

VACCINATION ALTERCATION: THE CONSTITUTIONALITY OF MANDATORY INFLUENZA VACCINATION FOR STUDENTS

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I. INTRODUCTION

Vaccination is a crucial part of preventing infectious diseases. When injected with dead or weakened antigens (versions of the disease), the body produces antibodies capable of fighting that particular disease. Although the level of antibodies decreases once an infection is overcome, the body retains memory cells. If the virus or bacterium enters the body again, the memory cells can quickly generate antibodies, which can destroy the viral or bacterial cells before they produce the disease.

Mandatory flu vaccination has become a contentious issue in recent years. Like other vaccines, it offers resistance against a dangerous disease. However, evolving strains of influenza require recurring vaccination and the vaccines are not always effective. Individuals have historically been free to choose whether or not to receive the flu vaccine. Nonetheless, mandatory flu vaccination regulations are becoming more common in employment settings such as in healthcare. Several states have made flu vaccines mandatory for young children in public daycare. Although these regulations have been met with opposition, they have been routinely upheld by the courts. Because no clear boundary for mandatory flu regulations has been established, it is not clear whether mandatory flu vaccination for students in elementary school through college would be upheld as constitutional.

This Note will examine mandatory vaccination, with particular attention to mandatory flu vaccination for students in elementary school, middle school, high school, and college. The first part of this Note will discuss the background of mandatory vaccination. This includes the public policy and ethical arguments for and against mandatory vaccination, the landmark case of *Jacobson v. Massachusetts*, and statutes and case law since that decision. Next, this Note will compare influenza to other vaccine-preventable illnesses. This Note will then examine existing mandatory flu vaccination policies for healthcare workers, employees, and young students. Finally, this Note will examine the implications of case law, statutes, and various ethical and public policy arguments for mandatory influenza requirements for students in elementary school, middle school, high school, and college. This Note will not address the COVID-19 pandemic nor the COVID-19 vaccination.

II. BACKGROUND OF MANDATORY VACCINATION

Although it is proven that vaccines are generally effective at preventing the spread of infectious diseases, mandatory vaccination requirements have been the subject of contentious legal battles for nearly a century. Often, this is rooted in the tension between individual autonomy and public health concerns. While individuals have certain rights to bodily autonomy, there are situations in which sufficiently important public health goals overcome this autonomy.

A. PUBLIC POLICY ARGUMENTS FOR AND AGAINST MANDATORY VACCINATION

1. Arguments for Mandatory Vaccination

Several public policy arguments are often made in favor of mandatory vaccination. First, vaccines are highly effective at preventing infections in individuals who receive the vaccines. Although no vaccine is 100 percent effective, most vaccines that children receive range from 85-95 percent effective.¹ Even though some individuals might not respond to the vaccine for individual reasons, these individuals can still be protected because the high efficacy of vaccines can create herd immunity, discussed below.²

Second, vaccines are safe. This is illustrated by statistics from the National Vaccine Injury Compensation Program (“NVICP”). The NVICP compensates individuals who have been injured by vaccination.³ It does have limits. It only covers certain vaccines and injuries, and claims must be filed within a particular time frame that is designated by the claimed vaccine and injury.⁴ However, all childhood vaccines are covered, as well as the influenza vaccine. Although this is not a perfect metric for evaluating the safety of vaccines, it is based on peer-reviewed studies of side effects of routinely administered vaccines, thus making the NVICP a reliable measure of vaccine safety. At first glance, the statistic that the program has paid out roughly \$4.5 billion over the life of the program might suggest that vaccines are incredibly unsafe.⁵ However, this could not be further from the truth. Between 2006 and 2019, over 4 billion doses of vaccines were administered in the United States.⁶ However, only 5820 people suffered a compensable vaccine-related injury, which means that “for every 1 million doses of vaccine that were distributed, approximately 1 individual was compensated.”⁷ In addition, roughly 60 percent of compensations awards from the NVICP are produced

¹ *Six Common Misconceptions About Immunization*, WORLD HEALTH ORG., https://www.who.int/vaccine_safety/initiative/detection/immunization_misconceptions/en/index2.html (last visited Dec. 19, 2019).

² *See id.*

³ *National Vaccine Injury Compensation Program Data Report*, HEALTH RES. & SERVS. ADMIN. 1 (2021), <https://www.hrsa.gov/sites/default/files/hrsa/vaccine-compensation/data/data-statistics-report.pdf>.

⁴ *See Vaccine Injury Table*, HEALTH RES. & SERVS. ADMIN., <https://www.hrsa.gov/sites/default/files/hrsa/vaccine-compensation/vaccine-injury-table.pdf> (last visited Dec. 19, 2019).

⁵ *National Vaccine Injury Compensation Program Data Report*, *supra* note 3, at 1.

⁶ *Id.*

⁷ *Id.*

through settlements.⁸ This means that for 60 percent of compensation awards, there has been no finding that the vaccine caused the alleged injury.⁹

In recent years, misinformation about vaccines and autism has spread rapidly throughout the country, distorting the conversation surrounding vaccination. In 1998, Andrew Wakefield published a study claiming that there could be a link between the MMR vaccine and developmental regression (autism).¹⁰ In 2004, ten of the article's twelve co-authors retracted the interpretation of the data, which they stated were insufficient to establish a causal link. In 2010, the journal editors retracted the article because it had misrepresented its methods. Not only did the "study" involve just twelve children, a tiny sample size,¹¹ but, the cases were selected by Wakefield and were not consecutive, as he had reported.¹² Additionally, Wakefield's study was funded by attorneys working for parents who were suing vaccine manufacturers.¹³ The original article provoked epidemiologists to conduct many subsequent studies, which all refuted that vaccines cause autism.¹⁴ For this reason, the NVICP does not recognize autism as a vaccine-related injury and does not compensate individuals for allegedly developing autism as a result of vaccination.¹⁵ Unfortunately, Wakefield's study contributed to a public fear of vaccines, and this misinformation is still used by individuals to justify refusing vaccination.

Third, vaccination is instrumental in herd immunity. Herd immunity is the protection that extends beyond vaccinated individuals to unvaccinated individuals.¹⁶ As more individuals get vaccinations against a particular virus, the rate of infection goes down in unvaccinated members of the population as well.¹⁷ Thus, vaccination of individuals not directly at risk for a disease can provide crucial protection for both themselves and at-risk members of the population, such as individuals who cannot be safely vaccinated (young children, people for whom vaccination is medically contraindicated, etc.).

Fourth, there are economic benefits derived from vaccination. For example, one study found that a catch-up and routine vaccination program for adolescents with the quadrivalent meningococcal vaccine saved the United States \$551 million in direct costs (e.g., costs of hospitalization, medication, etc.)¹⁸ and \$920 million in indirect costs (e.g., costs of

⁸ *Id.*

⁹ *Id.*

¹⁰ Andrew J. Wakefield et al., *Ileal-Lymphoid-Nodular Hyperplasia, Non-Specific Colitis, and Pervasive Developmental Disorder in Children*, 351 *LANCET* 637, 641 (1998) (study was retracted).

¹¹ Laura Eggerston, *Lancet Retracts 12-Year-Old Article Linking Autism to MMR Vaccines*, 182 *CAN. MED. ASS'N J.* E199, E199 (2010).

¹² *Id.*

¹³ *Id.*

¹⁴ Luke E. Taylor, Amy L. Swerdfeger & Guy D. Eslick, *Vaccines Are Not Associated with Autism: An Evidence-Based Meta-Analysis of Case-Control and Cohort Studies*, 32 *VACCINE* 3623, 3628 (2014) (noting that while all studies refuted that vaccines directly cause autism, one study suggested that autism is caused by many factors, and mercury, a preservative in some vaccines in the form of thimerosal, could be a contributing factor).

¹⁵ See Vaccine Injury Table, *supra* note 4.

¹⁶ Tae Hyong Kim et al., *Vaccine Herd Effect*, 43 *SCANDINAVIAN J. INFECTIOUS DISEASES* 683, 683 (2011).

¹⁷ *Id.*

¹⁸ Ismael R. Ortega-Sanchez et al., *Economics of an Adolescent Meningococcal Conjugate Vaccination Catch-up Campaign in the United States*, 46 *CLINICAL INFECTIOUS DISEASES* 1, 1 (2008).

permanent disabilities and premature deaths).¹⁹ Additionally, the childhood pneumococcal vaccine saved the United States roughly \$112,000 per life saved, as it prevented about 38,000 pneumococcal infections during the first five years that the vaccine was used.²⁰ With herd immunity considered, the vaccine likely prevented 109,000 cases of the infection.²¹ Vaccines also prevent costs associated with productivity losses and medical costs.²² These benefits are not only economic but also medical and personal. Basically, it is good for both society and individuals when people are sick less often and survive for longer periods of time.

