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## Effectiveness of Stricter Vaccine Mandates in Public Schools and Childcare Centers

by Anna Ferentinos

### **Introduction**

Vaccine mandates and the safety of vaccines have been topics of discussion dating as far back as the invention of the first vaccine. Parents want the best for their children and seek to make the choices that most benefit them. However, especially in recent years, making an informed decision has proven difficult due to the sheer amount of information that is readily available through the internet and the contradictions various sources provide for one another (“Vaccines: Calling the Shots,” 10:52-20:20). This broad knowledge pool has led many false statements to become popular among parents skeptical of vaccines and resulted in more children not receiving the recommended immunizations. This, in turn, prompts the outbreak of preventable diseases that were previously under control, due to the benefits of herd immunity.

The COVID-19 pandemic that ensued in 2020 put a spotlight on the importance of vaccines and herd immunity. It has created rising anticipation for the vaccine that will immunize people against the virus, which will speed up the process of returning the country back to a more normal state. The problem is that many people, especially parents, are expressing their unwillingness to get themselves and their children vaccinated because they do not trust that the vaccine is safe and effective. This could result in the number of vaccinated individuals being too low to achieve herd immunity, which would provide too little or no protection to those vulnerable to the virus and unable to be vaccinated.

While there are varying opinions and degrees of confidence in the effectiveness and safety of vaccines, it is important to be informed about the credibility of one's sources. Although there is always a possibility of side effects, the scientific community has clearly proven that the benefits of vaccines drastically outweigh their potential downsides. Vaccine mandates in public schools and childcare facilities should be implemented more extensively and offer less exemptions because they are essential to the health of communities and the safety of the future.

### **Conspiracies and Misconceptions About Vaccines**

Since the invention of the first vaccine, there has always been a group of people who were skeptical of the vaccine's safety and effectiveness. While the scientific community has accomplished major improvements in the department of vaccine science since then, a recent increase in people who believe and spread misinformation has caused uncertainty and mistrust by parents towards medical professionals. The people spreading this false and unsupported information, who call themselves "anti-vaxxers," are responsible for a spike in the number of parents who refuse to have their children vaccinated or delay the recommended vaccination schedule as listed on CDC.gov.

One widespread misconception about vaccines, and the MMR vaccine in particular, is their potential to cause autism. This risk was explored and confirmed by a British surgeon named Andrew Wakefield who wrote an article linking this vaccine to an inflammation in the brains of children who received it, which caused a variety of "behavioural disorders including autism, disintegrative psychosis and possible postviral or vaccinal encephalitis" (637). Although the article was eventually retracted and the leading author, Andrew Wakefield, lost his medical

license and permission to practice, retracting the information and set precedents about vaccines from people's heads is much harder than disputing the article.

Zachary J. Goldberg discusses the reason for persisting misinformation about vaccines, despite a tremendous effort by the health care providers and the general public to dispute it. One of the most prominent characteristics of “anti-vaxxers” that Goldberg brings to attention is their belief in not just the vaccination conspiracies, but also other unfounded beliefs, such the death of Princess Diana having been a planned assassination (Goldberg 109). These patterns point to the generalization that people who believe in vaccine conspiracies are untrusting of the government and other sources of information, such as the news media. While this is a problem that spans beyond the need for more parents to vaccinate their children, it is important to understand that a lack of trust in the government can lead to severe consequences such as major outbreaks of preventable diseases, due to the absence of herd immunity.

### **Herd Immunity and its Significance**

When a high percentage of the community is immune to a disease, whether that immunity is due to prior infection or the use of vaccines, it is called herd immunity. To reach this status in a community, a certain minimum percentage of the population must be vaccinated, depending on the contagiousness of the disease. Highly infectious diseases such as measles require a high percentage of immunity (96%-99%) to reach herd immunity, meaning that as long as this threshold is not reached, herd immunity is not achieved (Hendrix et al. 274).

