Ethical Considerations in Compulsory Vaccination

If any individual or healthcare provider were asked to rank the most important health achievements of the past, there is no doubt that vaccines would be among that list. It has been well studied over the course of time that vaccinations have been the key to the eradication of life-threatening conditions. Throughout the 20th century, smallpox and polio, both diseases that plagued millions, have been significantly reduced or completely eradicated through the use of vaccination and compulsory immunization programs. Vaccination opened up the eyes of the medical community to a new approach of disease treatment; disease prevention. By the work of many individuals throughout history such as Edward Jenner and Louis Pasteur, we have come to gain the understanding of a vaccine as a “suspension of live (usually attenuated) or inactivated microorganisms or fractions thereof administered to induce immunity and prevent infectious disease or its sequelae.” ¹ The idea of compulsory or mandatory vaccination programs has long been supported and protested, but has no doubt yielded incredible benefits. The most common form of compulsory vaccination is that of young children seeking to enter public or private schooling. Each state currently has its own policy on the matter, and also a means of dealing with exceptions, including those parents who refuse to vaccinate their children based on religious or philosophical grounds.

History and Development of Compulsory Vaccination Standards

The modern portrayal of vaccination began with the story of Dr. Edward Jenner and his experimentation with cowpox in England. By taking inoculates from blisters of milkmaids who had been exposed to cowpox, he was able to protect others from future smallpox infection.
Using his knowledge of animal science and incorporating it with his love of experimentation, Jenner was able to develop the backbone of one of the most beneficial feats in medical science. Later in the century, noted scientist Louis Pasteur further defined Jenner’s “variolation” into the definition of vaccination, as we know it today. He expanded Jenner’s ideals with cowpox and smallpox and extended it to include all inoculating agents known at the time. Over the years, as the idea of vaccination and immunization grew, so did the problems associated with it. Some of the problems that have arisen include issues of funding, vaccine safety and public viewpoints of vaccination as a whole.

For hundreds of years, the federal government funded vaccines and new vaccine technology. By funding these vaccines, the federal government was able to develop standards for vaccination and eventually compulsory vaccination programs against smallpox in the 19th century. This was further expanded in the 20th century to include programs for vaccinations for school aged children. After the founding of organizations such as the World Health Organization (WHO) and the United Nations Children’s Fund (UNICEF), vaccinations have become global, and somewhat more of a commonplace causing a shift in funding away from the government and into the hands of private corporations. This shift, however, has caused numerous problems in the way of vaccine supply. Many organizations and drug companies refuse to manufacture vaccines due to the high regulatory status involved, and thus have led to shortages and fear of vaccine unavailability in the future. To avoid a crisis, if any of the few companies manufacturing vaccines were to go out of business, the National Vaccine Advisory Board increased funding for vaccine production in 2003. However, to ensure that shortages do not occur at all in the future when vaccines may truly be needed, federal government support
may need to become a mainstay as it was in the beginnings of vaccine development and marketing.

Another primary concern that has arisen throughout the development of vaccines is the issue of safety and contamination. Vaccines, even those that are killed or inactivated, are still biological microorganisms and are at high risk for contamination. In today’s society, quality control, sterilization and monitoring are non-negotiable for vaccine production. Other issues with safety have included the debate over whether live or inactivated vaccines are safer for administration. An example of the issue was highlighted in the production of an inactivated form of the measles vaccine in the 1960’s which was withdrawn from the market due to the short lived immunity and the predisposition of recipients to getting the disease when exposed to the wild type virus. This eventually led to the development of the live type measles virus that is the only one used in the United States today. Ultimately, the decision of whether a vaccine is safe depends on the strict enforcement of manufacturing processes and the individual disease or microorganism in question.

