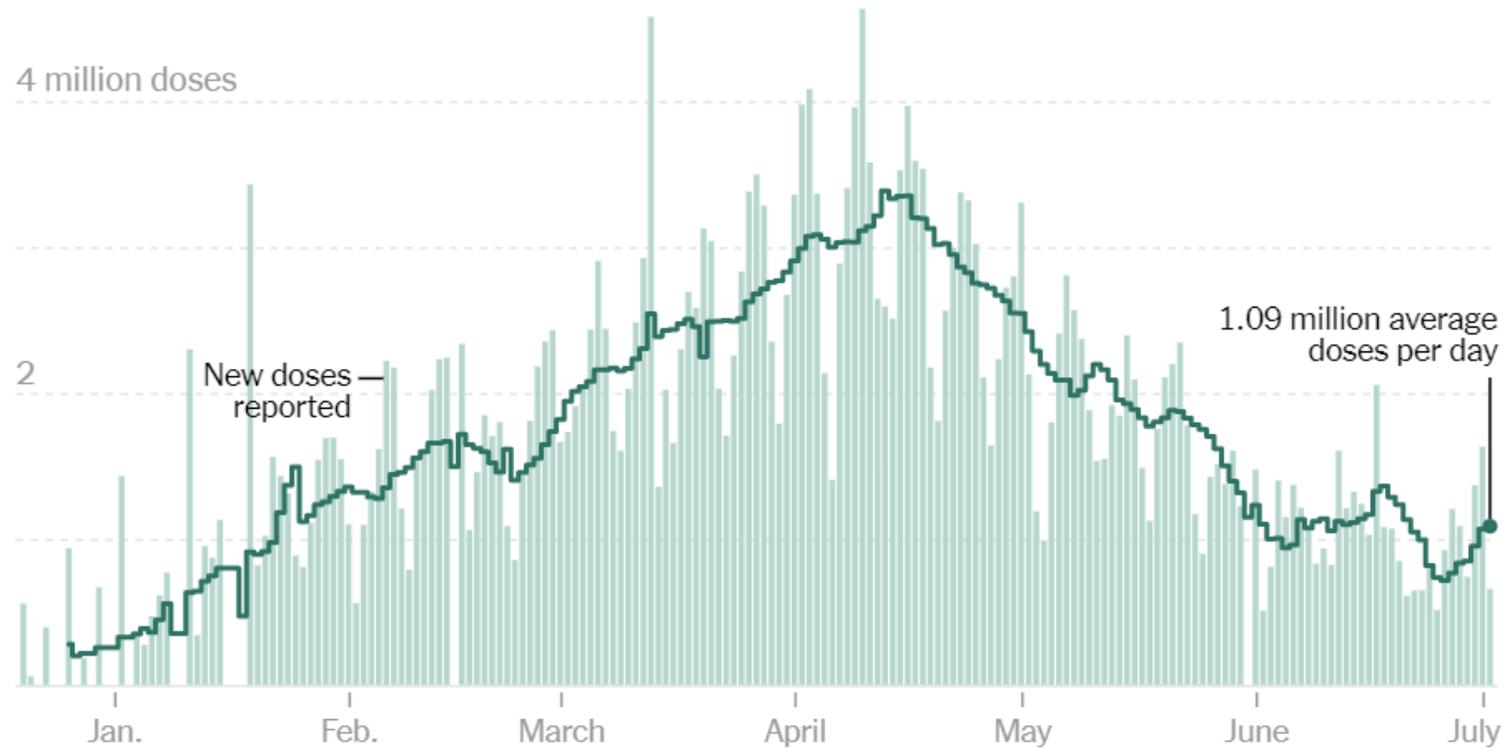
*Includes those not yet eligible for the vaccine.

Source: Centers for Disease Control and Prevention | Note: Figures include the U.S. territories and three countries with [special agreements](#).

