

Misinformation, Ideological Immunity, and Vaccine Hesitancy

SCMA Annual Meeting

April 28, 2023

Jane Kelly, MD

kellyjm1@g.cofc.edu

Objectives

Part I:

1. Consider the concept of Ideological Immunity and what we can do about it
2. Describe the communication challenges in the era of social media, “pre-prints”, and medical mistrust
3. Discuss the ethics of prescribing unproven medications

Part II:

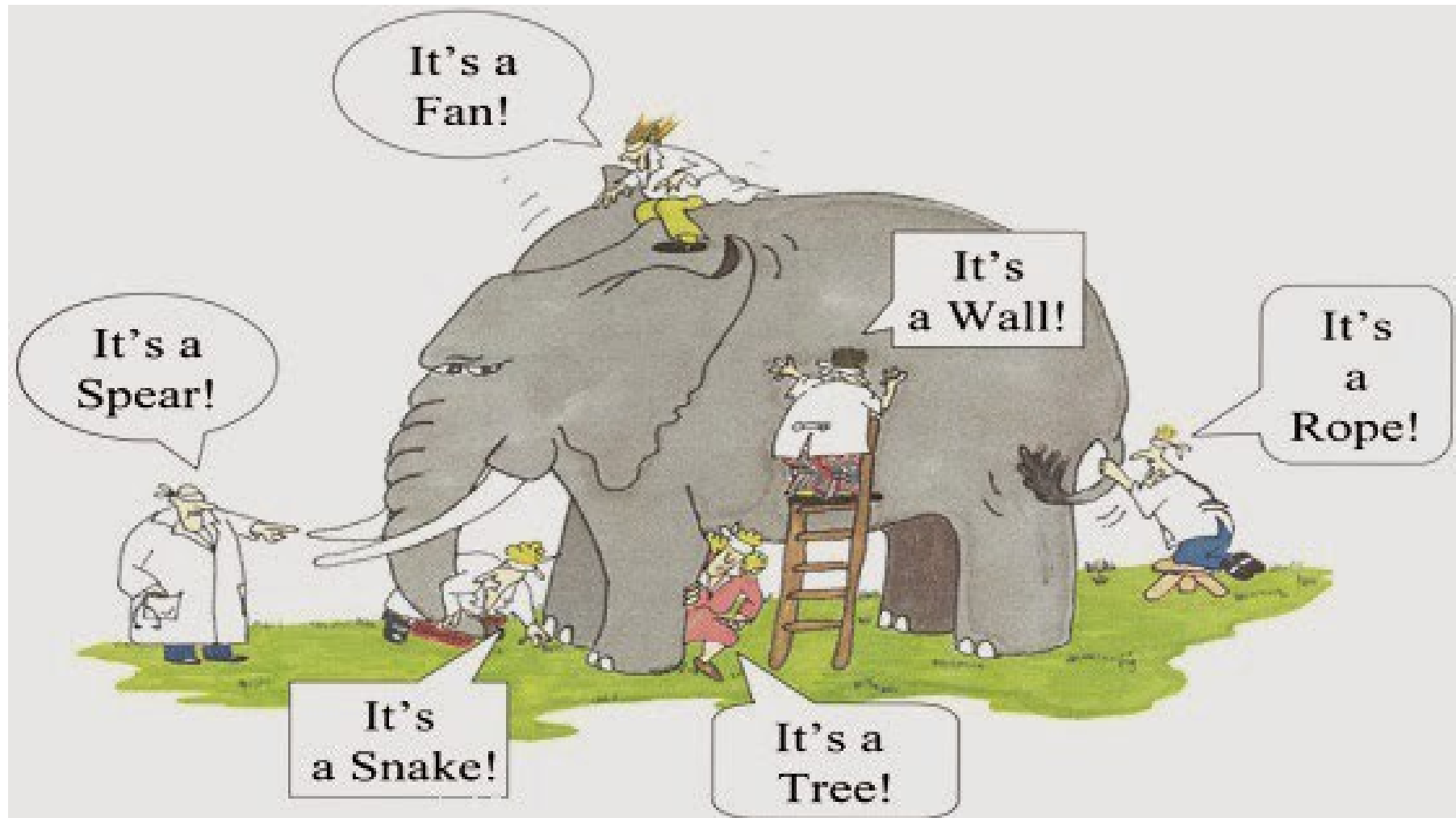
1. Review and reflect on the determinants of vaccine hesitancy



Ideological Immunity | Jane Kelly | TEDxCharleston



Limited perspective

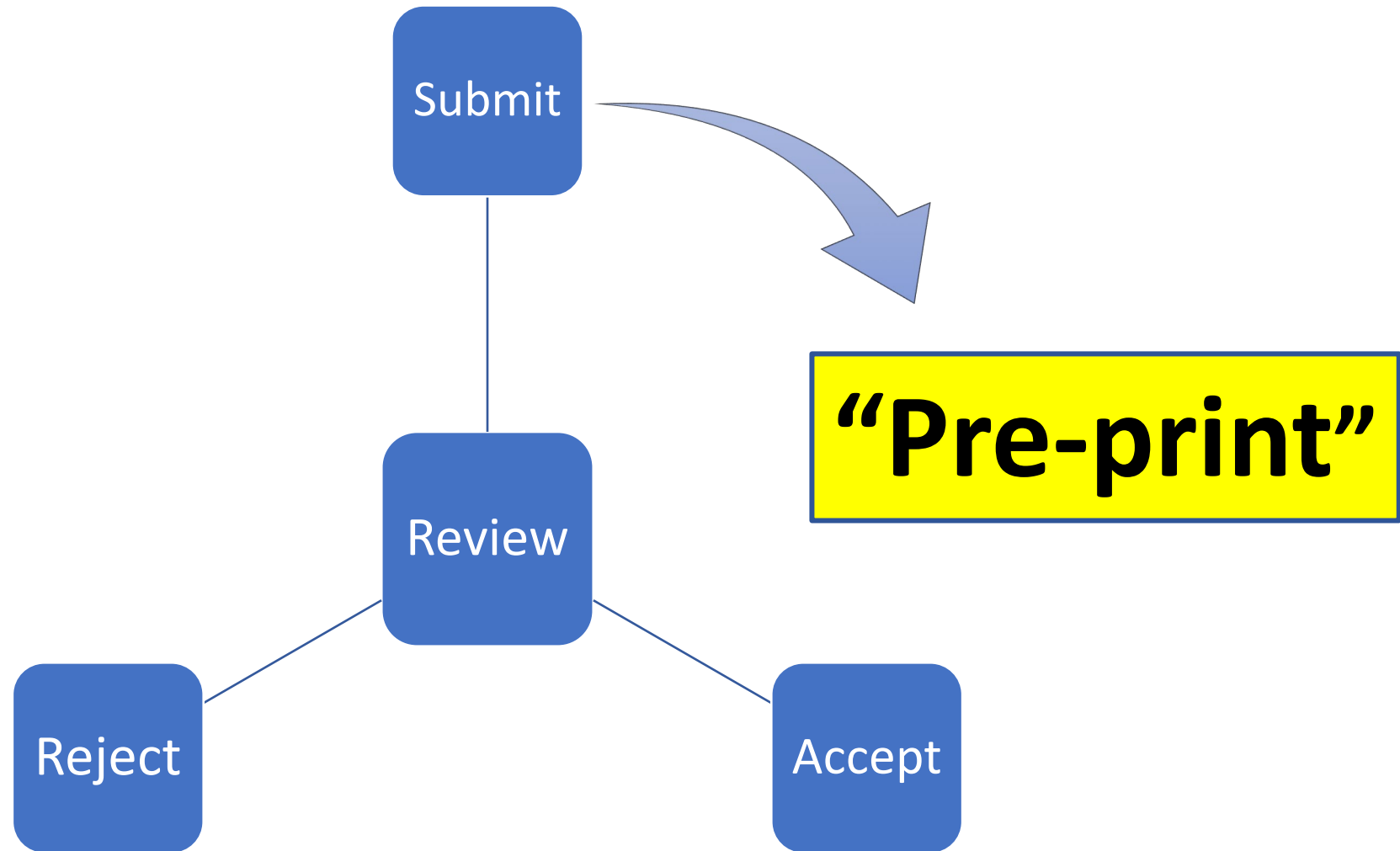


HIV \neq AIDS





Publication process





Coke and
Mentos a
Hoax!

SC Senate Medical Affairs Committee Public Comments session, 9/15/2021

**“We are no longer living in a time when a
doctor’s knowledge exceeds that of the
general public.”**

Americans don't
like...

