

2019

Public Health and Personal Choice: The Ethics of Vaccine Mandates and Parental Refusal in the United States

Rebecca Horan

Jonelle DePetro

Follow this and additional works at: https://thekeep.eiu.edu/lib_awards_2019_docs



Part of the [Public Health Commons](#)

Recommended Citation

Horan, Rebecca and DePetro, Jonelle, "Public Health and Personal Choice: The Ethics of Vaccine Mandates and Parental Refusal in the United States" (2019). *2019 Awards for Excellence in Student Research and Creative Activity – Documents*. 7.
https://thekeep.eiu.edu/lib_awards_2019_docs/7

This Book is brought to you for free and open access by the 2019 Awards for Excellence in Student Research and Creative Activity at The Keep. It has been accepted for inclusion in 2019 Awards for Excellence in Student Research and Creative Activity – Documents by an authorized administrator of The Keep. For more information, please contact tabruns@eiu.edu.

Rebecca Horan
 Jonelle DePetro
 Honors Thesis
 April 4, 2019

Public Health and Personal Choice:
 The Ethics of Vaccine Mandates and Parental Refusal in the United States

CONTENTS

INTRODUCTION	1
BACKGROUND	2
VACCINE HESITANCY	4
THE ETHICS OF PARENTAL REFUSAL	7
THE ETHICS OF VACCINE MANDATES.....	11
SUMMARY	18
CONCLUSION.....	20
WORKS CITED	21

INTRODUCTION

In January 2019 The World Health Organization (WHO) released its list *Ten threats to global health in 2019*. For the first time ever, *vaccine hesitancy*, “the reluctance or refusal to vaccinate despite the availability of vaccine services” is officially on the list.¹ Although great progress has been made in reducing or eradicating various diseases such as polio, measles, and whooping cough (pertussis), the number of parents refusing vaccination for their children is growing rapidly in what is now often referred to as the “anti-vaccination movement” (or “anti-vax movement”). This is causing a threat to public health as the lowered proportion of vaccine uptake within communities is triggering a reversal of the progress made by vaccination thus far through a weakening herd immunity, putting everyone at a greater risk of contracting and spreading infectious diseases.² According to the Center for Disease Control and Prevention

¹ “Ten Threats to Global Health in 2019.”

² Hendrix et al., “Ethics and Childhood Vaccination Policy in the United States.”

(CDC), so far in 2019 the United States has already faced three outbreaks of the measles, a disease previously considered eliminated in the United States, in New York City, New York state, and Washington state.³ Each outbreak was found in areas with particularly low vaccination rates.⁴

It is clear through the growing number of outbreaks in areas with low vaccine uptake that vaccine hesitancy is a serious threat to public health. There are several ethical complications surrounding possible solutions to this issue due to the conflict between parents' right to refuse vaccination for their child as an exercise of their autonomy, and a physician's duty to do what is best for the child. Furthermore, at the level of the state, vaccine mandates without possible religious or philosophical exemption would similarly infringe on parents' right to autonomy and yet the state faces a real and growing public health threat from those who utilize these exemptions. Therefore, it is important to carefully explore the complicated reasons for vaccine hesitancy, identify the dangers of a population with a low vaccination rate, and examine some potential solutions through the four major bioethics principles: autonomy, justice, beneficence, and nonmaleficence and the relevant moral theories of utilitarianism and deontology.⁵

BACKGROUND

Immunizations work by using the natural processes that the body undergoes in order to fight illnesses to create immunity for certain diseases. The immune system uses white blood cells composed of macrophages, B-lymphocytes and T-lymphocytes, to fight against diseases which enter the body.⁶ Vaccines enter the body and imitate infectious diseases without making the patient sick. This causes the body to produce the antibodies from B-lymphocytes and T-lymphocytes that will "remember" how to fight that disease; thus, helping the body build

³ "PAHO/WHO | Measles Elimination in the Americas."

⁴ "Measles | Cases and Outbreaks | CDC."

⁵ Childress and Beauchamp, "Principles of Biomedical Ethics."

⁶ "How Do Vaccines Work? | NIH: National Institute of Allergy and Infectious Diseases."

immunity without ever having been sick.⁷ Because of vaccines, doctors are now able to prevent many illnesses that once claimed thousands of lives each year. Since the start of vaccine use and national recommendations there has been a greater than a 92% decrease in cases and a 99%+ decrease in deaths due to vaccine preventable diseases such as diphtheria, mumps, pertussis, and tetanus.⁸ Additionally, the “endemic transmission of polio virus, measles, and rubella viruses has been eliminated in the United States and smallpox has been eradicated worldwide.”⁹ Not only do vaccines function on the individual level but they work at the level of population as well. An important element of our ability to have populations who are no longer at risk of contracting various diseases (disease eradication) is the concept of *herd immunity*.

Herd immunity (sometimes referred to as “community immunity”) is the protection of all through the immunization of most and is the benefit of vaccines that extends beyond the individual being vaccinated.¹⁰ One reason that vaccine hesitancy and the anti-vaccination movement are so dangerous is because it weakens this herd immunity. When herd immunity is weakened, it increases the risk of outbreaks for highly infectious diseases for the entire population, not only for the unvaccinated.

In any given community when the number of people who are vaccinated reaches a certain percentage the spread of infectious disease is highly unlikely and herd immunity is achieved.¹¹ The percentage required for community protection varies from disease to disease; for example, measles needs a very high threshold of 96 to 99 percent.¹² If the percentage falls under the herd immunity threshold, a community loses this immunity and people are at risk once again.¹³

⁷ “How Do Vaccines Work? | NIH: National Institute of Allergy and Infectious Diseases.”

⁸ Roush, Murphy, and Vaccine-Preventable Disease Table Working Group, “Historical Comparisons of Morbidity and Mortality for Vaccine-Preventable Diseases in the United States.”