Pct. of residents age 12+ that are fully vaccinated

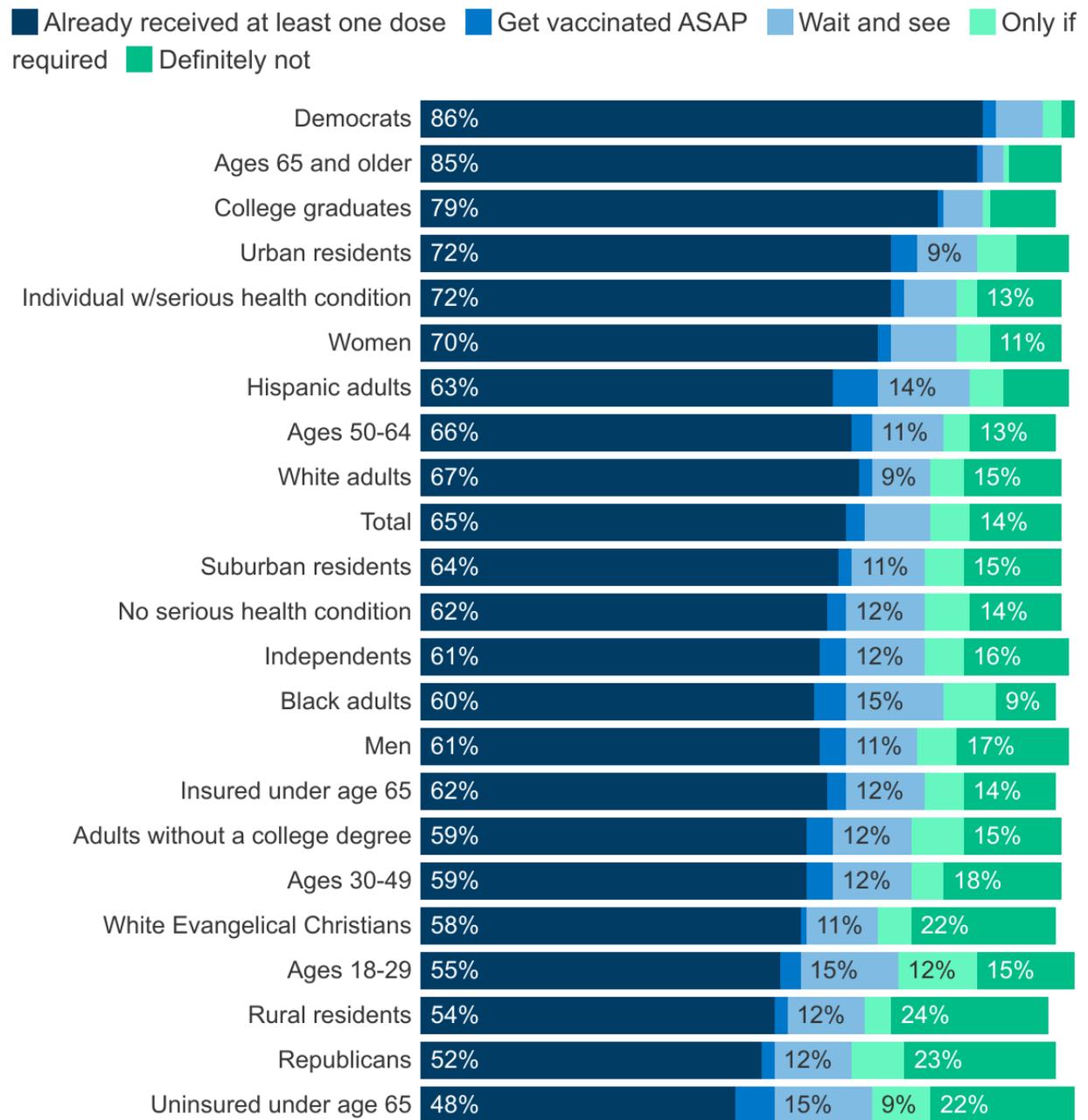


New reported doses administered by day



Source: Centers for Disease Control and Prevention | Note: Line shows a seven-day average. Data not updated on some weekends and holidays. Includes the Johnson & Johnson vaccine as of March 5.

Have you personally received at least one dose of the COVID-19 vaccine, or not? As you may know, an FDA-authorized vaccine for COVID-19 is now available for free to all adults in the U.S. Do you think you will...?



Vaccination Hesitancy

“A delay in acceptance or refusal of vaccines despite availability of vaccination services”

