SALT LAKE COUNTY HEALTH DEPARTMENT

# COMMUNITY HEALTH ASSESSMENT

2013

Last Updated July 31, 2013

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SALT LAKE COUNTY HEALTH DEPARTMENT

Gary L. Edwards, MS • Executive Director

## LETTER OF TRANSMITTAL

To: Interested Individuals and Agencies

The Salt Lake County Health Department (SLCoHD) is pleased to announce the release of the 2013 Salt Lake County Community Health Assessment. Many dedicated individuals spent numerous hours collecting data, providing input, analyzing results, and compiling information in hopes it will be useful to all those interested in the health of Salt Lake County. We are especially grateful to the many individuals and agencies that provided their time sharing experiences and knowledge to help prepare a more accurate assessment.

The purpose of this assessment is to better define the health challenges we all face in Salt Lake County. Where possible, data has been analyzed by small area (ZIP code). This has helped us see that while overall Salt Lake County is a fairly healthy county in a very healthy state, there are defined pockets of need within various health indicators. This will help all of us focus our efforts as we strive to achieve the greatest impact with limited resources.

We see this as a working document that will be updated periodically, with the assessment process repeated every five years. SLCoHD will use this document to help shape a community health improvement plan, as well as our department strategic plan.

We hope you find it valuable in helping Salt Lake County residents achieve their highest level of health status. We appreciate any comments you might have and look forward to working collectively as we all strive to make Salt Lake County the healthiest county.

Sincerely,

Gary L. Edwards, MS

Executive Director

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"There's a movement afoot. Cities and towns big and small, counties from coast to coast and groups of passionate individuals from all over are coming together across sectors to build healthier communities."

Robert Wood Johnson Foundation
*New Public Health*
Monthly Archives
April 2012

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## TABLE OF CONTENTS

## Table of Figures

## List of Tables



## List of Maps

# EXECUTIVE SUMMARY

According to a group of Salt Lake County community leaders and county residents, the most important public health issues facing the county are air pollution, communicable diseases, water quality, obesity, and substance abuse/mental health. Further, participants identified a number of individual, system, and environmental process issues that impact health and health practices.

This Community Health Assessment (CHA) is the first of three interrelated activities designed to increase the efficiency and effectiveness of the Salt Lake County Health Department (SLCoHD). As the first comprehensive Community Health Assessment conducted by the SLCoHD it identifies community health needs and strengths. Through the input of residents, leaders, and partners who serve the community, combined with review of hard data, the SLCoHD will be better positioned to form partnerships with organizations, agencies, and community leaders; as well as more strategically invest resources to seek and implement solutions.

Once the assessment is complete, findings will be used to enter into a Community Health Improvement Planning (CHIP) venture with community partners. The plan reflects the results of a participatory planning process that includes significant involvement by key community sectors: residents, illness care consumers and providers, organizations and agencies that serve the community, and the public health system.

The CHIP will help direct the development of the SLCoHD Strategic Plan that will guide SLCoHD activities through the next five years. A project plan was developed to summarize this process.

## What We Did

### Organized

The Accreditation Committee, a standing committee of four, was formed to guide the assessment process and write the CHA. Membership consists of the Deputy Director (executive in charge), Management Analyst (project lead), Planner/Special Projects (research/analysis and writing), and Community Development Director. This standing committee will continue to guide the Community Health Improvement Plan and Strategic Planning processes.

An Advisory Committee, consisting of department managers from each division and the past Chair of the Board of Health, provides input into process decisions and offers guidance through the remaining two tasks. Extensive utilization of interns from local university public health programs provided data collection and analysis (**Appendix 1**).

The Community Health Assessment consisted of three central interrelated activities: Generation of new data, collection and analysis of existing data, and identification of community issues.

### Generated Data from Focus Groups

A large, formal assessment should be grounded in the problems and processes identified by the residents and professionals serving the communities through their lived experiences. With this philosophy guiding the SLCoHD assessment, the Advisory Committee chose to use focus

groups to solicit information about community problems from the residents and those who serve them.

Since public health impacts all aspects of society, a wide variety of perspectives were sought as the community groups were planned. Representation was sought from the community at large that included neighborhood leadership, residents of various ages and ethnicities and partners who provide services to the community. Partner groups included health care providers, government, employers/business, religious organizations, charitable foundations, community organizations, ethnic organizations, nursing schools, emergency response and environmental health.

In total, 22 focus groups were conducted with over 200 community leaders and area representatives from all six sections of the county. Refugees and representatives of Spanish Speaking and Native American ethnic groups also participated.

Focus groups were audio-recorded and transcribed. ETHNOGRAPH version 6.0 was used as a data management program. Concepts were coded and grouped into themes. In addition to identifying health concerns, the focus groups provided insight into process issues that would not have come to light if demographic data and existing process data had been considered alone.

## Gathered Existing Data

Existing data and reports gathered focused on:

- Performance Reports: *Community Health Status Indicator Project* and *County Health Roadmaps Project*
- *Healthy People 2020* Objectives and Targets
- Demographic data: CDC, Census Bureau, IBIS-PH
- Previous studies and reports: University of Utah's Bureau of Economic and Business Research (BEBR), Governor's Office of Planning and Budget (GOPB), and the Wasatch Front Regional Council
- Environmental data: Environmental Protection Agency standards and reports, SLCoHD data and reports

These data provide perspective into how well the county is doing on select health indicators compared to other counties, Utah, the nation, and targeted objectives for the future. Comparisons may point to additional problem areas or confirm findings from other sources.

### Community Health Status Indicator Project

In 2009, the U.S. Department of Health and Human Services (DHHS) published health rankings as part of the *Community Health Status Indicator (CHSI) Project*. The CHSI report measures over 200 health indicators for each of the 3,141 United States counties and compares peer counties (counties similar in selected demographic).

### County Health Roadmaps Project

The Robert Wood Johnson Foundation's *County Health Roadmaps Project (CHRP)* compared counties within a state to each other based on health indicators. In addition, Salt Lake County's (SLCo) rate is compared to the average rate (called the National Benchmark) of the top ten percent of all counties in the nation.

### Healthy People 2020

As a result of the 1979 publication *Healthy People: the Surgeon General's Report of Health Promotion and Disease Prevention,* the U.S. Public Health Service (USPHS) published *Healthy People 2000* in 1990. The USPHS identified, summarized the current status, and established year 2000 targets for various diseases, behavior, and environmental measures determined to be essential for improving the public's health. Since then *Healthy People 2010* and *Healthy People 2020* (*HP2020*) have been published.

#### Demographic Data and Published Reports

The 2010 Census data provided the most current information on population characteristics. Reports analyzing demographic data and morbidity and mortality data identified trends and difficulties. From this data, actual and potential problems could be identified and used to support other findings.

### Analyzed Data and Reported Findings

Data from the aforementioned sources were considered in the analysis. Health measures of concern were identified from the findings of the health indicator reports, progress on *Healthy People 2020* objectives, factors identified through collection of demographic data, and the responses of community member and professional participants in the focus groups.

#### Reviewed Issues by Geographic Area

To identify geographical areas at issue, data were analyzed according to Small Area data sets or by Local Public Health District. Geographic Information System (GIS) mapping allowed Small Area data to be presented in visual form that allows for macro-comparison of data within Small Areas of the county and easy analysis of overlying risk factors. In addition, interventions can be focused on the areas showing the most need.

#### Reviewed Demographic Shifts and Trends

Utilizing 2010 Census reports, studies conducted by the University of Utah's Bureau of Business and Economic Research (BEBR), the Governor's Office of Planning and Budget, and the Wasatch Front Regional Council, we reviewed demographic trends that will impact the need for and delivery of services.

## What We Learned

Based on input from the focus groups, air pollution appears to be the greatest community health problem facing Salt Lake County. An abbreviated discussion on air pollution in Salt Lake County is included in this report.

### Salt Lake County is Not the Highest or Lowest Ranked County

According to the county Health Roadmaps Project (county rankings), Salt Lake County is the 12$^{th}$ healthiest county in Utah when comparing health outcomes such as premature death or low birth weight; and 16$^{th}$ when ranked on health factors such as obesity, smoking or sexually transmitted infections.

In general, the rankings show that SLCo has obstacles to overcome if it is to become one of the healthiest counties in the country. For example, SLCo was ranked 26$^{th}$ out of the 26 counties in Utah on its Physical Environment, which consist of indicators such as air pollution, recreational facilities, and access to healthy food. Further, when the topic is social and economic factors (consisting of education, children in poverty, social supports and violent crime), SLCo ranked 19$^{th}$. However, there are some bright spots. SLCo ranks 5$^{th}$ in clinical care (# physicians per 100,000, preventive screenings for diabetes and mammography) and 7$^{th}$ in mortality (premature death).

Despite its "middle of the pack" rankings when compared to other Utah counties, Salt Lake County is a fairly healthy county. It is important to note that Utah consistently ranks among the top 10 healthiest states in the nation by *America's Health Ranking*. From 1993-1998 and again in 2002, Utah ranked as the nation's healthiest state. In 2009, Utah placed second behind Vermont for the title of healthiest state. Utah has never ranked below 7th during the 20 years that states have been ranked. As Salt Lake County accounts for about 38 percent of the state's population, Utah's ranking is significantly affected by Salt Lake County's performance.

## Where You Live Can Impact Your Health

Although Salt Lake County may not meet the *HP2020* target for the county as a whole, there will usually be "Small Areas" of the county that do meet the target. Conversely, the county may have met the *HP2020* target for an objective, there will usually be Small Areas within the county that do not. Small Areas within Salt Lake County that are in greatest need for assistance to meet *HP2020* targets are Glendale, South Salt Lake, West Valley City and Magna.

## Individual, System, and Environmental Factors Impact Change

While health conditions and environmental health concerns were mentioned during focus groups, the majority of time was spent on individual, system, and environmental factors that will impact many proposed interventions. These factors will either promote or impede actions taken to improve the community's health. The relationship of these process issues is delineated in the model **Factors Impacting a Community's Health.**

## The County's Population is Growing and Shifting to South and West

The population of Salt Lake County grew dramatically from 2000 to 2010. In addition to overall growth, the population has shifted, and that shift is expected to accelerate. According to the 2000 census, Salt Lake County had 879,325 residents; by 2010 this number had increased to 1,029,655. During the last decade the county's population, which had been centered in Salt Lake City and the county's southeast quadrant, began shifting to the southwest quadrant. The Wasatch Front Regional Council estimates that by 2030 the southwest area will contain about 30% of the county's population. Currently, the area contains 10% of the county's population. This shift will require the relocation and extension of resources that, at the current time, are less available in that area.

## The County's Population is Aging

While the population of Utah will continue to be younger than the general US population, the ratio of the aging to the young will increase. With the first of the Baby Boomers turning 65 years old in 2010, the 65 and older age group became the fastest growing age demographic. Beginning in the next few years, and continuing through the year 2040, the 85+ age group will be predominant. Services supporting the needs of elderly on fixed incomes will increase which might impact both the types and locations of services offered by health departments and other providers.

## The County's Population is Becoming More Ethnically Diverse

The county's minority population is growing quickly. In 2000, ethnic and cultural minorities accounted for 19.1% of Salt Lake County's population. By 2010, the county's minority population rose to 26.3%. For nearly 20% of the ethnic minority families, English is not the primary language spoken at home. The burgeoning ethnic diversity will impact the way services are provided. As the county's ethnic and cultural minority population will continue to grow, the

services provided will need to reflect this. Increasing diversity requires adjusting programs to work within the framework of a person's cultural heritage and belief system.

### Data Collection Must be Uniform and More Useable

#### MISMATCH BETWEEN TYPE OF STATE DATA GATHERED AND *HP2020* OBJECTIVES

One of the State of Utah's key data repositories for health data is called the Indicator-Based Information System for Public Health (IBIS-PH). It features a wealth of data and is highly interactive and user friendly. However, throughout this assessment we experienced a few frustrations in the availability and usability of data.

A Community Health Assessment relies heavily on data. However if data is not reflective of the same indicators, is gathered in a different way, or refers to areas that are not clearly delineated, its value is not as great. Some of the IBIS-PH data have the following problems:

- Data collected for a significant number of *HP2020* objectives are inconsistent with the data collected by the federal government.
    - For example, fruits and vegetables in the diet are collected as servings/day by IBIS-PH while federal data are collected as cups/day
    - Additionally, one source may gather prevalence data while another uses incidence data for the same indicator
- Some geographic data (Small Area data) do not necessarily reflect the municipality they are named after.
- Data are not collected on some *HP2020* objectives that are clearly public health related.

Data by geographic area are helpful to local officials and other policy makers who are charged with impacting public health. By focusing in on one or two lagging areas, interventions can become more strategic and appropriate for the citizenry of the area. However, not all of the Small Area data for Salt Lake County represents the area it is named for. For example, the Small Area named "Taylorsville" does not correlate with the City of the same name. Instead it includes parts of four other communities that are not within the city. Other neighborhoods within Taylorsville City are not part of the geographic Small Area called Taylorsville. This problem is due to the incorporation of a city after the small area boundaries were established. In addition to the problem with boundaries, other sources of imprecise data are due to municipalities annexing previously unincorporated areas.

When necessary, we have disclosed the limits of the data and have made adjustments to help preserve the integrity of this review.

## Early Successes Resulting from the CHA Process

As a direct result of this Community Health Assessment, collaborations with local community leaders and the professional community have expanded. In addition, opportunities to partner with area universities and hospitals have developed.

### Partnerships with Area Universities

One of the critical goals of a university is to prepare students for the workforce. A key component of this preparation is experience. We have successfully partnered with three of the major universities in the Salt Lake area in an effort to help them meet their mission and benefit our agency. Interns from the University of Utah's Division of Public Health, Westminster Public Health Program, and from the Brigham Young University's College of Health have participated in the project. All of the interns have been extraordinary. Without the intellect and energy of this group of future administrators this project would not have achieved the level of excellence

that it has. In addition to providing experience for interns, we have collaborated with the University of Utah on their community health assessment and have added the Director of the University of Utah's Division of Public Health program to the Salt Lake County Board of Health.

### Partnership with Intermountain Healthcare Hospitals

We have partnered on several projects with Intermountain Healthcare, the largest hospital system in the Intermountain West. Through this effort we have identified several opportunities to share resources. For example, Intermountain Healthcare officials expressed difficulty in providing health education and support to their patients who suffer from chronic, potentially controllable, conditions such as hypertension, obesity, and COPD due to smoking. They noted that although their physicians were qualified to make a diagnosis and issue prescriptions, they had neither the time nor skills to provide guidance in making lifestyle changes. The SLCoHD, as the public health authority for SLCo, employs health educators who can provide the education and support. Discussions are planned to facilitate this collaboration. This is only one partnership example; other collaborations with Intermountain Healthcare and with other hospitals will be considered in the future.

### Partnership with Area Cities

In an effort to better leverage dwindling resources, SLCoHD has sought to partner with Salt Lake County's cities and municipalities. These efforts include the pre-placement of Emergency supplies with Taylorsville City and working with Cottonwood Heights residents to strengthen their emergency preparations. In addition, the SLCoHD has initiated a Healthy Communities initiative and has assigned staff members to coordinate efforts with area municipalities and cities.

### Community Liaisons

One of the SLCoHD goals is that "*The Salt Lake County Health Department is the first agency called by local municipalities when they need public and environmental health information and direction*." The message from focus groups was loud and clear that the community residents want to be included in planning and decision-making. Based on CHA preliminary findings, the SLCoHD has assigned two-member teams to serve as liaisons for every city and municipality in the county. Every mayor will have SLCoHD staff that can be contacted about public health related issues.

## Where Do We Go from Here?

### Promote Collaborations

Continuing to build relationships with our community partners is necessary to continue coordinating services, collaborating on projects, and maximize the use of limited resources. Planning and implementing a joint effort to deliver health education related to hypertension control, obesity management or prevention, and smoking cessation is one example. In addition, we will continue to work with area universities to provide excellent experiences for interns.

### Community Health Improvement Plan

The next phase of this effort will be for SLCoHD to spearhead the development of a Community Health Improvement Plan in collaboration with our community partners. Once the CHIP is complete, a SLCoHD Strategic Plan will be developed that reflects how the agency will function to improve the priority areas identified in the CHIP.

To develop the CHIP, original partner focus group participants, those who were originally unable to participate, and new partners were invited to a meeting October 18, 2012 to review the

findings of the CHA and participate in work groups based on the priority problems identified in the CHA. The CHA includes information from the first set of focus groups, performance reports, demographic data (Census, Bureau, IBIS-PH), previous studies and reports (University of Utah's Bureau of Economic and Business Research [BEBR], Governor's Office of Planning and Budget [GOPB], Wasatch Front Regional Plan), and environmental data (Environmental Protection Agency standards and reports, SLCoHD data and reports). The work groups were: Air Quality, Water Quality, Chronic Disease, Infectious Disease, Maternal Child Health, and Mental Health/Substance Abuse.

During the work group, participants were asked to identify issues on their topic that fall within their scope of practice, and activities or projects they or their organizations have done, are doing, or plan to do to impact the issue. The work groups will then brainstorm to create projects that require collaboration. These projects will then be prioritized according to importance, cost, and likelihood of success and will form the basis of the Community Health Intervention Plan. As the lead agency, we hope to encourage our community partners to coordinate with each other as they seek to positively impact their common problems.

## SLCoHD Strategic Plan

The final piece of the project is preparation of the SLCoHD Strategic Plan. This plan will be built upon the findings of the CHA, the prioritized issues identified in the CHIP, and the direction given by SLCoHD leadership.

## Dissemination

The CHA will be published on the SLCoHD website. Limited hard copies will be printed for select individuals and organizations in the community.

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## ACRONYMS

| Acronym | Definition |
|---|---|
| ACIP | Advisory Committee on Immunization Practices |
| ACOG | American Congress of Obstetricians and Gynecologists |
| ADHD | Attention Deficit Hyperactivity Disorder |
| AHRQ | Agency for Healthcare Research and Quality |
| BEBR | Bureau of Economic and Business Research |
| BMI | Body Mass Index |
| BRFSS | Behavioral Risk Factor Surveillance System |
| BRHD | Bear River Health Department |
| CBC | Midvale Community Building Community |
| CDC | Centers for Disease Control and Prevention |
| CDP | Census Designated Places |
| CHA | Community Health Assessment |
| CHIP | Community Health Improvement Plan |
| CHRP | Community Health Roadmaps Project |
| CHSI | Community Health Status Indicator Project |
| CO | Carbon Monoxide |
| CO2 | Carbon Dioxide |
| CoCASA | Comprehensive Clinic Assessment Software Application |
| COPD | Chronic Obstructive Pulmonary Disease |
| CUPPHD | Central Utah Public Health Department |
| DCHD | Davis County Health Department |
| DDW | Division of Drinking Water |
| DHHS | Department of Health and Human Services |
| DTaP | Diphtheria, Tetanus, and acellular Pertussis Vaccine (for teenagers) |
| DTP | Diphtheria, Tetanus, and Pertussis Vaccine |
| ED | Emergency Department |
| EPA | Environmental Protection Agency |
| ESF | Essential Support Function |
| FQHC | Federally Qualified Health Center |
| GIS | Geographic Information System |
| GOPB | Governor's Office of Planning and Budget |
| HbA1C | Hemoglobin A1C / Glycated Hemoglobin |
| HFFI | Healthy Food Financing Initiative |
| HHS | United States Department of Health and Human Services |
| Hib | Haemophilus Influenza Type b |
| *HP2020* | *Healthy People 2020* |
| HPV | Human Papilloma Virus |
| I/M | Vehicle Inspection and Maintenance |
| IBIS-PH | Indicator-Based Information System for Public Health Data resource |
| IUGR | Intrauterine Growth Restriction |
| LBW | Low Birth Weight |
| LEHS | Licensed Environmental Health Scientist |
| LHD | Local Health District |
| MAPP | Mobilizing for Action through Planning and Partnerships |

| | |
|---|---|
| MHA | Master of Healthcare Administration |
| MMR | Measles-Mumps-Rubella Vaccine |
| MPA | Master of Public Administration |
| MPH | Master of Public Health |
| NAAQS | National Ambient Air Quality Standards |
| NOV | Notice of Violations |
| NOx | Oxides of Nitrogen |
| PANO | Utah Department of Health Physical Activity Nutrition and Obesity Program |
| PHASE | Public Health Air Surveillance Evaluation |
| PM (10/2.5) | Particulate Matter |
| PPB | Parts Per Billion |
| PWS | Public Water System |
| RN | Registered Nurse |
| RWJF | Robert Wood Johnson Foundation |
| SA | Small Area |
| SCHD | Summit County Health Department |
| SDWA | Safe Drinking Water Act |
| SEUDHD | Southeastern Utah District Health Department |
| SGA | Small-for-Gestational Age |
| SLC | Salt Lake City |
| SLCo | Salt Lake County |
| SLCoHD | Salt Lake County Health Department |
| STD | Sexually Transmitted Disease |
| STI | Sexually Transmitted Infections |
| SWUPHD | Southwest Utah Public Health Department |
| TB | Tuberculosis |
| TCHD | Tooele County Health Department |
| TDaP | Tetanus, Diphtheria, and acellular Pertussis Vaccine Booster (for adults) |
| TRCHD | Tri-County Health Department |
| U of U | University of Utah |
| UCHD | Utah County Health Department |
| UDOH | Utah Department of Health |
| UDOT | Utah Department of Transportation |
| USDA | U.S. Department of Agriculture |
| USEPA | U.S. Environmental Protection Agency |
| USPHS | United States Public Health Service |
| VOCs | Volatile Organic Carbon Compounds |
| WCHD | Wasatch County Health Department |
| WHO | World Health Organization |
| WIC | Women, Infants, and Children program |
| WMHD | Weber-Morgan Health Department |
| WQ/HHW | Bureau of Water Quality and Household Hazardous Waste |

## PREFACE

Like a truly healthy human body, a truly healthy community is one in which all systems function as they should and work together to make the community function well. In an individual, health is, to a large extent, a result of all the body's billions of cells getting what they need. For a community, health is, to a large extent, the result of all citizens getting what they need, not only to survive, but to flourish.

