

Utah Health Status Update:

Childhood Immunization Coverage in Utah

October 2008

Utah Department of Health

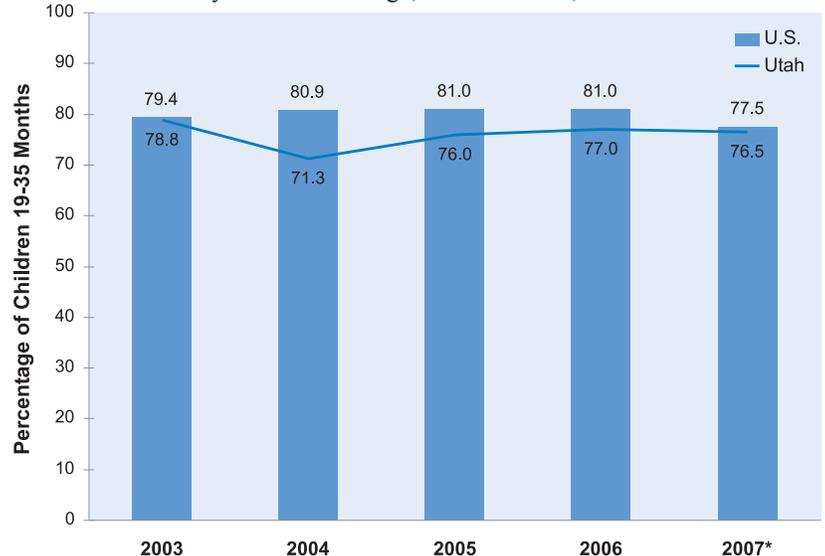
Utah is the sixth healthiest state according to the United Health Foundation's (UHF) *America's Health Rankings*™ 2007 report. Utah's ranking was the same in 2006 and has consistently been in the top ten of the healthiest states since 2000. While Utah ranks fairly high in overall health rankings, statistics for early childhood immunization rates are not as impressive. Utah currently ranks 20th in the nation for the percentage of two-year-olds fully immunized according to the National Immunization Survey (NIS). The NIS measures the number of children 19–35 months of age who have completed the 4:3:1:3:3:1 (4 DTaP, 3 polio, 1 MMR, 3 Hib, 3 hepatitis B, 1 chickenpox) series by 24 months of age (Figure 1). Prior to 2007, NIS did not include the chickenpox vaccine as part of the basic immunization series for children. For the interim reporting period during 2007, Utah's immunization coverage rate among two-year-olds was 76.5%; slightly below the national rate of 77.5%, and below the Healthy People 2010 objective of 80% coverage for two-year-olds. Based on these rates, it is clear there is still work to do to meet the 2010 objective.

Immunization rates at school entrance (kindergarten) are better than early childhood (age two) rates in part because Utah law requires that children entering a public, private, or parochial school be fully immunized. However, kindergarten entry immunization rates, which have been over 90% since 2002, declined to 84% in 2006–2007.

Various factors may account for the lower immunization rates among two-year-olds and kindergartners in Utah, including immunization exemptions. Utah is one of twenty states that allow exemptions to immunization for medical, religious, or personal beliefs. The percentage of Utah exemptions for school entry has increased from 1.2% in 1997 to 2.9% in 2007. Nationally, Utah has the youngest median age, larger family sizes, and the highest birth rate. These factors, combined with an increasing exemption rate, create a

Immunization Coverage

Figure 1. Percentage of children 19–35 months of age who had completed the 4:3:1:3:3:1 series by 24 months of age, Utah and U.S., 2003–2007



The 4:3:1:3:3:1 series consists of 4 DTaP, 3 polio, 1 MMR, 3 Hib, 3 hepatitis B, and 1 chickenpox dose.

*2007 data are interim

Note: Prior to 2007, the chickenpox vaccine was not included as part of the basic immunization series for children
Sources: Centers for Disease Control and Prevention and Utah Department of Health

critical risk in the community for outbreaks of vaccine-preventable diseases. Vaccination is an important line of defense for two reasons. First, vaccination directly protects the person being vaccinated. Second, having a high percentage of the population vaccinated protects all of us, including those who cannot be vaccinated because of severe allergies to vaccine ingredients, medical conditions, or are too young to begin vaccination.