The final major concern that has come about throughout the history of vaccination is the public backlash and protests against vaccination. This issue is the one that fuels the majority of this project. After the initial surge of vaccination after Dr. Jenner’s discovery and the rapid decline in the incidence of smallpox, the first anti-vaccination movements began. Many of these movements addressed issues that are still relevant in today’s societies, such as an imposition on autonomy and the issue of vaccine safety and efficacy. One of the earlier cases in the US against vaccination, especially compulsory vaccination, was the case of Jacobson v. Massachusetts. In 1809, Massachusetts passed the first law requiring smallpox vaccination for the general population. Jacobson refused to be vaccinated and was given a monetary penalty for
noncompliance with the state regulation. In the case, Jacobson stated, “A compulsory vaccination law is unreasonable, arbitrary and oppressive, and therefore, hostile to the inherent right of every freeman to care for his own body and health in such a way as to him seems best, and that the execution of such a law against one who objects to vaccination, for whatever reason, is nothing short of an assault on his person.” 1,2,4 The Supreme Court ruled however that the states had the right to require vaccination as an extension of their police powers and to protect the common good of their citizens over the individual rights of one citizen. This case was the basis for compulsory immunization standards in the United States, including those required for entrance into schooling. The Supreme Court then further upheld laws requiring vaccination for school entry in 1922. The development of compulsory vaccination standards like this have led to the eradication of smallpox, eliminating polio and reducing by 98-99% the incidence of most other vaccine-preventable diseases. 3

State Regulations Regarding Vaccination Linked to School Entry

Vaccination and compulsory vaccination standards are not controlled by the federal government, rather they are under the police powers of the individual states. By 1963, 20 states required immunization against certain diseases for school entrance; by 1970 this number had increased to 29 states. By 1980, all 50 states had laws that linked vaccination to school entrance.2 As of the 1998-99 school year, all states required evidence of vaccination against diphtheria, measles, rubella, and polio, 49 states required immunization against pertussis and 43 states required immunization against mumps. Some states do not require immunization against mumps and pertussis, however these immunizations are often given in combination with other vaccines such as measles and diphtheria. In later years, schools have also begun to require vaccination against Hepatitis B and varicella for entrance into public or private schooling. No
schools require the Hib vaccine for school entry because it is not suggested for children over 5 years of age, however 49 states require the vaccine for licensed day care entry. These school immunization laws provide a structured method for ensuring that children remain safe and protected from the vaccine preventable diseases in an environment where contraction and spread of these diseases would be common. The penalty for noncompliance with these requirements is exclusion of the student from school until there is compliance in most cases. This method of “punishment” has proven effective in several cases of measles outbreaks in both Alaska and Los Angeles. As with any law or regulation, there is always an exception, and with vaccination standards, exemptions may be made on medical, religious or philosophical grounds.

States may provide exemptions labeled in two broad categories: medical and non-medical. Medical exemptions are those cases in which vaccination is contraindicated in that child. Non-medical exemptions can be made on both religious and philosophical grounds; however, exemptions for the latter are far less common. There is no constitutional amendment for states to offer non-medical exemptions. As of the 2004-05 school year, all 50 states allow medical exemptions, which require a letter of documentation from a doctor, 48 states allow non-medical exemptions and of those 48 states, 20 allow exemptions based on philosophical ideals. Some states have stricter policies regarding philosophical exemptions, and others simply ask parents to fill out preprinted forms. When states develop these non-medical exemptions, two considerations must be made. The idea is to maintain high levels of immunization among children by reasonably restricting the number of exemptions granted while ensuring that the exemptions are fair when granted. The allowance of non-medical exemptions place the states in a situation that may spark political backlash and cause parents who wish to receive exemptions to add to the anti-vaccination front.
Belief Systems Involved in the Refusal of Vaccinations

The next logical piece to this investigation would have to be the reasons for parents wishing to obtain these non-medical exemptions. Those seeking religious exemptions are often members of individual religions who do not promote the use of vaccinations. It is difficult to establish how parents can prove their dedication to that particular religious sect, or their degree of participation in the religion. Some states define these exemptions broadly to include beliefs in the most general terms, and others require the individual to be a member of a certain religious group. The most noted is The First Church of Christ, Scientist whose written documents prohibit the use of invasive medical procedures such as vaccination. However, if limits are placed on the types of religions included, there is then a violation of the individual’s protection under the First Amendment. If any individual is challenged regarding their exemption, this could be used as the primary argument against the state refusing the exemption.

