

Looking Forward: Vaccine Uptake and Behavior

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BACKGROUND



COVID-19 vaccine candidates- OWS

Preclinical/Phase 1

Vaxart, oral adenovirus vector

Merck, vesicular stomatitis virus vector

Inovio, DNA

Sanofi/GSK, viral protein

Phase 2

Johnson/Johnson, adenovirus vector (Ad26)

Novavax, recombinant nanoparticle

Phase 3

AstraZeneca/UOxford, chimp adenovirus vector (ChAdOx1)

Moderna, mRNA – July 27

Pfizer/BioNTech/Fosun, mRNA – July 27 Phase



Operation Warp Speed

Investment to decrease financial risk for vaccine developers

Build manufacturing capacity ahead of schedule, assumes success of the vaccine candidate/s

Concerns

Red companies have never brought a vaccine to approval or market

Platforms with no prior human vaccines: adenovirus vectors, DNA, mRNA

Pharmalittle: One in three Americans would refuse a Covid-19 vaccine; pharma donates big-time to Congress

By ED SILVERMAN @Pharmalittle

Warning: Current rates of vaccine hesitancy in the US could mean a long road to normalcy

Aug 10, 2020 8:24am EDT

What if they make a Covid-19 vaccine but Americans refuse to take it?

Analysis by [Stephen Collinson](#) with [C](#)
Updated 5:10 PM ET, Fri July 17, 2020

Vaccines are safe. But huge numbers of people around the world say they wouldn't take a Covid jab

By [Emma Reynolds](#), CNN
Updated 5:28 PM ET, Sat August 15, 2020

Defeat COVID-19 by requiring vaccination for all. It's not un-American, it's patriotic.

Make vaccines free, don't allow religious or personal objections, and create disincentives for those who refuse vaccines shown to be safe and effective.
Dr. Michael Lederman, Maxwell J. Mehlman and Dr. Stuart Youngner
Opinion contributors
Published 8:00 a.m. ET Aug. 6, 2020 | Updated 12:28 a.m. ET Aug. 10, 2020

IDEAS When a Vaccine Arrives, People Will Ignore the Anti-Vaxxers

Even if some Americans opt out, the country will still reach herd immunity against COVID-19.

JULY 31, 2020

Yascha Mounk
Contributing writer at *The Atlantic*

'This Is All Beyond Stupid.' Experts Worry About Russia's Rushed Vaccine

Vaccines are among the safest medical products in the world — but only because of the intense rigor of the clinical trials that test their safety and effectiveness.

How much of a problem is vaccine hesitancy overall?

Pro-vaccine		Anti-vaccine
Acceptors	Hesitant	Rejectors
Agree with or do not question vaccines	Are unsure about, delay, or choose only some vaccines	Completely reject vaccines
Children fully immunized	Children under-immunized	Children un-immunized
High trust in provider	Desire a trustworthy provider	Low trust in provider
Interest in vaccine information from child's provider	Interest in vaccine information from child's provider	No interest in vaccine information
70%	30%	<1%

- Percentage refusing all vaccines remains low (1.3%)
- Prevalence of undervaccination has been rising
 - Increasing requests to “spread out” vaccines



Vaccination and Exemption Rates

MMWR Morb Mortal Wkly Rep. 2019 Oct 18;68(41):905-912. doi: 10.15585/mmwr.mm6841e1.

Vaccination Coverage with Selected Vaccines and Exemption Rates Among Children in Kindergarten - United States, 2018-19 School Year.

Seither R, Loretan C, Driver K, Mellerson JL, Knighton CL, Black CL.