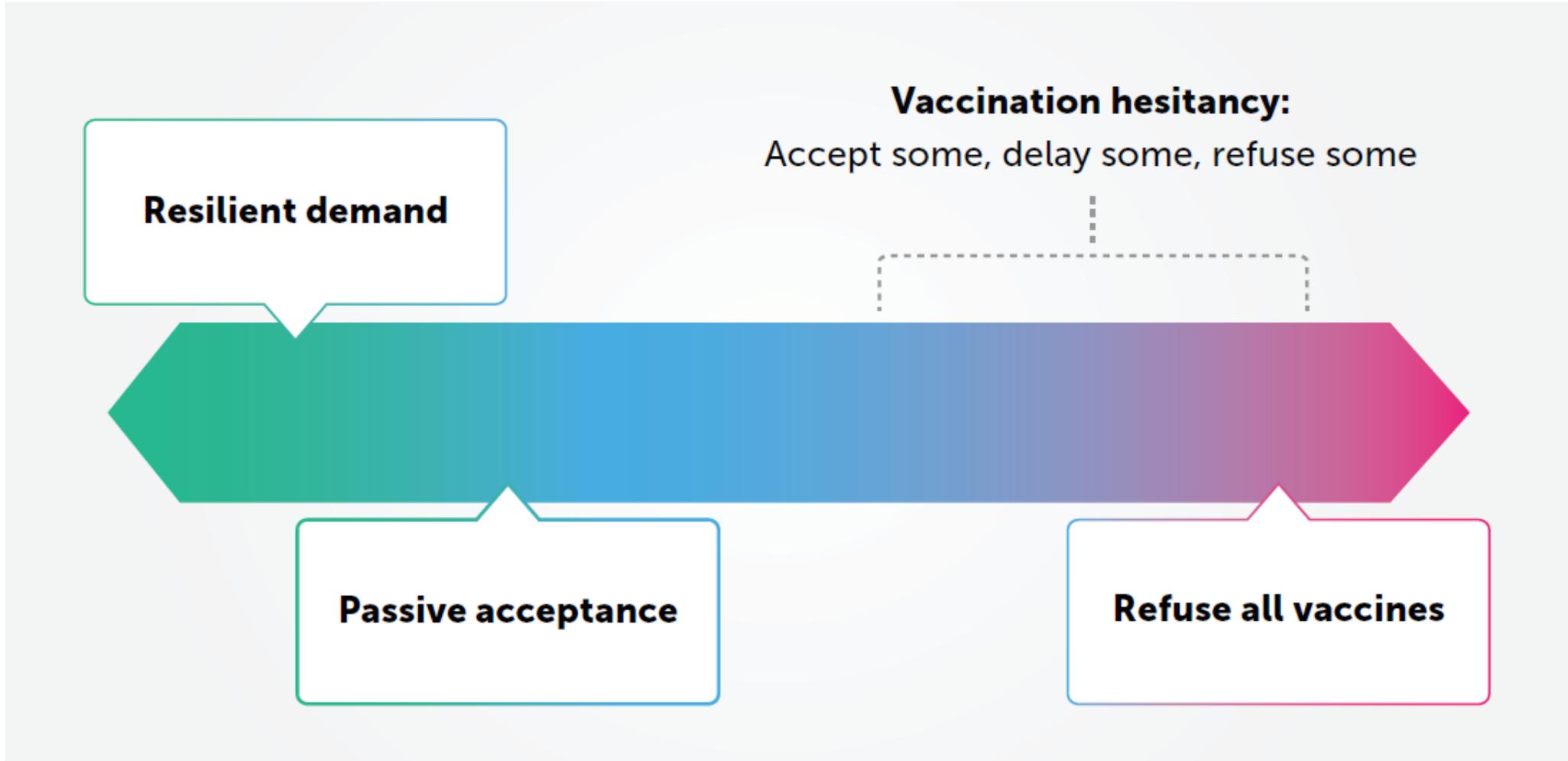
- World Health Organization, 2014

One of ten threats to global health

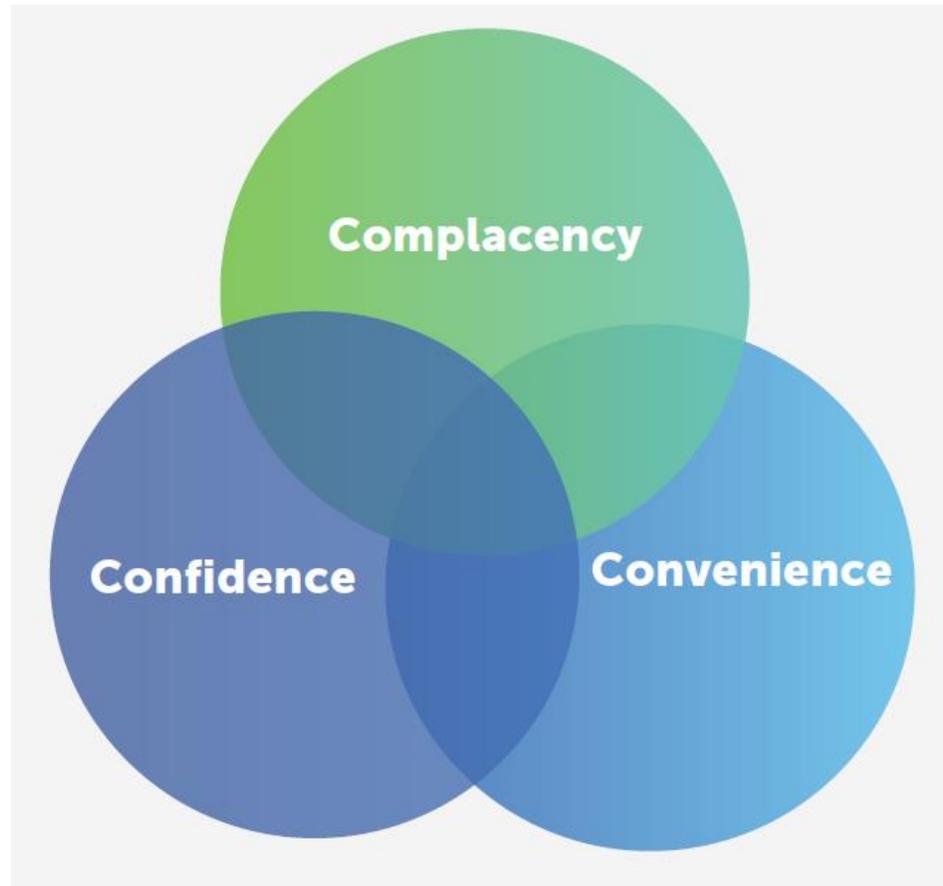
- World Health Organization, 2019

Fast Facts

- Vaccination is one of the most cost-effective ways of avoiding disease – prevents 2-3 million deaths/year
- A further 1.5 million could be avoided if global coverage of vaccinations improved



