With the constant pull of our attention to the urgent problems posed by disease outbreaks, it is important periodically to focus attention on the most serious sources of death, disease, and disability affecting the community. The list of the leading causes of mortality and morbidity in Utah contains few surprises for health practitioners and public health officials, but always reveals opportunities for significant improvement in population health. Prevention of the chronic diseases and injuries that are the "big killers" in Utah also helps to control health care costs.
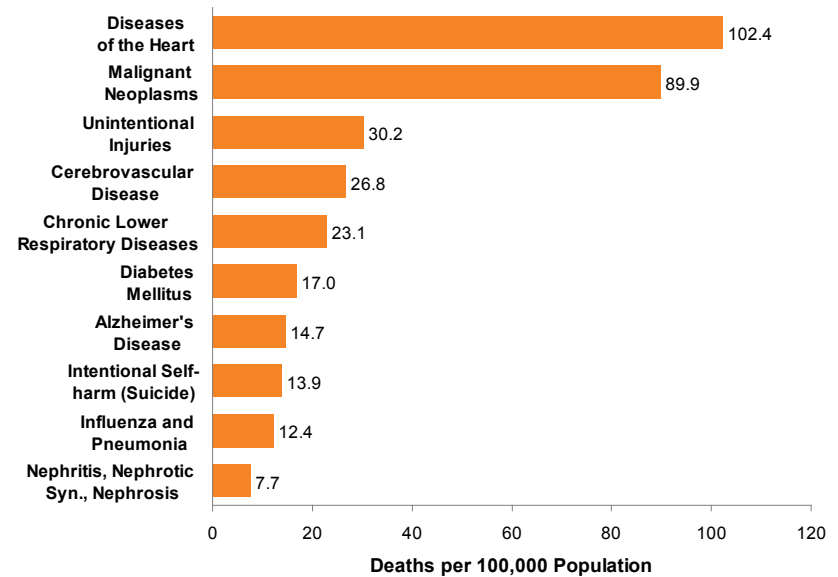
Figure 1 shows the leading causes of death in Utah for 2008. Diseases of the heart top the list, as they have throughout the decade. Malignant neoplasms were the second leading cause of death, and together the three chronic diseases—heart disease, cancer, and stroke—accounted for more than half of all mortality. Unintentional injury, the fifth leading cause of death in 2000 is now the third leading cause of death, reflecting the current epidemic of deaths due to prescription drug overdoses. Premature deaths due to most of these leading causes are strongly related to lifestyle factors such as tobacco use, obesity, substance abuse and inactivity.

Figure 2 displays the ten leading causes of Utah hospitalizations using the Clinical

- **Together, the top three chronic diseases, heart disease, cancer, and stroke, accounted for more than half of all mortality in 2008.**
- **Five of the ten leading causes of mortality, heart disease, injuries, influenza and pneumonia, malignant neoplasms, and cerebrovascular disease, were among the leading causes of serious morbidity in Utah.**
- **Injuries, heart conditions, mental disorders, and back problems were leading causes of both hospitalizations and emergency encounters.**
- **Heart conditions, injuries, and arthritis were the leading cost drivers.**
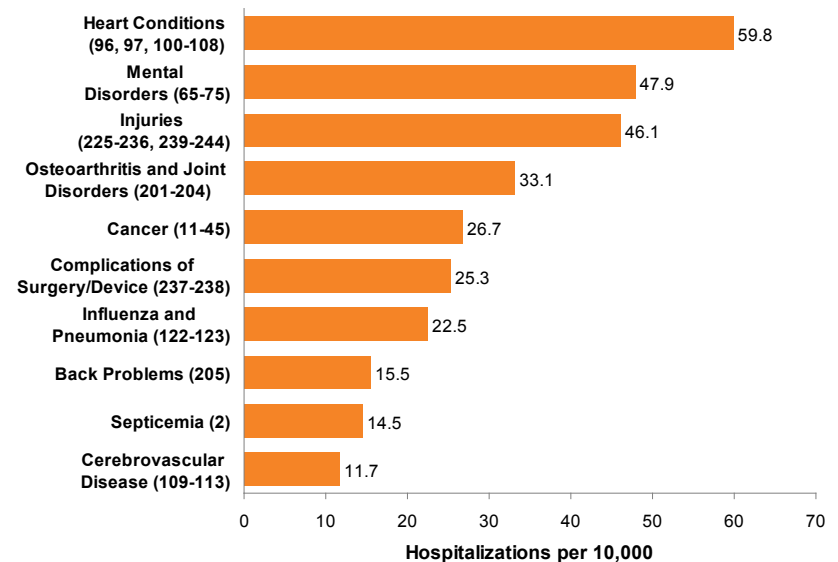
Leading Causes of Death
Figure 1. Death rates from the leading causes of death, Utah, 2008

