

Utah Health Status Update: Community Health Assessment in Utah

February 1999

Utah Department of Health

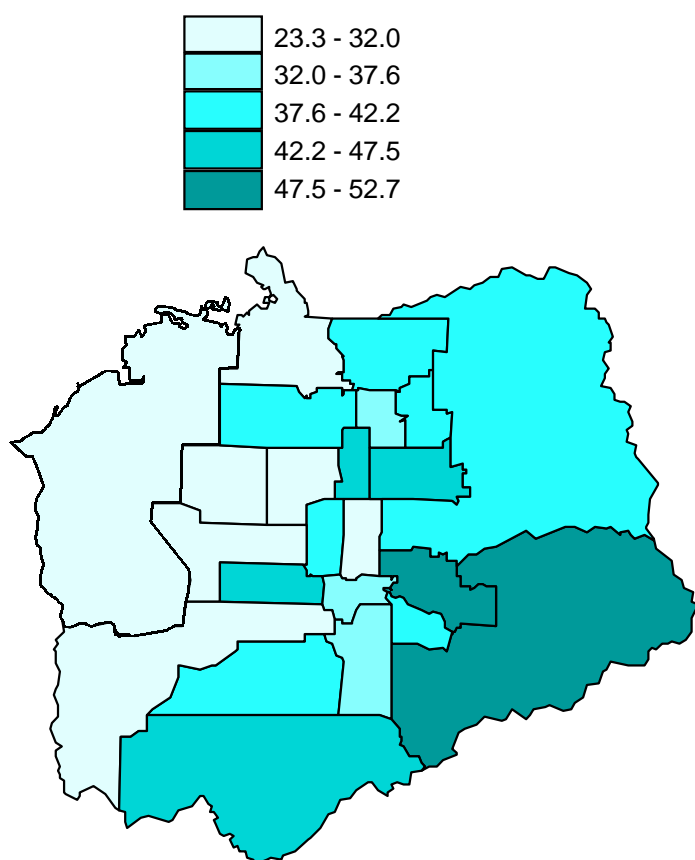
The Utah Department of Health has recently published two reports on health status measures and rates of preventable hospitalizations^{1,2} using small area analysis methods to provide information to support community health assessment and planning. Sixty-one small areas, ranging in population size from 15,000 to 62,500 persons (see page 3) were designated based on population size, boundaries of cities and towns, and economic similarity.

This update illustrates some of the findings of those reports and uses of this method of health assessment. Different views and ways of presenting data are illustrated as well as interesting findings. Map 1 uses shading to show the percentage of persons in excellent health for the 24 areas in Salt Lake County. Map 2 uses shading to indicate areas of the Wasatch front where teen birth

rates are higher, lower, or same as the state rate. Map 3 shows areas where the death rate was higher, lower, or same as the state rate for the entire state.

- In north and west Salt Lake County, smaller percentages of persons were in excellent health (Map 1).
- In the Wasatch front, the highest teen birth rates occurred in north and west Salt Lake County and in northern Weber County (Map 2).
- Higher-than-average rates of deaths from all causes were found in several urban and rural areas (Map 3).