- **Elites**
- **Authority**
- **Intellectuals**
- **Being told what to do**
- **Finding out that they are wrong**

But they are not anti-science *per se*



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Open Forum Infectious Diseases



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UNIVERSITY PRESS
academic.oup.com/ofid

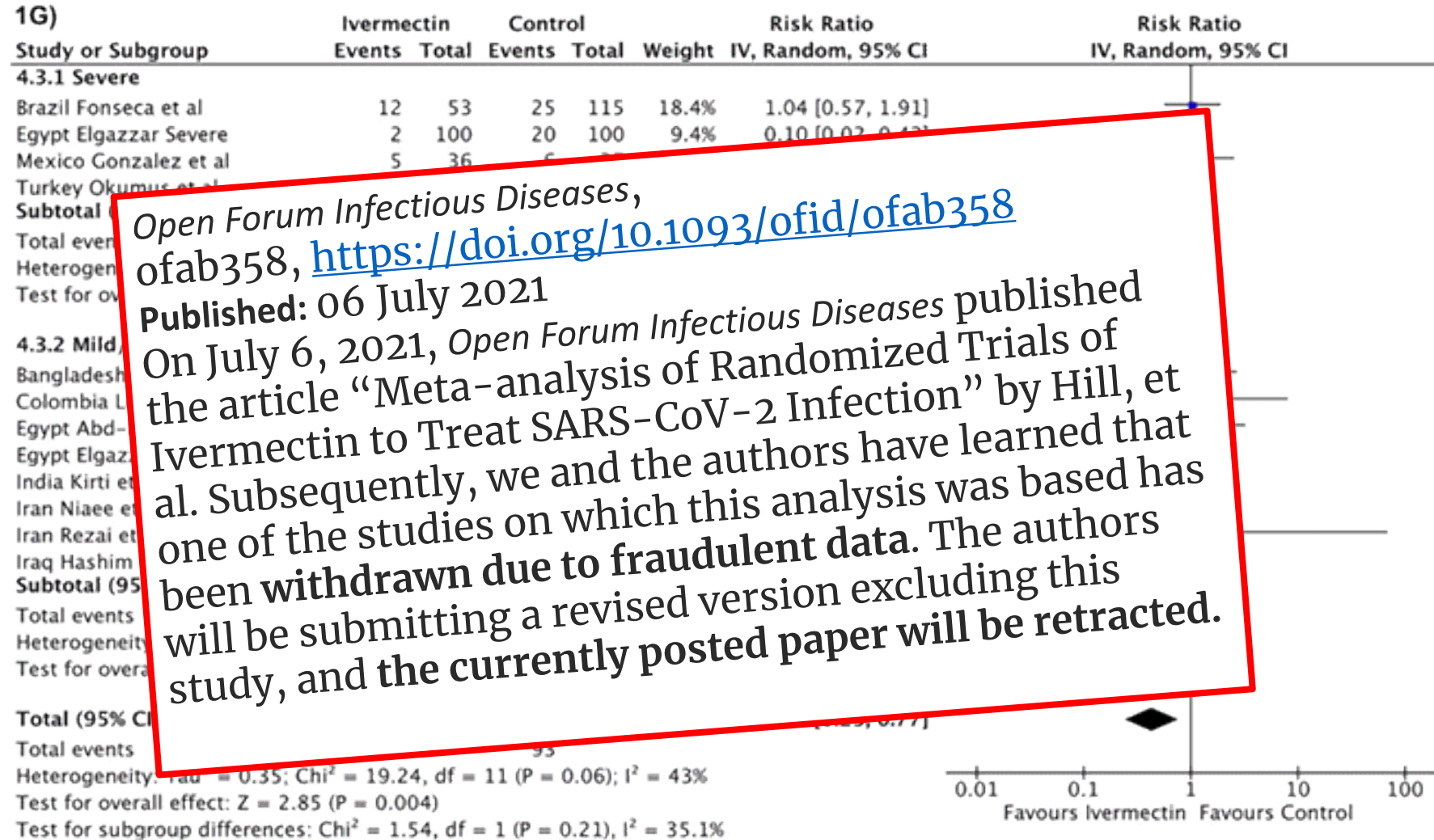
Meta-analysis of Randomized Trials of Ivermectin to Treat SARS-CoV-2 Infection

Published July 9, 2021

Retraction published: *Open Forum
Infectious Diseases*, March 2022

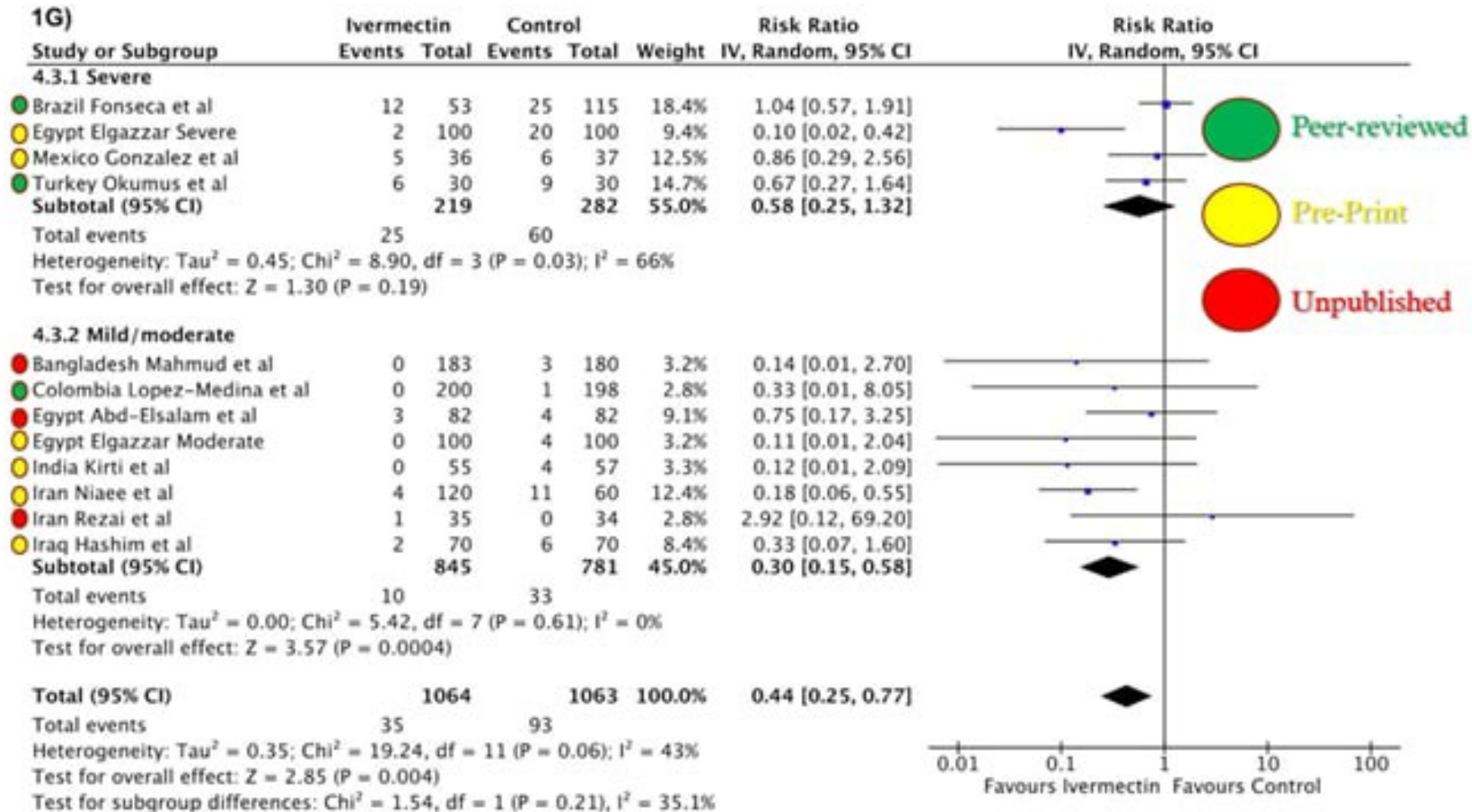
<https://doi.org/10.1093/ofid/ofac056>

Ivermectin meta-analysis



<https://academic.oup.com/ofid/advance-article/doi/10.1093/ofid/ofab358/6316214>

Deeper problem



Americans don't
like...

- Elites
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But they are not anti-science *per se*

**They may be anti-Science
Establishment, and they don't like
sarcasm**



U.S. FDA 
@US_FDA



You are not a horse. You are not a cow. Seriously, y'all.
Stop it.