⁹ Roush, Murphy, and Vaccine-Preventable Disease Table Working Group.

¹⁰ Diekema, “Responding to Parental Refusals of Immunization of Children.”

¹¹ Hendrix et al., “Ethics and Childhood Vaccination Policy in the United States.”

¹² Hendrix et al.

¹³ Hendrix et al.

Lowering this herd immunity threshold is but one way that unvaccinated individuals pose a risk to the community.

According to an article published by the American Academy of Pediatrics (AAP) there are four potential harms done to others by an unvaccinated child: (1) if the unvaccinated child becomes infected it poses a threat to anyone who is unimmunized (young children not yet fully vaccinated, those with allergies to vaccine ingredients, the immunocompromised, etc.) (2) even in communities with strong herd immunity there will be those who are at risk because their vaccine did not create full immunity or they are no longer immune (3) there are children who, because of other medical issues, cannot be safely vaccinated and must rely on herd immunity and (4) those who are at no risk of contracting a disease will still be harmed by the medical costs of treating the infected, unvaccinated individuals.¹⁴ This raises the question, “why are there so many parents who still refuse vaccinations for their children despite the risk?”

VACCINE HESITANCY

The World Health Organization Strategic Advisory Group of Experts (WHO SAGE) working group states that vaccine hesitancy refers to any “delay in acceptance or refusal of vaccines despite [the] availability of vaccine services.”¹⁵ According to an AAP Periodic Survey of Fellows, the percentage of pediatricians who have encountered parents who declined one or more vaccines for their children increased from 75% in 2006 to 87% in 2013 with approximately 3% having encountered parents who refused all vaccinations.¹⁶ The vaccine most frequently refused was the MMR (measles-mumps-rubella)-vaccine, “followed by varicella vaccine, pneumococcal conjugate vaccine, hepatitis B vaccine, and diphtheria and tetanus toxoids and pertussis vaccines.”¹⁷

¹⁴ Diekema, “Responding to Parental Refusals of Immunization of Children.” “Responding o Parental Refusals of Immunization of Children.”

¹⁵ Jarrett et al., “Strategies for Addressing Vaccine Hesitancy – A Systematic Review.”

¹⁶ Rucoba, “How to Address Vaccine Hesitancy.”

¹⁷ Diekema, “Responding to Parental Refusals of Immunization of Children.”

The reasons behind parental vaccine hesitancy are complex, however, a study published by *The Journal of Pediatric Pharmacology and Therapeutics* found that parents often cite safety concerns. Many of these concerns are echoed in the testimonies of various antivaccination groups on the internet. While there are risks to vaccination, many of the fears that vaccine hesitant parents have are exaggerated and are truly minor compared to the risks of not vaccinating; others are entirely unfounded. It is possible that this increase in hesitancy happens especially when parents conduct research on the internet.

Many people use the internet to gather information regarding potential decisions. This is also true for parents who are considering the benefits and risks of vaccination for their children. In fact, according to a recent survey, “52 million American adults (55% of those with internet access) have used the internet to acquire health information.”¹⁸ The issue here is the probability that these parents will encounter, via the internet, misinformation that increases vaccine hesitancy. According to one study, when searching the key-words “vaccination”, “immunization”, and “immunisation” using the top seven search engines, 43% of websites encountered were antivaccination including all of the first 10 websites which appeared on Google.¹⁹ Of the 100 antivaccination websites looked at by this study, all shared similar content including “highly emotive content, conspiratorial claims, privately published material, newspapers articles, etc. given as sources of information, and claims to have privileged information unknown to medical authorities.”²⁰ This type of information is meant to strengthen any doubts that parents may have had about vaccinating their children.

As mentioned before, like any medical procedure, vaccination poses risks. Many parents are wary of medically acknowledged risks both mild (redness, swelling, and pain at injection

¹⁸ Licciardone, Smith-Barbaro, and Coleridge, “Use of the Internet as a Resource for Consumer Health Information.”

¹⁹ Davies, Chapman, and Leask, “Antivaccination Activists on the World Wide Web.”

²⁰ Davies, Chapman, and Leask.

site, fever, and swollen glands in face and neck), and severe (deafness and brain damage).²¹

Pediatricians ought to inform the parents of the risks and benefits of vaccination so that they understand the likelihood of adverse reactions and safe ways to mitigate such reactions.

However, when mistrust is established in the minds of parents via anti-vaccination groups, parents may begin to believe that their doctors are not providing them with complete information about the risks or that the risks of vaccination are greater than the benefits.²² This mistrust may prevent both the pediatrician and the parents from providing the child with the best possible medical care. Furthermore, misinformation used in anti-vax literature often leads parents to fear risks that are not actual risks. One of the most famous among these unfounded fears is the fear that the MMR- vaccine causes autism.

The link between the MMR-vaccine and the developmental disorder autism was first suggested by Andrew Wakefield, a now discredited former British physician, and his medical research colleagues. In 1998 they published a study in the *Lancet*, a prestigious medical journal, that showed a link between the preservative thimerosal found in the MMR vaccine and autism, but the quality of the study was heavily criticized for reasons such as a small sample size, speculative conclusions, and an uncontrolled design.²³ Unfortunately, the study still received a lot of attention, despite being widely discredited, and launched a widespread, unfounded fear of the MMR vaccine which still exists today. There have been numerous studies showing that thimerosal is not a toxin and that there is no link between its use in vaccines and the development of autism in children.²⁴ This is one of many such unfounded fears which are fueled by anti-vax groups that have long lasting negative effects on vaccine uptake.

²¹ "Vaccines."

²² McKee and Bohannon, "Exploring the Reasons Behind Parental Refusal of Vaccines."