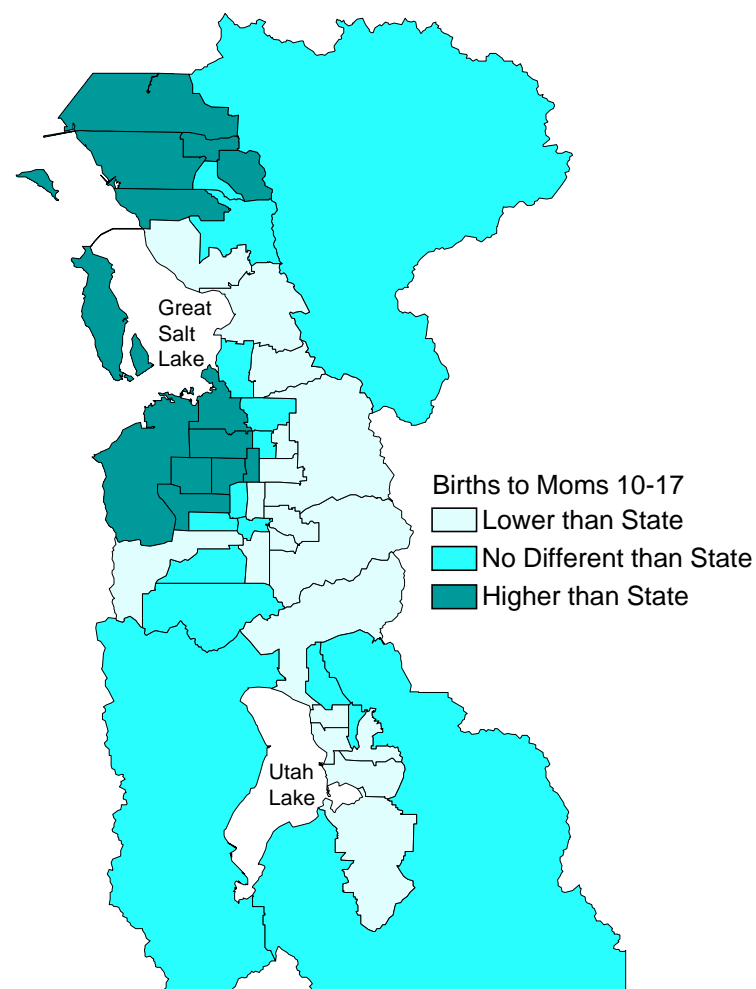
Map 1. Percentage of Persons Reported to Be In Excellent Health. Salt Lake County Small Areas, 1996.



| Area | Percent | 95% Confidence Interval | |
|-------------------------|---------|-------------------------|-------|
| 28 Cottonwood | 52.7% | 44.5% | 60.9% |
| 38 Sandy, Southeast | 48.6% | 38.2% | 58.9% |
| 39 Riverton/Draper | 47.5% | 37.2% | 57.8% |
| 26 Millcreek | 46.7% | 39.2% | 54.1% |
| 16 Bountiful | 46.1% | 41.0% | 51.2% |
| 25 South Salt Lake | 44.8% | 32.7% | 56.9% |
| 33 West Jordan No. | 42.8% | 36.1% | 49.5% |
| 30 Taylorsville | 42.2% | 33.5% | 50.9% |
| 35 South Jordan | 42.1% | 31.5% | 52.7% |
| 27 Holladay | 40.3% | 32.8% | 47.9% |
| 18 Avenues | 39.4% | 30.1% | 48.6% |
| 21 Glendale | 39.2% | 27.3% | 51.2% |
| 37 Sandy, Northeast | 38.8% | 29.1% | 48.5% |
| 19 Foothill/U of U | 38.5% | 29.6% | 47.5% |
| 32 Midvale | 37.6% | 25.5% | 49.6% |
| 24 Downtown Salt Lake | 36.6% | 29.5% | 43.8% |
| 36 Sandy Center | 35.3% | 28.1% | 42.5% |
| 17 Rose Park | 31.9% | 21.3% | 42.5% |
| 31 Murray | 31.9% | 22.3% | 41.4% |
| 20 Magna | 30.1% | 19.8% | 40.4% |
| 22 West Valley West | 29.3% | 23.1% | 35.6% |
| 34 W. Jordan, Copperton | 25.4% | 15.5% | 35.2% |
| 23 West Valley East | 25.1% | 16.9% | 33.3% |
| 29 Kearns | 23.3% | 17.9% | 28.7% |

Number labels refer to area numbers on key map on page 3.
Data source: Utah Department of Health, 1996 Utah Health Status Survey.
Percentages were age-adjusted using SUDAAN statistical software.

