



Vaccination Mandates – Impacts & Ethics

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Abstract The invention and the wide use of immunizations across the globe has significantly reduced and in some cases eradicated infectious diseases globally. Though vaccines just like other medications come with its own risk for few patients, the difference is vaccines are given to healthy members and the benefit of the vaccination is beyond the individual who received it thereby benefiting the population health through herd immunity. The Centers for Disease Control and Prevention (CDC) works alongside the public health agencies and private organizations to expand and keep up with the immunization coverage and to monitor the safety of immunizations. Despite the usefulness of vaccines currently there are no federal laws regulating the immunizations and each stage has their own laws to encourage vaccinations. As the public health laws follow the utilitarianism rule it is ethical for CDC to work with the federal and state health agencies in enforcing vaccinations in the event of pandemics [1]. However, mandating vaccinations also needs to take into consideration the ethical issues of individual rights. Therefore, it is important to have a balance between the collective good and the rights of individual and informed consent.

Keywords Vaccination, CDC, Ethics, herd immunity, population health, epidemics

1. Introduction

Ethical issues in mandating vaccinations are complex manifold, requiring a delicate balance between individual rights and social health equity. Hence the goal should be to ensure greater public health benefit while minimizing intrusion on individual choices but also ensuring everyone has access to these vaccines. The article aims to highlight some of the ethical considerations before mandating vaccines but also review some of the literature that proved the need for mandating vaccines and how it helped spread of communicable diseases in the past.

History is a proof of how devastating the infectious diseases will be to humans, be it the Bubonic plague epidemic that killed twenty-five million people in Europe in 17th century, or the Ebola epidemic in West Africa which causes 30,000 deaths between 2014 and 2016 or more recently the coronavirus disease 2019 that killed millions across the globe. One thing in common among all three is the lack of vaccination at the start of the outbreak and all these epidemics vary when it relates to economic and geographical impacts [2].

2. Key Ethical Considerations in Vaccination Mandates

The goal of the public health organizations across the globe by enforcing vaccinations is to prevent the spread of infectious diseases and protect their population, but this comes with an ethical dilemma if that mandates are infringing the personal choice of an individual. Another consideration is achieving herd immunity to protect people who cannot be vaccinated due to their pre-existing conditions where mandates can aid as social responsibilities in protecting these vulnerable population.

Mandating vaccinations also need to ensure the ethical issues involving accessibility and equity by eliminating the disparities in healthcare access based on the socio economic and geographic locations. Informed consent and transparency by making the information available to people on the pros and cons of vaccines are important



ethical consideration to be considered before ensuring vaccination mandates. Ethical mandates also require ensuring that the benefits of the vaccinations outweigh the risks involved when it comes to preventing the spread of the diseases.

Public engagement is key before enforcing vaccinations by building public trust. This should include social awareness campaigns, advertisements, and engagement from the public in the form of feedback for any concerns. Global equity is another consideration that needs to be enforced by making the vaccination available for the underdeveloped nations before the wealthier nations impose the mandates. Ethical mandates should also consider legal considerations including the laws of the land. Finally monitoring the vaccine effectiveness and safety as well as the impacts of mandates is key to justify the ethics surrounding the mandates.

Children are a unique population with diverse developmental and physiological differences from adults. The vulnerable nature of this population must be considered when balancing the risks of research and unvalidated therapies. Children are an exceptional population with specific ethical and clinical concerns. A child's immune system can be "overloaded" if the child receives multiple vaccines at once. The human body genetically has natural immunity and kids' bodies work in vastly diverse ways and they often undergo many changes as they grow from infancy towards adolescence and adulthood. For the first few months of life, infants' immune systems still possess the antibodies they received from their mothers across the placenta during late pregnancy. This changes how newborns respond to pathogens and makes them less able to mount an immune response to some vaccines. And even before they become adults, there are ethical questions surrounding the long-term impacts of too many harmful chemicals in the name of vaccines.

Even though the smallpox vaccine for the public was stopped in 1972 in the United States as the disease was eradicated, however in the recent years as of 2002 there were plans to vaccinate selected health care workers and the military, and potentially all the citizens in the future in preparation for bioterror attack. The United States government also has stockpiled substantial number of vaccines in case of emergency for all its citizens. However, the program was a failure with only 39,353 healthcare workers getting vaccinated. One biggest concern according to many researchers with the smallpox vaccine is it is considered the least safe human vaccine and therefore it is not ethical to force either healthcare workers or non-healthcare worker citizens to get vaccinated for Smallpox as a precautionary measure as the side effects from this vaccine outweighs the benefits [3].

Religious objections to vaccines are due to the ethical dilemmas associated with the use of tissue cells in vaccines, and the beliefs that the body is sacred and should be healed either by God or naturally without external support from chemicals. Therefore, religion-based decisions on vaccination and religious objection are a common excuse to avoid the vaccination. While the U.S. government cannot force individuals to get vaccinated against their religious convictions, the religious exemptions vary from state to state [4]. In the United States, most states allow individuals to use the religious exemptions for mandatory vaccinations that does not however include the state of California. As of 2015 California only accepts medical exemption as a valid reason for not getting vaccinated.

3. Literature Review supporting mandates.

It is important to note that religious beliefs should not come in the way of science and in the event of a larger threat to population health like pandemics the guidance from the CDC, the state and federal health bodies and the doctors should take precedence over an individual's belief system [1]. Infections can spread quickly even through small unvaccinated groups and except for any valid medical reason that can cause any adverse effects due to the vaccination, religious beliefs should not be a reason for opposing the vaccines as it can hamper the government's efforts in controlling the spread. While quarantining in place of vaccination can serve the immediate purpose, it does not eradicate the problem completely and the unvaccinated person can still be at risk of spreading the disease.

