

The Vaccine Debate

The Immunization Action Coalition documents that infectious disease was first described by Hippocrates in 400 BC ("Vaccine Timeline"). For centuries, infectious disease such as small pox, measles, mumps, rubella, polio, diphtheria, tetanus, pertussis, yellow fever, tuberculosis, varicella, etc. plagued the global population ("Vaccine Timeline"). The Mayo Clinic Staff explains, infection with a virus is the first stage in the damaging of cells within the body. Consequently, symptoms result in permanent side effects and disease ("Germs"). It was not until 1796 that Edward Jenner introduced the first vaccine for the smallpox virus ("Vaccine Timeline"). The development of the smallpox vaccine led to the eradication of the virus. Author Brian Greenwood reports in his article, "The Contribution of Vaccination to Global Health: Past, Present and Future," (that) "the smallpox vaccine today is estimated to save 5 million lives annually" (Greenwood). Another virus, Polio, is also said to be close to eradication. In addition, other diseases such as: measles, diphtheria, tetanus, pertussis, and yellow fever are finally being controlled by vaccine (Greenwood). Greenwood also reports, "Global coverage of vaccination against many important infectious diseases of childhood has been enhanced dramatically since the creation of WHOS's Expanded Programme of Immunization in 1974 and the Global Alliance for Vaccination and Immunization in 2000. Despite these successes, approximately 6.6 million children still die each year and about half of these deaths are caused by infections, including pneumonia and diarrhoea, which could be prevented by vaccination. Enhanced deployment of recently developed pneumococcal conjugate and rotavirus vaccines should therefore, result in a further decline of child mortality" (Greenwood). According to the College of Physicians of Philadelphia, vaccines have undergone extreme criticism since the 1800's ("History"). The big debate today is whether we should continue to vaccinate regardless

of the misconceptions today's vaccinations face, the actual risks of vaccination, and the overall benefits of vaccination.

First, a main concern of vaccine critics is whether we should continue to vaccinate. The World Health Organization known as WHO provides that these critics, also referred to as Anti-Vaxxers proclaim, "vaccines cause many harmful side effects, illnesses, and even death – not to mention possible long term side effects we don't even know about" ("Six Misconceptions"). For example, Anti-Vaxxers attribute vaccines as the direct cause for Autism Spectrum Disorder or ASD. The authors of WebMD describe ASD as, "a developmental disorder that is caused by how the brain functions" ("Do Vaccines"). Anti-Vaxxers suggest that vaccine ingredients, such as the mercury containing preservative thimerosal and receiving multi-dose vaccines like MMR, have contributed to the development of autism in its recipients ("Do Vaccines"). "Doctors use thimerosal to prevent the growth of bacteria and fungi in vaccines" ("Do Vaccines"). If thimerosal were to be completely eliminated, the full blown version of virus could thrive within the vaccine. That being said, the ingredient is necessary to be included in the vaccine. Why do some vaccine recipients have ASD while other recipients do not? The CDC explains in a study, "A 2013 CDC study added to research showing that vaccines do not cause ASD. The study looked at the number of antigens (substances in various vaccines that cause the body's immune system to produce disease-fighting antibodies) from vaccines during the first two years of life. The results showed that the total amount of antigen from vaccines received was the same between children in ASD and those that did not have ASD" ("Six Misconceptions"). Just in case, the amount of thimerosal in the MMR vaccine and other multi-dose vaccines has been reduced to the minimum required amount, ensuring the vaccines effectiveness ("Do Vaccines").

Also suggested by Anti-Vaxxers is that the diphtheria-tetanus vaccine causes sudden infant death syndrome (SIDS). The DTP vaccine is administered to a child during a certain time frame in age. CDC experts conclude, "a number of well-controlled studies were conducted