The 3 C's of Vaccine Hesitancy



Complacency



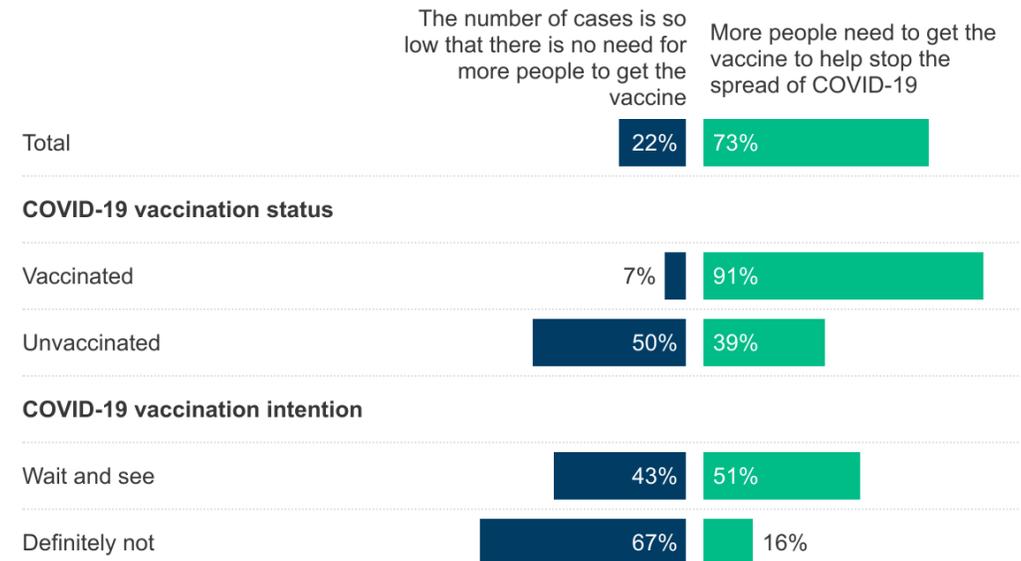
Vaccines are a tool of prevention whose purpose is not always obvious

This is especially true in countries where vaccines have succeeded to the extent that diseases they target have largely disappeared or no longer appear as significant threats

Clinicians are less prepared to discuss the poor outcomes of vaccine-preventable diseases

Half Of Unvaccinated Adults Say Cases Are So Low That There Is No Need For More People To Get Vaccinated

Which comes closer to your view?



NOTE: Vaccinated adults are those who have received at least one dose of a COVID-19 vaccine. Sample sizes for those who say they will get the vaccine "As soon as possible" or "Only if required" are too small for analysis. See topline for full question wording.
SOURCE: KFF COVID-19 Vaccine Monitor (June 8-21, 2021).

[KFF COVID-19 Vaccine Monitor](#)

Vaccination Apathy

“Disinterest characterized by weak attitudes and little time spent considering vaccination; populations characterized by apathy have yet to make the psychological investment required to be described as hesitant.”

Occurs across socioeconomic groups, but may be more common in young adults

Apathy = low involvement decision-making

Difficult to assess due to social desirability bias in surveys

Messaging for Apathy

Less-involved decision-makers are less likely swayed by logical or fact-filled appeals (central)

Need to focus more on quick, catchy, affective, or big picture appeals (peripheral)



Convenience



In principle, convenience is a discrete logistic problem

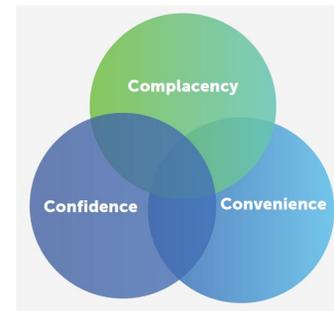
BUT, it may present a significant barrier, especially when overlapping with the other C's

Potential hurdles:

- Accessibility of vaccination sites
 - Transportation
 - Hours of operation
 - Location in the community
- Cost
 - Does everyone know that COVID-19 vaccination remains free?
 - Do parents know that childhood vaccines are covered by the federal government if have financial need?
 - Barriers to adult vaccination due to cost

Convenience overlaps with complex web of healthcare inequities

KFF Poll: Convenience



	% who say each of the following is a major reason why they have not gotten the COVID-19 vaccine:	% who say each of the following is the main reason they haven't gotten the COVID-19 vaccine:
Too busy or haven't had time to get it	14%	7%
Worried about missing work	7%	2%
Difficult travel to vaccination site	6%	2%
Not sure where or how to get the vaccine	5%	0%
Worried they will have to pay	5%	0%

