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Bioethics and Vaccines: Scientific Facts, Values, and Conflict

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IDEAS THAT MATTER

2023-2024 Myth & Science

Lesson: Bioethics and Vaccination: Scientific Facts, Values, and Conflict

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Learning Outcomes

Students will:

- Identify key questions related to Myth and Science and outline strategies or methods to tackle them—specifically, about the interrelation of facts and values in relation to contemporary controversies over vaccination
- Apply discipline-specific theories and evidence to answer questions about Myth and Science—specifically, understand concepts of moral and political philosophy to answer questions about the morality of vaccine mandates, personal decisions not to vaccinate, and public health strategies related to vaccination
- Consider how biases and structural inequalities around race, gender, culture, and/or religion relate to vaccine access, vaccine hesitancy, and medical and public health communication strategies around vaccination
- Reflect upon how learning about moral and political issues around vaccination might be relevant to your own life, role as a national or global citizen or local community member, or future career plans

Annotated Bibliography

Brennan, Jason. "A libertarian case for mandatory vaccination." *Journal of Medical Ethics* 44, no. 1 (2018): 37-43.

In this paper (published pre-COVID) Jason Brennan argues in favor of universal childhood vaccine mandates from a libertarian political/philosophical perspective. Libertarianism is a political philosophy that stresses strong individual rights rooted in the idea self-ownership and so finds much government interference in personal decisions unjustified; importantly, as a *political* philosophy, libertarianism takes up a position not about what is *morally* right, obligatory, or

praiseworthy, but rather about what the state may legitimately *force* people to do. For libertarians of any strip, the answer to that question is not much. Most importantly, the state may not force competent adults to do anything *for their own good*. But given the assumption of self-ownership, there are also strong limits on whether the state might force one to do something for the sake of other people's good as well, at least in all but the most extreme circumstances. (Brennan refers to a zombie apocalypse scenario to show that faced with utter disaster, even a libertarian can accept substantial state action like quarantines and forced vaccination. But of course, illnesses like measles and whooping cough are not at all like an apocalyptic threat to humankind.)

One might reasonably think, then, that acceptance of a libertarian political philosophy will yield opposition to government mandated vaccination. Brennan, however, argues that even on a libertarian approach, "mandatory vaccination is permissible to protect individuals from the imposition of undue risk of harm" (39) at least if there is strong and easily available evidence that vaccines are highly effective and have a low incidence of side effects. To do so, he takes up philosophical thought-experiments that attempt to show that even though vaccination/preventing infectious disease is a collective action problem and we generally cannot show with certainty that any particular failure to vaccinate causes any particular other person to become ill, individuals can still be blameworthy when participating in group-based actions in which the group causes harm or in which the group action has an unacceptable risk of harm. This is the Clean Hands Principle, which Brennan argues applies to the case of refusing to vaccinate: in not vaccinating, one takes part in a collective action that involves subjecting non-consenting others to an unacceptable risk of harm; therefore, government mandating of vaccination is justified even on a libertarian political approach.

This paper is particularly useful in teaching in that it takes seriously a political perspective that is perhaps most strongly aligned with vaccine hesitancy and skepticism of government action around public health. Brennan himself is a libertarian and his forceful argument in favor of vaccine mandates from that political perspective perhaps may help students separate attitudes toward vaccination from partisan politics and discontent with the US government.

Emanuel, Ezekiel J., Govind Persad, Adam Kern, Allen Buchanan, Cécile Fabre, Daniel Halliday, Joseph Heath et al. "An ethical framework for global vaccine allocation." *Science* 369, no. 6509 (2020): 1309-1312.

Writing in 2020 in anticipation of the production of a successful COVID-19 vaccine, the authors frame the question of how to allocate a vaccine in the midst of a global pandemic as a matter of distributive justice. They argue for a "fair priority" model of allocation, which emphasizes the values of benefiting people and limiting harm, prioritizing the disadvantaged, and equal moral concern. These values point especially to three phases of vaccine allocation: first, a priority focus on avoiding premature death (whether directly from COVID-19 or indirectly given overly strained healthcare systems as a result of uncontrolled COVID-19 infections), second to mitigating economic and social deprivations, and third to

returning to full functioning. Each phase maps on to different prioritization among countries: Phase 1: priority globally in whatever way will prevent the most direct or indirect premature death. Phase 2: priority to countries where vaccination will reduce more poverty, have the greatest positive economic effect on the country, and avoid the most mortality and morbidity. Phase 3: Priority given to countries with higher transmission rates. The authors compare this model to a population proportionality (in Phase 1) model as well as a model that prioritizes the proportion of the elderly and front line workers in the country and defends the Fair Priority Model against objections.

