UTAH DEPARTMENT OF HEALTH

Utah Health Status Update:

Vaccine Preventable Diseases, 2011

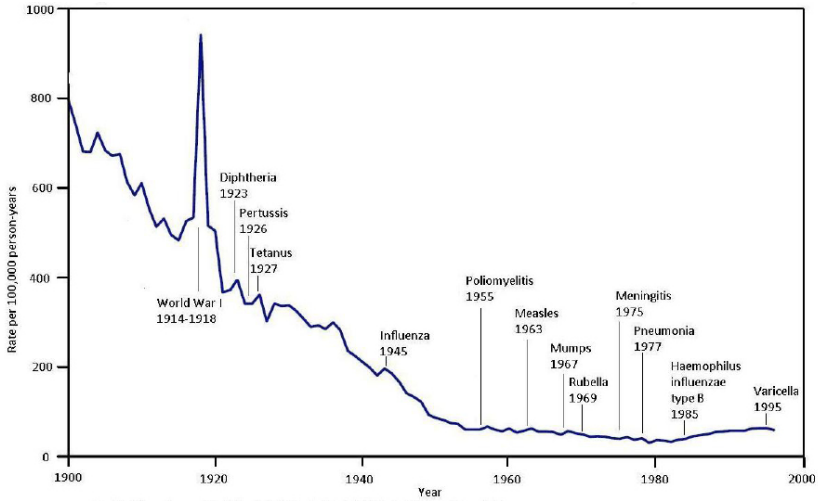
February 2012

Vaccines are considered one of the greatest achievements in public health. The first vaccine was developed in 1796 against smallpox, and by 1900, vaccines against rabies, typhoid, cholera, and plague were created. Widespread use of these and additional vaccines throughout the 20th century has contributed to a worldwide decrease of illness and death due to infectious diseases (Figure 1). National vaccination coverage began decreasing in 2008, but 2010 combined childhood series figures from the National Immunization Survey (NIS), indicate that trend has reversed and coverage in the U.S. increased from 69.9% in 2009 to 74.9%.[1] In Utah, NIS figures show decreased coverage. From 2008 to 2010, rates dropped from 76.6% to 69.5%.[1] An increase in measles and pertussis cases seen in Utah during 2011 may be a direct result of this decrease in vaccine coverage. The number of selected vaccine preventable diseases reported in Utah over the past three years is detailed in Figure 2. This report will discuss the measles outbreak in the spring of 2011 and the increasing pertussis activity in Utah.

- **Throughout the 20th century, widespread use of vaccines has contributed to a worldwide decrease in illness and death.**
- **An increase in measles and pertussis cases seen in Utah during 2011 may be a direct result of a decrease in vaccine coverage between 2008 and 2010.**
- **In April 2011, the first case of measles was identified in Utah since 2002. During this outbreak, public health officials found nine cases in Salt Lake County, of which seven were unvaccinated.**
- **In late May, another measles case was identified in Cache County. Six cases were found in Cache and Millard Counties.**
- **Utah has seen a rise in the number of pertussis cases from 2009 to 2011, mirroring the national trend.**

Infectious Disease Deaths and Vaccine Introduction

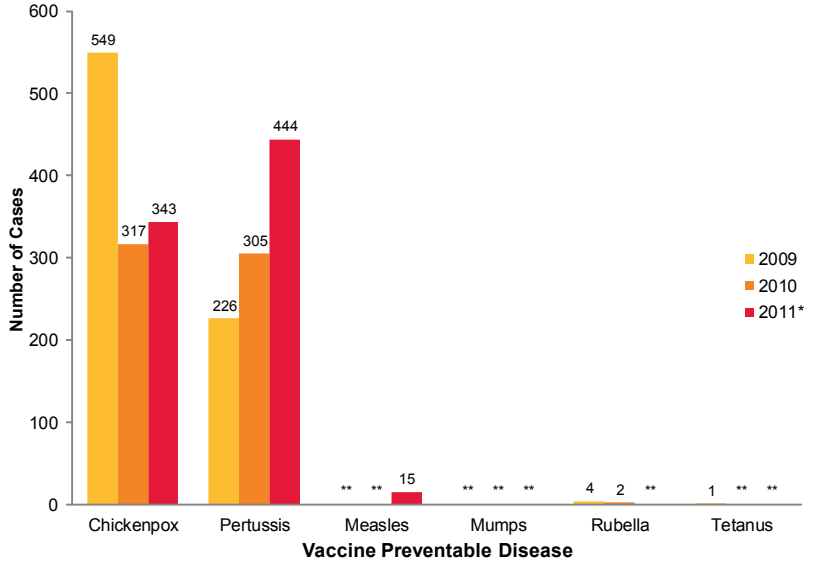
Figure 1. Crude death rate per 100,000 persons, United States, 1900 to 1996



