

# Utah Health Status Update:

## Enteric Diseases

May 2008

Utah Department of Health

After the advent of antibiotics during the 20th century, infectious diseases appeared likely to vanish as a common cause of human illness. However, new threats, such as HIV/AIDS, SARS, cryptosporidiosis, and *E. coli* O157:H7, have refuted that possibility. Infectious diseases have been tracked by mandatory reporting for over 100 years in the United States. This Health Status Update highlights trends in six reportable enteric diseases. These infections are spread by fecal-oral transmission routes, including person-to-person, food borne, and waterborne transmission.

### Cryptosporidiosis

Cryptosporidiosis is a highly communicable parasitic disease that causes loose, watery diarrhea along with stomach cramps, nausea, and a slight fever. It can be easily spread through exposure to recreational water contaminated with human feces and can be spread from person to person in settings such as daycare centers where diapers are changed regularly.

In 2007, Utah experienced one of the largest recreational water-associated outbreaks of cryptosporidiosis ever reported in the United States. The Utah Department of Health (UDOH) received reports of 1,912 laboratory-confirmed cryptosporidiosis cases from June through December. Eighty percent of patients reported having visited a recreational water venue.

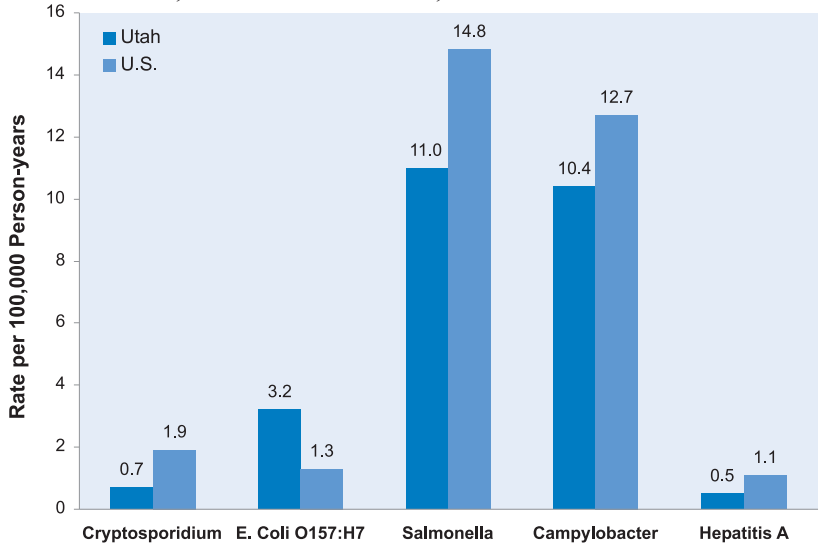
People should not swim for two weeks after an episode of diarrhea to avoid spreading the infection. Physicians are encouraged to consider testing people with diarrhea for cryptosporidiosis.

### *Escherichia coli* (*E. coli*)

Pathogenic strains of *E. coli* can cause several syndromes, including watery or bloody diarrhea and serious complications such as hemolytic uremic syndrome (HUS). The most serious illnesses are caused by shiga toxin-producing strains (STEC) which are reportable in Utah. In 2006, the most common STEC, *E. coli* O157:H7, caused 19 cases in Utah that were associated with a nationwide outbreak

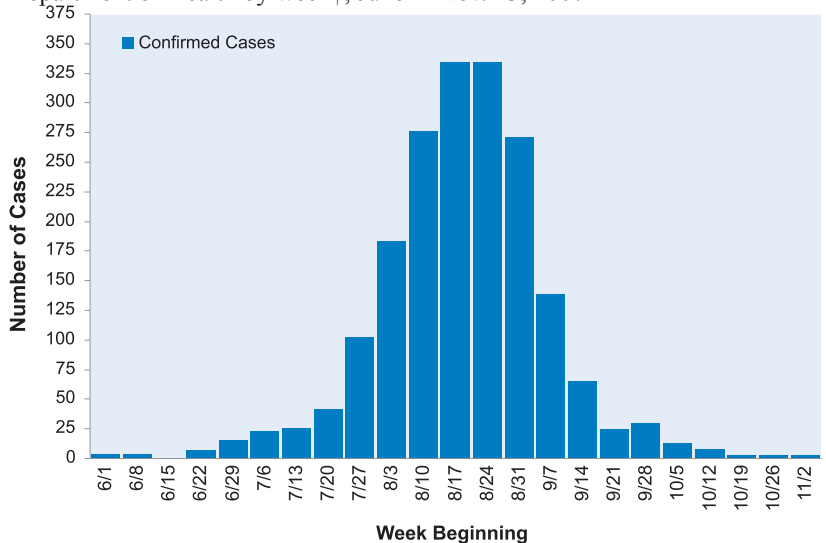
### Enteric Diseases in Utah and the U.S.

