

Utah Health Status Update:

Utah Birth Defect Network's Report on Birth Defects in Utah

February 2010

Utah Department of Health

Birth defects are common, deadly, and costly.

They affect an estimated 1 of every 33 newborns in Utah, or 1,500 babies every year. They are also the leading cause of infant death in Utah, a major determinant of pediatric hospitalizations, and contribute to prematurity rates (Figure 1).

The economic costs to families and society are high.

For spina bifida, the medical costs have been estimated at \$50,000 during the first year of life alone and over \$600,000 in lifetime costs per child. In Utah over 50% of babies born with birth defects are enrolled in Medicaid during their first year of life. For these reasons, birth defects are considered a high public health priority.

The leading **public health program** for assessment and prevention of birth defects in Utah is the Utah Birth Defect Network (UBDN). The overall goal of the UBDN is to prevent birth defects in Utah and increase the number of healthy babies without birth defects. The approach is twofold. First, UBDN monitors patterns of birth defects and their associated risk factors in Utah. For example, it evaluates rates over time, responds to clusters reported by the public, and determines potential modifiable risk factors for primary prevention. Second, UBDN uses this information to develop and conduct primary prevention. One example is preconception education, whereby women and the community are educated about avoiding known risk factors and implement evidence-based prevention strategies, such as taking folic acid regularly before conception. These activities form a cycle: monitoring to provide the data to guide interventions, interventions are put in place, monitoring shows what works, leading to better interventions, in a cycle of continuous improvement.

Utah shares several birth defects patterns with the rest of the nation, but it is also different. Utah has the **highest rate in the U.S.** of cleft lip and cleft palate (1 in every 450 births). Also, several birth defects are increasing in Utah: malformations of the penis (hypospadias - the urethra is abnormally placed) and a specific malformation of the gut and abdomen (gastrochisis - an abdominal wall defect). Of particular

Folic Acid

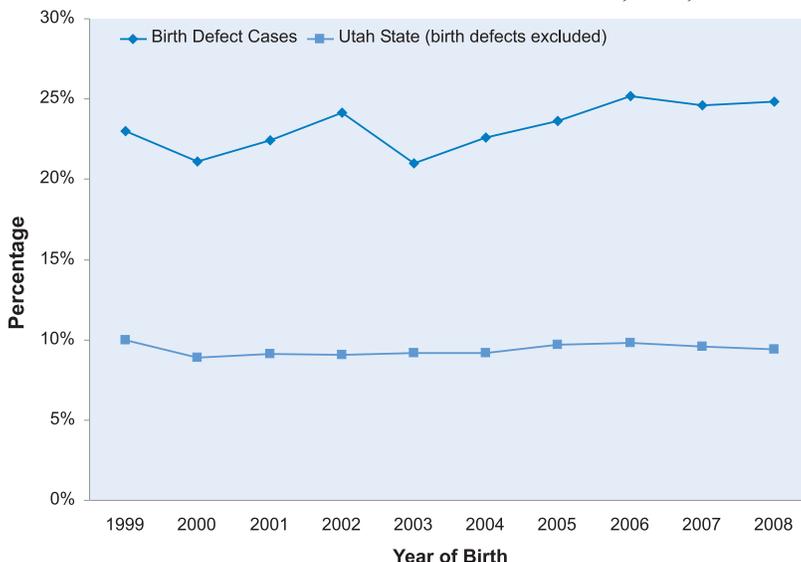
Table 1. Percentage of women (18-44 years) taking folic acid in Utah, 1999-2008

Survey Year*	Percentage	95% CL
1999	49.5	45.1, 53.8
2000	46.8	42.5, 51.1
2001	49.5	45.5, 53.5
2002	47.0	43.0, 51.1
2003	48.2	44.2, 52.2
2004	47.0	43.5, 50.6
2006	40.4	36.7, 44.3
2008	42.9	39.2, 46.8

* Behavioral Risk Factor Surveillance Survey: Folic acid questions included in random household survey for even years only after 2004.

Premature Births

Figure 1. Percentage of premature births (<37 weeks gestation) among infants with birth defects and infants without birth defects, Utah, 1999-2008



concern is also our **increase** in defects of the brain and spine (such as spina bifida), unlike most of the U.S. where these defects are decreasing.