Source: Adapted from Figure 1 in CDC, MMWR July 30, 1999, Vol. 48, No. 29, p. 621.

Vaccine Preventable Disease Summary

Figure 2. Number of preventable disease cases, Utah, 2009 to 2011*



Source: Bureau of Epidemiology, Utah Department of Health NEDSS database.
*2011 data is preliminary
**There were no reported cases for this disease and year.

Measles

In April 2011, the first case of measles was identified in Utah since 2002. A family with unvaccinated children traveled to Eastern Europe where measles was known to be circulating. Upon returning to Utah, one child who was sick with a rash, fever and cough attended school during the infectious period, exposing siblings and classmates, resulting in the largest measles outbreak in Utah since 1996. During this outbreak, public

health officials identified nine cases in Salt Lake County, of which, seven were known to be unvaccinated. The last known confirmed case of measles in Salt Lake County had a rash onset in mid-April.

In late May, another measles case was identified in Cache County. This case was an unvaccinated child who exposed five family members, two of which were known to be unvaccinated. One of the cases worked in Millard County and returned home during the infectious period, exposing many coworkers and community members, resulting in an extensive public health response. This second outbreak involving Cache and Millard counties had six cases. No evidence has been found to link these two outbreaks, but it is presumed that some cases were not reported to public health. No additional cases of measles were reported in 2011.

Pertussis

Pertussis is known to be cyclical in nature with peaks in activity every three to four years. Nationally, rates of pertussis have been on the rise since 2007 (Figure 3). The same trend has been seen in Utah. The last year Utah experienced elevated numbers of pertussis was in 2006. Preliminary 2011 data indicate the highest incidence of disease is in children 14 years of age and younger, children less than one year bearing the highest burden of disease (incidence rate of 41.6 cases per 100,000). Figure 4 details pertussis incidence by age group in Utah for 2011, as compared to the incidence rate of 15.6 cases per 100,000 persons for all age groups.

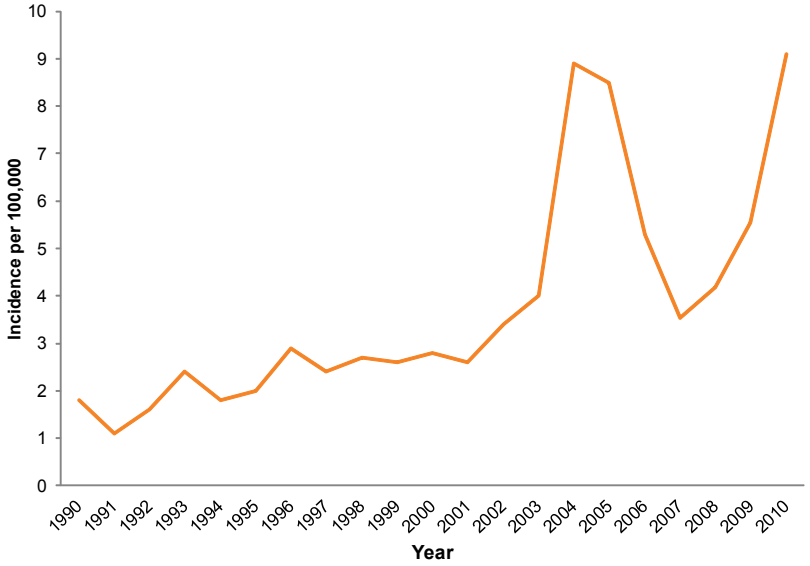
Two pertussis outbreaks in schools since the beginning of this school year involved junior high school-aged children (11-15 years). In both outbreaks, students in the 7th grade were permitted to enter school without their required Tdap booster shot or a signed exemption form. Once an outbreak had been identified, students were not allowed back into school until they received the Tdap booster or brought in a signed exemption form.

