Unspoken Vaccine Hesitancy Among Healthcare Workers

Terrence Shenfield MS, RRT-ACCS, RPFT, NPS, AE-C

Objectives

- Stats
- Adverse effects of vaccine
- What is vaccine hesitancy
- Determinants of vaccine hesitancy
- Distrust of government and healthcare organizations
- Safety concerns
- Herd Immunity
- Losing your job because of failure to get vaccine

Stats

- Amid COVID-19 vaccination requirements, workers have been fired for noncompliance, and some have resigned or quit.
- 22% of healthcare workers are unvaccinated
- Widespread misinformation plays a role here.
- Among the reasons: The research was done too quickly; it wasn't fully FDA-approved (at first).

Some questions

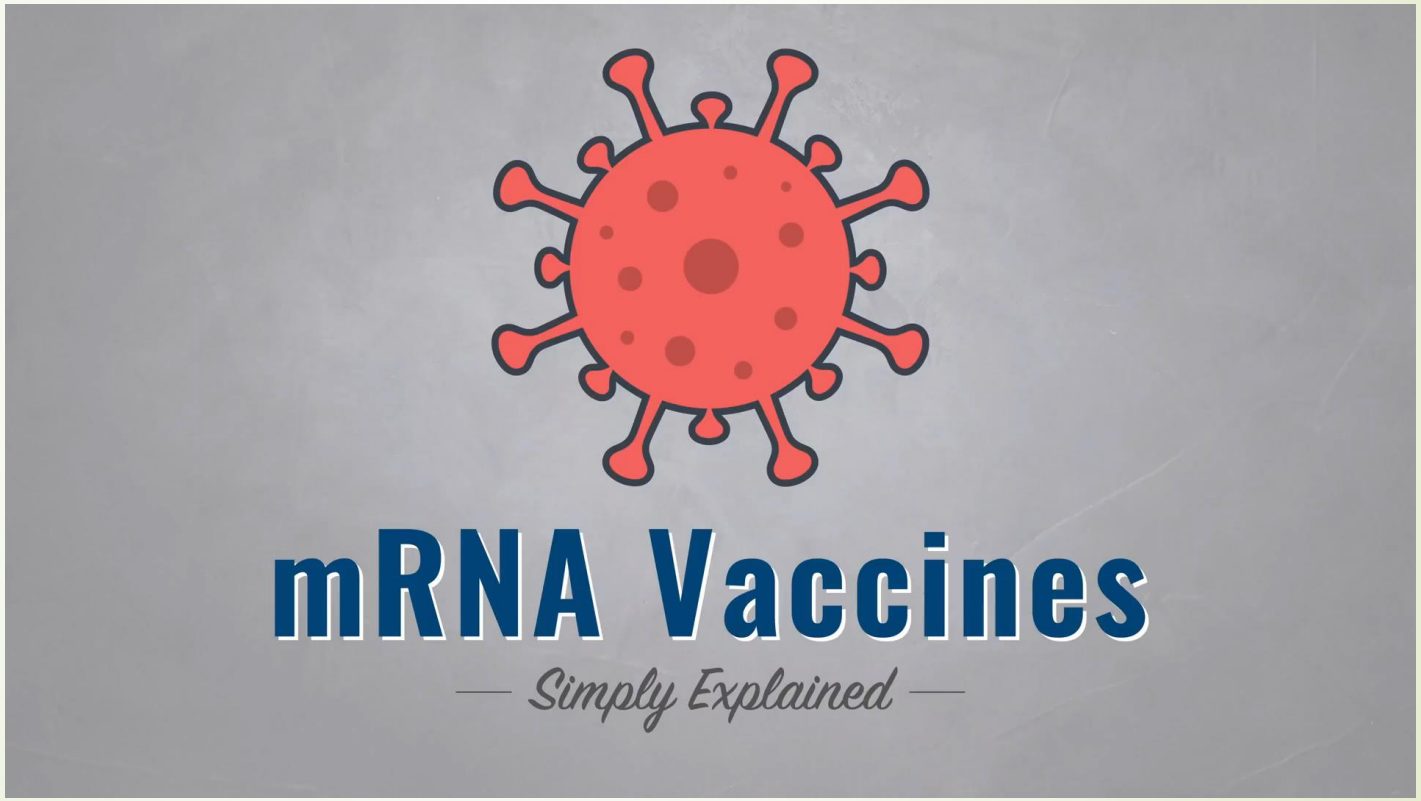
- How many of you work at a hospital that is mandated that the employee receives a COVID vaccine?
- Since the vaccines have been developed so quickly does this mean that their safety and efficacy have been compromised?
- Do you feel that the vaccine you received improve your chances of survival if you happen to get COVID-19?
- Did any of you get COVID-19 after the vaccination?
- Have any of you been hospitalized because of a COVID-19 infection?

