

# Salt Lake Valley Asthma Report

Salt Lake Valley Health District, located along the Wasatch Front, is the most populated of the 12 health districts. More than one-third (37%) of Utah residents (1,000,000) live in the Salt Lake Valley Health District.

This report is intended to provide residents of Salt Lake Valley HD 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**

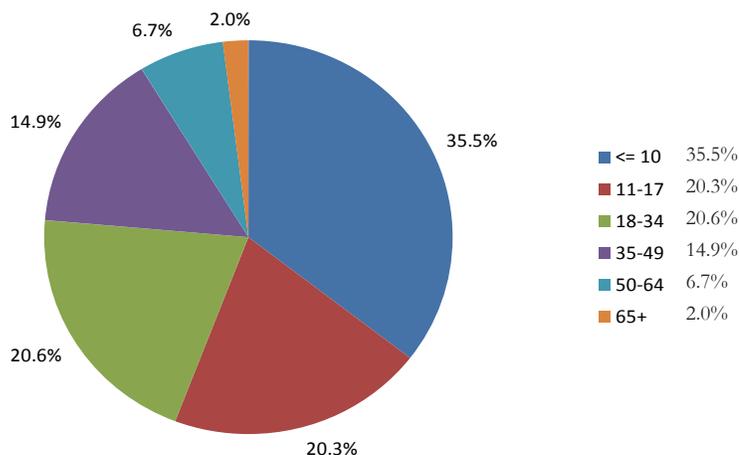
	<b>Age Group</b>	<b>Salt Lake Valley percent (95% CI)</b>	<b>State of Utah percent (95% CI)</b>
<b>Children</b>	0-17	6.9% (5.1-9.3)	7.0 (6.2-7.8)
<b>Adults</b>	18-34	9.2% (7.5-11.2)	7.9 (6.9-9.1)
	35-49	8.9% (7.5-10.6)	8.2 (7.3-9.1)
	50-64	9.9% (8.4-11.7)	8.6 (7.7-9.6)
	65+	7.6% (6.2-9.3)	8.3 (7.4-9.4)

Data source: Behavioral Risk Factor Surveillance System 2007-2009. Crude prevalence.

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## Age at Diagnosis

Figure 1. Age at First Diagnosis Among Adults with Lifetime Asthma, Salt Lake Valley, 2004-2009



Data source: Behavioral Risk Factor Surveillance System 2004-2009. Crude prevalence.

More than half (55.8%) 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.<sup>2</sup>

### Particulate Matter (PM<sub>2.5</sub>)

Table 2. Salt Lake Valley Air Quality 2007-2009<sup>1</sup>

Monitoring Station	Estimated days over 24-hour standard*		
	2007	2008	2009
Cottonwood	15	11	17
SLC	18	8	16

\*Compared with the National Ambient Air Quality 24-hour Standard for PM<sub>2.5</sub> of 35 µg/m<sup>3</sup>

Wintertime temperature inversions act to trap air in valleys long enough for concentrations of PM<sub>2.5</sub> to build up to levels that can be unhealthy. These particles are so small that they can become embedded in human lung tissue, further

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harming those with respiratory diseases and cardiovascular problems. From 2007 to 2009, on average, the PM<sub>2.5</sub> levels exceeded the EPA national standard on 14 days each year.

## Ozone

Table 3. Salt Lake Valley Ozone, 2006-2007<sup>2</sup>

	Estimated days over 8-hour standard *	
	2006	2007
South SLC	10	11
West SLC	10	11
Central SLC	8	7
West Valley	9	9

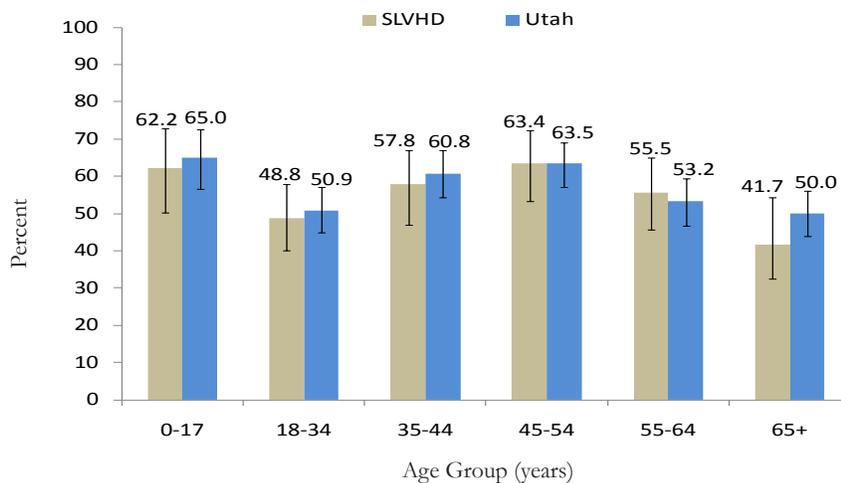
\*Compared with the National Ambient Air Quality 8-hour Ozone Standard of .075 ppm

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 Salt Lake Valley during 2007, there were between seven and eleven days where the EPA standard for ozone was exceeded.