Even for the more common diseases, like measles, it is the state's responsibility to promote and increase the immunization and refuse any exemptions from getting vaccinated except on the health grounds. Over time in the United States there were multiple occurrences of measles outbreaks such as the one in Philadelphia in 1990 in unvaccinated school children of the two fundamentalist churches and more recently in 2005 a measles outbreak



occurred among members of a religious community in Indiana from an unvaccinated teenager who returned from an overseas trip [5]. The unvaccinated group poses threat to not only themselves but also spread the infection to a larger population and more specifically the immunocompromised people like AIDS and cancer patients are at a greater risk and therefore the state should refuse any exceptions.

More people need to be vaccinated to reach the state of “herd immunity” and if the number of people denying the vaccinations increases it gets difficult to achieve herd immunity. Herd Immunity occurs when most of the population is immune to an infectious disease and those without immunity are indirectly protected. This can be achieved either by large group of the population getting the disease or large group of the population taking the vaccines. While individuals may find mandatory vaccinations a threat to their liberty, public health interventions, such as mandatory vaccination campaigns, that often are based on the concept of utilitarianism, have by far have significant positive results than their absence for everyone [5].

Vaccines are the only method of preventing the polio outbreak as there is no cure for the disease. In 1988 WHO presented global plan for eradication of Polio that included two phases of vaccination - Oral Polio Vaccine and Post-Oral Polio Vaccine and mandating vaccination for 80% of the children. According to the article [6] there were 350,000 polio cases reported in 1988 from 125 endemic countries and in 2018 only twenty-nine cases in three endemic countries. Fig 1 below shows the polio distribution in the year 1988 and year 2018. Researchers indicate that eighteen million children can walk today because of immunizations and 1.5 million child deaths have been avoided.

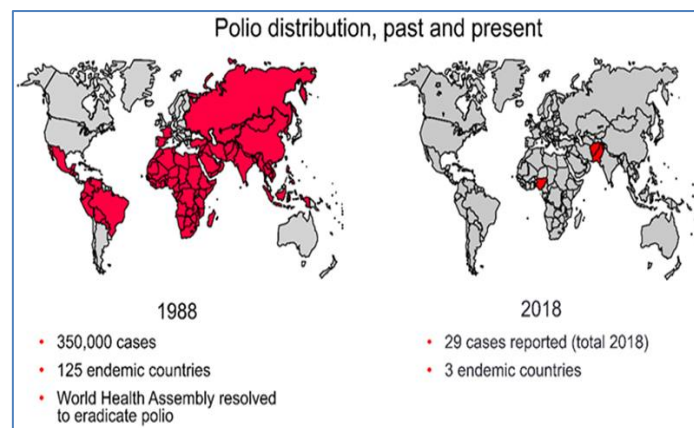


Figure 1: Polio distribution in 1988 and 2018

Vaccines have significantly reduced the mortality rates due to infectious diseases. Hence it is unethical for an individual to refuse the vaccine thereby putting the larger population at risk.

4. Focus areas to promote vaccine-friendly environment over ethics.

There are several focus areas that can promote vaccine-friendly environment over ethics which aims at creating trust among the people, ensuring availability and support informed patient consent. Few of these are discussed below.

Educational outreaches and awareness programs that can provide evidence-based information on benefits of the vaccines, the safety protocols, and the impact on herd immunity is crucial to promote vaccination mandates. These outreaches should be customized based on the socio-economic strata of the population. Transparency in terms of the effectiveness of the vaccines, its approval for widespread use, potential side effects backed by evidence and countering false information through data is crucial to earn public trust.

Engaging with local community leaders, healthcare providers and organizations can influence acceptance of vaccines and promote wider reach. This also ensures that the vaccines are available for all sections of the communication irrespective of the socio-economic status including the underserved communities. Healthcare providers need to be trained in communicating and addressing concerns related to vaccines would play a key role in promoting the acceptance.

To increase public trust, there is a need to build an effective transparent monitoring and response system to address any potential adverse events due to vaccination. Incentivizing for taking the vaccines, integrating

vaccines as part regular healthcare services, and providing mobile clinics to reach rural areas are some ways the healthcare organizations can encourage vaccinations. Ensuring there is vaccine equity meaning there is availability of vaccines irrespective of the country's economic status promotes global health and prevent global spread of epidemics.

5. Conclusion

While we know that natural immunity lasts longer than vaccine-induced immunity can, and the risks of untested immunization will outweigh the risks of not getting one it is important find balance between individual choice to greater good. To get a buy-in from a larger population there is a need for increased collaboration and information sharing between health officials and the public regarding immunization policies and their effectiveness. Given the benefits not just to the individual receiving the vaccines that were proven effective but also to the community around the individual there comes a question of why ethics should come into play in case of vaccine mandates. But one should understand that the coercion for vaccines, religious beliefs, informed consent, long term side effects and the non-availability of vaccines are few ethical considerations that cannot be undermined.

To summarize, to create an environment where there is a positive acceptance for vaccines as part of the routine healthcare and effectively used to promote public health, the health care governing bodies should pay attention to the focus areas discussed in this article. This ensures there is consideration to individual autonomy while considering the wider benefits of vaccination.

References

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