Adverse effects caused by vaccination

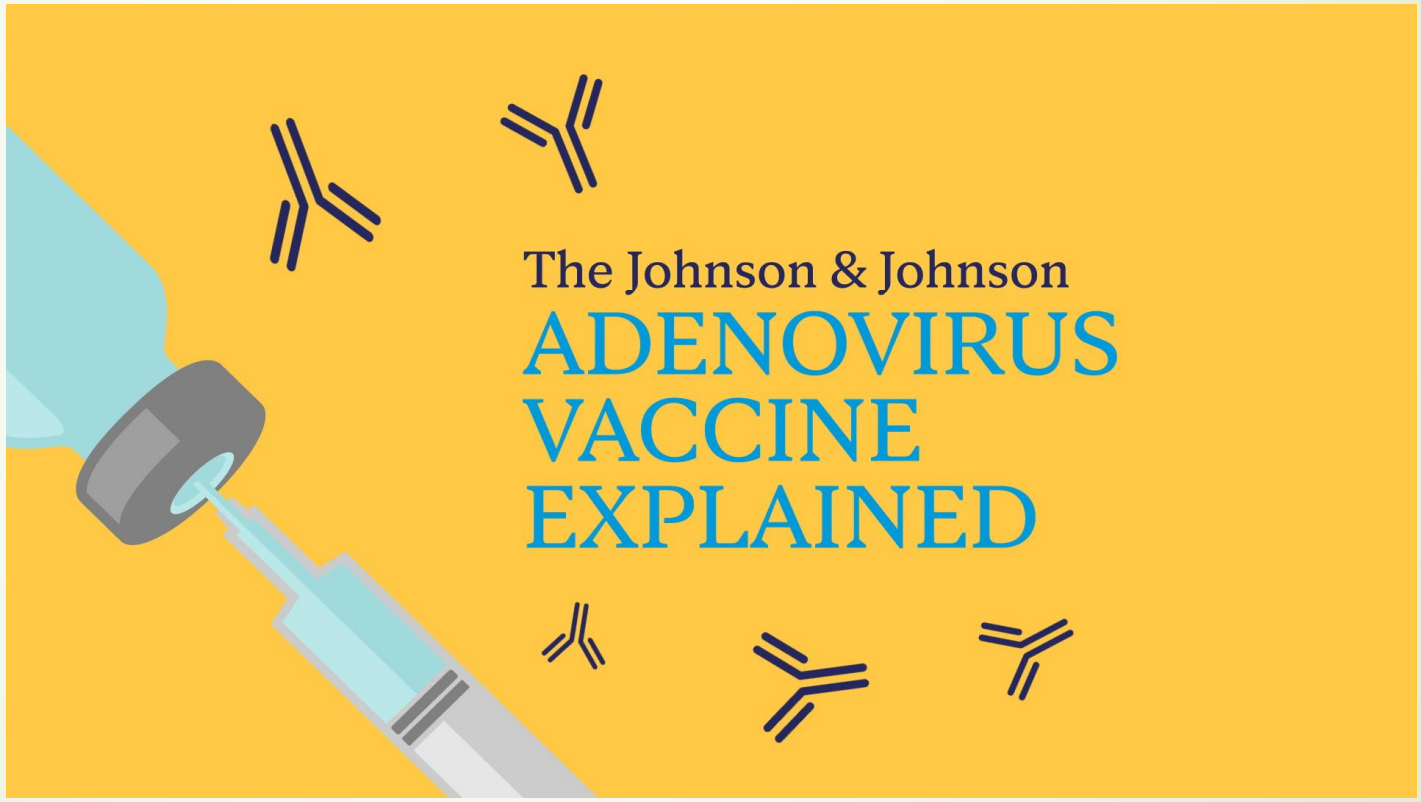
- Misinformation is rampant
- Commonly reported side effects include headache, fatigue, muscle and joint pain, fever and chills, and pain at the injection site
- Adverse events of special interest
  - MRNA vaccines (Pfizer and Moderna vaccines)
    - Anaphylaxis (approximately 10 cases per 1,000,000 vaccinations)
    - Vaccines should not be given to people with a known history of a severe allergic reaction to any of the vaccine components
    - Unusual bleeding and blood clotting disorders, facial weakness, seizures, loss of sense of taste or smell and cardiac events
  - Adenovirus vector vaccines (Johnson and Johnson/AstraZeneca)
    - Very rare and unusual clotting syndrome involving thromboembolic events (blood clots) with thrombocytopenia (low blood platelet count)