Cause	Deaths per 100,000 Population
Diseases of the Heart	102.4
Malignant Neoplasms	89.9
Unintentional Injuries	30.2
Cerebrovascular Disease	26.8
Chronic Lower Respiratory Diseases	23.1
Diabetes Mellitus	17.0
Alzheimer's Disease	14.7
Intentional Self-harm (Suicide)	13.9
Influenza and Pneumonia	12.4
Nephritis, Nephrotic Syn., Nephrosis	7.7

Source: Utah Death Certificate Database

Leading Causes of Hospitalizations
Figure 2. Hospitalization rates for the leading causes of hospitalization according to CCS code condition categories, Utah, 2008

Cause	Hospitalizations per 10,000
Heart Conditions (96, 97, 100-108)	59.8
Mental Disorders (65-75)	47.9
Injuries (225-236, 239-244)	46.1
Osteoarthritis and Joint Disorders (201-204)	33.1
Cancer (11-45)	26.7
Complications of Surgery/Device (237-238)	25.3
Influenza and Pneumonia (122-123)	22.5
Back Problems (205)	15.5
Septicemia (2)	14.5
Cerebrovascular Disease (109-113)	11.7

Source: Utah Hospital Discharge Database

Classifications Software (CCS). Developed at the Agency for Healthcare Research and Quality (AHRQ), CCS clusters patient diagnoses and procedures into clinically meaningful categories. According to this measure of morbidity, five of the ten leading causes of mortality—heart disease, injuries, influenza and pneumonia, malignant neoplasms, and cerebrovascular disease—were among the leading causes of

serious morbidity in Utah. The fact that heart conditions were the leading cause of hospitalizations supports the validity of heart disease as the leading underlying cause of death, rather than a more general mode of dying, a criticism sometimes made of mortality cause statistics based on death certificates. The remaining leading causes of hospitalization, such as mental disorders and osteoarthritis, appeared to reflect the large number of hospitalizations in Utah for certain morbid but not lethal conditions.

Figure 3 uses the CCS classifications to summarize the leading causes of Utah hospital emergency encounters involving treatment and release of patients for 2008. Injuries stand out as the source in 43% of encounters. Along with injuries, heart conditions, mental disorders, and back problems were leading causes of both hospitalizations and emergency outpatient encounters, so chronic conditions figure importantly in this measure of Utah morbidity as well.

In an attempt to understand how the leading causes of mortality and serious morbidity relate to the cost of health care, Figure 4 plots the frequency of hospitalization for leading causes against summed emergency encounter and hospital charges for the same classifications. Points located towards the top right quadrant of the graph reflect conditions that affect large numbers of Utahns and involve the greatest health care expense (as measured by reported charges). So, heart conditions, which were the leading cause of death and hospitalization, are also the leading cost drivers in this analysis. Mental disorders are a relatively larger cause of morbidity than of health care charges. Overall, the plot shows a very high correlation of costs and numbers of people affected by a given cause.