²³ Rao and Andrade, "The MMR Vaccine and Autism."

²⁴ "Vaccines Do Not Cause Autism Concerns | Vaccine Safety | CDC."

Many parents mistakenly believe that to vaccinate their children is to put them in more danger than to leave them unvaccinated. To further this argument, many parents suggest that it is unnecessary to take on any of the risks of vaccination when herd immunity is already protecting them. This line of reasoning is ethically questionable, and it relies on an unverified assumption that the herd immunity threshold for highly infectious diseases is met in their community (or anywhere they may travel).

THE ETHICS OF PARENTAL REFUSAL

Behavior that uses herd immunity as an excuse not to vaccinate is often referred to as “free-riding”. This is because it relies on the benefit created by others who take on the risk of vaccination while the free-riders themselves do not take on that risk.²⁵ The Hart-Rawls Principle of Fairness states that “those who submit to the rules of cooperative enterprises have a right to similar submission from those who have benefited from their cooperation.”²⁶ Applying this principle of fairness to the issue of vaccination, those who refuse vaccination yet benefit from herd immunity can be considered free-riders who are acting against the principle of fairness and, therefore, acting unethically.

Other issues in bioethics are also relevant to this debate. There are four major principles brought forward by Childress and Beauchamp which are widely recognized within bioethics; *autonomy*- a patient’s right to make her own decisions regarding her medical treatment; *justice*- equal access to medical care; *beneficence*- doing what is best for the patient; and *nonmaleficence*- to never harm the patient.²⁷ Autonomy, beneficence, and nonmaleficence, may be applied to actions of the pediatrician in order to gauge whether parental refusal of vaccines is ethical. It may also be used to discover what, if any, actions a pediatrician should take when faced with such behavior.

²⁵ Ibuka et al., “Free-Riding Behavior in Vaccination Decisions.”

²⁶ Arneson, “The Principle of Fairness and Free-Rider Problems.”

²⁷ Childress and Beauchamp, “Principles of Biomedical Ethics.”

The principle of autonomy plays a complicated role in the case of child vaccination, since children themselves are not autonomous. To be considered autonomous one must meet certain requirements. For instance, a person with reduced mental capacity (such as someone under the influence of judgment-impairing medications or a person with reduced mental capabilities) would not have complete autonomy regarding her medical treatment.²⁸ It is clear that children, and especially young children, have extremely limited autonomy. Although children do gain limited autonomy as they reach certain ages, parents typically have full autonomy regarding vaccination decisions, especially at the young age that most children receive their vaccinations.²⁹ Thus, when discussing autonomy and parental refusal of vaccines, it is a discussion the parents' autonomy.

A person exercising his own autonomy has the right to refuse any treatment so long as it does not cause significant risk of harm to the community. However, when parents exercise their autonomy in regard to their children, their decision to refuse treatment must not cause significant risk of harm to others *or* to the child; otherwise the physician may step in and overrule the parent.³⁰ Considering this principle of autonomy, a pediatrician who allows a child to remain unvaccinated due to the parents' wishes would be acting ethically. Respecting autonomy is an important component to providing ethical medical care, but it is only one of several principles. Respecting parental autonomy may occasionally interfere with upholding other principles of bioethics and so it cannot be considered alone. For instance, what would be the ethical action for the pediatrician who believes that, medically speaking, vaccination is in the best interest of this child? This question brings the principles of beneficence and nonmaleficence into play.

Beneficence and nonmaleficence go hand in hand in that they emphasize doing what is best for the patient, in this case the child. If the child is not vaccinated, this is medically

²⁸ Varelius, "The Value of Autonomy in Medical Ethics."

²⁹ Hendrix et al., "Ethics and Childhood Vaccination Policy in the United States."

³⁰ Dickema, "Responding to Parental Refusals of Immunization of Children."

demonstrated to increase the risk of the child contracting disease.³¹ It can be argued that, considering the principle of beneficence, if the pediatrician respects the parents' wishes and allows a child to remain unvaccinated indefinitely, then the pediatrician would be acting unethically. This is because the child is at greater risk of being harmed by being kept from the protections of vaccination.³² On the other hand, when considering the principle of nonmaleficence, the pediatrician may be acting unethically by vaccinating the child if, for example, the child is harmed by side effects. This is because, unlike beneficence, nonmaleficence emphasizes the final result of the action (whether harm is done) more than the intent (to protect the child.)

The risks associated with not vaccinating can be difficult to quantify even for an individual child.³³ For example, during an outbreak it would be clear that the unvaccinated child would be at substantial risk, but what if the child lived in a community which met the herd immunity threshold? Furthermore, it is difficult to assess risk of vaccination side effects to the individual child for, although exceedingly rare, serious side effects do happen. Consequently, it is difficult to know whether there is enough risk in vaccinating or in remaining unvaccinated to evaluate a particular pediatrician's actions. Yet, it can be argued that in the majority of children, the benefits of vaccination in preventing disease greatly outweighs the potential side effects and most pediatricians would be acting unethically in allowing the parents to refuse vaccinations for their child. Evidently, there is a potential conflict between parents' right to exercise their autonomy in regard to their children and a pediatrician's duty to do what is in the best interest of the child.

Considering all of this, what is the ethical action for the pediatrician if her patient's parents refuse vaccines? Clearly, the pediatrician cannot simply vaccinate the child anyway,

³¹ Phadke et al., "Association Between Vaccine Refusal and Vaccine-Preventable Diseases in the United States."

³² Field and Caplan, "A Proposed Ethical Framework for Vaccine Mandates."