How the vaccines work

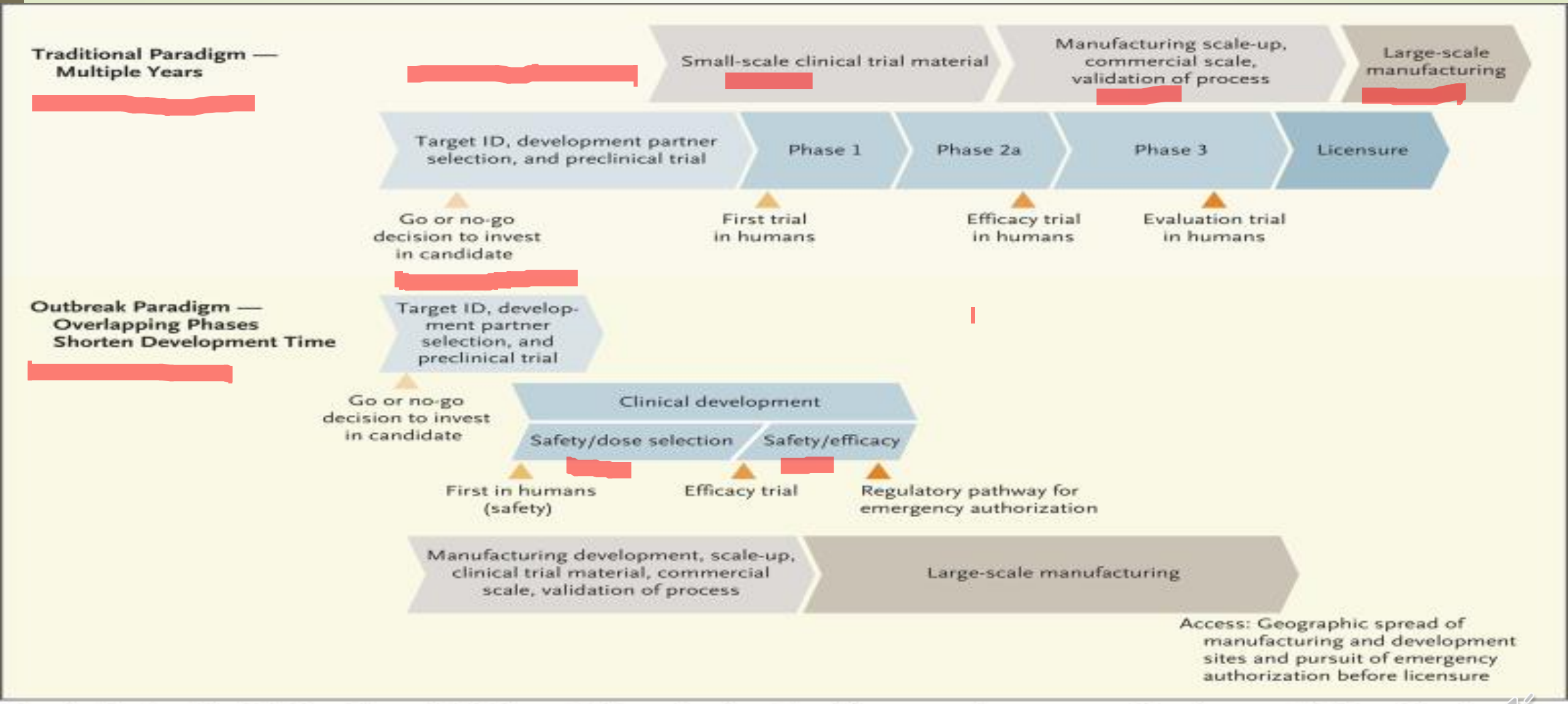
How the Pfizer-BioNTech or Moderna mRNA COVID-19 vaccine works



How the Johnson & Johnson COVID-19 vaccine works



Scientists did not skip clinical trial stages.