Confidence



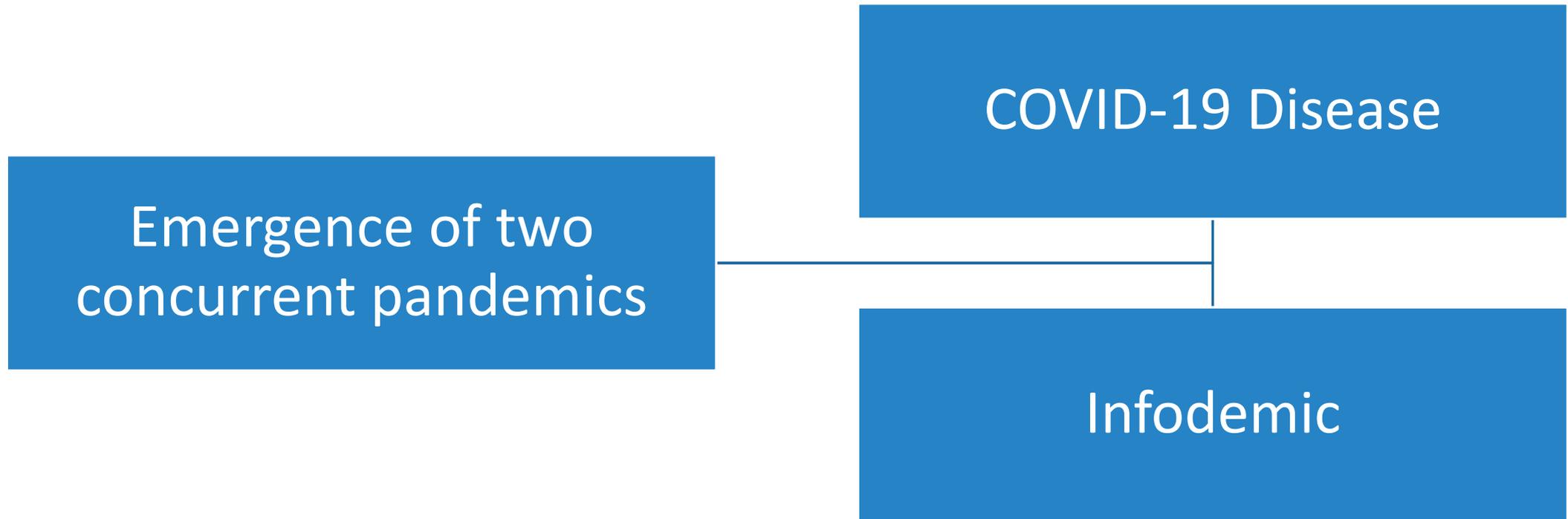
2019 – 20 Measles Epidemic

- Deaths of 2 children who received MMR reconstituted with a muscle relaxant
- 31% vaccination rate before the epidemic
- Impact of the epidemic
 - 83 people died, mostly small children
 - 5700 of 200,000 residents infected
 - Unknown long-term outcomes (SSPE)

KFF Poll: Confidence

	% who say each of the following is a major reason why they have not gotten the COVID-19 vaccine:	% who say each of the following is the main reason they haven't gotten the COVID-19 vaccine:
The vaccine is too new	53%	20%
Worried about side effects	53%	11%
Don't trust the government	38%	11%
Don't believe the COVID-19 vaccines are safe	37%	6%
Don't trust vaccines in general	26%	4%

Confidence & COVID-19



“We’re not just fighting an epidemic; we’re fighting an infodemic. Fake news spreads faster and more easily than this virus, and is just as dangerous.”

DR. TEDROS ADHANOM GHEBREYESUS

FEBRUARY 15, 2020

Vaccine Misinformation

Figure 1: Cumulative English-language fact-checks in our corpus

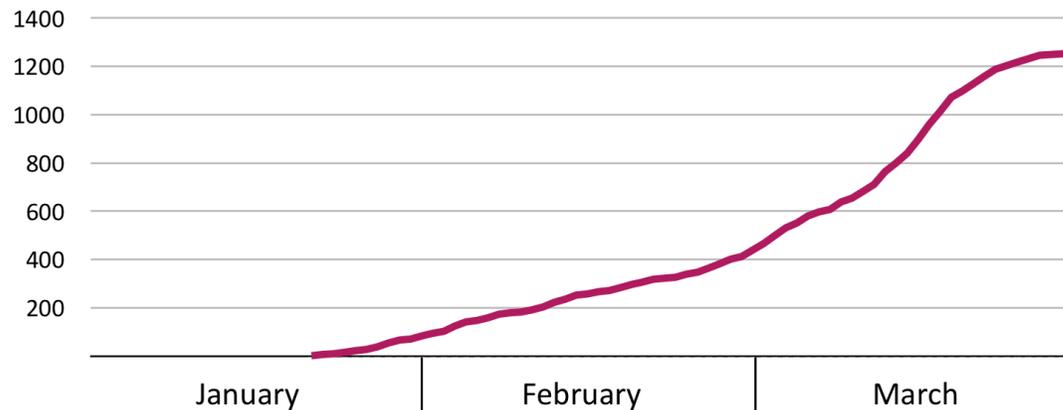


Figure 1 plots all English-language cumulative entries in the full corpus of fact-checks (N=1253) by day from January through March 2020.