The type of exemption that has created more of a debate among the public and the politicians is the idea of philosophical exemptions. These philosophical exemptions are ideals of parents that are apart from religious views for why they wish their children to not be immunized. In many of the state laws regarding these exemptions, the individual must oppose all types of vaccination, not just a single one. According to a study conducted by Allison Kennedy et al, demographics of individuals who opposed immunization in general were observed by conducting the 2002 HealthStyles survey. The results of the survey revealed that parents opposed to vaccination differed from supportive parents in terms of race, household income, and household size. White parents with higher household incomes and smaller household incomes were more likely to be in support of vaccination. It has also been shown that states with easily obtainable philosophical exemptions have higher rates of such exemptions due to the fact that at times
obtaining an exemption is easier than actually receiving the vaccinations. Some of the common examples of these philosophical views include: 1) superior or other methods for fighting disease, 2) concern over safety of available vaccines, 3) unobserved danger of the vaccine preventable diseases, and 4) opposition to compulsory or mandatory vaccination on the grounds of ethics. All of these viewpoints have a valid holding in an individual not having their child vaccinated, however there are also very valid arguments and support for vaccination opposing the above reasons. In the following paragraphs, we will take a look at each of these arguments individually and both the arguments for and against compulsory vaccination involved with each.

Many ethnic groups around the world practice individual medical techniques, all which are deep-rooted in history and tradition. Often times these techniques cross paths with Western medicine, and individuals comfortable with traditional medicine will choose to “medicate” themselves without the use of medications. The use of herbal remedies and processes such as acupuncture may be alternatives to vaccination for individuals of certain ethnic groups who oppose Western based medicine. Many parents also believe it is better for their child to be naturally infected one time in order to gain immunity rather than expose their child to a series of vaccinations. It is important to note the effects of either type of immunity, though. There is little inconvenience or bodily damage linked to vaccination, but natural infection may lead to the life-threatening consequences of the diseases we are trying to protect against. Making parents aware of the risks of both options may be a critical education point for those considering philosophical exemption for this reason.

Another alternative viewpoint on treatment from parents opposed to vaccination is the idea of “herd immunity.” Herd immunity “is a phenomenon that, once a critical proportion of a population is immune to a particular transmissible disease, through infection or immunization,
the disease can no longer circulate in the community.” This idea is primarily important when applied to individuals who are too young to be vaccinated against certain diseases and receive indirect immunity from others being immunized. However, the concept of herd immunity usually only applies to diseases such as measles, diphtheria and pertussis. When parents are aware of this phenomenon, and have observed that large amounts of individuals in the area have already been vaccinated, they may elect not to vaccinate their child due to the fact that the herd will protect them. These parents are referred to as “free riders.” This benefit from herd immunity depends on the rates of immunized children and degree of disease within the community. If levels of the circulating disease are high because of low levels of immunization, then vaccination of the child would be beneficial because herd immunity would not apply. In reality, herd immunity cannot be relied upon to protect all children from vaccine preventable diseases and immunization in the end would benefit both the individual and the community.

