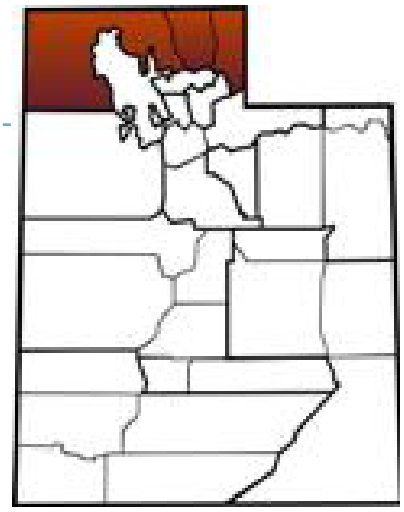
Bear River District Asthma Report



Bear River Local Health District (LHD) is comprised of three counties located in northern Utah: Box Elder, Cache and Rich Counties.

The district health department is headquartered in Logan. This report is intended to provide residents of Bear River Utah Health District with district-specific information on asthma. Additional publications are available on the Utah Department of Health website at http://www.health.utah.gov/asthma/

Prevalence

Asthma prevalence is one of the foremost indicators used to measure and track the burden of disease among population groups. Since 2001, asthma prevalence has been increasing in Utah, similar to increasing trends nationwide. Lifetime asthma is defined as having ever been diagnosed with asthma by a doctor or other health professional. Current asthma is defined as those who have ever been diagnosed with asthma by a doctor or other health professional and who report that they still have asthma.

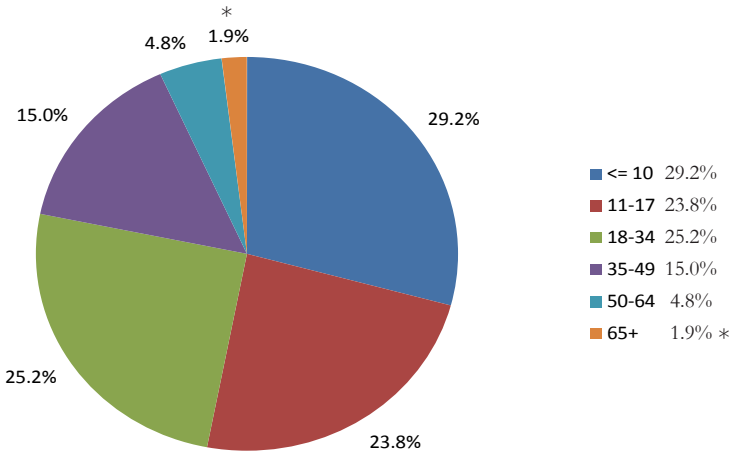
Table 1. Current Asthma Prevalence 2007-2009

	Age Group	Bear River Utah LHD percent (95% CI)	State of Utah percent (95% CI)
Children	0-17	5.1 (3.2-8.0)	7.0 (6.2-7.8)
Adults	18-34	5.3 (2.7-10.3) *	7.9 (6.9-9.1)
	35-49	9.0 (6.0-13.4)	8.2 (7.3-9.1)
	50-64	8.8 (5.8-13.1)	8.6 (7.7-9.6)
	65+	6.1 (3.7-10.0)	8.3 (7.4-9.4)

Data source: Behavioral Risk Factor Surveillance System 2007-2009. Crude prevalence.
* Estimate has a coefficient of variation greater than 30% and does not meet Utah Department of Health standards for reliability.

Age at Diagnosis

Figure 1. Age at First Diagnosis Among Adults with Lifetime Asthma, Bear River LHD, 2004-2009



Data source: Behavioral Risk Factor Surveillance System 2004-2009. Crude prevalence.
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More than half (53%) of adults who have ever been diagnosed with asthma were diagnosed by age 17.

