

Argument 1: Vaccines have reduced or eliminated once prevalent and deadly disease.

There are two clinical forms of smallpox. Variola major is the severe and most common form of smallpox. Historically, variola minor has an overall fatality rate of about 30%. (A)

The [smallpox] vaccine is relatively inexpensive. In 2011, the cost of a single dose for public health programs in developing countries was between 11 and 14 US cents. (A)

Smallpox is a disease caused by the Variola major virus. Some experts say that over the centuries it has killed more people than all other infectious diseases combined. Worldwide immunization stopped the spread of smallpox three decades ago. The last case was reported in 1977...The U.S. stopped routine smallpox vaccinations in 1972. (B)

Smallpox was fatal in up to 30% of cases. Smallpox has existed for at least 3,000 years and was one of the world's most feared diseases until it was eradicated by a collaborative global vaccination program led by the World Health Organization. The last known natural case was in Somalia in 1977. Since then, the only known cases were caused by a laboratory accident in 1978 in Birmingham, England, which killed one person and caused a limited outbreak. Smallpox was officially declared eradicated in 1979...Smallpox no longer occurs naturally since it was totally eradicated by a lengthy and painstaking process, which identified all cases and their contacts and ensured that they were all vaccinated. Until then, smallpox killed many millions of people. (C)

Few diseases frightened parents more in the early part of the 20th century than polio did. Polio struck in the warm summer months, sweeping through towns in epidemics every few years. Though most people recovered quickly from polio, some suffered temporary or permanent paralysis and even death. Many polio survivors were disabled for life. They were a visible, painful reminder to society of the enormous toll this disease took on young lives. (F)

The first major documented polio outbreak in the United States occurred in Rutland County, Vermont. Eighteen deaths and 132 cases of permanent paralysis were reported. (F)

An average of over 35,000 cases were reported during this time period. With the introduction of Salk inactivated poliovirus vaccine (IPV) in 1955, the number of cases rapidly declined to under 2,500 cases in 1957. By 1965, only 61 cases of paralytic polio were reported. (F)

Polio is an infectious disease caused by a virus that lives in the throat and intestinal tract. It is most often spread through person-to-person contact with the stool of an infected person and may also be spread through oral/nasal secretions. Polio used to be very common in the United States and caused severe illness in thousands of people each year before polio vaccine was introduced in 1955. Most people infected with the polio virus have no symptoms; however, for the less than 1% who develop paralysis it may result in permanent disability and even death. (D)

Polio used to be very common in the U.S. and caused severe illness in thousands of people each year before polio vaccine was introduced in 1955. (E)

The number of worldwide polio cases has fallen from an estimated 350,000 in 1988 to 407 in 2013—a decline of more than 99% in reported cases. Four regions of the world are certified polio free—the Americas, Europe, South East Asia and the Western Pacific. Only three polio-endemic countries remain—Afghanistan, Nigeria, and Pakistan. January 13, 2014 marked three years since a child was paralyzed by poliovirus in India. The country was once considered the most complex challenge to achieving global polio eradication. On March 27, 2014, the country of India, along with the other 10 countries in the WHO South East Asia Region, was certified polio-free. 80% of the world's people now live in polio-free areas. (F)

A staggering 2.5 million children die every year of diseases for which vaccines are already available. Diseases due to rota virus and pneumococcus, both of which are preventable, account for nearly 1.26 million deaths annually. Hepatitis B causes nearly 600,000 deaths annually. Measles accounts for another 200,000 deaths" (I)

The number of measles deaths globally decreased by 71% between 2000 and 2011, from 542 000 to 158 000. Over the same period, new cases dropped 58% from 853 500 in 2000 to 355 000 in 2011, according to new data released in 2013 by WHO, a leading member of the Measles and Rubella Initiative which is working all over the world to bring vaccinations to children and adults. (G)

In 2000, the United States declared that measles was eliminated inside its borders because it has a highly effective measles vaccine, a strong vaccination program that achieves high vaccine coverage in children and a strong public health system for detecting and responding to measles cases and outbreaks. *Elimination* is defined as the absence of continuous disease transmission for 12 months or more in a specific geographic area. (G)

Unfortunately, every year, measles is brought into the United States by unvaccinated travelers (Americans or foreign visitors) who get measles while they are in other countries. They can spread measles to other people who are not protected against measles, which sometimes leads to outbreaks. This can occur in communities with unvaccinated people. (G)

Most people in the United States are protected against measles through vaccination, so measles cases in the U.S. are uncommon compared to the number of cases before a vaccine was available. Since 2000, when measles was declared eliminated from the U.S., the annual number of people reported to have measles ranged from a low of 37 people in 2004 to a high of 667 people in 2014. In 2008, 2011, 2013 and 2014, there were more reported measles cases compared with previous years. CDC experts attribute this to U.S. communities with pockets of unvaccinated people. (G)

Countries have accelerated their efforts to reduce measles-related morbidity and mortality both through increasing routine measles immunization coverage and conducting periodic campaigns known as supplementary immunization activities. During 2000–2008, these activities reduced global measles-associated mortality by an estimated 78% (achieving an estimated >90% mortality reduction in the Eastern Mediterranean, the African regions, and the Western Pacific WHO Regions). (G)

“A ten-pack of shots to prevent Hepatitis B costs \$30.20 and a ten-pack of shots to prevent Measles, Mumps and Rubella costs \$19.75. (H)

Deaths due to diseases like diphtheria, pertussis and tetanus are showing a downward trend. Some like small pox have been eradicated. Others like polio are on the verge of eradication” (D).