In some ways, this article is "old news" given that COVID-19 vaccination distribution decisions are long over. However, the issue might be of interest to students in two ways: First, one could consider how COVID-19 vaccine distribution actually occurred, compare to this framework, and thus critique the real-world distribution). Second, in keeping with increasing scientific, public health, and bioethical attention focused on preparing for the *next* pandemic, it might be productive to think about this model as an approach for future pandemics.

Kraaijeveld, Steven R., Rachel Gur-Arie, and Euzebiusz Jamrozik. "Against COVID-19 vaccination of healthy children." *Bioethics* 36, no. 6 (2022): 687-698.

The authors oppose mandatory and routine vaccination of healthy children against COVID-19 and point out the diversity of approaches among different nations regarding recommending such vaccination. The paper takes up three main arguments that might justify routine COVID-19 vaccination of healthy children and show that all three of them fail in the case of COVID-19, though they might succeed regarding other childhood illnesses. These arguments are 1) the argument from paternalism—that it is in the best interest of children to be vaccinated and is therefore justified for the sake of the well-being of children themselves, 2) the argument from indirect protection and altruism—that routine vaccination of healthy children is justified because it protects other vulnerable groups, and 3) the argument from global eradication—that vaccinating healthy children is necessary to achieve the public health goal of eradicate of COVID-19.

The authors suggest that none of these arguments is successful in the case of COVID-19. For example, (regarding argument #1), they point out that in contrast to typical childhood diseases prevented by vaccination, healthy children are at low risk of morbidity and mortality from COVID-19—including long COVID—and thus the known and potential but currently unknown risks of vaccination are not outweighed by a potential benefit. Moreover (regarding argument #2 and #3), they point out that unlike vaccination against traditional childhood diseases, COVID-19 vaccination does not provide "sterilizing immunity"—meaning that even those who are vaccinated can still become infected and transmit it to others–and therefore herd immunity will not be able to be reached, nor is eradicating the disease a possibility; in addition, children are not major drivers of transmission unlike the case of influenza.

This paper could be of great use in helping students to recognize nuance in public health decision making and in tracing the importance of both facts and

values in public health decision-making. I also suspect that most US based students—especially STEM majors or those planning for health professions in their future-will simply assume that routine COVID-19 vaccination of children is obviously appropriate, since that is what public health officials in the US have recommended. Asking students to follow the arguments in the paper with an open mind and challenge their own thinking could also be of great value in developing critical thinking.

Kärki, Kaisa. "Listening to vaccine refusers." *Medicine, Health Care and Philosophy* 25, no. 1 (2022): 3-9.

Kärki suggests that the typical framing of vaccine refusal in terms of free-riding does not properly represent the motivations of many vaccine refusers. Many refusers point to concerns about the safety of vaccines, report having been treated disrespectfully or dismissed by medical professionals, or being distrustful of an entire healthcare institution or government. Moreover, many people who refuse vaccination also spread false information about vaccination which is intended to discourage others from vaccinating; but this action inhibits their own success of freeriding.

Instead of continuing to apply the common free-riding frame, Kärki suggests an alternative approach: vaccine refusal should be understood as an attempted exit from a public good by appealing to Albert Hirschman's theory of voice and exit. According to Hirschman, exit general arises only after voice is refused. Kärki recognizes this within the motivation of some vaccine refusers who have experienced distrust, dismissal, and disrespect in medicine. The result is an attempted exit, in which the anti-vaccine movement emphasizes personal and individualized healthcare decision-making, which turns the public good of herd immunity into a private good of individual risk and choice. Kärki concludes that this kind of attempted exit from the public good of herd immunity indicates a failure of communication between citizens and the state and calls for a different set of interventions than countering free-riding. What is needed is the respectful addressing of concerns and increasing the number of feedback channels.

Malm, Heidi, and Mark Christopher Navin. "Pox parties for grannies? Chickenpox, exogenous boosting, and harmful injustices." *The American Journal of Bioethics* 20, no. 9 (2020): 45-57.