As mentioned earlier, concern over vaccine safety has been a concern of the public since the beginning of vaccine manufacture. The fact that vaccines are biological microorganisms and are manufactured via animal sources lead to the belief that there is a high risk of contamination and antigenic reactivity that could occur with vaccinations. It is well known that vaccines can cause adverse events including local reactions, fever, irritability and rare but threatening complications such as encephalitis. There is also the small risk that the vaccine will not be effective for the patient and exposure to the virus may lead to infection. With these risks readily known along with the recent media link between autism and neurotoxicity with thimerosal containing vaccines, parents are often reluctant to put their children at risk in order to have them vaccinated. After several meta-analyses, this form of mercury used in several vaccinations was linked to the increasing incidence of autism in the United States. Thimerosal is a type of
mercury called ethylmercury, which is rapidly removed from the body and has a low likelihood of accumulating in the body and causing damage such as neurotoxicity. It has also been observed that autism is a genetic condition, and there is truly no link between the vaccination and the development of the disease. Even after these viewpoints had been established, the FDA, in 1999, declared removal of all mercury-containing products from the market, including thimerosal, simply because it fell in this class of compounds. With all of these risks that have been tied to immunization, it may be critical to display to patients the risks associated with living in the world today. According to a book by Dr. Paul Offitt, “each year in the United States, 350 people are killed in bathtub or shower related accidents, 200 are killed when food lodges in their throats, and 100 people are struck and killed by lightning.” Even though the risks are there with these activities parents still allow their children to eat and bathe on a daily basis. Why is it that vaccination while the child is young is too risky when compared to the possible contraction of the deadly diseases they protect against? The federal government as well as the governments of the individual states ensure that vaccines are produced using sterile manufacturing techniques, and although there are adverse effects linked to these vaccines, the ramifications of risking a child getting the actual disease are much worse in a majority of cases.

When one truly thinks about how many times they have seen a case of diphtheria or mumps the response in most cases will be zero. This brings about another reason for why parents do not have their children vaccinated. The fact of the matter is that vaccines and compulsory vaccination programs are the reasons why those diseases are not seen in today’s society. According to the book by Dr. Paul Offit, there are three reasons why vaccines should still be given. The first is that diseases such as pertussis are so prevalent in this country that not vaccinating a child is putting them at risk for getting that disease. The second reason is that even
though some diseases, like mumps and German measles, have a low incidence among humans, they are still present in the environment. If immunization levels get to a low enough level, there may be outbreaks of these conditions again and may be associated with increased morbidity and mortality. The third and final reason is that many of the diseases that are virtually eliminated in the United States are still very prevalent in other countries. Since there is a high rate of international travel, especially to and from the US, there is an enormous risk that these diseases could easily be carried over from these areas. These diseases are a risk, and those parents who feel their children are not at risk because they have never experienced the disease should realize that the cause of that is compulsory vaccination standards, especially those required for school entry. The final reason why parents seek exemptions from compulsory immunization standards deals with some of the common normative principles and ethical ideals. These same normative principles can also be used in support of vaccination. The application of these principles may add some more of a gray area to this already highly disputed topic.

**Ethical Principles and Vaccination Standards**

Let us first observe the role of these ethical principles in those parents seeking to gain exemption for their child from mandated school vaccinations based on philosophical means. The first, and probably most defined principle that may be violated due to compulsory vaccination, would be the one of autonomy. A young child is not yet capable of making medical decisions; therefore, that is the role of the parent. In today’s American society, many different parenting strategies are accepted as long as the parent is willing to accept the consequences associated with the choices that they make for their children. There is also the idea that parents have rights and are allowed to act as an individual when it comes to arguing their child’s medical care. They are emotionally and financially invested in the child’s well being and raise the child as they see fit.
If they do not see the role of vaccination in their child’s medical care, they should have the right to refuse that treatment. Vaccination and parental decisions may be one of the situations where weak paternalism is acceptable because the child is not mentally capable of deciding on their medical treatments at that age. The harm principle is one of the very few exemptions to the principle of autonomy, and states that it is acceptable to violate one’s autonomy if the action causes harm or neglect to the patient or others. Parents may also feel their right to autonomy is being violated by the government forcing them to partake in an activity that they do not feel comfortable with. Many individuals in this country already feel that the government has too much of a role in the daily activities of American citizens, and this additional coercion may add to the anti-government movements, and greater worry over the risks associated with the process of vaccination. This may also lead to trust issues with those parents who voluntarily vaccinate their children. Having to “force” individuals to vaccinate their children may cause individuals to feel that there is something wrong with the vaccinations that they must give their children.