Air Quality

The Environmental Protection Agency (EPA) has established health-based National Ambient Air Quality Standards (NAAQS) which consider both concentration level and duration of exposure that can cause adverse health effects. Pollution concentrations higher than the NAAQS are considered unhealthy.[2]

Particulate Matter ($PM_{2.5}$)

Table 2. Bear River Air Quality 2007-2009[1]

	Estimated days over 24-hour standard *		
Monitoring Station	**2007**	**2008**	**2009**
Logan	7	12	18

*Compared with the National Ambient Air Quality 24-hour Standard for $PM_{2.5}$ of 35 µg/m3

Wintertime temperature inversions act to trap air in valleys long enough for concentrations of $PM_{2.5}$ to build up to levels that can be unhealthy. These particles are so small that they can become embedded in human lung tissue, further harming those with

respiratory diseases and cardiovascular problems. From 2007-2009, there was an increase each year in the number of days when the $PM_{2.5}$ standard was exceeded in Logan.

Ozone

Table 3. Bear River Ozone 2006-2008[2]

	Estimated days over 8-hour standard *		
Ozone	**2006**	**2007**	**2008**
Brigham City	5	6	1
Logan	0	3	1

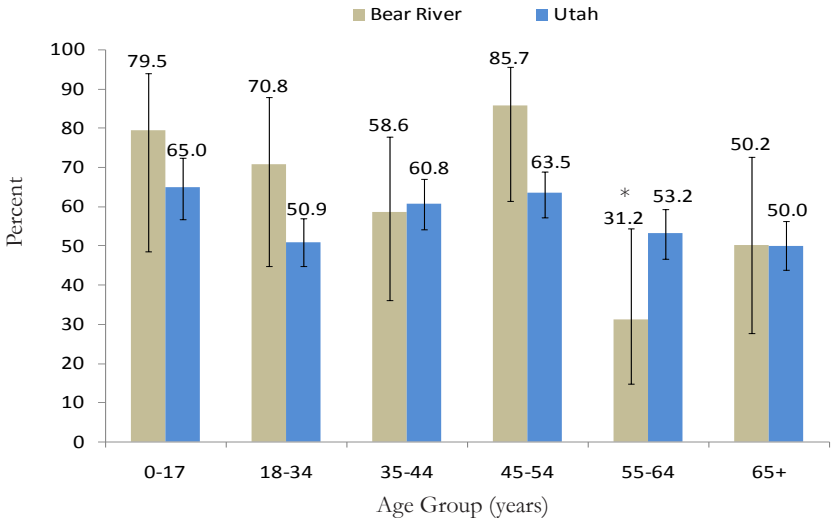
*Compared with the National Ambient Air Quality 8-hour Ozone Standard of .075 ppm

Ozone production is a year-round phenomenon. However, the highest ozone levels occur during the summer when strong sunlight, high temperatures, and stagnant meteorological conditions combine to drive chemical reactions and trap the air within a region for several days. In the past three years, Brigham City has had more days where the EPA standard for ozone was exceeded than Logan.

Asthma Management and Quality of Life

Frequency and severity of asthma symptoms and quality of life are indicators of one's management of asthma.

Figure 2. Asthma Attack Among Adults and Children with Current Asthma During Past 12 months, Bear River LHD, 2004-2009