## 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, Salt Lake Valley, 2004-2009



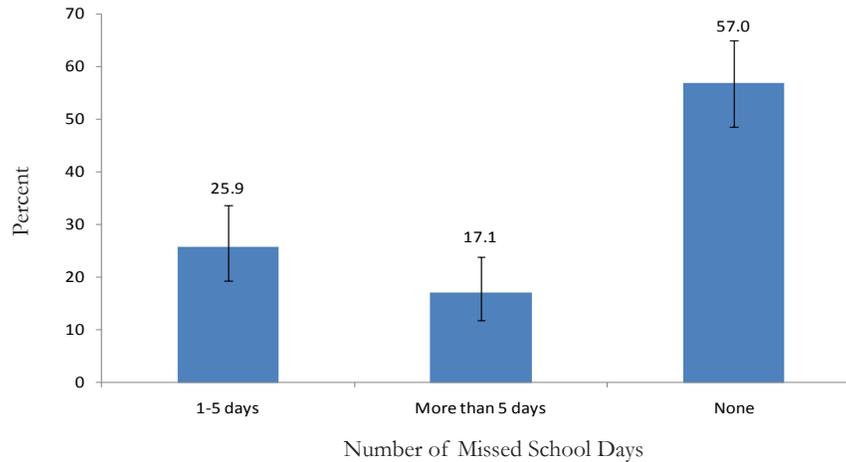
Data source: Behavioral Risk Factor Surveillance System, 2004-2006 and Call-back Survey 2007-2009. Crude prevalence.

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

## Missed School Days

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



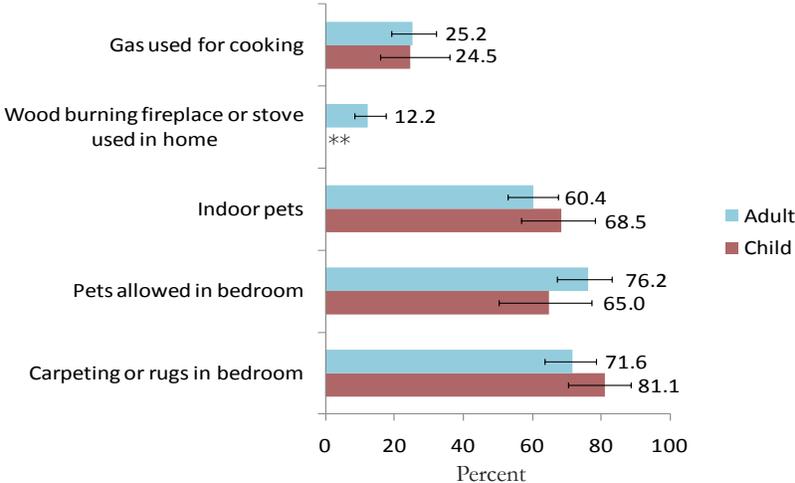
Data source: Behavioral Risk Factor Surveillance System, Call-back Survey 2007-2009. Crude prevalence.

Nationally, asthma is a leading cause of school absenteeism.<sup>1</sup> Salt Lake Valley 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, Salt Lake Valley, 2007-2009



Data source: Behavioral Risk Factor Surveillance System, Call-back Survey 2007-2009. Crude prevalence.  
 \*\* Estimate has a coefficient of variation >50% and is not considered appropriate for publication.

Having carpeting in the bedroom (81.1%) and pets in the home (68.5%) were the two most prevalent environmental exposures for children. The two most prevalent environmental exposures for adults were pets allowed in the bedroom (76.2%) and carpeting in the bedroom (71.6%).