Vaccines are one of the most successful public health tools for preventing disease and death. Vaccination has effectively eliminated diphtheria, measles, mumps, polio, rubella, and tetanus from Utah. The incidence of these diseases has been reduced by over 99% since the pre-vaccine era (Table 1). More recent decreases in the disease burden of chickenpox, *H. influenzae* type B, hepatitis A, hepatitis B, and invasive pneumococcal disease in Utah are largely due to new and improved vaccines developed in the last 20 years.

However, vaccine-preventable diseases are still around and can spread quickly, causing serious illness and even death. Although wild measles virus has been eliminated from the Americas, a major outbreak of measles in the United States has been ongoing since the beginning of 2008. This outbreak has affected more than one third of all states, and has resulted in 123 cases reported to CDC in U.S. residents as of August 2, 2008, with many more currently under investigation. In 2007, there were 43 cases of measles reported in United States residents. Nearly all of the cases have been among the unvaccinated population,

either by personal choice or because they were too young to receive the vaccine, and their exposure can be traced to measles virus imported into the United States from elsewhere in the world. This is a reminder of the importance of maintaining high vaccination rates, even for diseases that are rarely seen in the United States, as long as those diseases continue to circulate in other parts of the world.

In recent years, Utah has struggled with a resurgence of pertussis, or whooping cough. From 2003–2006, the number of cases of pertussis increased substantially, although never reaching anywhere near the number of cases seen in the pre-vaccine era (Figure 2). In 2006, most of the reported cases occurred in adolescents and adults—a population which until recently had limited protection against pertussis because there was no licensed vaccine to boost immunity. A pertussis-containing vaccine (Tdap) is now available for adolescents and adults from 10–64 years of age. In 2007, the number of cases of pertussis decreased to just under 400, and continues to remain low. As of August 8, 2008, 100 confirmed and probable cases of pertussis have been reported to the Utah Department of Health.

Utah holds an annual statewide Immunization Summit which brings stakeholders together to discuss methods and strategies to increase Utah’s immunization rates. Ongoing efforts to increase childhood immunization levels include a variety of interventions such as: educating parents on the continued importance of immunizations, ensuring health care providers have current information on immunization best practices, and enrolling health care providers in the Utah Statewide Immunization Information System (USIIS) and the Utah Vaccines for Children (VFC) Program. The process of increasing Utah’s immunization rates will require the joint efforts of health care providers, parents, and other community members to ensure Utahns continue to be protected from vaccine-preventable diseases.

Morbidity of Vaccine-preventable Diseases

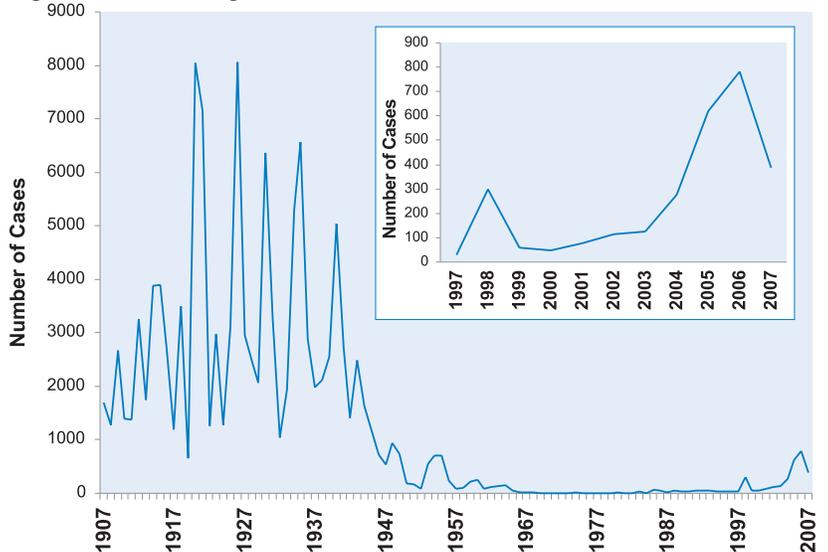
Table 1. Comparison of maximum and current reported morbidity of vaccine-preventable diseases in Utah, 2007