Conclusion

Continued surveillance of vaccine preventable diseases in Utah is needed to assess the impact of decreasing immunization rates on reports of illness.

U.S. Reported Pertussis Incidence

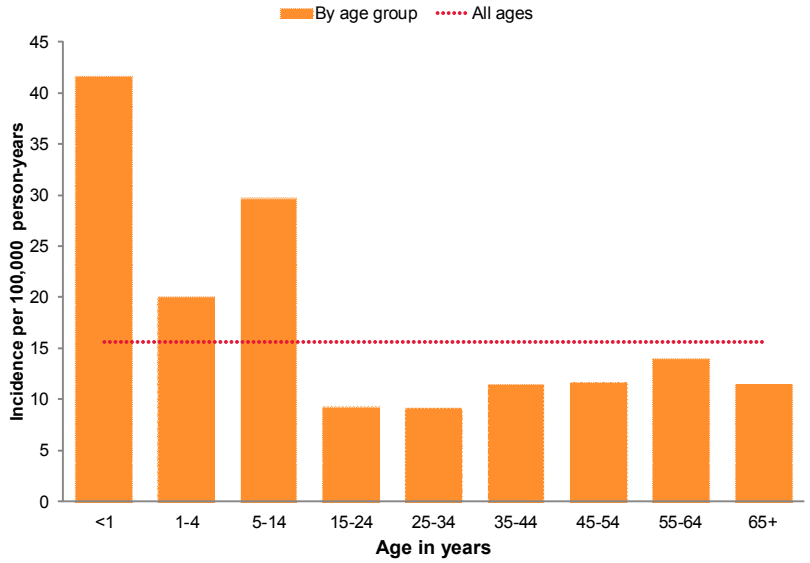
Figure 3. Incidence rate per 100,000 persons, U.S., 1990 to 2010



Source: CDC, National Notifiable Diseases Surveillance

Pertussis Incidence

Figure 4. Incidence rate per 100,000 persons by age group and for all ages, Utah, 2011*



Source: Bureau of Epidemiology, Utah Department of Health
*2011 data is preliminary

References

1. National and State Vaccination Coverage Among Children Aged 19-35 Months, United States, 2010. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6034a2.htm?s_cid=mm6034a2_w.

February 2012 Utah Health Status Update

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Breaking News, February 2012

Postpartum Glucose Screening Among Women with Gestational Diabetes

Gestational diabetes mellitus (GDM) is defined as carbohydrate intolerance leading to hyperglycemia with onset or first recognition during pregnancy. [1] There can be long term health indications for women with GDM. It is estimated that as many as 10% of women with GDM are diagnosed with type 2 diabetes immediately after delivery[2] and 15-50% of women with GDM will develop type 2 diabetes in their lifetime.[1] The American College of Obstetricians and Gynecologists and the American Diabetes Association recommend postpartum and periodic glucose screening for women with a history of GDM. Since there is ample clinical evidence that type 2 diabetes can be delayed or prevented by lifestyle interventions in women with glucose intolerance, in 2010 the Utah Department of Health (UDOH) began an education campaign targeted to women with GDM. Women with GDM identified on the Utah certificate of live birth are mailed a packet of information about GDM, lifetime risks, and the importance of postpartum follow up.

Beginning in 2009, the Utah Pregnancy Risk Assessment Monitoring System (PRAMS) asks women who were diagnosed with GDM if they had a postpartum glucose screen. Using 2009-2010 PRAMS data, rates of postpartum glucose screening among women with self-reported GDM were assessed. In 2009, before women were receiving the packets, 35.8% of women reported having a postpartum glucose screen. Postpartum screening rates increased to 48.5% after the mailings began in 2010, though they are still less than optimal. The UDOH will continue to educate women and providers on the importance of postpartum testing in hopes that every woman with GDM will receive this vital service.

1. Postpartum screening for abnormal glucose tolerance in women who had gestational diabetes mellitus. ACOG Committee Opinion No. 435. American College of Obstetricians and Gynecologists. Obstet Gynecol 2009; 113:1419-21.

2. Gestational Diabetes in the United States, National Diabetes Statistics 2011. http://diabetes.niddk.nih.gov/DM/PUBS/statistics/#Gestational. Accessed January 19, 2012.