A healthy community is a whole that's larger than the sum of its parts. It's one where people take care of one another, where people from diverse backgrounds mix comfortably and work together for the good of the community. In short, a healthy community is one in which all citizens can be assured of a decent quality of life – economically, physically, environmentally, socially, and politically. It is a community in which all systems work well (and work together). This means that the health of the community is affected by the social determinants of health and development – the factors that influence individual and community health and development.[1]

> "Human development, community development and health are inseparable. There is a growing body of knowledge that makes it clear that the communities we live in can help us or hurt us in every conceivable way. The effects of living in poverty can be life-long and can affect one's ability to be physically, mentally and emotionally healthy. Just in the last six months there have been new data from a 10-year study by the Department of Housing and Urban Development that demonstrates that living in quality housing in a good community reduces obesity and diabetes by as much as 20 percent – which is an impact as great as a medical intervention! We also know medical interventions can solve only about 10 percent of our health issues. Much, much more of a person's health outcomes are a result of our environment, our upbringing and our habits. It is almost impossible to overstate how important the environment is on our ability to lead healthy, quality lives." [2]

[1] Abridged from the *Community Tool Box: http://ctb.ku.edu/en/tablecontents/sub_section_main_1009.aspx*
[2] Nancy Andrews, President and CEO of the Low Income Investment Fund, comments made at the National Interagency Community Reinvestment Conference

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# INTRODUCTION

*The mission of the Salt Lake County Health Department (SLCoHD) is to promote and protect community and environmental health.* In order to accomplish this, programs and processes must be developed to improve and protect human and environmental conditions. The SLCoHD is only one rib in the umbrella of community health. Community residents, leadership, and the organizations, agencies, and businesses that serve them comprise the other ribs and must be included in the process.

The purpose of this document is to examine factors that affect the public's health and provide a framework for developing a Community Health Improvement Plan (CHIP) and five-year Strategic Plan for the SLCoHD.

The 2013 goals of the SLCoHD are:

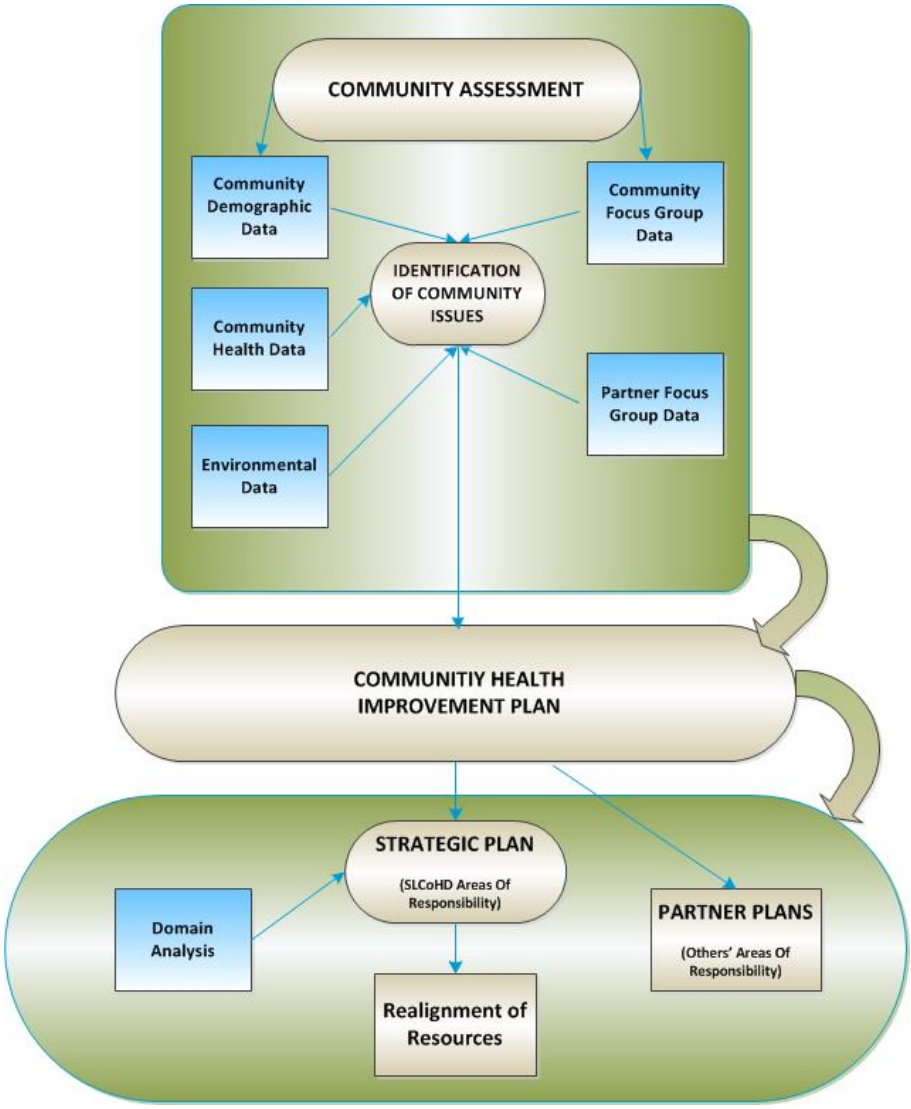
1. Develop a strategy to become the "healthiest county" in Utah by December 31, 2013
2. Apply for Public Health Accreditation and be fully accredited by December 31, 2013
3. Follow Quality Improvement Processes to work on improvement in services 100% of the time by December 31, 2013.
4. All SLCO municipalities say they see us as the 1st partner they turn to for public and environmental health by December 31, 2013

## PROJECT PLAN

The SLCoHD conducted a community health assessment to identify community health issues; the findings are discussed in this report. The SLCoHD will use the report to create, in collaboration with community partners, a Community Health Improvement Plan which will outline potential solutions to the identified health issues and delineate lead organizations. The SLCoHD will develop a Strategic Plan that will delineate agency plans and activities geared to mitigating specific public health problems identified in the Community Health Improvement Plan. This Strategic Plan will promote the mission and goals of SLCoHD and guide our activities for the next five years.

The Project Plan (Figure 1) outlines the methods data was collected, analyzed, and used to inform decision-making and planning. This model will serve as the outline for discussion of the Community Health Assessment findings.

**Figure 1. Project Plan**




The goal of this community health assessment is to:

- identify community strengths,
- detect unmet health needs,
- identify how well the SLCoHD has met program goals,
- uncover additional resource needs,
- mobilize community partners, and
- prioritize community needs.

Five sources of data were used to discover issues. The first three were collection approaches; the last two were data generation approaches. The analysis of the findings resulted in identification of community issues.

Assessing the community is an ongoing activity. Therefore, this document provides a solid foundation to build upon. As new information is obtained, updates will occur.

## HOW DID WE CHOOSE THE ISSUES?

Determining which factors and concerns to consider in depth was a difficult endeavor. The SLCoHD acknowledges that this assessment does not cover all potential risk factors and health problems that exist in the community. Determining which health issues to review was based upon the findings of the focus groups, the *Community Health Status Indicator*[3] study, the *Community Health Roadmap Project*[4], available health data (IBIS-PH), and *Healthy People 2020*[5] objectives.

A table (**Appendix 2**) was developed to track the information sources that identified each factor/concern as a problem. Criteria for choosing the health factors/conditions to analyze in this assessment included:

- Fit with Public Health core functions and Essential Public Health Services that frame the public health sphere of responsibility.
- Salt Lake County "Small Area" rates that were significantly different from county, state and national rates.
- Condition is somewhat preventable given adoption of healthy behaviors and/or screening.
- Improvement in the problem area will impact other problem areas.
- Cause and effect relationships were considered, e.g. lack of recreational facilities is related to physical activity and obesity.
- Identification by 3 or 4 of the afore-mentioned sources as issues for Salt Lake County.

## WHAT DO WE DO?

### Definition of Public Health

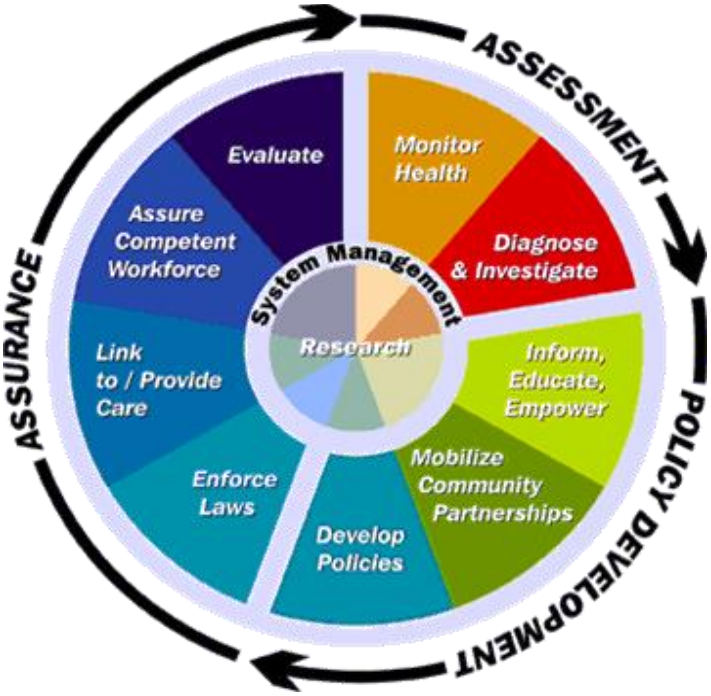
"Public health is what we do collectively to fulfill society's interest in assuring the conditions in which people can be healthy."[6]

### Core Functions of Public Health

What is the role of public health in community health-related problems? In 1988, the Institute of Medicine described three core functions of public health in a document entitled *The Cycle of Public Health Practice: the Bellagio Report.*[7] Figure 2 depicts the three core functions are assessment, policy development, and assurance.

[3]Department of Health and Human Services (2009). *Community Health Status Indicators* (CHSI), (2009). Obtained 3 June 2012 from http://www.communityhealth.hhs.gov/homepage.aspx?j=1
[4] *Community Health Roadmap Project.* Obtained 15 June 2012 from: http://www.countyhealthrankings.org/#app/
[5] *Healthy People.gov* obtained 15 June 2012 from: http://www.healthypeople.gov/2020/default.aspx
[6] Institute of Medicine, 1988. *The Future of Public Health.* Obtained 29 October 2012 from: http://iom.edu/Reports/1988/The-Future-of-Public-Health.aspx
[7] *The Cycle of Public Health Practice: The Bellagio Report. Obtained 29 October 2012 from: http://www.cdc.gov/genomics/events/file/print/NCI2007-Sept20.pdf*

**Figure 2. Core Functions and Essential Services**




### ASSESSMENT

Assessment is the regular systematic collection, assembly, analysis, and dissemination of information on the health of the community. Rooted in the community, local health departments are in a unique position to be familiar with and assess a community's collective resources, assets, gaps, and challenges. Local public health departments not only bring the community's perspective, but they are legally mandated to represent the interests of all residents in a jurisdiction.

### POLICY DEVELOPMENT

Policy development is the formulation of standards and guidelines, in collaboration with stakeholders. Local public health departments are in a unique position to analyze and draw conclusions about local data gathered through assessment. Local public health departments can then make relevant recommendations to elected officials. Effective policy requires local identification, familiarity with and responsibility for priorities based on needs and community resources.

### ASSURANCE

Public health agencies assure the availability of services to meet public health needs of communities. Local public health does not provide all elements directly, but works to assure resources are available. At a minimum, the local health department informs the public about gaps and disparities. The local health department allocates its resources in areas of highest priority in the community. It provides the safety net for individuals in need of clinical, health promotion, health protection and/or environmental services.

### Essential Public Health Services

In 1994 the Core Public Health Functions Steering Committee identified ten Essential Public Health Services that are required to succeed in performing the core functions. The "Essential Services" provide a working definition of public health and a guiding framework for the responsibilities of the local public health system.[8]

These essential services provide the guiding framework for local public health responsibilities. Essential services guiding this community assessment project include:

- Monitor health status to identify community health problems
- Mobilize community partnerships and act to identify and solve health problems
- Develop policies and plans that support individual and community health efforts
- Link people to needed personal health services and assure the provision of healthcare when otherwise unavailable
- Evaluate effectiveness, accessibility, and quality of personal and population-based health services

## HOW ARE WE DOING? – Two Report Cards

A number of organizations and agencies monitor and evaluate the performance of state and local health departments related to set standards or criteria. National standards were initially developed by the Centers for Disease Control and Prevention (CDC) in 1980, hoping to achieve them by 1990. Every ten years new sets of standards to be achieved during the decade are published. Today, this process continues as *Healthy People 2020*. This assessment compares selected health, socio-economic, and environmental issues against *HP2020* objectives.

Two other organizations provide "report cards" to gauge the status of counties on various health indicators. The first compares county rankings to peer counties around the country; the second compares counties within a state and ranks them on various measures that impact health.

### Salt Lake County's Health Status - Compared with Peer Counties across the United States

This section provides:

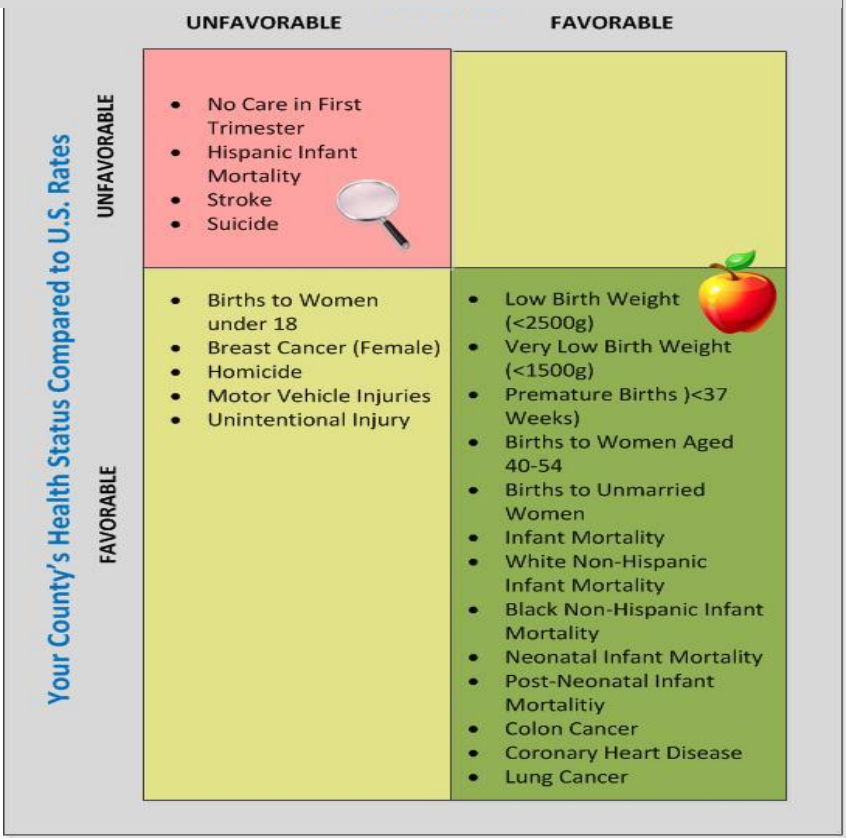
- A snapshot of a county's health status including leading causes of mortality, environmental health, vulnerable populations, preventive service use, and access to care.
- National rates and peer county comparisons
- *Healthy People 2020*

In 2009, the Department of Health and Human Services (DHHS) published health rankings as part of the *Community Health Status Indicator (CHSI) Project*. The CHSI report measures over 200 health indicators for each of the 3,141 United States counties and compares SLCo to peer counties. Peer counties are counties similar in population composition and selected demographics. Comparison of a county to its peers takes into account some of the factors (population size, poverty level, age distribution, and population density) that impact a community's health. All data presented are age-adjusted to 2000 standards to account for differences in age distributions.

[8] CDC (ND). *10 Essential Public Health Services.* Obtained 29 May 2012 from http://www.cdc.gov/nphpsp/essentialservices.html

The CHSI can serve as a starting point to assess community health needs, identify vulnerable populations, and measure preventable diseases, disabilities, and deaths.[9] The report is intended to facilitate collaboration among community agencies and organizations to create a healthy community.[2]
Salt Lake County did well in most areas measured by the CHSI reports. Figure 3a is the CHSI matrix that indicates areas of excellence as well as areas for improvement. Specific term definitions can be found in **Appendix 3**.

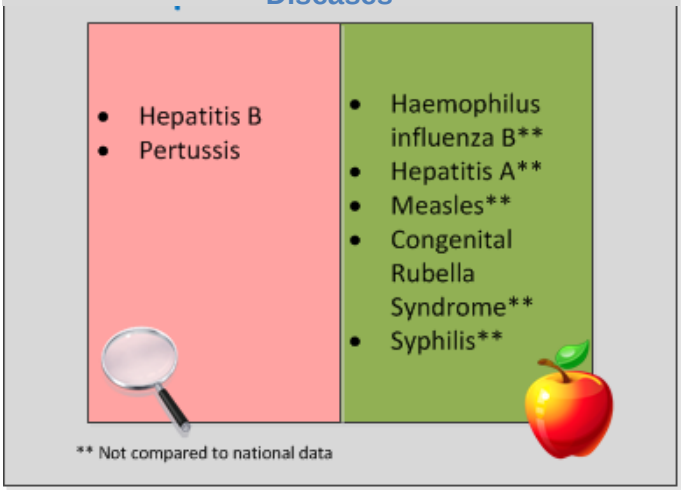
**Figure 3. Comparison of Salt Lake County's Health Status to Peer Counties**




The measures in the red box reflect where SLCo compares unfavorably to both its peer counties and the national rates. The county's performance on these indicators should be evaluated and actions taken to improve them. The indicators in the yellow boxes have favorable comparisons to either peer counties or the nation, but not both. Measures listed in the green box indicate favorable comparisons to both peer counties and the national rates.

SLCo compares favorably to peer counties for all diseases except two: Hepatitis B and Pertussis (Figure 4). For clarification of the incidence rates of Pertussis please see the Pertussis section of this document. For clarification of Hepatitis B please see the Hepatitis B discussion.

**Figure 4. Comparison of Salt Lake County's Health Status to Peer Counties – Infectious Diseases****




[9] US Department of Health and Human Services (2009). Community Health Status Indicators (CHSI), (2009). Obtained 3 June 2012 from http://www.communityhealth.hhs.gov/homepage.aspx?j=1

## Salt Lake County's Health Status - Compared to National Data

The *County Health Rankings and Roadmaps Project*, conducted by the Robert Wood Johnson Foundation (RWJF), ranked each county within a state to the other counties in the state. Of the 26 counties in Utah that were rated, Salt Lake County ranked as the 12th healthiest county in terms of **Health Outcomes** and 16th in **Health Factors.**

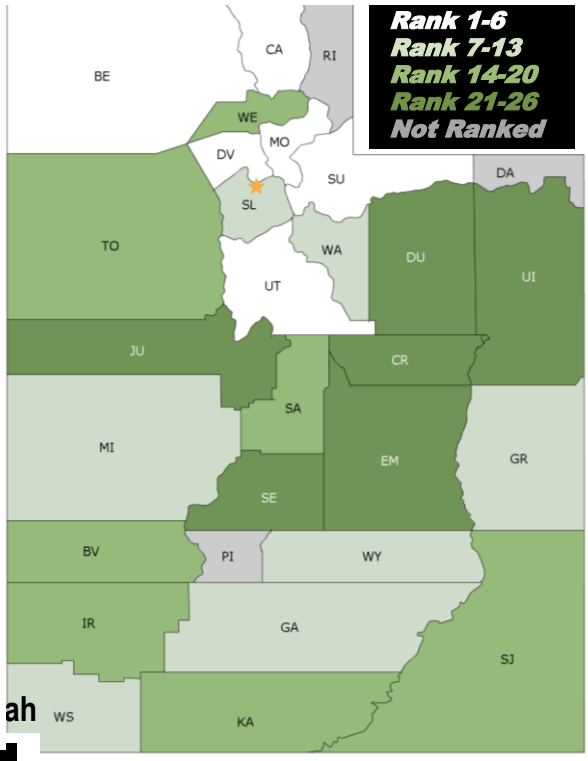
For comparison purposes, RWJF created a national benchmark using the average rates of the top ten percent of all counties within the U.S. This national benchmark should not be confused with *Healthy People 2020* Targets. Detailed tables showing county, state, and national rates are located in **Appendix 4**.