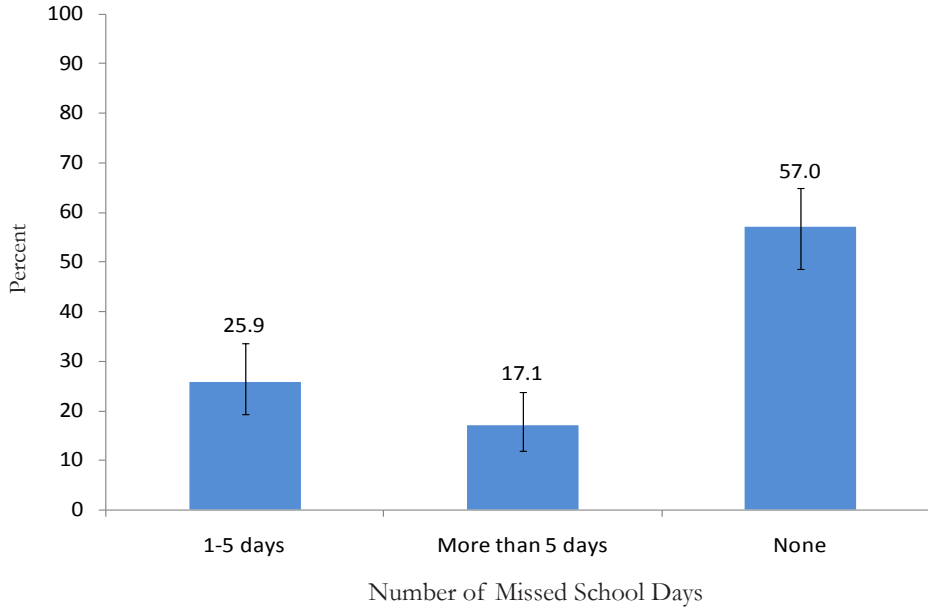


Data source: Behavioral Risk Factor Surveillance System, 2004-2006 and Call-back Survey 2007-2009. Crude prevalence.
* Estimate has a coefficient of variation greater than 30% and does not meet Utah Department of Health standards for reliability.

In each age group, the number of people who had experienced an asthma attack in the past 12 months was similar for Bear River LHD and the state of Utah.

Missed School Days

Figure 3. Number of School Days Missed Due to Asthma During the Past 12 Months, School-aged Children with Current Asthma, Utah, 2007-2009



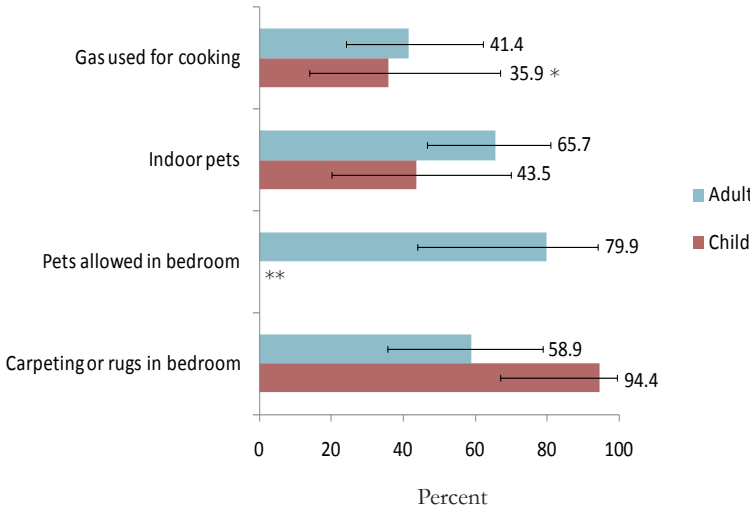
Data source: Behavioral Risk Factor Surveillance System, Call-back Survey 2007-2009. Crude prevalence.

Nationally, asthma is a leading cause of school absenteeism.[3] Bear River LHD data could not be reported in Figure 3 due to the unreliability of available data. In Utah, among parents of school-aged children with asthma, 25.9% reported that their child missed 1-5 days of school because of asthma during the past 12 months and 17.1% said their child missed more than five days of school due to asthma.

Indoor Environmental Exposures

Because people generally spend the majority of their time indoors, environmental factors in the home can play a significant role in triggering asthma attacks. Environmental modifications can be made in the home to reduce exposure to these triggers and reduce asthma symptoms.

Figure 4. Environmental Triggers in the Homes of Adults and Children with Current Asthma, Bear River LHD, 2007-2009 Combined



Data source: Behavioral Risk Factor Surveillance System, Call-back Survey 2007-2009. Crude prevalence.
* Estimate has a coefficient of variation greater than 30% and does not meet Utah Department of Health standards for reliability.
** Estimate has a coefficient of variation >50% and is not considered appropriate for publication.