In this bioethics article the authors lay out the contrasting approaches of US (encouraging routine childhood varicella zoster vaccination to wipe out chickenpox) vs. western European approaches (discouraging or remaining neutral on childhood varicella zoster vaccine in order to benefit the elderly regarding shingles (herpes zoster). Malm and Navin argue that he European approach is unethical because it is a violation of intergenerational justice; this is so given that the approach (a) treats children as a mere means (by causing them harm in order to benefit others without any compensating benefit to the children), (b) is inconsistent with parental and pediatric medical moral duties, and (c) violates the ideal of transparency in democratic institutions.

In short, the European approach relies on the exogenous-boosting hypothesis: the idea that the immune system of a person who has latent varicella virus in one's body after a previous chickenpox infection will receive a "boost" when exposed to others with active chickenpox infections; such boosts are protective against developing shingles. If this hypothesis is correct, then as chickenpox is wiped out as a common childhood illness, older people who have experienced chickenpox will lack these immune "boosts"; the result will be a short to medium term reduction in community health as shingles cases rise in the group of adults who themselves experienced chickenpox, but who are not able to experience exogenous boosting.

The most valuable part of the article in my view (coming from a philosophy/bioethics perspective) is the focus on intergenerational injustice and the ethics of allowing harm to come to children in order to benefit adults—that is, concern (a) above. But the authors lay out their ethical case in detail and also consider and respond to a variety of objections.

(See powerpoint slides to go along with this article. Note also that this article as a "Target Article" in *The American Journal of Bioethics* Volume 20, Issue 9, 2020, meaning that there are multiple short peer commentaries replies also published in the same journal issue.)

Njoku, Anuli, Marcelin Joseph, and Rochelle Felix. "Changing the narrative: structural barriers and racial and ethnic inequities in COVID-19 vaccination." *International journal of environmental research and public health* 18, no. 18 (2021): 9904.

This article (published in early Fall of 2021 and likely written in the months just before) focuses on racial and ethnic disparities in vaccination for COVID-19 in the US context. The authors lay out the background of how COVID had disparate impacts on BIPOC people in the US and then point to lower rates of vaccination among Black and Hispanic/Latinx people compared to whites as of 2021. They frame the article around finding strategies to overcome structural barriers related to racism and place the issue in the context of the history of medical racism.

This article might be useful to pair with discussion of vaccine hesitancy/refusal. While in the US much of the controversy over vaccines has to do with deliberate refusal to vaccinate, the issue of *access* and inequities in access is easily overlooked.

Additional Relevant News and Blog Items: Racial & Global Inequities, Religious/Cultural Views, and Preparing for the Next Pandemic

Bill Gates. "I Worry We're Making the Same Mistakes Again." *NYTimes* 3/19/23

Furr-Holden **"**What's not being said about why African Americans need to take the COVID-19 vaccine." *The Conversation* 12/23/20.

Ghebreyesus, Tedros. "I Run the W.H.O., and I Know That Rich Countries Must Make a Choice." *The NYTimes 4/22/2021*

Ghebreyesus, Tedros. "Why There Should be a Moratorium on COVID-19 Booster Shots Until Low-Income Countries Get Vaccinated." *Time 12/12/21*

Michel Martin interviewing Harriet Washington. "Race and the Roots of Vaccine Skepticism." *All Things Considered* NPR News 12/20/20

Will Stone. "An Anti-Vaccine Film Targeted to Black Americans Spreads False Information." *NPR* 6/8/21

Berkley Center for Religion, Peace, & World Affairs Series on *Religion, Bioethics, and COVID-19 Vaccination*

Lecture Notes

Section I: Background

- Vaccines are one of the most successful public health interventions in history
    - History:
        - The idea of vaccination is often traced back to English doctor Edward Jenner, who injected pus from cowpox into a child to successfully make them immune to smallpox.
        - However, the idea of inoculation, e.g. attempting to give people a controlled version of a disease, can also be traced back to other cultures and historical periods, perhaps beginning in China over a millennium ago.
    - The mechanism of vaccination: the aim is to train your immune system to develop antibodies against a virus or bacterium by exposing the immune system to a weakened or dead form
    - Opposition to vaccination: while most of us are likely familiar with anti-vaccination sentiment and activism in the US and other Western countries today, the history of such opposition traces back to the development of the first vaccine
        - In recent decades in the US there has been an increasing number of parents opting out of vaccinating their children according to the schedule recommended by the CDC. As a result there have been increasing numbers of outbreaks of illnesses like

measles throughout pockets of the country. And of course, we have all seen the controversy over vaccine effectiveness and trustworthiness during the COVID-19 vaccine rollout.