Herd immunity is essential to a community's survival due to the protection it provides for those vulnerable to diseases, who are not able to be vaccinated and have not survived it yet. This group of people includes a variety of different members of society including “babies, pregnant

women, and immunocompromised people, such as those receiving chemotherapy or organ transplants” (“Herd Immunity”). Because these people cannot protect themselves through vaccines, it is important that they are taken into consideration by the community around them by getting vaccinated to minimize the spread, thereby decreasing the chances of unprotected people being infected.

The benefits of herd immunity are enormous, which is why its achievement should be a goal for everyone. To reap the most rewards from this, the more people that immunize themselves, the more effective the herd immunity is. There are some circumstances that interfere with this goal. For instance, the possibility of side effects and the pain inflicted when being vaccinated cause many parents to consider not vaccinating their children. These parents bring up the argument that if everyone else is vaccinated, they do not have to expose their children to the discomfort that comes with being vaccinated (Hendrix et al. 274). This mentality causes the “free-rider” problem, which in turn can result in the loss of herd immunity, because multiple families think this way and therefore the threshold is not reached.

### **Schools and Childcare Centers as Risk Environments**

Immunizing children is one of the most important factors to reach herd immunity. In addition to children 0-14 years old making up approximately 26% of the world’s population, they are the age group which has most physical contact with other people, and is not as able as adults to take precautions (“Population Ages 0-14 (% of Total Population)”). During past pandemics, children have been major sources of infection, which is especially dangerous in conjunction with their tendency to be asymptomatic, delaying diagnosis. A big factor in calculating children’s risk of transmitting diseases is they are bringing it home from

Kindergarten or school. This poses a risk for the adults in the household, especially those vulnerable to the disease, which are often the elderly (Lopez et al. 1319).

As it pertains to the recent outbreak of COVID-19, childcare centers have not been observed as being common sources of major outbreaks (Isaacs et al 978). Schools, on the other hand, have seen more extreme spread of the virus, especially from childcare providers to children and children to their parents. The enclosed spaces of school classrooms provide an excellent environment for diseases to spread quickly and unnoticed, particularly when as infectious as COVID-19. Schools have also been centers of outbreaks of measles and more common diseases like the flu, which further demonstrates their potential to cause widespread infection if herd immunity is not achieved (Azimi et al. 17).

### **Vaccine Mandates Internationally**

To understand the positive impact of vaccine mandates and what they could look like in the US, it is helpful to look at the policies in other nations. An international resurfacing and concerning increase of infections with previously controlled or even eradicated diseases have caused much reform in vaccine policy around the world. A statistic that is a source of extreme concern, is the finding that in 2019 there was an 300% increase in measles cases globally, “with outbreaks in Ukraine, Philippines, Brazil and France, the United States, and Australia” (Armiento et al. 5231). To counteract this rise in outbreaks caused by an increase in vaccine refusals, Australia introduced two vaccination policies: “No Jab, No Pay” and “No Jab, No Play” (Armiento et al. 5232). Armiento et al. notes “the policies stipulate that children must be fully vaccinated, on a recognized catch-up schedule or medically exempt from vaccinations to be able to access childcare and/or Kindergarten and make the family eligible for government-

subsidized family payments” (5232). These incentives for vaccination have proven effective, by raising vaccine coverage to 92-93%, reaching the herd immunity threshold for several diseases (Attwell et al. 7379).

While effective from the medical perspective, these policies offer no exemptions for people who refuse vaccines out of reasons other than medical ones. This provides no way for people with religious, traditional, or other conflicts with vaccines to get their exemption approved, bringing forth claims of discrimination. This is especially troublesome when it comes to low-income families whose health insurance may not cover the full cost of the required vaccines. An article written by the Murdoch Children’s Research Institute suggests that “‘No Jab, No Pay’ could unfairly penalise low-income families” by prohibiting their entry into childcare and ceasing family payments for not being vaccinated, when the reason for that is a lack of funds to pay the portion of vaccine costs not covered by health insurance (“Research Suggests 'No Jab, No Pay' Could Unfairly Penalise Low-Income Families”). Due to these issues, there has been much controversy in Australia about the vaccine policies which seem to disadvantage groups of people and makes many Australians feel that their freedom is being infringed on.

