

A brief history of the cornerstone of public health

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Immunizations have often been referred to as the cornerstone of public health. With the exception of safe water, no other health strategy, not even antibiotics, has had such a large impact on the reduction of disease and the improvement of health than immunizations. Diseases such as measles, polio, diphtheria, mumps, and pertussis are rarely seen in the United States. Smallpox has been declared eradicated since 1980, thanks to vaccines.

Many people have fears about vaccines which come from misunderstandings of scientific findings, pseudo-science, and illogical arguments. In the past, vaccine safety was an uncommon occurrence; fear of the disease itself outweighed the risk of the vaccine side effects. Today the crippling diseases of the past are rare and therefore forgotten. Vaccines are among the most studied and safe public health prevention interventions we have next to pasteurization of milk, hand-washing and sanitary sewage practices. Being vaccinated is much less risky than being at risk of getting the disease. For more information on vaccine misconceptions visit:

<http://www.cdc.gov/vaccines/vac-gen/6mishome.htm>

The word vaccine comes from the Latin word "*vacca*" which means cow. What do cows have to do vaccines? India and China had been using the pus of cowpox lesions to immunize humans against smallpox as early as the 10th century. In the 1600s in Europe and 1700s in colonial America, others were practicing inoculation from cowpox lesions. In 1796 a doctor living in Gloucestershire, England, Edward Jenner, inoculated an eight-year-old boy by taking the pus from a cowpox lesion on a milkmaid's hand and scratching the surface of the boy's arm. Jenner had heard a milkmaid boasting that she would never have an ugly pockmarked face because she had had the cowpox and knew she would never get smallpox. This experience set in motion Jenner's experimentation with inoculation. The young boy was inoculated with smallpox six weeks later and never got sick. Jenner published this experience as well as twelve other studies he had conducted. This study was the foundation of today's modern vaccinology.

We have recently passed the 50-year anniversary of the Salk polio vaccine. Before polio vaccine was available 13,000 to 20,000 cases of paralytic polio were reported each year in the United States. Annual polio epidemics left victims, mostly children, in braces, crutches, wheelchairs, and iron lungs. The crippling effects of polio lasted throughout their lives. Polio has now been eliminated from the Western hemisphere, Europe and the Western Pacific regions due to vaccine.

The measles vaccine was first licensed in 1963. Previously there were three to four million cases of measles each year in the US, 450 of those ending in death. Since the measles vaccine this rate has been reduced by 99%. Few cases of measles are seen today in the United States.

Those cases that are in the United States are mostly imported from other countries where vaccine rates are much lower.

The elimination of smallpox and the dramatic decrease of polio and measles are just a few of the successes of vaccines. (See <http://www.thefinalinch.org/> for some interesting videos on efforts to eradicate polio) However, the viruses and bacteria that cause the vaccine-preventable diseases still exist and can be passed on to people who are not protected by vaccines. Preventable diseases have many effects on society as a whole. Sick children miss school which can force parents to take off from work. Visits to the doctor's office are usually necessary, time-consuming and even costly. Vaccine-preventable diseases may also result in hospitalization, permanent disability, or even death. Immunization is one of the most important ways to protect individuals and communities against serious infectious diseases and their consequences.

Apache County Public Health offers free and low-cost vaccines at our clinics in Springerville and St. Johns. For more information please call our office at 928-333-2415.