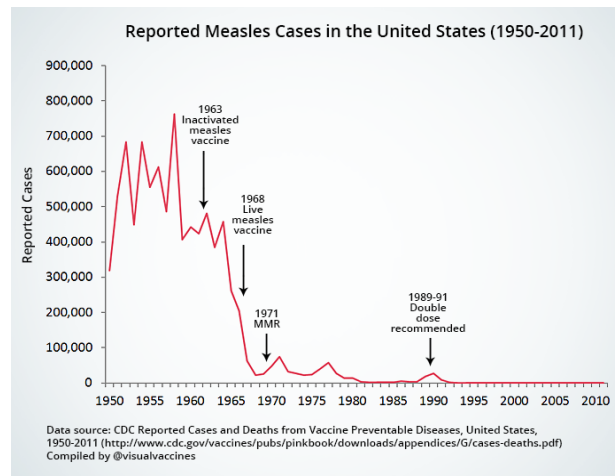


WHY IMMUNIZATION IS IMPORTANT

Economic Impact of Vaccines

- Local and state health departments incur costs in investigating and controlling these disease.
- In 2017, Minnesota estimated that it cost the tax-payer more than \$1 million to address a single outbreak of measles⁴
- Measles is a very expensive disease. Not only are there treatment costs, time and productivity lost from work by parents, but also the cost to local and state health departments to investigate and control these diseases.
- A recent study from the University of North Carolina calculated that the overall cost of 10 adult vaccine-preventable diseases was \$8.95 billion in 2015⁵.
- Unvaccinated people accounted for \$7.1 billion (about 80%) of this cost.
- The flu alone accounted for \$5.8 billion.
- A study in Colorado in 2015, showed that hospital and Emergency Department visits to treat vaccine preventable disease in children totaled more than \$35 million⁶.
- The actual costs, taking into account costs of office visits, medication, lost wages and decreased productivity, are much higher.

- Vaccine Preventable Disease (VPDs) can cause deaths and long-term disabilities and have a substantial cost to the community. So Immunization has many benefits to both the individual and the community by preventing these diseases.
- 1 out of every 20 children with measles gets pneumonia, which is the most common cause of death for young children².
- 1 out of every 1,000 children with measles develops a swelling of the brain, leaving the child with deafness or intellectual disability².
- Deaths and long-term disabilities due to VPDs are very expensive, costing millions of tax-payer and personal dollars, due to hospitalizations, long term care and lost productivity for parents as a result of time off work. (see Economic Impact of Vaccines sidebar)..
- Children with VPDs or who are unimmunized may miss school for many days or even weeks during an outbreak.
- Vaccines are not just for children. Vaccines can protect first responders (police and paramedics as well as health care staff during an influenza pandemic) and assure communities that their health and safety and not jeopardized.
- It is the right thing to do. As society we should protect our communities, including the very young, the very old and the vulnerable.



Vaccines fight Antimicrobial Resistance

- Resistance of bacteria to antibiotics is a major public health crisis.
- By 2050, it is projected that 10 million people worldwide could die from untreatable infections.
- *Strep. pneumoniae* causes diseases such as meningitis which are treated with antimicrobial drugs. A vaccine against this disease reduces the need for antimicrobial use.

Measles

- ◊ Measles is a highly contagious disease spread from person-to-person through sputum.
- ◊ One person typically transmits the infection to 12-18 others³.
- ◊ Before 1963, the CDC estimates¹ that there were over 10,000 cases for every 100,000 people in the US (see graph to left).
- ◊ 1 out of 4 cases are hospitalized² and 1 per 1,000 cases results in encephalitis (inflammation of the brain).
- ◊ In 2013, hospital costs for a person with measles was anywhere from \$4,032 to \$46,060.
- ◊ The decline in measles cases is not related to hygiene, safer food handling or improvements in water treatment.
- ◊ No other factor, besides vaccination, can account for the substantial decline in the number of cases of measles following the introduction of the measles vaccine.

References and Further Reading

1. CDC Decision Analysis Model Table 1. <https://www.cdc.gov/vaccines/programs/vfc/pubs/methods/index.html>. Accessed 17 July 2018
2. CDC <https://www.cdc.gov/measles/about/complications.html>
3. European Centre for Disease Prevention and Control
http://ecdc.europa.eu/sites/portal/files/media/en/healthtopics/measles/PublishingImages/measles_contagious_1000.jpg
4. Center for Infectious Disease Research and Policy 2017 Minnesota measles outbreak to cost state \$1 million.
<http://www.cidrap.umn.edu/news-perspective/2017/05/minnesota-measles-outbreak-cost-state-1-million>
5. Ozawa, Portnoy, Getaneh, Clark, Knoll et al. 2016 Modeling the Economic Burden of Adult Vaccine-Preventable Diseases in the United States. Health Affairs 35 (11)
6. Colorado Children's Immunization Coalition and Children's Hospital Colorado, 2017. Vaccine Preventable Disease in Colorado Children. <https://www.childreimmunization.org/resource-library/2016-vaccine-preventable-diseases-in-colorados-children-report>