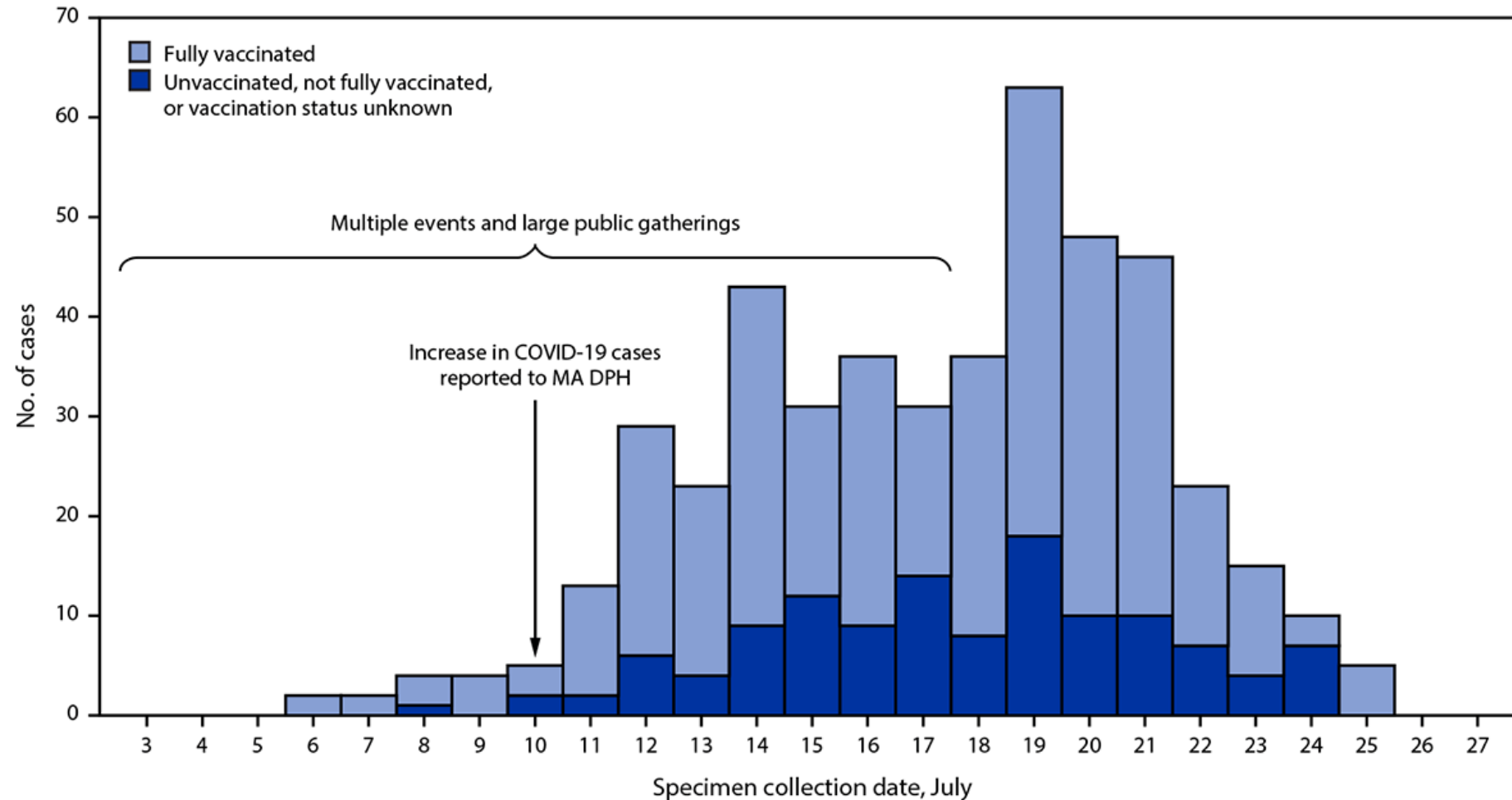


Communication Disconnects

- May 2021: CDC's new guidance that fully vaccinated people don't need to wear masks in most circumstances
- "Data have emerged again that [demonstrate] that even if you were to get infected during post vaccination that you can't give it to anyone else," Walensky said in response to a question about the new CDC guidance for vaccinated people and masks.



SARS-CoV-2 Outbreak, Including COVID-19 Vaccine Breakthrough Infections, Associated with Large Public Gatherings — Barnstable County, MA, July 2021



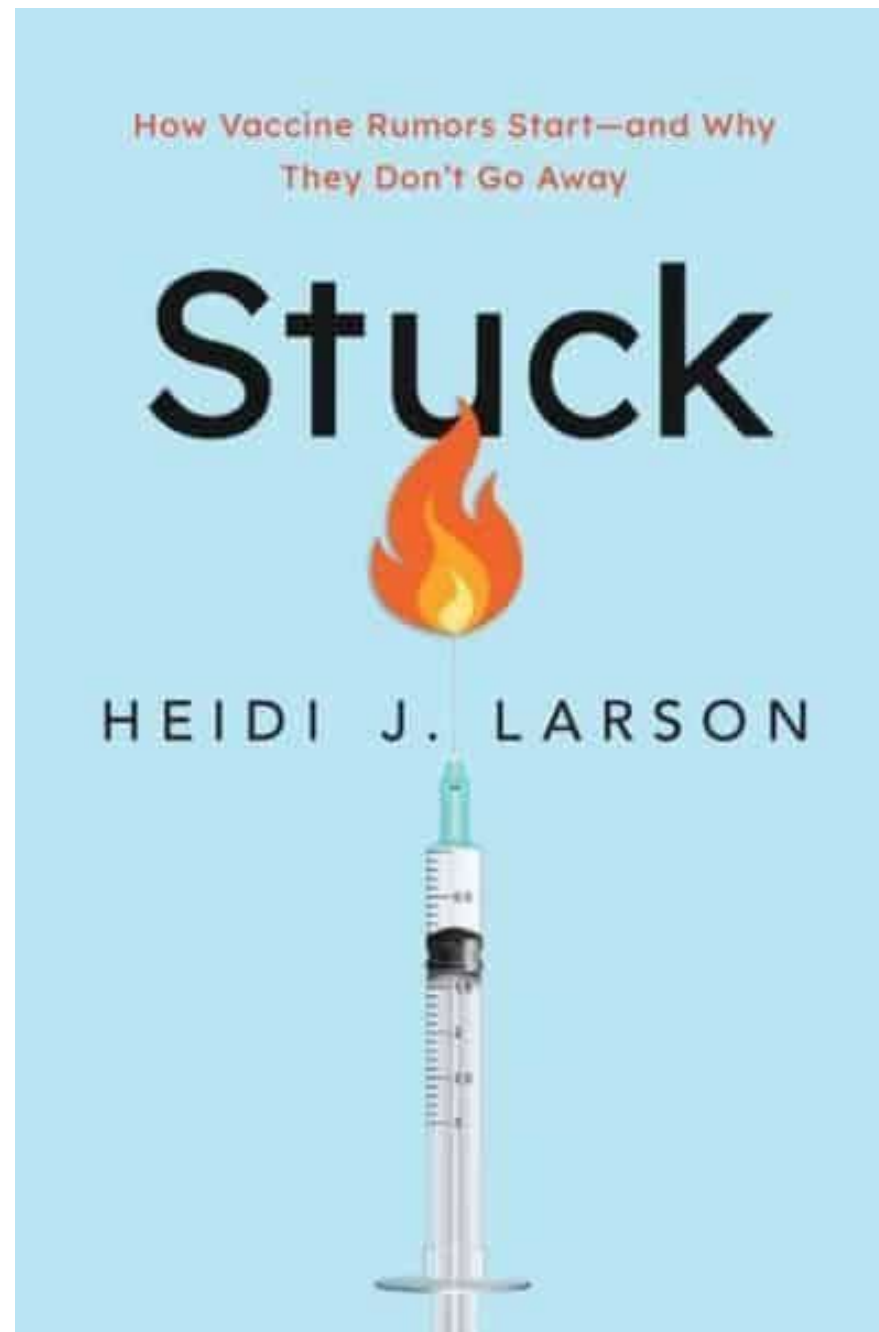
Thomas Huxley,
1870

The slaying of a beautiful
hypothesis by an ugly fact

Ideological Immunity



“Facts are not rejected because they are seen as wrong, but because they are seen as being irrelevant.”

