

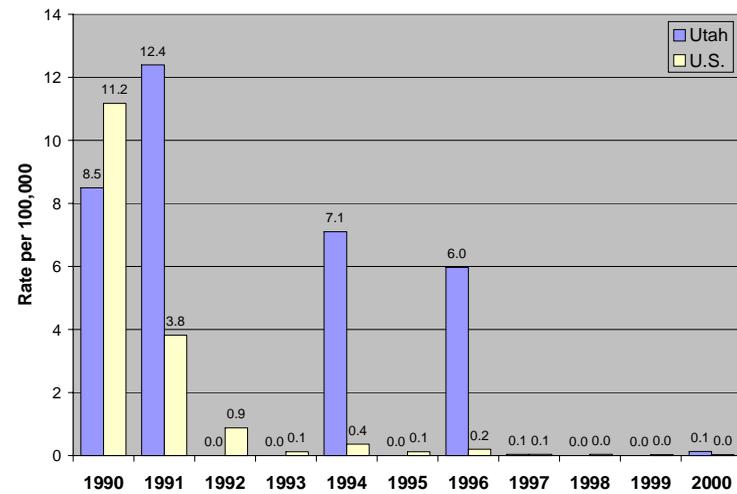
During the 20th century, new vaccines and recommendations for universal childhood vaccination dramatically reduced illness and death from diseases such as smallpox, polio, and diphtheria. Despite that success, outbreaks in Utah during the 1990's of measles and pertussis illustrated the need for ongoing surveillance and high immunization coverage rates. This Update reviews recent trends for selected vaccine-preventable illnesses.

Measles

- Before measles vaccine was introduced in 1963, more than 0.5 million cases of measles were reported annually in the U.S. Since then measles incidence has steadily decreased.
- Utah experienced four major outbreaks (>100 cases) since 1990 (Figure 1), but none in 1997-2001.
- Three cases were reported in 2000 due to exposure to an infected foreign athlete.

Measles

Figure 1. Reported cases of measles per 100,000 persons, Utah and U.S., 1990-2000.



Source: Bureau of Epidemiology, UDOH

Pertussis

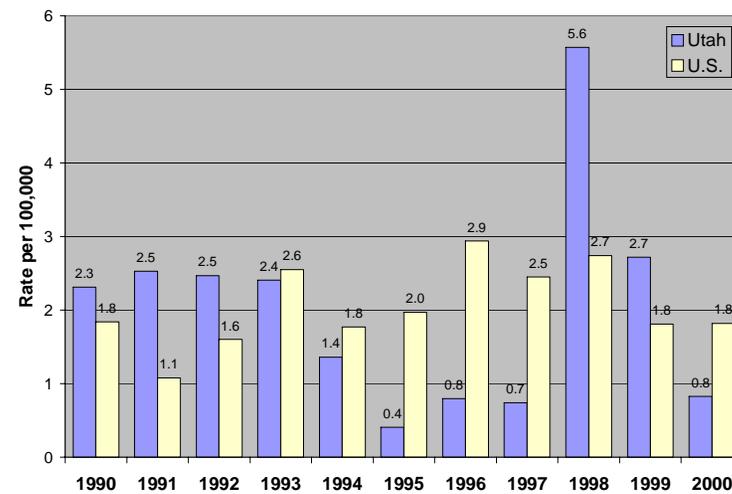
- Pertussis, a common cause of childhood illness and death in the early 1900's, decreased in frequency after vaccination began in the 1940's.
- Since 1991, pertussis has become the most common vaccine-preventable disease among children <5 years of age. More cases have been reported in adults and outbreaks among school-age children and adolescents have been increasing.
- Utah had a large outbreak in 1998 in a poorly vaccinated population. Sporadic cases continue to occur statewide (Figure 2).

Mumps

- The number of reported mumps cases in the U.S. decreased more than 99% after licensure of mumps vaccine in 1967.
- Despite routine childhood vaccination, mumps outbreaks occurred in highly vaccinated populations (Figure 3).