Figure 1. Rates per 100,000 person-years of reported cases of selected enteric diseases, Utah and United States, 2006



### Cryptosporidiosis Outbreak

Figure 2. Number of confirmed cryptosporidiosis cases reported\* to the Utah Department of Health by week†, June 1–Nov. 13, 2007



\* The number of cases represented in this figure only represent reported cases.

† Cases are grouped by week according to illness onset dates (1,562), laboratory test dates (341), or reported dates (10).

of *E. coli* caused by contaminated spinach. Most cases and outbreaks are due to contaminated and undercooked food, but transmission also occurs from person to person and by contaminated water. Prevention should focus on careful preparation and adequate cooking of food and good personal hygiene, including hand washing.

## Salmonella

*Salmonella* species can cause severe diarrhea and a range of other complications. In 2006, Utah cases were identified as part of a nationwide outbreak of *Salmonella enteritidis* (SE) associated with raw almonds. In 2007, ten Utah cases were associated with a nationwide outbreak of *Salmonella typhimurium* caused by improperly cooked pot-pies. Prevention should focus on careful preparation of food and good personal hygiene, including hand washing. *Salmonella* rates declined from a high in 1999 to a low in 2002 primarily due to reduced risk of SE as a result of improved egg production practices. The causes of the apparent increase from 2002 to 2006 have not been identified.

## Campylobacter

Most cases of diarrhea caused by *Campylobacter* are associated with handling raw poultry or eating raw or undercooked poultry meat, though larger outbreaks are usually related to unpasteurized milk or dairy products or contaminated water. In 2007, Utah experienced an outbreak due to raw milk consumption from a dairy farm.

## Hepatitis A

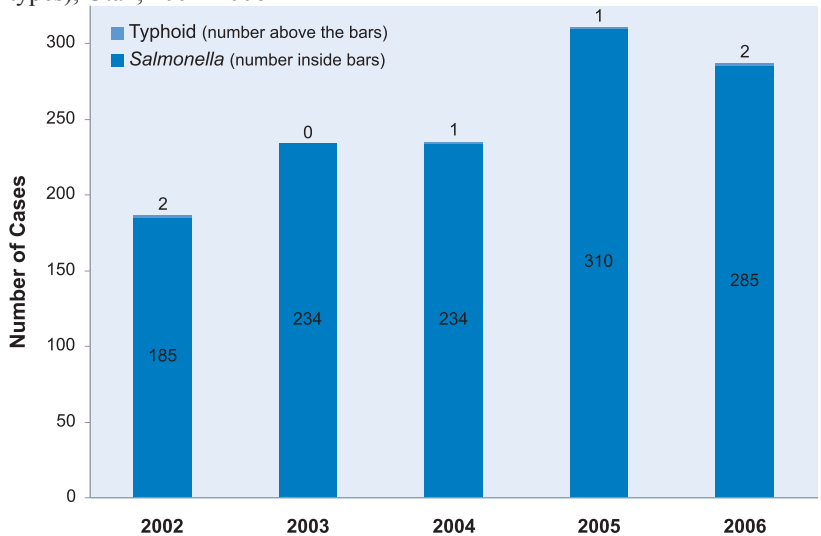
Hepatitis A virus is one of several viruses causing liver inflammation. Hepatitis A is usually spread by fecal-oral person-to-person transmission or through fecally contaminated food or water. Good personal hygiene and proper sanitation can help prevent hepatitis A; also, an effective vaccine is available. Hepatitis A in Utah has decreased steadily over the past five years after the introduction of hepatitis A vaccine and education and prevention efforts.