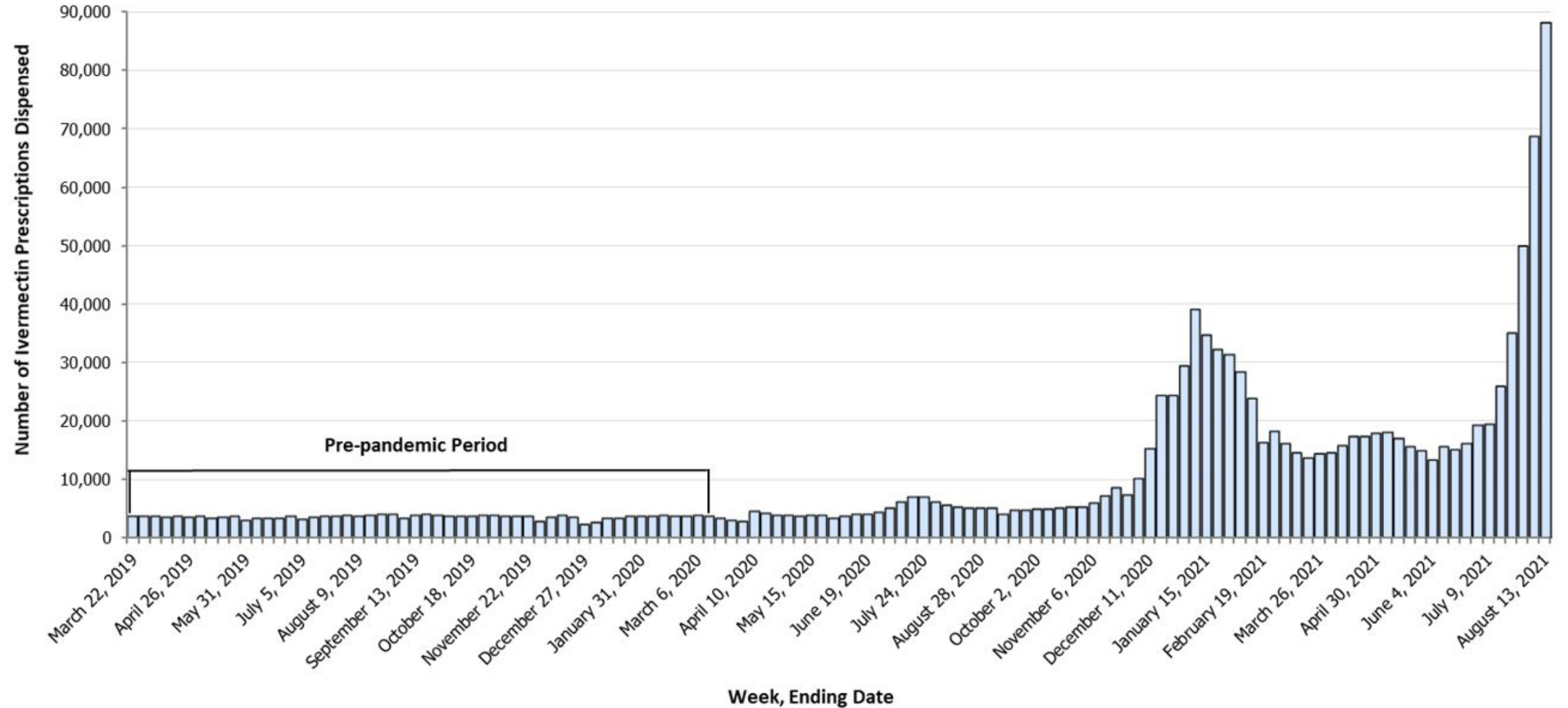


SC Senate Medical Affairs Committee Public Comments session, 9/15/2021

“We are no longer living in a time when a
doctor’s knowledge exceeds that of the
general public.”

How is this a BioEthics concern?

Ivermectin prescriptions dispensed



So, what's wrong with just prescribing Ivermectin?

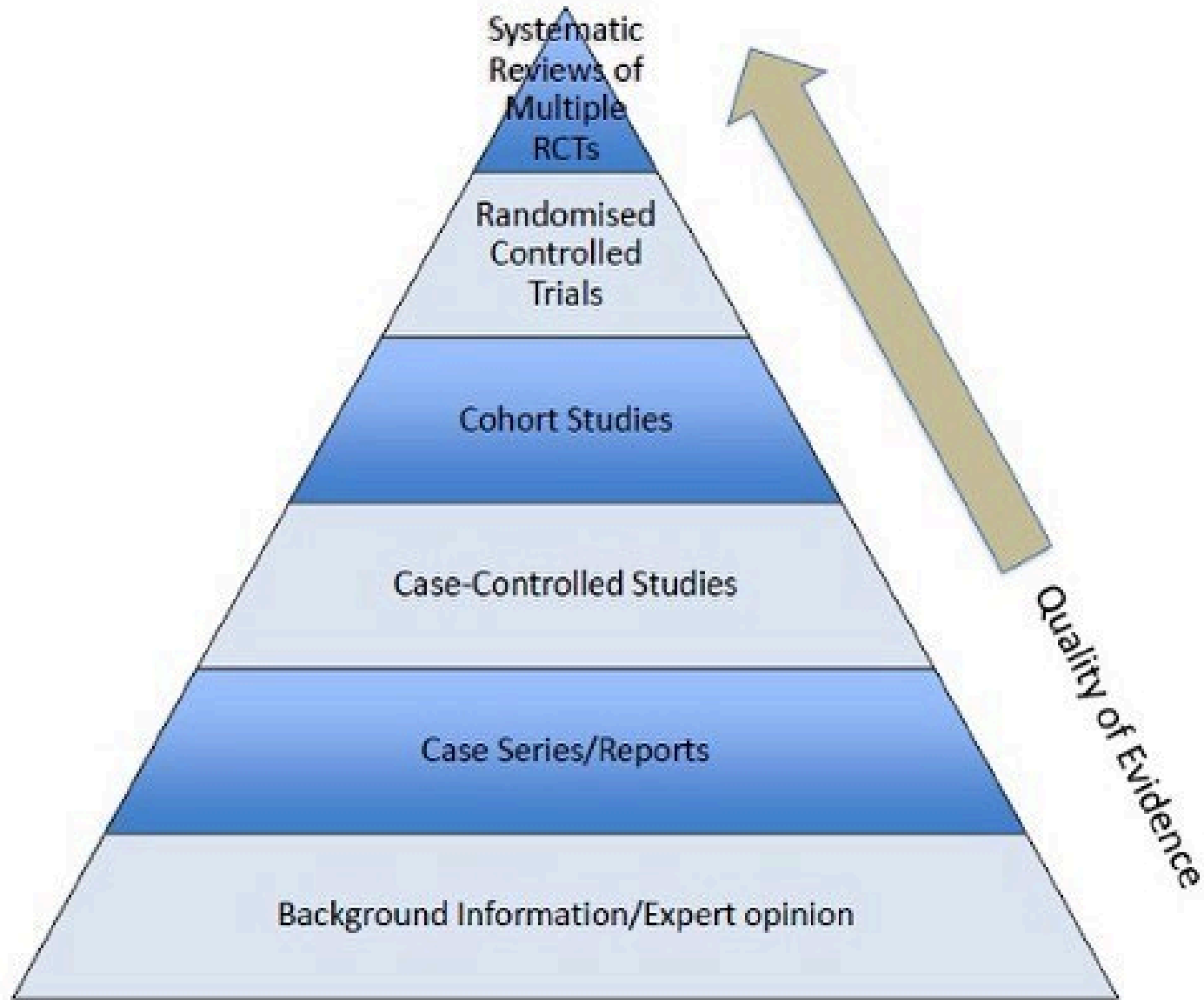
Absence of evidence is not evidence of absence

Maybe it does work

The background is a solid dark blue. A large, lighter blue circle is positioned on the right side, partially overlapping the edge. A vertical line of a slightly different shade of blue runs through the center of the image.

How do we know what
we know?

The hierarchy of evidence.