Disease	Maximum Cases Reported	Year Maximum Cases Reported	2007 Reported Cases	Last Case Reported	Percent Decrease
Chickenpox	5,370	1945	810	current	84.9%
Diphtheria	1,271	1926	0	1960	100.0%
<i>H. influenzae</i> type B	20	1991	1	current	95.0%
Hepatitis A	1,073	1996	8	current	99.2%
Hepatitis B	167	1985	17	current	89.8%
Measles	24,688	1934	0	2002	100.0%
Meningococcal disease	24	1993	12	current	50.0%
Mumps	5,638	1939	2	current	99.9%
Pertussis	8,059	1920	408	current	94.9%
Polio	585	1951	0	1996	100.0%
Rubella	3,399	1942	0	2004	100.0%
Tetanus	4	1939	0	2006	100.0%

Source: Utah Department of Health

Pertussis

Figure 2. Number of pertussis cases in Utah, 1907-2007



Source: Utah Department of Health

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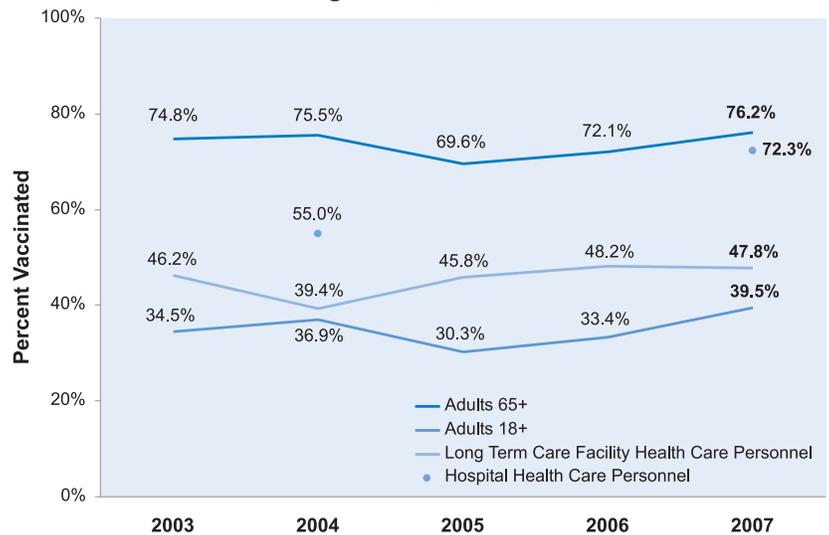
For additional information about this topic, contact the Utah Immunization Program, (801) 538-9450, Hotline 1-800-275-0659, website: www.immunize-utah.org; the Office of Epidemiology, (801) 538-6191, FAX (801) 538-9923, email: epi@utah.gov; or the Office of Public Health Assessment, Utah Department of Health, Box 142101, Salt Lake City, UT 84114-2101, (801) 538-6108, FAX (801) 538-9346, email: phdata@utah.gov

Breaking News, September 2008

Adult Influenza Vaccinations

Due to vaccine shortages and shipping delays, adult influenza vaccination coverage rates fell nationwide in 2005, and have been climbing slowly since that time. In 2005, Utah's influenza vaccine coverage rate from the Behavioral Risk Factor Surveillance System survey was 69.6% for all non-institutionalized persons 65 years of age and older. In 2006, that rate climbed to 72.1% and in 2007, it climbed further to 76.2%. Utah's rate has remained consistently above the national rate for the past six years, by an average of 4.2%. Our state currently stands 11th in the nation for influenza vaccine coverage for this age group and this 2007 rate is the highest rate reached to date in Utah. The rate for all adults 18 years of age and older follows a similar pattern climbing from 30.3% in 2005, to 33.4% in 2006 and finally to 39.5% in 2007. However, an estimated 83% of the population fall into a risk group recommended for vaccination. The 76.2% rate for those 65 and over and the 39.5% rate for those 18 and over both remain below the 83% target. Additionally, the Healthy People 2010 goal for influenza vaccination for persons 65 years and older is 90%. There is still much work to be done to reach this goal.