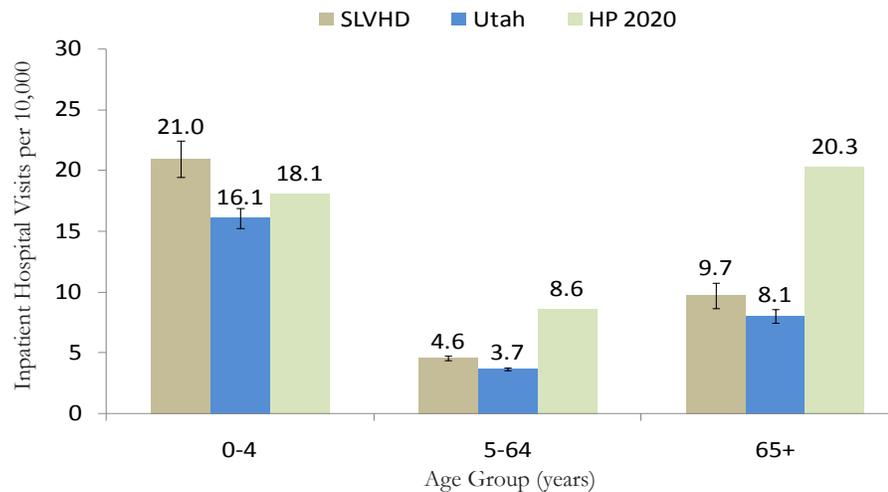
### Health Care Utilization

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 SLVHD and state data. Healthy People 2020 (HP2020) is a comprehensive set of disease prevention and health promotion objectives for the nation.

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## Hospitalizations

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



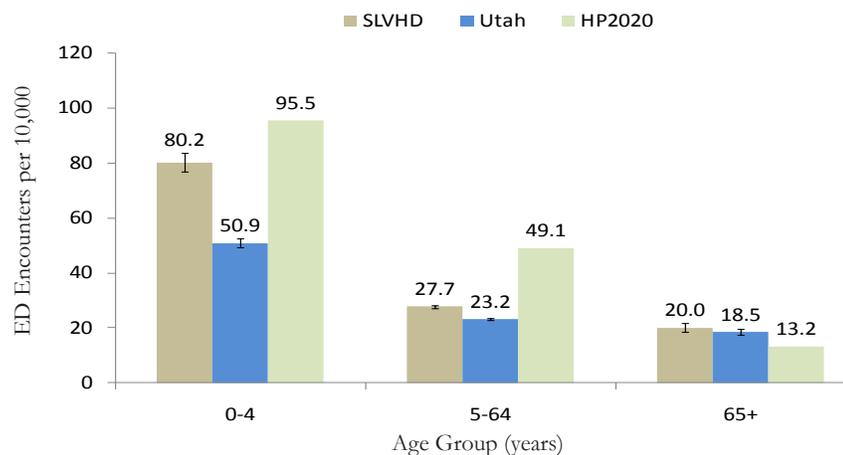
Source: Utah Hospital Discharge Database, 2006-2009. Crude rates.

Note: Primary diagnosis code ICD 493 was used to identify hospitalizations due to asthma.

The rate of asthma hospitalizations was significantly higher for all age groups in the SLVHD than the state rate.

## 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.

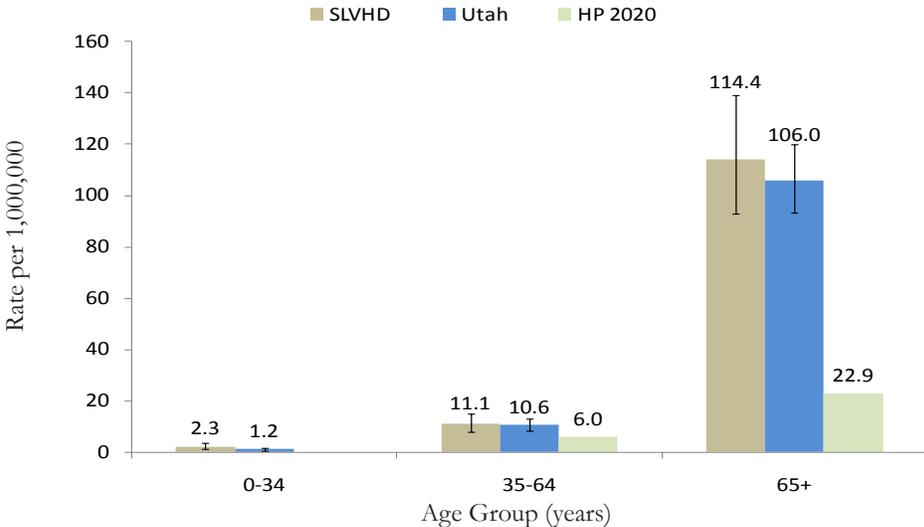
The rate of ED encounters for SLVHD was significantly higher than the state rate for the 0-4 and 5-64 age groups.

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## 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.

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 SLVHD are similar to state rates and both are above the HP2020 objective.

## 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](http://www.epa.gov/iaq/schools/pdfs/publications/managing_asthma.pdf)
4. U.S. Department of Health and Human Services. HP2020 Objectives.



### **Utah Asthma Task Force**

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