Note that this analysis is limited by the available data resources on mortality, morbidity and health care costs: vital statistics, hospital and emergency billing data sets. Health surveys conducted by public health support the important contribution of chronic diseases to morbidity and mortality in Utah. As reports from Utah's All Payer Database on cost and utilization for pharmacy and outpatient care become available, a more refined, and possibly different picture, of morbidity, mortality and health care costs may emerge.
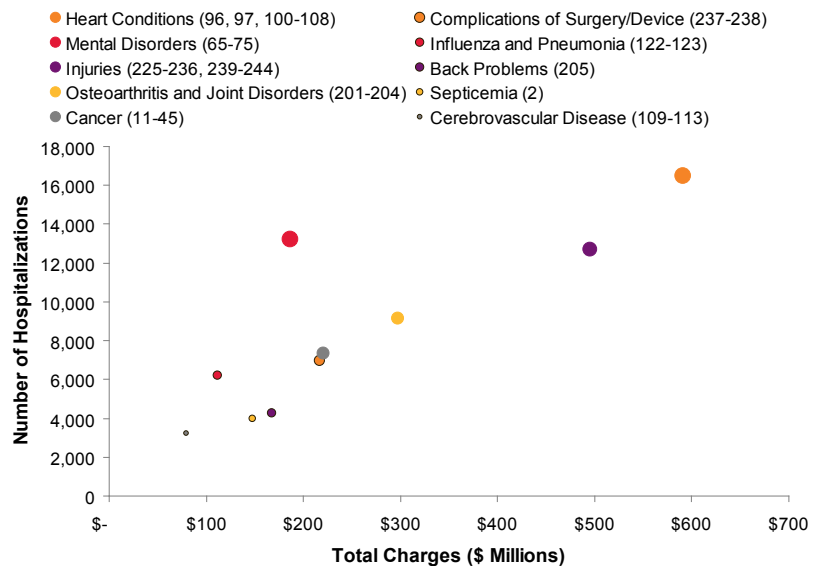
Leading Causes of ED Outpatient Encounters

Figure 3. Emergency department (ED) outpatient encounter rates for the leading causes of ED outpatient encounters according to CCS code condition categories, Utah, 2008
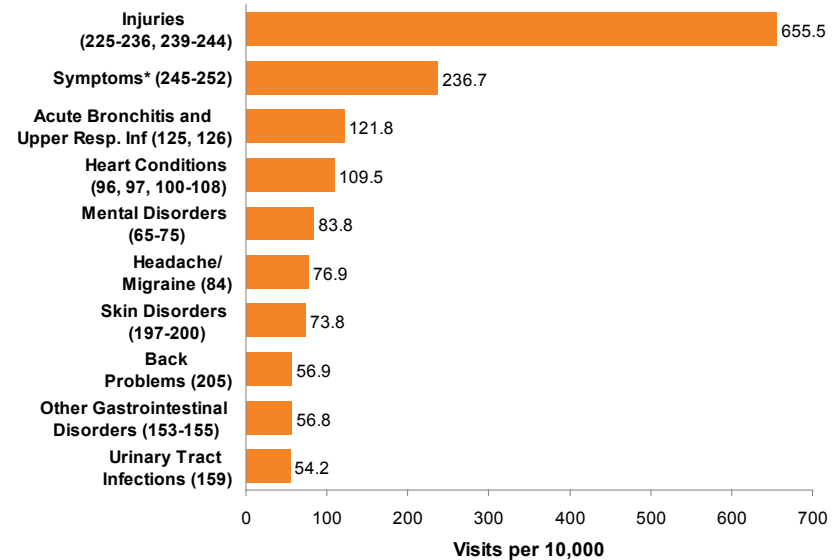
* Symptoms include various conditions of unknown origin: abdominal pain, nausea, fever, allergic reactions, syncope, etc.
Source: Utah Emergency Department Encounter Database

Hospitalization Counts and Charges

Figure 4. Total number of hospitalizations and summed charges of hospitalizations and emergency outpatient encounters according to CCS code condition categories, Utah, 2008

Source: Utah Hospital Discharge Database

Breaking News, September 2010

Recent Outbreaks in Utah Associated With Raw Milk Consumption

In 2007, the Utah Dairy Act was amended to authorize dairies to sell raw milk at an off-site retail store owned and operated by the dairy. A requirement was included in the legislation for the Utah Department of Health (UDOH) and the Utah Department of Agriculture and Food (UDAF) to report on illness associated with raw milk consumption. Four outbreaks of illness have been associated with raw milk dairies since that time. This spring, UDOH received reports of 10 *Salmonella* Newport cases who reported consuming unpasteurized milk from store A or store B; both stores are supplied by dairy B in Central Utah. DNA finger-printing by PFGE (Pulsed-Field Gel Electrophoresis) identified bacteria in frozen, unpasteurized milk samples from batches of milk sold during the outbreak that matched the bacteria that caused the outbreak.