Germany has also seen a rise in annual infections with measles, which led the federal government to strengthen vaccine policy. While similar to the Australian “No Jab, No Play,” the German vaccine policy allows parents to exempt the recommended vaccines as long as they schedule and attend regular vaccine-focused consultations with their child’s physician. If parents cannot provide evidence of these routine visits to the applicable Kindergarten, they are reported to public health authorities and may be fined up to €2,500 (Attwell et al.7382). Thus, the German policy requires parents to be informed by licensed medical professionals on the safety and

effectiveness of vaccines, but lets them make their own decision on whether the evidence has convinced them to have their children vaccinated, therefore providing them with quality information but upholding their freedom to choose. This compromise, between public health officials and the parents who want to make their own decision, appears to be paying off, with vaccine coverage at school entry being over 90% for almost all recommended vaccines (Attwell et al.7382).

### **Current Vaccination Policy in the United States**

When discussing vaccine policy in the US, it is important to consider the country's various levels of government and the powers which the Constitution grants them. While the federal government has the general authority to enact laws "to provide for the public health, safety, and morals," it has mostly remained in the background of vaccine mandates (Shen 1). The federal government has seldom enacted federal laws regarding vaccines, unless it pertained to "promoting, facilitating, or monitoring the use and/or manufacture of vaccines, such as requiring insurance coverage for recommended vaccinations, providing clinical guidance on vaccinations, and ensuring vaccine safety" (Shen 3). Due to this lack of federal laws regarding vaccines, states have been very autonomous in their decision making on vaccine mandates: "All US States require children to receive vaccines to attend daycare or school," but the exemption policies vary (Attwell et al. 7378). In California for instance, a rise in non-medical exemption (NME) rates has incited new state legislation that made it more difficult for parents or guardians to receive NMEs (Atwell et al. 7378). The Assembly Bill 2109 (in effect January 1, 2014 to January 1, 2016) required parents or guardians to "submit an official State form on which a physician attested that they provided information regarding the benefits/risks of immunization" in order for their NME

to be approved (Attwell et al. 7378). This is similar to the German policy, requiring parents and guardians to provide proof that they were informed by a qualified medical professional, but letting the ultimate decision of vaccinating up to them. This bill was associated with a 25% decrease in NMEs and a significant increase up-to-date status for entering Kindergarteners, from 90.2% to 92.9% (Attwell et al. 7382). In 2015, Senate Bill 277 eliminated access to NMEs entirely in California, which caused the state to join West Virginia and Mississippi as the only US States to not provide NMEs (Attwell et al. 7379).

While there is preliminary evidence that this bill has further increased immunization coverage, there are some concerns that came with a complete elimination of NMEs. One example of possible issues with such a policy is the increase in parents who are willing to commit fraud to exempt their kids from vaccine mandates despite the policies in place. Some physicians support fraudulent claims for medical exemptions or exaggerate the conditions of a child to make it seem as though they are eligible for medical exemption (Attwell et al. 7379). This risk is evidenced by the tripling of medical exemption rates in California since the passage of Senate Bill 277 (Attwell et al. 7379).

Until Senate Bill 5005 was implemented in 2011, Washington was a state where NMEs were readily available, and historically had some of the highest rates in the U.S. In the three years leading up to the new policy, “exemption rates for school entry mandates in Washington ranged from approximately 7-9%” (Attwell et al. 7381). Senate Bill 5005 requires parents who are seeking an exemption “to submit a ‘Certification of Exemption’ or a letter signed by a licensed healthcare provider verifying that the provider has discussed the benefits/risks of vaccines with the parents” (Attwell et al. 7381). The only other way to acquire an NME in Washington is by demonstrating an affiliation with a religious entity that does not permit medical

treatment to children. This new policy has caused a relative decline of more than 40% in nonmedical exemptions and increased vaccine coverage (Attwell et al 7382).

