

Vaccination Facts

Media reports have created confusion concerning the safety and effectiveness of vaccinations. The following is information concerning vaccines obtained from studies through various organizations, including the Centers for Disease Control and Prevention (CDC):

Effectiveness of the flu vaccine:

- A 2014 study showed that flu vaccine reduced children's risk of flu-related pediatric intensive care unit (PICU) admission by 74% during flu seasons from 2010-2012. Another study published in 2016 showed that those age 50 and older who received a flu vaccine reduced their risk of hospitalization from the flu by 57%. Flu vaccination is an important preventive tool for people with chronic health conditions. Vaccination is associated with lower rates of some cardiac events among people with heart disease, especially those who had a cardiac event in the past year. Flu vaccination also has been shown to be associated with reduced hospitalizations among people with diabetes (79%) and chronic lung disease (52%). ⁽¹⁾
- Vaccination helps protect women during and after pregnancy. Vaccination can also protect a baby after birth from flu. (Mom passes antibodies onto the developing baby during her pregnancy.) ⁽¹⁾
- A study that reviewed flu vaccine effectiveness in pregnant women found that vaccination reduced the risk of flu-associated acute respiratory infection by about one half. ⁽¹⁾
- Studies show that flu vaccine in a pregnant woman can reduce the risk of flu illness in her baby by up to one half. This protective benefit was observed for up to four months after birth. ⁽¹⁾
- Receiving personal vaccination also protects people around you, including those who are more vulnerable to serious flu illness, such as babies and young children, the elderly, and people with certain chronic health conditions. ⁽¹⁾

MMR vaccine – Misconception in relation to autism:

- This concern began with a paper published in 1998 by a British gastroenterologist, Andrew Wakefield. He reported autism in 8 children who received MMR vaccine and had endoscopic evidence of lymphoid nodular hyperplasia. He stated that the vaccine caused intestinal inflammation, which led to translocation of certain proteins from the intestines into the blood stream that affected brain development in these children. The paper was retracted from the public record in 2010, and the former doctor's medical title has been since revoked. ⁽²⁾
- In 2013, the CDC performed a study to analyze vaccines and the antigens used in the vaccinations. Antigens were observed for the first two years of each child's life. The study observed children who had autism, and those who did not. The results showed that the total amount of antigens in the children's bodies were the same, meaning there was no correlation between vaccines and autism. ⁽¹⁾

Thimerosal – Misconception that the preservative in vaccines results in brain toxicity:

- Thimerosal is a 50% solution of ethyl-mercury and historically was used as a preservative in some vaccines. It has never been used in live-virus vaccines such as MMR. The only vaccine routinely used today containing thimerosal is influenza vaccine and a thimerosal-free vaccine for influenza is available. Many studies in the US and Europe have failed to show any association between the thimerosal contained in vaccines with autism or mercury poisoning. ⁽³⁾