2. Arguments Against Mandatory Vaccination

Several public policy arguments are made against mandatory vaccination. First, some individuals argue that mandatory vaccination infringes on individual liberty (an argument that is explored in the section below on constitutional law). This liberty objection is reinforced by the claim that not all vaccines are as safe as proponents of vaccines suggest and are not always effective. While some vaccines have caused problems, vaccines have been subject to increased oversight over the last decade.

Vaccines are generally effective, although none produce immunity in every person who is vaccinated. Moreover, some vaccines have declined in efficacy over time. For example, the pertussis vaccine used to be incredibly effective (one study reported a reduction from 1214 cases to sixty-four cases), but adult pertussis has recently reemerged and, consequently, more children are dying despite being vaccinated.²³ This is likely because children are no longer exposed to the disease naturally in the household and the vaccine is less effective against unique strains of the disease.²⁴ It could also be attributed to increased detection; As better testing methods are developed, more cases of illness and death are being linked to pertussis that previously would have been ascribed to another cause.²⁵ Although a booster shot given during adulthood seems to counteract this declining efficacy, more data are needed before concluding that it will save children from infection.²⁶

Second, vaccines are not always cost effective for the physicians who provide them. Today, vaccines cost more than they used to. Some carry a higher price because they are protected by a patent and because sophisticated biological technology is involved.²⁷ Manufacturers must also pay for the costs and delays of regulatory oversight.²⁸ While the average cost of vaccinating a child was one hundred dollars in 1986, today it is several thousand dollars.²⁹ Some physicians no longer offer certain vaccines because

¹⁹ *Id.*; see also Meningococcal Vaccines: WHO Position Paper, November 2011, 47 WKLY. EPIDEMIOLOGICAL REC. 521, 536 (2011).

²⁰ Kim et al., *supra* note 16, at 683.

²¹ *Id.*

²² Ortega-Sanchez et al., *supra* note 18, at 7.

²³ Kim et al., *supra* note 16, at 684.

²⁴ *Id.*

²⁵ *Id.* at 684–85.

²⁶ *Id.* at 685.

²⁷ Vanessa Rémy, York Zöllner & Ulrike Heckmann, *Vaccination: The Cornerstone of an Efficient Healthcare System*, 3 J. MKT. ACCESS & HEALTH POL'Y 3402, 3405 (2015).

²⁸ *Id.*

²⁹ See *CDC Vaccine Price List*, CTRS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/vaccines/programs/vfc/awardees/vaccine-management/price-list/index.html> (last updated Sept. 1, 2020).

insurers will sometimes inadequately reimburse the full cost of some vaccines.³⁰

Third, opponents of mandatory vaccination might also argue that vaccination should be encouraged but not required, as there are other, more voluntary means to achieve high rates of vaccination. For example, having people write down the date and time that they plan to get vaccinated has been correlated with a higher rate of receiving the vaccination.³¹ Benefits can also be offered: in Australia, families who do vaccinate their children are eligible for a tax benefit that is denied to those who fail to vaccinate.³² While it is not necessary to exhaust all other options first, individual autonomy should be valued and other avenues should be thoroughly explored.

Fourth, the financial benefits to vaccine manufacturers from mandatory programs leads to public corruption or to great potential for corruption. For example, Merck & Co., the manufacturer of the human papillomavirus vaccine (“HPV”) (which can reduce the risk of cervical cancer and genital warts), engaged in direct lobbying of legislators drafting bills to mandate the vaccine for students and drafted bills themselves.³³ Merck & Co. also searched for sponsors for the bills, marketed the vaccine directly to physicians, and donated large sums of money to interest groups.³⁴ Opponents thus claim that mandatory vaccine requirements stem from corrupted public officials and healthcare professionals rather than an effort to serve individuals’ best interests.

B. ETHICAL ARGUMENTS FOR AND AGAINST MANDATORY VACCINATION

Some ethicists argue that individuals have a moral obligation to be vaccinated because of herd immunity. Herd immunity is both a collective good—it can only be achieved through many people working together—and a public good—even if individuals do not contribute to herd immunity, they still benefit from it.³⁵ This creates an interesting problem: Why should individuals be forced to get vaccinated if their personal choice likely will not impact herd immunity? One individual’s refusal to vaccinate will not destroy herd immunity. Similarly, one individual’s choice to vaccinate will not create herd immunity. Different ethical theories have different ways of addressing this tension.

³⁰ Elisabeth Rosenthal, *The Price of Prevention: Vaccine Costs Are Soaring*, N.Y. TIMES (July 2, 2014), <https://www.nytimes.com/2014/07/03/health/Vaccine-Costs-Soaring-Paying-Till-It-Hurts.html>.

³¹ Alex Dubov & Connie Phung, *Nudges or Mandates? The Ethics of Mandatory Flu Vaccination*, 33 VACCINE 2530, 2533 (2015).

³² *Id.*

³³ Michelle M. Mello, Sara Abiola & James Colgrove, *Pharmaceutical Companies’ Role in State Vaccination Policymaking: The Case of Human Papillomavirus Vaccination*, 102 AM. J. PUBLIC HEALTH 893, 893–95 (2012).

³⁴ *Id.* at 895–96.

³⁵ Alberto Giubilini, Thomas Douglas & Julian Savulescu, *The Moral Obligation to Be Vaccinated: Utilitarianism, Contractualism, and Collective Easy Rescue*, 21 MED. HEALTH CARE & PHIL. 547, 548 (2018).

1. Utilitarianism

Under utilitarianism, individuals should act in such a way to maximize goodness.³⁶ Classic Utilitarians, such as John Stuart Mill, took goodness to mean pleasure or utility.³⁷ His harm principle states that, “the only purpose for which power can be rightfully exercised over any member of a civilized community, against his will, is to prevent harm to others.”³⁸ If this is accepted, then there is a strong case for a moral obligation to be vaccinated. By getting vaccinated, individuals are less likely to contract the disease, thus preventing transmission of the disease to others and in turn preventing the potentially deadly consequences of the disease. Additionally, vaccination is a safe procedure, so it entails little risk of harm. Thus, mandatory vaccination is moral because it minimizes the likelihood of causing great harm to others with minimal cost to the individual.

Because utilitarianism requires weighing the risk of potential harm from vaccination against its potential benefits, the risks and benefits of vaccination must be weighed objectively. There are several fallacious arguments that are often raised in opposition to mandatory vaccination which obscure the analysis. First, some individuals argue that vaccines should be avoided because they entail risks. This argument is flawed because it creates the impression that abstention does not entail risks as well. On the contrary, abstaining from vaccination creates the risk of contracting a dangerous vaccine-preventable disease.³⁹ Opponents of vaccination may respond that parents are concerned about being the cause of possible harm to their children. In contrast, if they choose not to vaccinate their children, the subsequent harm is a product of nature.⁴⁰ However, this distinction does not change the risk-benefit analysis. Because parents have a duty to act in the best interests of their children, it should not matter whether the harm came from their action or inaction. The source of the harm does not change the probability or the magnitude of the harm, so this argument is unconvincing.

However, proponents of mandatory vaccination must still address the aforementioned tension. Proponents of mandatory vaccination would likely argue that under utilitarianism, even if herd immunity will likely not be altered by one individual's choice about whether to receive a vaccination, a mandatory flu vaccine regulation would still be justified. Assuming that the disease being vaccinated against is serious and potentially deadly, and assuming that the vaccine is quite safe, receiving the vaccine will still generate more utility and less harm than not receiving the vaccine, regardless of herd immunity. Vaccination will make it less likely that the individual will contract the disease and subsequently suffer its harms, and, in turn, makes it less likely that the individual will spread the disease to others, thus preventing others from being harmed. Despite the fact that an individual's choice to vaccinate or not vaccinate may not alter herd immunity, this does not prevent the individual from harming others by transmitting the disease.

³⁶ See Julia Driver, *The History of Utilitarianism*, STAN. ENCYCLOPEDIA PHIL. (Sept. 22, 2014), <https://plato.stanford.edu/entries/utilitarianism-history>.

³⁷ *Id.*

³⁸ JOHN STUART MILL, *ON LIBERTY* 22 (Cambridge Univ. Press 2011) (1859).

³⁹ See Angus Dawson, *The Moral Case for the Routine Vaccination of Children in Developed and Developing Countries*, 30 HEALTH AFFS. 1029, 1030 (2011).

⁴⁰ *Id.*

Herd immunity does not guarantee that all other people are immune, so it is still possible to transmit the disease to others while herd immunity exists. Even without an effect on herd immunity, the morally correct act is to receive the vaccination because of the benefits of vaccination.