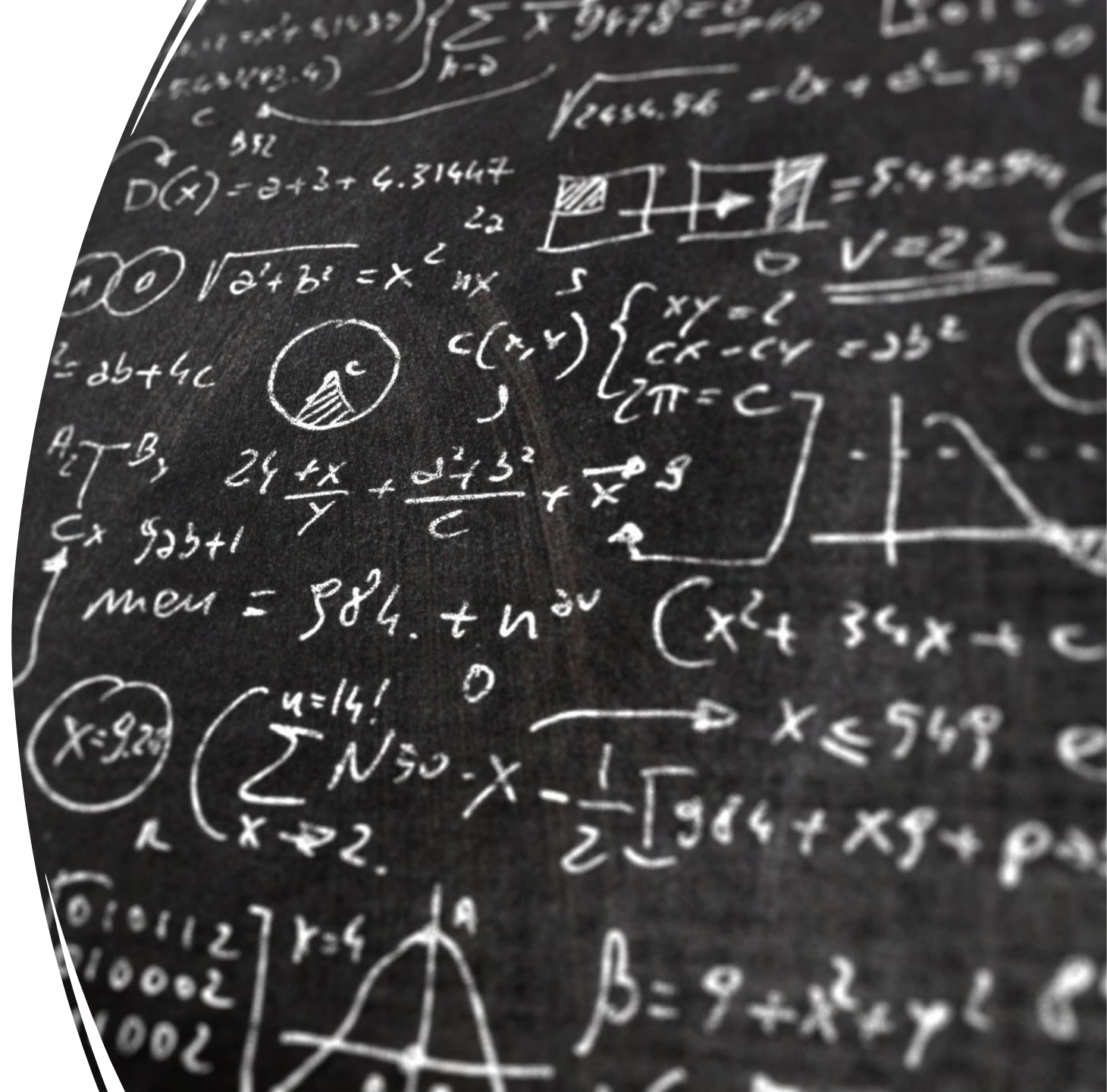
Doctors
commonly
prescribe meds
for off-label use

What are the ethics of using an unproven treatment?

- Undermine evidence-based medicine
- Anecdote = Evidence
- De-value Scientific Method
- Support Quackery as acceptable
- Enter a new “Dark Age” in which Medicine is no longer respected, but suspected
- Lend legitimacy to conspiracy theorists
- Divert resources from effective treatments
- Ignores “First, do no harm”
- Is satisfying consumer demand a good enough reason to compromise?
- How can we be so sure we are right?

Science is Iterative

- What we learn today may be overturned tomorrow
- When Science is viewed as a foreign, inaccessible, elite language, it is mistrusted
- Science should not be presented as Dogma



What are the ethics of using an unproven treatment?

- What about the [Right to Try Act](#)?
- We used unproven therapies during the Ebola outbreak
- Unfolding crises with great uncertainty
- Interests of patient may not align with interests of the medical provider
- Making decisions based on false premises

<https://www.fda.gov/patients/learn-about-expanded-access-and-other-treatment-options/right-try>

Undermining Science feeds conspiracy theory

The New York Times

The Coronavirus Pandemic >

[Map and Cases](#)

[Updated Boosters](#)

[New Covid Variants](#)

[Holiday Advice](#)

[Covid F.A.Q.](#)

Her Baby Needs Heart Surgery. But She Is Demanding ‘Unvaccinated’ Blood.

New Zealand’s health service is seeking to take temporary custody of a critically ill infant so it can perform a lifesaving operation.

Pre-prints getting headlines in Science

IN DEPTH



A teen receives a dose of the new Omicron-specific COVID-19 booster in a Pennsylvania pharmacy last month. Data on boosters' benefits for young people are lacking.

COVID-19

Heart risks fuel debate over COVID-19 boosters

With benefits unclear, some scientists question new round of shots for young people

By Jennifer Couzin-Frankel

Florida Surgeon General Joseph Ladapo ignited a furor this month when, based on a state analysis purporting to show COVID-19 vaccines were linked to cardiac deaths in young men, he advised men ages 18 to 39 to steer clear of the shots. Scientists slammed his warning and decried the eight-page analysis, which was anonymous and not peer reviewed, for its lack of transparency and flawed statistics.

Still, COVID-19 vaccines do have a rare but worrisome cardiac side effect. Myocarditis, an inflammation of the heart muscle that can cause chest pain and shortness of breath, has disproportionately struck older boys and young men who received the shots. Only one out of several thousand in those age groups is affected, and most quickly feel better. The number of deaths tentatively linked to vaccine myocarditis around the world has been tiny. But several new studies suggest the heart muscle can take months to heal, and some scientists worry about what this means for patients long term. The U.S. Food and Drug Administration (FDA) has ordered vaccinemakers Pfizer and Moderna to conduct a raft of studies to assess these risks.

As they parse emerging data and fret over knowledge gaps, scientists and doctors are divided over whether such concerns should influence vaccine recommendations, especially

now that a new COVID-19 wave is looming and revamped boosters are hitting the scene. Nearly all urge vaccinating young people with the first two vaccine doses, but the case for boosters is more complicated. A key problem is that their benefits are unknown for the age group at highest risk of myocarditis, who are at lower risk of severe COVID-19 and other complications than older adults.

"I'm a vaccine advocate, and I would still vaccinate children," says Jane Newburger, a pediatric cardiologist at Boston Children's Hospital who has cared for and studied post-vaccine myocarditis patients. But Michael Portman, a pediatric cardiologist at Seattle Children's Hospital who's also studying patients, says he would hesitate to recommend boosters to healthy teens. "I don't want to cause panic," Portman says—but he craves more clarity on the risk-benefit ratio.

Earlier this month, a team from Kaiser Permanente Northern California and the U.S. Centers for Disease Control and Prevention (CDC) reported the risk of myocarditis or pericarditis—inflammation of the tissue surrounding the heart—was about one in 6,700 in 12- to 15-year-old boys following the second vaccine dose, and about one in 16,000 following the first booster. In 16- and 17-year-olds, it was about one in 8,000 after the second dose and one in 6,000 after the first booster. Men ages 18 to 30 have a somewhat elevated risk as well.

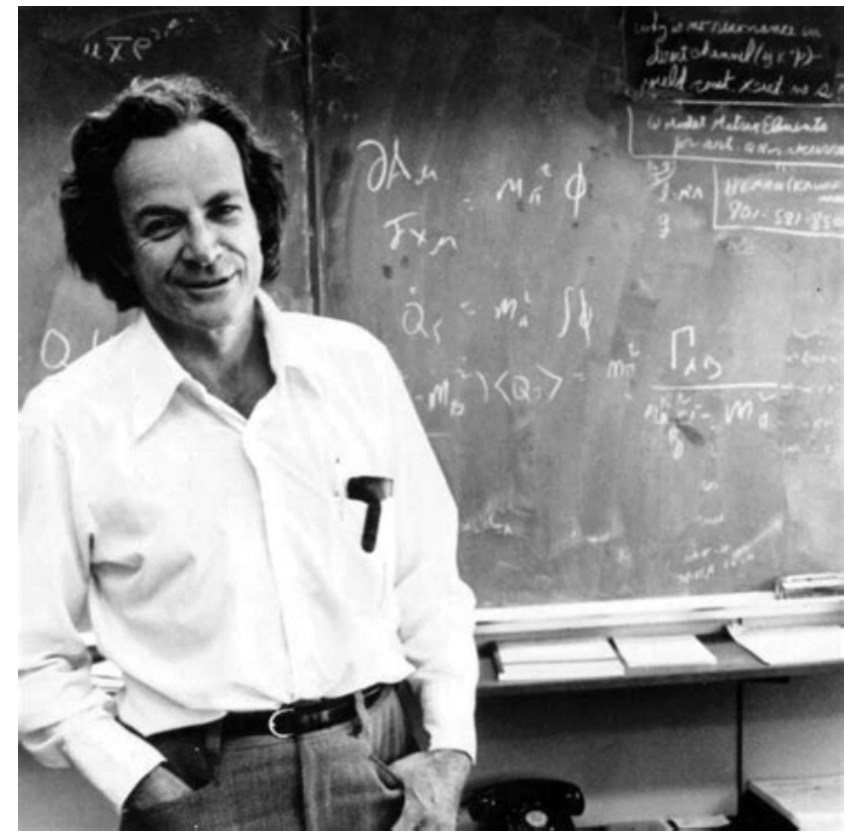
Many scientists suspect vaccine-driven myocarditis is somehow triggered by an immune reaction following the COVID-19 shot. A study from Germany published last month in *The New England Journal of Medicine* suggested it may be driven by an inflammatory response associated with SARS-CoV-2's spike protein, which the messenger RNA (mRNA) vaccines coax the body to produce. The group reported finding certain antibodies in both vaccine-induced myocarditis patients and patients with severe COVID-19, which itself can cause myocarditis. The same antibodies, which interfere with normal inflammation control, also turned up in children who developed a rare, dangerous condition called multisystem inflammatory syndrome (MIS-C) after a bout of COVID-19. "I think it's really another mechanism," says Karin Klingel, a cardiac pathologist at the University of Tübingen who helped lead the work. But whether the antibodies are directly causing myocarditis remains unclear.