	MMR (2 doses)	DTaP (5 doses)	Varicella (2 dose)	Any exemption
National average	94.7	94.9	94.3	2.6

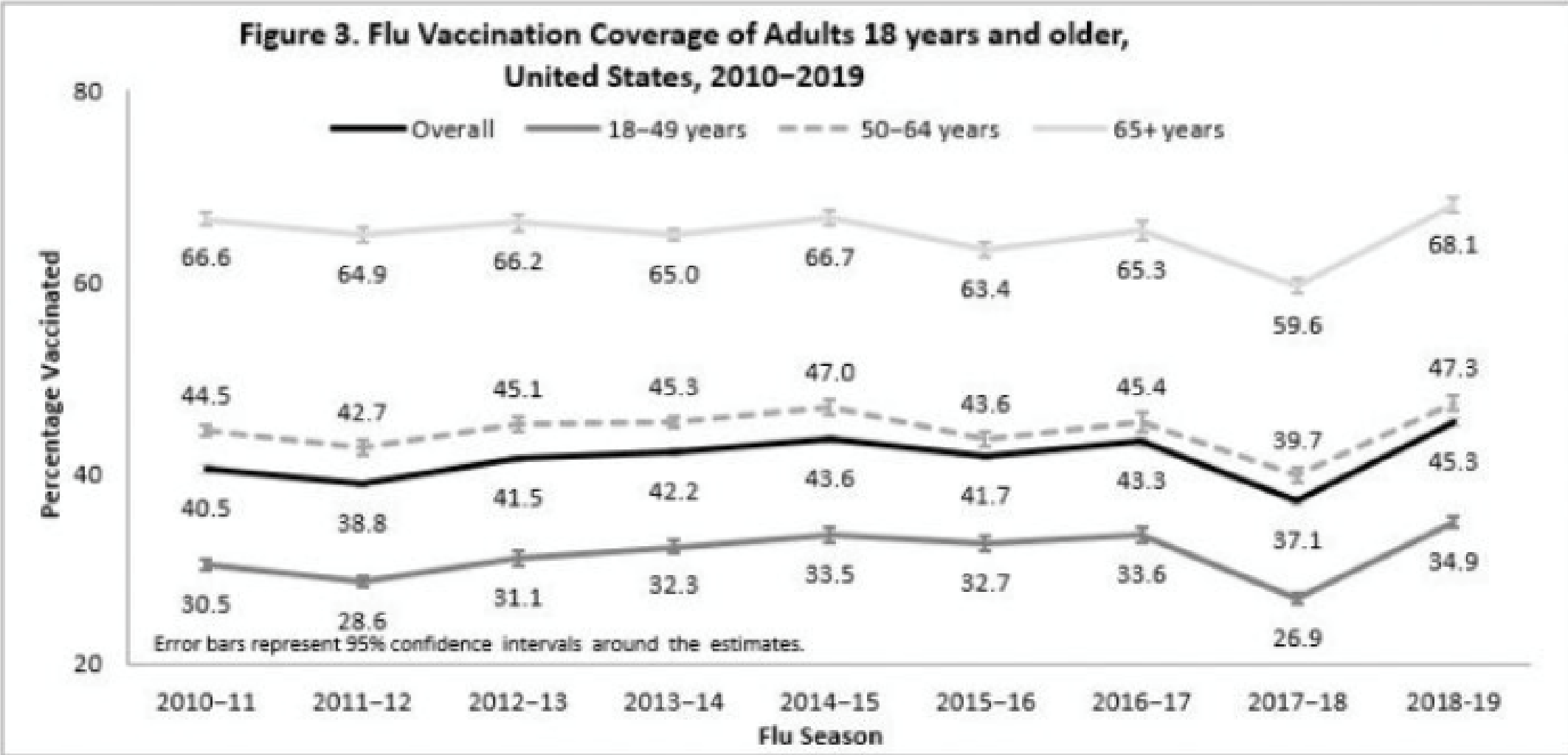
MMWR Morb Mortal Wkly Rep. 2018 Oct 12;67(40):1123-1128. doi: 10.15585/mmwr.mm6740a4.

Vaccination Coverage Among Children Aged 19-35 Months - United States, 2017.