## Botulism

Botulism is a rare but serious paralytic illness caused by a nerve toxin produced by the bacterium *Clostridium botulinum*. There are three main kinds of botulism: food borne botulism, wound botulism, and infant botulism. Botulinum toxin is also a potential bioterrorism threat. All forms of botulism can be fatal and are considered medical emergencies. Food borne botulism can be especially dangerous because many people can be poisoned by eating contaminated food. In 2003, two fatal cases of food borne botulism occurred in an elderly couple in the Southwest Utah Public Health District. The botulism source was undetermined, but possibly linked to home

## Salmonella Cases

Figure 3. Number of reported cases of *Salmonella* (Typhoid and all other types), Utah, 2002–2006



canned foods. Persons who do home canning should follow strict hygienic procedures to reduce contamination of foods. Persons who eat home-canned foods should consider boiling the food for 10 minutes before eating it to ensure safety. Instructions on safe home canning can be obtained from county extension services or from the U.S. Department of Agriculture.

## Conclusion

Although death rates due to infectious diseases have declined, thousands still become ill each year due to enteric illnesses, such as those presented here. Changes in food production, increasing dependence on food from parts of the world without adequate sanitation, and other factors have produced new challenges for preventing these illnesses. Prevention and control of communicable diseases require ongoing surveillance, analyses, and investigations to detect new means of transmission and enable prompt responses to outbreaks. Surveillance depends on the cooperation of physicians, laboratories, and other health care providers and facilities. Control of enteric diseases requires changes in personal behavior, such as hand washing and proper food preparation, as well as regulation of food production and other environmental measures.

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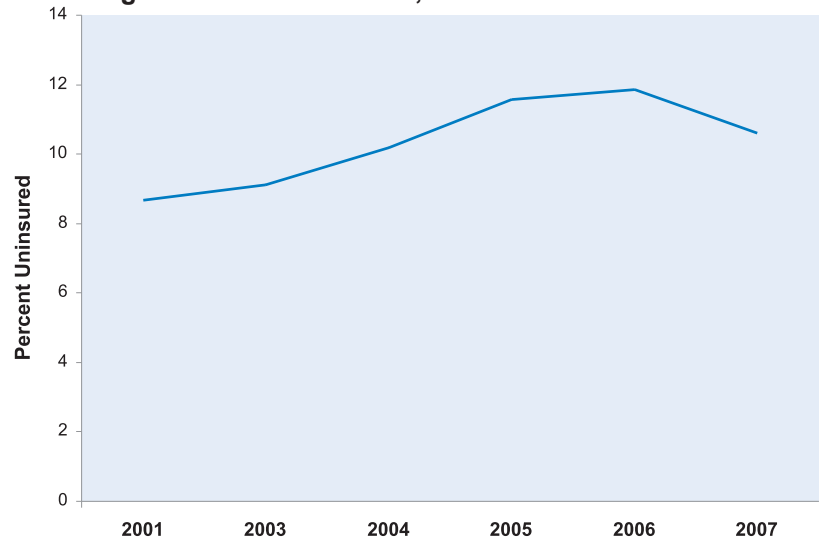
For additional information about this topic, contact the Bureau of Epidemiology, Utah Department of Health, P. O. Box 142104, Salt Lake City, UT 84114-2104, (801) 538-6191, FAX (801) 538-9923, [epi@utah.gov](mailto:epi@utah.gov), or visit <http://www.health.utah.gov/epi>; or the Office of Public Health Assessment, Utah Department of Health, Box 142101, Salt Lake City, UT 84114-2101, (801) 538-6108, FAX (801) 538-9346, email: [phdata@utah.gov](mailto:phdata@utah.gov)