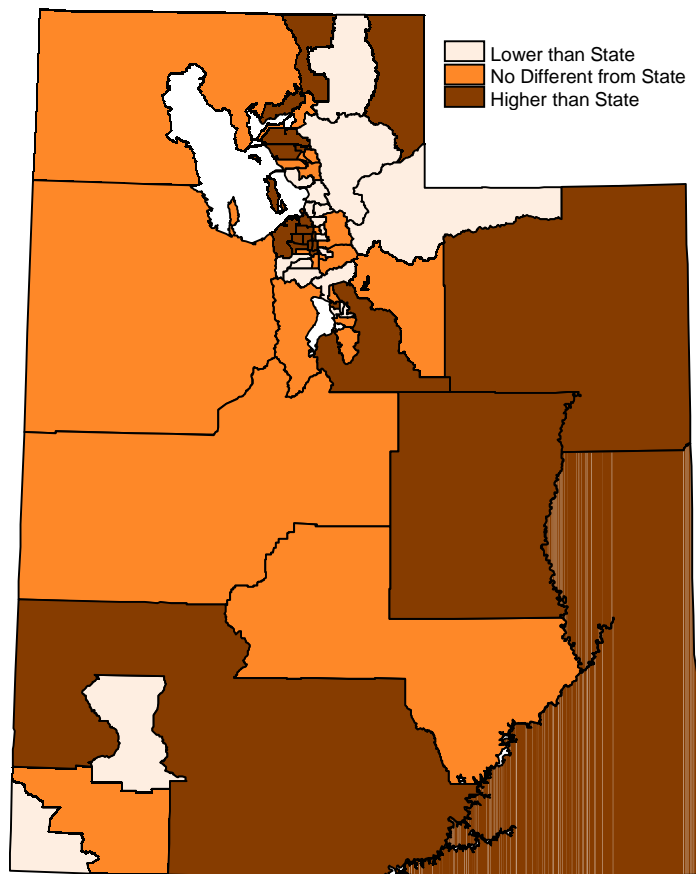
Map 2. Percentage of Births to Adolescent Mothers (10-17 Years). Wasatch Front Small Areas, 1994-96.



| Area | Birth Rate* | 95% Confidence Interval | |
|--|-------------|-------------------------|------|
| Wasatch front areas with the lowest adolescent birth rates: | | | |
| 19 Foothill/U of U | 0.5 | 0.2 | 1.1 |
| 47 Provo/BYU | 1.2 | 0.9 | 1.7 |
| 16 Bountiful | 1.5 | 1.0 | 2.0 |
| 13 Syracuse/Kaysville | 2.0 | 1.4 | 2.8 |
| 26 Millcreek | 2.0 | 1.5 | 2.5 |
| 28 Cottonwood | 2.0 | 1.4 | 2.8 |
| 37 Sandy, NE | 2.0 | 1.3 | 3.1 |
| 38 Sandy, SE | 2.0 | 1.4 | 3.0 |
| 48 Provo South | 2.0 | 1.7 | 2.5 |
| 45 West Orem | 2.2 | 1.7 | 2.8 |
| Wasatch front areas with the highest adolescent birth rates: | | | |
| 25 South Salt Lake | 5.2 | 4.2 | 6.4 |
| 8 South Ogden | 5.6 | 4.6 | 6.7 |
| 23 West Valley II | 5.9 | 5.1 | 6.9 |
| 22 West Valley I | 6.0 | 5.2 | 6.8 |
| 17 Rose Park | 6.2 | 5.2 | 7.4 |
| 5 Ben Lomond | 6.6 | 5.6 | 7.7 |
| 21 Glendale | 6.6 | 5.5 | 7.9 |
| 20 Magna | 7.5 | 6.1 | 9.1 |
| 7 Downtown Ogden | 8.4 | 7.2 | 9.7 |
| 46 East Orem | 11.8 | 2.1 | 37.7 |

Number labels refer to area numbers on key map on page 3.
Data source: Utah Department of Health, 1994-1996 Utah Birth Certificate Database
* Percentage of all births that were to adolescents

Map 3. Average Annual Rates of Death From All Causes per 100,000 Persons. Utah Small Areas, 1992-1996.