	MMR (1 or more doses)	DTaP (4 or 5 doses)	Hep B birth dose	Rotavirus
National average	91.5	83.2	73.6	73.2

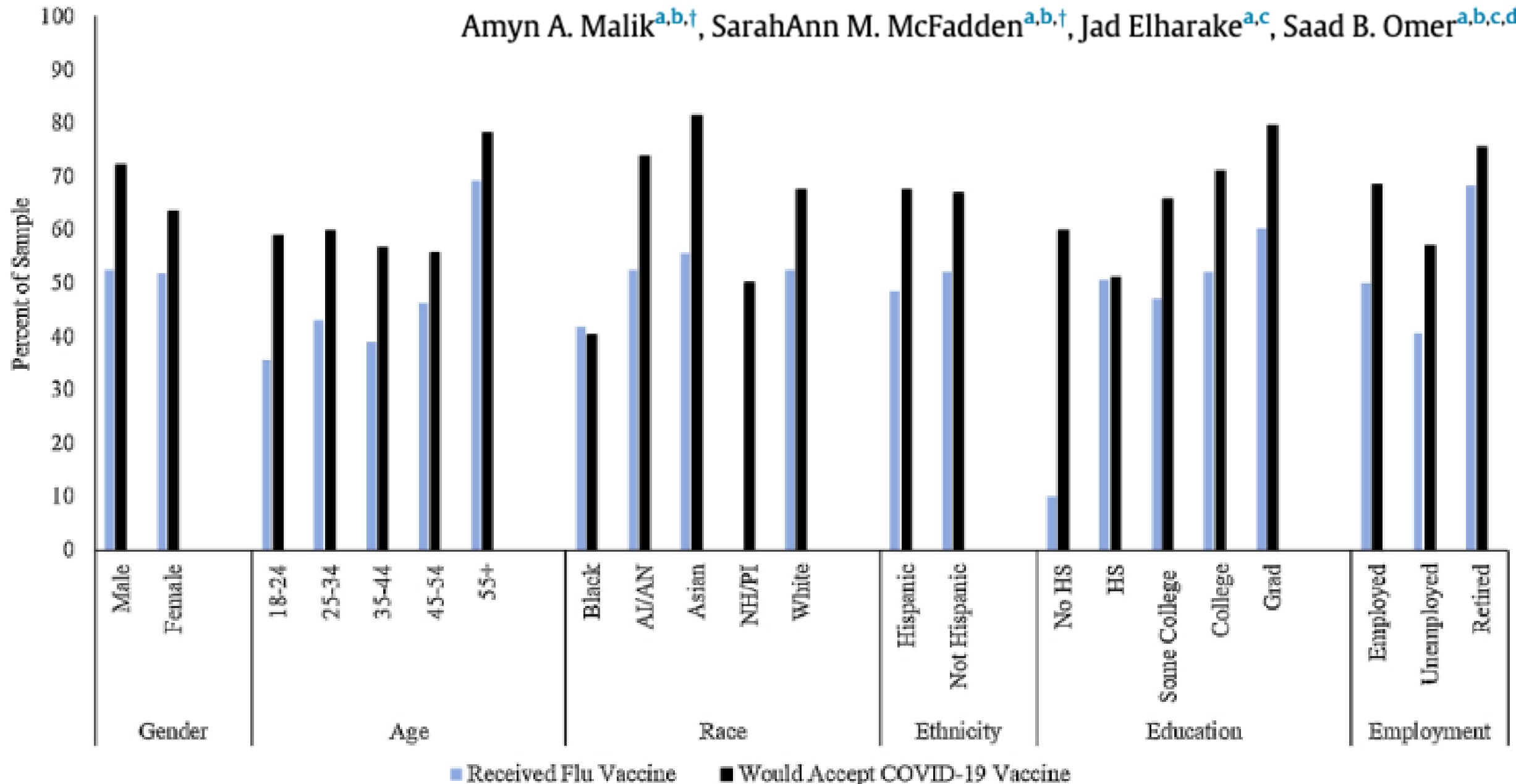


Flu Vaccination Coverage, United States, 2018–19 Influenza Season