While utilitarianism seems to support mandatory vaccination, there is another possible reading of Mill's ethical theory which cuts against mandatory vaccination. Because individuals have freedom to act so long as their acts do not harm others, vaccines should not be mandatory because they might cause harm to the individual getting vaccinated. Instead of framing the policy as a constraint on individuals who could spread the disease to others, this view frames the policy as a constraint on institutions who force individuals to get vaccinated, thereby harming those individuals.

Although this reading is possible, it is not plausible. Nearly all action and inaction entail risks. For example, sitting on the couch for too long can lead to heart disease, walking down the street could lead to being hit by a car, etc. If all of these risks were taken to be equal, this would render Mill's theory useless. We would be stuck without guidance. More plausibly, Mill believes we should be free to do as we please so long as our actions do not pose a significant risk of harm to others. This is a consistent reading because Mill is a proponent of utilitarianism—an ethical system that determines which actions are morally right by calculating which actions maximize pleasure or utility and minimize pain or harm. This reading gives us the ability to differentiate between courses of action. If all actions carry some risk of harm to others, we should choose the one that is less significant, as that is the moral action under utilitarianism. Both abstaining from and receiving vaccines carry risks. The likelihood of risk in vaccination is small, and the side effects are often not severe. Further, the harm is only posed to the individual getting vaccinated. In contrast, the likelihood of risk in not getting vaccinated is large, and the consequences can be devastating. Further, the harm is not only posed to the individual choosing to abstain from vaccination. Instead, the harm is posed to many other people who are at risk of catching the disease, as the individual choosing not to be vaccinated not only risks direct transmission to others but also risks undermining herd immunity (or, at minimum, being a free rider if herd immunity is left intact). It follows that under Mill's theory, mandatory vaccination should be preferred.

2. Deontology

Another ethical theory that can be used to evaluate mandatory vaccination is deontology, which is an ethical system that focuses on moral duties.⁴¹ While there are many forms of deontology, one of the most well-known is Immanuel Kant's categorical imperative.⁴² One of the tenets of this theory is that humans are ends in themselves, and individuals should not be treated as mere means to an end.⁴³ This can cut several ways when examining

⁴¹ See Larry Alexander & Michael Moore, *Deontological Ethics*, STAN. ENCYCLOPEDIA PHIL. (Oct. 30, 2020), <https://plato.stanford.edu/entries/ethics-deontological/>.

⁴² *Id.*

⁴³ IMMANUEL KANT, *GROUNDWORK FOR THE METAPHYSICS OF MORALS* 45 (Allen W. Wood ed. & trans., Yale Univ. Press 2002) (1785).

mandatory vaccination. It can cut against vaccination, since many individuals promote mandatory vaccination as a means to achieve herd immunity. Opponents of mandatory vaccination would likely argue that no one cares whether a stranger gets vaccinated. Instead, we care that a stranger is vaccinated only insofar as it boosts herd immunity, which helps us avoid getting sick. This might be viewing that stranger merely as a means to the end of herd immunity and our own personal avoidance of sickness, which would violate Kant's categorical imperative and thus be unethical.

However, it is not convincing that mandatory vaccination would be using individuals as a mere means under Kant's categorical imperative. When I drive down the highway, I am implicitly hoping that the individuals around me will continue to drive safely. This is generally because I do not want to get hurt or get into an accident. I am not consciously considering the safety of those around me. However, it would be incorrect to state that I do not care about the safety of those around me. If I were asked, I would respond that I hope that they are safe as well. Although individuals are more concerned with themselves than with others, this does not mean that they are apathetic to the welfare of others. Herd immunity is good not just for me as an individual, but for everyone as individuals. Thus, mandatory vaccination is not a violation of the mere means tenet of Kant's categorical imperative and is morally permissible.

C. JACOBSON V. MASSACHUSETTS

The seminal case for mandatory vaccination is *Jacobson v. Massachusetts*. In 1902, Massachusetts passed a law mandating that all residents receive the smallpox vaccination.⁴⁴ Henning Jacobson, a Massachusetts resident, claimed that he and his son suffered adverse reactions to earlier vaccinations,⁴⁵ and Jacobson resisted the vaccination on several grounds. First, he argued that it was an invasion of his liberty to mandate vaccines with a punishment of fines or imprisonment for failure to comply.⁴⁶ Second, he argued that mandatory vaccination laws were "unreasonable, arbitrary and oppressive" and thus an intrusion on his liberty to choose how to stay healthy.⁴⁷ He supported his argument by stating that "vaccination 'quite often' caused serious and permanent injury" to the individual who was vaccinated, that sometimes vaccines killed the individual who was vaccinated, and that individuals could not determine if a vaccine would cause an injury or death in a particular case.⁴⁸

The Supreme Court upheld the Massachusetts mandatory vaccination statute in a 7-2 decision.⁴⁹ The Court stressed that some infringements on individual liberty were necessary in order to secure the common good of the community. Justice Harlan powerfully wrote,

⁴⁴ Wendy K. Mariner, George J. Annas & Leonard H. Glantz, *Jacobson v. Massachusetts: It's Not Your Great-Great-Grandfather's Public Health Law*, 95 AM. J. PUB. HEALTH 581, 582 (2005).

⁴⁵ *Id.*

⁴⁶ *Jacobson v. Massachusetts*, 197 U.S. 11, 26 (1905).

⁴⁷ *Id.*

⁴⁸ *Id.* at 36.

⁴⁹ *See id.* at 39.

But the liberty secured by the Constitution of the United States to every person within its jurisdiction does not import an absolute right in each person to be, at all times and in all circumstances, wholly freed from restraint. There are manifold restraints to which every person is necessarily subject for the common good.⁵⁰

Furthermore, the mandatory vaccination statute was enacted because at the time, there was a smallpox epidemic.⁵¹ The Court additionally held that Massachusetts was acting within its police power in enacting this law to protect its citizens against the smallpox epidemic.⁵² The danger to the community outweighed individuals' freedom to refuse the smallpox vaccination. Thus, the statute constitutionally restricted individuals' freedom.

The Court held that the statute was not "unreasonable, arbitrary, and oppressive" because the legislature had determined that vaccination was a reasonable way to stop the smallpox epidemic. The legislature's determination was consistent with both public opinion and the opinion of many medical professionals. The Court stressed that it was the legislature's responsibility, not the Court's, to figure out how public health goals should be achieved. The Court would only be able to intervene if the determination was not related to the goals it purports to serve, or if it was a clear violation of the Constitution.⁵³ The Court held that neither of these concerns were present in this case.⁵⁴

The Court acknowledged that the Massachusetts mandatory vaccination statute was not limitless. In situations which it is either clear or reasonably certain that vaccinating an individual will lead to serious health consequences or death, that individual should not be required to receive the vaccination.⁵⁵ This in essence creates a medical exemption. Justice Harlan stressed that this was consistent with the text of the statute, so it was not unreasonable to believe that the legislature intended the statute to be interpreted as such. However, the Court held that this medical exemption did not cover Jacobson, as he failed to show that receiving the vaccination would lead to serious health consequences or death.⁵⁶ Merely alleging that he and his son suffered adverse reactions to previous vaccinations was insufficient to attain the medical exemption. If merely alleging anxiety about the potential consequences of vaccines would be sufficient for exemption, then this would "strip the legislative department of its function to care for the public health and the public safety when endangered by the epidemics of disease."⁵⁷ If anyone could refuse on this basis, then it would completely undermine the authority of the legislature to enforce vaccination, thereby undermining the statute itself.

⁵⁰ *Id.* at 26.

⁵¹ *Id.* at 30–31.

⁵² *Id.* at 24–25, 29, 38.

⁵³ *Id.* at 31.

⁵⁴ *Id.*

⁵⁵ *Id.* at 39.

⁵⁶ *Id.*

⁵⁷ *Id.* at 37.

Jacobson was decided in the same year as another infamous Supreme Court case, *Lochner v. New York*.⁵⁸ In *Lochner*, the Court held that a state law limiting the number of hours bakers could work per day and per week was unconstitutional, as it infringed on individuals' freedom of contract.⁵⁹ Even though New York argued that this law was enacted to protect the health of bakers,⁶⁰ the Court viewed it as impermissible. In the subsequent *Lochner* era, the Court went on to invalidate many economic state statutes, affording the statutes little deference, irrespective of their purpose, because they infringed on the right to contract.⁶¹ *Jacobson's* holding becomes even more profound when viewed in this historical context.