Pertussis

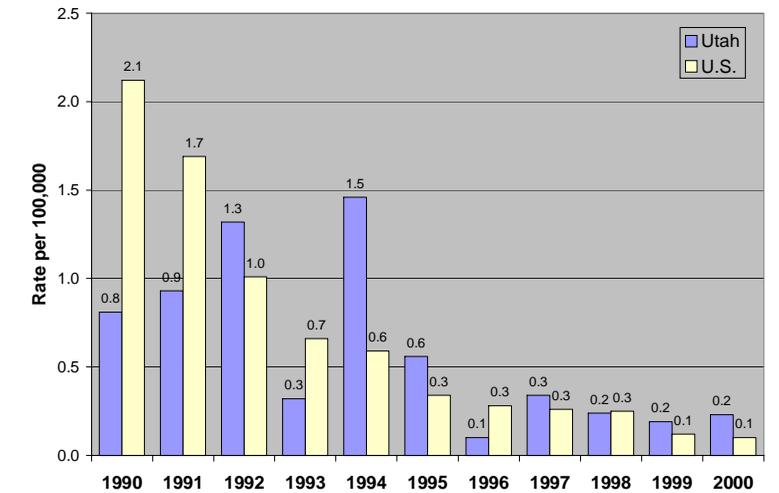
Figure 2. Reported cases of pertussis per 100,000 persons, Utah and the U.S., 1990-2000.



Source: Bureau of Epidemiology, UDOH

Mumps

Figure 3. Reported cases of mumps per 100,000 persons, Utah and U.S., 1990-2000.



Source: Bureau of Epidemiology, UDOH

Rubella

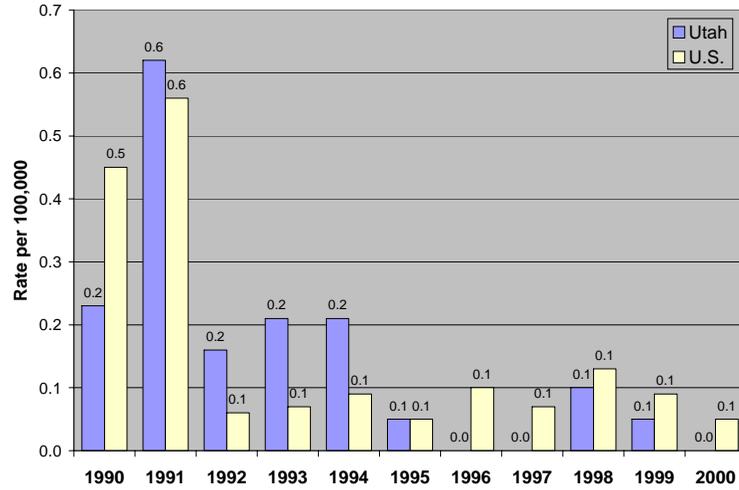
- Reported U.S. rubella cases declined by 99% after 1969.
- Despite routine vaccination of children, rubella continues to occur among adults from countries without rubella vaccination programs. The last Utah case in a first trimester pregnant woman led to an infant born with congenital rubella in 1999.
- Since 1995, Utah's rates have been lower than U.S. rates (Figure 4).

Invasive Pneumococcal Disease

- About 50,000 cases of invasive pneumococcal disease occur in the U.S. annually.
- The first pneumococcal conjugate vaccine (PCV7) Prevnar™ was licensed in the U.S. in 2000. It includes purified capsular polysaccharide of the 7 serotypes most com-

Rubella

Figure 4. Reported cases of rubella per 100,000 persons, Utah and U.S., 1990-2000.



Source: Bureau of Epidemiology, UDOH

only isolated from children with invasive disease and reduces invasive disease caused by vaccine serotypes by 97%.

- Utah has averaged 17 cases of invasive pneumococcal disease annually over the last five years; most cases occurred in children <2 years of age.

***Haemophilus Influenzae* Type B Invasive Disease**

- Before introduction of *Haemophilus influenzae* (Hib) Type B conjugate vaccine in 1990, about 1 in 5 U.S. children developed invasive Hib disease before the age of 5; 2/3 were among children <18 months old. Invasive Hib disease has decreased by 99% since onset of vaccination.
- In Utah, the incidence rate has decreased from 1.2 per 100,000 persons in 1990 to 0.5 per 100,000 persons in 2000.
- In 2000, only one case of invasive Hib disease was reported in Utah in an unvaccinated two-year-old.

Childhood immunization was one of the great public health successes of the 20th century, but needs ongoing attention to maintain and extend those gains in health.

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