Section II: Overview of General Ethical Issues Around Vaccination

- First it is important to distinguish two major areas of ethical concern about vaccines:
    - (1) the research involved in creating vaccines (which will often have similarities to ethical issues surrounding biomedical research more generally, e.g. in the development and testing of pharmaceuticals or biotechnology)

      and

    - (2) the use of vaccination as a public health strategy/preventative medicine.
        - This lesson focuses only on (2).
- Vaccination contrasts with many other medical treatments and/or public health interventions in a few ways, many of which turn out to be of vital importance to evaluating the ethics of issues around vaccines:
    - Point A: vaccination is preventative (forward-looking)
        - vaccines are administered to healthy people with the aim of preventing disease
        - this contrasts with *treatments*, which are administered to people who are already ill with the hope of curing a disease or mitigating symptoms of negative health outcomes
    - Point B: vaccination is NOT primarily aimed at protecting an individual person; rather, the point of vaccinating as a public health intervention is to reach herd immunity in order to protect the community as a whole (this protection will extend even to those who are not vaccinated)
        - **herd immunity**: this refers to achieving a high enough level of immunity among a population (which can occur either from experiencing the disease or from vaccination or a combination thereof) in order to make spread of the disease unlikely
            - the degree of immunity necessary to achieve herd immunity in a population differs by diseases given

differences in how specific viruses spread and their degree of contagiousness

Section IV: Is There a Moral Obligation to Vaccinate?

- One might think the moral duty to vaccinate one's children could be easily established simply by pointing out that vaccines are highly effective, have minimal side effects in general, and where they have more serious side effects or risks, these are very rare.
    - Indeed, much debate about vaccination in our society tends to focus on questions around trusting science, trusting experts, trusting the government, when vaccination is mandated, and "doing one's own research." And most people are familiar with the debunked idea that vaccination in childhood is associated with development of autism. These sorts of false claims that continue to circulate and influence some people's behavior and choices lead to a focus on the epistemic situation: how does one determine who is trustworthy, how does someone who is not an expert determine who an expert is, and or conduct their own research, is it possible to recognize when one has been sucked into a false worldview etc.
        - Many people who support universal vaccination tend to view those who refuse vaccinations as ignorant, irresponsible, and as having significant epistemic vices. Often there is also an assumption or concern about selfishness or moral vices, but we will see more about moral issues in a moment.
        - Indeed, multiple readings from this unit point to reasons to temper, this approach of assuming the epistemic failures or vices of those parents choosing not to vaccinate… or at least to acknowledge, much more complexity than is usually recognized.
            - One major concern has to do with structural inequalities and medical racism.
            - Relatedly, there is a concerning parallel between the dismissal of those who are vaccine hesitant, and the dismissal by medical professionals and the medical establishment of others who question dominant medical advice, and approaches.
                - For example, the feminist inspired women's health movement has for decades argued that childbirth is over medicalized in the US and pointed to

experiences of dismissal, discrimination, gender, bias, and so on in women's medical experiences. As bioethicists, public health officials, government agencies, and everyday citizens go about attempting to persuade others to vaccinate, we should be very careful not to replicate these patterns of potential epistemic injustice in medicine. (See, for example, Navin, Mark. "Competing epistemic spaces: How social epistemology helps explain and evaluate vaccine denialism." *Social Theory and Practice* (2013): 241-264. on issues of gender, medicine, and epistemic injustice.)

- The usual, moral, philosophical, or biological approach to the question of the duty to vaccinate has to do with the science of herd immunity, and the concept of *free-riding*.
    - It follows from the nature of herd immunity and vaccination aiming to protect a population rather than particular individuals that one may be able to achieve protection from an illness, not by receiving a vaccination oneself, but simply by living in a community in which sufficient numbers of others have received the vaccination and so herd immunity has been reached.
        - This is the way in which infants are protected prior to reaching the age at which they may receive vaccines and it is also very important for immunocompromised individuals, or those who for other medical reasons cannot receive a vaccine or for whom vaccination is unlikely to create a proper immune response.
    - The science behind herd immunity also means that vaccines do not have to be 100% effective for any individual and in fact, they often are not 100% effective at the individual level (though some of the standard childhood vaccines do reach 95%+ effectiveness.)
        - These points about herd immunity can sometimes be behind some concerns and misunderstandings about vaccines and how they work. But it's important to realize that someone becoming ill with an illness they have been vaccinated against is not necessarily an indication of vaccine failure, because the public health strategy behind vaccination is generally not aimed at protecting every single individual through their own personal vaccination. (Also important to realize here: virtually, no medical treatment can ever be 100% effective. So, whether we are