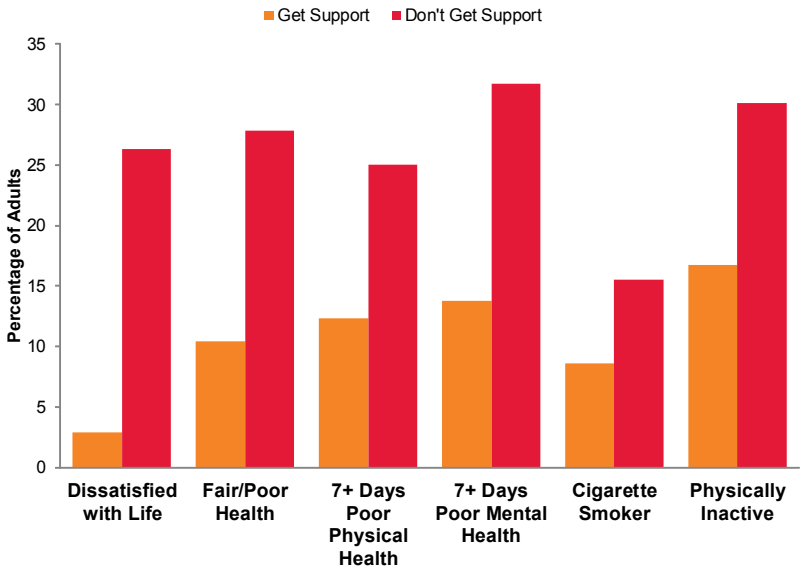
Community Health Indicators Spotlight, February 2012

Social and Emotional Support

Social and emotional support can be defined as resources and assistance exchanged through social relationships and interpersonal interactions. Adequate social and emotional support has been associated with decreased risk of mental illness, physical illness and mortality, and with improved adherence to health-related behavioral change efforts and medical treatment.

The Utah Behavioral Risk Factor Surveillance System (BRFSS) included a question about social and emotional support in 2010. Approximately 6.3% of Utah adults reported that they rarely or never received the social and emotional support they needed. The survey showed that adults who didn't get support fared worse on a number of health status and health behavior measures when compared with adults who said they sometimes, usually or always got support. A higher percentage of adults who didn't get support reported dissatisfaction with life, seven or more days of poor physical or poor mental health in the past month, fair or poor health, cigarette smoking and physical inactivity.

Health-related Quality of Life and Health Behaviors by Social and Emotional Support, Utah BRFSS, 2010



Health care providers, policy makers and program planners can use this information to ensure the provision of social and emotional support services that can prevent mental and physical health problems, and enhance treatment of existing problems.

Monthly Health Indicators Report

(Data Through December 2011)

Monthly Report of Notifiable Diseases, December 2011	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)	11	18	443	339	1.3
Shiga toxin-producing Escherichia coli (E. coli)	3	3	171	116	1.5
Hepatitis A (infectious hepatitis)	0	1	8	10	0.8
Hepatitis B, acute infections (serum hepatitis)	0	1	8	13	0.6
Influenza*	Weekly updates at http://health.utah.gov/epi/diseases/flu				
Meningococcal Disease	1	1	11	7	1.5
Pertussis (Whooping Cough)	19	28	557	372	1.5
Salmonellosis (Salmonella)	23	21	329	325	1.0
Shigellosis (Shigella)	0	4	53	47	1.1
Varicella (Chickenpox)	19	65	352	695	0.5

Quarterly Report of Notifiable Diseases, 3rd Qtr 2011	Current Quarter # Cases	Current Quarter # Expected Cases (5-yr average)	# Cases YTD	# Expected YTD (5-yr average)	YTD Standard Morbidity Ratio (obs/exp)
HIV/AIDS†	13	25	57	85	0.7
Chlamydia	1,671	1,516	5,089	4,456	1.1
Gonorrhea	77	137	193	434	0.4
Tuberculosis	6	5	29	22	1.3