### Health Outcomes

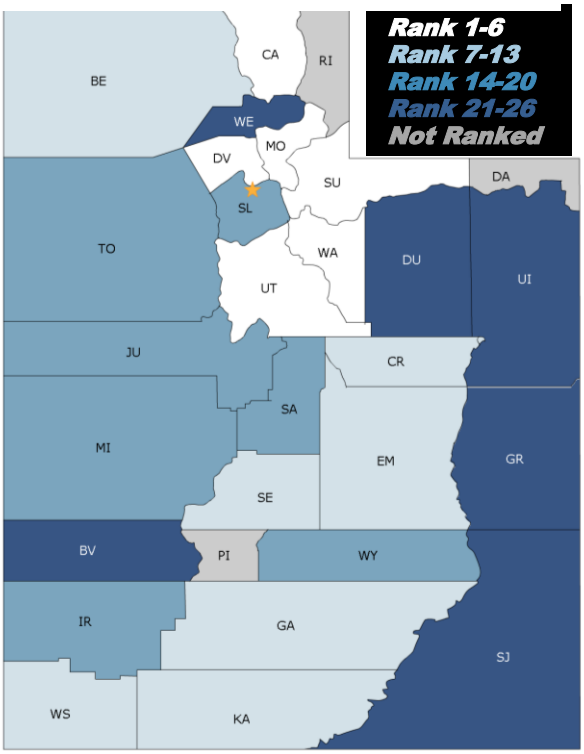
RWJF ranks health outcome based on mortality and morbidity rates. Map 1 indicates the health outcome rank for each county in Utah. In terms of mortality, Salt Lake County ranks 7th in the state. This ranking is due to a premature death rate that is about 2% higher than the state rate and 12% higher than the national benchmark.

Morbidity is a way to measure the quality of life. RWJF measures it using birth outcomes and self-reported health status. SLCo's morbidity rankings are less favorable. The county ranks 15th in the state; the ranking is due in part to a higher rate of low birth weight.

Map 1. County Rankings on Health Outcomes




Map 2. County Rankings on Health Factors




### Health Factors

The second major category used to develop the rankings is health factors. Salt Lake County ranked 17th among 26 Utah counties evaluated (see Map 2). This ranking of subcategories ranges from as high as 5th for "clinical care" to a low of 26th for "physical environment."

### Health Behaviors

The health behaviors category is composed of seven indicators: adult smoking, adult obesity, physical activity,

excessive drinking, motor vehicle accidents, sexually transmitted infections (STI), and teen birth rate. In general, Salt Lake County ranks worse than the other counties on all but three measures: motor vehicle crash death rate, adult obesity, and physical activity.

According to the RWJF study, the county STI (Chlamydia) rate is substantially higher than the state rate and national benchmark. For more information see the section on Chlamydia. In addition, Salt Lake County compare poorly on the teen birth rate (SLCo 40; Utah 35; US 22 per 1,000 females age 15-19). The least favorable health behavior was excessive drinking (SLCo 12%; Utah 9%; US 8% of population reporting binge drinking in the last 30 days).

### Clinical Care

Clinical care is comprised of five categories: percent uninsured, percent who report having a primary care physician, rate of preventable hospital stays, percent of diabetic patients screened for HbA1C during the past year, and percent of 67- to 69–year-old women who received a mammogram during the past two years.

Salt Lake County ranks fifth in the state on Clinical Care. Three out of five indicators are equal to or more favorable than the state rate. The most noteworthy clinical care indicator is the ratio of primary care physicians to residents. At 808:1, the ratio is better than the state ratio of 1072:1, but is less than the national benchmark of 631:1. Although the ratio is much worse than the national benchmark, it is the third most favorable in Utah.

#### Social and Economic Factors

The factors evaluated were children in poverty, inadequate social support, children in single parent households, and violent crime rate. Salt Lake County ranks 19th out of the counties in the state.

#### Physical Environment

The factors evaluated were air pollution (particulate matter and ozone), access to recreational facilities, limited access to healthy foods, and the number of fast food restaurants.

Salt Lake County ranks 17th in this category and has a worse rating than the state in all but one area: percentage of the population with limited access to healthy food. Statewide, seven percent of the population has limited access to healthy foods, while only four percent of Salt Lake County residents have the same limitation. Salt Lake County matches the state rate of people with access to recreational facilities. However, both the state and county lag far behind the national benchmarks for all five measures.

Air pollution is the major contributing factor for Salt Lake County's poor ranking on physical environment. The *County Health Rankings and Roadmaps Project* used the Public Health Air Surveillance Evaluation (PHASE) estimates to calculate the number of days that air is unhealthy for sensitive populations. The national benchmark for the number of excessive high ozone and particulate matter days is zero. During the year measured, 2007, Salt Lake County had 20 days of excessive ozone (the highest county in the state), and 11 days of excessive particulate matter (also the highest in the state).

## Healthy People 2020

Since 1979, *Healthy People* publications have sought to improve public health programs by providing national objectives for improvement. *Healthy People 2020* sets national targets for nearly 600 objectives and more than 1,300 measures of disease, behavior, and environmental indicators. *Healthy People* does not evaluate progress, but provides the objectives against which status or progress can be compared.

County data reflecting progress on *HP2020* objectives that are primarily impacted by public health programs are included within each topic section of this assessment as appropriate.

# COMMUNITY DEMOGRAPHICS

## HISTORY

The Fremont Indians first inhabited the area known as Salt Lake County. By the arrival of the first trappers to the area the Ute, Piute, Goshute and Shoshone had replaced the Freemont.

The Mormon pioneers, under the direction of Brigham Young, entered the valley in 1847 and established the territory known as the Deseret. "Great Salt Lake County" was established in 1850. The territory was linked to the rest of the nation through the railroad, when the Golden Spike was driven at Promontory Point on May 10, 1869. Utah was granted statehood January 4, 1896.

The precursor to the SLCoHD, Deseret Public Health, was founded in 1857. The Salt Lake County Board of Health was created in 1899. Deseret Public Health became the Salt Lake City Health Department. Salt Lake City and Salt Lake County operated separate health departments until 1969, when they combined to form the Salt Lake City-County Health Department. The department's name was changed to Salt Lake Valley Health Department in 2000, and back to the Salt Lake County Health Department in 2013.

## GEOGRAPHY

Salt Lake County is in a basin bordered by the Wasatch Mountains to the east, the Oquirrh Mountains to West, the Traverse Range to the south and the Great Salt Lake to the northwest. The county extends up the Wasatch Mountains encompassing City Creek, Emigration, Parleys, Big Cottonwood, and Little Cottonwood Canyons. The elevation of Salt Lake County ranges from 4200 feet by the Great Salt Lake to 11,330 feet atop Twin Peaks.

The main waterways are City Creek, Big Cottonwood Creek, and Little Cottonwood Creek, which all flow into the Jordan River and empties into the Great Salt Lake. Ten major rivers and streams come into the valley from the Wasatch Range and ten from the Oquirrh Mountains. Approximately 60% of the drinking water supply comes from four canyon watersheds: City Creek, Parleys, Big Cottonwood and Little Cottonwood. Emigration, Red Butte and Millcreek are part of the watershed but not fully protected. The remaining 40% of the drinking water comes from ground water, springs, or Provo Canyon through the Jordan Aqueduct.

Salt Lake County encompasses 737.38 square miles and has a population density of 1396.4 people per square mile. According to the US Census Bureau (2010) the population density of the cities within Salt Lake County ranges from 5,407 persons per square mile in Taylorsville to 93 in Alta.

### Geographic Information System (GIS) Mapping

GIS mapping was used to present demographic, environmental, and resource data. Layered GIS maps can indicate areas of need, gaps in service, over-served areas and/or resources. GIS maps can be found throughout the text as appropriate.

## Small Area Data

Health status information at the community level is reported as small area (SA) data, which is used to find pockets of need within the community. SA analysis is used throughout this report to find areas that do not meet recognized standards when the county as a whole does.

Maps showing the Small Areas for Salt Lake County can be found in **Appendix 5.** Cities are colored; SAs are outlined. The second map has SAs separated for easier identification.

Criteria used to identify SAs[10] were zip codes, population size, political boundaries, socio-economic status, and input from local authorities. Populations of 40,000-60,000 were determined to be adequate to produce stable estimates while protecting anonymity of individuals. SAs do not always represent defined city boundaries. For example, Taylorsville City is split between four SAs; three contain pieces of Taylorsville and the fourth bears its name. There are discrepancies between small area and city populations, which is shown in Table 1 below. Though it is difficult to use the Small Area data in planning for specific cities, SA data is usually the only data available.

| Cities* | Small Areas | 0-4 YEARS | | 5-19 YEARS | | 20-64 YEARS | | 65+ YEARS | |
|---|---|---|---|---|---|---|---|---|---|
| | | Small Area % | City or CDP % | Small Area % | City or CDP % | Small Area % | City or CDP % | Small Area % | City or CDP % |
| Salt Lake City | Avenues | 5 | 7.8 | 13 | 14.7 | 68 | 68.1 | 14 | 9.4 |
| | Rose Park | 10 | | 24 | | 57 | | 9 | |
| | Downtown | 6 | | 14 | | 70 | | 10 | |
| | Foothill/ U of U | 8 | | 20 | | 59 | | 13.8 | |
| | Glendale | 10 | | 24 | | 61 | | 8 | |
| Cotton-wood Heights | Cottonwood | 6 | 6.1 | 19 | 16.9 | 61 | 63.6 | 15 | 13.4 |
| Holladay City | Holladay | 6 | 6.8 | 18 | 18.3 | 57 | 57.6 | 19 | 17.3 |
| Kearns CDP | Kearns | 10 | 10.6 | 27 | 24.3 | 57 | 64.8 | 6 | 10.1 |
| Magna CDP | Magna | 11 | 10.6 | 28 | 23.8 | 55 | 60 | 6 | 5.6 |
| Midvale City | Midvale | 9 | 9.2 | 21 | 15.9 | 60 | 64.8 | 10 | 10.1 |
| Millcreek CDP | Millcreek | 7 | 7.2 | 19 | 15.9 | 58 | 61.1 | 16 | 15.8 |
| Murray City | Murray | 8 | 7.3 | 19 | 16.4 | 60 | 62.4 | 13 | 13.9 |
| Cities* | Small Areas | 0-4 YEARS | | 5-19 YEARS | | 20-64 YEARS | | 65+ YEARS | |
| | | Small Area % | City or CDP % | Small Area % | City or CDP % | Small Area % | City or CDP % | Small Area % | City or CDP % |
| Riverton City | Riverton/ Draper | 11 | 10.6 | 27 | 27.2 | 57 | 57.1 | 5 | 5.1 |
| Draper City | | | 8.6 | | 24.4 | | 61.6 | | 5.4 |

[10] Haggard, LF, Shah, G., Stat, M., & Rolfs, R.T. (1998) Assessing Community Health Status: Establishing Geographic Areas for Small Area Analysis in Utah. *Utah's Health: An Annual Review, Vol. V, 1997-1998.* Salt Lake City, UT, University of Utah. The Governor Scott M. Matheson Center for Health Care Studies. Online at http://health.utah.gov/opha/IBIShelp/sarea/SmallAreaAnalysis.htm

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Bluffdale City** | | | 10 | | 28.2 | | 56.5 | | 5.3 |
| **Herriman** | | | 14.2 | | 29.9 | | 53.3 | | 2.6 |
| **South Salt Lake City** | **South Salt Lake** | 9 | 8.3 | 19 | 13.9 | 61 | 71 | 10 | 6.8 |
| **Sandy City** | **NE Sandy** | 6 | 7.3 | 24 | 21.2 | 61 | 62.3 | 9 | 9.2 |
| | **SE Center** | 6 | | 28 | | 59 | | 6 | |
| | **Sandy Center** | 9 | | 25 | | 58 | | 8 | |
| **White City CDP** | | | 8.4 | | 20.2 | | 49.7 | | 13.3 |
| **South Jordan City** | **South Jordan** | 9 | 9.2 | 29 | 25.6 | 56 | 58.1 | 6 | 7.1 |
| **Taylorsville City** | **Taylorsville** | 8 | 9 | 22 | 18.8 | 60 | 63.5 | 9 | 9.1 |
| **West Jordan City** | **W. Jordan NE** | 9 | 10.2 | 28 | 25 | 58 | 60.2 | 5 | 4.6 |
| | **W. Jordan SE** | 12 | | 28 | | 56 | | 4 | |
| | **W. Jordan W. Copperton** | 14 | | 28 | | 54 | | 3 | |
| **West Valley City** | **West Valley East** | 9 | 10.2 | 27 | 22.8 | 59 | 60.1 | 9 | 6.9 |
| | **West Valley West** | 11 | | 22 | | 56 | | 6 | |

*There are six unincorporated townships within Salt Lake County: Magna, Millcreek, Emigration, White City, Kearns and Copperton. As of 2010 these townships are also considered Census Designated Places (CDP). Granite is not an unincorporated township, but is considered a Census Designated Place (CDP). The population of unincorporated Salt Lake County is 146,209.

**Table 1. Percentage of Population by Age Groups for SLCo Small Areas, and SLCo Cities or Census Designated Places (CDP)**

## POPULATION DEMOGRAPHICS

Population characteristics can often impact health. These characteristics are referred to as social determinants of health. *Healthy People 2020* defines these as "the social and physical environments that promote good health for all."[11] The conditions in which we live, including the opportunities and limitations placed upon us by these conditions, impact the quality of our lives. Sometimes choices are dictated by what is available in the community, not what is best for the person. Social determinants of health bear the major responsibility for inequities that affect health. The information found in this section describes some of the major inequities that are found in Salt Lake County which influence health.

### Population Growth[12]

Population growth has shifted over the past decade to the south and southwest portions of the county. Table 2 shows the population growth in Salt Lake County by city and municipality between 2000 and 2010, and the projected population growth for 2050. The largest city in Salt Lake County is Salt Lake City. Sandy City was the only city with a negative population growth. The population of Herriman is fastest growing city in Salt Lake County and second fastest in

[11] *Healthy People 2020.* 2020 Topics and Objectives. Social Determinants of Health. Obtained 4 Sept 2012 from: http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=39

[12] UpGrade Business on the Next Level. Obtained 12 June 2012 from: http://aging.slco.org/pdf/studySummary.pdf

Utah. The growth in the county has been, and will continue to be, primarily in the south and southwest communities of Herriman, Bluffdale, Draper, Riverton, West Jordan, and South Jordan. Although Holladay and Murray showed substantial growth during the last decade, the growth was primarily related to annexation of part of unincorporated Salt Lake County, which also accounts for the negative growth in the unincorporated county population.

**Table 2. Population Growth and Projections for Salt Lake County and its Cities**

| Cities* | 2000 Population | 2010 Population | Percent Change | Projected 2050 Population | Percent Increase |
|---|---|---|---|---|---|
| Salt Lake County | 898,387 | 1,029,655 | 14.6% | 1,663,994 | 61.6% |
| Alta Town | 370 | 383 | 3.5% | 798 | 108.4% |
| Bluffdale City | 4,700 | 7,598 | 61.7% | 56,535 | 644.0% |
| Herriman City | 1,523 | 21,785 | 1330.4% | 61,510 | 191.0% |
| Draper City | 25,220 | 40,532 | 60.7% | 60,676 | 48.8% |
| Salt Lake City | 181,743 | 186,440 | 2.6% | 225,066 | 20.7% |
| South Jordan City | 29,437 | 50,418 | 71.3% | 112,482 | 123.0% |
| West Jordan City | 68,336 | 103,712 | 51.8% | 182,080 | 75.6% |
| Riverton City | 25,011 | 38,753 | 54.9% | 63,081 | 62.8% |
| West Valley City | 108,896 | 129,480 | 18.9% | 167,413 | 29.3% |
| Holladay City | 14,561 | 26,472 | 81.8% | 30,306 | 10.5% |
| South Salt Lake City | 22,038 | 23,617 | 7.2% | 27,983 | 18.5% |
| Unincorporated County | 209,642 | 146,209 | -30.3% | 323,382 | 121.0% |
| Cottonwood Heights | n/a | 33,433 | n/a | 49,476 | 48.0% |
| Murray City | 34,024 | 46,746 | 37.4% | 47,899 | 2.5% |
| Sandy City | 88,418 | 87,461 | -1.1% | 123,157 | 40.8% |
| Midvale City | 27,029 | 27,964 | 3.5% | 52,748 | 88.6% |
| Taylorsville City | 57,439 | 58,652 | 2.1% | 79,402 | 35.4% |

*There are six unincorporated townships within Salt Lake County: Magna, Millcreek, Emigration, White City, Kearns and Copperton. As of 2010 these townships are also considered Census Designated Places (CDP). Granite is not an unincorporated township, but is also considered a CDP.

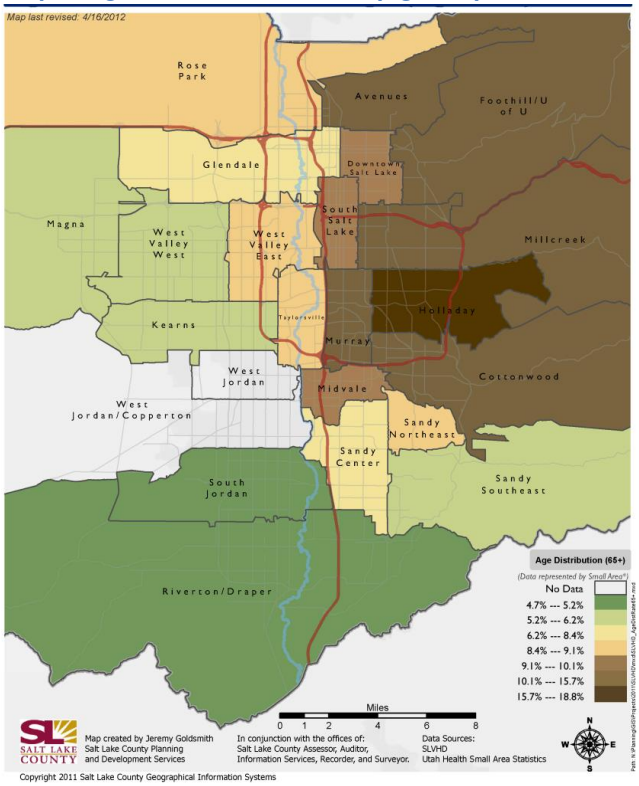
## Age[13]

Table 3. Percent of Population by Age Group

| AGE GROUP | PERCENT OF POPULATION | | |
|---|---|---|---|
| | Salt Lake County | Utah | US |
| Under 5 years | 8.8% | 9.5% | 6.5% |
| 5-18 years | 20.3% | 22.0% | 17.5% |
| 18-64 years | 62.2% | 59.5% | 63.0% |
| Over 65 | 8.7% | 9.0% | 13.0% |

Salt Lake County's population is older than the population of the state, but is relatively young when compared to the U.S (Table 3). Currently, more of the aging population is located to the east side of Salt Lake County (Map 3). The south and west areas of the county attract a younger population. The small areas with the highest percentage of elderly are Holladay (19%), Millcreek (16%), Cottonwood (15%), the Avenues area of Salt Lake City (14%), the Foothill/University of Utah area of Salt Lake City (13%), Murray (13%), and Downtown Salt Lake City, South Salt Lake City, and Midvale (10%).

Map 3. Age Distribution Percent (Age 65+)

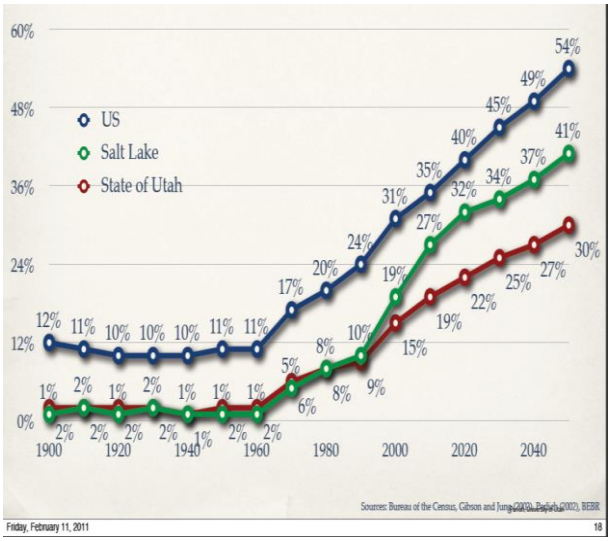



## Ethnicity and Culture[14]

The Salt Lake County population has a higher percentage of minorities than the state average (Figure 5). 1980 was the last year that the county and state had the same percentage.

In 2000, Salt Lake County's minority population accounted for approximately 33% of Utah's minority population. By 2010, the county's minority population represented 47.9% of the state's total minority population.