Those in support of vaccination may use the harm principle to argue against those who seek exemption from compulsory vaccination. It cannot be argued that parents have the autonomy and the right to act on their child’s behalf, but whether or not they are bringing harm to their child is a separate entity in and of itself. By not vaccinating, parents are exposing their children to the risk of developing diseases that could potentially harm them. In addition to not only harming their own child, they may also risk harming other children who may be too young to be vaccinated or those who have medical contraindications to vaccination. The idea that others could be harmed by the choice of a parent for his/her own child should indicate the need for compulsory vaccination standards, especially for those conditions that have high rates of spread in institutions such as schools and day care centers.
The principle of beneficence is also one that parents may use to argue their viewpoint in not vaccinating their children. With all of the previous reasoning listed above for parents not vaccinating their children, it is understood that parents feel they are protecting their children by not having them vaccinated. With the risks associated with the vaccines themselves, the parent feels they would rather keep their child un-immunized against the diseases they have never experienced as opposed to exposing them to the known risks of the actual vaccine. They have the idea that they are practicing in a way that brings about benefit for their children and removes them from harm, by providing them with alternative means to achieve immunity from life-threatening conditions. The ideal of non-maleficence can apply to the situation of forcing parents to vaccinate their children. Not allowing a parent to practice what they feel is the best for their child is an assault on the parent’s ideals and possibly the child’s as well, and indicates harm done to the individual.

Those who support the use of compulsory vaccination for school-aged children can utilize these same principles. By allowing a child to be vaccinated is that extra step that parents are taking to ensure that their child receives the maximum benefit from his/her medical treatments. Even though there is a small risk of complications with the actual vaccine, these parents are willing the take the risk to achieve a better outcome in preventing their child from contracting these life-threatening conditions. By taking this extra step and acting with beneficence, these parents are also acting with non-maleficence by indirectly allowing children who cannot be vaccinated to avoid harm when they reach school age. Having a child vaccinated also links to the principle of justice, ensuring that all children receive the benefits from vaccination, including those who cannot be vaccinated.
The final ethical discussion associated with the administration of compulsory vaccination standards are the practical issues associated with vaccinating such large groups of children. By mandating vaccination in all children for entrance into school or day care, there must be a guarantee that there is access by all individuals to this type of care. A major indicator of the rate of access is noted in insurance status of the children looking to be vaccinated. Based on the National Health Interview Survey given in 2003, 9.4% of children under the age of 18 were uninsured. High numbers of these children have received inadequate healthcare, including vaccines at a young age. It was shown that children with publicly funded health insurance have the lowest rate of vaccination, primarily due to the barriers associated with poverty. Knowing these statistics, programs such as Vaccines for Children (VFC) have been developed to ensure the equal distribution of vaccines among all children so that all individuals can uphold compulsory immunization standards. To be eligible for such a program, children must meet the following criteria:

- those 18 years of age or younger
- those eligible for Medicaid
- those with no health insurance
- those who are Native American or Alaskan Native
- those who have health insurance but it does not cover immunizations (in this case, children must go to a Federally Qualified Health Center or Rural Health Clinic for immunizations.

By allowing all of the children with known healthcare disparities to receive equal access to life-saving medical technologies such as vaccinations, the ethical principle of justice is being upheld by this program. This program is available in all states; however, the frequency of sites varies
among each individual state. There is a need for increased funding by state government and health programs (Medicaid) to ensure the widespread availability of these programs for all children if compulsory vaccination standards are to remain in place for school entry.

**Sources of Information and the Role of the Health Care Professional**

All of the reasons behind why parents refuse to have their children vaccinated should be evaluated because it is crucial to look into where these individuals are getting their information. It is well known that the three most common sources of information for citizens of the United States are the media, their own family and their child’s health care professionals. It is likely that the media was the reason behind the outburst of the anti-vaccine movement linked to the use of thimerosal in vaccines. Parents at the time were not aware of the reputable sources available to them and immediately turned to the sites they felt most comfortable with. The sources of information may be the key to the large divide between support and opposition of vaccination by healthcare providers and the public, respectively.