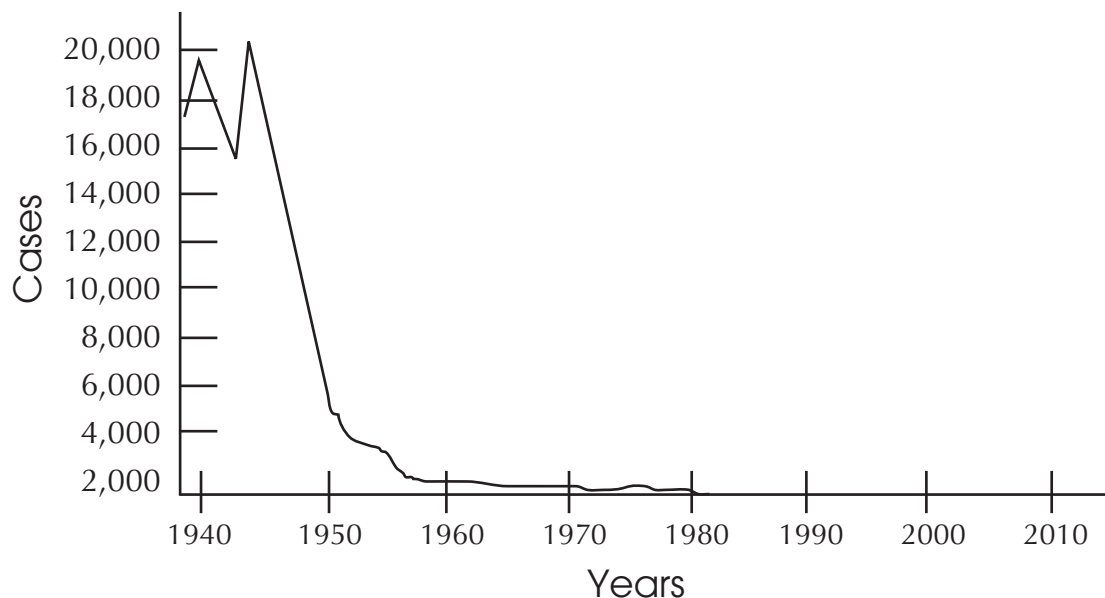


Antigens - Misconception that vaccines given concurrently overwhelm the immune system.

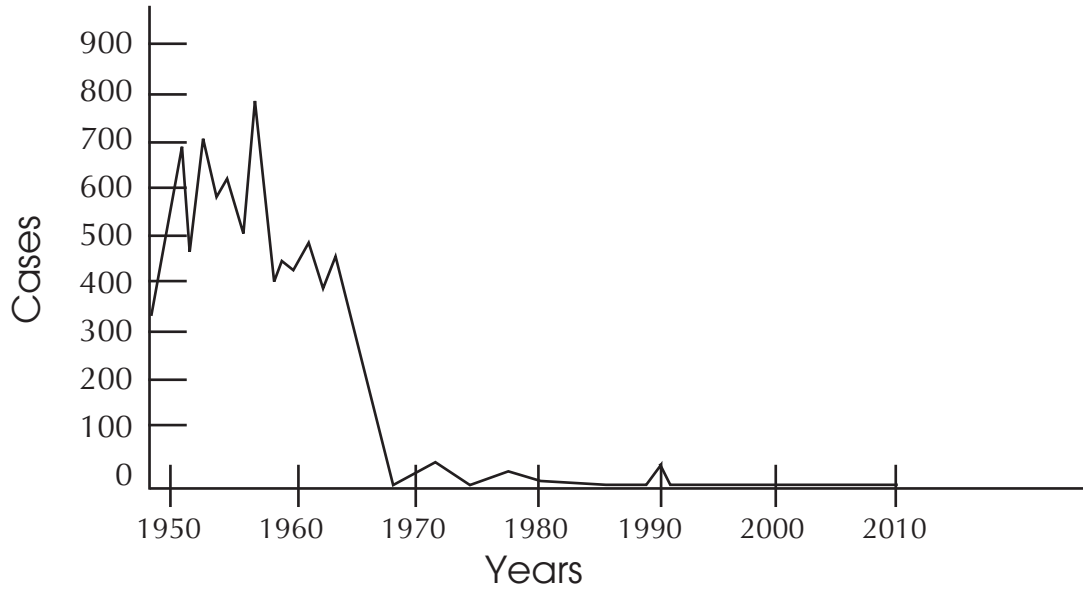
- Although the number of recommended childhood vaccines has increased during the past 30 years, with advances in protein chemistry and recombinant DNA technology, the dosage of vaccines has actually decreased. The 14 vaccines given today (2009) contain less than 200 bacterial and viral proteins compared to more than 3000 of these immunological components in the 7 vaccines administered in 1980. ⁽⁴⁾
- A CDC-sponsored study in 2013 evaluated 1,047 children, aged 7-10 years, who received 7,266 antigens, 8,127 antigens, and 10,341 antigens at 7, 12, and 24 months, respectively. This study was aimed to analyze the results to see if the children's immune systems were negatively affected by receiving a larger dose of antigens versus a smaller dose of antigens. Antigens - substances that cause the body to create antibodies - are necessary in the fight to ward off infectious diseases. The study concluded there was no association between the number of antigens received through vaccines in the first two years of life and a negative impact on the immune system. Interestingly, the study found that the children who received the most antigens tested better in attention and executive functions than those who received less antigens. ⁽⁵⁾