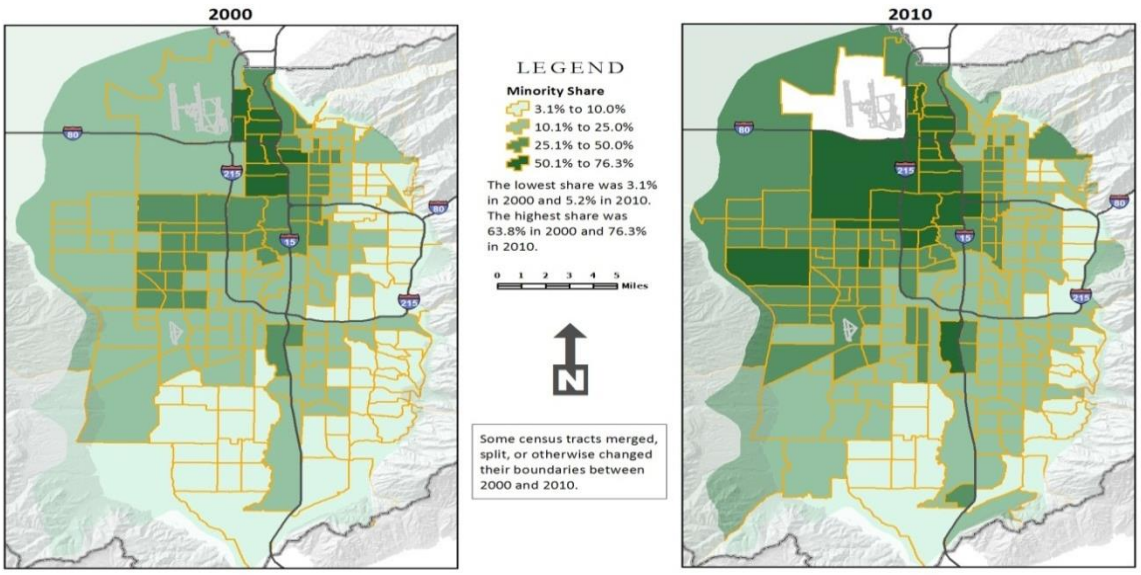
Figure 5. Ethnic and Cultural Minority Share of Population




Although SLCo has a greater concentration of ethnic and cultural minorities than the state, the county's minorities tend to group into selected sections of the county. Map 4 shows the growth the ethnic and cultural minority population over the previous decade.[15]

[13] U.S Census Quickfacts 2010: http://quickfacts.census.gov/qfd/states/49/49035.html
[14] Perlich, P.S. (2010). *Population Estimates by Race and Ethnicity for Utah Counties, 2009.* BEBR. Obtained 11 June 2012 from: http://www.bebr.utah.edu/Documents/2009_County_Race_Ethnicity_Estimates.pdf
[15] Downen, J. (2012). Comparison of Minority Populations in Salt Lake County 2000 and 2010. Obtained 12 Jun 2012 from John Downen.

**Map 4. Minority Share. Salt Lake County Population by Census Tract, 2000 and 2010**




*Source: U.S. Census Bureau, 2000 and 2010 Censuses; Utah Automated Geographic Reference Center.*
Cartography: John Downen, BEBR | June 2012

The Hispanic and Latino population comprised of 11.9% of the county population in 2000, in 2010 it increased to 17.1%. West Valley City and South Salt Lake have some of the highest percentages of Hispanic residents in the state. 129 languages are spoken in Salt Lake County; for almost 19.3% of the ethnic families in the county, English is not the primary language spoken at home.

**Table 4. County Population by Race and Ethnicity (2010)**

| Race / Ethnicity | Percent of Population | | |
|---|---|---|---|
| | County | Utah | US |
| White | 81.2% | 86.1% | 72.4% |
| Black | 1.6% | 1.1% | 12.6% |
| American Indian / Native Alaskan | 0.9% | 1.2% | 0.9% |
| Asian | 3.3% | 2.0% | 4.8% |
| Native Hawaiian / Pacific Islander | 1.5% | 0.9% | 0.2% |
| Two or More races | 3.1% | 2.7% | 2.9% |
| Hispanic Origin | 17.1% | 13% | 16.3% |
| Non-Hispanic / White | 74.0% | 80.4% | 63.7% |
| Language other than English spoken at home | 19.3% | 14.2% | 20.1% |

## Access and Functional Needs populations

The definition for "access and functional needs" populations is in a state of evolution. This term in its broadest sense refers to anyone with physical or mental challenges as well as those with transportation and language limitations which prevents or compromises the ability to access resources or services. For the purposes of this assessment, it will mean physical or mental challenges since age and ethnicity are examined in separate sections.

The American Community Survey (ACS) conducts a survey of disabilities annually[16]. The ACS is an ongoing statistical survey conducted by the U.S. Census Bureau that samples a percentage of the population every year from every state rather than in 10 year increments used for the census. The following data is based on a three year average (2009-2011).

**Table 5. Race and Ethnicity of the Disability Population**

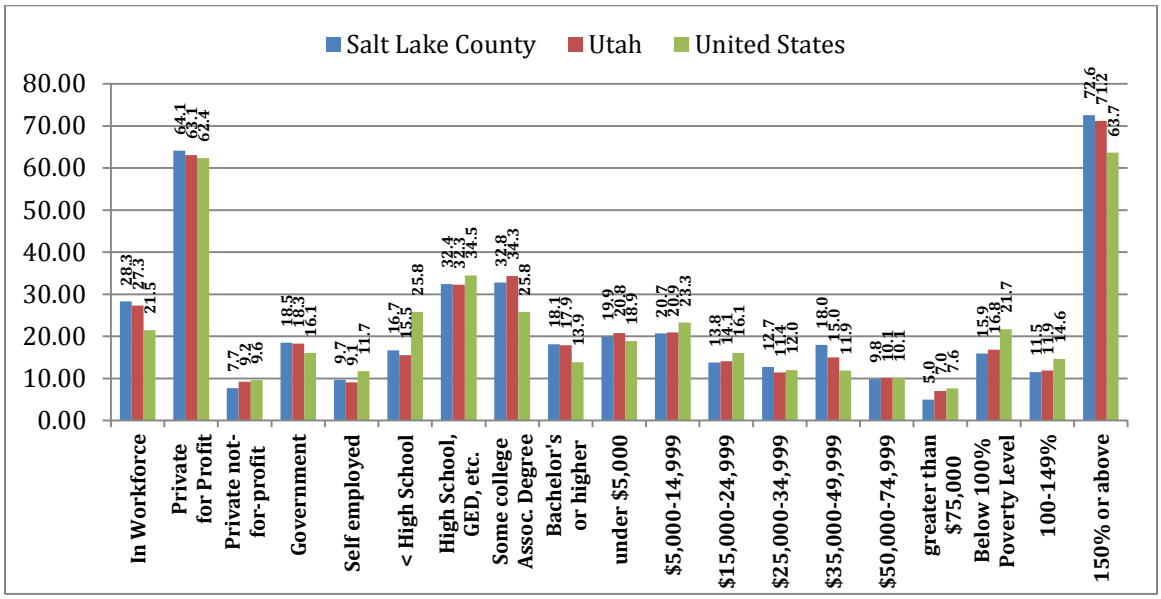
| Race / Ethnicity | Disability Population by Race/Ethnicity | | |
|---|---|---|---|
| | County | Utah | US |
| White (alone) | 8.8% | 8.9% | 12.4% |
| Black (alone) | 8.4% | 8.2% | 13.7% |
| American Indian/Alaskan Native | 17.2% | 15.2% | 16.0% |
| Asian (alone) | 6.0% | 5.4% | 6.3% |
| Native Hawaiian/Pacific Islander (alone) | 4.1% | 4.5% | 9.2% |
| Other race (alone) | 5.9% | 5.8% | 7.5% |
| Two or More Races | 9.0% | 8.3% | 10.9% |
| Hispanic Origin | 5.4% | 5.9% | 8.2% |
| Non-Hispanic white | 9.5% | 9.3% | 13.1% |

*Tables from which data was extracted for this discussion are located in **Appendix 6**.

Table 6 shows the percentage of the population in each race/ethnic group by County, state, and nation. At 8.8%, Salt Lake County's overall disability rate is roughly two thirds of the national rate of 12.4%. The County is lower for all races/ethnicities except American Indians/Alaskan Natives which is higher than both the state and national rates. Table 5 compares the percent of population in each census-defined population group.

[16] American Community Survey (2011). Disability. Obtained 29 June 2013 from http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t

**Figure 6. Comparison of Selected Socio-Demographic Categories for People with Disabilities by SLCo, Utah, and U.S.**




*Tables from which data was extracted for this discussion are located in **Appendix 7**.

Although 71.1% if persons in Salt Lake County without disabilities are employed compared with 28.3% of persons with disabilities, Salt Lake County appears to provide more opportunity for persons with disabilities to participate in the workforce than either Utah as a whole or the U.S. Figure 5 compares the type of employment held by county, state, and nation. Ten percent more are employed in the for-profit private sector than either Utah or the U.S. The private not-for-profit sector employs fewer than either Utah or the U.S. Employment in the government sector are similar for SLCo and Utah with both over two percent more than nationally. The nation has two percent more persons with disabilities who are self-employed than either SLCo or Utah.

While fewer people with disabilities have completed high school in SLCo than Utah as a whole, 9% more completed than in the U.S. The rate of completion of high school or similar is about the same for SLCo, Utah, and the U.S. however the completion of some college or associate degrees and completion of baccalaureate degree or higher are 7% and over 5% higher, respectively, than for those with disabilities nationally.

With income, SLCo competes favorable only at the $25,000-$49,999 levels. Fewer earn more than $50,000 and more earn less than $25,000 than either Utah or the U.S. The median income is $1000 more than Utah and $3,000 more than the U.S., The discrepancy between the non-disability median income and disability median income is nearly $6,000 for SLCo and $5,000 for Utah, while over $10,000 for the U.S. as a whole. Comparing poverty levels, SLCo is doing 7% better than Utah as a whole and nearly 9% better than the U.S. for under 150% of poverty level but is 9% greater than the U.S. for at or above 150% of poverty level.

Resources for persons with disabilities include Americans with Disabilities Act (ADA) Center, a Center for Independent Living that assists people with disabilities to live independently and become fully participating members of society, Division of Rehabilitation Services Office that assists with training and job placement, and a Utah Work Incentives Planning Services which assists persons on Social Security Disability to learn about work incentive programs. Utah Division of Services to the Deaf and Hard of Hearing office in Taylorsville; Utah Division of Services for the Blind and Visually Impaired with an office in Salt Lake City providing vocational rehabilitation services, a Library for the Blind and Physically Handicapped in Salt Lake City, screenings, trainings, and adjustment services, Utah Center for Assistive Technologies provides

assistive technology evaluation services, custom design, short term equipment loans, home and workplace assessment and much more.

## Death Rate

The death rate in Utah for 2010 was 674 per 100,000 persons (age adjusted)[17] while the U.S. rate was 746.2 per 100,000 persons (age adjusted rate).[18] Salt Lake County has lower rates than the U.S. for all leading causes of death, except diabetes mellitus, suicide, pneumonitis, and Parkinson's. The county has higher death rates than Utah for all conditions except Influenza/pneumonia, Alzheimer's, and kidney disease.

**Table 6. Leading Causes of Death**

| Condition | SALT LAKE COUNTY (2005-2010) | | UTAH | U.S. |
|---|---|---|---|---|
| | Rank | Rate[19] | Rate | Rate |
| Diseases of heart | 1 | 144.3 | 135.9 | 178.5 |
| Malignant neoplasms | 2 | 128.5 | 128.5 | 172.5 |
| Cerebrovascular diseases | 3 | 37.1 | 35.2 | 39.0 |
| Chronic lower respiratory diseases (asthma, COPD) | 4 | 34.8 | 21.7 | 42.1 |
| Accidents (unintentional injuries) | 5 | 31.9 | 34.8 | 38.2 |
| Diabetes mellitus | 6 | 23.9 | 12.6 | 15.3 |
| Influenza and pneumonia | 7 | 16.7 | 21.8 | 20.8 |
| Intentional self-harm (suicide) | 8 | 16.6 | 17.0 | 11.9 |
| Alzheimer's disease | 9 | 16.4 | 16.5 | 15.1 |
| Nephritis, nephrotic syndrome, & nephrosis | 10 | 10.8 | 18.7 | 25.0 |
| Parkinson's disease | 11 | 9.6 | 8.5 | 6.8 |
| Pneumonitis due to solids and liquids | 12 | 6.5 | 5.5 | 5.1 |
| Essential hypertension and hypertensive renal disease | 13 | 6.5 | 7.0 | 9.4 |
| Chronic liver disease and cirrhosis | 14 | 6.5 | 6.2 | 10.6 |
| Septicemia | 15 | 5.6 | 5.9 | 7.9 |

[17] IBIS-PH – Important Facts for General Mortality Rates. Obtained 16 May 2012 from: http://ibis.health.utah.gov/indicator/view/DthRat.UT_US.html
[18] January 2012. CDC. National Vital Statistics System. Obtained 16 May 2012 from: http://www.cdc.gov/nchs/data/nvsr/nvsr60/nvsr60_04.pdf
[19] Age adjusted to 2000 U.S. population

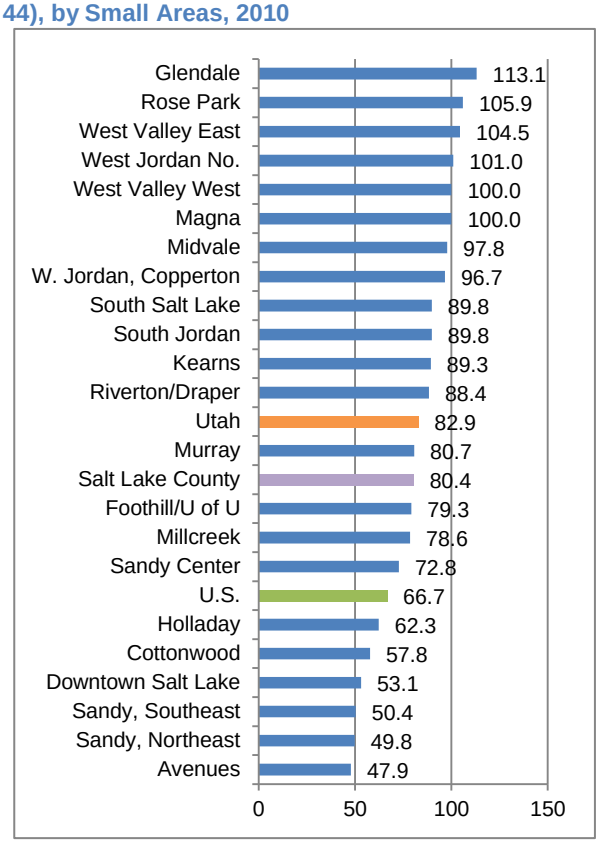
## Fertility Rate[20]

The general fertility rate is a more precise measure of birth rate patterns than the crude birth rate. While the crude birth rate and the general fertility rate both look at the total number of live births among the population, crude birth rate is calculated using the total population including young, old, male, and female.

The general fertility rate is calculated using only females of reproductive age, defined as ages 15 through 44 years, residing in Utah during a specified time period. During the ten-year period from 2001 through 2010, Utah's general fertility rate has ranged from a high of 90.8 in 2007 to a low of 82.9 per 100,000 in 2010. Figure 7 shows how the county compares with Utah, the nation, and among small areas.

Nationally, the general fertility rate in 2009 was 66.7, which was a decrease from 68.6 in 2008. In 2009, Utah's general fertility rate was 82.9. Salt Lake County's rate was 80.2.

**Figure 7. Fertility Rates (per 100,000 females age 15-44), by Small Areas, 2010**

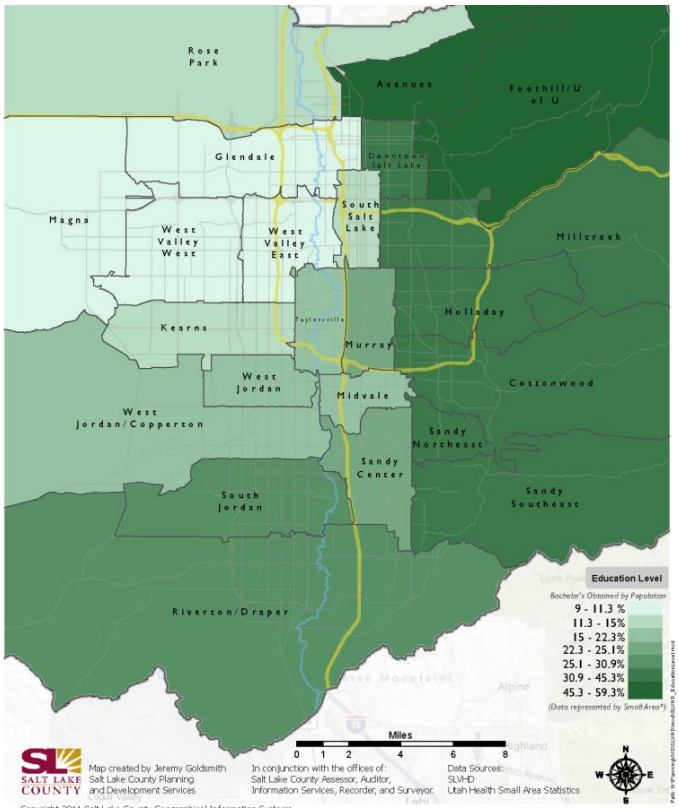



## Education Level[21]

Education level is generally correlated to income and poverty. 89.9% of SLCo residents have a high school diploma compared to 90.6% for the state and 84.6% nationally. Of the county's residents, 30.1% have a bachelor's degree or higher, compared to 29.4% for the state and 27.5% nationally.

Map 5 shows the percentage of the county's population that has a Bachelor's degree or higher.

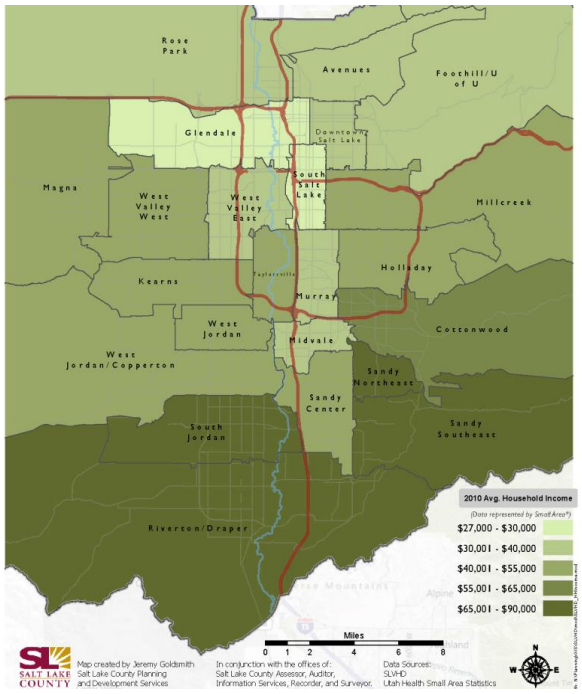
**Map 5. Persons with a Baccalaureate Degree**




[20] IBIS-PH – Important Facts for General Fertility Rates. Obtained 16 May 2012 from: http://ibis.health.utah.gov/indicator/important_facts/FertRat.html

[21] U.S. Census Bureau. 2010 Quick Facts. Obtained 16 May 2012 from: http://quickfacts.census.gov/qfd/states/00000.html

**Map 6. Average Household Income**




The northeast section shows the highest percent of persons with baccalaureate degree which is expected since the University of Utah and Westminster College are both located there. The next highest concentration of degreed persons is on the east side of the county followed by the southern end of the valley. Magna, West Valley and Glendale areas have the fewest. Education tends to be correlated with socioeconomic status.

## Socioeconomic Status

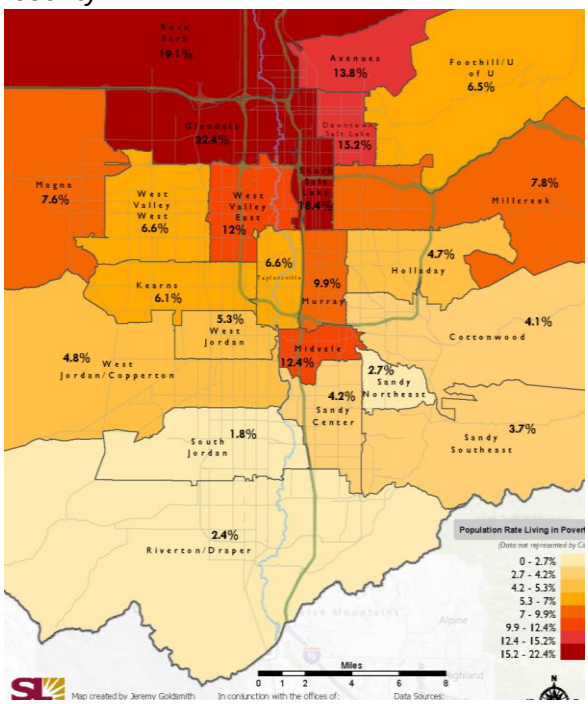
The median household income in Salt Lake County is $58,004, which is slightly higher than the state median of $56,330 and significantly higher than the U.S. median income $51,914.[22]

Map 6 shows that the lowest income areas are the Glendale and South Salt Lake SAs. The income levels are highest in the south end of the county.