| Area | Death Rate | 95% Confidence Interval | |
|---|------------|-------------------------|-------|
| State of Utah small areas with the lowest death rates: | | | |
| 46 East Orem | 107.0 | 73.7 | 140.3 |
| 35 South Jordan | 293.3 | 255.2 | 331.3 |
| 39 Riverton/Draper | 350.0 | 325.9 | 374.1 |
| 45 West Orem | 373.0 | 349.4 | 396.5 |
| 18 Avenues | 376.3 | 354.5 | 398.2 |
| 3 Logan | 378.7 | 360.0 | 397.4 |
| 58 St. George | 402.5 | 358.5 | 419.4 |
| 14 Farmington/Centerville | 404.1 | 368.0 | 440.2 |
| 47 Provo/BYU | 407.2 | 382.6 | 431.8 |
| 19 Foothill/U of U | 424.7 | 400.8 | 448.5 |
| State of Utah small areas with the highest death rates: | | | |
| 44 North Orem | 741.6 | 698.6 | 784.6 |
| 17 Rose Park | 669.1 | 633.5 | 704.7 |
| 29 Kearns | 668.8 | 634.4 | 703.2 |
| 21 Glendale | 662.7 | 627.4 | 697.9 |
| 23 West Valley East | 658.5 | 623.7 | 693.2 |
| 22 West Valley West | 626.0 | 592.5 | 659.4 |
| 53 Tri-county LHD | 624.7 | 594.4 | 655.0 |
| 20 Magna | 622.4 | 576.4 | 668.5 |
| 4 Other Cache/Rich Co. | 601.1 | 565.1 | 637.0 |
| 56 Carbon/Emery Co. | 594.3 | 565.8 | 622.8 |

Data source: 1992-1996 Utah Death Certificate Database

Ambulatory Care Sensitive (Preventable) Hospitalizations

Ambulatory care sensitive (ACS) conditions are illnesses such as asthma, bacterial pneumonia, and congestive heart failure that can usually be effectively treated in ambulatory care settings. Most hospitalizations for ACS conditions should be preventable with good access to ambulatory or outpatient care. Small area analysis of rates of these conditions can identify communities that have problems with access to health care.

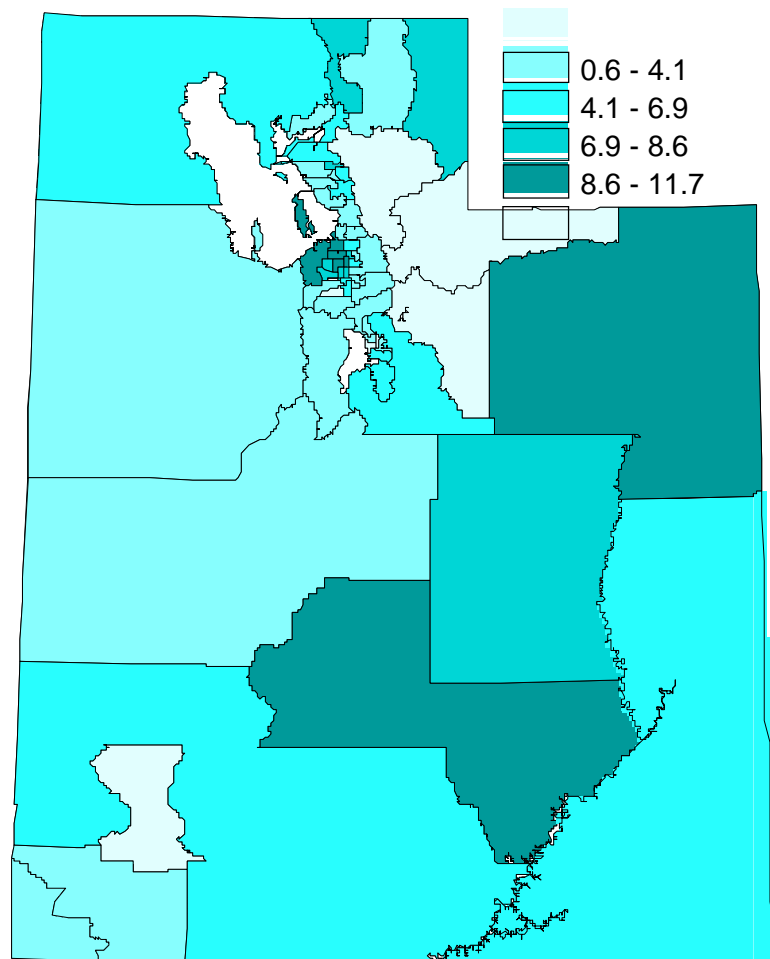
- Analyses of 12 ACS conditions identified several urban and rural areas in which rates were high for several conditions indicating significant access problems. Twelve areas had high rates for ≥ 23 conditions, TriCounty

H.D. (area #53), Other Southwest H.S. (#61), Glendale (#21), Kearns (#29), N. Orem (#44), Rose Park (#17), Downtown Ogden (#7), Provo S. (#48), S. Salt Lake (#25), W. Valley I & II (#22, #23).