³³ Dickema, "Responding to Parental Refusals of Immunization of Children."

against the parents' wishes. This would be a clear violation of their autonomy. Conversely, allowing the child to remain unvaccinated puts that child at risk of preventable and potentially life-threatening diseases which goes against both the principles of beneficence and nonmaleficence. Moreover, the pediatrician must also consider the risk to her other patients, such as infants who are not yet fully vaccinated, children who cannot be vaccinated, and the immunocompromised, if they share spaces such as the waiting room with the unvaccinated child.³⁴ Because of this, many pediatricians decide that dismissing the patient is the right course of action. According to one study, 11.7% of pediatricians will dismiss patients who refuse vaccination because of the ethical dilemmas and because of the risks to other patients.³⁵ However, the AAP (American Academy of Pediatrics) recommends that the pediatrician not dismiss the unvaccinated patients right away for several reasons.

Previously the AAP's official position was that patient dismissal should be avoided at all costs and that refusing vaccination was not a sufficient reason for dismissal. Although they have recently updated their position, the AAP still generally advises against dismissal because of the negative consequences that may arise.³⁶ One consequence is that the dismissal of non-vaccinating families may cause clusters of unvaccinated children at the practices of those pediatricians who will see them and this may cause outbreaks.³⁷ Additionally, the AAP maintains that a pediatrician ought to take the time to be supportive of her patients and try and work through any fears the parents may have, building a relationship of trust, and using every visit as an opportunity to educate them about vaccines.³⁸ The pediatrician who dismisses the patient risks that that child may never be vaccinated and that his or her parents may develop increased hesitancy. The AAP now concedes that, after all else fails (including "scheduling

³⁴ Hendrix et al., "Ethics and Childhood Vaccination Policy in the United States."

³⁵ Hough-Telford et al., "Vaccine Delays, Refusals, and Patient Dismissals."

³⁶ Edwards, Hackell, and The Committee on Infectious Diseases, "Countering Vaccine Hesitancy."

³⁷ Edwards, Hackell, and The Committee on Infectious Diseases.

³⁸ Edwards, Hackell, and The Committee on Infectious Diseases.

longer well-care visits”, discussing different vaccine schedules, and repeated assurances of the importance and safety of vaccines) it may be in the best interest of other patients to dismiss the non-vaccinating family because of the consequences from unvaccinated children sharing spaces with other patients.³⁹

Considering all sides, there are many conflicts concerning what constitutes the ethical action for the pediatrician. First, there is an apparent conflict between the autonomy of the parent and the duty of the pediatrician when the parents refuse vaccination. Second, there may be undesirable consequences for both continuing to see and dismissing, the unvaccinated child. It seems that the doctors do not have a clear moral obligation in these situations. For this reason, many have suggested that the government should step up to ensure public health, taking the burden off of the pediatricians’ shoulders.

THE ETHICS OF VACCINE MANDATES

Throughout US history, the government has used vaccine mandates to ensure a high threshold of vaccine uptake. The first vaccine mandate, which required all school children to be immunized, was put into effect in 1855 in the state of Massachusetts.⁴⁰ In 1905, the landmark case *Jacobson v. Massachusetts* upheld the state’s right to pass and enforce vaccine mandates.⁴¹ Today, all 50 states require schoolchildren to be immunized as it has been found that mandated vaccination for school aged children is an extremely effective means for ensuring herd immunity and protection from childhood illnesses.⁴² The issue lies in those who seek exemption from these mandates who do not have a medical condition or allergy that prevents them from being able to receive vaccinations. As of January 2019, 47 states allow religious exemption, and 18 states

³⁹ Edwards, Hackell, and The Committee on Infectious Diseases.

⁴⁰ “Timeline | History of Vaccines.”

⁴¹ Omer et al., “Vaccine Refusal, Mandatory Immunization, and the Risks of Vaccine-Preventable Diseases.”

⁴² Ciolli, “Mandatory School Vaccinations.”

allow philosophical exemptions (for moral or other beliefs).⁴³ Recently, one study found that “permission of religious and philosophical exemptions was associated with 2.3% and 1.9% decreases in MMR and DTaP coverage, respectively, and a 1.5% increase in both total exemptions and nonmedical exemptions, respectively.”⁴⁴ Furthermore, since 2009, the overall number of nonmedical exemptions has increased “in 12 of the 18 states that currently allow this policy.”⁴⁵ This decreased vaccine uptake is now contributing to new outbreaks, putting everyone in these communities at greater risk. Once more, the four major bioethical principles of beneficence, nonmaleficence, justice, and autonomy may be helpful in considering the ethics of vaccine mandates when nonmedical exemptions (NMEs) are not permitted. Moral theories such as utilitarianism and positions such as patient-centered deontology may also be useful.

Beginning with the principle of autonomy a clear conflict emerges. Vaccine mandates that do not permit NMEs clearly infringe on the personal autonomy of the parents in that they would be legally compelled to vaccinate their children even if they do not wish to do so for personal or religious reasons. If the principle of autonomy was the sole consideration, vaccine mandates without NMEs would appear to be unethical. However, the principle of beneficence seems to support vaccine mandates because high vaccine uptake significantly reduces the number of cases and deaths from preventable diseases.⁴⁶ Considering this principle of beneficence, vaccine mandates without NMEs are arguably ethical since they would provide the greatest probability that each child receives the benefits of vaccination while simultaneously increasing the likelihood of the greatest benefits from herd immunity. In considering the principle of justice, which values equal access to healthcare for all patients regardless of status or income, vaccine mandates would also seem to be ethical. This is because vaccine mandates

⁴³ “States With Religious and Philosophical Exemptions From School Immunization Requirements.”

⁴⁴ Shaw et al., “Immunization Mandates, Vaccination Coverage, and Exemption Rates in the United States.”

⁴⁵ Olive et al., “The State of the Antivaccine Movement in the United States.”