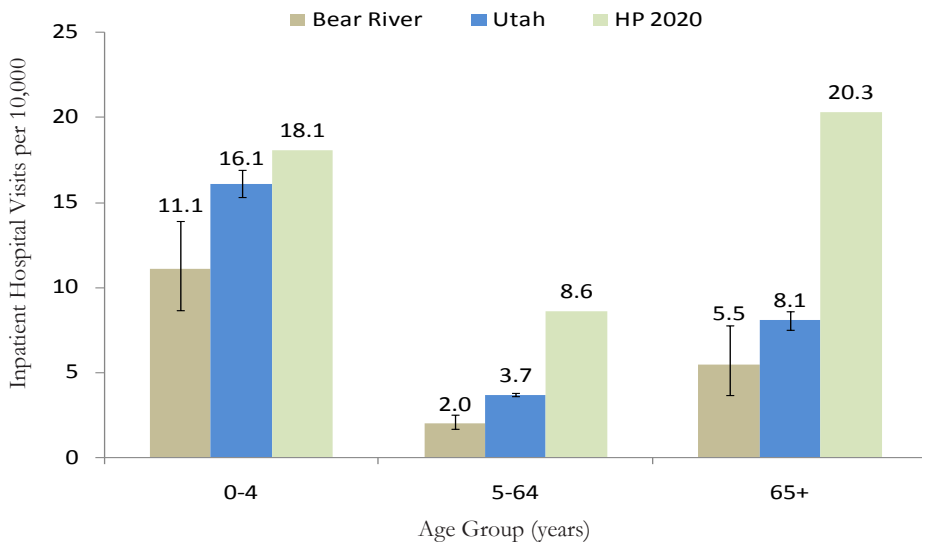
Having carpeting in the bedroom (94.4%) and pets in the home (43.5%) were the two most prevalent environmental exposures for children. Having indoor pets (65.7%) and pets allowed in the bedroom (79.9%) were the two most prevalent environmental exposures for adults.

Health Care Utilization

Emergency department (ED) and hospitalization data are taken from the Utah Inpatient Hospital Discharge Database and the Utah Emergency Department Encounter Database. Emergency Department encounters include all treat-and-release and all inpatient admissions through the ED. In several of these figures, Healthy People 2020 Objectives are shown along with Bear River LHD and state data. Healthy People 2020 (HP2020) is a comprehensive set of disease prevention and health promotion objectives for the nation.

Hospitalizations

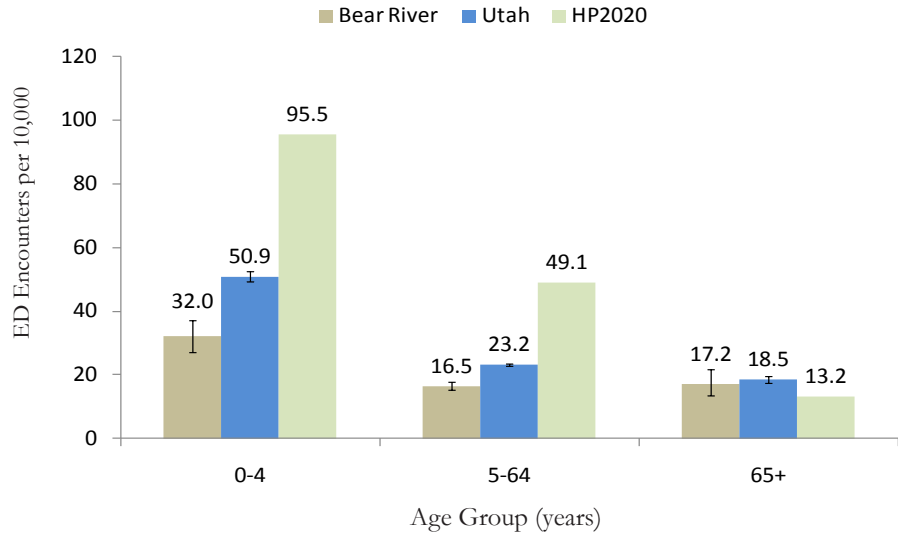
Figure 5. Asthma Hospitalizations by Age Group, 2006-2009



Source: Utah Hospital Discharge Database, 2006-2009. Crude rates.
Note: Primary diagnosis code ICD 493 was used to identify hospitalizations due to asthma.