Neural tube defects (NTDs) provide a significant opportunity for primary prevention. Although for most birth defects the cause is often unknown, for neural tube defects we know that over 50% of cases could be prevented if women take a multivitamin with folic acid before becoming pregnant. This fact, established over many years of studies and clinical trials, led the CDC (Public Health Service) in 1992 to recommend that all women take 400 micrograms (0.4 milligrams) of folic acid daily throughout their child-bearing years (or at least from three months prior to conception). Because behavior is difficult to change, the FDA in 1998 mandated the fortification of flour with folic acid. [With the exception of some cereals, it is difficult to

consume enough fortified food to get the recommended daily amount of folic acid.]

To promote the primary prevention of NTDs in Utah, the UBDN developed a plan of monitoring and intervention. In 1994, the UBDN began monitoring NTDs statewide. In 1995, UBDN staff developed an intensive statewide folic acid educational campaign, which was implemented from 1996 through 2001. The goal was to improve women's knowledge about folic acid, increase awareness about prevention, and increase consumption of a multivitamin with folic acid before pregnancy. From 2003–2006, the UBDN implemented January Birth Defect Prevention Month, with month-long activities. To assess knowledge, awareness, and consumption, the UBDN added a seven question folic acid module in 1999 to the Utah Behavioral Risk Factor Surveillance System survey. This survey was administered through 2004 annually, then every other year.

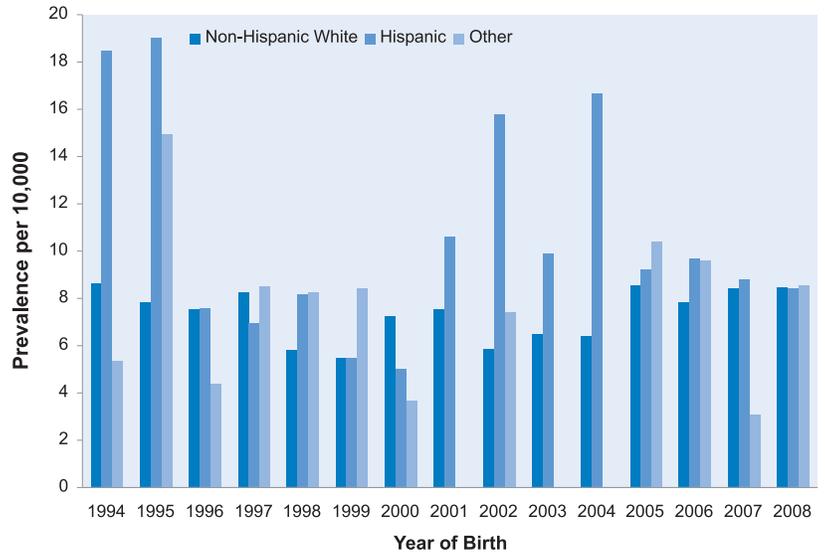
Concurrently, the UBDN evaluated its data on NTDs to identify which group of women who had children with these conditions so that education and intervention could be more efficiently targeted. Based on these data, nonpregnant WIC clients were selected as a specific target audience. Nearly all WIC clinics participated in the WIC Vitamin Project, during which WIC staff were trained to provide one-on-one education about neural tube defects and the importance of taking a multivitamin with folic acid every day. WIC clients were also provided with a free bottle of multivitamins with folic acid. Both the intensive statewide folic acid educational campaign and the WIC Vitamin Project continued until 2003.

February 2010 Utah Health Status Update

For additional information about this topic, contact Marcia Feldkamp, Utah Birth Defect Network, Utah Department of Health, Box 144699, Salt Lake City, UT 84114-4699, (801) 584-8490, toll-free 1-866-818-7096, email: mfeldkamp@utah.gov, or the Office of Public Health Assessment, Utah Department of Health, Box 142101, Salt Lake City, UT 84114-2101, (801) 538-9191, email: chdata@utah.gov