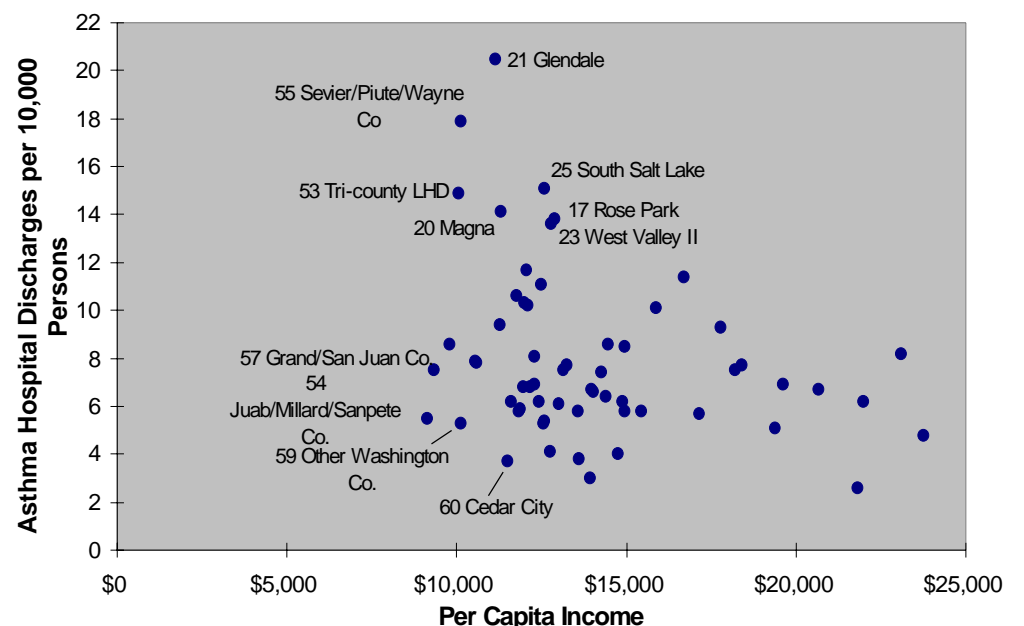
- Lack of access to ambulatory care is believed to cause high ACS hospitalization rates – people with poor access tend to wait to see a doctor until the problem is severe, more often requiring hospitalization.
- Areas with high ACS admission rates tended to be areas with lower income, as shown in the figure below. This “L”-shaped pattern was repeated for each of the 12 conditions examined and for use of early prenatal care.
- Areas with high ACS admission rates also had higher percentages of people who were without health insurance.
- Of note, areas with high hospitalization rates were always lower-income, but not all lower-income areas had high rates of hospitalization. Lessons may be learned by asking, “What distinguishes lower-income areas with high rates from those with low rates?”

ASTHMA HOSPITAL DISCHARGES

Average Annual Rate of Inpatient Hospital Discharges per 10,000 Persons. Utah Small Areas, 1992-1996.