D. SUBSEQUENT CASES

In *Zucht v. King*, the plaintiff was not allowed to go to school because she violated the mandatory vaccination requirements in Texas.⁶² The Supreme Court dismissed the plaintiff's writ of error because, pursuant to *Jacobson*, the Texas statute was a valid exercise of police power.⁶³ The Court drew additional support from *Lieberman v. Van De Carr*, 199 U.S. 552, which held that "the municipality may vest in its officials broad discretion in matters affecting the application and enforcement of a health law."⁶⁴ Referencing other Supreme Court precedent, the Court also held that "in the exercise of the police power reasonable classification may be freely applied and that regulation is not violative of the equal protection clause merely because it is not all-embracing"; thus, the Texas statute did not violate the Equal Protection clause because it only mandated vaccines for children.⁶⁵

Phillips v. City of New York involved a New York law that required all students who attend New York's public schools to be vaccinated,⁶⁶ but allowed students to be excused based on medical and religious grounds.⁶⁷ The plaintiffs' children had religious exemptions, but they were unable to go to school during a chicken pox outbreak.⁶⁸ The court followed *Jacobson* in holding that the mandatory vaccination regulation was within New York's police power and thus not a violation of the Fourteenth Amendment.⁶⁹ Further, the court held that the regulation was not an unconstitutional violation of the plaintiffs' free exercise of religion. While *Jacobson* does not control on the latter issue, the court relied on *Prince v. Massachusetts*, 321 U.S. 158, 166-67 (1944), in which the Supreme Court stated in dicta that parents "cannot claim freedom from compulsory vaccination for the child more than for himself on religious grounds. The right to practice religion

⁵⁸ Edward P. Richards III, *Evolving Viruses and Stagnant Public Health Policies: Flu, Fear, and Free Riders*, 37 LITIGATION 42, 44 (2010).

⁵⁹ *Lochner v. New York*, 198 U.S. 45, 64 (1905).

⁶⁰ *Id.* at 57.

⁶¹ See *Adair v. United States*, 208 U.S. 161, 180 (1908); *Coppage v. Kansas*, 236 U.S. 1, 26 (1915); *New State Ice Co. v. Liebmann*, 285 U.S. 262, 280 (1932). *But see Muller v. Oregon*, 208 U.S. 412, 423 (1908); *Bunting v. Oregon*, 243 U.S. 426, 438-39 (1917).

⁶² *Zucht v. King*, 260 U.S. 174, 175 (1922).

⁶³ *Id.* at 176.

⁶⁴ *Id.*

⁶⁵ *Id.* at 176-77.

⁶⁶ *Phillips v. City of New York*, 775 F.3d 538, 540 (2d Cir. 2015).

⁶⁷ *Id.*

⁶⁸ *Id.* at 540-41.

⁶⁹ *Id.* at 542.

freely does not include liberty to expose the community or the child to communicable disease or the latter to ill health or death.⁷⁰ The court also relied on several other cases that held that claims by parents regarding violations of freedom of religion are subject to the rational basis test.⁷¹ The court then held that New York's mandatory vaccination requirement was not a violation of the plaintiffs' free exercise of religion.⁷² The plaintiffs' equal protection and Ninth Amendment claims failed as well.⁷³ Thus, the New York vaccination requirement was upheld as constitutional.⁷⁴ Several recent mandatory vaccination cases have followed *Phillips*.⁷⁵

III. COMPARING INFLUENZA TO OTHER VACCINE-PREVENTABLE DISEASES

The CDC estimates that the flu infects between 9 million to 45 million people per year.⁷⁶ Between 5 and 20 percent of the population are infected with the flu each year,⁷⁷ but symptoms only appear in 3 to 11 percent—roughly half of all cases.⁷⁸ This means that nearly half of people infected with the flu are more likely to be in public places, placing them at risk of infecting others.

While the severity of the flu varies from year to year, the CDC estimates that the flu causes between 140,000 and 810,000 hospitalizations each year.⁷⁹ The flu causes roughly 36,000 deaths per year in the United States.⁸⁰ The CDC states that the lethality of the flu ranges between 12,000 and 61,000 deaths each year.⁸¹ While all individuals can suffer from flu complications, certain groups are at a higher risk for developing these complications. High-risk groups include individuals aged sixty-five years and older; individuals with chronic medical conditions like asthma, diabetes, and heart disease; individuals who are pregnant; and children under five years old.⁸²

Although measles was declared eliminated in the United States,⁸³ measles can still be brought into the country and infect individuals who are not vaccinated. There has not been a death caused by measles in the United States since 2015.⁸⁴ However, vaccination is still important because tens to hundreds of people get the measles each year in the United States.⁸⁵ It is a

⁷⁰ *Id.* at 543.

⁷¹ *Id.*

⁷² *Id.*

⁷³ *Id.* at 543–44.

⁷⁴ *Id.* at 544.

⁷⁵ See, e.g., *Whitlow v. Cal. Dep't of Educ.*, 203 F. Supp. 3d 1079, 1086 (S.D. Cal. 2016); *V.D. v. New York*, 403 F. Supp. 3d 76, 86–87 (E.D. N.Y. 2019).

⁷⁶ *Disease Burden of Influenza*, CTRS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/flu/about/burden/index.html> (last updated Oct. 5, 2020).

⁷⁷ *Key Facts About Influenza (Flu)*, CTRS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/flu/about/keyfacts.htm> (last updated Sept. 13, 2019).

⁷⁸ *Id.*

⁷⁹ *Disease Burden of Influenza*, *supra* note 75.

⁸⁰ Kim et al., *supra* note 16, at 686.

⁸¹ *Disease Burden of Influenza*, *supra* note 75.

⁸² *Key Facts About Influenza (Flu)*, *supra* note 76.

⁸³ *Measles Data and Statistics*, CTRS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/measles/downloads/measlesdataandstatsslideset.pdf> (last updated Apr. 16, 2019).

⁸⁴ *Id.*

⁸⁵ *Id.*

serious condition, as 25 percent of people infected will be hospitalized.⁸⁶ Roughly one or two per thousand individuals who are infected with the disease will die.⁸⁷ Severe complications include pneumonia, encephalitis, and even subacute sclerosing panencephalitis (SSPE).⁸⁸ Although SSPE is rare (only four to eleven per one hundred thousand individuals are at risk), it is ultimately fatal.⁸⁹

Students are also often required to be vaccinated against varicella (also known as chickenpox), which generally requires one dose after the child turns one year old and another dose when the child is between four and six years old.⁹⁰ Although the chickenpox generally causes only mild symptoms, it can be life-threatening.⁹¹ Before the chickenpox vaccine was available in the United States, between 10,500 and 13,000 people were hospitalized each year, and 100 to 150 people died each year, because of chickenpox.⁹² Since the introduction of the vaccine, chickenpox hospitalizations declined by 93 percent, chickenpox deaths declined by 87 percent, and chickenpox deaths in students under 20 years old declined by 99 percent.⁹³

This information about the chickenpox vaccine may provide support for proponents of mandatory flu vaccination regulations for students. Some opponents might claim that the government intrusion on their liberty is not justified because the flu is not likely to be lethal for children. However, neither is the chickenpox, but the vaccine is required for students. Proponents can point to the success of the chickenpox vaccine as support for mandatory flu vaccine regulations, which would drastically reduce the number of individuals who contract, spread, and suffer from the flu.

Opponents of mandatory flu vaccination for students will likely point out that the flu vaccine is also unique because individuals must receive the vaccine annually. Other mandatory vaccines generally require only one or several administrations or are spaced out over long periods of time. While the chickenpox might be similar to the flu in lethality, its vaccine only requires two doses instead of annual doses as the flu vaccine requires. While there have been trials of a potential long-term flu vaccine, this is still too new to give much weight to in analysis. While this has not yet been litigated, it is possible that this could be too significant of an encroachment on individual liberties. However, given the expansive holding of *Jacobson*, this is unlikely.

IV. MANDATORY INFLUENZA VACCINE STATUTES AND CASE LAW

Although employers are not likely to be held liable for failing to mandate vaccines against certain vaccine-preventable diseases, liability is possible. One possibility is that the employer's failure to mandate vaccination

⁸⁶ *Id.*

⁸⁷ *Id.*

⁸⁸ *Id.*

⁸⁹ *Id.*

⁹⁰ *Vaccine (Shot) for Chickenpox*, CTRS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/vaccines/parents/diseases/varicella.html> (last updated Aug. 2, 2019).

⁹¹ *Id.*

⁹² *Monitoring the Impact of Varicella Vaccination*, CTRS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/chickenpox/surveillance/monitoring-varicella.html> (last updated Dec. 31, 2018).