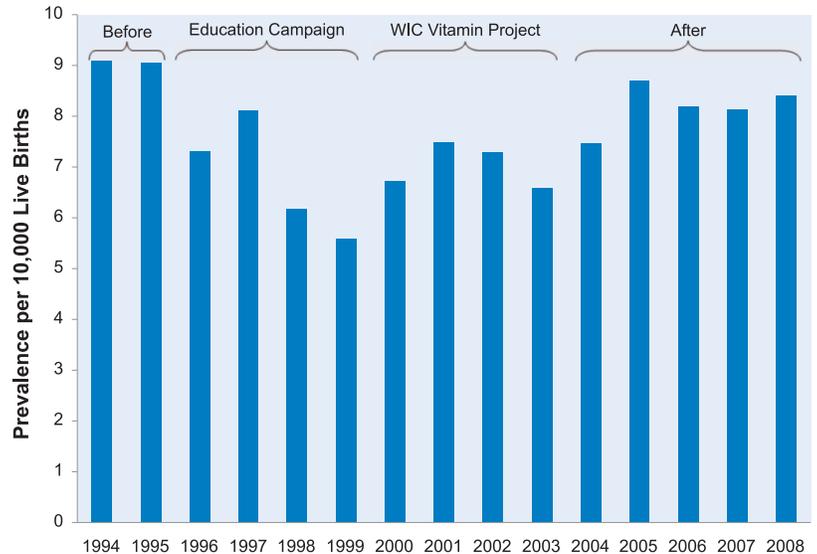
Neural Tube Defects by Race/Ethnicity

Figure 2. Prevalence of infants with neural tube defects by maternal race/ethnicity and year of birth, Utah, 1994–2008



Neural Tube Defects

Figure 3. Prevalence of infants with neural tube defects by year of birth, Utah, 1994–2008



With something as simple as taking a multivitamin with folic acid, how are we doing? The proportion of Utah women 18 to 44 years of age who take folic acid daily between 1999 and 2008 (Table 1) has decreased over time. Hispanic women are at higher risk compared to non-Hispanic Whites of having children with NTDs (Figure 2). Rates declined until 1999, then stabilized through 2003, and, since 2004, started increasing again (Figure 3). These trends parallel approximately the timing of the interventions, which had to be discontinued after 2003. Based on our data, it is critical to continue folic acid interventions and at the same time continue monitoring to identify what works and what still needs to be done. Preventing a few instances of birth defects can make a big difference to families, to their children, and to the economic and health impact on the people of Utah.

Breaking News, January 2010

Latest Hospital Comparison Reports: Heart, Hip, Maternity, Newborn, and Pneumonia Care Stand Out

In 2006 through 2008 Utah had lower percentages of in-hospital deaths and injuries than similar patients nationwide for 9 out of 11 measures. Several measures show a decreasing trend since 2005 for in-hospital deaths among heart attack, heart bypass surgery, heart failure, and pneumonia patients and for injuries to normal newborns and mothers. The measures were developed by the Agency for Healthcare Research and Quality, a federal agency that promotes patient safety and quality of care.

Individual hospitals also show above-average performance, e.g., one third of Utah hospitals (8 out of 24) that treated at least 30 stroke patients had a lower percentage of deaths compared to similar patients nationwide. The remaining 16 hospitals had about the same percentage of deaths as would be expected.

Average hospital charge differed widely among hospitals in 2008. Average hospital charge was calculated for two levels of severity of illness for each All Patient Refined Diagnosis Related Group. For hospitals that treated at least five low-risk patients in 2008, average hospital charges are in the accompanying table.

For a low-risk normal newborn, average charge increased from \$1,437 in 2005 to \$1,813 in 2008. Average charge does not include physicians' professional fees or other personal costs. Charge is not the same as payment hospitals receive for patient care. See <http://health.utah.gov/myhealthcare/hospital.htm#sb132>.