⁴⁶ Roush, Murphy, and Vaccine-Preventable Disease Table Working Group, “Historical Comparisons of Morbidity and Mortality for Vaccine-Preventable Diseases in the United States.”

require all school-aged children to be vaccinated which, by its very nature, ensures that all school-aged children will have equal access to these vaccines.⁴⁷ Considering the principle of nonmaleficence in the case of vaccine mandates without NMEs, more children will be vaccinated and so the rates of adverse reactions will be proportionately higher. If more children have severe reactions to a vaccine which they only received because of the vaccine mandate, this might suggest that vaccine mandates are unethical.⁴⁸ This is because the vaccine mandate would be the reason that the children were injured, if injury does indeed occur. However, in this case it can be argued that the increased number of children with severe reactions would still be incredibly small and thus, the cost would not outweigh the benefit.

Consider the conflict between bioethical principles. On the one hand, the principles of autonomy and nonmaleficence suggest that vaccine mandates without NMEs may be unethical. On the other hand, the principles of beneficence and justice seem to provide reason for thinking that these mandates are ethical. The fact that these principles conflict does not mean there is no solution to the dilemma, but it does suggest that a different approach might be helpful. Perhaps considering vaccine mandates through the moral theory of utilitarianism would be useful.

Utilitarianism is a moral theory which, like all moral theories, attempts to sort out morally right actions from the morally wrong. Utilitarianism is a consequentialist moral theory in that it considers an action to be ethical or not based on the outcome of the action.⁴⁹ In the utilitarian view, no act is intrinsically good or bad but comes to be good or bad based on its consequences. In utilitarianism, an action is considered morally good or morally right if and only if it maximizes “the good”.⁵⁰ The good is oftentimes considered pleasure or happiness and holds the same value for everyone, that is, one person’s happiness is in no way more important than

⁴⁷ Field and Caplan, “A Proposed Ethical Framework for Vaccine Mandates.”

⁴⁸ Field and Caplan.

⁴⁹ Driver, “The History of Utilitarianism.”

⁵⁰ Driver.

another's.⁵¹ Maximizing the good means that, as a result of the action, the net good in the world has been raised. In other words, according to utilitarianism, an action may not be morally right, even if it causes happiness for many, if it requires a great sacrifice from some unless it produces more net happiness (or less unhappiness) than any available alternative act.⁵²

If one applies the moral theory of utilitarianism to the ethics of vaccine mandates without NMEs, it appears to support such mandates. If the US adopts vaccine mandates without NMEs, it will ensure a higher number of children are vaccinated, it will reduce “hotspots” of unvaccinated children, particularly in areas of religious heterogeneity and in other metropolitan areas with high exemption rates, and it will increase the likelihood that herd immunity is met. In this way, outbreaks will be reduced, and more people will be protected from preventable infectious disease. However, these vaccine mandates would surely result in more children being vaccinated which means, statistically speaking, it is likely that a proportionately greater number of children may experience the negative side effects. Furthermore, parents may see this as an infringement on their autonomy and feel worse off by not being able to make this decision for their children.

Limiting the autonomy of parents in their decisions concerning how best to protect their children is no small matter. In the US, autonomy is a cornerstone of the closely-held beliefs of self-sufficiency and independence, and it is particularly cherished. Yet, it is understood that autonomy is one value among many. There may be circumstances where parents are required to sacrifice autonomy in vaccine decision-making, particularly in the cases of mild to moderate reactions. Fewer parents still may have to make a larger sacrifice if more severe side effects result. Yet, the net good would still be greatly increased; lives would be saved and suffering, avoided. The sacrifice of autonomy in parental decision making may be further supported by the reality of the extent to which parents are misinformed through internet research. A misinformed

⁵¹ Driver.

⁵² Sinnott-Armstrong, “Consequentialism.”

parent is not a safe decision-maker. Additionally, the sacrifices on behalf of those being vaccinated may be further justified by the statistical improbability of serious adverse reactions. It has been demonstrated that the rate of moderate side-effects such as fever and pain at injection site is low and the rate of severe side effects such as seizure and prolonged fever is extremely low.⁵³ It is important to note that, although statistically few, some children will have to face adverse side effects. This suffering should not be discounted. The work to improve the safety of vaccinations should be never-ending. Even so, the utilitarian approach suggests that the net good in the US from the implementation of vaccine mandates without NMEs would indicate that they are morally required. Yet, utilitarianism is not the only moral theory and considering it alone would not be prudent. To gain more perspective one may look to a major alternative to the consequentialist approach, patient-centered deontology.

Deontology differs from a consequentialist approach in that it considers each action in and of itself to be either morally right or wrong; it does not determine right or wrongness by looking at the results or consequences of the action. Patient-centered deontology is often referred to as right-centered deontology as it focuses on the rights that all people have instead of considering the morality of an action through the perspective of the agent.⁵⁴ For example, everyone has the right not to be lied to, therefore a person who lies is acting morally wrong; this is patient-centered deontology.⁵⁵ Unlike utilitarianism, deontology might consider an action to be morally wrong, even if it results in something good in a particular situation. For instance, if you lie to someone and it results in something good happening for that person, you would still be acting morally wrong because everyone has the right not to be lied to regardless of the actual consequences of the lie.

⁵³ “Update: Vaccine Side Effects, Adverse Reactions, Contraindications, and Precautions Recommendations of the Advisory Committee on Immunization Practices (ACIP).”

⁵⁴ Alexander and Moore, “Deontological Ethics.”

⁵⁵ Alexander and Moore.