Lurie N, Saville M, Hatchett R, Halton J. Developing Covid-19 vaccines at pandemic speed. New England Journal of Medicine. 2020;382(21):1969-1973.

Moderna Vaccine

15,210 received vaccine
15,210 received placebo

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 FEBRUARY 4, 2021 VOL. 384 NO. 5

Efficacy and Safety of the mRNA-1273 SARS-CoV-2 Vaccine

L.R. Baden, H.M. El Sahly, B. Essink, K. Kotloff, S. Frey, R. Novak, D. Diemert, S.A. Spector, N. Rouphael, C.B. Creech, J. McGettigan, S. Khetan, N. Segall, J. Solis, A. Brosz, C. Fierro, H. Schwartz, K. Neuzil, L. Corey, P. Gilbert, H. Janes, D. Follmann, M. Marovich, J. Mascola, L. Polakowski, J. Ledgerwood, B.S. Graham, H. Bennett, R. Pajon, C. Knightly, B. Leav, W. Deng, H. Zhou, S. Han, M. Ivarsson, J. Miller, and T. Zaks, for the COVE Study Group*

Baden LR, El Sahly HM, Essink B, et al. Efficacy and safety of the mRNA-1273 SARS-CoV-2 vaccine. New England Journal of Medicine. 2020; 384(5): 403-416.

With all that why is there vaccine hesitancy amongst health care workers?

What is vaccine hesitancy?

- Vaccine hesitancy is defined as the delay in acceptance, reluctance, or refusal of vaccination despite the availability of vaccination services
- Vaccine hesitancy results from complex decision-making processes
  - Communication and media historical influences
  - Religion / culture
  - Gender
  - Politics
  - Risk perception
  - Design of vaccination program
  - Education

Vaccine-related Fears

General vaccines

- Fear of needles
- Lack of trust in science
- Fear of side effects
- Personal cost for pharmaceutical companies' gains
- Lead to infertility? (No)
- Lead to autism (No)

COVID-19 vaccines

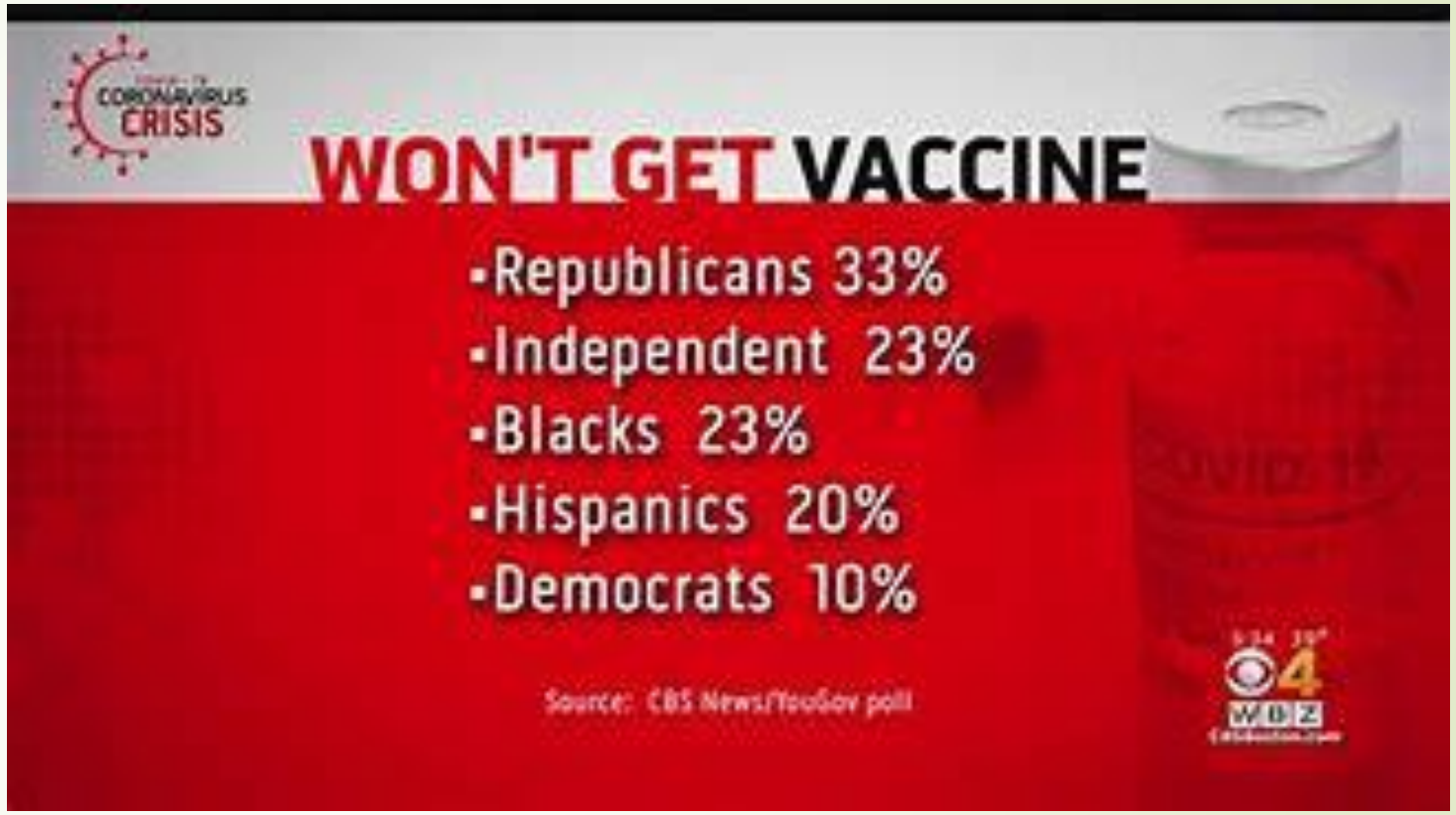
- Fear of side effects / safety
- Developed too quickly and not tested thoroughly enough
- Influence of politics
- Perceived cost
- Perception that it is unnecessary
- Conspiracy theories
  - Social control
  - Bill Gates and the 5G Network