## Breaking News, April 2008

### Uninsured in Utah

The Utah Healthcare Access Survey (UHAS) showed a slight dip in the rate of uninsured in Utah in 2007. In 2007, 10.6% of the population (approximately 287,200 people) in Utah reported being uninsured, compared to 11.9% in 2006. This is the first time the rate of uninsured has dropped in Utah since 2001, when this method of measuring the uninsured was first implemented. A probable factor in this decrease of the uninsured is due to Utah's strong economy in 2007. Throughout the last decade, Utah's overall population growth was 2.3%; yet, the uninsured population in the state grew by 6.9%. The recent drop in the rate of uninsured occurred in all age groups, however, the rate of uninsured is highest among the 18–34 age group (17.8%). Lack of health insurance coverage is also very prevalent among those who identify themselves as Hispanic/Latino (34.3%). Thirty-five percent of Utah's adults living below 150% of the federal poverty level lack health insurance. Of the total number of uninsured in Utah, half of them are employed full-time. Furthermore, despite the overall decrease in the number of uninsured, the percent of uninsured who report that their employer does not offer health insurance increased from 33.5% to 37.9% from 2006 to 2007. There is a considerable amount of research that shows that a lack of health insurance hinders access to health care, which leads to an increased risk of illness and death, a lower quality of life, and increased financial burdens. For further information on this topic, please contact Norman Thurston at (801) 538-7052 or [nthurston@utah.gov](mailto:nthurston@utah.gov)

Percentage of Uninsured in Utah, 2001–2007



## Community Health Indicators Spotlight, April 2008

### Tuberculosis

Although tuberculosis morbidity is declining, there are still major obstacles to be faced, such as elevated rates in racial/ethnic groups and foreign-born persons, multi-drug resistance, and a prolonged treatment regimen of six months or more.

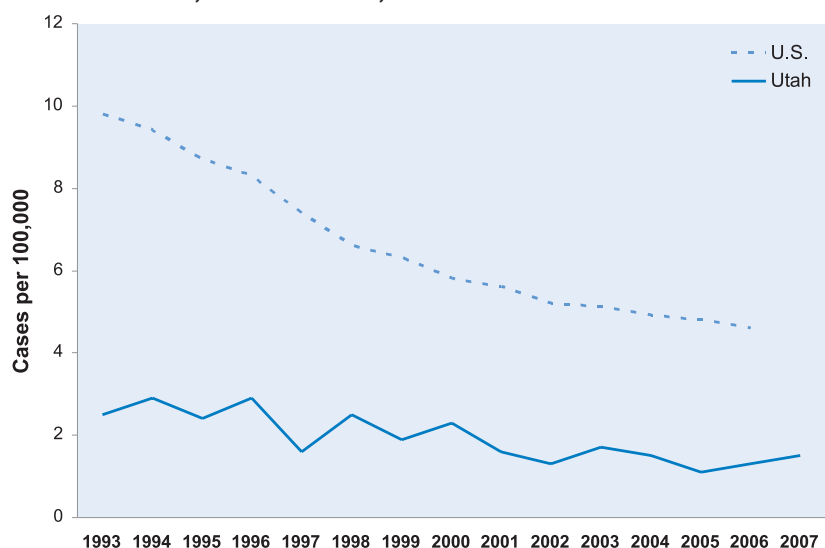
During the five-year period from 2003–2007, Utah reported an average of 35 cases of TB per year with an average of 1.4 cases of TB per 100,000 persons (range: 1.1–1.7 per 100,000 persons). From 1993–2006, Utah's case rate was an average of 30% of the national rate. Utah's TB case rate is below the national TB elimination goal of 3.5 per 100,000 persons by the year 2000 and above the Healthy People 2010 goal of 1 per 100,000 persons.

Over the past five years, the Salt Lake Valley Health District has carried 66% of the state's TB burden. Utah County had the next highest TB morbidity with 10% of the cases between 2003–2007.

The majority of Utah's TB cases are among foreign-born persons. From 2003–2007, foreign-born persons accounted for an average of 69% of the TB cases per year. The three countries of origin with the highest percentage of TB cases in Utah were Mexico (36.1%), Vietnam (9.8%), and Somalia (9.0%).

In 2006, 57% of all TB cases in the U.S. occurred in foreign-born persons. Utah ranked 16th out of 50 states for its percentage of TB cases that were of foreign-born persons. These numbers show the importance of effectively screening and treating individuals from high TB prevalence areas (CDC. *Reported Tuberculosis in the United States*, 2006).