Figure 2: Reconfigured vs fabricated misinformation

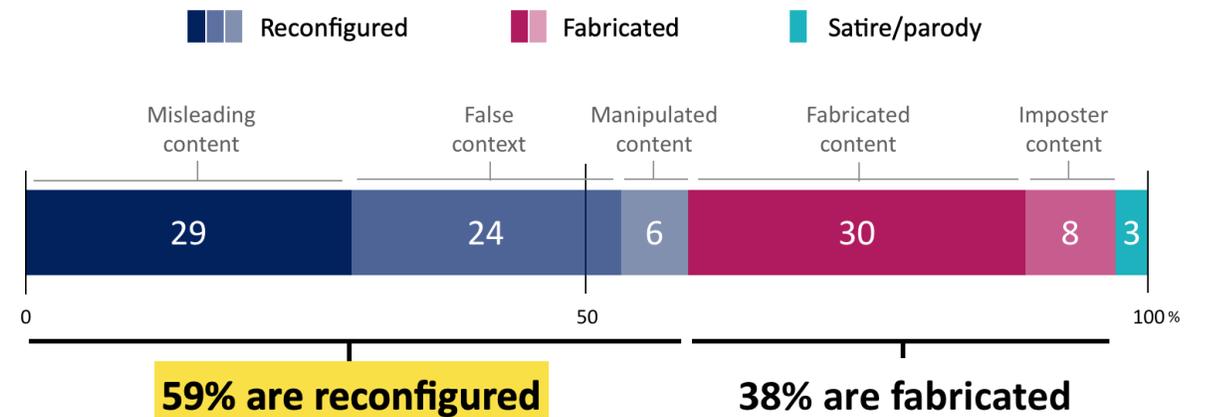


Figure 2 shows the proportion of reconfigured (N=133) and fabricated (N=86) misinformation in the sample (N=225) and the types of misinformation that constitute both reconfigured and fabricated misinformation.



COVID-19 Vaccine Myths

The COVID-19 vaccine enters your cells and changes your DNA.

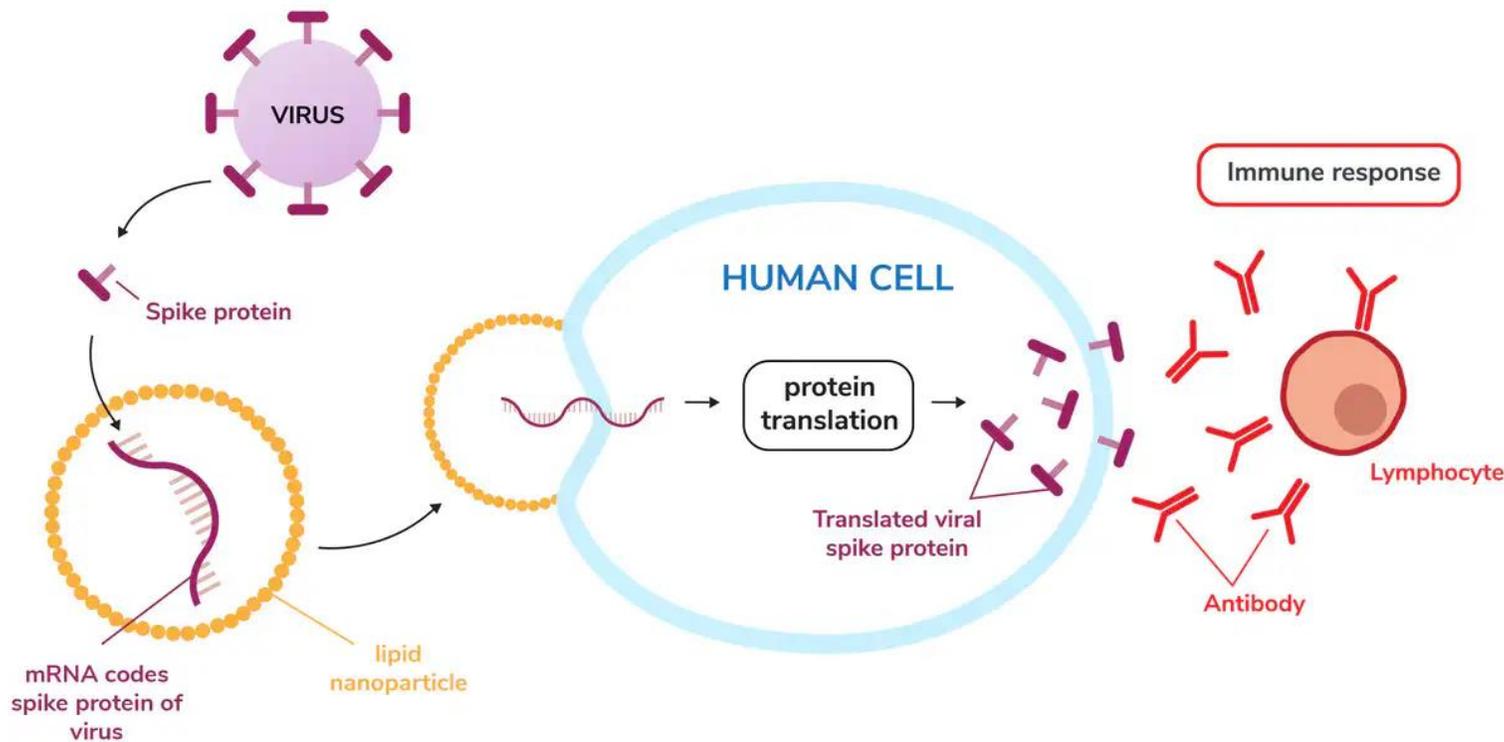
Researchers rushed the development of the COVID-19 vaccine, so its effectiveness and safety cannot be trusted.