## Poverty [23]

Federal data indicate that 13.7% of the residents in Salt Lake County live below the poverty level[24], which is greater than the state's rate. In 2010 approximately 360,400 Utahns lived in poverty, 135,400 of whom were children age 17 or under. The Kids Count Data Center reports that 13% of children in Salt Lake County lived in poverty in 2009.[25]

Examining Small Areas within the county demonstrates some poverty disparities. Areas of high poverty, such as Glendale and Rose Park, face different issues than areas with lower poverty rates, like South Jordan or Riverton/Draper. High areas of poverty coincide with medically underserved areas/populations and some food deserts.




**Map 7. Percent of Population Living in Poverty (All Ages)**

Similar to the pattern for education and household income, Map8 shows population rate living in poverty in Salt Lake County.

[22] U.S. Census Bureau. 2010 Quick Facts. Obtained 16 May 2012 from: http://quickfacts.census.gov/qfd/states/49/49035.html

[23] Poverty data adjusted for income and family size

[24] USDA Economic Research Division. 2010 County Level Poverty Rates for Utah. Obtained 16 May 2012 from: http://www.ers.usda.gov/data/povertyrates/PovListpct.asp?st=UT&view=Percent&longname=Utah

[25] Anna E. Casey Foundation. Kids Count Data Center. Obtained 16 May 2012 from: http://datacenter.kidscount.org/data/bystate/stateprofile.aspx?state=UT&loc=6786

Poverty impacts all areas of life as it limits choices on residence, food, health care and transportation to name a few. For children, poverty can lead to lifelong impacts on development, both physical and intellectual, educational attainment, and behavioral health issues.

## Challenges to the Community's Health from Demographic Shifts and Trends

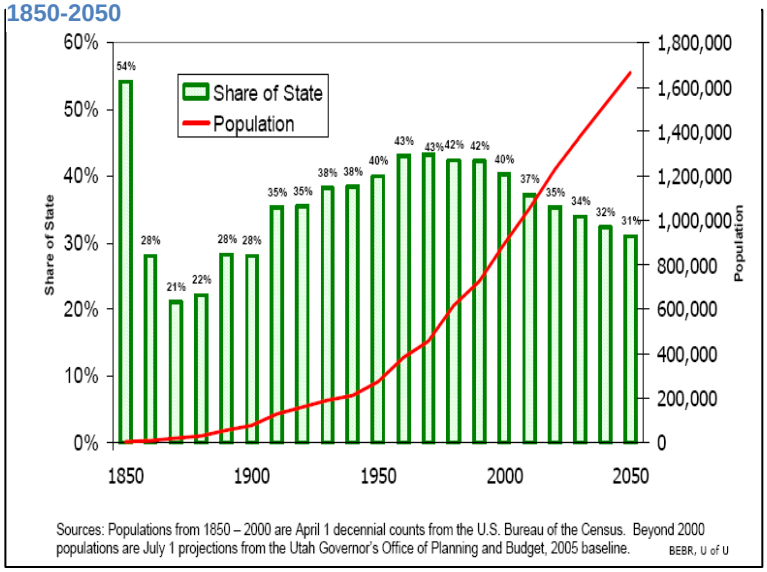
The two major population trends in Utah will drive future demographic changes[26]. The first is the continued arrival of young, working aged immigrants. The second is aging of the population.

Other demographic changes that impact service needs include population size, changing population center, and the location of jobs. Since Salt Lake County will continue to be the population center for the foreseeable future, these changes will result in a more diverse community.

### Change: Population Size[27]

With a 23.8% increase in population, Utah was the third fastest growing state during the 2000-2010 decade, surpassed only by Nevada with 35.1% and New Mexico at 24.6%. The natural increase (births minus deaths) accounted for 72% of the increase while the other 28% was contributed by in-migration.[28]

**Figure 8. Salt Lake County Population: Total and Share of State 1850-2050**




According to the 2010 US Census, the population of Salt Lake County is 1,029,655. The county population grew by 14.6% since 2000. While this is a healthy growth, it was slower than the state rate.

Figure 8 demonstrates that although the SLCo population continues to grow, its share of the state's population appears to be less. According to the Bureau of Economic and Business Research (BEBR) at the University of Utah, Salt Lake County's population is projected to increase to 1.7 million by 2050.

The number of households in Salt Lake County is projected to increase more rapidly than the population. It will more than double between 2000 (297,064) and 2050 (608,614). The result is a decline in persons per household from 2.99 in 2000 to a projected 2.67 in 2050. The state's projected persons per household will decline from 3.22 to 2.78 during the same period.

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[26] Perlich, P.S. (2009). Utah's demographic transformation: A view into the future. *Essential Educator.* Posted 9 Sept 2009 at: http://essentialeducator.org/?p=2334

[27] Perlich, P.S. (2007). Salt Lake County's Distinctive Demographics: Implications for the Aging Population. Bureau of Economic and Business Research. University of Utah.

[28] Perlich, P.S. and Downen, J.C. (2011). Census 2010 – A First Look at Utah Results. *Utah Economic and Business Review.* Obtained June 4, 2012 from http://www.bebr.utah.edu/Documents/uebr/UEBR2011/UEBR2011no2.pdf

Nationally, the average household size is expected to fall from 2.59 to 2.42. Much of this decline in household size is attributable to the aging of the population.

### CHALLENGE: INCREASED AIR POLLUTION DUE TO FREEWAY TRAFFIC

Increased population will result in increased traffic on already congested freeways. This in turn causes increased air pollution.

## Change: Population Movement[29]

Table 7 compares growth rates for the previous decade with estimated growth for the current decade. The growth in Salt Lake County is occurring mostly in the south and west, and this trend is expected to continue. According to BEBR, in the 1990s over 80% of the county's population growth occurred in the west-central section of the county, which are West Valley, Taylorsville and West Jordan.

**Table 7. Salt Lake County Population Growth by Area**

| GROWTH QUADRANT | 2000 to 2010 | 2011 to 2030 |
|---|---|---|
| **North of 2100 South** | | |
| • West of 5600 W. | **4.5%** | **15.4%** |
| • Between 5600 W & I-15 | **3.6%** | **(-1.3%)** |
| • East of I-15 | **7.4%** | **(-2.5%)** |
| **Between 2100S & 9000 S** | | |
| • West of 5600 W. | **11.3%** | **24.3%** |
| • Between 5600 W & I-15 | **22.4%** | **4.3%** |
| • East of I-15 | **19.4%** | **4.3%** |
| **South of 9000 South** | | |
| • West of 5600 W. | **9.2%** | **29%** |
| • Between 5600 W & I-15 | **13.5%** | **22.1%** |
| • East of I-15 | **8.8%** | **3.8%** |

The Governor's Office of Planning and Budget (GOPB) projects most of the growth to occur in the south and west areas of the county. Herriman, Bluffdale, South Jordan, Riverton, Draper, West Jordan, and unincorporated Salt Lake County are expected to grow the most in the decades to come.

To illustrate the shift in population over the next 20 years, BEBR divided the county into 9 sectors to conduct an analysis of county growth. Table 6 shows the 2010 population distribution in those nine geographic areas within the county and expected growth or decline by 2030.

### CHALLENGE: INCREASING DEMANDS FOR SERVICES IN THE SOUTH AND WEST

Availability of affordable health care was identified by focus groups as a health issue. Although the poorest populations reside in the north and west sides of the Salt Lake Valley, the younger demographic is moving south and west. As it does, service needs will expand. However, as Map 12 on page 101 indicates, the concentration of affordable health care services is north and centrally located around I-15. Service expansion by acute care corporations is already occurring. Public and other programs must follow.

## Change: Aging Population

[29] Bureau of Business and Economic Research (2009). Obtained June 3, 2012 from http://www.bebr.utah.edu/Documents/uebr/UEBR2011/UEBR2011no2.pdf

The older demographic will soon comprise a larger share of Utah's population. In approximately 2040, it is estimated that SLCo's share of Utah's population aged 85+ will increase from a low of about 35% in 2018 to a high of 46% and remain there for at least 10 years. The population aged 85+ will surpass those 65+ in about 2027 as the Baby Boom surge ends. Complicating matters, the percentage of the working age population is expected to decline dramatically between 2000 and 2050 from a high of 42% of Utahns in the 17-64 age demographic to less than 30%. The number of children under age 18 should remain stable.

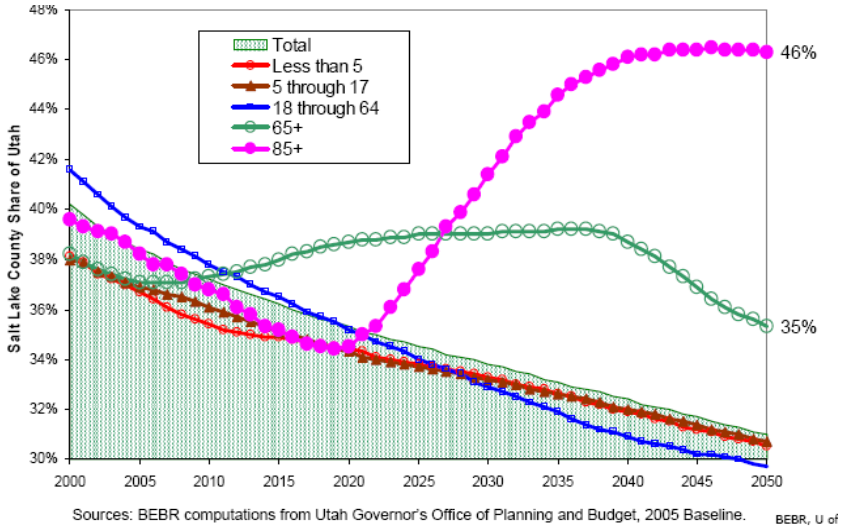



**Figure 9. Salt Lake County's Share of Selected Age Groups, 2000-2050**

According to the Milken Institute, boomer-driven elderly growth through 2025 will be led by Utah, where the senior population will increase by 143% during the next 25 years [30]. Figure 9 examines Salt Lake County's share of Utah's population for various age groups. It is very clear that SLCo will have a disproportionate percent of people 65 and older with a disproportionately smaller percent of 18 to 64 year olds who comprise the wage earning sector. The sheer number of elderly combined with longer and healthier retirement years will have a major economic impact. Just as we felt the ripple effect from the rapidly increasing number of baby-boomer school aged children stressing school enrollments during the1970s, the ripple effect of their parents reaching retirement age will impact the economy in more ways than health alone. They will move from large homes to small, from large family and luxury vehicles to small cars, recreation vehicles, and travel services.

### CHALLENGE: INCREASING DEMANDS FOR SERVICES FOR THE ELDERLY

While the population of Utah will continue to be younger than the general US population, the ratio of the elderly to the young will increase. Services supporting elderly on fixed incomes will increase, which might impact both the types and locations of services offered by the health department and community organizations.

With an expanding number of elderly, the burden of funding health care services will increase for the working age groups since funding streams depend on tax dollars. As the population ages, health services will need to meet the increased demands of an older population while continuing to meet the needs of the youth. There will be a greater need for programs that support the elderly in the northeast and central east parts of the county.

## Change: Increasing Ethnic/Cultural Diversity

The 2010 Census shows that more than 33% of the nation's population is classified as minority, whereas in Utah it is 20%. By 2050, these proportions are expected to increase to 30% in Utah, 41% in Salt Lake County and 54% in the U.S.

[30] Milken Institute (March 8, 2000). America's Demography in the New Century. Obtained 25 July 2013 from: http://www.frey-demographer.org/reports/R-2000-1_AgingBabyBoomersNewImm.pdf.

The ethnic and cultural minority share of the Salt Lake County population is unevenly distributed across the age spectrum. It is weighted toward the young. From 2000 through 2007, minorities accounted for one-third of the increase in the total population, yet accounted for two-thirds of the school enrollment increase in the state. Nearly one-third of preschool children in Salt Lake County are estimated to be ethnic/cultural minorities. In contrast, less than one-tenth of the age 65+ demographic is estimated to be members of ethnic/cultural minority groups.

### CHALLENGE: SERVICES MEET ETHNIC/CULTURAL NEEDS

Increasing diversity requires adjusting programs to work within the framework of a person's cultural heritage and belief system. Agencies, including the health department, will need to recruit and mentor youth from predominant minority cultures to assist with provision of services and develop written material that fits within various cultural norms. In addition, employing people from these cultures in positions that directly influence department mission and services will validate the agency for ethnic/cultural groups.

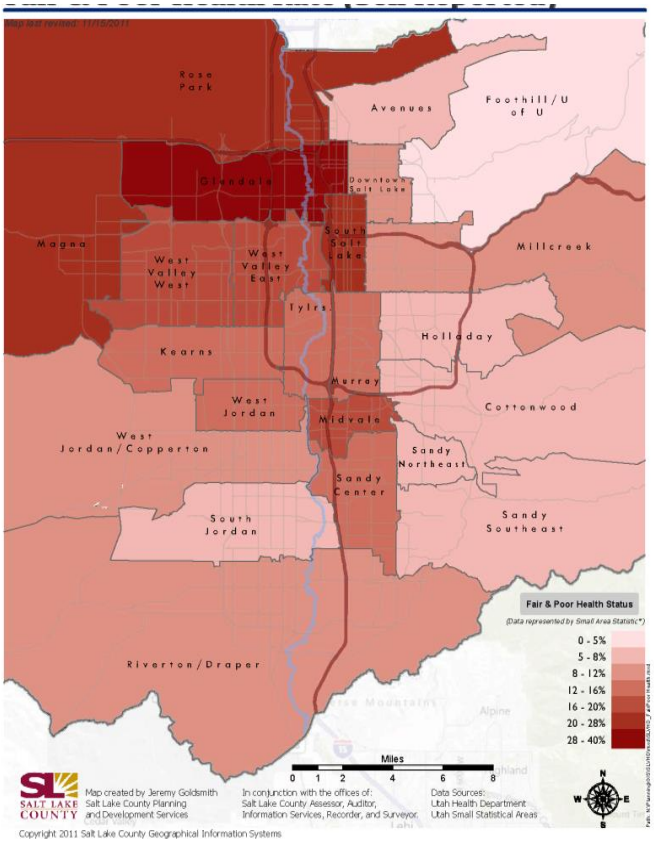
# COMMUNITY HEALTH STATUS

## Introduction

Data in this section consist primarily of figures which are graphs and maps. The maps have keys that provide the parameters for each color category. The graphs are consistent in their color codes which are:

| COLOR | REFERENCE |
|---|---|
| | Represents the U.S. rate used as the baseline for determining the *HP2020* Target |
| | Represents the most current Utah rate available on IBIS-PH |
| | Represents the most current Salt Lake County rate available on IBIS-PH or through the program at the SLCoHD |
| | Represents the population of measure (LHDs, SAs) that have met the *HP2020* Target |
| | Represents the population of measure (LHDs, SAs) that have **NOT** met the *HP2020* Target |

Note: Information for the maps, figures, and tables comes from the U.S. Census Bureau, IBIS-PH, *Healthy People 2020,* and/or the CDC unless otherwise footnoted. All data is adjusted to the 2000 population standard and is age adjusted.




**Map 8. Self-Reported Health Quality**

## Quality of Health

Utahns consider their health as generally good. Only 14.5% of adults in the state reported seven or more days of poor physical health in the last 30 days in 2009 compared with 15.1% for the U.S. In Salt Lake County, an average of 13.5% reported poor physical health. Map 8 shows there are areas with very low reporting of poor physical health. Poor physical health can have many contributing factors, such as distance to services, cost, and lack of health insurance.

Quality of life is a multi-dimensional concept that includes domains related to physical health, mental and emotional health, and social functioning. An emerging concept of health-related quality of life is well-being, which assesses the positive aspects of a person's life, such as positive emotions and life satisfaction.

Self-reported health status is considered to be a predictor of health outcomes including mortality, morbidity, and functional health status.

There are no *HP2020* objectives or targets for perceived quality of health. This topic is considered a foundational health measure along with determinants of health and health disparities. Perceived health quality is under study and will be included in future *Healthy People* documents.

Table 8 shows that of ten SAs reporting the fewest poor health days, six are in Salt Lake County. Conversely, eight of ten SAs reporting the most poor health days are also in Salt Lake County. Note that Glendale reports significantly poorer health than the next closest SA, Rose Park.

SLCo Small Areas that report the most poor health days also appear frequently throughout this document as the SAs not yet achieving many of the *Healthy People 2020* Objectives. They are Glendale, Rose Park, West Valley East, West Valley West, Midvale, South Salt Lake, and Magna,

**Table 8. Poor Health Days**

| FEWEST POOR HEALTH DAYS | | MOST POOR HEALTH DAYS | |
|---|---|---|---|
| 1 | Foothill/University of Utah | 63 | Glendale |
| 2 | Sandy, Northeast | 62 | Rose Park |
| 4 | Cottonwood Heights | 61 | West Valley City |
| 8 | Riverton/Draper | 60 | Midvale |
| 9 | Sandy, Southeast | 59 | South Salt Lake |
| 10 | Holladay | 57 | West Valley West |

## Selected Health Concerns

### Diabetes

Diabetes was one of the health concerns brought up in both the community and partner focus groups. There are two types of diabetes. Type 1 diabetes is generally thought to be an autoimmune disease. This type can occur at any age and is insulin dependent. Type 2 diabetes is lifestyle dependent. References to diabetes in this document are related to Type 2 diabetes.

Diabetes has reached epidemic proportions in the United States. About 8.3% of the U.S. population (18.8 million Americans) has been diagnosed with diabetes. Seven and three tenths percent[31] of Salt Lake County residents are diabetic compared with a state rate of 7.2% and a national rate of 8.5%.[32]

In addition to the 18.8 million currently diagnosed, CDC estimates that about one-fourth of people with diabetes (over 7 million Americans) are undiagnosed.[33] In Utah, this would mean approximately 45,000 people are not yet diagnosed. The demographics with the highest rate of diabetes are adults aged 65+ (21.27%), Hispanics (7.63%), individuals with a below high school education level (10.01%), American Indian and Pacific Islander (9.8% and 9.3% respectively), and individuals who earn less than $24,999 per year (11.27%). Salt Lake County's rate of diabetes may increase as the elderly and ethnic and cultural minority populations increase.

Diabetes is a disease that can have devastating consequences. Diabetes decreases life expectancy by 15 years.[34] It is the leading cause of non-traumatic lower-extremity amputation and renal failure. It is also the leading cause of blindness among adults younger than 75. It increases the risk for heart disease two to four times. Diabetes places an enormous burden on health care resources, approximately $174 billion annually ($116 billion in direct medical costs and $58 billion in indirect costs such as disability, work loss, and premature mortality).[35]

#### PREVALENCE OF DIABETES

The diabetes prevalence rate in Salt Lake County is 7.7%, which is the 5th highest in diabetes prevalence rate reported among the 12 LHDs in Utah.