Healthcare professionals, especially pharmacists are trained to locate primary literature in support of or in opposition of new healthcare measures and medications. Many times patients do not have that same access or are not knowledgeable to the places where they can receive such information. Having the ability to read and analyze these sources provide the healthcare provider an unbiased opinion on the subject matter, and allow in most cases a logical response. Since most healthcare focused sites and literature support the use of compulsory vaccination for proven reasons, many of these same healthcare providers will support the use of these programs, and at times to an extreme effect. The truth is that the healthcare provider is the key to a parent’s understanding of the need for their child to be vaccinated, but often times they are the last to be sought out.
Patients, on the other end of the spectrum, rely on sources of information that have been available to them for years. In certain cultures, especially those who oppose vaccination based on the need for their children to receive natural immunity, often make health decisions on tradition and family opinions. They turn to their elders who have had experience with these matters in the past as their primary source of information and opinion. With the remainder of the population, the issue of the content on the internet is the major driving force behind the anti-vaccination movement. If one were to search a simple term such as “vaccination” or “childhood vaccination” into a common search engine, there would be a mix of results that would appear. There is no doubt there would be a few links to consumer based information from reputable sites such as the Food and Drug Administration or the Centers for Disease Control, but following those would be opinion based sites on the dangers of vaccination and the importance of philosophical exemptions to compulsory vaccination standards. The problem associated with this scenario is the idea that patients often times cannot distinguish between what are reputable sites and which are completely opinion-based. If the parent has a predetermined idea about the topic before performing an information inquiry, the focus of their search may only include those things that support their opinion. Being aware of these sources of information may make it easier for the healthcare professional to relate to their patient population and provide a more compelling argument for compulsory vaccination when speaking to those same patients.

So what is the role of the healthcare professional in helping parents decide whether or not to vaccinate their children? It has been established that parents do not often turn to their healthcare professionals as their first line of information because of the fear of rejection of their opinion. One recent survey found that 24% to 39% of pediatricians reported they would dismiss a child from their practice if the parents refused ≥ 1 of the recommended vaccinations.⁹
Physicians need to assess the risks involved in not having a child immunized on an individual basis and discuss those risks with parents. This is the primary role of all healthcare professionals; to provide accurate risk/benefit information to the parent and guide them in the direction of evidence based guidelines or sites where accurate consumer information can be found. All healthcare professionals should sit down with any parent and create an inviting environment where the parent can address his/her concerns without the fear of judgment or rejection. There is a wide spectrum of refusal reasoning and tailoring the information to the parents needs may be the best strategy. For example, in many cases a parent may only object to one or two vaccinations based on safety concerns. These one or two vaccinations should not keep children from receiving all of their vaccinations, therefore the healthcare provider should sit down with the parent and discuss the risks associated with each individual vaccine and disease state if the child is not to be immunized. Giving this additional perspective to the media filled one that many parents already have is critical in having parents adequately consider all options in not having their children immunized.

At this time, it is not clear what the correct way is to deal with compulsory vaccination standards and exemptions. Many states have recently updated their exemption criteria, making them more difficult to obtain in order to increase the numbers of children immunized before the start of school. It may be more beneficial in the future to eliminate compulsory vaccination programs and investigate means of other countries with high immunization rates. Such alternative methods include compensation programs for individuals who have their children vaccinated voluntarily, but only the future can tell what the role of these programs will be in the United States. All that is known at the present time is that compulsory vaccination has proven to be beneficial to the individuals of the United States and other areas in the world. Education is
the key to helping parents decide what is the best option for their children by discussing the risks and benefits and guiding them to resources that may aid in wise decision making and a reduction in the rate of philosophical exemptions to compulsory vaccination.

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References