Parent Education Required for Completion of Vermont's Religious Exemption Form

Why are vaccines required for school and child care entry?
Vaccines have successfully helped to improve children's health, and have saved millions of lives by preventing diseases such as polio, measles and *haemophilus influenzae* type b. When the majority of people in a community are immunized, protection is shared with those individuals who are unable to be vaccinated. Therefore, the decision whether or not to vaccinate your child affects others in your community.

State laws set minimum immunization requirements for attendance at child care, schools and colleges to protect students, staff, and visitors against vaccine-preventable diseases. Medical and religious exemptions are allowed in Vermont. If too many parents choose not to vaccinate their children, we could see a return of vaccine preventable diseases and the many complications associated with them.

Public health initiatives, such as immunization, are designed to protect the health of the public. Immunization laws exist not only to protect individual children, but to protect all children. If vaccines were not required, fewer people would get their children vaccinated – they would forget; they would feel they couldn't afford it; they wouldn't have time. This would lead to levels of immunity dropping below what is needed for herd immunity, which could result in outbreaks of disease.

How are required vaccines selected?

The process of selecting vaccines required for children in school and child care in Vermont requires several steps.

1. The Advisory Committee on Immunization Practice (ACIP) - a select group of national medical and public health experts - meets quarterly at CDC to review research studies about vaccines from across the globe. This Committee makes recommendations for the vaccine schedule based on information presented at the meeting.
2. The Centers for Disease Control and Prevention (CDC) then approves and publishes the ACIP recommendations.
3. Each state uses the recommendations to guide their immunization requirements for child care and school. Not all of the recommended vaccines are required for admission to school or child care in Vermont. A child who is vaccinated according to the recommended schedule will have immunity to 14 diseases by the age of two. Vermont requires immunity to 9 of those 14 diseases for kindergarten entry, and 11 of the 14 for child care entry.

Some parents have concerns about the number of vaccines given to children, but there is no evidence to suggest that the vaccines recommended for children – given on schedule – can overload the immune system. From the moment babies are born, they are exposed to

bacteria and viruses on a daily basis. Every time an infant's hands are placed in her mouth she is exposing her immune system to multiple germs. Postponing vaccination serves only to leave children vulnerable to preventable diseases.

Why vaccinate healthy people?
Healthy people are vaccinated in order to protect both themselves and more vulnerable community members. The ability of a vaccine to protect community members depends upon the:

- **Ability of the disease to spread.** The more contagious a disease, the greater number of people that need to be protected for community immunity to work.
- **Effectiveness of the vaccine**. A less effective vaccine requires more people to have received it to account for those who are not effectively protected.
- **Number of susceptible people in the community**: Some members of the community cannot get a vaccine for medical reasons, such as allergies, cancers, immune deficiencies or age. The greater the number of people who are susceptible to vaccine preventable diseases in the community, the less likely the disease will be stopped.

How do Vaccines Protect Vulnerable Individuals?
A vaccine-preventable disease could be life-threatening for individuals who are too young, are unable to receive vaccines for medical reasons, and those who are at greater risk for contracting disease. These individuals rely on others for protection from vaccine preventable diseases. When most of the people in a community are vaccinated, there is less opportunity for a disease to enter the population and make people sick.

Is there a risk with vaccination?
Some parents choose not to immunize because they are concerned about vaccine risk. Two of the most common fears are the possibility of a reaction to the vaccine, or that a vaccine will not be effective and the child will get sick from the disease anyway.

With each vaccine there is a chance that an individual will experience mild side effects. An analysis of more than 1,000 research articles on vaccine safety was published in 2011 by the Institute of Medicine (IOM). The results revealed that vaccines are not free from side effects or adverse events, but most are very rare or mild such as swelling at the injection site, slight fever and headache.

Most childhood vaccines are between 90 and 99 percent effective in preventing disease, and all vaccines reduce the risk of severe disease, minimize symptoms and shorten the duration of illness. The risk of side effects from a vaccine is far lower than the risk of complications from a vaccine-preventable disease.

Vaccines provide protection – similar to the seatbelt you wear in a car or on an airplane. You buckle up not because you expect to be in a serious accident, but because you want to be protected in case there's a problem. It's the same with vaccines. You don't expect to get the disease, but you want to be protected.

How are Vaccines Are Made and Tested?
Vaccine development involves scientists and medical experts from around the world, and typically requires 10 to 15 years of research before a vaccine is made available to the public. The first step in this extensive process involves years of laboratory research, in which scientists and researchers identify an antigen that can prevent a disease, and then create a test vaccine.

The test vaccine must be cleared for further investigation by the U.S. Food and Drug Administration (FDA), and then at least three more phases of clinical trials are conducted on human volunteers to test vaccine efficacy, to determine appropriate dosage, and to monitor for side effects. These trials usually take several more years to complete. The last phase involves a test group of thousands of human volunteers.

How is Vaccine Safety Monitored?
The CDC monitors vaccine safety with the following programs:

- The Vaccine Adverse Event Reporting System (VAERS) - Health care providers are required to report side effects to VAERS. Anyone, including parents, can also file a report in VAERS. Vaccine safety professionals continuously monitor the reports, study possible problems, and adjust recommendations when indicated. If the potential for risk of an adverse event from a vaccine is greater than its benefit, the vaccine is no longer recommended. If new adverse effects are discovered, safety alerts are widely distributed.
- Vaccine Safety Datalink (VSD) – The VSD uses health data from large clinical centers across the U.S. to conduct vaccine safety studies based on questions or concerns raised from the medical literature, and reports to VAERS.
- Clinical Immunization Safety Assessment Project (CISA) - A national network of vaccine safety experts who use the most current methods and technology to investigate important questions related to vaccine safety.

What are the Vaccine Ingredients?
A vaccine contains part of a germ (bacteria or virus) that is called an antigen. Antigens are substances, often a protein, that stimulate the body to produce an immune response to protect itself against infection. The antigen used in vaccines has already been killed or weakened before it's used to make the vaccine, so it can't give you the disease it's meant to protect you from. Killed (inactivated) vaccines are made from a protein or other small pieces taken from virus or bacteria. The tetanus vaccine is an example. Live virus vaccines use the weakened (attenuated) form of the virus. The varicella (chickenpox) vaccine is an example. In addition to the antigen, vaccines contain ingredients that make them safer and more effective, including preservatives, adjuvants and additives. The American Academy of Pediatrics also provides a good explanation about what's inside the syringe.

What about Thimerosal?
Thimerosal, an effective preservative, has been used in the past to prevent bacterial contamination in multidose vaccine containers. It contains a type of mercury known as ethylmercury, which is different from the type of mercury found in fish and seafood

(methylmercury). At very high levels, methylmercury can be toxic to people, especially to the neurological development of infants.

In recent years, several large scientific studies have determined that thimerosal in vaccines does not lead to neurologic problems, such as autism. Nonetheless, vaccine manufacturers have voluntarily changed their methods to produce vaccines in single dose containers that are free of thimerosal or, in very limited cases, have only trace amounts. None of the vaccines required for school or child care contain thimerosal.

Conclusion

Vaccines have dramatically reduced disease and death in the United States and globally. Evidence from numerous scientific research studies over time has supported the use and safety of vaccines for effective disease prevention. The CDC recommended vaccine schedule is designed to give children the best protection at the earliest age possible.

Information was gathered from sources of evidence-based immunization information including the Centers for Disease Control and Prevention (CDC), American Academy of Pediatrics (AAP), Children's Hospital of Philadelphia (CHOP) and the Immunization Action Coalition (IAC).

References

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