during the 1980's, the investigators found, nearly unanimously, that the number of SIDS deaths temporally associated with DTP vaccination was within the range expected to occur by chance. In other words, the SIDS deaths would have occurred even if no vaccinations had been given" ("Six Misconceptions"). Anti-Vaxxers have proclaimed that all these "factors" concerning harmful side effects, illnesses, and possible death are known by the CDC, governments all over the globe, and organizations aimed towards global health, yet vaccines are still mandated. Amongst many conspiracy theories, one of the most popular is that vaccination has no other purpose then to reap financial gains. Anti-Vaxxers claim that wrongs caused by vaccination are lied about and covered up to protect the corrupters. Erin Walkinshaw reports in her article "Mandatory Vaccinations: The international Landscape" in a Canadian Medical Association Journal, (that) WHO admits, "no official policy on mandatory vaccinations, Alison Brunier, communications officer for immunizations writes in an email. "While it is preferable that high community demand and acceptance make compulsory vaccination programs unnecessary, WHO understands that some countries may wish to move in that direction when faced with declining vaccination rates and outbreaks of disease." But WHO is "very interested in learning from the experience of countries who introduce compulsory vaccination in order to better understand the impact on immunization coverage and the strengths and weaknesses of such approaches" (Walkinshaw). As mentioned earlier on, Hippocrates described infectious disease in 400 BC and it was not until plague and death obliterated the population that the first vaccine was introduced in 1796 ("Vaccine Timeline"). Therefore, it seems highly unlikely a conspiracy of virus and disease was created all the way back in 400 BC. Vaccines take many scientists and large funds to create. They are in fact urged, suggested and sometimes mandated for the sole purpose of keeping the global population healthy and alive. Not for reasons that support a conspiracy theory.

It took centuries to even begin to control and then eradicate infectious disease with vaccine. Critics argue, that vaccine did not lead the global population into the eradication of said diseases and the control of others. Critics argue, that education in better living, hygiene, and sanitation of water is merely responsible. An important idea to remember and question, if virus and disease plagued the population and virtually everything within it, how would better hygiene and water sanitation alone fix this major epidemic? The creation of vaccines is what took the virus and disease out of the people and out of the water. History and documented evidence provides yet again that vaccine was created for no other purpose then to save lives. Centuries later, this overall purpose has become even more successful with more knowledge, understanding of science, and advancement in medicine. History suggests and proves that “trial and error” is the way we learn in science and in medicine. What works and what does not work, simply by what has failed. That is no conspiracy. Rationale, history of virus, history of disease, science, and medicine can verify that truth. The CDC admits, financial cost is actually one of the obstacles they and other organizations are aiming towards resolving (“Making”). The vision is to provide more vaccine availability for poorer countries and also provide easier deliverance to more secluded populations due to their geographical locations (“Making”).

Next, the actual risks of not vaccinating the global population are severe. The Immunization Action Coalition suggests that vaccination is the best way to protect children, elderly, pregnant, travelers, the immunocompromised, and even perfectly healthy individuals (“Why Immunize”). The goal of the CDC and other governmental organizations geared towards more vaccination and better awareness have focused their attention on immunization beginning in children. If protection starts right from birth each individual should be protected for life (“Making”). Moreover, children are born with little to no immune system. If infectious disease had any chance of consuming our population as it did centuries ago, children would be the fastest route of travel. The CDC provides a recommended schedule for infants to ensure,

“protection against 14 serious diseases by the age 2” (“Making”). The CDC describes (how), “vaccines help develop immunity by imitating an infection” (“Making”). As described on the CDC website, “Making the Vaccine Decision”, vaccines contain antigens of a disease or the “germ”. The antigen is what triggers the body’s immune system to create a response to the germ by building up antibodies. These specific antibodies will then create a “memory” for the next time the antigen is ever introduced again. It will automatically initiate its defense mechanism on the virus and remember it. Then, it will use the antibodies it created when it responded to the antigen the first time (“Making”). The CDC states, “the antigens in vaccines come from weakened or killed germs so they cannot cause serious illness” (“Making”). The next goal for vaccine is to reach the elderly population and other possibly immunocompromised individuals. Pregnant women and their unborn would be at risk (against their own will) if the population is not vaccinated. It is also extremely important for travelers to vaccinate. A virus is, on its own, equipped to spread among the masses without any help from travelers. Travelers going from one side of the globe to the other, without vaccine protection, pose an extremely dangerous threat for the entire global population (“Importance”).

The CDC and the ACIP committee (Advisory committee on Immunization Practices) carefully studies and details all possible side effects for vaccines and presents an accumulation of information (good and bad) to vaccine recipients on Vaccine Information Sheets (VIS). The CDC proclaims, “Any vaccine can cause side effects. For the most part these are minor (for example, a sore arm or low-grade fever) and go away within a few days” (“Possible”). The CDC also carefully defines who should not get vaccines or certain vaccines. One vaccine that undergoes much scrutiny, not mentioned before, is the Influenza (inactivated) vaccine. It is recommended and specifically stated on the Influenza (inactivated) vaccine VIS, “Some people should not get this vaccine and to tell the person who is giving you the vaccine the following: have any allergies, including an allergy to eggs, or have ever had an allergic reaction to an

influenza vaccine, have ever had Guillain-Barré Syndrome (also called GBS), have any long-term heart, breathing, kidney, liver, or nervous system problems, have asthma or breathing problems, or are a child who has had wheezing episodes, are pregnant, are a child or adolescent who is receiving aspirin or aspirin-containing products, have a weakened immune system, will be visiting or taking care of someone, within the next 7 days, who requires a protected environment (for example, following a bone marrow transplant)” (“Inactivated”).