Determinants of vaccine hesitancy

- Gender
- Age
- Education
- Occupation
- Intention to get flu vaccine
- Perception of heath status
- Number of comorbidities
- School age children

Determinants of vaccine hesitancy

- Confidence in the capacity of health services to respond to the pandemic
- View on the information provided by health authorities
- Perception of the adequacy of measures implemented by the government
- Self-perceived risk to get COVID-19 infection
- Self-perceived risk to develop severe disease following COVID-19 infection
- Frequency of agitation, sadness, or anxiety due to the physical distancing measures
- Confidence in the efficacy and safety of COVID-19 vaccines being developed



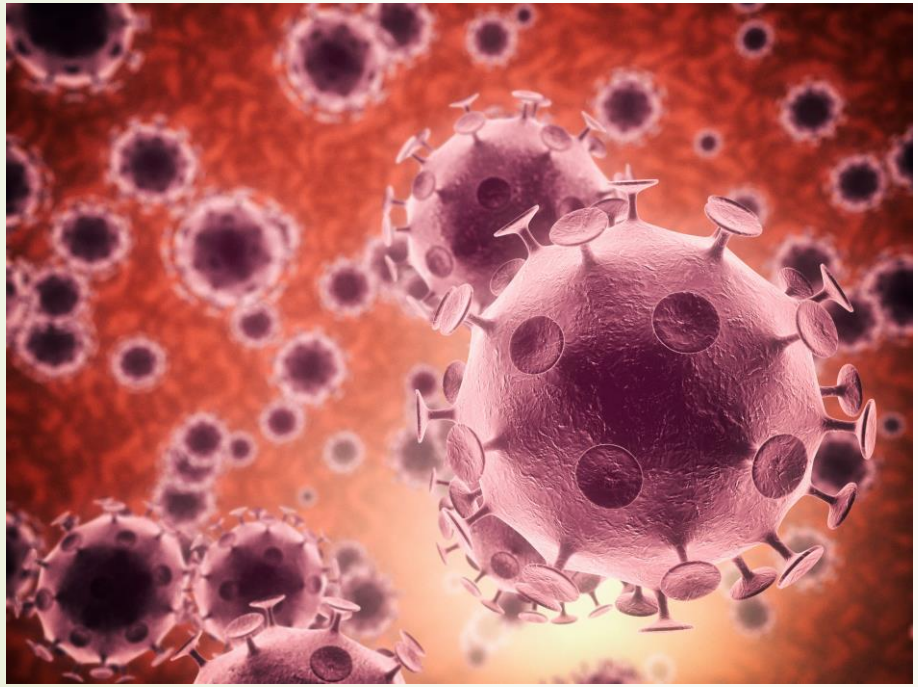
COVID-19 vaccine hesitancy amongst medical students