Influenza Vaccine Coverage Rates, Utah, 2003–2007



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Community Health Indicators Spotlight, September 2008

Pregnancy Interval and Birth Outcomes

Research indicates that short interpregnancy intervals (IPIs) are associated with pregnancy outcomes that are less than optimal. In a study utilizing Utah data, Zhu et al. analyzed data to determine whether the association between a short interval between pregnancies and adverse perinatal outcomes was due to confounding by other risk factors. Three adverse perinatal outcomes were examined: low birth weight (LBW <2500 grams), preterm births (<37 weeks gestation), and small for gestational age (SGA birthweight <10th percentile for gestational age). Zhu found that after controlling for maternal age, outcome of most recent pregnancy, death of a previous live-born infant, prenatal care entry, number of prenatal care visits, race, ethnicity, marital status, education, tobacco and alcohol use, the risk of any of the three adverse perinatal outcomes was high if the IPI was <3 months and that the risks declined rapidly as the IPI increased.¹

In a more recent analysis of linked Utah birth certificate and Medicaid eligibility data, among women enrolled in Medicaid for prenatal services, those with IPIs of <1 year had higher rates of preterm births than the state as a whole. These rates were even more discrepant among women who gave birth during each of two years following the record birth. The accompanying table illustrates these differences by year.

Preterm Birth Rates, Utah, 1999–2006

	State (All Births)	Medicaid (All Births)	One Year Rapid Repeat	Two Year Rapid Repeat
1999	9.46	11.44	14.20	25.58
2000	9.58	11.59	16.20	21.31
2001	9.37	11.39	13.52	24.00
2002	9.50	11.37	15.43	24.32
2003	9.51	11.30	12.71	19.40
2004	10.02	11.70	12.70	10.84
2005	10.15	11.79	13.12	--
2006	9.95	11.74	--	--

Note: Data not available for 2006 one year rapid repeat and 2005 and 2006 two year rapid repeat.

These data indicate that promoting adequate pregnancy spacing of between 18 to 24 months through programs that educate women and provide access to comprehensive family planning services would lead to improved pregnancy outcomes for this population of women.

1. Zhu, B.P., R.T. Rolfs, et al. (1999). "Effect of the Interval Between Pregnancies on Perinatal Outcomes." *New England Journal of Medicine* 340(8): 589-594.

Monthly Health Indicators Report

(Data Through August 2008)

Monthly Report of Notifiable Diseases, August 2008	Current Month # Cases	Current Month # Expected Cases (5-yr average)	# Cases YTD	# Expected YTD (5-yr average)	YTD Standard Morbidity Ratio (obs/exp)
Campylobacteriosis (Campylobacter)	41	33	283	203	1.4
Enterotoxigenic Escherichia coli (E. coli)	18	22	56	64	0.9
Hepatitis A (infectious hepatitis)	2	3	8	18	0.5
Hepatitis B (serum hepatitis)	1	4	23	23	1.0
Measles (Rubeola, Hard Measles)	0	0	0	0	--
Meningococcal Diseases	2	0	8	6	1.4
Norovirus	0	0*	8	13*	0.6
Pertussis (Whooping Cough)	36	49	192	271	0.7
Salmonellosis (Salmonella)	48	36	240	201	1.2
Shigellosis (Shigella)	8	6	24	32	0.8
Varicella (Chickenpox)	8	14*	533	470*	1.1
Viral Meningitis	11	33	40	81	0.5
West Nile (human cases)	12	32	14	42	0.3

Notifiable Diseases Reported Quarterly, 2nd Qtr 2008	Current Quarter # Cases	Current Quarter # Expected Cases (5-yr average)	# Cases YTD	# Expected YTD (5-yr average)	YTD Standard Morbidity Ratio (obs/exp)
HIV	27	21	49	46	1.1
AIDS	11	10	22	20	1.1
Chlamydia	1,444	1,206	2,880	2,152	1.3
Gonorrhea	122	182	261	321	0.8
Tuberculosis	5	9	14	17	0.8