In response to these outbreaks, a raw milk symposium was held in July with local health departments, UDAF and UDOH to discuss investigation methods, enforcement jurisdiction, and strategies to prevent illness. Methods to improve inter-agency communication were identified, recommendations to improve product labeling were made, and new questions about raw milk handling were incorporated into standard case report questionnaires. In addition, UDAF and UDOH are continuing discussions on the use of epidemiologic data, in addition to routine test data, for initiation and continuation of suspensions of raw milk sales.

Additional information about the recent *Salmonella* outbreak due to raw milk in Utah can be found here: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5926a6.htm.

## Community Health Indicators Spotlight, September 2010

Texting and Talking on a Cell Phone While Driving Among Utah Adults and Teens

While it is generally accepted that texting while driving is considerably more dangerous than talking on a cell phone, among high school drivers, these behaviors were equally common across grade levels.[1] Moreover, the percentage of drivers who text (27.4% to 75.0%) and talk on a cell phone (21.9% to 73.3%) while driving increased with each grade level.

Among adult drivers of every age group, the percentage of those who text while driving (24.5% overall) was significantly lower than the percentage of those who talk on a cell phone (73.6% overall) while driving.[2] Among adults, no statistically significant changes in the percentage of texters were found after Utah's texting law took effect, despite the law being widely touted as the nation's toughest.[3] In fact, for 18–34 year-olds, 43.6% of drivers surveyed after the law changed said they texted while driving, whereas 36.1% of drivers in this age group self-identified as texters before the law took effect.

The majority of young adults, grades 11, 12, and ages 18–24, talk and text daily. This emergent public health issue demands the attention and sincere efforts of those in a position to effect change.

Cell Phone Talking and Texting While Driving, Utah, 2009
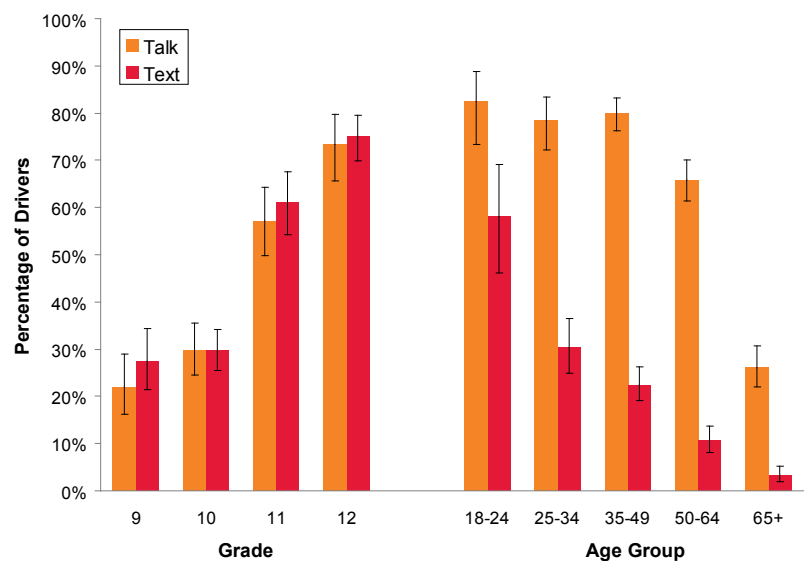
[1] Utah Youth Risk Behavior Survey (YRBS), 2009.

[2] Utah Behavioral Risk Factor Surveillance System (BRFSS), 2009

[3] The student survey was completed before the law's effective date.