The inconsistency of vaccine policies throughout the United States poses an issue because of the loopholes that parents find to exempt their kids from vaccine requirements. Additionally, a child whose parent is an anti-vaxxer might find themselves moving to a state where there are no NMEs, which means that they must catch up all their vaccines to that point. This process can be lengthy and stressful on a child's body, much more so than if the recommended vaccine schedule had been followed starting at birth. Additionally, the low vaccine coverage in many states creates high-risk environments for rapid spread of infections and major outbreaks of many diseases.

### **Future Vaccination Policy in the United States**

To ensure safety for the present and future generations it is crucial to introduce a national vaccination standard and policy. Having a uniform vaccine mandate in all states will ensure that all citizens can have an easy understanding of what rules apply to them, no matter where in the United States they reside and thereby ease the process of moving between states. A national vaccine mandate will ensure that the herd immunity threshold is achievable, thereby protecting those that cannot be vaccinated.

With the mandate, the federal government should also make it very difficult to be granted any NME that is not based on a religious affiliation, because they present an unnecessary risk simply by indulging people's unfounded beliefs that a product which has been proven safe throughout centuries and many intensive trials, is still not safe enough. While eliminating these exemptions appears the most effective option at first glance, this could lead to people perceiving

it as an infringement on their personal freedom. Therefore, making exemptions very difficult to achieve is the best way to prevent many people from taking advantage of this opportunity. Dr. Julie Leask of the University of Sydney believes that “regulation is useful,” and that for it to work, policies need to be “firm but fair” (Finnegan). She proposes that while exemptions should be available, they “should be harder to get ... than to get fully vaccinated” (Finnegan). It is important for people to understand that the alternative of getting sick is more likely to occur and poses a much greater risk for serious complications or even death than possible side effects from a vaccine. While the conspiracies and misconceptions about vaccines have not been scientifically proven, it is important to make people feel safe when they are mandated to use a product. This will minimize the resistance against the new policy, as well as make people feel that their government wants to ease their fears and has considered their opinion.

Looking at the “No Jab, No Play” policy that was implemented in Australia, it is important to consider the ways in which a vaccine mandate would affect various cultural groups, as well as social classes. Since one of the major American values is equality and prosperity, it is especially important to ensure that no group of people will be disadvantaged by the national vaccine mandate. In Australia the issue lies in the lack of coverage by health insurance, causing people to be forced to pay partial or full price of the vaccines to be able to send their children to daycare or school. In the U.S., “the Affordable Care Act has required vaccines recommended by the Advisory Committee on Immunization Practices (ACIP) to be covered by insurance,” which include Medicaid for those eligible (Attwell et al. 7378). This ensures that everyone has equal opportunities to vaccinate their children, providing no excuse for a financial barrier preventing one from vaccinating.

## **Conclusion**

While vaccine mandates have been discussed for many years in the past, the COVID-19 pandemic has spread awareness about the significance that vaccines hold in ensuring public health and safety. The rapid spread of the disease has shocked many and incited fear in many about the safety of being in public spaces. The vaccine for COVID-19 has been highly anticipated by many, in hopes that it will be the key to restore the country to a semblance of normalcy. On the opposite side, there are those that don't trust the safety of the vaccine and people that believe in conspiracy theories, such as the one claiming that former Microsoft CEO Bill Gates wants to use the COVID-19 vaccine to implant microchips into people. These conspiracy theories are what lead to low vaccination rates, causing outbreaks of vaccine preventable diseases. A vaccine mandate with NMEs that require persons to get informed by medical professionals will lead to a well-informed population and more people that voluntarily get vaccinated, because they will understand that the vaccine will be helpful in restoring their beloved nation back to normal.

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