A core right in patient-centered deontology is the right “against being used only as means for producing good consequences without one's consent”.⁵⁶ Considering this, if one applies patient-centered deontology to the issue of vaccine mandates without NMEs, it would seem that these mandates could be considered morally wrong. This is because these mandates would function by stopping parents from refusing vaccination for their children in order to ensure herd immunity. One can argue that this act is using these children as a means of producing good (herd immunity) without the consent of their parents. Even though these mandates would result in an overall healthier population, to force everyone to vaccinate their children would go against a core right. Therefore, the mandates would always be morally wrong no matter the good that they would produce.

Consequentialism and deontology seem to be in opposition here. However, if one applies a particular deontological position, Kant's idea of Categorical Imperatives (CI), it seems to suggest that vaccine mandates are morally right. The general patient-centered deontological view showed us that vaccines mandates are wrong because they violate the parents' autonomy by using the mandates as only a means in order to ensure public health. Kant's moral philosophy similarly opposes using people as a means only and violating autonomy, however, Kant's second and third Categorical Imperatives seem to support vaccine mandates without NMEs.

Kant's Categorical Imperatives determine moral obligations which are “objective, rationally necessary and unconditional” regardless of individual motivations or inclinations.⁵⁷ The second formulation of the CI, referred to as “The Humanity Formula” states that “we should never act in such a way that we treat humanity, whether in ourselves or

⁵⁶ Alexander and Moore.

⁵⁷ Johnson and Cureton, “Kant's Moral Philosophy.”

in others, as a means only but always as an end in itself.”⁵⁸ The Humanity Formula does not exclude using people as a means, in fact people use people as means all the time: for example, a waiter is a means to one’s meal. However, it excludes using people as only a means. One is aware that the waiter has chosen his work and thus one considers that he has the same intrinsic value and worth as anyone else. Therefore, when acquiring one’s meal, the waiter’s autonomy is not violated since he is treated as an end-in-himself.⁵⁹

Considering parents as ends-in-themselves does not necessarily mean allowing them to make whatever decisions they want for their children. In the situation of vaccine mandates, treating parents as ends-in-themselves would mean respecting that they are intrinsically valuable humans who want to keep their children healthy and safe, and that this maxim is just as important as anyone else’s maxim. Imposing vaccine mandates without NMEs would not be using these families as *only* a means since it would also be considering and following their maxim of keeping their children healthy and safe. This is the purpose of the vaccines. The parents’ decision is not overriding, just as it would not be overriding if parents chose not to educate their children. While vaccine mandates cannot be used simply to ensure public health on this view, enforcing the mandates would not necessarily be using parents or children *only* as means; the health and safety of the particular child is indeed the focus of both the parents and the health community.

The third formulation of the CI is “The Autonomy Formula” which is “the Idea of the will of every rational being as *a will that legislates universal law*.”⁶⁰ This means that one’s moral autonomy is limited to maxims which can be applied as universal law.⁶¹ The maxim in

⁵⁸ Johnson and Cureton.

⁵⁹ Johnson and Cureton.

⁶⁰ Johnson and Cureton.

⁶¹ Johnson and Cureton.

the case of parental refusal of vaccinations would be “Whenever anyone believes that vaccinations will cause harm to their child; they should refuse to vaccinate.” This maxim could not be willed into universal law because it would be self-defeating; the maxim is intended to protect the child but when willed into universal law it would weaken herd immunity which would put everyone in the community, including that child, in danger. Vaccine mandates without NMEs could be violating parents’ wishes, but not their moral autonomy.

Deontology and utilitarianism now have a common ground, since vaccines exist to ensure both public health and the health of each individual child, they are morally acceptable. Limiting autonomy is not something which should be taken lightly. Parents must and should exercise their autonomy in regard to their children’s medical decisions. Yet, it does not follow that every decision they make will be morally permissible; parents are often misinformed or ill-informed when making decisions for children. The focus concerning vaccines is to make the best possible medical decision for children who cannot decide for themselves.

SUMMARY

As the discussion above indicates, to surmise an appropriate solution would not be a matter of deciding which principles or theories are more vital but instead, weighing them in relation to one another in the specific context of vaccination and in the context of fundamental values.⁶² Just because there are conflicting sides to this debate does not mean that a final resolution is impossible. Something needs to be done. Every year, more and more parents refuse to vaccinate and every year there are larger outbreaks of vaccine-preventable diseases. Although it is often easier to do nothing when faced with a difficult situation, it is better to find some action which can push us in the right direction without compromising our moral standards.

⁶² Field and Caplan, “A Proposed Ethical Framework for Vaccine Mandates.”

In order to find a solution, there must not be a push too far in any one direction. When it comes to vaccine hesitancy at the doctor's office, pediatricians cannot vaccinate children without the consent of the parent. Neither can pediatricians simply comply with parents' anti-vax wishes without an effort to convince them of the benefits of vaccination. Furthermore, pediatricians should not hurriedly dismiss patients who refuse vaccinations. Instead the pediatrician should engage the parents with straightforward research summaries, enlightening statistics, and show real world consequences of not vaccinating. To this end, if parents display vaccine hesitancy, there can be a dedicated department which deals with educating parents on vaccines, and at least one parent could be required to attend a seminar which explains the dangers of remaining unvaccinated. It is true, however, that unvaccinated patients cannot continue to share spaces with other patients such as infants and the immunocompromised. Thus, if the parents continue to refuse after all questions are answered and as much information as possible has been shared, the pediatricians should dismiss the family with substantial prior notice. To avoid hotspots of unvaccinated children at other pediatric practices, these practices can enforce limits on how many unvaccinated patients they can take on.

