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Survey of Significant Factors Preventing Complete Enforcement of Mandatory Vaccination

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ABSTRACT

In the midst of the global COVID-19 pandemic and accompanying outbreaks, the controversy of mandatory vaccination is again brought under scrutiny. Although it has been well researched within the scientific community that vaccination is a simple and safe procedure, it continues to face outlash and distrust within societal communities. This literature review is a study of the current perspectives within pro and anti vaccination groups. From childhood illnesses to vaccine production, school mandates to minor consent, these and many more factors influence the current outlook and attitudes of the American general public towards vaccines. From this examination, we propose an actionable solution for the government, public health officials, and individual people. By fact checking widely held myths about vaccination and enforcing stricter standards in academic spheres for life threatening illnesses, we can improve the overall health and livelihood of our communities. In today's public health crisis, it is paramount for people to understand the methodology behind mass immunity and also provide alternatives to those who may have valid reasons against vaccination.

INTRODUCTION

Vaccination has always been a highly contested topic in healthcare and public policy but now, more than ever, its merits and detriments have come under inspection due to the current COVID-19 pandemic, Monkeypox outbreak, and seasonal flu. In order to understand why mandatory vaccination continues to be a scientifically backed decision but has never been completely accepted into communities, we analyze several articles and papers documenting the perspectives of proponents and opponents. We survey common conceptions about vaccination

and provide macroscale proof in statistics. Then we address the scientific distrust that some opponents may have regarding vaccination. We transition to microscale interactions, specifically the question of vaccination in school settings. Finally, we consider the healthcare rights of minors. Through this examination, we hope to propose our own solution to the public health vaccination debate such that vulnerable populations can be protected while respecting the rights of individuals. The solutions will be consistent, clear, and actionable. Our goal is to promote the health and knowledge of our community during this pandemic and pandemics of the future.

It is not without basis why mandatory vaccination continues to be a strongly debated topic within healthcare and societal settings to this day. Based on current statistical data, all 50 states require vaccinations for children who will be attending school, though there are no mandatory immunization requirements issued by the federal government.¹ According to the Centers for Disease Control (CDC), an estimated 732,000 children avoided death and cases of childhood illnesses such as smallpox and whooping cough due to vaccinations between 1994 and 2014. In contrast, based on the reports annually submitted to the Vaccine Adverse Event Reporting System (VAERS), approximately 30,000 cases of adverse reactions have been present in the nation since the year 1990. Out of these cases, 10-15% were categorized as a serious condition, meaning it was associated with permanent disability, hospitalization, life-threatening sickness, and even death. The CDC has implemented the COVID-19 vaccine as one of the recommended vaccines for children to receive in order to attend school. However, many people have opposing views on this matter. Proponents claim that receiving the vaccine is safe, and children's lives could be saved from illnesses such as smallpox and whooping cough. On the other hand, opponents argue that injecting vaccines with harmful ingredients can cause side effects such as paralysis, seizures, and possibly death. Opponents believe that children's immune system can overcome these infections naturally. Although this article is quite informative with numerous arguments supporting mandatory vaccination for children, it does have some limitations. This article does not address critical reasons why people oppose mandatory vaccination such as scientific distrust, religious freedom, personal rights, and uneven distribution of resources.

¹ (n.d.). Should Vaccines Be Required for Children to Attend School. Britannica. Retrieved November 3, 2022, from <https://vaccines.procon.org/>

A significant factor in why people oppose mandatory vaccination can be attributed to scientific misconceptions or distrust in scientific methods. Most of the general population do not understand the mechanics behind vaccine production, which often leads to mass hysteria when adverse cases get sensationalized. The three different ways vaccines are produced are through egg based technology, cell cultures, and recombinant viral methods. Specifically, egg based vaccines are made by injecting candidate vaccine viruses (CVVs) into fertilized chicken eggs. Once the virus replicates, viral antigens are harvested and inactivated.² The FDA oversees every step of the process. The CDC also details the implications and strategies in dealing with an egg allergy and receiving the influenza vaccine. Some flu shots are manufactured using egg-based technology, which can cause those with egg allergies to be hesitant to get the flu vaccine in fear of a harmful reaction.³ However, the CDC still recommends that those individuals get vaccinated for the flu, due to the low risk of an allergic reaction. In addition, alternative vaccination methods are available for those who require it. To put the fear of vaccines into context, it is important to note that egg allergies only affect 1.3% of children and 0.2% of adults, and even those with serious reactions to consuming eggs can get the vaccine with healthcare provider supervision. In a Vaccine Safety Datalink study, only 10 cases of anaphylaxis presented themselves after over 7.4 million doses of flu vaccine, further backed by a recent CDC study that found the rate of anaphylaxis to be 1.31 per million vaccine doses administered. Despite such a small chance of allergic reactions occurring, it remains understandable if certain individuals would rather not take a risk. Instead, they are eligible to receive egg-free flu vaccines with the two current options being Flublok Quadrivalent and Flucelvax Quadrivalent. With such a large collection of data and cases, it is clear that the flu vaccine is safe for the large majority of the population, only raising the question of the minimum amount of time or data a vaccine requires to be considered trustworthy or scientifically sound, a standard that may be different for each person. However, the data demonstrated in this case study should also be indicative that the scientific principles and practices applied across all vaccine creation and distribution are trustworthy, or at least have