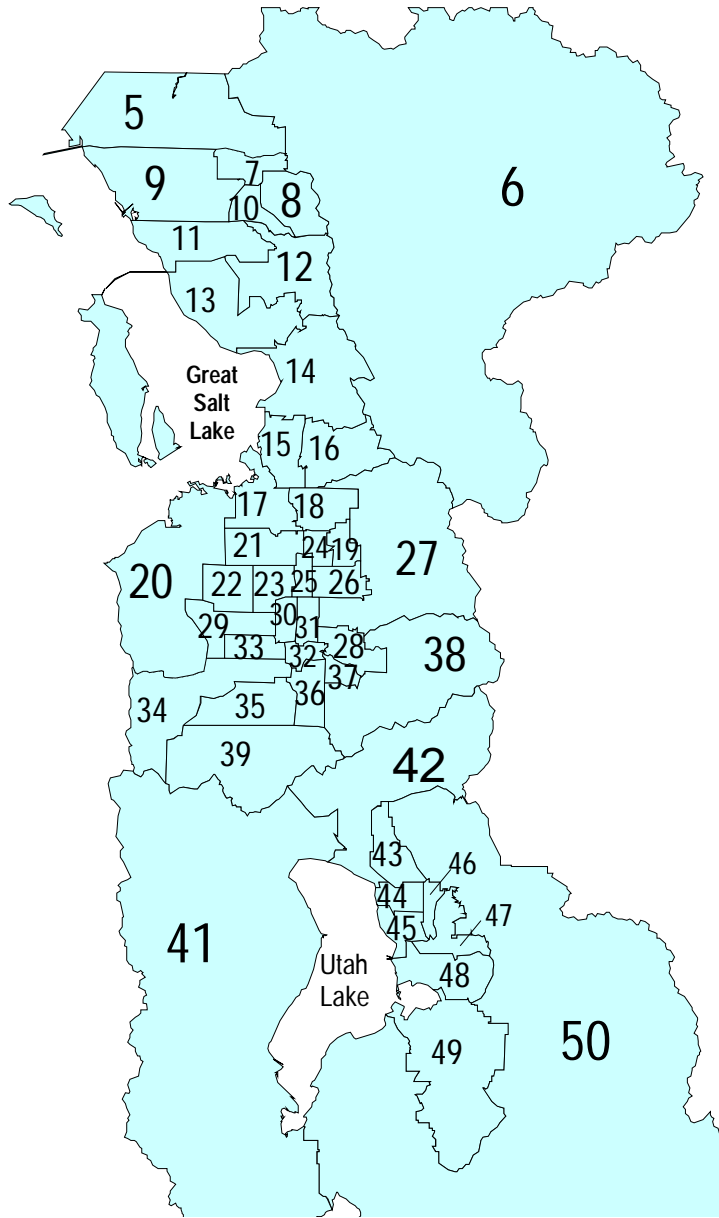
Average Annual Rate of Asthma Hospital Discharges per 10,000 Persons by Per-Capita Income. Utah Small Areas, 1992-1996.



Data source: 1992-1996 Utah Hospital Discharge Database
Data were age-adjusted to U.S. 2000 population

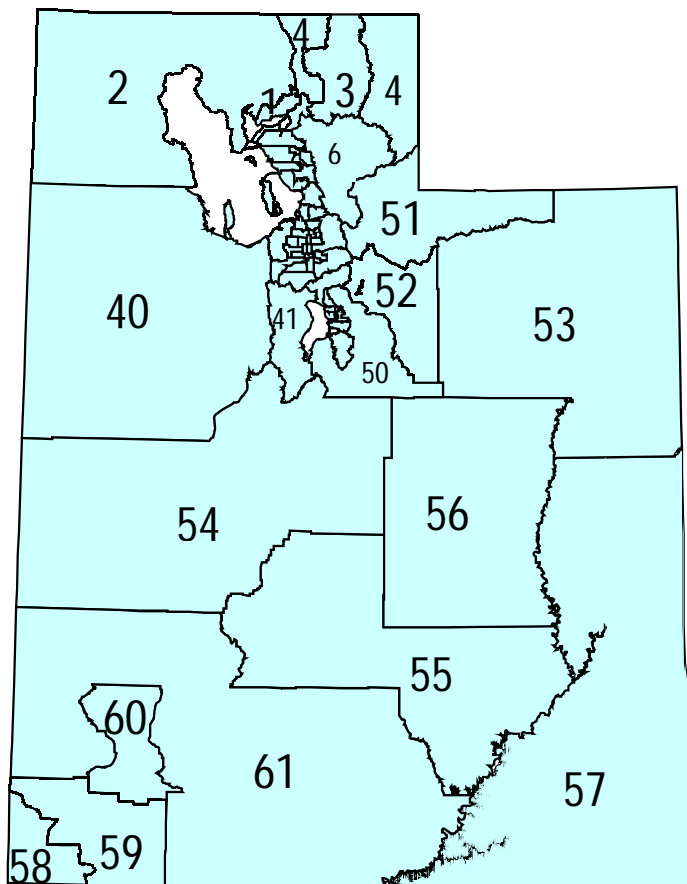
Utah Small Area Key Maps and Boundary Descriptions