considering vaccination, pharmaceuticals, surgical, intervention, etc. we must always expect that any given treatment, even if it is aiming, a purely individual benefit may not actually provide that benefit to every single individual who receives the treatment.)

- Understanding these details about herd immunity is vital to understanding the moral issues surrounding vaccination. In particular, since the main protective element of vaccination works through herd immunity the possibility of free-riding arises, and this is the typical way in which those who believe in a moral responsibility to vaccinate argue for it.

- ***Free-riding***

  - Free-riding refers to someone who receives a benefit without themselves contributing to the upkeep or "price" of that benefit.

    - Example: a group of coworkers regularly order pizza each week for lunch, each time with another member of the group paying for the pizza, and the turns rotating so that everyone takes an equal number of turns as the person paying. But one individual coworker, call them Riley, refuses to take part in this group lunch endeavor.

      - That in itself is not free riding and raises no moral concern. Suppose Riley is allergic to tomatoes and cheese, and so there is simply no way in which pizza can but be a benefit to them. This is simply opting out of the group-based opportunity.

      - Very different from this is free-riding, which would be a case in which Riley chooses not to take part in the payment rotation, but after everyone else in the group has eaten lunch each week, Riley helps themself to the leftovers in the refrigerator. No doubt the coworkers will likely take offense and feel that Riley is taking advantage or refusing to play fairly. Let's further add that this isn't simply a coincidence or an accident. Riley is quite aware of what they are doing and has in fact

reasoned to themselves this way: “why pay for pizza that I can get for free 10 minutes after the group has eaten?” (note though, one can be a free rider technically speaking, even if you want it’s not intended to be so.)

        - Riley’s co workers might therefore begin storing the leftovers in their own offices or ordering just the right amount of pizza, so that no leftovers are available. This would be a way to guard against the free-riding that Riley is engaged in since now Riley will have to get in on the rotating payment if they would like to enjoy the pizza.

- Similarly, in the case of vaccination, to refuse to vaccinate oneself or one’s child against measles for example, can still allow one to reap the benefits if 95% of the rest of one’s community is vaccinating against that illness. Herd immunity will be reached, regardless of whether one individual vaccinates, and therefore that individual will not be susceptible to catching measles since almost everyone else around them has been vaccinated and so the illness cannot manage to spread through the community.

    - Indeed, we might imagine Reilly again, treating vaccinating their children just as they did the pizza situation: Reilly reasons “Why vaccinate my children when almost everyone else has already done so? Herd immunity has already been reached and what I do with my two children won’t change that. So, they can get all the protection of herd immunity without taking on any risk or inconvenience of being vaccinated.”

        - **This is free riding!** The rest of the community has chosen to vaccinate, knowing that herd immunity is important for their children and everyone else’s; they are willing to cooperate, and to have their child take on that very small, rare risk and will understandably be angry at the parent who free-rides. Indeed, this seems to exactly parallel the kind of anger that many people who support universal vaccination feel towards those who

are commonly described as “anti-vax” or “vaccine hesitant.”

- Importantly, unlike the case of Riley and the pizza there is no way to remove the benefit of herd immunity from those who are not willing to vaccinate. (and importantly, since we are generally talking about the health of children, which is determined by the parents decisions, it would be greatly unethical to remove, herd immunity protection from a child on the basis of their parents, moral failings.)

- As a result, the appropriate response in these cases might be mandating participating in the cooperative scheme, sanctioning those who refused to cooperate (for instance, fines that will encourage them to cooperate), or removal of other kinds of cooperative benefits (e.g. children not being permitted to attend public school if they are not vaccinated.)