The following graphs contain data showing the positive effect that vaccinations have had on certain infectious, debilitating diseases. Among children born from 1994 through 2013, vaccination has prevented 322 million illnesses, 21 million hospitalizations, and 732,000 deaths, per CDC estimates. However, due to vaccine hesitancy among parents and patients, cases of Pertussis, Tetanus, and other diseases recently have begun to increase in the U.S. and other countries around the world. ⁽⁶⁾

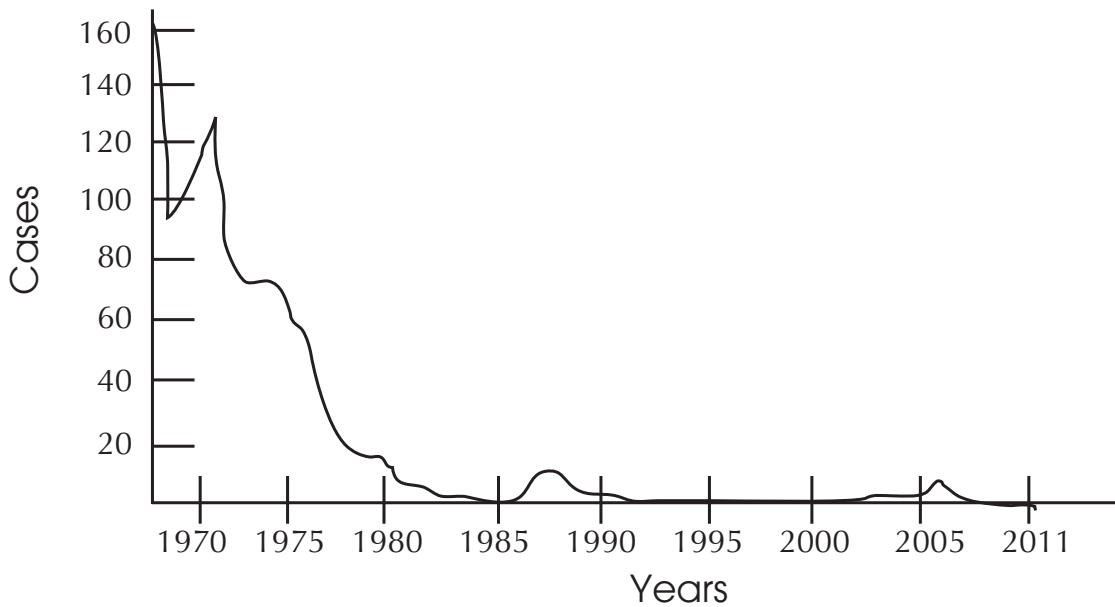
Cases of Diphtheria



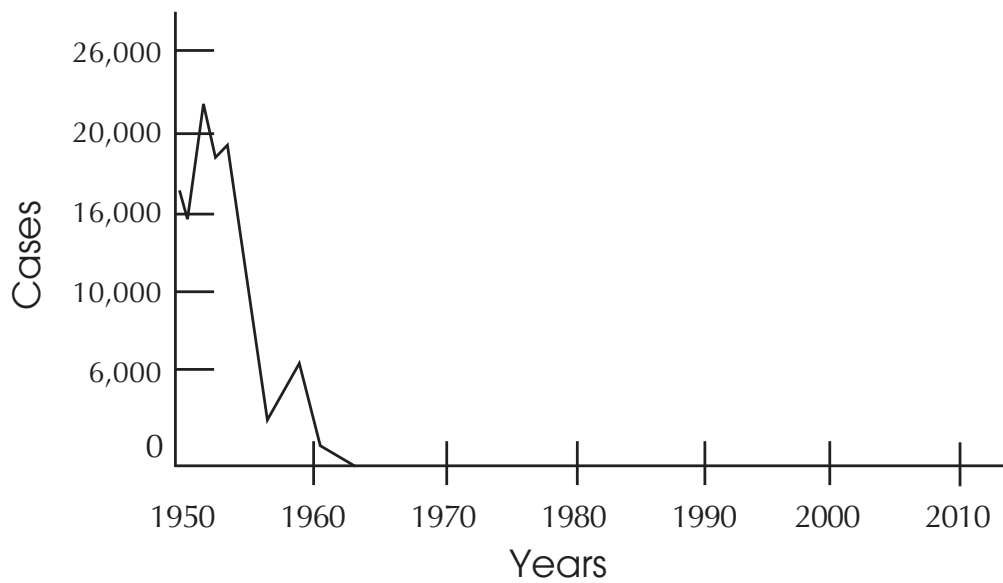
Cases of Measles



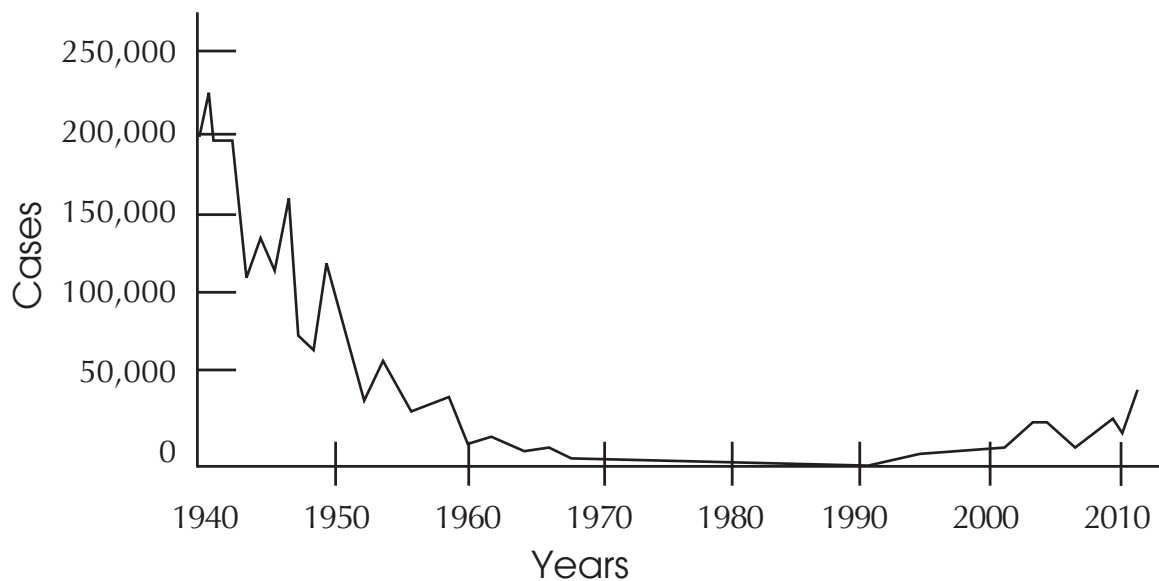
Cases of Mumps



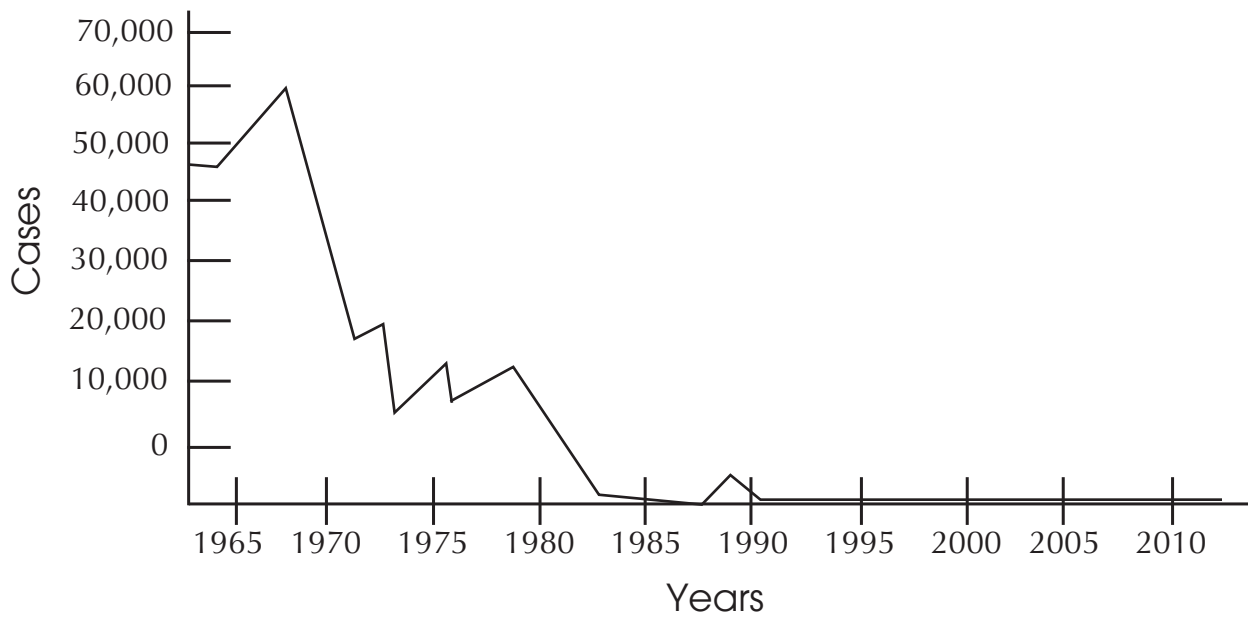
Cases of Poliomyelitis



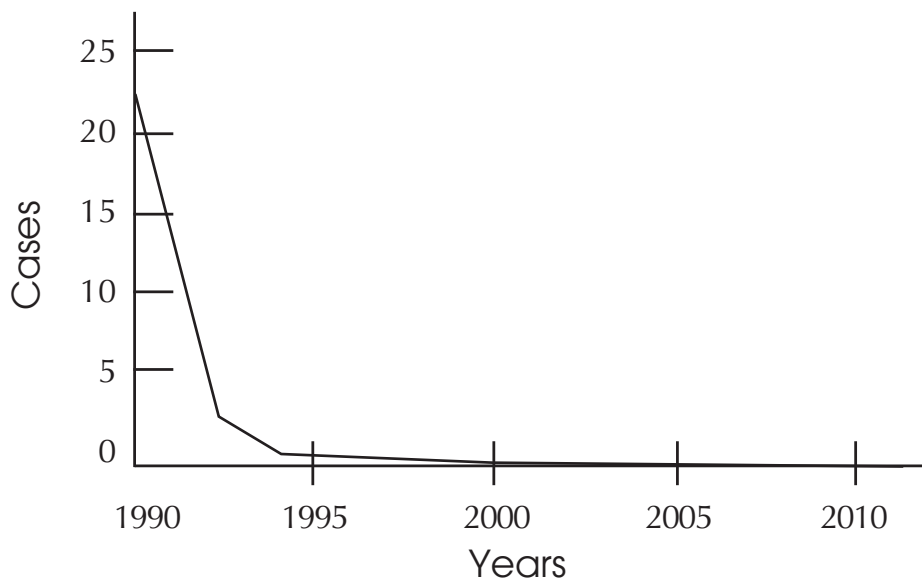
Cases of Pertussis



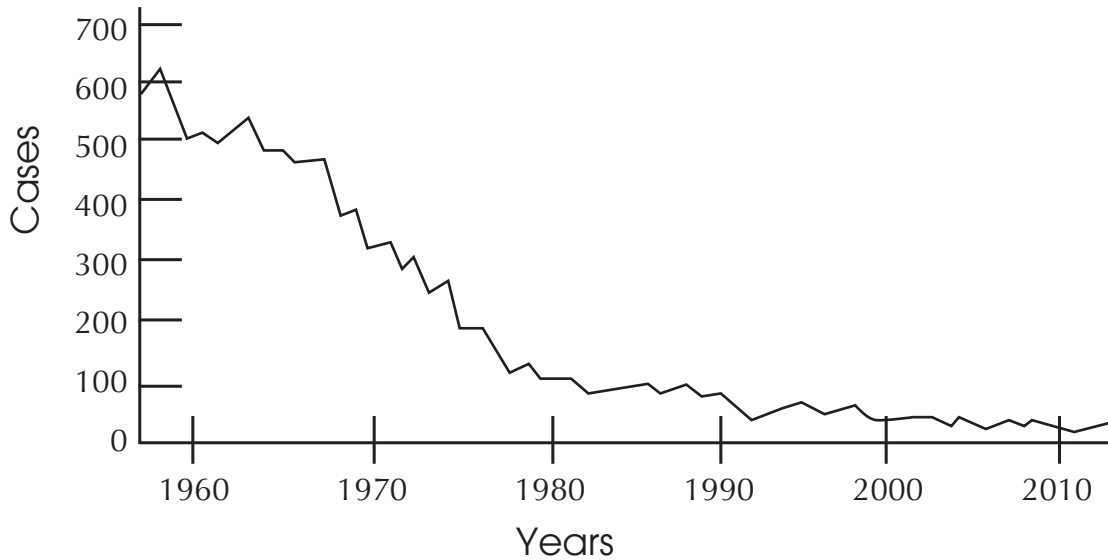