Even better, the problem could be addressed before it reaches the doctor. Current religious and philosophical exemptions are far too easy to obtain; many states require only that a form be filled out and signed by the parent in order to receive an exemption.⁶³ Yet, to not allow for any NMEs could be infringing on the parents' personal autonomy, and to blanketly mandate vaccinations for all children could be considered morally wrong. However, autonomy is just one value and it is not the only one that should be considered. Nor does it necessarily outweigh every other important value. Vaccine mandates without NMEs would be considered morally right if one considers other values such as the importance of ensuring public health. On the other hand,

⁶³ "Vaccine Exemptions FAQs - NVIC."

there are things that can be done to limit the number of NMEs being used. In order to counter the growing number of parents seeking exemptions one needs to make such exemptions more difficult to obtain. Some possible solutions might be to (1) require parents to first take a class on vaccination in order to be fully educated on the risks of remaining unvaccinated, (2) to make exemptions temporary so that the parent must reapply every year, and (3) to require a signature from the school stating that the school understands that the child poses some threat to other students. In these ways, perhaps these changes will act as a sufficient deterrent to stop people from making the decision to not vaccinate their children too lightly and without the proper time spent learning about vaccines and the dangers for their children and others if their children are unvaccinated.

CONCLUSION

In the US today, people are lucky to live in a world in which vaccines are readily available. We enjoy a blissful ignorance of what it was like for our grandparents and all the generations before them who had no choice but to fear horribly painful and dangerous diseases such as polio or tetanus. We have vaccines to thank for this freedom from fear and disease. The decision parents make to vaccinate their children is a decision of protection and love. The decision parents make to refuse vaccinations for their children is equally a decision of protection and love. It is important to understand that all parents want the same for their children: health and happiness. Unfortunately, today, some parents decide not to vaccinate their children based on widely disseminated misinformation and a mistrust of medical professionals. To compound the problem, these parents have not lived in a world where the dangers of vaccine-preventable diseases are highly visible. No matter which moral theories and ethical principles one adheres to, the health of children is a shared goal and, to achieve this, increased vaccine uptake is crucial.

WORKS CITED

- Alexander, Larry, and Michael Moore. "Deontological Ethics." In *The Stanford Encyclopedia of Philosophy*, edited by Edward N. Zalta, Winter 2016. Metaphysics Research Lab, Stanford University, 2016. <https://plato.stanford.edu/archives/win2016/entries/ethics-deontological/>.
- Arneson, Richard J. "The Principle of Fairness and Free-Rider Problems." *Ethics* 92, no. 4 (July 1982): 616–33. <https://doi.org/10.1086/292379>.
- Childress, J, and T Beauchamp. "Principles of Biomedical Ethics." *New York: Oxford University Press* 7th Edition (2013).
- Ciulli, Anthony. "Mandatory School Vaccinations: The Role of Tort Law." *The Yale Journal of Biology and Medicine* 81, no. 3 (September 2008): 129–37.
- Davies, P., S. Chapman, and J. Leask. "Antivaccination Activists on the World Wide Web." *Archives of Disease in Childhood* 87, no. 1 (July 1, 2002): 22–25. <https://doi.org/10.1136/adc.87.1.22>.
- Diekema, Douglas S. "Responding to Parental Refusals of Immunization of Children." *Pediatrics* 115, no. 5 (May 1, 2005): 1428–31. <https://doi.org/10.1542/peds.2005-0316>.
- Driver, Julia. "The History of Utilitarianism." In *The Stanford Encyclopedia of Philosophy*, edited by Edward N. Zalta, Winter 2014. Metaphysics Research Lab, Stanford University, 2014. <https://plato.stanford.edu/archives/win2014/entries/utilitarianism-history/>.
- Edwards, Kathryn M., Jesse M. Hackell, and The Committee on Practice and Ambulatory Medicine The Committee on Infectious Diseases. "Countering Vaccine Hesitancy." *American Academy of Pediatrics* 138, no. 3 (September 1, 2016): e20162146. <https://doi.org/10.1542/peds.2016-2146>.
- Field, Robert I., and Arthur L. Caplan. "A Proposed Ethical Framework for Vaccine Mandates: Competing Values and the Case of HPV." *Kennedy Institute of Ethics Journal* 18, no. 2 (2008): 111–24. <https://doi.org/10.1353/ken.0.0011>.
- Hendrix, Kristin S., Lynne A. Sturm, Gregory D. Zimet, and Eric M. Meslin. "Ethics and Childhood Vaccination Policy in the United States." *American Journal of Public Health* 106, no. 2 (February 2016): 273–78. <https://doi.org/10.2105/AJPH.2015.302952>.
- Hough-Telford, Catherine, David W. Kimberlin, Inmaculada Aban, William P. Hitchens, Jon Almquist, Richard Kratz, and Karen G. O'Connor. "Vaccine Delays, Refusals, and Patient Dismissals: A Survey of Pediatricians." *Pediatrics* 138, no. 3 (September 1, 2016): e20162127. <https://doi.org/10.1542/peds.2016-2127>.
- "How Do Vaccines Work? | NIH: National Institute of Allergy and Infectious Diseases." niaid.nih.gov. Accessed February 4, 2019. <https://www.niaid.nih.gov/research/how-vaccines-work>.
- Ibuka, Yoko, Meng Li, Jeffrey Vietri, Gretchen B. Chapman, and Alison P. Galvani. "Free-Riding Behavior in Vaccination Decisions: An Experimental Study." *PLoS ONE* 9, no. 1 (January 24, 2014). <https://doi.org/10.1371/journal.pone.0087164>.
- Jarrett, Caitlin, Rose Wilson, Maureen O'Leary, Elisabeth Eckersberger, and Heidi J. Larson. "Strategies for Addressing Vaccine Hesitancy – A Systematic Review." *Vaccine* 33, no. 34 (August 2015): 4180–90. <https://doi.org/10.1016/j.vaccine.2015.04.040>.
- Johnson, Robert, and Adam Cureton. "Kant's Moral Philosophy." In *The Stanford Encyclopedia of Philosophy*, edited by Edward N. Zalta, Spring 2019. Metaphysics Research Lab, Stanford University, 2019. <https://plato.stanford.edu/archives/spr2019/entries/kant-moral/>.
- Licciardone, John C, Peggy Smith-Barbaro, and Samuel T Coleridge. "Use of the Internet as a Resource for Consumer Health Information: Results of the Second Osteopathic Survey of