² (n.d.). How Influenza (Flu) Vaccines Are Made. CDC. Retrieved November 13, 2022, from <https://www.cdc.gov/flu/prevent/how-fluvaccine-made.htm>

³ (n.d.). Flu Vaccine and People with Egg Allergies. CDC. Retrieved November 3, 2022, from <https://www.cdc.gov/flu/prevent/egg-allergies.htm>

led to widespread success, meaning that the doubt should not lie in the validity of scientific institutions, but in the beliefs of the individual.

Most often, the question of mandatory vaccination arises when children enter new communities, specifically school. It may be difficult to respect vastly different individual and family needs. An article by the Washington Post discusses the debate over the vaccination requirement for young children and teens.⁴ The 2015 measles outbreak, a national health concern that originated at the Disneyland Resort in California, had sparked debate over the vaccination issue that still remains relevant today in the case of COVID-19. While most people tend to agree with the idea of vaccinating their children, there are still some U.S. adults and scientists from the American Association for the Advancement of Science (AAAS) who believe that parents should be able to opt out, according to the Pew Research Center. Amongst the U.S. adults surveyed, 30% voted for parents being able to decide, and 68% voted for a vaccination requirement regardless of parental decision. Amongst AAAS scientists that were surveyed, 13% voted for parents being able to decide, and 86% voted for a vaccination requirement regardless of parental decision. In educational settings specifically, students at schools such as Palm Springs High School have been told to not attend class if they have not received the proper vaccinations. This was also spurred on by parents of immunocompromised children who have more concerns over their children's risk and well-being. By keeping unvaccinated children away from school, it keeps immunocompromised children safer, but it is at the expense of children whose parents are anti-vax. Here is an argument in favor of allowing people the right to make their own healthcare-related decisions. Though this article addresses both sides of the argument, it does have some limitations to note. It does not include parental testimonies and anecdotes explaining why they should have the authority over their children receiving vaccination or not. Reasons vary from religious to political to personal lifestyle choices, but which of these are more valid than others? For these children, would they choose to vaccinate themselves if it meant their immunocompromised classmates would be safer and more comfortable within their community?

⁴ (2015, January 29). Reminder: Most people think vaccinations should be mandatory for children. Washington Post. Retrieved November 13, 2022, from <https://www.washingtonpost.com/news/post-nation/wp/2015/01/29/reminder-most-people-think-vaccinations-should-be-mandatory-for-children/>

For those arguing individual rights and autonomy, the rights of minors are a topic continuously debated, not only in healthcare, but also in the legal, social, and academic realms.

A pillar of medical ethics is autonomy; however, minors often do not have this privilege in regards to medical decisions. Proponents have argued for states to enact laws that expand access to vaccines and the rights of minors aged 12 to 14 years old to include consent to vaccination. Currently, children are considered non-autonomous under U.S. law. Typically, parents are given “broad discretion” in making medical decisions on their children’s behalf.⁵ Opponents of granting minor consent to vaccinations believe that parents know their children best and consider family interests in making medical decisions for their children. However, note that this does not mean children shouldn’t have any say at all in decisions that affect their own body. All states have some sort of law that permits minors to make confidential, independent decisions in regards to stigmatized health issues (sexual health, reproduction, mental health, substance abuse, etc.). Yet, most states don’t allow independent consent for vaccines. Some states, like New York, California, and Washington D.C., have passed bills that allow minors of a certain age to receive certain vaccines. About 20% of jurisdictions require these minors to be 12 to 14 years old to be able to make these decisions. If minors had the right to consent to their own vaccines, it would diminish the risk to public health in heavily anti-vax communities. Adolescents would have the opportunity to catch up on missed childhood vaccines their parents didn’t allow them to receive. It would also improve rates of vaccination against highly infectious diseases. This is especially important for adolescents who don’t have regular access to preventative care. Adolescents shouldn’t be harmed by parental decisions based on misinformation or disinformation. If they were allowed to make their own medical decisions, it would facilitate access to “medically recommended and evidence based” treatment. States should enact laws to expand vaccine rights to minors in order to reinforce norms of vaccination and enhance community protection.