Wasatch front view



| Area # | Area Name | Boundary Designation | 1997 Population |
|--------|--------------------------|---|-----------------|
| | State Total | All counties / ZIP codes in Utah | 2,042,003 |
| 1 | Brigham City | ZIP code 84302 | 18,915 |
| 2 | Other Box Elder Co. | Box Elder County except ZIP code 84302 | 20,712 |
| 3 | Logan | ZIP codes 84321, 84322, 84341, 84332 | 60,515 |
| 4 | Other Cache/Rich Co. | Cache & Rich Co. except ZIP codes 84321, 84322, 84341, 84332 | 26,325 |
| 5 | Ben Lomond | ZIP codes 84404, 84407, 84412 | 39,592 |
| 6 | Morgan/East Weber Co. | ZIP codes 84310, 84317, 84414, 84050 or Morgan County | 32,686 |
| 7 | Downtown Ogden | ZIP codes 84401, 84402 | 24,663 |
| 8 | South Ogden | ZIP code 84403 | 30,696 |
| 9 | Roy/Hooper | ZIP codes 84067, 84315 | 36,276 |
| 10 | Riverdale | ZIP codes 84405, 84409 | 23,783 |
| 11 | Clearfield/Hill AFB | ZIP codes 84015, 84016, 84056 | 45,593 |
| 12 | Layton | ZIP codes 84040, 84041 | 53,648 |
| 13 | Syracuse/Kaysville | ZIP codes 84037, 84075 | 29,312 |
| 14 | Farmington/Centerville | ZIP codes 84025, 84014 | 24,991 |
| 15 | Woods Cross/No SL | ZIP codes 84087, 84054 | 17,596 |
| 16 | Bountiful | ZIP codes 84010, 84011 | 44,309 |
| 17 | Rose Park | ZIP code 84116 | 26,083 |
| 18 | Avenues | ZIP codes 84103, 84114 | 23,277 |
| 19 | Foothill/U of U | ZIP codes 84108, 84112, 84113 | 22,917 |
| 20 | Magna | ZIP code 84044 | 20,128 |
| 21 | Glendale | ZIP codes 84104, 84101, 84110, 84152 | 20,579 |
| 22 | West Valley West | ZIP codes 84128, 84120, 84170 | 58,179 |
| 23 | West Valley East | ZIP codes 84119, 84199 | 40,174 |
| 24 | Downtown Salt Lake | ZIP codes 84111, 84102, 84105 | 48,215 |
| 25 | South Salt Lake | ZIP codes 84115, 84165 | 22,416 |
| 26 | Millcreek | ZIP codes 84106, 84151, 84109 | 55,943 |
| 27 | Holladay | ZIP codes 84124, 84117 | 46,584 |
| 28 | Cottonwood | ZIP code 84121 | 45,933 |
| 29 | Kearns | ZIP code 84118 | 62,462 |
| 30 | Taylorsville | ZIP code 84123 | 33,294 |
| 31 | Murray | ZIP codes 84107, 84157 | 30,139 |
| 32 | Midvale | ZIP code 84047 | 27,154 |
| 33 | West Jordan No. | ZIP code 84084 | 44,308 |
| 34 | W. Jordan, Copperton | ZIP codes 84088, 84006 | 28,860 |
| 35 | South Jordan | ZIP code 84095 (new zip code as of 1993) | 32,401 |
| 36 | Sandy Center | ZIP codes 84070, 84091, 84094 | 52,784 |
| 37 | Sandy, NE | ZIP codes 84093, 84090 | 28,948 |
| 38 | Sandy, SE | ZIP code 84092 | 34,139 |
| 39 | Riverton/Draper | ZIP codes 84065, 84020 | 37,651 |
| 40 | Tooele Co. | Tooele County | 30,371 |
| 41 | Lehi/Cedar Valley | ZIP codes 84043, 84013 | 14,951 |
| 42 | American Fork/Alpine | ZIP codes 84004, 84003 | 34,378 |
| 43 | Pleasant Grove/Lindon | ZIP codes 84062, 84042 | 26,294 |
| 44 | North Orem | ZIP codes 84057, 84059 | 35,107 |
| 45 | West Orem | ZIP code 84058 | 27,114 |
| 46 | East Orem | ZIP code 84097 (new zip code as of 1996) | 30,579 |
| 47 | Provo/BYU | ZIP codes 84602, 84604 | 47,328 |
| 48 | Provo South | ZIP codes 84601, 84603, 84605, 84606 | 47,650 |
| 49 | Springville/Spanish Fork | ZIP codes 84660, 84663, 84664, 84653 | 44,774 |
| 50 | Utah Co. South | ZIP codes 84651, 84655, 84626, 84633 | 19,920 |
| 51 | Summit Co. | Summit County | 25,301 |
| 52 | Wasatch Co. | Wasatch County | 12,441 |
| 53 | Tri-county LHD | Daggett, Duchesne and Uintah Counties | 39,334 |
| 54 | Juab/Millard/Sanpete Co. | Juab, Millard, and Sanpete Counties | 39,473 |
| 55 | Sevier/Piute/Wayne Co. | Piute, Sevier, and Wayne Counties | 21,373 |
| 56 | Carbon/Emery Co. | Carbon and Emery Counties | 31,108 |
| 57 | Grand/San Juan Co. | Grand and San Juan Counties | 21,083 |
| 58 | St. George | ZIP codes 84770, 84771, 84790 | 51,395 |
| 59 | Other Washington Co. | Washington County except ZIP codes 84770, 84771, 84790 | 26,263 |
| 60 | Cedar City | ZIP code 84720 | 24,424 |
| 61 | Other Southwest Dist. | Beaver, Garfield, Iron, and Kane Counties other than ZIP code 84720 | 19,162 |