- Health Care in America (OSTEOSURV-II).” *Journal of Medical Internet Research* 3, no. 4 (December 26, 2001). <https://doi.org/10.2196/jmir.3.4.e31>.
- McKee, Chephra, and Kristin Bohannon. “Exploring the Reasons Behind Parental Refusal of Vaccines.” *The Journal of Pediatric Pharmacology and Therapeutics* 21, no. 2 (April 2016): 104–9. <https://doi.org/10.5863/1551-6776-21.2.104>.
- “Measles | Cases and Outbreaks | CDC,” February 1, 2019. <https://www.cdc.gov/measles/cases-outbreaks.html>.
- Olive, Jacqueline K., Peter J. Hotez, Ashish Damania, and Melissa S. Nolan. “The State of the Antivaccine Movement in the United States: A Focused Examination of Nonmedical Exemptions in States and Counties.” *PLOS Medicine* 15, no. 6 (June 12, 2018): e1002578. <https://doi.org/10.1371/journal.pmed.1002578>.
- Omer, Saad B., Daniel A. Salmon, Walter A. Orenstein, M. Patricia deHart, and Neal Halsey. “Vaccine Refusal, Mandatory Immunization, and the Risks of Vaccine-Preventable Diseases.” *The New England Journal of Medicine* 360, no. 19 (May 7, 2009): 1981–88. <https://doi.org/10.1056/NEJMsa0806477>.
- “PAHO/WHO | Measles Elimination in the Americas.” Pan American Health Organization / World Health Organization, September 27, 2016. https://www.paho.org/hq/index.php?option=com_content&view=article&id=12526:measles-elimination-in-the-americas&Itemid=40721&lang=en.
- Phadke, Varun K., Robert A. Bednarczyk, Daniel A. Salmon, and Saad B. Omer. “Association Between Vaccine Refusal and Vaccine-Preventable Diseases in the United States.” *JAMA* 315, no. 11 (March 15, 2016): 1149–58. <https://doi.org/10.1001/jama.2016.1353>.
- Rao, T. S. Sathyanarayana, and Chittaranjan Andrade. “The MMR Vaccine and Autism: Sensation, Refutation, Retraction, and Fraud.” *Indian Journal of Psychiatry* 53, no. 2 (2011): 95–96. <https://doi.org/10.4103/0019-5545.82529>.
- Roush, Sandra W., Trudy V. Murphy, and Vaccine-Preventable Disease Table Working Group. “Historical Comparisons of Morbidity and Mortality for Vaccine-Preventable Diseases in the United States.” *JAMA* 298, no. 18 (November 14, 2007): 2155–63. <https://doi.org/10.1001/jama.298.18.2155>.
- Rucoba, Ruben J. “How to Address Vaccine Hesitancy: New AAP Report Says Dismissal a Last Resort.” *AAP News*, January 23, 2019. <http://www.aappublications.org/news/2016/08/29/VaccineHesitancy082916>.
- Shaw, Jana, Emily M Mader, Brittany E Bennett, Olesya K Vernyi-Kellogg, Y Tony Yang, and Christopher P Morley. “Immunization Mandates, Vaccination Coverage, and Exemption Rates in the United States.” *Open Forum Infectious Diseases* 5, no. 6 (June 2, 2018). <https://doi.org/10.1093/ofid/ofy130>.
- Sinnott-Armstrong, Walter. “Consequentialism.” In *The Stanford Encyclopedia of Philosophy*, edited by Edward N. Zalta, Winter 2015. Metaphysics Research Lab, Stanford University, 2015. <https://plato.stanford.edu/archives/win2015/entries/consequentialism/>.
- “States With Religious and Philosophical Exemptions From School Immunization Requirements.” NCSL.org. Accessed February 24, 2019. <http://www.ncsl.org/research/health/school-immunization-exemption-state-laws.aspx>.
- “Ten Threats to Global Health in 2019.” www.who.int. Accessed February 4, 2019. <https://www.who.int/emergencies/ten-threats-to-global-health-in-2019>.
- “Timeline | History of Vaccines.” HistoryOfVaccines.org. Accessed February 24, 2019. https://www.historyofvaccines.org/timeline#EVT_69.
- “Update: Vaccine Side Effects, Adverse Reactions, Contraindications, and Precautions Recommendations of the Advisory Committee on Immunization Practices (ACIP).”

- Accessed February 25, 2019.
<https://www.cdc.gov/mmwr/preview/mmwrhtml/00046738.htm>.
- “Vaccine Exemptions FAQs - NVIC.” National Vaccine Information Center (NVIC). Accessed February 25, 2019. <https://www.nvic.org/faqs/vaccine-exemptions.aspx>.
- “Vaccines Do Not Cause Autism Concerns | Vaccine Safety | CDC,” February 6, 2019. <https://www.cdc.gov/vaccinesafety/concerns/autism.html>.
- “Vaccines: Vac-Gen/Side Effects.” CDC.gov, July 12, 2018. <https://www.cdc.gov/vaccines/vac-gen/side-effects.htm>.
- Varelius, Jukka. “The Value of Autonomy in Medical Ethics.” *Medicine, Health Care, and Philosophy* 9, no. 3 (December 2006): 377–88. <https://doi.org/10.1007/s11019-006-9000-z>.

Acknowledgements:

I would like to thank my thesis advisor, Jonelle DePetro, for her support, editing, and advice, and Christina Purdy, for her proofreading.