Medicaid Expenditures (in Millions) for the Month of December 2011	Current Month	Expected/ Budgeted‡ for Month	Fiscal YTD	Budgeted‡ Fiscal YTD	Variance - over (under) budget
Capitated Mental Health	$ 5.5	$ 2.4	$ 69.0	$ 69.5	$ (0.5)
Inpatient Hospital	$ 19.6	$ 22.0	$ 142.4	$ 139.4	$ 2.9
Outpatient Hospital	$ 7.4	$ 10.0	$ 40.7	$ 47.9	$ (7.2)
Long Term Care	$ 15.6	$ 15.5	$ 77.2	$ 74.3	$ 2.9
Pharmacy§	$ 16.8	$ 15.4	$ 87.2	$ 74.0	$ 13.2
Physician/Osteo Services	$ 11.9	$ 9.4	$ 44.3	$ 44.9	$ (0.6)
TOTAL HCF MEDICAID	$159.7	$ 161.9	$ 847.8	$ 856.9	$ (9.2)

Program Enrollment for the Month of December 2011	Current Month	Previous Month	% Change¶ From Previous Month	1 Year Ago	% Change¶ From 1 Year Ago
Medicaid	249,521	248,731	+0.3%	230,812	+8.1%
PCN (Primary Care Network)	11,280	11,715	-3.7%	18,456	-38.9%
CHIP (Children's Health Ins. Plan)	37,306	37,468	-0.4%	36,559	+2.0%

	Annual Visits			Annual Charges	
Health Care System Measures	Number of Events	Rate per 100 Population	% Change¶ From Previous Year	Total Charges in Millions	% Change¶ From Previous Year
Overall Hospitalizations (2010)	274,576	9.0%	-2.6%	$ 5,416.2	+5.9%
Non-maternity Hospitalizations (2010)	167,340	5.3%	-0.9%	$ 4,552.5	+5.9%
Emergency Department Encounters (2009)	684,176	23.3%	-1.1%	$ 1,081.4	+22.9%
Outpatient Surgery (2009)	311,442	10.6%	+1.9%	$ 1,465.7	+14.7%

Annual Community Health Measures	Current Data Year	Number Affected	Percent/ Rate	% Change¶ From Previous Year	State Rank# (1 is best)
Obesity (Adults 18+)	2010	454,700	23.1%	-4.0%	11 (2010)
Cigarette Smoking (Adults 18+)	2010	180,100	9.1%	-6.9%	1 (2010)
Influenza Immunization (Adults 65+)	2010	175,900	68.2%	-0.8%	23 (2010)
Health Insurance Coverage (Uninsured)	2010	301,900	10.6%	-5.6%	n/a
Motor Vehicle Traffic Crash Injury Deaths	2010	231	8.1 / 100,000	+0.1%	19 (2009)
Poisoning Deaths	2010	342	12.0 / 100,000	-38.1%	47 (2009)
Suicide Deaths	2010	479	16.8 / 100,000	+5.8%	n/a
Diabetes Prevalence (Adults 18+)	2010	128,000	6.5%	+6.2%	15 (2010)
Poor Mental Health (Adults 18+)	2010	296,100	15.0%	-0.2%	17 (2010)
Coronary Heart Disease Deaths	2010	1,488	52.2 / 100,000	-0.4%	1 (2007)
All Cancer Deaths	2010	2,791	98.0 / 100,000	+7.9%	1 (2008)
Stroke Deaths	2010	736	25.8 / 100,000	-1.4%	14 (2007)
Births to Adolescents (Ages 15-17)	2010	876	14.3 / 1,000	-13.2%	17 (2009)
Early Prenatal Care	2010	38,124	73.1%	+2.1%	n/a
Infant Mortality	2010	251	4.8 / 1,000	-9.0%	3 (2008)
Childhood Immunization (4:3:1:3:3:1)	2010	38,900	70.6%	-7.8%	12 (2010)

* Influenza activity remains minimal in Utah. Influenza-like illness activity is below baseline statewide. As of November 16, 2011, 1 influenza-associated hospitalization has been reported to the UDOH. More information can be found at http://health.utah.gov/epi/diseases/flu.

† Diagnosed HIV infections, regardless of AIDS diagnosis.

‡ Budget has been revised to include supplemental funding from 2011 General Session.

§ Only includes the gross pharmacy costs. Pharmacy Rebate and Pharmacy Part-D amounts are excluded from this line item.

¶ % Change could be due to random variation.

State rank based on age-adjusted rates.

Notes: Data for notifiable diseases are preliminary and subject to change upon the completion of ongoing disease investigations. Active surveillance for West Nile virus has ended until the 2012 season.