# Immunizations are for the greatest good essay

I believe that vaccination is safe and one of the greatest health developments of the 20th century. Illnesses, including rubella, diphtheria, smallpox, polio, and whooping cough, are now prevented by vaccination and millions of children’s lives are saved. Vaccinations are safe and protect the individual but are also beneficial to the greater good. It is ethical to immunize your child so that the population is vaccinated against a contagious disease and it will be unlikely that an outbreak of the disease will occurs and most members of the community will be protected.

In a population in which a large number of individuals are immune, chains of infection are likely to be disrupted, which stops or slows the spread of disease (Fine, P. , Eames, K; Heymann, D. L. 2011) The greater the proportion of individuals in a community who are immune, the smaller the probability that those who are not immune will come into contact with an infectious individual. Opposition to vaccination has posed a challenge to herd immunity, allowing preventable diseases to persist in or return to communities that have inadequate vaccination rates (Fine, 2011).

Without Immunizations, people would be contracting deadly diseases and the risk for spread would be much greater. The Center for Disease Control and Prevention describes the role of vaccines as “ vaccines reduce the risk of infection by working with the body’s natural defenses to help it safely develop immunity to disease. ” The United States long standing vaccine safety system ensures that vaccines are as safe as possible.

According to the CDC, the United States has the most effective vaccine supply in its history. The U. S. Food and Drug Administration ensures the

safety, effectiveness, and availability of vaccines for the United States. Before a vaccine is approved by the FDA for use by the public, results of studies on safety and effectiveness of the vaccine are evaluated by highly trained FDA scientists and doctors. The FDA also inspects the sites where vaccines are made to make sure they follow strict manufacturing guidelines.

The CDC's Immunization Safety Office conducts four primary vaccine safety activities to ensure safety of immunizations; Vaccine Adverse Event Reporting System; Vaccine Safety Datalink; Clinical Immunization Safety Assessment Project; and Emergency Preparedness For Vaccine Safety (" Parents | Making the Vaccine Decision | CDC," n. d. ). VAERS is an early warning system that helps the CDC and FDA monitor problems following vaccination. VSD is a collaboration between CDC and several health care organizations that allows ongoing monitoring and proactive searches of vaccine-related data.

CISA is a partnership between CDC and several medical centers that conducts clinical research on vaccine-associated health risks in certain groups of people. In the event of a disease outbreak in which a mass vaccination campaign is needed, CDC activates emergency preparedness activities to ensure that vaccines remain safe. (" Parents | Making the Vaccine Decision | CDC," n. d. ) Some people have had concerns that Autism Spectrum Disorder might be linked to the vaccines children receive, but studies have shown that there is no link between receiving vaccines and developing ASD.

In 2011, an Institute of Medicine (IOM) report on eight vaccines given to children and adults found that, with rare exceptions, these vaccines are very safe. A 2013 CDC study added to the research showing that vaccines do not cause ASD (Taylor LE, Swerdfeger AL, Eslick GD 2014)The study looked at the number of antigens (substances in 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 with ASD and those that did not have ASD (Taylor LE, Swerdfeger AL, Eslick GD 2014). One vaccine ingredient that has been studied specifically is thimerosal, a mercury-based preservative used to prevent contamination of multidose vials of vaccines.

Research shows that thimerosal does not cause ASD. In fact, a 2004 scientific review by the IOM concluded that " the evidence favors rejection of a causal relationship between thimerosal–containing vaccines and autism. Since 2003, there have been nine CDC conducted and funded studies that have found no link between thimerosal-containing vaccines and ASD, as well as no link between the measles, mumps, and rubella (MMR) vaccine and ASD in children (Madsen KM, Hviid A, Vestergaard M, Schendel D, Wohlfahrt J, et al 2002). Between 1999 and 2001, thimerosal was removed or reduced to trace amounts in all childhood vaccines except for some flu vaccines.

This was done as part of a broader national effort to reduce all types of mercury exposure in children before studies were conducted that determined that thimerosal was not harmful (Ball L, Ball R, Pratt RD 2001) It

was done as a precaution. Currently, the only childhood vaccines that contain thimerosal are flu vaccines packaged in multidose vials. Thimerosal-free alternatives are also available for flu vaccine. (Madsen KM, Hviid A, Vestergaard M, Schendel D, Wohlfahrt J, et al 2002).