The messenger RNA technology used to make the COVID-19 vaccine is brand new.

The COVID-19 vaccine can affect women's fertility.

The side effects of the COVID-19 vaccine are dangerous.

Myth #1: Changing Your DNA



- Vaccines contain only the COVID spike gene
- No virus, no DNA
- RNA is synthesized, not from the virus
- RNA does not enter the nucleus
- Does not interact with human DNA

Myth #2: Vaccine Was Rushed

COVID-19 genetic sequence was published early in the pandemic, so vaccine development started immediately

No clinical trial steps were skipped, but some steps overlapped to gather data faster

More money and resources invested simultaneously than any other vaccine

mRNA vaccines are faster to produce than traditional vaccine methods

Crowdsourcing for trial participants

Pandemic= quick trial recruitment

Production started even before the FDA EUA, so large supply was ready

Myth #3: New Vaccine Platform

Originated at the University of Wisconsin in the early 1990s

But, naked mRNA provoked a robust immune response

Two subsequent decades to develop modified nucleosides that avert the initial immune response and lipid nanoparticles

mRNA vaccine research funded by US government since 2010 as part of pandemic preparedness

Tested in animal models of influenza virus, Zika virus, rabies virus and others, especially in recent years, using lipid-encapsulated or naked forms of sequence-optimized mRNA

Also trialed as cancer vaccines

Myth #4: Vaccine Causes Infertility

False report surfaced linking the COVID-19 spike protein sequence to another spike protein called syncytin-1, which is responsible for growth and attachment of the placenta

Report stated that the vaccine would prompt an immunologic response to the placenta

However, the two spike proteins are different sequences and there is no cross-reactivity with the vaccine

In the Pfizer trial, 23 women became pregnant and 1 suffered a miscarriage after receiving placebo

Myth #5 Dangerous Side Effects

Most recipients who experience side effects have flu-like symptoms for 24-48 hrs after

Myocarditis/pericarditis

- Investigation continues into rate of events
- Most common in adolescents
- Risk of cardiac complications higher with COVID-19 compared to vaccination

Thrombosis with Thrombocytopenia Syndrome

- J&J paused for investigation of rare SE
- Nearly all cases in women <50 years of age
- Rate ~ 7 per 1,000,000 vaccinated women 18-49 years old
- Benefits outweigh risks, but alternative vaccines available

Myth #5 Dangerous Side Effects

Existing systems and data sources are used to monitor safety of vaccines post-authorization and post-licensure, such as:

- Vaccine Adverse Event Reporting System (VAERS)
- Vaccine Safety Datalink (VSD)
- Clinical Immunization Safety Assessment (CISA)
- Biologics Effectiveness and Safety System (BEST)

New systems have been developed to monitor COVID-19 vaccine safety, such as v-safe:

- Active surveillance that uses text messaging to initiate web-based survey monitoring
- Will provide telephone follow up to anyone who reports medically significant adverse events

Identifying Misinformation

Top tips for navigating the infodemic



1. Assess the source:

Who shared the information with you and where did they get it from? Even if it is friends or family, you still need to vet their source.



2. Go beyond headlines:

Headlines may be intentionally sensational or provocative.



3. Identify the author:

Search the author's name online to see if they are real or credible.



4. Check the date:

Is it up to date and relevant to current events? Has a headline, image or statistic been used out of context?



5. Examine the supporting evidence:

Credible stories back up their claims with facts.



6. Check your biases:

Think about whether your own biases could affect your judgment on what is or is not trustworthy.