Monthly Health Indicators Report
(Data Through August 2010)

Monthly Report of Notifiable Diseases, August 2010	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)	32	38	293	233	1.3
Shiga toxin-producing Escherichia coli (E. coli)	13	23	57	79	0.7
Hepatitis A (infectious hepatitis)	1	2	7	10	0.7
Hepatitis B, acute infections (serum hepatitis)	1	2	6	14	0.4
Meningococcal Disease	0	0	1	7	0.2
Pertussis (Whooping Cough)	4	34	159	292	0.5
Salmonellosis (Salmonella)	16	40	227	241	0.9
Shigellosis (Shigella)	6	7	28	29	1.0
Varicella (Chickenpox)	0	19	217	478	0.5
West Nile (human cases)	0	37	0	46	0.0

Quarterly Report of Notifiable Diseases, 2nd Qtr 2010	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*	19	35	45	67	0.7
Chlamydia	1,584	1,341	3,227	2,744	1.2
Gonorrhea	108	157	181	329	0.6
Tuberculosis	9	9	13	17	0.8

Medicaid Expenditures (in Millions) for the Month of August 2010†	Current Month	Expected/ Budgeted for Month	Fiscal YTD	Budgeted Fiscal YTD	Variance - over (under) budget
Capitated Mental Health	N/A	N/A	N/A	N/A	N/A
Inpatient Hospital	N/A	N/A	N/A	N/A	N/A
Outpatient Hospital	N/A	N/A	N/A	N/A	N/A
Long Term Care	N/A	N/A	N/A	N/A	N/A
Pharmacy	N/A	N/A	N/A	N/A	N/A
Physician/Osteo Services	N/A	N/A	N/A	N/A	N/A
TOTAL HCF MEDICAID	N/A	N/A	N/A	N/A	N/A

Program Enrollment for the Month of August 2010	Current Month	Previous Month	% Change§ From Previous Month	1 Year Ago	% Change§ From 1 Year Ago
Medicaid	225,703	222,380	+1.5%	198,188	+13.9%
PCN (Primary Care Network)	14,620	15,293	-4.4%	21,673	-32.5%
CHIP (Children's Health Ins. Plan)	40,975	40,867	+0.3%	40,219	+1.9%

Health Care System Measures	Annual Visits			Annual Charges	
	Number of Events	Rate per 100 Population	% Change§ From Previous Year	Total Charges in Millions	% Change§ 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 (2008)	681,958	23.4%	-2.9%	$ 879.5	+12.6%
Outpatient Surgery (2008)	299,958	10.3%	-1.9%	$ 1,277.7	+15.2%

Annual Community Health Measures	Current Data Year	Number Affected	Percent/ Rate	% Change§ From Previous Year	State Rank¶ (1 is best)
Obesity (Adults 18+)	2009	465,600	24.0%	+3.9%	11 (2009)
Cigarette Smoking (Adults 18+)	2009	190,300	9.8%	+5.4%	1 (2009)
Influenza Immunization (Adults 65+)	2009	174,400	68.8%	-6.2%	33 (2009)
Health Insurance Coverage (Uninsured)	2009	314,300	11.2%	+4.7%	n/a
Motor Vehicle Traffic Crash Injury Deaths	2008	268	9.7 / 100,000	-2.5%	15 (2007)
Poisoning Deaths	2008	500	18.1 / 100,000	-8.5%	49 (2007)
Suicide Deaths	2009	445	15.9 / 100,000	+15.3%	n/a
Diabetes Prevalence (Adults 18+)	2009	118,500	6.1%	+0.2%	11 (2009)
Poor Mental Health (Adults 18+)	2009	291,600	15.0%	+7.0%	19 (2009)
Coronary Heart Disease Deaths	2008	1,514	54.9 / 100,000	-3.2%	2 (2006)
All Cancer Deaths	2008	2,478	89.9 / 100,000	-4.8%	1 (2006)
Stroke Deaths	2008	739	26.8 / 100,000	-0.2%	7 (2006)
Births to Adolescents (Ages 15-17)	2008	1,122	18.5 / 1,000	-0.6%	14 (2006)
Early Prenatal Care	2008	43,997	79.1%	-0.4%	n/a
Infant Mortality	2008	264	4.7 / 1,000	-7.9%	4 (2007)
Childhood Immunization (4:3:1:3:3:1)	2009	41,500	76.6%	+4.1%	20 (2008)

* Diagnosed HIV infections, regardless of AIDS diagnosis.
† The Medicaid program budget amounts for FY2011 has not yet received final approval at this point.
§ % 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 influenza has ended until the 2010 season.