⁹³ *Id.*

constitutes a violation of the Occupational Safety and Health Act (“OSHA”).⁹⁴ OSHA’s general duty clause provides in pertinent part: “Each employer shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees.”⁹⁵ This provision may require employers to either encourage or mandate vaccination in the interest of their employees’ health.⁹⁶ Employees could also argue that the employer was negligent in failing to mandate vaccines. However, this is not likely to succeed, as negligence requires a duty, and courts have not held that employers have a duty to prevent the transmission of vaccine-preventable diseases in the workplace.⁹⁷ While a court has never held that an employer violated OSHA by not requiring that employees receive vaccines, it is possible that employers may violate OSHA by not at least encouraging and allowing employees to get vaccinated.⁹⁸ After all, mere compliance with the safety standards listed in OSHA does not ensure that the employer has followed the general duty clause.⁹⁹

Healthcare workers in particular both face and pose great risks regarding the flu. OSHA states that “Workers who perform certain types of healthcare tasks for patients who may have the flu are at a higher risk of exposure to the seasonal flu virus and need additional precautions to protect them from workplace infection.”¹⁰⁰ OSHA further states, “Vaccination is the most important way to prevent the spread of the flu. Healthcare and emergency medical services personnel are a priority group for receiving the flu vaccine.”¹⁰¹ It is also important for healthcare personnel to be vaccinated because they work with patients who are in high-risk populations regarding the flu.¹⁰² No state statute requiring healthcare employees to get vaccinated has ever been struck down by a court.¹⁰³ However, state statutes are generally quite limited, either in which workers need to be vaccinated or in which diseases the workers are vaccinated against. As of 2015, seventeen states (through state laws which are implemented on a local level) required certain hospital workers to be vaccinated against the flu, but some of these states allowed exemptions for personal or religious reasons.¹⁰⁴ For example, in Los Angeles County, all healthcare personnel must be vaccinated against influenza or wear a protective mask while in patient care areas during each flu season.¹⁰⁵

⁹⁴ Teri Dobbins Baxter, *Employer-Mandated Vaccination Policies: Different Employers, New Vaccines, and Hidden Risks*, 2017 UTAH L. REV. 885, 887 (2017).

⁹⁵ 29 U.S.C. § 654(a)(1).

⁹⁶ Baxter, *supra* note 93, at 897.

⁹⁷ *Id.* at 899.

⁹⁸ *Id.*

⁹⁹ *Safeway, Inc. v. Occupational Safety & Health Review Commission*, 382 F.3d 1189, 1194 (10th Cir. 2004).

¹⁰⁰ *Reducing Healthcare Workers’ Exposures to Seasonal Flu Virus*, OCCUPATIONAL SAFETY & HEALTH ADMIN., <https://www.osha.gov/seasonal-flu/healthcare-employers> (last visited Dec. 19, 2019).

¹⁰¹ *Id.*

¹⁰² Baxter, *supra* note 93, at 903.

¹⁰³ *Id.*

¹⁰⁴ *Menu of State Hospital Influenza Vaccination Laws*, CTRS. FOR DISEASE CONTROL & PREVENTION 2–3, <https://www.cdc.gov/php/docs/menu-shfluvacclaws.pdf>. (last updated Oct. 2017).

¹⁰⁵ *Influenza Information for Providers*, CNTY. L.A. PUB. HEALTH, http://www.publichealth.lacounty.gov/ip/influenza_providers.htm (last updated Nov. 2, 2020).

Interestingly, while children in all states must receive certain vaccines before they can attend school, teachers are not required in any state to receive vaccinations.¹⁰⁶ This is likely because teachers alone cannot have much of an effect on herd immunity. However, it does raise concerns that they could infect children who have exemptions or for whom the vaccine did not work well.¹⁰⁷

It should be noted that at the time of this Note, lawsuits from employees against employers for mandating the COVID-19 vaccine are beginning to appear in courts. While it is likely that these cases will continue to expand upon *Jacobson* by upholding mandatory vaccination policies, it is not fatal to this Note if they do not. It is likely that many of the claims will at least partly center around the fact that the COVID-19 vaccine is currently only authorized for emergency use by the FDA.¹⁰⁸ This is different from the flu vaccine, which is approved by the FDA.¹⁰⁹ Thus, unless courts overrule *Jacobson* in some way, these cases should not present an insurmountable problem for mandatory flu vaccination regulations.

V. IMPLICATIONS FOR STUDENTS

A. PUBLIC POLICY CONCERNS FOR MANDATORY STUDENT INFLUENZA VACCINATION

1. The Importance of Habit

One compelling argument for upholding mandatory flu vaccination for students is that it could promote vaccination even after graduation, when it would no longer be mandatory. One study found that “the most important predictor of future vaccination behavior was previous vaccination behavior.”¹¹⁰ Although this study involved adults, there is no clear reason why the pattern could not hold for children and adolescents as well. If vaccination was mandatory for students, then students would receive the vaccination annually for years. When the mandatory vaccination policy is first adopted, students near the end of high school and students in college might only get the vaccine a few times before graduating. However, one study involving healthcare personnel found that the most important predictor of influenza vaccination is whether that person received the influenza vaccination in the previous year.¹¹¹ This suggests that even students who only receive one flu vaccine could be more likely to get the flu vaccine the next year. One problem with this policy rationale is that we cannot be certain that

¹⁰⁶ Baxter, *supra* note 93, at 915.

¹⁰⁷ *Id.*

¹⁰⁸ See *Safety of COVID-19 Vaccines*, CTRS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/safety/safety-of-vaccines.html#:~:text=Millions%20of%20people%20in%20the,monitoring%20in%20US%20history> (last updated June 16, 2021).

¹⁰⁹ *FDA's Critical Role in Ensuring Supply of Influenza Vaccine*, FOOD & DRUG ADMIN., <https://www.fda.gov/consumers/consumer-updates/fdas-critical-role-ensuring-supply-influenza-vaccine> (last updated Sept. 28, 2020).

¹¹⁰ Chyongchiou J. Lin et al., *Importance of Vaccination Habit and Vaccine Choice on Influenza Vaccination Among Healthy Workers*, 28 *VACCINE* 7706, 7711 (2010).

¹¹¹ Mary Patricia Nowalk et al., *Establish the Habit: Influenza Vaccination for Health Care Personnel*, 32 *J. FOR HEALTHCARE QUALITY* 35, 40 (2010).

habits will be established through mandating flu vaccination for students in schools. However, it seems that because habit is such a strong predictor of future vaccination across various populations, the benefits would also extend to students. This is an area which would benefit from further studies.

A lack of negative vaccine experiences is also positively correlated with receiving vaccines in the future.¹¹² A mandatory flu vaccine policy in schools would likely promote these ends. This policy would force students to repeatedly get the vaccine, which by itself could lead to increased vaccination after graduation (so long as the findings in the study extend to children and adolescents). However, coupled with the data from the NVICP, most individuals are not injured when they are vaccinated. This suggests that most children and adolescents would not be injured, which in turn suggests that they would likely not have negative experiences (although it is possible that they may have negative experiences due to reasons other than injury). Their history of vaccination coupled with a lack of negative experiences could lead to an incredible increase in vaccination after graduation. While studies are necessary to support this, it could lead to greater herd immunity and could help the United States population reach and surpass its goal of 70 percent of the population receiving the flu vaccine annually. As an additional benefit, this might curb some of the apprehension surrounding vaccines, much of which is caused by misinformation. However, it is possible that mandating flu vaccines for students could lead to worse habits as adults. One study found that individuals who believed that the effects of contracting influenza would be manageable had lower vaccination rates than individuals who believed that the effects of contracting influenza would be severe.¹¹³ If students have less exposure to the flu and experience less severe symptoms, they could be less likely to continue vaccination as adults.

2. Students Are Not Considered an At-Risk Population

One problem for mandatory flu regulations for students is that these students (children older than five years old, adolescents, and young adults) are not considered an at-risk population for the flu. Although the CDC recommends that everyone older than six months receive the flu vaccine,¹¹⁴ students do not face the same sort of severe complications and risk of death that high-risk individuals do.

A response to this concern is that although adolescents are not at high risk for the flu, their vaccination plays a crucial role in herd immunity, thereby protecting high-risk populations. Studies have found that only vaccinating high-risk populations against the flu is not as effective at creating herd immunity for several reasons.¹¹⁵ First, the high-risk population is a small portion of the population.¹¹⁶ Because herd immunity requires that a large portion of the population be vaccinated, only vaccinating individuals

¹¹² See Lin et al., *supra* note 107, at 7711.

¹¹³ Glen J. Nowak, Michael A. Cacciatore & Maria E. Len-Rios, *Understanding and Increasing Influenza Vaccination Acceptance: Insights from a 2016 National Survey of U.S. Adults*, 15 INT'L J. ENV'T RSCH. & PUB. HEALTH 711, 725 (2018).

¹¹⁴ *Information for Schools & Childcare Providers*, CTRS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/flu/school/index.htm> (last reviewed Aug. 26, 2020).

¹¹⁵ Kim et al., *supra* note 16, at 686.