While both Utah and SLCo rates met the *HP2020* Target of 7.2 in 2008, neither met it in 2011. The state rate increased from 6.8 to 7.5 while SLCo's rate increased

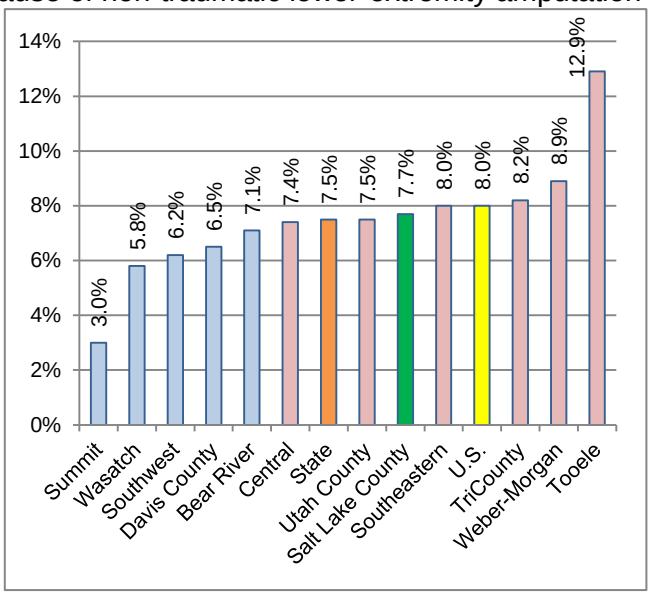



**Figure 10. Prevalence of Diabetes by Local Health District, 2009-2011, Behavioral Risk Factor Surveillance System (BRFSS) Developmental Database**

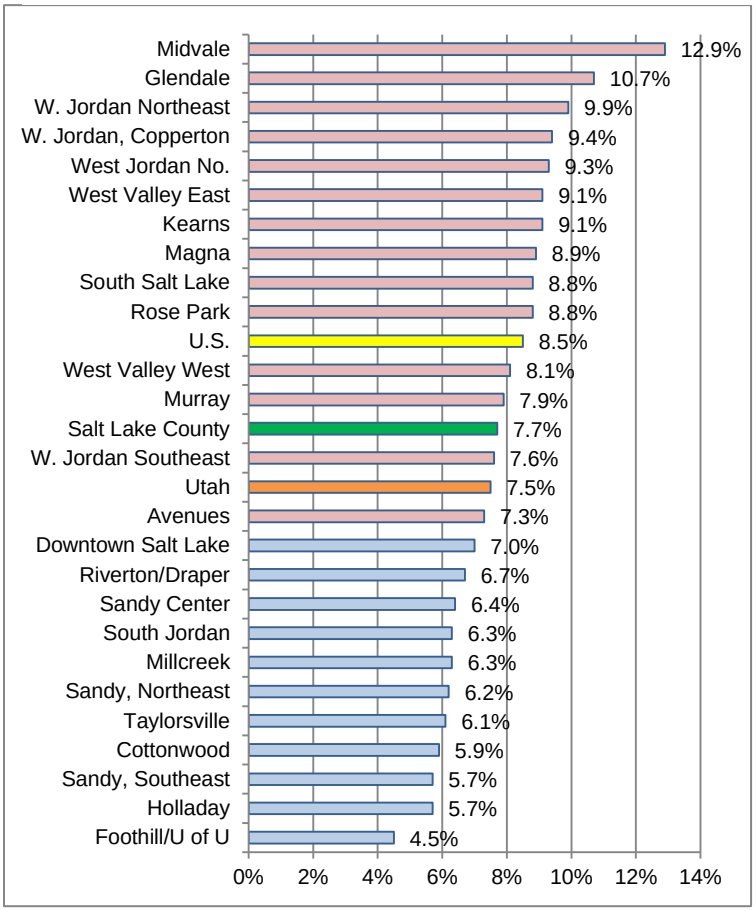
[31] IBIS-PH. Obtained 26 June 2012 from: http://IBIS-PH.health.utah.gov/indicator/view/DiabPrev.LHD.html
[32] IBIS-PH. Obtained 26 June 2012 from: http://IBIS-PH.health.utah.gov/indicator/view_numbers/DiabPrev.UT_US.html
[33] CDC. Diabetes Public Health Resource. Obtained 26 June 2012 from: http://www.cdc.gov/diabetes/pubs/estimates11.htm#1
[34] *Healthy People 2020*. Diabetes. Obtained 26 June 2012 from: http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=8
[35] See American Diabetes Association, http://care.diabetesjournals.org/content/31/3/596.abstract

from 7.2 to 7.7. This trend may continue.

| ***Healthy People 2020* Objective** | | | |
|---|---|---|---|
| ***D–1: Reduce the annual number of new cases of diagnosed diabetes in the population*** | | | |
| Salt Lake County Rate/1000 2009-2011 | Utah Rate/1000 2009-2011 | U.S. Rate/1000 2007 | *Healthy People 2020* Target |
| 7.7* [36] | 7.5* | 8.0** | 7.2** |

***Prevalence **Incidence

**Figure 11. Percentage of Utah Adults with Diabetes, by Small Areas, 2006-2008**




**Note**: Small Area data reflects 2008 data while the Utah and LHD rates reflect the 2011 data. Utah and Salt Lake County rates increased from 6.8 and 7.2 to 7.5 and 7.7 respectively between 2010 and 2011. It is expected that most small areas will also see an increase in incidence.

Although Salt Lake County does not meet the *HP2020* target as a whole, 11 of 25 Small Areas meet or surpass the target.

While the diabetes death rate is not generally considered a factor modifiable by public health, it is one measure for which data is collected by the state. However, the state uses different data than HP2020 uses its Objectives. CDC data is comparable to Utah's. In 2010, the age adjusted death rate by CDC for the U.S. was 22.4/100,000 while Utah's rate was 19.7. This was the first year that Utah's rate was lower than the U.S. rate and the first year Utah's 2020 target of 22 was met. Reducing the death rate will take a collaborative effort of public health, ambulatory care, and acute care agencies; public health to prevent or delay occurrence; outpatient care to manage diabetes and prevent occurrences of hypo or hyperglycemia requiring ED visits/or hospitalizations; and acute care to prevent and treat complications of diabetes.

[36] Although the rates presented by the IBIS-PH data are diabetes prevalence rather than incidence, it is the only data available for comparison. Salt Lake County's prevalence rate of 7.2% is above the Utah rate, but the same as the *HP2020* target

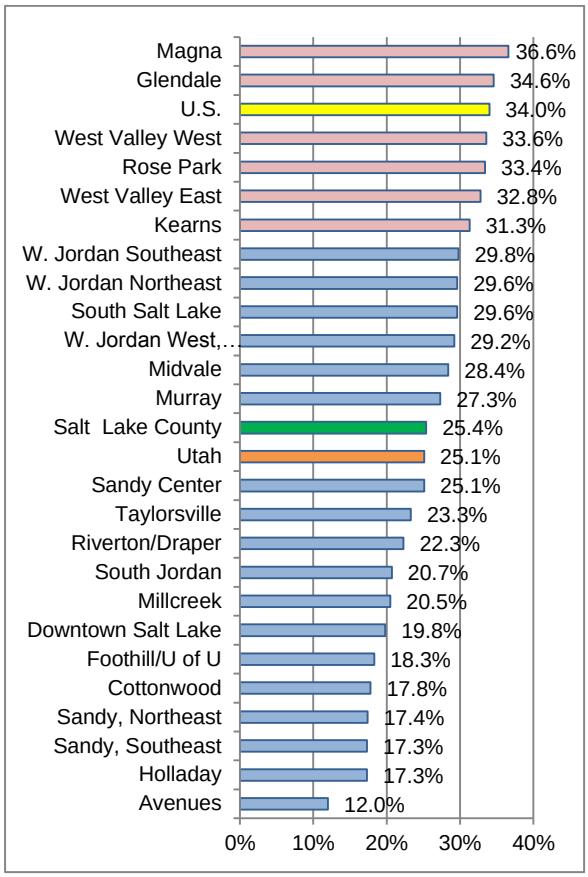
## Obesity and Overweight

Obesity is now considered a national epidemic. Obesity is recognized when a person has a Body Mass Index (BMI) of ≥30, and a BMI of ≥25 but <30 is recognized as overweight. The 2010 BRFSS data indicates that 23.8% of adults in Salt Lake County are obese compared with 23% for the state. Nationally approximately 17% of children and adolescents aged 2-19 years are obese (CDC). If overweight and obesity categories are combined, 6 out of 10 (59.7%) adults are affected.

The percentage of obese adults in Utah has more than doubled (a 128% increase) since 1989. In a 2008 survey, significantly more men (67.5%) were overweight or obese in Utah than women (52.4%).[37] Over 36% of Magna's residents are classified as obese, while only about 12% of the Avenue's residents are obese (Figure 13).

Obesity can be a precipitating factor or the direct cause of many individual health problems. It is a factor in diabetes, heart disease, and orthopedic injuries. It affects breathing, the physical ability to exercise, and endurance as well as making existing health problems such as arthritis more severe.

**Figure 12. Distribution of Obesity in Ages 18+, by Small Area, 2009-2011**




| ***Healthy People 2020* Objective** | | | | |
|---|---|---|---|---|
| ***NWS–9: Reduce the percentage of adults who are obese to 30.6%.*** | | | | |
| Salt Lake County 2011 | Peer County Range 2009 | Utah 2011 | U.S. 2007 | *Healthy People 2020* Target |
| 25.4 | 23-26 | 25.1 | 34 | 30.6 |

| ***Healthy People 2020* Objective** | | | | |
|---|---|---|---|---|
| ***NWS–8: Increase the proportion of adults who are at a healthy weight*** | | | | |
| Salt Lake County 2011 | Peer County Range | Utah 2010 | U.S. 2007 | Healthy People 2020 Target |
| 39.4 | NA | 38.9 | 30.8 | 33.9 |

As shown by Figure 14, both Salt Lake County and the state have met the *HP2020* Target for obesity. Both the county and state are doing better than the U.S. However, there are six Small Areas in SLCo that do not meet the target. *HP2020* has an objective for healthy weight, but Utah IBIS-PH collects data for overweight and obesity instead.

While a part of the overweight and obesity issue is personal choice for foods that may be high in calories and low in important nutrients, another factor is food availability and affordability

[37] Behavioral Risk Factor Surveillance Survey (2008). http://health.utah.gov/obesity/pages/Obesity/The_Facts.php

causing people to opt for lower quality of foods in a limited framework of choices (see Food Desert discussion).

| ***Healthy People 2020* Objective** | | | | |
|---|---|---|---|---|
| ***NWS–10: Reduce the percentage of children and adolescents who are considered obese*** | | | | |
| | Salt Lake County 2011 | Utah 2011 | U.S. 2005-2008 | *Healthy People 2020* Target |
| Ages 6-11 | No data* | 9.7 | 17.4 | 15.7 |
| Ages 12-19 | 8.6 | 8.4 | 17.9 | 16.1 |

*County-level data is not reported for this age group

Appropriate nutrition and exercise in childhood set the stage for a healthy adulthood. Children and adolescents who eat a nutritious diet are more likely to reach and maintain a healthy weight, achieve normal growth and development, show improved muscle development and bone health, and have strong immune systems.

The number of overweight or obese children and adolescents is increasing and as a consequence, risk factors such as high blood pressure and high cholesterol, once considered to be adult diseases, are now being diagnosed in children and adolescents. The number of children with positive screening for Acanthosis Nigricans, an early indicator of Type 2 diabetes, continues to increase.[38] These risk factors can lead to diabetes, cardiovascular diseases, and stroke.[39] The social and psychological impacts of childhood obesity include social isolation, increased rate of suicidal thoughts, low self-esteem, increase rate of anxiety disorders and depression, and increased likelihood of being bullied.[40]

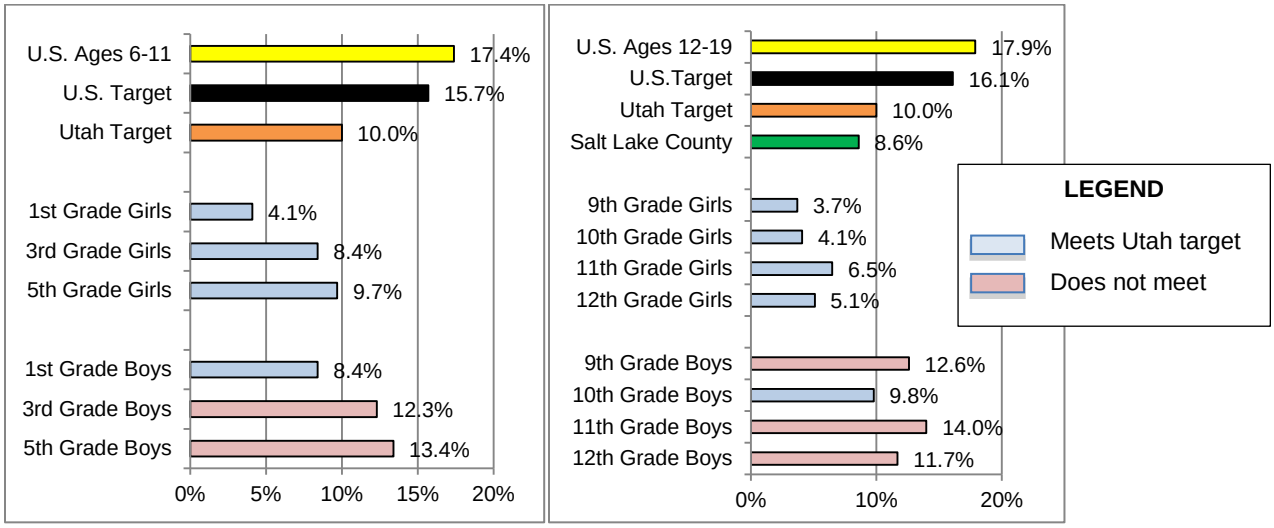



**Figure 13. Obese Children by Grade Level ages 6-11 & 12-19, 2012**

[38] Acanthosis Nigricans screening has been legislated as part of routine childhood screening program in public schools. The Texas Risk Assessment for Type 2 Diabetes in Children is a legislatively mandated program developed, coordinated, and administrated by The University of Texas Pan-American Border Health Office (BHO). During vision/hearing and scoliosis screenings of 1st, 3rd, 5th, and 7th graders in public and private schools, certified individuals assess children for the acanthosis nigricans marker, a skin condition that signals high insulin levels. Children who are positively identified with the marker undergo additional assessments of body mass index (BMI), BMI percentile, and blood pressure. Referrals are issued to the parents of these children, alerting each parent of their child's risk factors and encouraging further evaluation from a health professional. Additional information on Acanthosis Nigricans can be found at: https://rfes.utpa.edu/ and http://www.cdc.gov/diabetes/news/docs/an.htm.

[39] HP2020. Nutrition, Physical Activity, and Obesity. Found at: http://www.healthypeople.gov/2020/LHI/nutrition.aspx?lhiItem=144171&tab=overview

[40] IBIS-PH-P. Diabetes Prevalence among Utah Youth. Obtained 19 Jun 2012 from: http://IBIS-PH.health.utah.gov/indicator/view/DiabYou.None.html

Figure 13 demonstrates the rate of obesity in school aged children. Utah school-aged children fall well below the *HP2020* Target rate of 15.7% for 6-11 year olds and 16.1% for 12-19 year olds. Therefore, Utah has set lower targets than established by *HP2020* for weight (orange lines). Boys in Utah have a greater problem with obesity than girls. No data from SLCo is available for 6 to 11 year olds. For adolescents, SLCo falls well below the target set by UDOH.

## Hypertension

High blood pressure (hypertension) is an important risk factor for heart disease and stroke. Although hypertension does have a genetic component which can predispose a person for hypertension, the chance of it actually occurring is impacted significantly by individual behavior and stress.

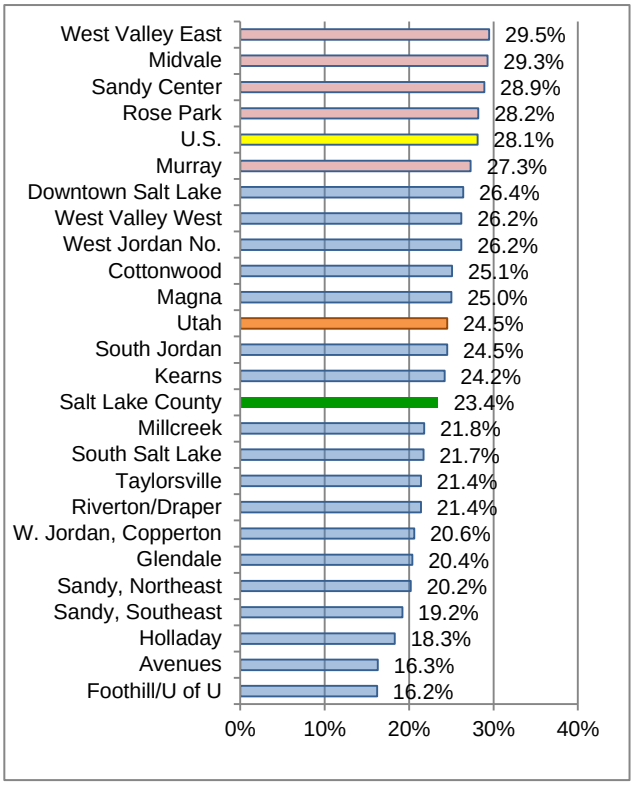
| ***Healthy People 2020* Objective** | | | |
|---|---|---|---|
| ***HDS–5.1: Reduce the proportion (percentage) of adults with hypertension*** | | | |
| Salt Lake County 2010 | Utah 2010 | U.S. 2005-08 | *Healthy People 2020* Target |
| 25 | 26.8 | 29.9 | 26.9 |

Hypertension is preventable given a healthy lifestyle. In most cases, it can be treated with medication and lifestyle changes, such as diet, exercise, and tobacco cessation.

Compared to state and national rates, Salt Lake County has a lower rate of hypertension overall. However, as can be seen in Figure 14, there are 5 Small Areas of the valley that exceed the Healthy People goal of 26.9%.

Hypertension in children and adolescents is a growing concern. IBIS-PH does not provide hypertension data for children or adolescents.

**Figure 14. Percent of Provider Diagnosed Hypertension, by Small Area, 2009**



## Cancer

### Breast Cancer

Breast cancer is one of the most commonly occurring cancers in U.S. women and the leading cause of female cancer death in Utah.

| ***Healthy People 2020* Objective** | | | | |
|---|---|---|---|---|
| ***C–3: Reduce female breast cancer death rate per 100,000*** | | | | |
| Salt Lake County 2008-2010 | Peer County Range 2009 | Utah 2008-2010 | U.S. 2007 | *Healthy People 2020* Target |
| 20 | 20.9 – 27.7 | 20.2 | 22.9 | 20.6 |

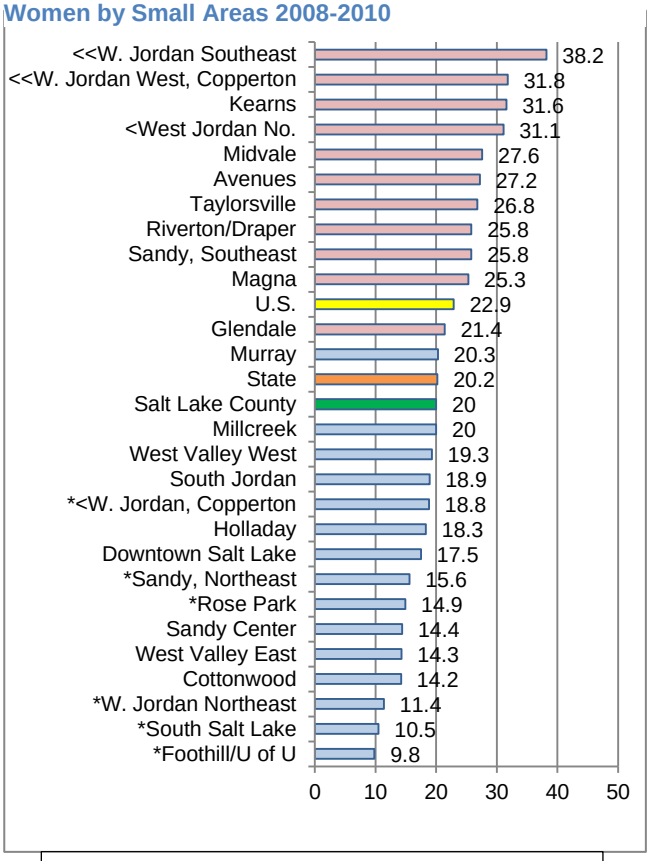
It is not known exactly what causes breast cancer, but certain risk factors are linked to the disease. Some of these risk factors include age, socio-economic status, exposure to ionizing radiation, family history, alcohol, and hormonal influence.

Compared to the state and national rates, the Salt Lake County breast cancer death rate is slightly lower than the state rate and lower than the national. The SLCo rate meets the *HP2020* target. However, when Small Area data for breast cancer deaths are reviewed (Figure 16), eleven Small Areas within the County exceed the *HP2020* Target. Fourteen met or exceeded the *HP2020* target.

For breast cancer incidence, the Salt Lake County rate (109.2/100,000) is higher than the state rate (103.8/100,000) but lower than the national rate (125/100,000). Data for 2010 indicate that only 4 local health districts in Utah have lower incidence of breast cancer than the SLCoHD. In addition SLCo has a lower rate than our peer counties.

Incidence has not been analyzed according to Small Area data and there is no *HP2020* objective for incidence.