7. Turn to fact-checkers:

Consult trusted fact-checking organizations, such as the International Fact-Checking Network and global news outlets focused on debunking misinformation.

Tackling Misinformation

Know the landscape

- Our relationship to information is emotional
- Misinformation circulates in spaces that feel safe
- Recognize what's spreading

Listen

Find the kernel of truth

Start combatting

- Lead with truth
- Offer alternative explanation
- Language matters

Tips for Difficult Conversations

Be personal and empathetic

Listen and validate the person's concerns

Rely on science and data AND personal experience

Account for the varying experiences of people in different demographic groups

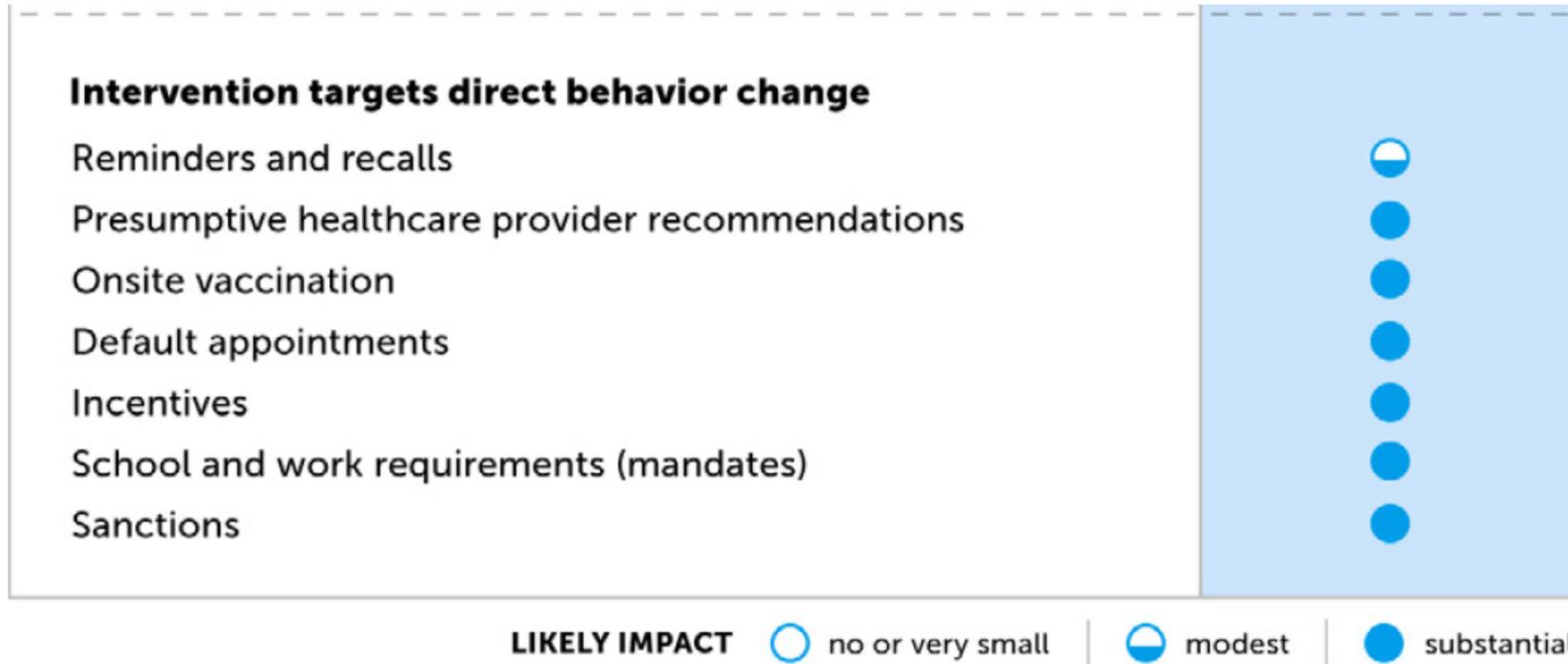
- Many communities of color have valid reasons to be skeptical of the health system

Avoid politics

Avoid repeating misinformation

And, most importantly, listen

Where Are We Going



Want to Know More?

ImmunizeSD.org

- Grass roots advocacy group promoting immunization in South Dakota
- Getting Back on Track, Immunize SD Conference -- September 10th, Sioux Falls

NDSU Center for Immunization Research and Education (CIRE)

- “Transcending COVID-19 Vaccine Barriers: Strategies to Increase Confidence and Acceptance” (YouTube)

de Beaumont Foundation – Brian Castrucci, PhD

- Changing the COVID Conversation

The Public Good Projects – Joe Smyser, PhD

- Social media monitoring and marketing perspectives

Your Local Epidemiologist – Katelyn Jetelina, PhD





Vaccinate with **Confidence**

Strategy to Reinforce Confidence in Covid-19 Vaccines

QUESTIONS?