¹¹⁶ *Id.*

in high-risk populations will not be successful in creating sufficient herd immunity to lessen seasonal epidemics.¹¹⁷ Second, flu vaccines are less effective in the elderly population, likely because their immune systems do not function as well as they age.¹¹⁸ Herd immunity provides an additional safeguard for these high-risk individuals. One study found that there were immense benefits for at-risk populations after vaccinating adolescents against the flu, even though they were not an at-risk population.¹¹⁹ Another study found that administering the flu vaccine to students between the ages of two and sixteen reduced the number of low-risk elderly influenza cases.¹²⁰ Furthermore, even though students are not a high-risk population, the flu often spreads quickly throughout schools because of the frequency of close proximity interactions between students.¹²¹

It is unclear whether this is a sufficient response to the concern that students are not a high-risk population. Proponents of vaccination will argue that even though students are not at high risk of severe complications or death, the flu is still extremely unpleasant and leads to lower productivity. Many students can recount a time that they contracted the flu and had to choose between coming to school when sick, thus risking infecting others, or staying home, thus risking falling behind in coursework. This is a similar problem that employees face, but the flu spreads extremely quickly through schools due to the higher density of people in school settings. Vaccine proponents would argue that these concerns outweigh the fact that students are not a high-risk population.

Opponents of mandatory flu vaccination will likely respond that even though students are in a unique environment where the flu spreads quickly, this is not enough to mandate vaccination because they are simply not part of a high-risk population. This likely comes down to a more fundamental disagreement about when government action in the name of public health can overcome an individual's right to autonomy. Opponents of mandatory flu vaccination would likely argue that vaccines should only be mandatory when there is a great danger (as in *Jacobson*) to the population being vaccinated. Although students face unpleasant symptoms and the possibility of missing school, that is the nature of living in a community. If mandatory flu vaccine requirements for students who are not part of a high-risk population are allowed, then this rationale could lead to many other groups being required to get vaccinated against the flu as well, such as employees generally.

However, proponents of mandatory flu vaccination might not see this as a problem. After all, this would further promote herd immunity for the benefit of the general public. Additionally, they would respond that unpleasant symptoms and loss of productivity should be sufficient to impose a mandatory vaccination requirement. In high school, school performance is

¹¹⁷ *Id.*

¹¹⁸ *Id.*

¹¹⁹ Biao Wang et al., *Effect of Influenza Vaccination of Children on Infection Rate in Hutterite Communities: Follow-Up Study of a Randomized Trial*, 10 PUB. LIBR. SCI. ONE 1, 13 (2016).

¹²⁰ David Hodgson et al., *Effect of Mass Paediatric Influenza Vaccination on Existing Influenza Vaccination Programmes in England and Wales: A Modelling and Cost-Effectiveness Analysis*, 2 LANCET PUB. HEALTH e74, e74 (2017).

¹²¹ Marcel Salathé et al., *A High-Resolution Human Contact Network for Infectious Disease Transmission*, 107 PROCEEDINGS NAT'L ACAD. SCI. 22020, 22020 (2010).

crucial for getting into a good college. Missing school could have significant negative effects (although opponents would likely argue that missing a few days to a week of school is likely insufficient to significantly impact grades). In college these negative effects are even more pronounced. College students are paying for classes and attendance might be mandatory. Moreover, there is significant disruption when the flu moves through a school in a matter of weeks or months. Proponents would simply argue that these concerns are sufficient to justify a mandatory vaccination requirement in schools.

Another strong point of support for mandatory flu vaccines for at least elementary school students is that the influenza attack rate (the percentage of people infected in a population during a given period of time) for children between the ages of 5 and 9 years old is 25 percent.¹²² Many current statutes require flu vaccination for young children through the age of five. These mandates fail to cover students several years older who are still highly at risk, such as nine-year-old children who are generally in the fourth grade.

Relatedly, a different study found that 32 percent of students at a large, public northeastern university did not receive a flu vaccine because they were “too lazy to get the influenza vaccine.”¹²³ In that same study, 29 percent of students did not receive a flu vaccine because they believed that they did not need it, as they were healthy.¹²⁴ This means that over half of the students did not receive a flu vaccine for reasons other than cost or apprehensions about the vaccine. While opponents might argue that alternative approaches could increase immunization rates, it is clear that requiring flu vaccines for college students would address both of these issues.

3. Overreliance on the Flu Vaccine

An additional problem for making the flu vaccine mandatory for students is that some individuals may rely too heavily on the flu vaccine for protection. While the CDC maintains that receiving a flu vaccine annually is the “most important step” in preventing the flu, this is alone may not be sufficient.¹²⁵ Other important ways to avoid contracting the flu include avoiding people who have the flu, covering your mouth and nose when coughing and sneezing, and frequently washing your hands.¹²⁶ Some individuals who receive the flu vaccine might believe that they have done their part and neglect to engage in these other behaviors. However, despite being vaccinated, this inattention to hygiene can increase an individuals’ risk of contracting the flu.¹²⁷ While no specific studies have been done on this phenomenon in regard to the flu, there do not appear to be significant differences that might prevent this from happening when individuals receive the flu vaccine.

¹²² Kim et al., *supra* note 16, at 686.

¹²³ Robert A. Bednarczyk et al., *Low Uptake of Influenza Vaccine Among University Students: Evaluating Predictors Beyond Cost and Safety Concerns*, 33 *VACCINE* 1659, 1661 (2015).

¹²⁴ *Id.*

¹²⁵ *Key Facts About Influenza (Flu)*, *supra* note 76.

¹²⁶ *Id.*

¹²⁷ *Id.*

4. Slowing Spread in Schools During an Outbreak

Another unique aspect of the flu, which weighs in favor of mandatory flu vaccination for students, is that the flu season lasts several months. Thus, it would not be feasible to exclude students from school for the flu season's duration. This underscores the importance of students receiving the flu vaccine. While attendance policies vary by school, sick students must choose between either attending class but infecting others or staying home but missing class. For some students, missing class might not be a problem. However, other students might feel pressured, either because of inflexible attendance policies or because of the risk of falling behind in their classes. With mandatory flu vaccination for students, greater immunity among most students could prevent or slow the spread of flu in schools, reducing the number of students who must make the aforementioned decision.

Additionally, students may be contagious before symptoms appear and after symptoms subside, while still other students might be infected but asymptomatic.¹²⁸ This means that even if students avoid school when symptoms present, they might infect others.¹²⁹ Mandatory flu vaccination for students would help prevent the spread of flu through schools in these cases as well.

5. Possibility of Pandemic

According to the World Health Organization, “The threat of pandemic influenza is ever-present.”¹³⁰ A White House report from the Council of Economic Advisers estimated that there is a 4 percent chance each year of pandemic influenza.¹³¹ An influenza pandemic occurs when a new influenza virus easily infects people¹³² and spreads around the world, as most people do not have immunity.¹³³ The characteristics of an influenza pandemic may resemble seasonal influenza in some ways, but divergences are also possible.¹³⁴ For example, younger people had the most severe cases and the most mortalities during the H1N1 pandemic, while the elderly generally have the most severe cases and the most mortalities from seasonal influenza.¹³⁵

There are some key differences between the seasonal flu and pandemic flu. First, while seasonal flu occurs each year, pandemic flu is rare—flu pandemics occurred only three times in the twentieth century.¹³⁶ Second, because pandemic flu spreads rapidly and infects many people, hospitals and

¹²⁸ See Perri Klass, *When Does a Child Need a Sick Day?*, N.Y. TIMES (Feb. 6, 2017), <https://www.nytimes.com/2017/02/06/well/family/when-does-a-child-need-a-sick-day.html>.

¹²⁹ *Id.*

¹³⁰ 8 *Things to Know About Pandemic Influenza*, WORLD HEALTH ORG. (Mar. 11, 2019), <https://www.who.int/news-room/feature-stories/detail/8-things-to-know-about-pandemic-influenza>.

¹³¹ *Mitigating the Impact of Pandemic Influenza through Vaccine Innovation*, COUNCIL OF ECON. ADVISERS I (Sept. 2019), <https://www.whitehouse.gov/wp-content/uploads/2019/09/Mitigating-the-Impact-of-Pandemic-Influenza-through-Vaccine-Innovation.pdf>.

¹³² *Pandemic Influenza*, CTRS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/flu/pandemic-resources/index.htm> (last updated May 12, 2020).

¹³³ *What is a Pandemic?*, WORLD HEALTH ORG. (Feb. 24, 2010), https://www.who.int/csr/disease/swineflu/frequently_asked_questions/pandemic/en/.