Most postvaccine myocarditis patients are briefly hospitalized and their symptoms quickly abate. Newburger's hospital has tracked 33 patients who developed the condition, and she is largely reassured by their healing. Portman agrees: "Many of these kids are asymptomatic after they leave the hospital."

But what he sees in the youngsters during follow-up appointments nags at him:

SCIENCE PHOTO LIBRARY

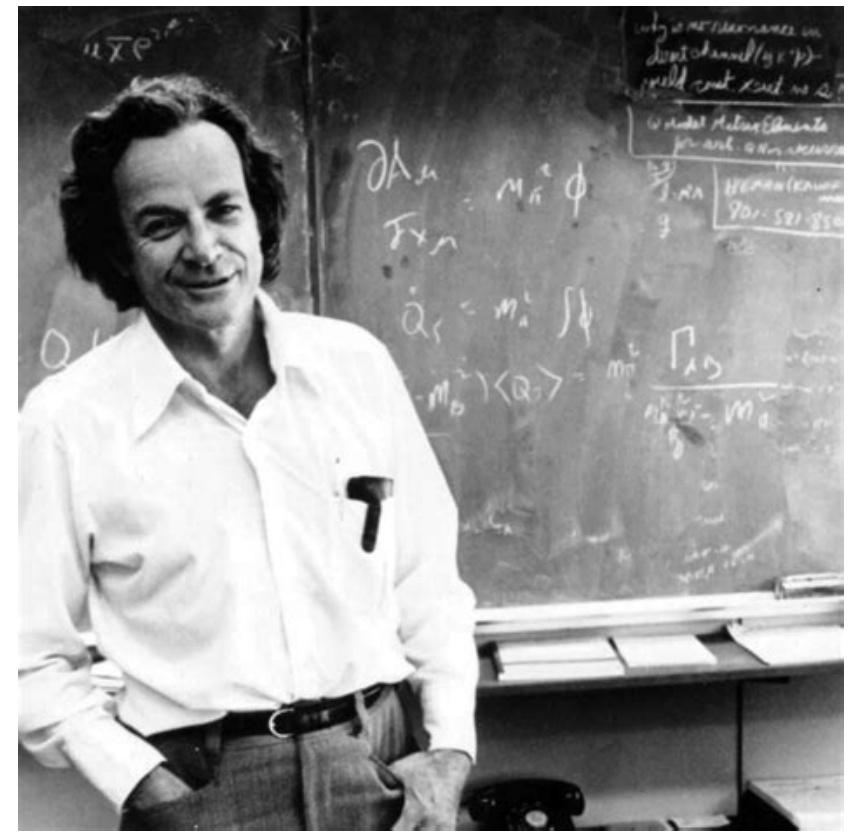
**I would rather have
questions that can't
be answered...**



**...than answers that
can't be questioned.**

-- Richard Feynman

**When I find out that
I'm wrong, I change
my mind.**



What do you do?

-- Richard Feynman

SOCO

- Be skeptical
 - Remember the Seven Men and an Elephant
 - Be like Feynman
- Beware of Ideological Immunity
 - Remember Science is the New Dogma
 - Give complex topics the complexity they deserve

Comments?

Questions?

Discussion?

Part II: Vaccine Hesitancy

EMBARRASSMENT OF RICHES:

NAVIGATING VACCINE HESITANCY IN THE
AGE OF MISINFORMATION

Edwin Hayes



FDA

**U.S. Department of Health and Human Services
Food and Drug Administration**



Clarke MD

@MdTeryn

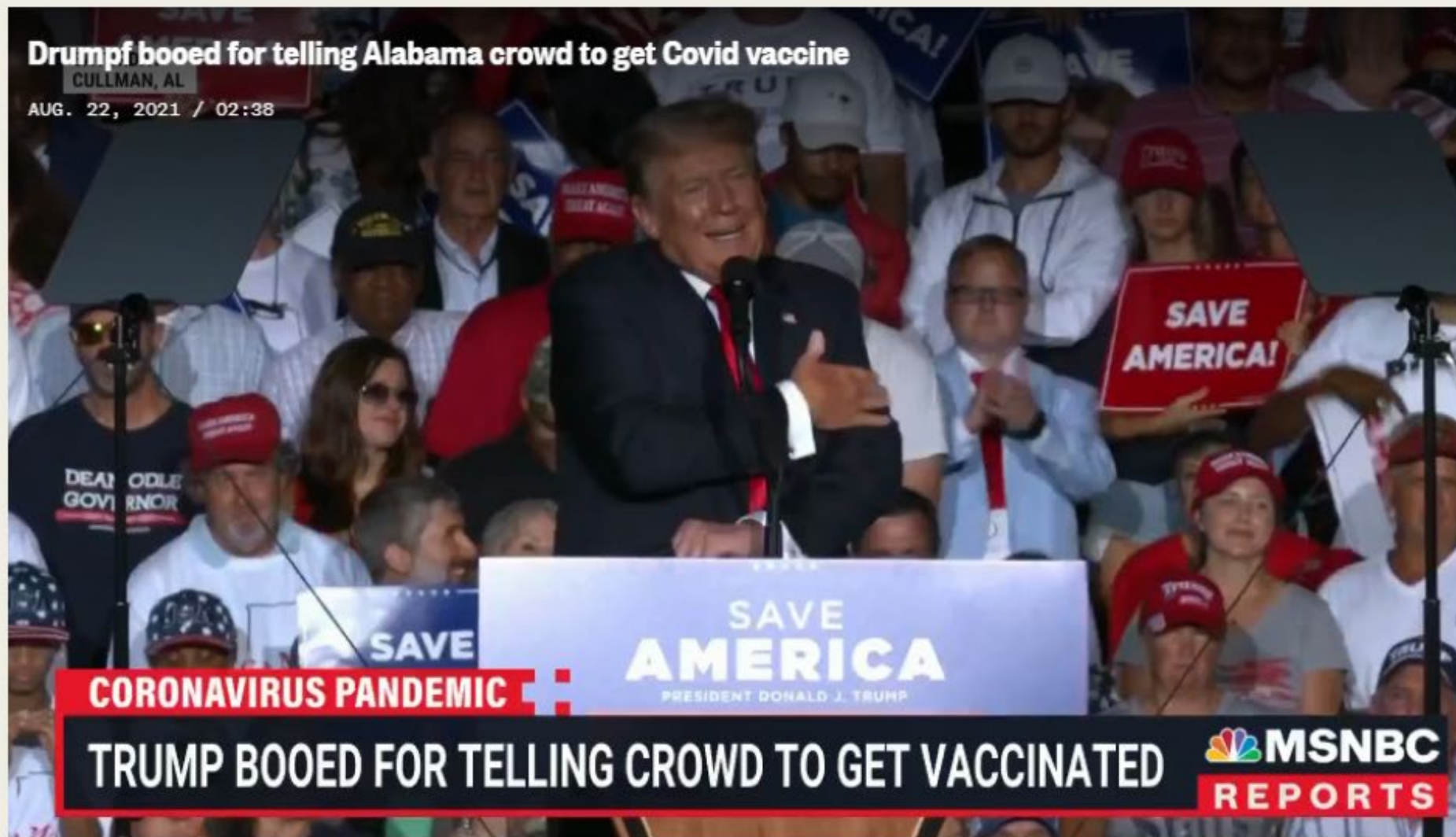


If you think the vaccine hesitant are going to feel reassured by the FDA's approval, you have no idea how much research they have done.