- So it looks like the obvious case in favor of a moral duty to vaccinate against usual childhood diseases goes like this:

  - **Not vaccinating is a form of free-riding. Free-riding is immoral because it involves taking advantage of others’ willingness to cooperate without cooperating oneself; it is therefore unfair and inequitable. So, one is morally required to vaccinate.**

- [Objection] But there is a pretty large problem with the reasoning just given: in the real world, many individuals who are vaccine hesitant or refusers don’t care about the benefit of herd immunity at all. Perhaps they don’t believe in or understand the basic science behind herd immunity; or perhaps the are convinced that childhood illnesses like measles just aren’t that bad, and thus they see no reason to try to prevent their children from acquiring them anymore than they would go out of their way to try to prevent the common cold.

  - In this sort of case, one might *technically* be free-riding, yet this is not what one is intending. One is not trying to get a benefit without paying the price nor are they hoping that others will cooperate so that they can take advantage of that cooperation.

        - We can see this most starkly in the fact that many people who are vaccine refusers encourage other people to refuse vaccines as well. If these individuals were trying to take advantage of herd immunity, encouraging others to forgo vaccination would directly impede their own intended goal. This shows that taking advantage of others is NOT the goal of many vaccine refusers. (The reading from Karki "Listening to Vaccine Refusers" discusses these issues in much more depth.)

        - In this case, they are more like the case of Reilly who is allergic to tomatoes and cheese—they don't see herd immunity as something that can benefit them and are not trying to take part it (though of course, they are mistaken here—herd immunity *does* benefit them, whether they want or intend this or not, which is different than the allergy to tomatoes and cheese case.)

- Another concern: even if there is a *moral* duty to vaccinate, does it follow that the state (the government) is justified in *mandating* vaccination and/or in sanctioning those who refuse to vaccinate?

    - Brennan takes up this concern in more detail, pointing out that there are plenty of immoral actions that we judge ought to be perfectly legal. Many of us (especially if we have libertarian or liberal political attitudes toward individual rights and government legitimacy) expect that the government must have a compelling reason to interfere with personal decisions around bodies and health.

        - Consider the case of abortion after all and the backlash that has ensued since the overturning of *Roe v. Wade* in the *Dobbs* decision in 2022. There are extremely few situations in which the government forces one person to use their body or take on health/physical risk to their body for the benefit of another person. Prohibiting abortion for the sake of fetal life is one such example. Vaccination is another.

            - Note importantly, that while support for abortion rights in the US context is highly partisan—with support for legal abortion being associated with democratic voting patterns and progressive and socially liberal attitudes—the idea that the government ought not interfere in personal decisions or force us to take on risk/use our bodies to benefit others also has strong support in on the other end of the political spectrum (e.g. gun rights, insistence on parental rights to parent children as they see fit with regard to religion and schooling, and so on, are championed by the political right).

- The paper "A Libertarian Case for Mandatory Vaccination" exemplifies this; Brennan makes a *libertarian* case case for the moral legitimacy of government mandated vaccination for childhood illnesses, like measles. (Libertarianism, as Brennan explains in more detail, is a political philosophy that begins with the idea that each of us owns ourselves; strong ownership rights in our bodies and our labor mean that the government needs compelling reason to interfere or mandate any kind of behavior.) Brennan makes his case for mandating vaccines not by emphasizing free riding, but rather by understanding not vaccinating as a form of putting others at unreasonable risk—something that even a strong libertarian can support government intervention to prevent and sanction.

<u>Section V: Which vaccines? Which diseases? Are they all the same morally?</u>

- Suppose that there is a moral duty to vaccinate against childhood illnesses like measles—and perhaps even a justification for government mandating of this sort of vaccination. If so, does that moral duty and that justification of government action apply to *every* available vaccine?
    - Not obviously, given that the moral duty to vaccinate depends on the facts of the matter about the risk posed to others through not vaccinating. And these facts might be quite different depending on the particular illness and the particular vaccine.
        - Consider as an obvious example the way in which the MMR vaccine is part of the CDC childhood vaccination schedule, and schools in the US generally require evidence of that vaccine (or justification of an exception) for children to attend school. But while health providers generally recommend flu vaccination for children and adults, schools do not require information about that vaccine. Why not? Presumably given the different facts of the matter about the risks of influenza compared to childhood diseases like measles, who is most at risk from those diseases (e.g. influenza is often a much greater threat to older people than elementary school children), the nature and effectiveness of the vaccine, the nature of the virus (e.g. while measles is usually a once and done illness, many of us will catch influenza multiple times in our lives even if we receive regular vaccines against it.)
    - Two cases from this unit's readings further demonstrate the complexity of these questions:

- 1) Malm and Navin "Pox parties for grannies? Chickenpox, exogenous boosting, and harmful injustices." In this paper the authors take up the case of the varicella vaccine (which prevents chickenpox) and the question of whether deciding as a society not to vaccinate children against chickenpox for the sake of benefiting older people (who have already had chickenpox and so are susceptible to shingles) can be justified. This is the approach the UK's NHS has taken in contrast to the US situation, in which varicella vaccination has become routine in childhood. Here the particular moral and justice related issues center around *generational* relations: is allowing negative health outcomes to fall upon children, for the benefit of older adults, unjust? **See the accompanying lecture slides.**

- 2) Kraaijeveld et al "Against COVID-19 vaccination of healthy children". In this paper the authors argue contra the dominant US approach, that COVID-19 vaccination in healthy children is not justified, and therefore that mandating of such vaccination is especially unjustified. Though the authors do not object to routine childhood vaccinations for other diseases and acknowledge that the very same arguments in favor of mandates, which they reject in the case of COVID-19, might hold in the case of other childhood illnesses.

Section VI: What about ACCESS to vaccines?

- In the western context and in relation to the US response to COVID-19, so much focus has been on what to do about people who do not want to be vaccinated or have their children vaccinated. But what about the flip side of the coin? What about those who would be open to vaccination, but do not have access? Here the moral concerns are about justice in distribution and in terms of background structural global, racial, cultural, and class-based inequalities.
    - Domestic Access
        - COVID-19 exposed and exacerbated already existing race-based structural inequalities in the US as BIPOC people were disparately impacted by the disease.
        - Data during the vaccine rollout in the US indicates that racial disparities also showed up in CVOID-19 vaccination with lower rates of vaccination among Black and Hispanic/Latinx people compared to whites. This disparity must be understood in context of the larger background of structural racism in the US.

For example, Njoku et al discuss a list of barriers that arise due to structural racism and suggest strategies to address racial and ethnic inequities in access to COVID-19 vaccination; the latter include:

- Tailoring vaccine messaging to communities most at risk
- Careful consideration of health literacy and language (recognizing distrust of medical and health systems in minority racial communities)
- Bridging the digital divide (since online signups are the main way vaccination has been provided)
- Partnering with trusted local sources
- Providing convenient and trusted points of access

- Global Access
  - The COVID-19 pandemic brought this issue to the forefront of many bioethicists' minds in the period during which vaccines were in development, and a major question was how they would be distributed during the many months when there would not be enough vaccine for everyone. After all, decisions about who received the vaccines first would indirectly be life vs. death for some people.
  - Emmanuel et al offer one type of model for morally justified distribution and contrast their approach with that of the WHO. However, since Emmauel et al were writing *before* the availability of any vaccine, their article is missing information about how COVID vaccines actually were distributed.
    - We can fill in this lack through our own research and additional reading. For example, as a start:
      - We can explore COVAX, the WHO's vaccine equity project
      - We can also consider this data (from Pilkington et al. "Global COVID-19 vaccine inequity: failures in the first year of distribution and potential solutions for the future." *Frontiers in public health* 10 (2022).): "Within the first year of distribution of vaccines

against COVID-19, high-income countries (HICs) have achieved vaccination rates of 75-80%, whilst low-income countries (LICs) have vaccinated <10%." and put it in conversation with Emmanuel's model. We might ask: how unjust was the distribution of vaccines and how might we do better in the future?