Program Enrollment for the Month of August 2008	Current Month	Previous Month	% Change^s From Previous Month	1 Year Ago	% Change^s From 1 Year Ago
Medicaid	167,293	166,026	+0.8%	158,896	+5.3%
PCN (Primary Care Network)	20,177	19,068	+5.8%	18,575	+8.6%
CHIP (Children's Health Ins. Plan)	34,762	34,491	+0.8%	27,191	+27.8%

Medicaid Expenditures (in Millions) for the Month of August 2008	Current Month	Expected/Budgeted for Month	Fiscal YTD	Budgeted Fiscal YTD	Variance - over (under) budget
Capitated Mental Health	\$ 9.2	\$ 8.5	\$ 17.1	\$ 16.9	\$ 0.2
Inpatient Hospital	\$ 24.4	\$ 22.2	\$ 29.7	\$ 27.6	\$ 2.1
Outpatient Hospital	\$ 9.7	\$ 9.1	\$ 11.5	\$ 11.3	\$ 0.2
Long Term Care	\$ 17.2	\$ 16.3	\$ 27.9	\$ 28.1	(\$ 0.2)
Pharmacy	\$ 15.2	\$ 13.5	\$ 21.2	\$ 23.3	(\$ 2.1)
Physician/Osteo Services [‡]	\$ 7.0	\$ 7.3	\$ 9.0	\$ 8.7	\$ 0.4
TOTAL HCF MEDICAID	\$ 146.0	\$ 144.9	\$ 187.4	\$ 191.3	(\$ 3.8)

Health Care System Measures	Number of Events	Rate per 100 Population	% Change^s From Previous Year	Total Charges in Millions	% Change^s From Previous Year
Overall Hospitalizations (2006)	272,404	9.9%	-0.9%	\$ 3,874.8	+10.7%
Non-maternity Hospitalizations (2006)	161,398	5.7%	-2.5%	\$ 3,235.3	+11.0%
Emergency Department Encounters (2006)	670,168	24.7%	-1.3%	\$ 667.2	+20.6%
Outpatient Surgery (2006)	304,511	11.3%	-3.1%	\$ 1,020.9	+7.7%

Annual Community Health Measures	Current Data Year	Population at Risk	Number Affected	Percent/Rate	% Change^s From Previous Year
Overweight and Obesity (Adults 18+)	2007	1,861,147	1,077,600	57.9%	+5.5%
Cigarette Smoking (Adults 18+)	2007	1,861,147	217,800	11.7%	+19.4%
Influenza Immunization (Adults 65+)	2007	227,928	173,700	76.2%	+5.7%
Health Insurance Coverage (Uninsured)	2007	2,699,554	287,200	10.6%	-10.4%
Motor Vehicle Crash Injury Deaths	2007	2,699,554	269	10.0 / 100,000	-12.0%
Suicide Deaths	2007	2,699,554	368	13.6 / 100,000	-0.1%
Diabetes Prevalence	2007	2,699,554	127,000	4.7%	+15.0%
Coronary Heart Disease Deaths	2007	2,699,554	1,531	56.7 / 100,000	-5.1%
All Cancer Deaths	2007	2,699,554	2,547	94.3 / 100,000	-5.1%
Births to Adolescents (Ages 15-17)	2007	62,174	1,165	18.7 / 1,000	+12.7%
Early Prenatal Care	2007	55,063	43,728	79.4%	+0.5%
Infant Mortality	2007	55,063	284	5.2 / 1,000	+2.5%
Childhood Immunization (4:3:1:3:3:1)	2007	51,869	40,500	78.1%	+14.7%

* Due to limited historical data, the average is based upon 4 years of data for norovirus and varicella.
[§] % Change could be due to random variation.
[‡] Medicaid payments reported under Physician/Osteo Services do not include enhanced physician payments.
 Note: Data for notifiable diseases are preliminary and subject to change upon the completion of ongoing disease investigations.
 Active surveillance for influenza has ended until the 2008 season.