**Figure 15. Breast Cancer Death Rates per 100,000 Women by Small Areas 2008-2010**

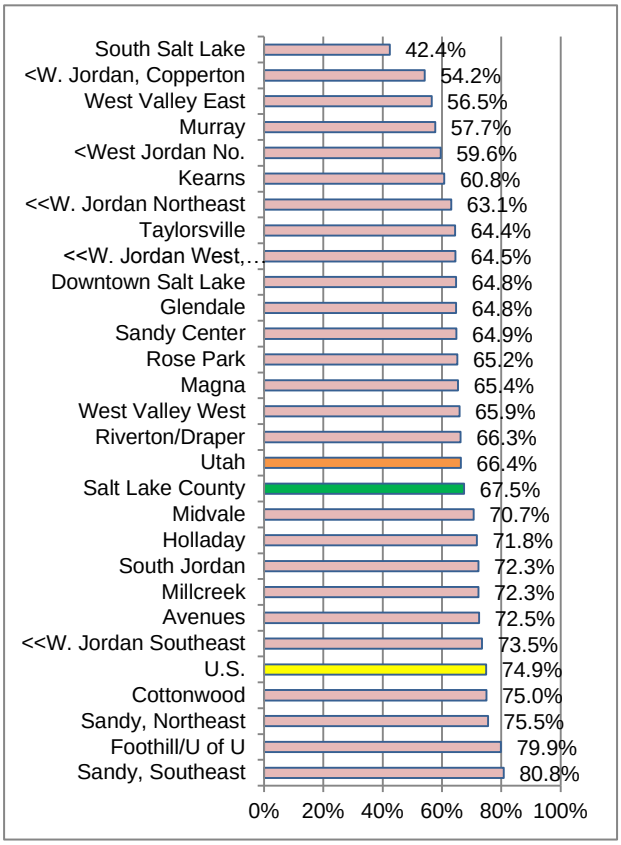



< Due to Utah Small Area reclassification, these numbers only include data for 2007-2008
<< Due to Utah Small Area reclassification, these numbers **only include data for 2009 and 2010**
*Use caution when interpreting, the estimate does not meet UDOH standards for reliability

## Screening Programs for Breast Cancer

| ***Healthy People 2020* Objective** | | | |
|---|---|---|---|
| ***C–17: Increase the proportion (percentage) of women who receive a breast cancer screening based on the most recent guidelines*** | | | |
| Salt Lake County 2007-2010 | Utah 2007-2010 | U.S. 2010 | *Healthy People 2020* Target |
| 67.5 | 66.4 | 74.9 | 81.1 |

**Figure 16.Percentage of Women over 40 Who Have Received a Mammogram within the Past Two Years, 2007, 2008, & 2010**




< Due to Utah Small Area reclassification, these numbers only include data for 2007-2008
<< Due to Utah Small Area reclassification, these numbers only include data for 2009 and 2010

Mammography is considered the most effective screening tool for early breast cancer detection.

Deaths from breast cancer can be substantially reduced if the cancer is discovered at an early stage. Clinical trials have demonstrated that routine screening with mammography can reduce breast cancer deaths by 20% to 30% in women aged 50 to 69 years, and by about 17% in women 40-49 years.[41] Women aged 50-74 should be screened for breast cancer by mammography every 2 years. Averaging 2007, 2008, and 2010 data, 74.9% of women nationally followed this recommendation which is significantly lower than the national target of 81.1% in *HP2020.* Overall 66.4% of women over 40 in Utah and 67.5% in Salt Lake County had mammograms.

Figure 17 shows that neither the State nor SLCo meets the *HP2020* Target of 81.1%. No Small Areas in SLCo meet the target.

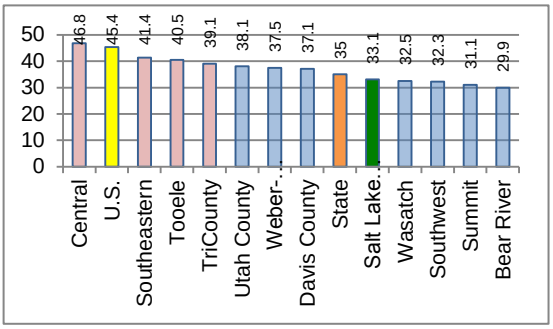
[41] National Cancer Institute. Breast Cancer Screening (PDQ). Obtained 3 July 2010 from: http://www.cancer.gov/cancertopics/pdq/screening/breast/healthprofessional/page4

## COLORECTAL CANCER

| *Healthy People 2020* Objective | | | |
|---|---|---|---|
| ***C–5: Reduce invasive colorectal cancer per 100,000*** | | | |
| Salt Lake County 2010 | Utah 2009 | U.S. 2007 | *Healthy People 2020* Target |
| 33.1 | 35 | 45.4 | 38.6 |

No Utah Small Area data are available from IBIS-PH on colorectal cancer. The *HP2020* target for incidence of colorectal cancer is 38.6 persons per 100,000. Both Salt Lake County and the state of Utah are better than the target with 33.1 and 35 per 100,000 persons respectively. Salt Lake County has the fifth lowest incidence rate of colorectal cancer among the twelve public health districts as demonstrated by Figure 17.

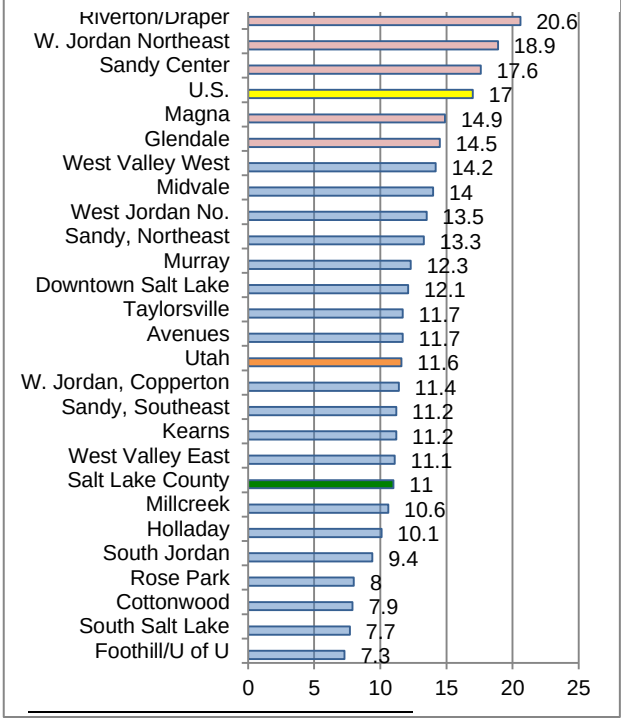
**Figure 17. Invasive Colorectal Cancer Rate per 100,000, by LHDs, 2007-2009**




Not counting skin cancers, colorectal cancer is the third most common cancer when males and females are considered together.[42] Each year more than 140,000 Americans are diagnosed with colorectal cancer (often referred to simply as "colon" cancer). In the U.S., over 50,000 people die from it annually.

| *Healthy People 2020* Objective | | | |
|---|---|---|---|
| ***C–9: Reduce the colorectal cancer death rate per 100,000*** | | | |
| Salt Lake County 2010 | Utah 2009 | U.S. 2007 | *Healthy People 2020* Target |
| 11 | 11.6 | 17 | 14.5 |

**Figure 18.Colorectal Cancer Death Rates per 100,000, by Small Area, 2007-2009**




Colorectal morbidity and mortality are higher among ethnic/racial minorities. This has been attributed to barriers such as lower screening rates, less use of diagnostic testing, decreased access to healthcare, cultural beliefs, and lack of education regarding healthcare practices and preventable disease.

Although Salt Lake County is well below the *HP2020* target of 14.5 deaths per 100,000 population (Figure 19), there are 5 Small Areas in Utah that are above the target.

[42] IBIS-PH. Obtained 5 July 2912 from: http://IBIS-PH.health.utah.gov/indicator/view/ColCAInc.LHD.html

## Screening Programs for Colorectal Cancer

| ***Healthy People 2020* Objective** | | | |
|---|---|---|---|
| ***C–4: Reduce the death rate per 100,000 from cancer of the uterine cervix*** | | | |
| Salt Lake County 2010 | Utah 2007-2009 | U.S. 2007 | *Healthy People 2020* Target |
| 1.2 | 1 | 2.4 | 2.2 |

Colorectal cancer is largely preventable with regular screening and is treatable with early detection. When colorectal cancer is diagnosed early, 90% of the patients survive at least 5 years.[43]

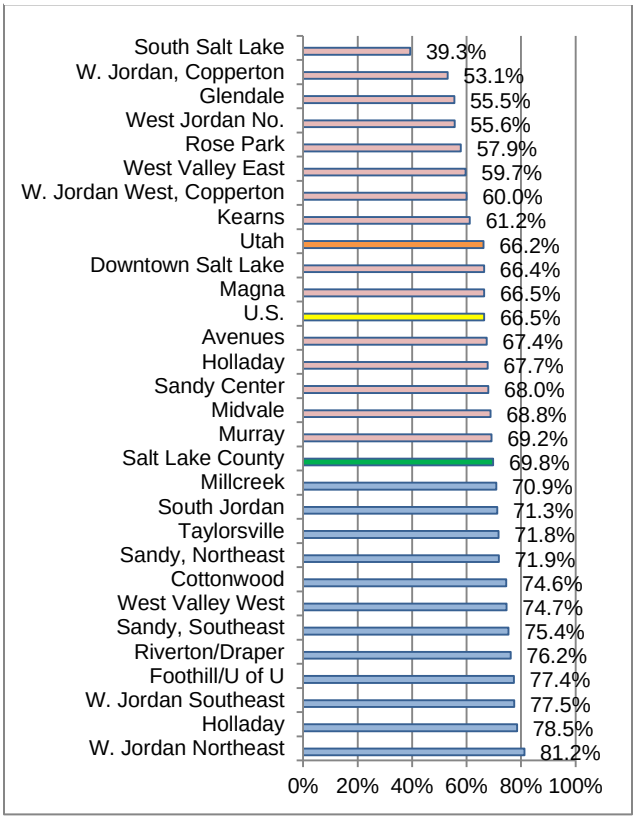
| ***Healthy People 2020* Objective** | | | |
|---|---|---|---|
| ***C–16: Increase the proportion (percentage) of adults who receive a colorectal cancer screening based on the most recent guidelines*** | | | |
| Salt Lake County 2006, 2008, 2010 | Utah 2010 | U.S. 2010 | *Healthy People 2020* Target |
| 69.8* | 66.2* | 66.5* | 70.5 |

*Percentage from BRFSS Developmental Database

Early detection is possible using fecal occult blood tests annually and a colonoscopy or sigmoidoscopy on a recommended schedule beginning usually at age 50 (or earlier depending on family history and previous findings).

Nationally, 66.5% of persons report being up-to-date on screenings which is lower than the *HP2020* Target of 70.5% (Figure 20). Utah falls below the nation at 66.2%. The residents in Salt Lake County do better than Utah, but are still lagging behind the *HP2020* target. However, 12 Small Areas of the county have reached the *HP2020* Target of 70.5%

**Figure 19. Percentage of Utah Adults Age 50+ Who Reported Having a Sigmoidoscopy or Colonoscopy in the Past 10 Years (2006-2010)**




[43] IBIS-PH. Obtained 5 July 2012 from: http://IBIS-PH.health.utah.gov/indicator/view/ColCADth.Ut_US.html

## CERVICAL CANCER

Cervical cancer is one of the most curable cancers if detected early. Almost all cases are caused by infection with the high-risk types of the human papilloma virus (HPV). Other risk factors include smoking, chlamydia infection, many sexual partners, oral contraceptives, young age at first term pregnancy and multiple full term pregnancies. There will be an estimated 12,000 new cases of cervical cancer and 4200 deaths in the U.S. from cervical cancer.

The human papillomavirus (HPV) is the most common sexually transmitted infection in the United States, with approximately 6.2 million cases diagnosed annually.[44] There are more than 100 strains of HPV, over 40 of which can cause cervical cancer and/or genital warts.[45]

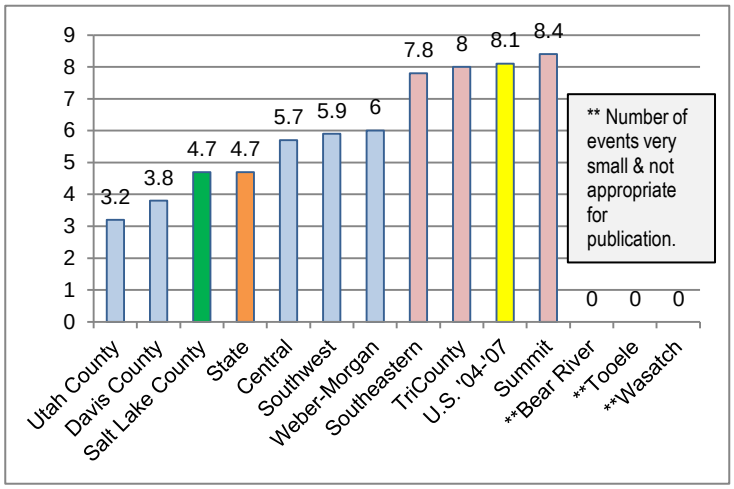
The incidence and death rates vary significantly for various ethnic groups. As the demographics of the county change to include more ethnic diversity, Utah's rates may change.

| ***Healthy People 2020* Objective** | | | |
|---|---|---|---|
| ***C–10: Reduce the incidence of uterine cervical cancer per 100,000*** | | | |
| Salt Lake County 2007-2009 | Utah 2007-2009 | U.S. 2007 | Healthy People 2020 Target |
| 4.7 | 4.7 | 7.9 | 7.1 |

Most cervical cancer can be prevented by HPV vaccination. The federal Advisory Committee on Immunization Practices (ACIP) now recommends routine vaccination against HPV for girls and boys ages 11 and 12.

All but three local health districts for which there are adequate data meet the *HP2020* target for incidence rate Figure 21). No Small Area data are available.

**Figure 20. Cervical Cancer Incidence per 100,000, by LHD, 2007-2010**




### Screening Programs for Cervical Cancer

| ***Healthy People 2020* Objective** | | | |
|---|---|---|---|
| ***C–15: Increase the proportion (percentage) of women who receive a cervical cancer screening based on the most recent guidelines*** | | | |
| Salt Lake County 2010 | Utah 2010 | U.S. 2008 | *Healthy People 2020* Target |
| 78 | 74 | 84.5 | 93 |

The recommendation is for women aged 21-65 with a cervix to be screened by Pap test every 3 years. In the U.S., 84.5% of women reported having a Pap test within the last 3 years.

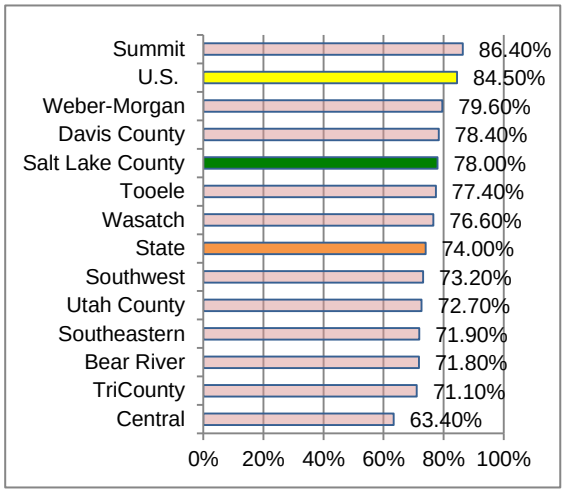
[44] Centers for Disease Control and Prevention. (2011). HPV Vaccine Monitoring.
[45] Ibid

As Figure 22 shows, 78% of women in Salt Lake County and 74% of women in Utah report being tested during the last three years. These rates are significantly lower than the *HP2020* target of 93%.

At 83.3% Blacks have the highest rate for screening in Utah; at 60.3% American Indians/Alaskan Native have the lowest rate of screening. Women without a usual source of healthcare or who were uninsured were less likely to have had a Pap test every 3 years.

Salt Lake County is fourth of 12 LHDs in the percentage of women who have received a Pap smear according to current recommendations, third lowest in incidence of cervical cancer, and tied for second lowest in cervical cancer deaths. Small Area Data are not available.

**Figure 21. Percent of Women in Utah who have had a Pap Smear within the Last 3 Years, by LHD, 2010**




## Low, Very Low, and Extremely Low Birth Weight Infants

Low birth weight is categorized into three levels:

- Low (<2500 grams or 5.5 pounds)
- Very low (<1500 grams or 3.3 pounds)
- Extremely low (>1000 grams or 2.2 pounds)

As birth weight decreases, the chance for increased morbidity and mortality increases. Infants who survive low birth weight often have chronic conditions and may suffer some loss of physical or intellectual ability. Hospital discharge data for 2010 indicates that the cost for a low birth weight baby was $44,472 compared with a normal delivery of $2,218. The costs for extremely low birth weight deliveries can be much more.

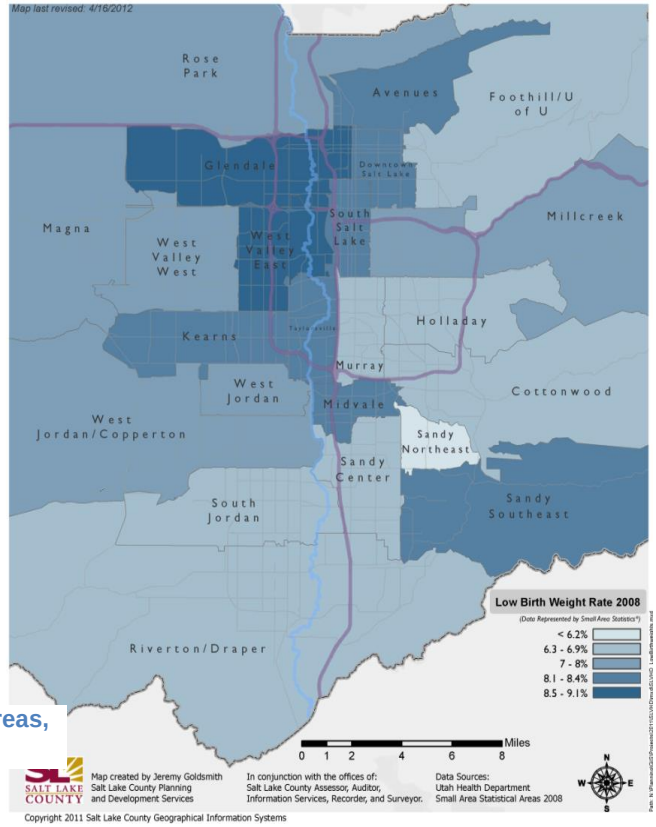
| ***Healthy People 2020* Objective** | | | | |
|---|---|---|---|---|
| ***MICH–8.1: Reduce percentage of low birth weight (LBW) births*** | | | | |
| Salt Lake County 2009 | Peer County Range 2009 | Utah 2009 | U.S. 2007 | *Healthy People 2020* Target |
| 7.4 | 6.7-8.4 | 7.1 | 8.2 | 7.8 |

| ***Healthy People 2020*** | | | |
|---|---|---|---|
| ***MICH–8.2: Reduce the incidence (percentage) of very low birth weight (LBW) births*** | | | |
| Salt Lake County 2009 | Utah 2009 | U.S. 2007 | *Healthy People 2020* Target |
| 0.8 | 0.84 | 1.5 | 1.4 |

Women at higher risk for LBW infants include those who are younger than 25 or older than 38; have chronic health problems; smoke or use substances; have infections; have inadequate maternal weight gain; and have certain socio-economic factors such as being Black, Hispanic, Asian, or Pacific Islander, low income, of low educational attainment, and unmarried.[46]

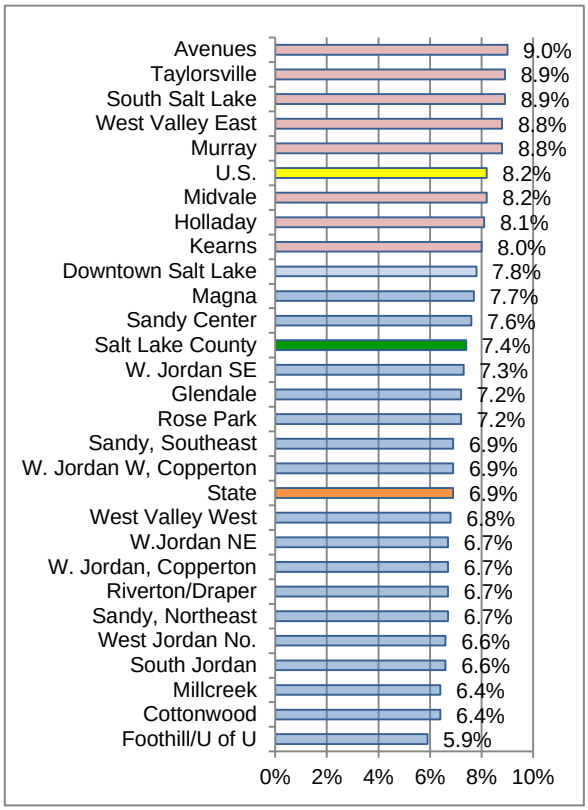
Salt Lake County's rate for low birth weight babies is a little higher than the rate for Utah as a whole. However, it compares favorably with the range for Peer Counties, U.S. as a whole, and exceeds the *HP2020* Target.

The incidence of low, very low, and extremely low birth weight births has been increasing recently due primarily to the increase in prematurely born multiple gestations – in part due to reproductive technology.[47]




**Map 9. Percent of Low Birth Weight Infants in Salt Lake County, by Small Areas**

**Figure 22. Percent of Low Birth Weight, by Small Areas, 2008-2010**




Although Salt Lake County as a whole exceeds the *HP2020* Objective for low birth weight infants (Figure 23), there are eight Small Areas of the county that are below the Peer County Median and do not meet the *HP2020* target.

Low, very low, and extremely low birth weight in the case of a single gestation baby can also be an

Small-for-Gestational Age may be due to genetics, growth problems that occur during pregnancy, or intrauterine growth restriction (IUGR). IUGR may be caused by lack of nutrients or oxygen required for proper growth and development, placental insufficiency, or chromosomal defects[48].