Regardless of VIS sheets, Anti-Vaxxers rave that the population is lied to when a serious side effect does result from a vaccine. They continue to claim that they are covered up and hidden from the public. There have been reports of recipients of the influenza resulting in Guillain-Barré Syndrome (GBS). However, the Influenza (inactivated) VIS sheet warn vaccine recipients of this potential syndrome and specifically state that the person giving the vaccine should be told of any concerns. Remember, the only way a side effect became a side effect is because it was a reaction for an Influenza (inactivated) recipient in the past. Healthcare workers will report that many papers given to patients are “left behind” or thrown in the garbage. It is time for patients and vaccine recipients to take some accountability and responsibility for their own health by asking more questions. Also, they need to do exactly what the healthcare provider suggests and read informative paperwork. Anti-Vaxxers will argue that people who get the influenza vaccine still get the “flu”. The purpose of a vaccine is to eliminate the virus completely. However some viruses, such as the influenza virus, can in fact “mutate” or change. The annual influenza vaccine is predicted from the strain the population across the globe experienced previously. This prediction is not always one hundred percent accurate. The goal of vaccines that protect against a virus that can mutate, is the symptoms, side effects, and overall cycle of the virus might be greatly reduced.

Finally, past and present day vaccine statistics will prove the overall benefit of vaccination. From the eradication of smallpox to the approaching eradication of polio and

diphtheria, vaccination is controlling disease and saving lives all over the globe. The CDC provides the analogy, "It's much like bailing out a boat with a slow leak. When we started bailing, the boat was filled with water. But we have been bailing fast and hard, and now it is almost dry. We could say, "Good. The boat is dry now, so we can throw away the bucket and relax." But the leak hasn't stopped. Before long we'd notice a little water seeping in, and soon it might be back up to the same level as we started" ("Why Immunize"). This analogy explains why it is necessary to continue to vaccinate even if a virus and/or disease proves to be rare statistically. The rarity has to be completely eliminated before we can eliminate its vaccine ("Why Immunize"). One single case could trigger an epidemic. The CDC provides a prime example of the consequence the population might face by eliminating a vaccine before complete elimination. The CDC reported, "In 1974, Japan had a successful pertussis (whooping cough) vaccination program, with nearly 80% of Japanese children vaccinated. That year only 393 cases of pertussis were reported in the entire country, and there were no deaths from pertussis. But then rumors began to spread that pertussis vaccination was no longer needed and that the vaccine was not safe, and by 1976 only 10% of infants were getting vaccinated. In 1979 Japan suffered a major pertussis epidemic, with more than 13,000 cases of whooping cough and 41 deaths. In 1981 the government began vaccinating with acellular pertussis vaccine, and the number of pertussis cases dropped again" ("Why Immunize"). This actual event is not a consequence that any child, sibling, parent, grandparent, or friend should ever have to endure. Especially when we have vaccines for some of these preventable-diseases. Anti-Vaxxers can argue that there is some ulterior motive that was carefully designed by the government. The facts continue to prove them all wrong.

In conclusion, we should continue to vaccinate regardless of the misconceptions today's vaccinations face. The MMR vaccine is not responsible for autism. The DTP vaccine is not responsible for infants who have died unexpectedly and so tragically from SIDS. Study after

study, scientists and medical doctors have found no validity in these claims. Nevertheless, precautions are taken and vaccines are under continual surveillance. Vaccine is highly recommended by the CDC, WHO, ACIP, scientists, and medical doctors because the facts supporting the overall benefit of vaccination prove true every single time it is tested. The most common side effects are named. As are the rare but more serious side effects and complications. Experts are learning more and more about virus and infectious disease. Vaccination for HIV, some cancers, hypertension, diabetes, obesity, and even addiction are the goal of the future (Greenwood). These conditions and diseases are more complex. They may take a vaccine that is multi-dose and capable of targeting the most complicated parts of the body and its systems (Greenwood). Even though some virus and infectious disease may seem rare statistically, historically removing the vaccine has proven to result in failure. When looking at the “bigger picture” risks of vaccination are minute compared to a national or even global epidemic. We must continue to vaccinate, so that the future is able to live.

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