Drumpf booted for telling Alabama crowd to get Covid vaccine

CULLMAN, AL

AUG. 22, 2021 / 02:38



CORONAVIRUS PANDEMIC

TRUMP BOOED FOR TELLING CROWD TO GET VACCINATED

MSNBC
REPORTS

Video of Lindsey Graham Booed for Telling Crowd to Get Vaccine Goes Viral

Jack Dutton · 6 days ago



A video of Senator [Lindsey Graham](#) (R-SC) being booed after advising a Republican audience to consider getting the COVID-19 vaccine has gone viral, clocking up more than 200,000 views as of Wednesday morning.



Hesitancy Heterogeneity

- Hesitancy is heterogeneous, even amongst similar demographics

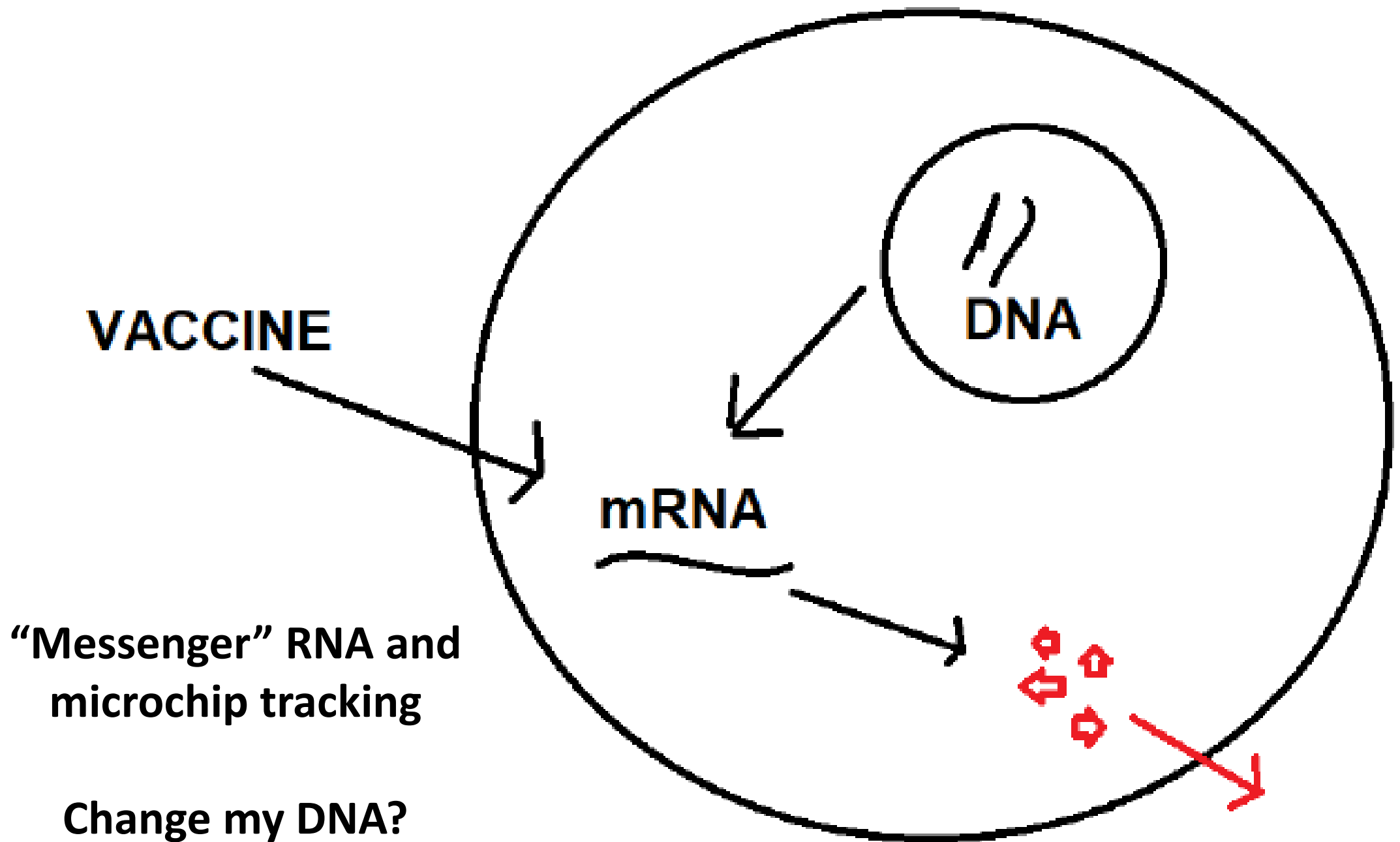




The Cow-Pock — or — the Wonderful Effects of the New Inoculation! — Vide. — the Publications of *the Anti-Vaccine Society.*

Pubd June 16. 1854. by H. Thompson, 31, James Street.

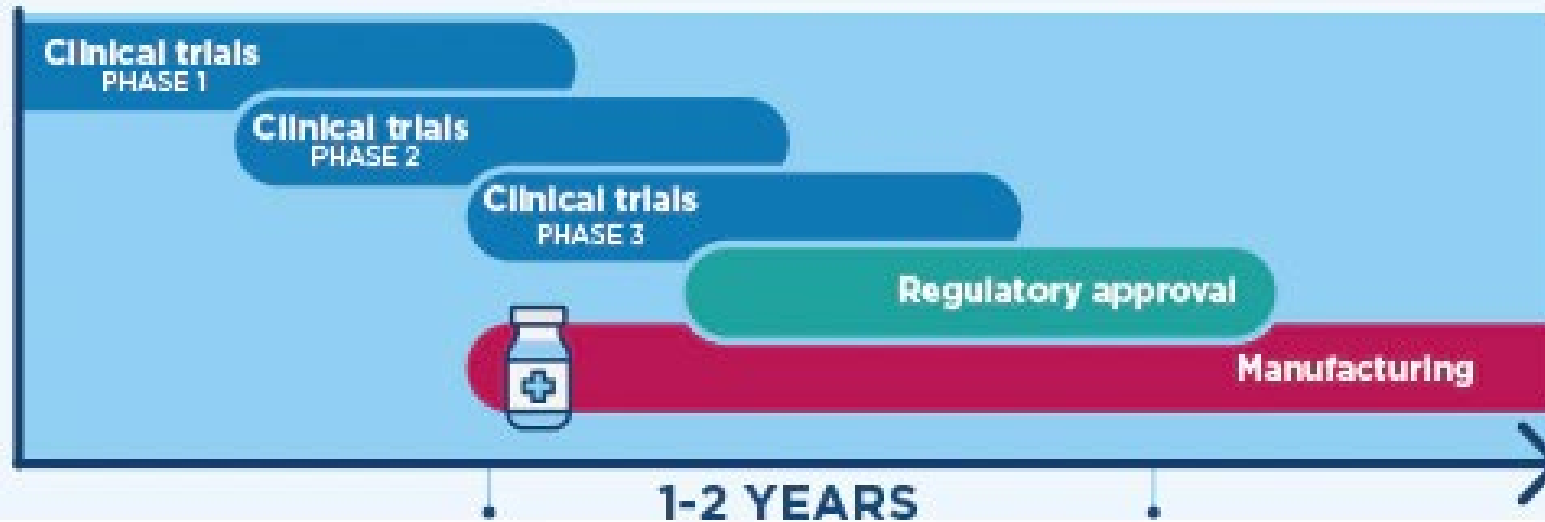




Traditional vaccine development: One step at a time



COVID-19 vaccine development: Multiple steps happening at once





Love them. Protect them.
Never inject them.

There are NO safe vaccines!

Shaken Baby Syndrome

Chronic Ear Infections

Death

SIDS

Seizures

ADD

Allergies

Asthma

Autism

Diabetes

Meningitis

and polio are caused by adverse reactions to vaccine poisons.