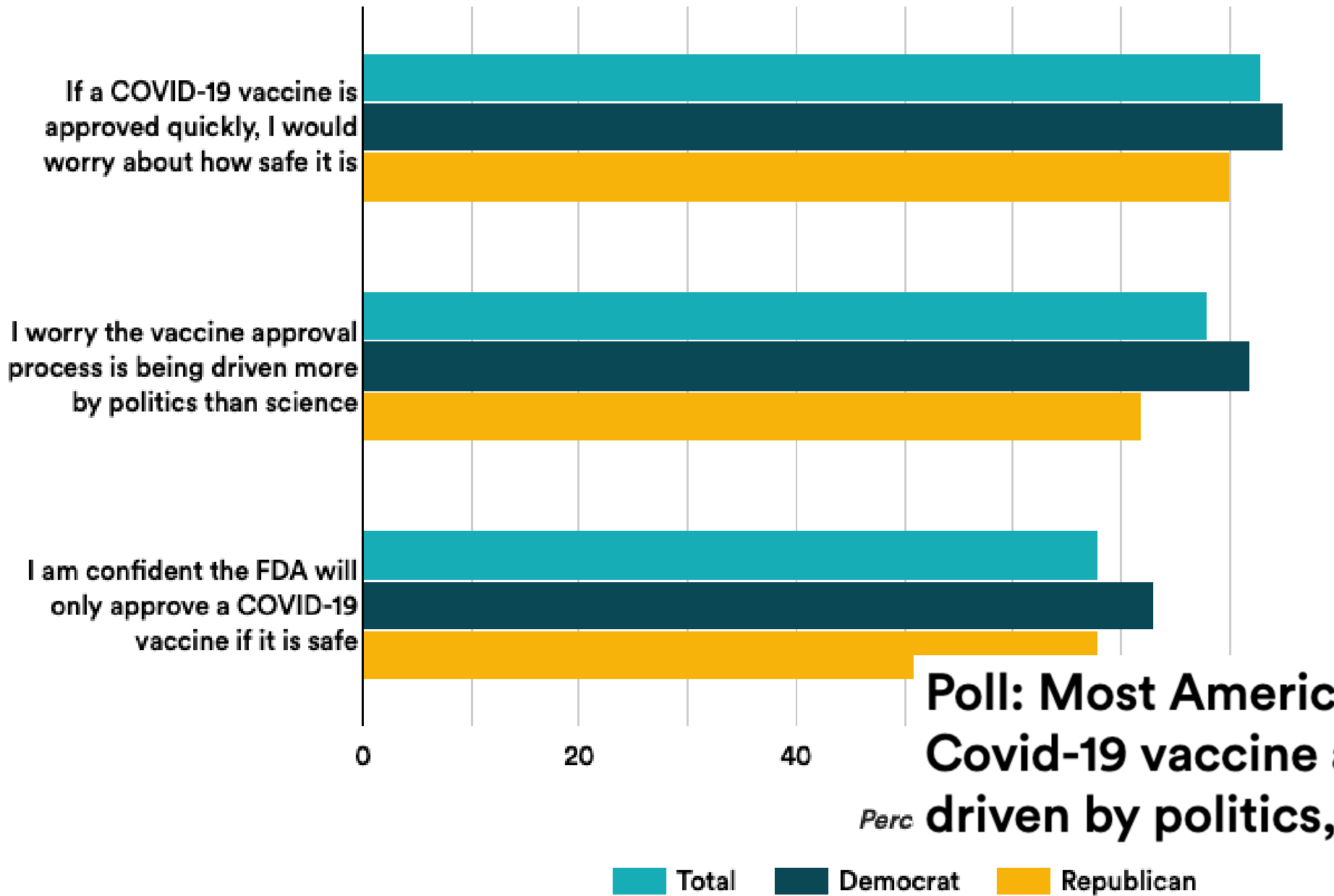


Determinants of COVID-19 vaccine acceptance in the US

Amy A. Malik^{a,b,†}, SarahAnn M. McFadden^{a,b,†}, Jad Elharake^{a,c}, Saad B. Omer^{a,b,c,d,*}