State view



Conclusions:

Maps and small area analyses are powerful and effective ways to communicate health information.

Depicting data by small areas also allows researchers to combine data from different data sets. By doing so, new relationships between variables may be discovered. We encourage other agencies and organizations to use this small area analysis method to provide community level information.

Methodology Notes: A combination of ZIP code and county boundaries was used to define the areas. Areas with smaller populations will have less stable, that is less precise, estimates. In the accompanying data tables, 95% confidence intervals are published alongside the rates to indicate the precision of the estimates. Most rates have been age-adjusted to control for population age differences. For maps showing rates as lower, higher, or same, a rate was considered statistically different if its confidence interval did not include the state rate. More details on the methods used are in the reports referenced to the right.

References:

1. Bureau of Surveillance and Analysis. (1998). *Community Health Status: Selected Measures of Health Status by Small Area in Utah*. Salt Lake City, UT: Utah Department of Health.
2. Office of Health Data Analysis and Bureau of Surveillance and Analysis. (1999). *Small Area Analysis of Hospitalizations for Ambulatory Care Sensitive Conditions in Utah*. Salt Lake City, UT: Utah Department of Health.
3. Haggard, L.M., Shah, G., and Rolfs, R.T. (1998) Assessing community health status: Establishing geographic areas for small area analysis in Utah. *Utah's Health: An Annual Review*. Salt Lake City, UT: The Governor Scott M. Matheson Center for Health Care Studies.

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Additional information about this topic is available from the Office of Public Health Data, Utah Department of Health, P O Box 142101, Salt Lake City, Utah 84114-2101, (801) 538-6108, FAX (801) 536-0947, or email: phdata@doh.state.ut.us; or from the Office of Health Data Analysis, Utah Department of Health, P O Box 144004, Salt Lake City, Utah 84114-4004, (801) 538-7048, FAX (801) 538-9916. Please send any comments on this report to the Office of Public Health Data.



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