Emergency Department Visits

Figure 6. All Asthma-related Emergency Department Visits, 2007-2009



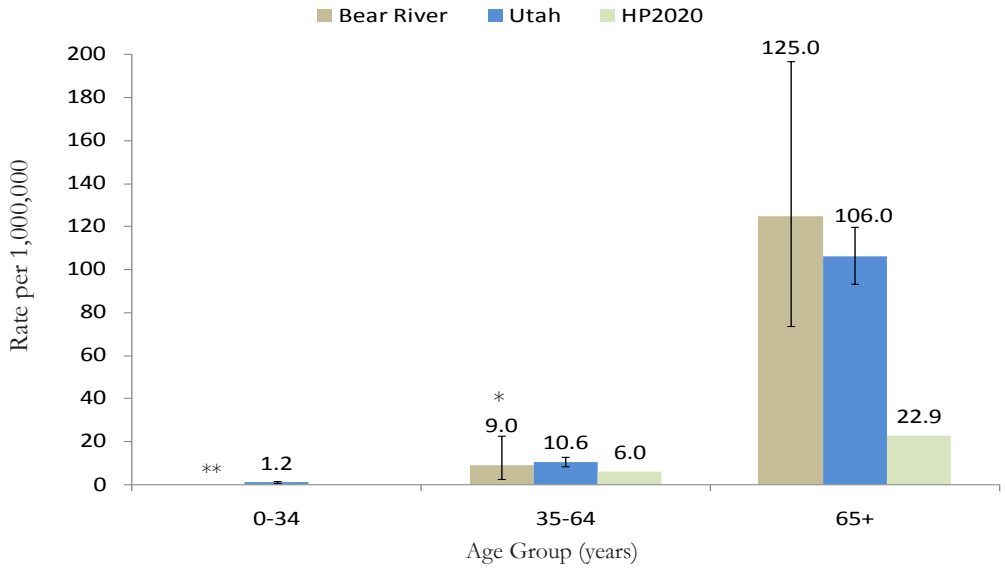
Source: Utah Emergency Department Encounter Database, 2007-2009. Crude rates.
Note: Primary diagnosis code ICD 493 was used to identify emergency department visits due to asthma.

Bear River LHD had a significantly lower ED encounter rate than the state rate and HP2020 Objective for the 0-4 and 5-64 age groups.

Asthma Mortality

Asthma-related deaths are rare and most commonly occur among the elderly population. The 65-and-older age group data should be interpreted with caution because similarities exist between chronic obstructive pulmonary disease and asthma, which can lead to misdiagnoses. Also, due to the small number of asthma deaths among some age groups, data were not reportable for the youngest age groups.

Figure 7. Asthma Mortality Rate by Age, 1999-2009



Source: Utah Death Certificate Database, 1999-2009 combined. Crude rates.
Note: ICD-10 codes J45 and J46 were used to identify asthma as the primary cause of death.
* Estimate has a coefficient of variation greater than 30% and does not meet Utah Department of Health standards for reliability.
** The estimate has a coefficient of variation >50% and is not considered appropriate for publication.

For the 0-34 age group, HP2020 is currently collecting data to set a mortality rate objective in the future. The asthma mortality rates for Bear River LHD are similar to state rates and both are above the HP2020 goal.

References

1. Utah Division of Air Quality: Air Monitoring Center and the AQS EPA database. 2006-2009. Available at http://www.airmonitoring.utah.gov/dataarchive/archpm25.htm

2. Governor's Office of Planning and Budget. Retrieved on April 13, 2010 from Utah Department of Health, Center for Health Data, Indicator-Based Information System for Public Health website at http://ibis.health.utah.gov.

3. United States Environmental Protection Agency. IAQ tools for schools. Available at http://www.epa.gov/iaq/schools/pdfs/publications/managing_asthma.pdf

4. U.S. Department of Health and Human Services. HP2020 Objectives.

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