¹³⁴ *Id.*

¹³⁵ *Id.*

¹³⁶ *How is Pandemic Flu Different from Seasonal Flu?*, CTRS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/flu/pandemic-resources/basics/about.html> (last updated May 7, 2019).

other health care providers might be overwhelmed.¹³⁷ Third, while vaccines and antivirals are generally available for the seasonal flu, the supply for pandemic flu is limited and could be insufficient to meet demand.¹³⁸ Fourth, while the seasonal influenza usually only has a minor impact on schools and workplaces, pandemic influenza can have far-reaching impacts on schools, workplaces, and even both domestic and international economies.¹³⁹

The flu shot that individuals receive annually generally only protects against a few versions of the influenza virus—the versions predicted to be most common during that year's flu season.¹⁴⁰ While vaccination is the most effective way to prevent the spread of influenza, the current means of producing vaccines would be insufficient to mitigate pandemic influenza, as it could take six months or more to produce sufficient quantities.¹⁴¹

As demonstrated by the Coronavirus pandemic, it is difficult (albeit possible) to rapidly make sweeping changes in response to a novel virus.¹⁴² However, this is not a surprise. Over the past several years, the United States government has examined measures in case of a pandemic virus.¹⁴³ One report from October 2019 showed that the federal government would be underprepared for a pandemic.¹⁴⁴ As one professor chillingly pointed out nearly a decade ago:

You cannot change ingrained behaviors and beliefs overnight. You cannot overrule anti-vaccination policies in union contracts, make workers stay home when they are part of a workforce that has been socialized to come to work if they can still crawl, or get police to wear masks and gloves by just saying, gee, this is a bad flu, we need to do everything differently. Once bodies start piling up in the streets, behavior will change, but by then you have likely lost the opportunity to control the outbreak.¹⁴⁵

The Coronavirus pandemic has illustrated the vulnerability of the United States. While focus has shifted from influenza to COVID-19, the risk of pandemic influenza remains. Additionally, although the United States has much room for improvement regarding the prevention of pandemics and we do not yet have a universal flu vaccine, we currently have the tools to combat seasonal influenza; yet the flu is largely ignored.¹⁴⁶ Mandatory flu vaccination for students would reduce the number of those infected with seasonal influenza and could be a step toward improving health policy more generally, which could be crucial in the case of a pandemic.

¹³⁷ *Id.*

¹³⁸ *Id.*

¹³⁹ *Id.*

¹⁴⁰ *Mitigating the Impact of Pandemic Influenza Through Vaccine Innovation*, *supra* note 128, at 5.

¹⁴¹ *Id.* at 1–2.

¹⁴² See David Cyranoski, *What China's Coronavirus Response Can Teach the Rest of the World*, NATURE (Mar. 17, 2020), <https://www.nature.com/articles/d41586-020-00741-x>.

¹⁴³ David E. Sanger et al., *Before Virus Outbreak, a Cascade of Warnings Went Unheeded*, N.Y. TIMES (Mar. 22, 2020), <https://www.nytimes.com/2020/03/19/us/politics/trump-coronavirus-outbreak.html>.

¹⁴⁴ *Id.*

¹⁴⁵ Richards, *supra* note 58, at 42.

¹⁴⁶ *Id.*

6. Barriers to Mandatory Flu Vaccination

Opponents of mandatory flu vaccination will likely point out practical problems with requiring students to receive the flu vaccine. For example, university students may not be able to afford the flu vaccine. Although this is not an insurmountable problem for other mandatory vaccines, this might be more significant for the flu vaccine, as it requires recurring seasonal vaccination, thus increasing the financial burden that students might have to bear. While many students are covered by their parents' health insurance, some hospitals or clinics might not accept the insurance.¹⁴⁷ Even if their insurance is accepted, students might still be responsible for co-pays or for other payment to be reimbursed later.¹⁴⁸ However, one study found that 71 percent of university students at a large, public northeastern school would be willing to pay up to twenty dollars out of pocket for a flu vaccine.¹⁴⁹ This suggests that a large portion of students would not have a problem with some personal financial contribution. However, these results will likely vary depending on the demographics of the students in question. Furthermore, this does not refute that some students may face financial hardship when faced with mandatory influenza vaccination.

7. Alternatives to Mandatory Flu Vaccination

As mentioned earlier in this Note, opponents might also argue that more alternatives should be explored before making flu vaccination for students mandatory. For example, one study found that a nonmandatory community-supported and school-based flu immunization program achieved high immunization rates.¹⁵⁰ This program involved collaborating with the school to avoid test dates and other campus events, getting local media involved, putting flyers up around the community, talking to parents about the program when they drop off their children at school, speaking to children about the program during class, involving community leaders, and hosting community events.¹⁵¹ The program also used a live, attenuated influenza vaccine that is administered via a mist instead of a shot, thus making the vaccinations easier to administer.¹⁵²

However, while alternatives can and should be explored, mere awareness is not enough. One university study found that even though 61 percent of students were aware of an on-campus vaccination program, this was not associated with increased rates of flu vaccination.¹⁵³ Another study found that even when parents were accepting of vaccines, they were often okay with delaying vaccination or spacing out vaccines over months or years.¹⁵⁴ Furthermore, efforts to increase awareness might not result in a shift in attitude. A different study found that communications meant to increase awareness about vaccination had the opposite effect of reinforcing

¹⁴⁷ Bednarczyk et al., *supra* note 120, at 1662.

¹⁴⁸ *Id.*

¹⁴⁹ *Id.* at 1661.

¹⁵⁰ Cuc H. Tran et al., *Implementing a Community-Supported School-Based Influenza Immunization Program*, 8 *BIOSECURITY & BIOTERRORISM: BIODEFENSE STRATEGY PRAC. & SCI.* 331, 340 (2010).

¹⁵¹ *Id.* at 335.

¹⁵² *Id.* at 336.

¹⁵³ Bednarczyk et al., *supra* note 120, at 1661.

¹⁵⁴ Jessica Deas et al., *Childhood Vaccine Attitudes and Information Sources Among Oregon Parents and Guardians*, 20 *HEALTH PROMOTION PRAC.* 529, 536 (2019).

misconceptions about vaccines for individuals who were already skeptical about vaccines.¹⁵⁵ Additionally, parents with “nonmainstream beliefs” relied more on sources like family and social networks than other sources to reinforce their beliefs.¹⁵⁶ When confronted with sources that challenged their perspective, all parents tended to dismiss this information, keeping only what was consistent with what they already believed.¹⁵⁷

8. Wording of a Mandatory Vaccination Statute

Some opponents of mandatory flu vaccination for students might also take issue with how a particular regulation is drafted. It is possible that the regulation could be too stringent, causing critics to argue that more exemptions, or broader exemptions, are necessary. This has historically been a source of great controversy for many vaccine regulations. For example, in 2008, New Jersey passed a law requiring that children between 6 months old and 5 years old in daycare or preschool be vaccinated against the flu each year.¹⁵⁸ This was met with great resistance from parents who advocated for the addition of an exemption that would allow parents to opt out of the vaccine on moral grounds.¹⁵⁹ Conversely, critics might argue that a particular regulation is not stringent enough and advocate that fewer exemptions, or narrower exemptions, are necessary.

Exemptions in statutes might also face the problems of being underinclusive, overinclusive, or sometimes both. The aforementioned New Jersey flu vaccine regulation does not provide a mechanism to enforce the religious exemption. While the wording of the exemption is stringent, often letters for religious exemptions go unquestioned in practice,¹⁶⁰ leading to more individuals receiving the exemption than necessary. On the other hand, the medical exemption in the New Jersey regulation is strict, and would not authorize an exemption for the sibling of a child who already had a severe adverse reaction, as the sibling had not had an adverse reaction, despite some individuals being genetically predisposed to adverse reactions.¹⁶¹ This means that some children who should qualify for the medical exemption may not receive it.

B. ETHICAL ANALYSIS OF MANDATORY STUDENT INFLUENZA VACCINATION

The deontology argument discussed earlier still holds for mandatory student influenza vaccination. Because each student is benefiting individually from the vaccination, no student is being used as a mere means to achieve herd immunity. Thus, Kant’s categorical imperative is not violated. The utilitarian argument for mandatory student influenza

¹⁵⁵ *Id.*

¹⁵⁶ *Id.*

¹⁵⁷ *Id.*

¹⁵⁸ N.J. ADMIN. CODE § 8:57-4.19 (2008).

¹⁵⁹ Sharyn Alfonsi, *N.J. Mandatory Flu Shots for Preschoolers Cause Outrage*, ABC NEWS (Oct. 16, 2008, 3:59 PM), <https://abcnews.go.com/Health/ColdandFluNews/story?id=6051917&page=1>.

¹⁶⁰ Michael Poreda, *Reforming New Jersey’s Vaccination Policy: The Case for the Conscientious Exemption Bill*, 41 SETON HALL L. REV. 765, 802 (2011).