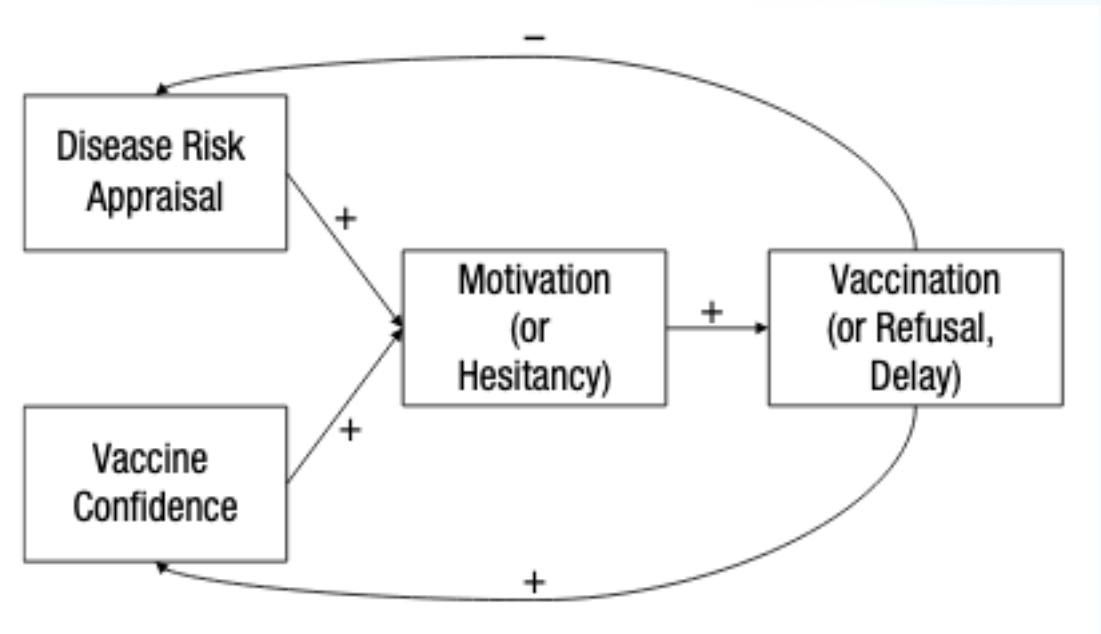
Views of the U.S. public on Covid-19 vaccine development, approval process



Poll: Most Americans believe the Covid-19 vaccine approval process is driven by politics, not science


■ Total ■ Democrat ■ Republican





BEHAVIORAL SCIENCE AND VACCINATION UPTAKE





It's Not (just) About the Facts: The “What” and the “How”

- The **What** – *necessary, but often not sufficient*
 - Safety surveillance mechanisms, ingredients, facts about diseases prevented, immunology of vaccination, ACIP recommendations, misconceptions, etc
- The **How** – what is the best way to convey information so that a person who is already resistant will be receptive to the information?
- Conventional Wisdom: Improve knowledge and people will make the right decision
 - This educational approach assumes human decision making is always rational (has been called the ‘Information Deficit Model’)
- Becoming increasingly clear that simply correcting knowledge gaps – whether through informational brochures, community campaigns, or direct provider conversations – is often **not enough** to address people who have concerns about vaccines





Effective Messages in Vaccine Promotion: A Randomized Trial

- Parents randomly assigned to receive 1 of 4 interventions:
 - (1) info explaining lack of evidence that MMR causes autism from CDC;
 - (2) info about measles, mumps, rubella from VIS;
 - (3) images of children with measles, mumps, rubella;
 - (4) a dramatic narrative about severe case of measles; or to a control group.
- None of the interventions increased parental intent to vaccinate a future child, and they often **BACKFIRED**
 - For example, refuting claims of an MMR/autism link: reduced misperceptions that vaccines cause autism but **decreased** intent to vaccinate among parents who had the least favorable vaccine attitudes