TB Case Rates, Utah and U.S., 1993–2007



# Monthly Health Indicators Report

(Data Through March 2008)

Monthly Report of Notifiable Diseases, March 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)	18	22	52	49	1.1
Enterotoxigenic Escherichia coli (E. coli)	1	3	4	8	0.5
Hepatitis A (infectious hepatitis)	0	4	2	8	0.3
Hepatitis B (serum hepatitis)	3	3	6	7	0.8
Influenza <sup>†</sup>	Weekly updates at <a href="http://health.utah.gov/epi/diseases/flu">http://health.utah.gov/epi/diseases/flu</a>				
Measles (Rubeola, Hard Measles)	0	0	0	0	--
Meningococcal Diseases	1	0	4	2	1.7
Norovirus	0	4*	8	6*	1.3
Pertussis (Whooping Cough)	20	43	89	97	0.9
Salmonellosis (Salmonella)	26	18	67	46	1.5
Shigellosis (Shigella)	1	3	3	11	0.3
Varicella (Chickenpox)	129	110*	311	286*	1.1
Viral Meningitis	3	5	11	14	0.8

Notifiable Diseases Reported Quarterly, 1st 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	22	20	22	20	1.1
AIDS	11	11	11	11	1.0
Chlamydia	1,415	946	1,415	946	1.5
Gonorrhea	137	139	137	139	1.0
Tuberculosis	9	8	9	8	1.1

Program Enrollment for the Month of March 2008	Current Month	Previous Month	% Change <sup>§</sup> From Previous Month	1 Year Ago	% Change <sup>§</sup> From 1 Year Ago
Medicaid	160,949	159,338	+1.0%	162,217	-0.8%
PCN (Primary Care Network)	19,518	19,164	+1.8%	16,000	+22.0%
CHIP (Children's Health Ins. Plan)	33,047	31,760	+4.1%	28,271	+16.9%

Medicaid Expenditures (in Millions) for the Month of March 2008	Current Month	Expected/Budgeted for Month	Fiscal YTD	Budgeted Fiscal YTD	Variance - over (under) budget
Capitated Mental Health	\$ 15.6	\$ 9.0	\$ 75.4	\$ 72.0	\$ 3.4
Inpatient Hospital	\$ 26.5	\$ 20.4	\$ 155.2	\$ 148.0	\$ 7.2
Outpatient Hospital	\$ 9.6	\$ 8.3	\$ 62.3	\$ 61.1	\$ 1.2
Long Term Care	\$ 16.5	\$ 16.5	\$ 139.8	\$ 145.5	(\$ 5.7)
Pharmacy	\$ 12.7	\$ 13.1	\$ 95.5	\$ 102.2	(\$ 6.7)
Physician/Osteo Services <sup>‡</sup>	\$ 8.0	\$ 6.8	\$ 50.0	\$ 49.6	\$ 0.4
TOTAL HCF MEDICAID	\$ 168.0	\$ 143.9	\$ 1,128.8	\$ 1,128.8	(\$ 5.6)

Health Care System Measures	Number of Events	Rate per 100 Population	% Change <sup>§</sup> From Previous Year	Total Charges in Millions	% Change <sup>§</sup> 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 <sup>§</sup> 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	2006	2,582,371	296	11.5 / 100,000	-0.7%
Suicide Deaths	2006	2,582,371	357	13.8 / 100,000	+1.6%
Diabetes Prevalence	2007	2,699,554	127,000	4.7%	+15.0%
Coronary Heart Disease Deaths	2006	2,582,371	1,563	60.5 / 100,000	-2.3%
All Cancer Deaths	2006	2,582,371	2,600	100.7 / 100,000	+1.4%
Births to Adolescents (Ages 15-17)	2006	58,992	981	16.6 / 1,000	+5.9%
Early Prenatal Care	2006	53,475	42,237	79.0%	+0.3%
Infant Mortality	2006	53,475	269	5.0 / 1,000	+12.2%
Childhood Immunization (4:3:1:3:3)	2006	51,016	41,000	80.4%	+8.5%

\* Due to limited historical data, the average is based upon 4 years of data for norovirus, varicella, and West Nile virus infections.

† Influenza activity is now widespread in Utah. Influenza-like illness activity is above baseline statewide. As of April 16, 2008, 491 influenza-associated hospitalizations have been reported to the UDOH. More information can be found at <http://health.utah.gov/epi/diseases/flu>.

‡ % 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 West Nile Virus has ended until the 2007 season.