Utah Hospital Average Charges by All Patient Refined Diagnosis Related Group

Condition or Procedure	Average	Lowest	Highest
Normal Newborn	\$1,813	\$992	\$2,535
Vaginal Delivery	\$5,222	\$3,161	\$7,024
Cesarean Delivery	\$8,938	\$4,315	\$14,182
Hip Joint Replacement	\$33,527	\$17,527	\$49,244
Knee Joint Replacement	\$31,678	\$23,912	\$46,588
Heart Attack	\$14,752	\$2,802	\$21,431
Heart Failure	\$11,247	\$2,934	\$14,827
Stroke	\$13,932	\$2,911	\$19,807
Pneumonia	\$9,912	\$5,312	\$15,099

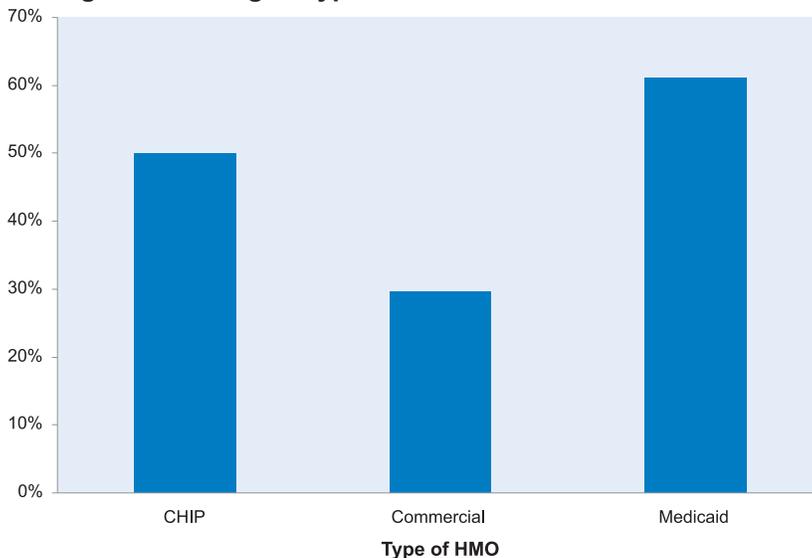
Community Health Indicators Spotlight, January 2010

HMO Performance Comparisons

The Utah Health Data Committee has collected data on a variety of HMO (Health Maintenance Organization) performance measures since 1996. The Healthcare Effectiveness Data and Information Set (HEDIS) measures the performance of HMOs on a variety of dimensions. HEDIS can be used to make comparisons between an HMO and other HMOs, state averages, and national averages. Utah has three different types of HMOs, including, Commercial, Medicaid, and CHIP.

Utah's averages are compared with national averages; in this case, the Medicaid HMOs performed the best. Medicaid HMOs scored above the national averages on over 60% of the measures reported. While Medicaid HMOs did excel in some areas including adult's access to preventive services, they also have areas that need improvement, such as Chlamydia screening in women. CHIP did reasonably well when compared to the national averages, exceeding the national averages on 50% of the measures reported. CHIP excelled in both childhood immunizations and appropriate treatment for children with an upper respiratory infection. Commercial HMOs had the most room for improvement, scoring above the national average on only 30% of the measures reported. Commercial HMOs can improve in cancer screenings (colorectal, breast, and cervical).

Percentage of State Averages That Exceed the National Averages According to Type of HMO



Monthly Health Indicators Report

(Data Through December 2009)

Monthly Report of Notifiable Diseases, December 2009	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)	19	15	304	319	1.0
Shiga toxin-producing Escherichia coli (E. coli)	3	3	110	103	1.1
Hepatitis A (infectious hepatitis)	0	1	7	19	0.4
Hepatitis B, acute infections (serum hepatitis)	0	3	6	29	0.2
Influenza†	Weekly updates at http://health.utah.gov/epi/h1n1flu/UT_update.html				
Measles (Rubeola, Hard Measles)	0	0	0	0	--
Meningococcal Disease	0	1	3	11	0.3
Norovirus	3	1	12	16	0.8
Pertussis (Whooping Cough)	0	39	157	452	0.3
Salmonellosis (Salmonella)	8	19	307	318	1.0
Shigellosis (Shigella)	5	3	24	52	0.5
Varicella (Chickenpox)	34	74	543	733	0.7
Viral and Aseptic Meningitis	1	4	53	95	0.6
Notifiable Diseases Reported Quarterly, 4th Qtr 2009	Current Quarter # Cases	Current Quarter # Expected Cases (5-yr average)	# Cases YTD	# Expected YTD (5-yr average)	YTD Standard Morbidity Ratio (obs/exp)
HIV	47	27	112	91	1.2
AIDS	10	11	44	44	1.0
Chlamydia	1,447	1,317	5,941	5,105	1.2
Gonorrhea	118	176	335	706	0.5
Tuberculosis	10	8	37	33	1.1
Program Enrollment for the Month of December 2009	Current Month	Previous Month	% Change ^s From Previous Month	1 Year Ago	% Change ^s From 1 Year Ago
Medicaid	206,351	204,630	+0.8%	177,369	+16.3%
PCN (Primary Care Network)	18,494	19,267	-4.0%	16,496	+12.1%
CHIP (Children's Health Ins. Plan)	41,748	41,096	+1.6%	37,414	+11.6%