Go to: VaccineTruth.com

or call Vaccination Liberation: 1-888-249-1421

**WOULD YOU INJECT MATTER FROM
ABORTED FETUSES INTO YOUR CHILD?**



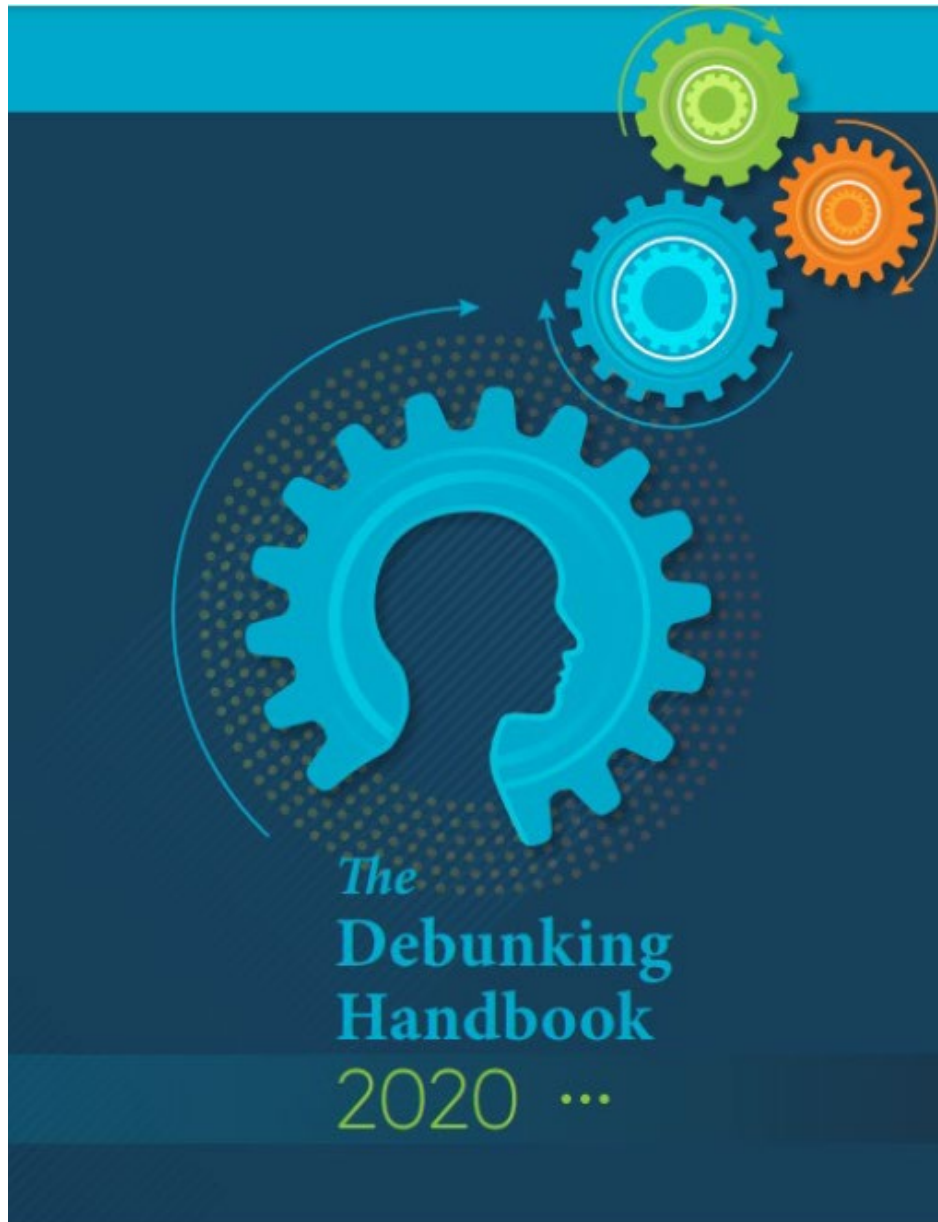
**92% OF CHILDREN WHO ARE VACCINATED HAVE
BEEN POTENTIALLY INJECTED WITH DNA FROM
ABORTED FETUSES**

INDEPENDENCEDECLARATION.ORG



Common Themes

- Often anchors in kernels of truth
- Plays on fear of the unknown
- Many presumptions and hypotheticals
- Vague standards (less than fully tested)
- Emotionally charged descriptors (experimental vaccine)
- Often combative with volume more than substance



Misinformation and Its Correction: Continued Influence and Successful Debiasing

**Stephan Lewandowsky¹, Ullrich K. H. Ecker¹, Colleen M. Seifert²,
Norbert Schwarz², and John Cook^{1,3}**

¹University of Western Australia, ²University of Michigan, and ³University of Queensland

[https://journals.sagepub.com/doi
/full/10.1177/1529100612451018](https://journals.sagepub.com/doi/full/10.1177/1529100612451018)

Common Themes

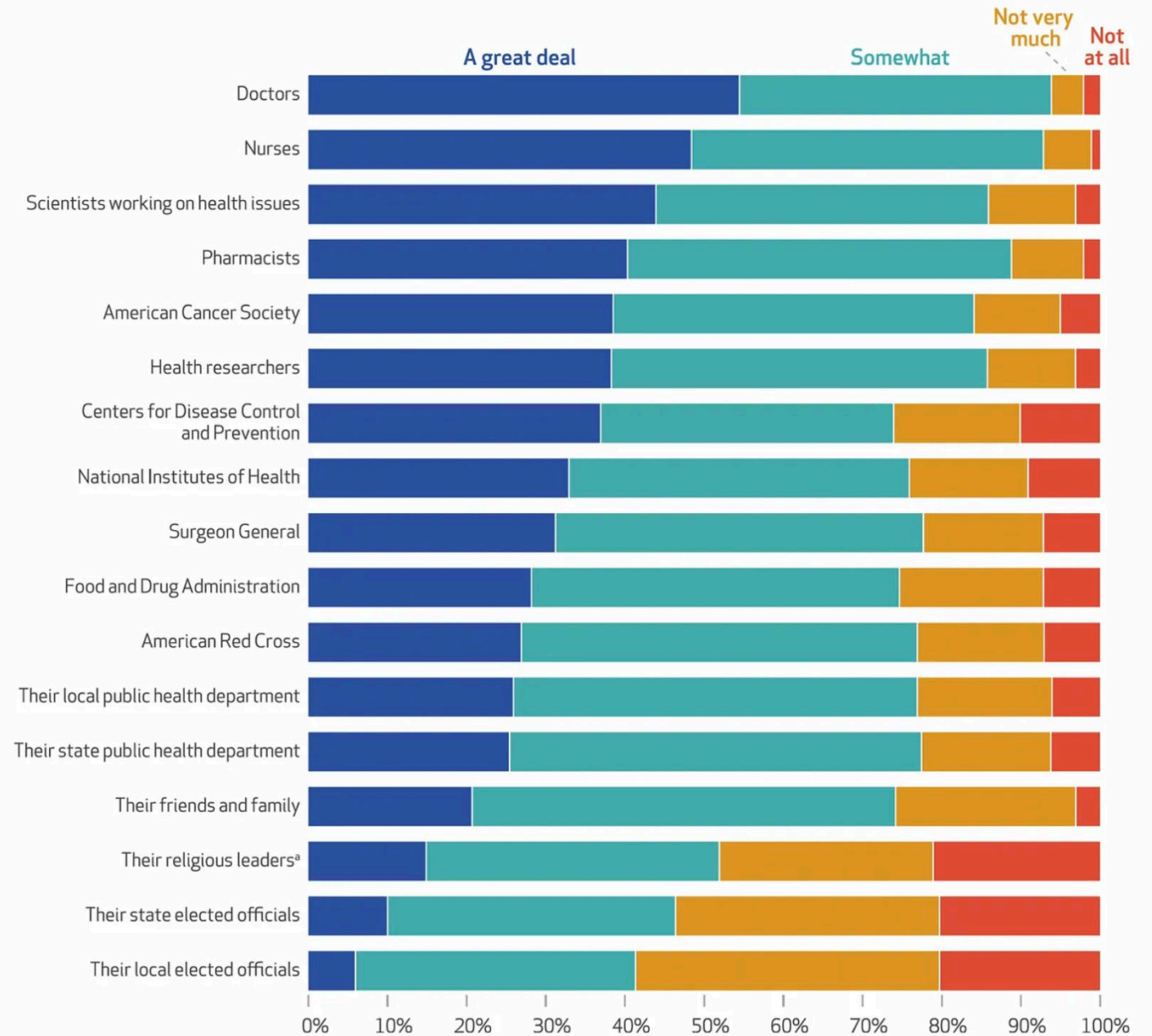
- Often anchors in kernels of truth
- Plays on fear of the unknown
- Many presumptions are unproven
- Vague standards (less than 100%)
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- Often combative with volume more than substance



TRUST

Public Trust in Health Information Sources

Public trust in sources of health information among US adults, by degree of trust, 2022



America's Frontline Doctors



Protecting the Legitimacy of Medical Expertise

Richard J. Baron, M.D., and Carl H. Coleman, J.D.

In response to the Covid-19 pandemic, however, state lawmakers have embraced measures that could seriously undermine boards' ability to carry out these functions.

Perhaps the most substantial threat to expertise is that members of the public are coming to believe that facts don't exist — that all facts are political and therefore a matter of opinion. This mindset is fundamentally incompatible with the scientific practice of medicine

Although there are many gray areas in medicine, some propositions are objectively wrong. For example, when a licensed physician insists that viruses don't cause disease or that Covid-19 vaccines magnetize people or connect them to cell towers, professional bodies must be able to take action in support of fact- and evidence-based practice.

<https://www.nejm.org/doi/full/10.1056/NEJMp2214120?query=TOC>

Questions?