Besides thimerosal, some people have had concerns about other vaccine ingredients in relation to ASD as well. However, no links have been found between any vaccine ingredients and ASD (Ball L, Ball R, Pratt RD 2001). Beyond preventing 426 million cases of illness and averting 6. 4 million deaths over the next ten years, improving coverage of childhood immunization would hold major economic benefits for both families and governments (“ Estimated Economic Benefits During The ‘ Decade Of Vaccines’ Include Treatment Savings, Gains In Labor Productivity,” n. . ).

Expanding childhood immunization rates in the world’s 72 poorest countries over the next decade would result in an estimated $151 billion in treatment and productivity savings (During the ‘ Decade of Vaccines,’ The Lives of 6. 4 Million Children Valued At $231 Billion Could be saved,” n. d. ). Averting short-term costs of disease treatment saves $6. 2 billion and avoiding the lost productivity of caretakers saves $1. billion, while averting the long term economic costs of lost productivity due to disability and death yields savings of $144 billion (“ Estimated Economic Benefits During The ‘ Decade Of Vaccines’ Include Treatment Savings, Gains In Labor Productivity,” n. d. ). Vaccines against pneumonia alone represent $68 billion (45%) of the total estimated savings in treatment costs and productivity losses, while accounting for 42% of the 6. 4 million lives saved (During the ‘ Decade Of

Vaccines,' The Lives Of 6. Million Children Valued At $231 Billion Could Be Saved," n. d. ).

The ability to avert 6. 4 million deaths by improving vaccine coverage has an estimated value of $231 billion for those in at-risk countries (During The ' Decade Of Vaccines,' The Lives Of 6. 4 Million Children Valued At $231 Billion Could Be Saved," n. d. ). . Based on an analysis of the five countries where the majority of the averted deaths occur, we expect that the economic value of the vaccination program is somewhere between 3 and 18 times the projected costs of purchasing the vaccines. " Estimated Economic Benefits During The ' Decade Of Vaccines' Include Treatment Savings, Gains In Labor Productivity," n. d. )

In January 2010 the Bill & Melinda Gates Foundation pledged to spend $10 billion over the next decade (the " Decade of Vaccines") to help discover and develop vaccines and deliver them to people in the world's poorest countries. The goal of this commitment is not only to reduce illness and death in low-income countries, but also to mobilize support from other organizations and the governments of middle- and high-income countries to join the fight for immunization.

If developing countries are able to increase access to life-saving vaccines and rates of vaccination, the health benefits could be substantial (" Estimated Economic Benefits During The ' Decade Of Vaccines' Include Treatment Savings, Gains In Labor Productivity," n. d. ). In addition, when vaccination is used to prevent illness and death, the push to expand vaccine

access may also deliver major economic benefits to families and governments.

According to the Lives Saved Tool developed by the Johns Hopkins Bloomberg School of Public Health, the World Health Organization, and the Futures Institute, an estimated 6. million children's deaths could be averted between 2011 and 2020 by scaling up the delivery of five life-saving vaccines and rapidly introducing an effective malaria vaccine in seventy-two of the world's poorest countries (" Estimated Economic Benefits During The ' Decade Of Vaccines' Include Treatment Savings, Gains In Labor Productivity," n. d. ). In 2011, 49 US states did not meet the 92-94% herd immunity threshold for pertussis (whooping cough), resulting in a 2012 outbreak that sickened 42, 000 people and was the biggest outbreak since 1955. Mark Fishetti 2013).

In 2005, an 18-month-old Amish girl contracted polio and spread the disease to four other unvaccinated children, but, because the community met the herd immunity threshold for the disease, there was no polio outbreak. (Steven F. Hirsch, 2007) Vaccines protect the " herd. " Herd immunity (or community immunity) is the percent of people who need to be vaccinated to provide immunity for the population (US Department of Health and Human Services).

Children and adults who cannot be vaccinated due to age, poor health (who are immune-compromised or undergoing chemotherapy, for example), or other reasons rely on herd immunity to prevent contraction of vaccine-preventable diseases. (Steven L. Weinreb 2011). A Jan. 2008 outbreak of

measles in San Diego, CA resulted in 48 children who had to be quarantined because they were too young to be vaccinated and could not rely on herd immunity to keep them safe (David Surgerman 2008).

Reference

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