Medicaid Expenditures (in Millions) for the Month of December 2009	Current Month	Expected/Budgeted for Month*	Fiscal YTD	Budgeted Fiscal YTD	Variance - over (under) budget
Capitated Mental Health	\$ 12.4	N/A	\$ 54.8	\$ 45.2	\$ 9.6
Inpatient Hospital	\$ 12.1	N/A	\$ 102.6	\$ 97.4	\$ 5.3
Outpatient Hospital	\$ 9.5	N/A	\$ 53.6	\$ 48.7	\$ 4.9
Long Term Care	\$ 15.0	N/A	\$ 86.1	\$ 89.8	\$ (3.7)
Pharmacy ^β	\$ 10.7	N/A	\$ 67.6	\$ 57.0	\$ 10.6
Physician/Osteo Services [‡]	\$ 7.0	N/A	\$ 39.0	\$ 34.4	\$ 4.6
TOTAL HCF MEDICAID	\$ 129.0	N/A	\$ 736.4	\$ 745.0	\$ (8.6)
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 (2008)	279,504	9.4%	-2.7%	\$ 4,703.3	+10.3%
Non-maternity Hospitalizations (2008)	164,602	5.4%	-3.0%	\$ 3,924.7	+10.4%
Emergency Department Encounters (2007)	682,122	24.0%	-1.3%	\$ 781.0	+17.1%
Outpatient Surgery (2007)	296,596	10.5%	-5.7%	\$ 1,109.0	+8.6%
Annual Community Health Measures	Current Data Year	Population at Risk	Number Affected	Percent/Rate	% Change ^s From Previous Year
Overweight and Obesity (Adults 18+)	2008	1,924,274	1,119,500	58.2%	+0.5%
Cigarette Smoking (Adults 18+)	2008	1,924,274	179,200	9.3%	-20.4%
Influenza Immunization (Adults 65+)	2008	237,275	173,900	73.3%	-3.8%
Health Insurance Coverage (Uninsured)	2008	2,781,954	298,200	10.7%	+0.7%
Motor Vehicle Crash Injury Deaths	2008	2,781,954	268	9.6 / 100,000	-3.3%
Suicide Deaths	2008	2,781,954	384	13.8 / 100,000	+1.3%
Diabetes Prevalence	2008	2,781,954	129,500	4.7%	-1.0%
Coronary Heart Disease Deaths	2008	2,781,954	1,514	54.4 / 100,000	-4.0%
All Cancer Deaths	2008	2,781,954	2,478	89.1 / 100,000	-5.6%
Births to Adolescents (Ages 15-17)	2008	61,727	1,122	18.2 / 1,000	-2.0%
Early Prenatal Care	2008	55,605	43,997	79.1%	-0.4%
Infant Mortality	2008	55,605	264	4.7 / 1,000	-7.9%
Childhood Immunization (4:3:1:3:3:1)	2009	55,120	42,200	76.6%	+4.1%

† Influenza activity remains widespread in Utah. Influenza-like illness activity is above baseline statewide. As of November 28, 2009, 807 influenza-associated hospitalizations have been reported to the UDOH this influenza season. More information can be found at http://health.utah.gov/epi/h1n1flu/UT_update.html.

* % Change could be due to random variation.

‡ The Medicaid program service budget numbers by month are not available at this time.

β The Pharmacy Expenditure and Budget amount only includes the gross pharmacy costs. The Pharmacy Rebate and Pharmacy Part-D amounts are excluded from this line item.

‡ Medicaid payments reported under Physician/Osteo Services do not include enhanced physician payments.

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 2010 season.