- 98% of medical students think they'd be will be exposed to COVID-19
- 23% of the students were unwilling to take the vaccine immediately upon FDA approval
- Some of the biggest concerns were serious side effects and lack of trust in Information received from the public health experts
- ‘Personally, I would like to see the vaccine in the market for several years before receiving the vaccine, as I am concerned about possible congenital defects in newborns born to mothers who received the new vaccine.’
- ‘I would rather wait a little bit longer for a better crafted vaccination with fewer side effects (if any) than a rushed vaccination that ends up dissuading more people from getting it. It should be released with the knowledge of exactly how it will adversely effect people if at all.’

Safety and efficacy concerns

- FDA has issued Emergency Use Authorization (EUA) of several vaccines due to the public health emergency, based on data from clinical trials that included tens of thousands of participants
- Among HCWs, knowledge of a specific vaccine increased their willingness to recommend that vaccine
- Concerns about the speed of COVID-19 vaccine development are often based on the mistaken belief that mRNA technology — used for the first two COVID-19 vaccines authorized in the U.S. — is entirely new.
- But the first successful use of mRNA technology in animals was reported more than 30 years ago, and tremendous mRNA advances have been made over the past decade.

Preference for physiological immunity



- Herd immunity can be achieved through vaccination or via previous infections
- HCW expressed a preference for physiologic immunity, rather than obtaining immunity via vaccination
- There is evidence of greater vaccine acceptance among HCWs who have cared for hospitalized COVID-19 patients, presumably because of an accurate perception of the severity of the disease

Distrust in government and health organizations

- A key factor in gaining acceptance of a new vaccine is trust
- Media misinformation can cause public doubts about disease spread, prevention, lethality, and vaccine safety, and can promote mistrust of the government, policymakers, health authorities, and pharmaceutical companies
- HCWs, have been exposed to conspiracy theories (especially on social media) such as the claims that novel coronavirus was intentionally created by the government or that health organizations have exaggerated COVID-19's lethality for pharmaceutical and political gain
- "Operation Due Diligence," instead of "Operation Warp Speed"

Autonomy and personal freedom

- Mandating these vaccines violates a person's bodily autonomy and strips a person of many basic human rights.
- How is it that one person has the right to require another person to inject something into their body that they either find to be harmful or in violation of their religious beliefs?
- Informed consent gives each person the right to refuse medical treatment. Once a person is stripped of this right where do we draw the line?
- At what point is it unethical to force medical intervention on a person?
- Who accepts the liability if the person does sustain a vaccine injury?

What about job loss due to not taking vaccine?

- Amid COVID-19 vaccination requirements, workers have been fired for noncompliance, and some have resigned or quit.
- While most of the 1,379 employees at Orangeburg, S.C.-based Regional Medical Center were compliant with the federal COVID-19 vaccination mandate for healthcare workers as of Feb. 14, 125 employees were not, according to CEO David Southerland
- Compliance at Regional Medical Center means receiving at least one shot, having a pending request for an exemption, having been granted a qualifying exemption or having been identified as having a temporary delay as recommended by the CDC, by Feb. 14.
- Mr. Southerland told the newspaper employees are not eligible to work until they are compliant, and those who indicated they're not going to comply will be terminated.

COVID-19 Vaccines and People of Color

- Although Black, Hispanic, Native American and other people of color are disproportional victims of severe coronavirus disease as compared to whites.
- Vaccine hesitancy among these groups.
- Was there enough participant diversity in testing the COVID-19 vaccine?
- Are there special reasons for people of color choose not to get vaccinated?

Percent of Total Population that has Received a COVID-19 Vaccine Dose by Race/Ethnicity, Selected States, April 4, 2022