Cases of Rubella



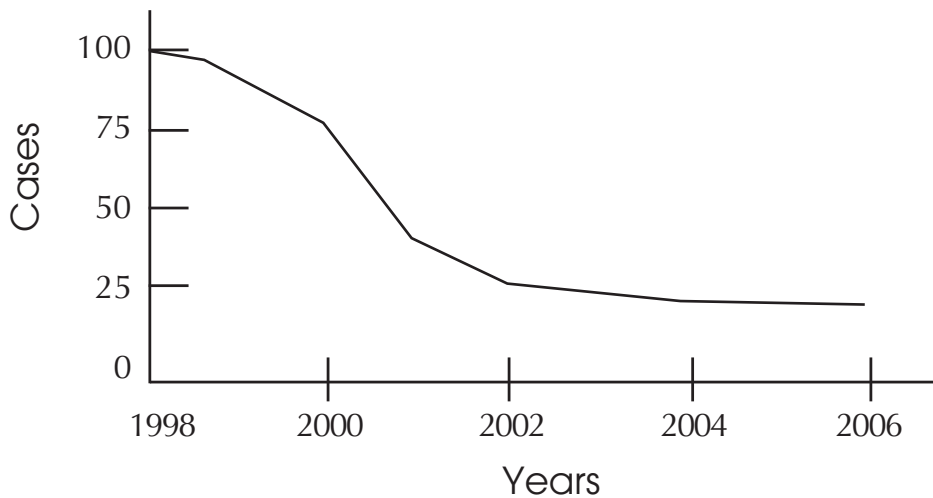
Cases of Invasive Hib



Cases of Tetanus



Cases of Pneumococcal Disease



Data Footnotes: (1) Vaccine Effectiveness - How Well Does the Flu Vaccine Work? (2017, February 15). Retrieved September 01, 2017, Centers for Disease Control and Prevention. (2) Lancet 2010; 375:445—BMJ 2001;342:c5347—BMJ 2011;342:c5258—Clin Infect Dis 2009 Feb 15;48(4):456-461. (3) Thompson et al. N Engl J Med 2007;357:1281-92—Stehr-Green et al. Am J Prev Med 2003;25:101-6—Madsen et al. Pediatrics 2003;112:604-6—Heron et al. Pediatrics 2004;114:577-83—Clarkson et al. N Engl J Med 2003;349(18): 1731. (4) Gerber Clin Infect Dis 2009 Feb 15, 48(4): 456-461. (5) Iqbal et al. Pharmacoepidemiol Drug Safety 2013; 22 (12): 1263 (6) <https://www.cdc.gov/vaccines/pubs/pinkbook/chapters.html>