¹⁶¹ *Id.* at 804.

vaccination becomes even stronger. The burden of flu vaccination is small, as it is relatively quick and cheap. Although the flu vaccination must be administered annually, this increase in burden is greatly outweighed by the increase in benefits. As stated earlier, high rates of flu vaccination among students not only protects the students but also the greater community. These benefits could continue even after graduation if the students develop a habit of receiving the flu vaccination, further protecting the community. Thus, utilitarianism strongly supports mandatory flu vaccines for students.

C. CONSTITUTIONAL ANALYSIS OF MANDATORY STUDENT INFLUENZA VACCINATION

Even though there are compelling public policy reasons for upholding mandatory influenza vaccination regulations for students, these regulations cannot be upheld unless they are constitutional. While public policy concerns illustrate a compelling need for vaccination, constitutionality additionally requires that the regulation not be irrational.

Proponents of mandatory influenza vaccination for students will point to the expansive case law surrounding vaccination. Pursuant to *Jacobson*, regulatory bodies have consistently been given much discretion when it comes to vaccination regulations. Even though the regulation would require immunization regardless of whether an influenza epidemic is present, it would likely be upheld as constitutional because the flu is so prevalent each season, the flu creates a great risk of harm, and the flu vaccine is generally safe and effective at stopping the spread of the flu.¹⁶² This demonstrates that the regulation would pass the requisite rational basis review test.

Opponents of mandatory influenza vaccination regulations for students will argue that although the case law regarding vaccination is expansive, this is insufficient to conclude that a mandatory flu vaccine regulation for students would be upheld as constitutional. This regulation is much more invasive, as it requires recurring seasonal vaccination instead of vaccination once or once every few years. Additionally, they will likely dispute the flu vaccine's efficacy. For example, the 2012–2013 flu vaccine was “only 55% effective against laboratory-confirmed influenza A and 70% effective against influenza B.”¹⁶³

While not controlling on the issue of constitutionality, opponents might also appeal to practical consequences of holding that these regulations are constitutional. For example, allowing this exercise of state police power could lead to further restrictions on public liberty. If a state legislature lacks adequate funds to improve public health, officials might turn to harsh regulations as an easier solution instead of investing in public health measures that would do a better job of improving public health.¹⁶⁴ Also, if the public does not believe that officials are working to protect their personal liberties, then it will in turn make it harder for officials to convince the public to take action during public health crises in the future.¹⁶⁵

¹⁶² Mariner et al., *supra* note 44, at 586.

¹⁶³ Michael Gardam & Camille Lemieux, *Mandatory Influenza Vaccination? First We Need a Better Vaccine*, 185 CAN. MED. ASS'N J. 639, 640 (2013).

¹⁶⁴ Mariner et al., *supra* note 44, at 588.

¹⁶⁵ *Id.*

However, these concerns can be overcome. First, a regulation requiring students to receive the flu vaccine annually is not a much more significant intrusion on personal liberties than other current vaccination requirements for students. Even if it is significantly more intrusive, this will likely still satisfy *Jacobson's* deferential standard because vaccination is a reasonable means to control influenza.

Second, despite the vaccine's lower efficacy during some flu seasons, the vaccine is still effective enough to be a reasonable means of controlling influenza. Because of *Jacobson's* deferential standard, it need not be the most effective means to achieve a public health goal. Even with a fifty-five to seventy percent efficacy rate, there will be a significant impact on influenza rates in a school population where all students are vaccinated. For example, in the 2018-2019 flu season, just under half of the United States population received the flu vaccine,¹⁶⁶ which had an efficacy of nine to forty-four percent.¹⁶⁷ However, it is estimated that despite the low efficacy rate, the vaccine still prevented "4.4 million illnesses, 2.3 million medical visits, 58,000 hospitalizations, and 2500 deaths associated with influenza viruses."¹⁶⁸ This shows that a vaccine can still contribute to great public health outcomes. Thus, a vaccine can still be a reasonable means of controlling influenza even with a lower efficacy rate.

Third, the argument that allowing this exercise of state police power could lead to further restrictions on public liberty is unconvincing. It merely presents a slippery slope argument. Additional data or reasoning would be needed to establish that a mandatory influenza vaccination regulation for students would entail problematic further regulations. Without more, this is no different from the possibility that any regulation could lead to more restrictions on personal liberty, and this general argument is unpersuasive.

Fourth, the argument that the state could turn to harsher measures as a way to save money is unsuccessful because it ignores the test set forth in *Jacobson*. As stated above, a regulation need not be the least restrictive to be constitutional. Even ignoring constitutionality, it is not persuasive because there is insufficient data to suggest that this is a real danger. Further still, even if it is a real danger, proponents will argue that this is not sufficiently problematic. After all, this would still lead to positive public health outcomes, as more people would be protected from influenza.

Fifth, while concern about mistrust of public health officials is understandable, this argument overestimates the effect of a mandatory influenza vaccination regulation for students. Numerous other vaccines are required for students to attend public schools, and there is not data suggesting that these mandatory vaccinations have caused people to be reluctant to take action during public health crises.

In sum, these arguments against the constitutionality of mandatory student flu vaccination will likely fail. The first two arguments will fail

¹⁶⁶ 2018–19 Influenza Illnesses, Medical Visits, Hospitalizations, and Deaths Averted by Vaccination, CTRS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/flu/about/burden-averted/2018-2019.htm> (last updated Jan. 16, 2020).

¹⁶⁷ Jessie R. Chung et al., *Effects of Influenza Vaccination in the United States During the 2018-2019 Influenza Season*, 71 CLINICAL INFECTIOUS DISEASES e368, e369 (2020).

¹⁶⁸*Id.* at e372.

because the recurring nature of the vaccine and the lower efficacy are not enough to be unconstitutional under *Jacobson*. The last three arguments are unpersuasive from a practical standpoint because they are speculative. Thus, it is likely that a regulation mandating flu vaccination for students would be upheld as constitutional.

VI. CONCLUSION

Although it is not certain whether mandatory influenza vaccine regulations would be upheld as constitutional for students in elementary school, middle school, high school, and college, there are several compelling reasons which suggest that it would be upheld as constitutional. First, there are many public policy reasons that support mandatory flu vaccination for students. Studies have shown that vaccinating children and adolescents against the flu can be crucial in achieving greater herd immunity. Additionally, because students are in close contact with one another at school, mandatory flu vaccination could dramatically slow the spread among both students and the greater population. Although we do not have a universal flu vaccine to protect against new strains that could cause a pandemic, we have the means to annually vaccinate against seasonal influenza, which would still save countless lives and generate great economic benefits. Also, given that the most important predictor for flu vaccination is whether an individual was vaccinated in the previous year, making flu vaccines mandatory for students could be crucial in establishing habits that increase vaccination even after graduation.

Although there are possible problems with mandatory flu vaccination, the problems can be overcome. Even though students are not considered an at-risk population, their close proximity to one another in schools creates a unique environment with a large potential for an outbreak. Additionally, studies have shown that vaccinating students can provide immense benefits through herd immunity for the larger population. Although it is possible that there are other means to achieve greater flu immunization rates, more research needs to be done regarding these alternatives to assess their efficacy, cost, and practicability. Even with viable alternatives, there is no constitutional requirement that states must utilize the best means to achieve an end, so this is not an insurmountable problem. Also, the mere fact that overreliance on the flu vaccine is possible is not an insurmountable obstacle, as there have been no studies showing that overreliance negates all benefits derived from vaccination. Further, while it is likely that mandatory flu vaccination laws will be overinclusive, underinclusive, or both, this is not infeasible; many laws are imperfectly tailored to their ends. Given the numerous benefits from introducing mandatory flu vaccination laws, these problems are outweighed by the resulting benefits.

Second, ethical arguments similarly support upholding mandatory flu vaccination for students. A utilitarian theory justifies mandatory vaccination, as a small bit of harm to individuals achieves a large benefit to society—namely, less sickness, less death, and less costs associated with these harms. A deontological theory is a closer case, as opponents of mandatory flu vaccination may argue that requiring individuals to be vaccinated is using people as mere means to achieve herd immunity, which is unjustifiable under

Kant's categorical imperative. However, herd immunity benefits everyone, including the opponents, so mandatory vaccination likely is not a violation of Kant's categorical imperative.

Third, the expansive outcomes of cases involving mandatory vaccine policies suggest it likely would be upheld. *Jacobson* gave a lot of power to regulatory bodies to determine what constituted a great danger worthy of infringements on individual liberties and to determine what means should be used to avoid that great danger. The CDC is clear that vaccination plays a crucial role in slowing and preventing the seasonal flu, and many peer-reviewed studies show the importance of achieving herd immunity through high rates of vaccination. Furthermore, although there is always a concern that expanding states' rights will undermine individual liberties, this is unlikely to go much further than other similar vaccination regulations for students. Given the aforementioned strong public policy, ethical, and constitutional reasons, it is likely that a mandatory flu vaccination regulation for students would be upheld as constitutional.