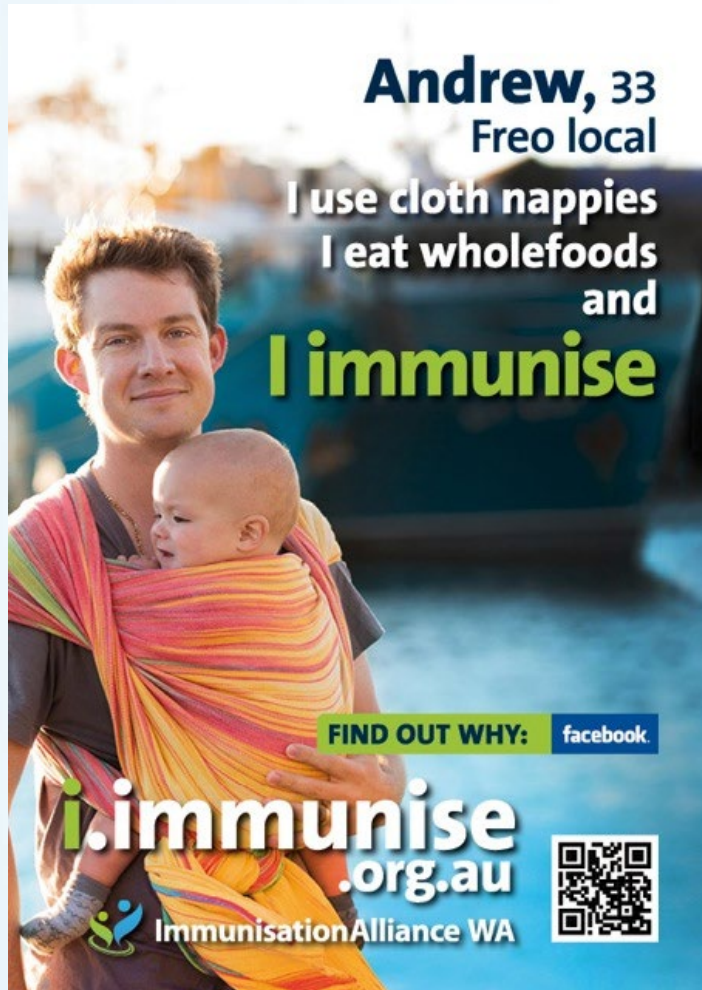
The Backfire Effect

“I Immunise” campaign

Target audience: parents who are
Hesitant
Late/selective vaccinators

Campaign evaluated via online survey
(304 respondents)

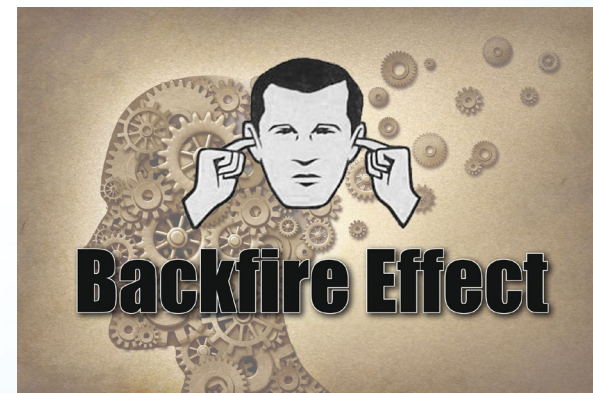
Parents with a history of vaccine
refusal had a high level of negative
response compared to those without
97.2% of those reporting negative
thoughts
97.5% of those reporting negative
feelings





The Familiarity Backfire Effect

- Once people hear a myth, or misinformation, it's very difficult to remove that from their minds
- Debunking a myth can actually strengthen it
 - making myths more familiar
 - providing too many arguments
 - providing arguments that threaten one's worldview





How to Debunk a Myth

1. Focus on core facts rather than the myth to avoid the misinformation becoming more familiar
2. Any mention of a myth should include explicit warnings that the information is false
3. Include an alternative explanation that accounts for the original misinformation

the
DEBUNKING
handbook

Written by:

John Cook, Global Change Institute, University of Queensland

Stephan Lewandowsky, School of Psychology, University of Western Australia



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Task Force Findings

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[Vaccination Programs: Home Visits to Increase Vaccination Rates](#)

Recommended | Completed February 2016

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[Vaccination Programs: Requirements for Child Care, School, and College Attendance](#)

Recommended | Completed February 2016

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[Vaccination Programs: Client-Held Paper Immunization Records](#)

Insufficient Evidence | Completed February 2016

Vaccination

www.thecommunityguide.org





Conclusions/Implications

- Safe, effective vaccines have the potential to end this pandemic
- Community engagement with vulnerable populations must start early
- Public health messages must be tested before they are rolled out
- Care should be taken to avoid perpetuating misinformation
- Use existing evidence-based strategies to increase uptake





“VACCINES DON’T SAVE LIVES; VACCINATION SAVES LIVES”