⁵ (2019, July 11). Vaccination over Parental Objection — Should Adolescents Be The New England Journal of Medicine. Retrieved November 3, 2022, from <https://www.nejm.org/doi/full/10.1056/NEJMp1905814>

CONCLUDING REMARKS

Currently, the state and federal government has the right to constitute the mandate for vaccines.⁶ However we believe that these regulations should be implemented along exemptions, specifically regarding religious beliefs and medical allergies. Officially, The Equal Employment Opportunity Commission (EEOC) states that employers are allowed to mandate vaccines or ask for proof of vaccination from their workers. This can be done under two conditions: they must meet the policies of the Americans with Disabilities Act (ADA) and Title VII of the Civil Rights Act of 1964. The workers who choose to enact these rights must provide reasonable accommodations for their exemptions. After submitting the request for the desired exemption, we believe the employer has the right to accept or deny the request. To prevent biased outcomes, the employer should have a meeting with the human resources department and public health officials to formally discuss the application and come to a unanimous vote. If the request is accepted, the employer can then provide alternative safety measures the worker has to abide by in the workplace, such as wearing masks indoors or working at a social distance from other employees. This solution addresses not only the common health concern of the general public but also the liberty rights and personal beliefs of each individual.

Accessibility and general knowledge of scientific processes can play a significant role in public opinion regarding vaccination. Vaccine education has been a notable project of the CDC since 1976, when the first versions of “Vaccine Information Statements” (VISs) were printed.⁷ It was originally in response to a legal trial, *Reyes v. Wyeth Laboratories*, in which parents sued the vaccine manufacturer when their child was inflicted with paralytic polio after vaccine administration. Since then, the National Childhood Vaccine Injury Act (NCVIA) and the Department of Health and Human Services (HHS) has continuously edited and re-printed VISs, balancing both the needs of parents for simple, essential information and of providers and health educators for thorough and accurate vaccine manufacturing information. In 1994, VISs were reduced to single sheet, two sided information sheets. In the following years, more and more

⁶ (2022, October 25). Vaccine Mandate: What to Know. WebMD. Retrieved November 13, 2022, from <https://www.webmd.com/vaccines/covid-19-vaccine/vaccine-mandates>

⁷ (n.d.). History of Vaccine Information Statements. Department of Health and Human Services. Retrieved November 13, 2022, from <https://www.cdc.gov/vaccines/hcp/vis/downloads/vis-history.pdf>

vaccines were required to have accompanying VISs. “Pediatric Multi-Vaccine” VISs were produced to inform wary parents of pediatric vaccination schedules that required multiple vaccinations at once. In 2013, VISs transitioned to online formats that could be easily updated according to new developments. VISs have been translated into over 40 languages. The effects of VISs were analyzed in a study which found a significant link between HPV vaccination perception of benefits and risks due to distribution of associated VISs. To further educate the general public about vaccines, we propose the CDC and HHS could potentially work with influential community leaders, such as religious figures, to disseminate accurate, neutral information about vaccine benefits and risks. Social Media is another platform on which information can be pared down into essential points and quickly shared among younger adults.

Mandatory pediatric vaccination is an especially challenging issue with substantial gray area. Minors are raised with beliefs aligning their parents, and there are certain limits which public health policies can not cross. However, mandatory vaccination should not be framed as a two sided issue, and policies should continue to be straightforward and accurate so that parents and children themselves can educate themselves when they are ready. While the COVID-19 pandemic saw a rise of anti-vax movements, there were also complementary movements of anti-vax parents turning pro-vaccination.⁸ Due to the magnitude of the pandemic combined with tragic death tolls, parents have turned to health providers and online communities for more information. Studies have shown that healthcare providers are crucial sources of health related information for parents. However, online communities widely vary in legitimacy. When realizing anti-vax movements were primarily built on propaganda and not science, these parents chose to vaccinate their children. Human beings are continuously learning and changing. Anti-vax community members may have multiple reasons against vaccination, but maintaining the two sided divide and villainizing such people will only further polarize the two sides. Increased education of vaccines in schools, workplaces, and clinics will allow open minded parents to perceive the benefits of vaccination over the sensationalized risks.

⁸ (2022, May 12). Formerly Anti-Vax Parents Are Turning Pro-Vaccine Because of the Retrieved November 13, 2022, from <https://www.parents.com/health/coronavirus/formerly-anti-vax-parents-are-turning-pro-vaccine-because-of-the-pandemic/>

Analysis of current perspectives held within the vaccination community reveal that mandatory vaccination cannot be enforced globally and without exceptions. But with consistent standards, increased vaccine education and awareness, and greater consideration for the views of parents, we believe vaccination can be implemented safely and widely for the country and the world in the midst of an ongoing, three year pandemic and for future pandemics as well.

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