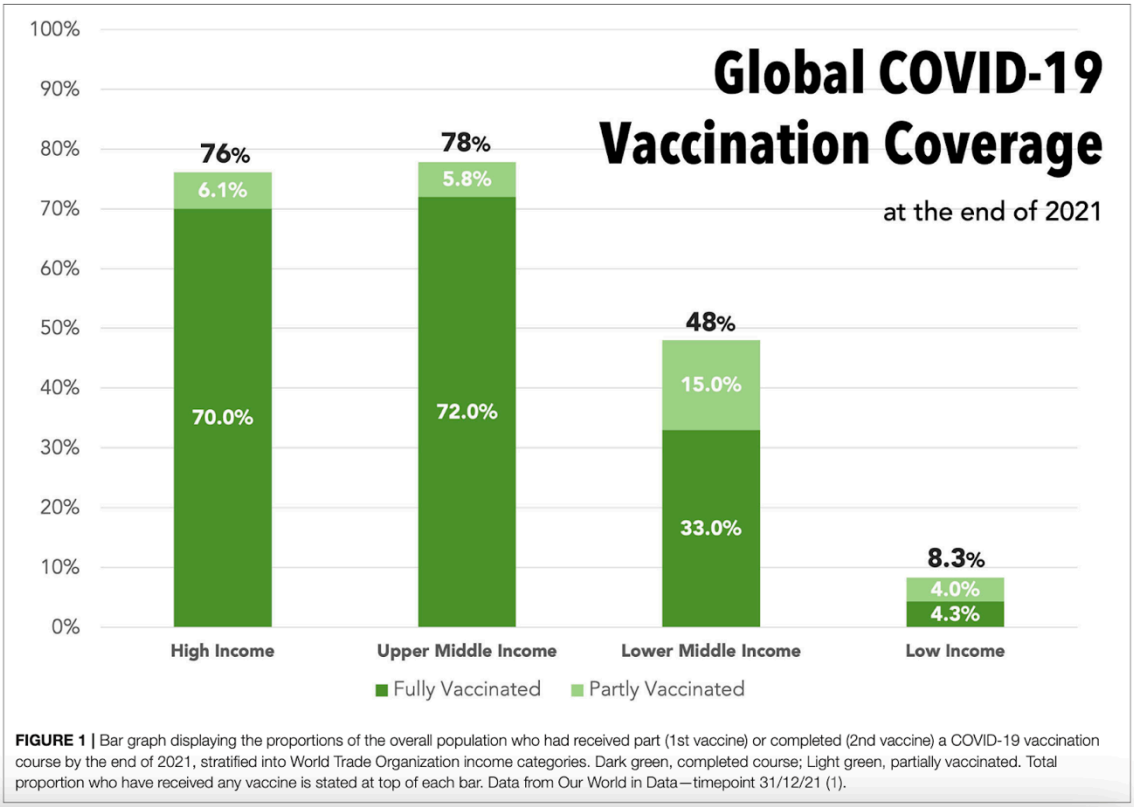

FIGURE 1 | Bar graph displaying the proportions of the overall population who had received part (1st vaccine) or completed (2nd vaccine) a COVID-19 vaccination course by the end of 2021, stratified into World Trade Organization income categories. Dark green, completed course; Light green, partially vaccinated. Total proportion who have received any vaccine is stated at top of each bar. Data from Our World in Data—timepoint 31/12/21 (1).

Integrative and Applied Learning Activity

Option 1: Small Group Brainstorm on DEIB and Vaccination Public Health Strategies

- Have students get into small groups (or group them on a discussion board in an online context). Assign each group a particular axis of potential structural inequality—e.g. gender, race, class/global location, age, disability
- In groups, students should brainstorm (by pulling on their own knowledge, the assigned material, and perhaps research they are able to do in-class by pulling on news sources and such) to answer the following questions:

- a) how does the structural inequality they have been assigned interact with vaccination ethics/public health strategies?

  and

- b) suppose government institutions and public health experts chose to center their vaccination education, access, and encouragement/mandate strategies toward equity around that structural inequality; what might their strategies then look like?

Option 2: Think/Pair/Share Exercise in Relation to the lecture slides on Chickenpox, Shingles, and Intergenerational Justice

> See Slide #14 in the lecture slides: Given the modeling discussed in the powerpoint slides and the way in which universal childhood varicella vaccination in a society will lead to much higher rates of shingles for young and middle aged adults as they age, what should public health officials recommend be done? What is the *just* policy?

Assessment

Reflective Writing Prompt

In a few pages, take up the following writing prompts focused on your own thinking about vaccination ethics and vaccine hesitancy in relation to the material presented. Answer each question in about a paragraph or two.

> 1) Prior to this lesson, what was your own approach to vaccination? How did you understand the reasons for vaccine hesitancy? [ideally students might be asked to write about these questions *before* learning anything in the lesson or doing any of the reading]
>
> 2) In light of the lecture content, powerpoint, and readings, identify three ways in which issues of diversity, pluralism, oppression, or structural inequalities affect choices around vaccination and/or access to vaccination and the consequences for public health.
>
> 3) Reflecting on your answers to (1) and (2), how might you think differently in the future about these issues? Is there anything you might *do* differently in your future as a global citizen, as a member of your local community, as a voter, in your career, in your personal life, etc.?