	White	Black		Hispanic		Asian	
	Percent Vaccinated	Percent Vaccinated	Percentage Points from White	Percent Vaccinated	Percentage Points from White	Percent Vaccinated	Percentage Points from White
Total (38 States)	63%	57%	-5.0	65%	2.0	85%	22.0
Alabama	49%	51%	2.0	58%	9.0	82%	33.0
Alaska	56%	61%	6.0	50%	-6.0	81%	25.0
Arizona	60%	51%	-9.0	44%	-16.0	80%	20.0
California	75%	66%	-9.0	65%	-10.0	88%	14.0
Colorado	78%	73%	-5.0	42%	-36.0	72%	-5.0
Connecticut	80%	66%	-14.0	76%	-4.0	87%	8.0
Delaware	74%	65%	-9.0	70%	-4.0	>99%	26.0
District of Columbia	70%	61%	-9.0	84%	14.0	>99%	30.0
Florida	62%	44%	-18.0	70%	8.0	NR	NR
Georgia	55%	53%	-2.0	56%	1.0	93%	38.0
Hawaii	62%	56%	-6.0	NR	NR	76%	14.0
Idaho	50%	33%	-17.0	34%	-16.0	54%	4.0
Illinois	69%	63%	-7.0	69%	0.0	90%	21.0

https://www.kff.org/coronavirus-covid-19/issue-brief/latest-data-on-covid-19-vaccinations-by-race-ethnicity/

The role of religiosity in COVID-19 vaccine hesitancy

- With the surge of COVID-19 cases worldwide, it is essential that vaccination be prioritized to facilitate herd immunity. However, there is vaccine hesitancy reflected in religiosity.
- One study found that religious teachings prioritize prayers over medicine, thus resulting in vaccination hesitancy among devotees
- Vatican has issued its stance toward vaccination. They remain firm in their admonition toward use of cell lines from aborted fetuses in COVID-19 vaccines.
- Buddhism and Judaism, appear to have no central doctrines to on vaccination, thus widely accept vaccination.
- Other religious beliefs such as in the case of Islam, vaccines with pork derivatives are prohibited.

The Nature and Extent of COVID-19 Vaccination Hesitancy in Healthcare Workers

- Most of the studies found concerns about vaccine safety, efficacy, and potential side effects as top reasons for COVID-19 vaccination hesitancy in healthcare workers.
- Most of the studies also found that individuals who were males, of older age, and doctoral degree holders (i.e., physicians) were more likely to accept COVID-19 vaccines.
- In the general public, it has been found that females are less likely to accept a COVID-19 vaccine and it has been postulated that this could be due to concerns about side effects such as infertility, serious side effects making them unable to take care of families, or greater susceptibility to myths and misinformation from media

What can we do to get more HCW's vaccinated?

Interdisciplinary and multipronged strategies must be utilized to increase COVID-19 vaccine uptake in these populations (e.g., incentives to be vaccinated, role models and community leaders encouraging vaccinations, educational interventions, hospital-based protocols and mandates, prioritizing vaccination for these groups and making vaccine access easy, giving time off or sick leave benefits to enable vaccination etc.)

Summary

- HCWs bridge the gap between health care policymakers and patients and have a disproportionate influence on patients' vaccine decisions.
- Vaccination rates among HCWs correlate positively with their willingness to recommend COVID-19 vaccination to their patients.
- Delays in COVID-19 vaccination among HCWs and the general population further prevent herd immunity and will result in increased COVID-19-related illness and deaths, creating a surge in the utilization of already strained health care resources.
- Broad uptake of the COVID-19 vaccine will be essential to reducing COVID-19 infections and deaths. Targeted messaging to HCWs, and using accurate messages delivered by trusted individuals, can increase uptake.
- Innovative ways to communicate information should be explored and employed to increase understanding of the empirical evidence underpinning public health officials' endorsement of widespread COVID-19 vaccination.

References

- Biswas, N., Mustapha, T., Khubchandani, J., & Price, J. H. (2021). The nature and extent of COVID-19 vaccination hesitancy in healthcare workers. *Journal of community health*, *46*(6), 1244-1251.
- Momplaisir, F. M., Kuter, B. J., Ghadimi, F., Browne, S., Nkwihoreze, H., Feemster, K. A., ... & Green-McKenzie, J. (2021). Racial/ethnic differences in COVID-19 vaccine hesitancy among health care workers in 2 large academic hospitals. *JAMA Network Open*, *4*(8), e2121931-e2121931.
- Paris, C., Bénézit, F., Geslin, M., Polard, E., Baldeyrou, M., Turmel, V., ... & Tattevin, P. (2021). COVID-19 vaccine hesitancy among healthcare workers. *Infectious diseases now*, *51*(5), 484-487.
- Sallam, M. (2021). COVID-19 vaccine hesitancy worldwide: a concise systematic review of vaccine acceptance rates. *Vaccines*, *9*(2), 160.