[46] March of dimes. Working together for stronger, healthier babies. Obtained 5 July 2012 from: http://www.marchofdimes.com/professionals/medicalresources_lowbirthweight.html
[47] University of San Francisco Medical Center. Very low and extremely low birth weight infants. Obtained 4 July 2012 from: http://www.ucsfbenioffchildrens.org/pdf/manuals/20_VLBW_ELBW.pdf
[48] Lucile Packard Children's Hospital at Stanford. Small for Gestational Age. Obtained 17 Aug 2012 from http://www.lpch.org/diseasehealthinfo/healthlibrary/hrnewborn/sga.html

indicator of the quality and availability of prenatal health care. Many of the causes can be identified if prenatal care is begun early. Cases caused by poor lifestyle decisions can be averted through counseling and education.

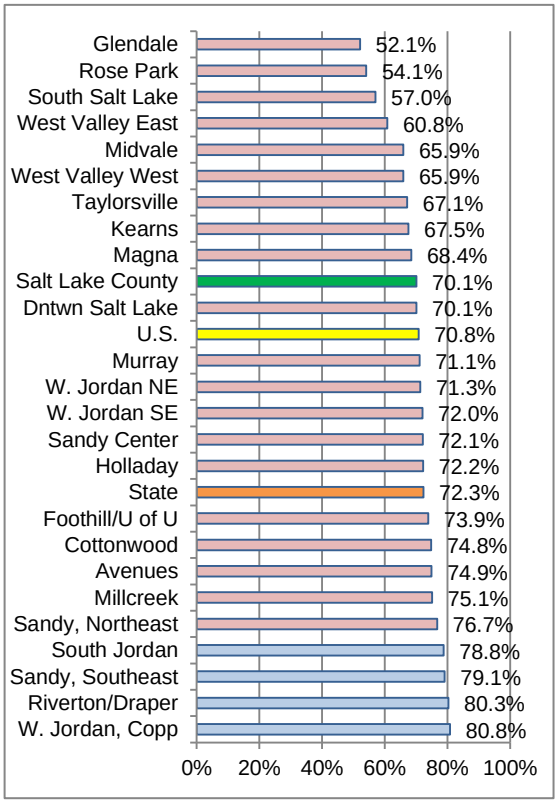
Both Salt Lake and the State as a whole met the *HP 2020* target for very low birth weight births in 2006. Only one county, Daggett, did not meet the *HP2020* target. Salt Lake County fell about in the middle with 15 counties having fewer very low birth weight births and 13 having more than Salt Lake County. Because data is available only at the county level, Small Areas of the county which may have scored above the target cannot be identified.

## Prenatal Care in the First Trimester

Women who receive early and consistent prenatal care enhance their likelihood of giving birth to a healthy child of normal birth weight. Health care providers recommend that women begin prenatal care in the first trimester of their pregnancy.

| ***Healthy People 2020* Objective** | | | | | |
|---|---|---|---|---|---|
| ***MCH–10.1: Percentage of women who received prenatal care in the first trimester*[49]** | | | | | |
| Salt Lake County 2009 | | Peer County Range 2009 | Utah 2009 | U.S. 2007 | *Healthy People 2020* Target |
| 70.1 | 81.4-91.5 | 72.6 | 70.8 | 77.9 | |

**Figure 23. Percent of Women Receiving Prenatal Care in the First Trimester, by Small Area, 2009**




Mothers who obtain adequate prenatal care appear to establish positive care-seeking behavior that makes them more likely to obtain preventive care for their infants.[50] SLCo does not compare favorably with Peer Counties on percentage of women who receive prenatal care in the first trimester. SLCo falls below the state by 2.5 percentage points, the *HP2020* target by 7.8 percentage points and the U.S average by 0.7 percentage points.

The Small Area data demonstrate there are challenges. All but four Small Areas of Salt Lake County fall below the *HP2020* target. The SA with the highest percent of first trimester pregnancy care is West Jordan West/Copperton.

## Respiratory Disease

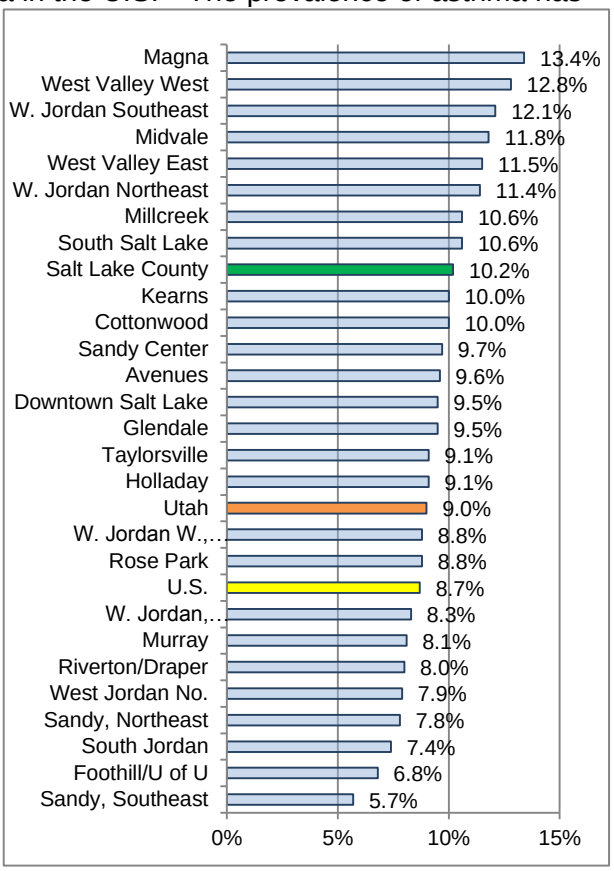
Asthma and Chronic Obstructive Pulmonary Disease are serious personal and public health issues that have medical, economic, and psychosocial implications. The burden of asthma can be seen in the number of asthma related medical events, including emergency department (ED) visits, hospitalizations, and deaths.

[49] Include 37 states, New York City and DC
[50] The Commonwealth Fund. Prenatal Care in the First Trimester. Obtained 28 June 2012 from: http://www.commonwealthfund.org/Performance-Snapshots/Preventive-Health-and-Dental-Care-Visits/Prenatal-Care-in-the-First-Trimester.aspx

## ASTHMA

There are no *HP2020* objectives for asthma incidence or prevalence for children or adults. The number of deaths is tracked for adults 35 years and older. *HP2020* objectives focus on reduction of hospital ED visits and hospitalizations. IBIS-PH data are provided for asthma prevalence at the LHD level for children and for adults at the Small Area Level. IBIS-PH reports hospital ED visits but not hospitalizations.

**Figure 24. Current Doctor Diagnosed Asthma in Adults by Utah Small Areas, 2006-2010**

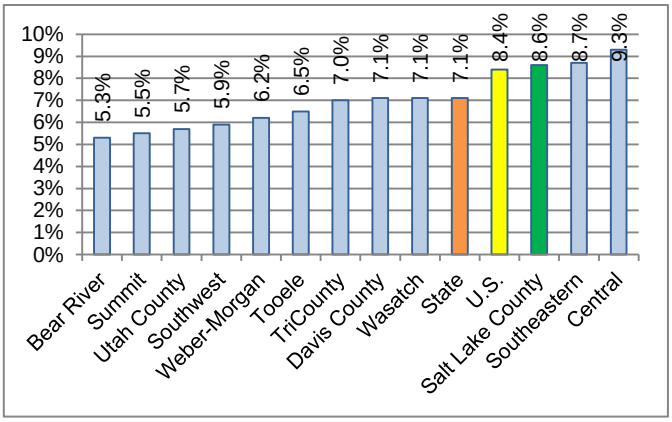



Currently more than 23 million people have asthma in the U.S.[51] The prevalence of asthma has increased since 1980, but deaths have decreased since the mid-1990s.[52] Adult asthma rates show no sign of declining in Utah or in the U.S.

Risk factors for asthma include having a parent with asthma, sensitization to irritants and allergens, respiratory infections in childhood, and being overweight. Asthma is believed to be closely linked to air pollution especially ozone and particulate matter (PM). Additional triggers are smoke, tobacco smoke, dust mites, cockroach allergen, mold, pets, and strenuous physical exercise.

Adult asthma prevalence is higher for women than men at every age group. Figure 25 shows that in 2010 Utah had a slightly higher prevalence of adult asthma than the U.S. as a whole. SLCo had a significantly higher prevalence than Utah. Eight Small Areas have a higher rate than the County.

**Figure 25. Asthma Prevalence in Children by Health District, 2007-2010**




Asthma prevalence in children is only available on IBIS-PH by LHD (Figure 26). There are only two LHDs with higher rates in children than Salt Lake County.

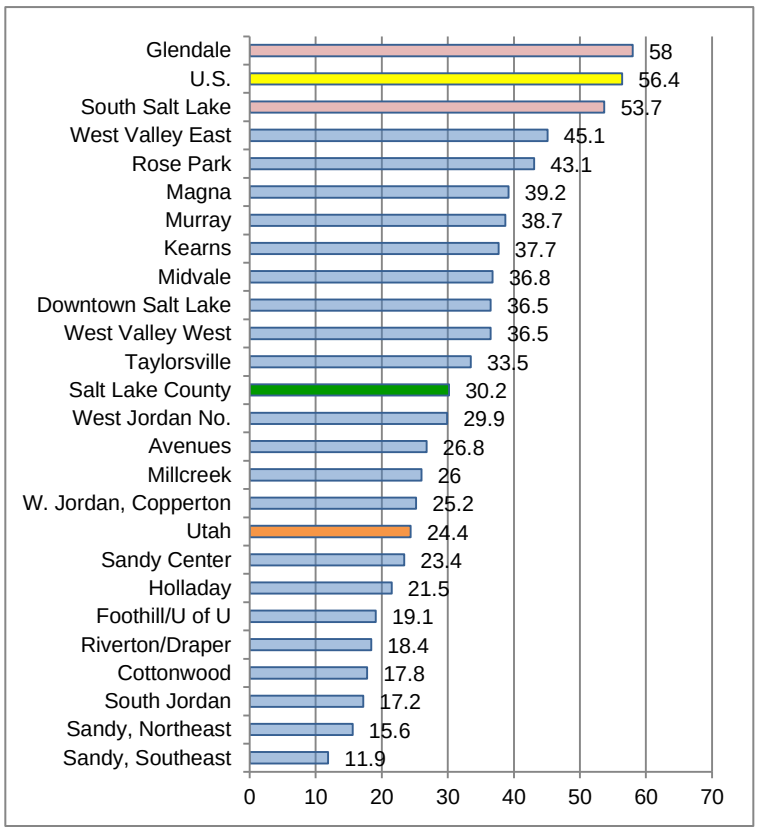
[51] Pleis JR, Lucas JW, Ward BW. Summary health statistics for US adults: National Health Interview Survey, 2008. National Center for Health Statistics. Vital Health Stat. 2009;10(242):1-157

[52] Healthy People.gov. *Healthy People 2020* Objectives - Respiratory Diseases. Obtained from: http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicId=36

| *Healthy People 2020* Objective | | | |
|---|---|---|---|
| ***RD–2.3: Reduce hospital emergency department visit rate per 100,000 for asthma*** | | | |
| Salt Lake County 2006-2010 | Utah 2006-2010 | U.S. 2007 | *Healthy People 2020* Target |
| 30.2 | 24.4 | 56.4 | 49.1 |

One asthma *HP2020* objective that may respond to public health intervention relates to reduction in hospital emergency department visits. The only Small Area data available are ED visits for 5-64 year olds. Data for 0-4 and 65+ age groups are available at the state and national levels only.

**Figure 26. Emergency Department Visits for Asthma, Age Adjusted, Adults 18-64 years (Utah 2010 data; U.S. 2007)**

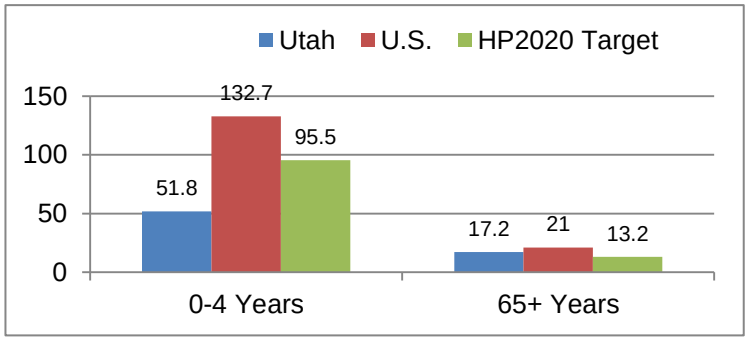



Utah as a whole ranks better than the U.S. and is well below the *HP2020* target for the 0-4 and 5-64 year age groups. However, Utah does not meet the *HP2020* standard for the 65 and older age group.

Although Salt Lake County is well under the *HP2020* target, two Small Areas are above it: Glendale and South Salt Lake (Figure 26). Glendale has the highest rate of emergency department visits of any SA in the state.

Data are not available at the Small Area level or county level for age groups 0-4 and 65+. Only state level data are available. Utah compares well with the U.S. with regard to 0-4 year old ED visits and is well under the *HP2020* target. While Utah has fewer ED visits than the U.S. for the 65+ group, it does not meet the *HP2020* target.

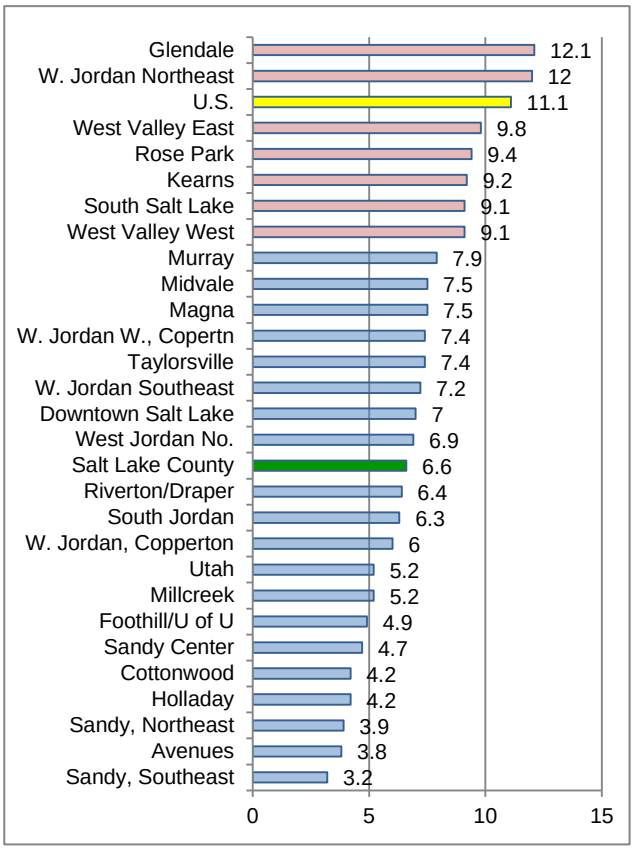
**Figure 27. Emergency Department Visits for Asthma by Age Group and HP2020 Target (Utah 2010 data; U.S. 2007)**



| *Healthy People 2020* Objective | | | |
|---|---|---|---|
| ***RD–2.2: Reduce hospitalization rate per 100,000 for asthma in children and adults ages 5 to 64*** | | | |
| Salt Lake County 2006-2010 | Utah 2006-2010 | U.S. 2007 | *Healthy People 2020* Target |
| 6.6 | 5.2 | 11.1 | 8.6 |

Another *HP2020* objective that public health could influence is hospitalization rates.

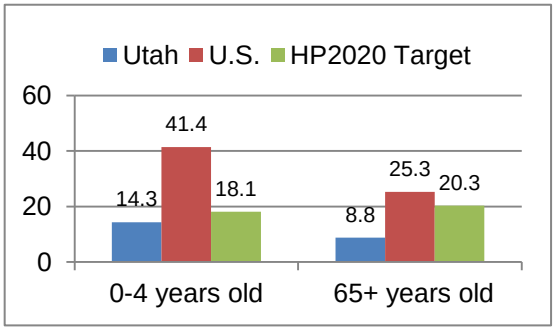
**Figure 28. Hospitalizations for Asthma Ages 5-64, Age Adjusted by Small Areas, 2006-2010**




Asthma can usually be managed in outpatient care settings. Hospitalizations can be prevented by reducing exposure to pollutants and allergens and following appropriate pharmaceutical routines. The number of hospitalizations in a given area may indicate that there is a problem for those with asthma accessing routine primary care early enough or at all in the community.

No data for 0-4 or 65+ year olds are available at the Small Area of LHD levels. Utah compares favorably for 0-4 year olds and 65+ falling well below the U.S. rates and within the *HP2020* targets for hospitalizations for asthma.

**Figure 29. Hospitalizations for Asthma by Age Group and HP2020 target (UT 2010 data; U.S. 2007)**




Since young children and elderly are populations at risk for more severe responses to pollution or allergens, Small Area data would be helpful.

## Chronic Obstructive Pulmonary Disease

Chronic Obstructive Pulmonary Disease (COPD) describes airflow obstruction that is associated mainly with emphysema and chronic bronchitis. It affects 13-24 million people in the U.S.[53,54] and is the fourth leading cause of death. Air pollution and fumes can irritate the lungs

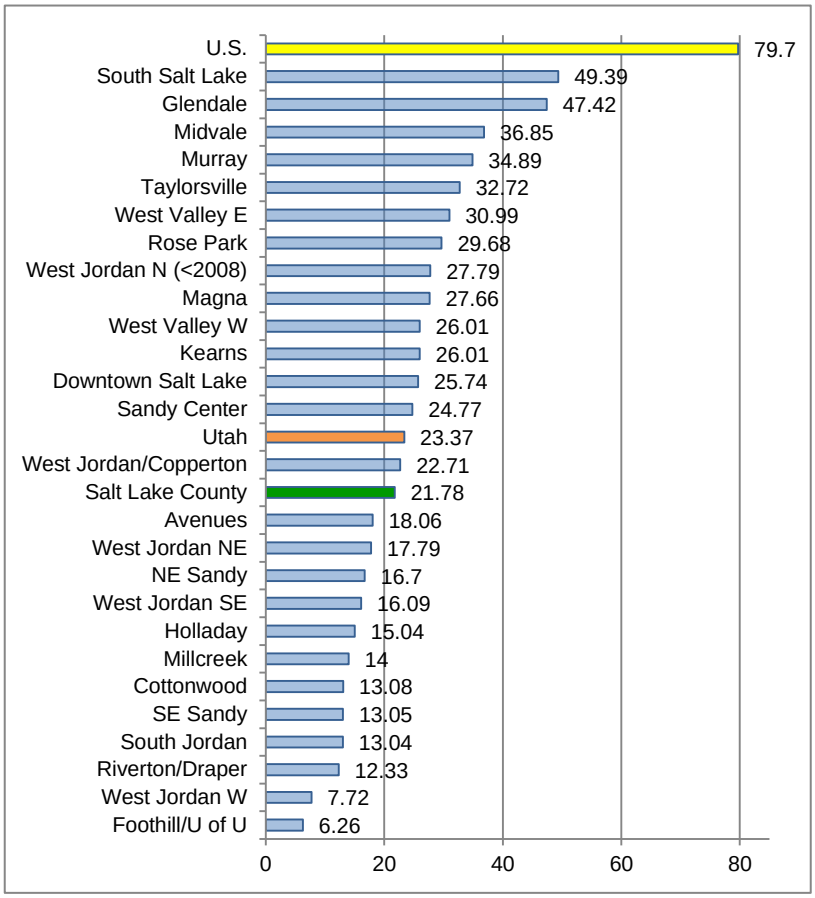
[53] Utah Department of Health. ND, COPD. Obtained 2 June 2012 from: http://health.utah.gov/asthma/pdf_files/Respiratory_Packets/COPD.pdf

[54] University of Utah Health Care. ND. Health Information: Chronic Obstructive Pulmonary Disease. Obtained 2 June 2012 from: http://healthcare.utah.edu/healthlibrary/library/diseases/adult/doc.php?type=85&id=P01155

| *Healthy People 2020* Objective | | | |
|---|---|---|---|
| ***RD–12: Reduce hospital emergency department visits for chronic obstructive pulmonary disease per 10,000 adults 45 years and older*** | | | |
| Salt Lake County 2009 | Utah 2009 | U.S. 2007 | *Healthy People 2020* Target |
| 21.78 | 23.37 | 79.7 | 55.2 |

Low level and high level air pollution can exacerbate symptoms of COPD. COPD accounts for 1.5 million emergency department visits; 726,000 hospitalizations; and 8 million physician office and hospital outpatient visits. A study of Medicare beneficiary claims data from 2003-2004 showed readmission rates for patients with COPD to be 22.6%, third highest behind heart failure and pneumonia.[55] All of this costs the nation an estimated $42.6 billion in direct and indirect costs.

**Figure 30. Emergency Department Visits for COPD for Adults 45+, 2008-2010**




Both Salt Lake County and the State have met the *HP2020* target of 55.2 emergency department visits per 10,000 population. The 2007 U.S. rate for emergency department visits for COPD was 79.7/10,000 which is significantly higher than the Salt Lake County rate of 21.78 or the state rate of 23.37 (Figure 31). No Small Areas are above the target.

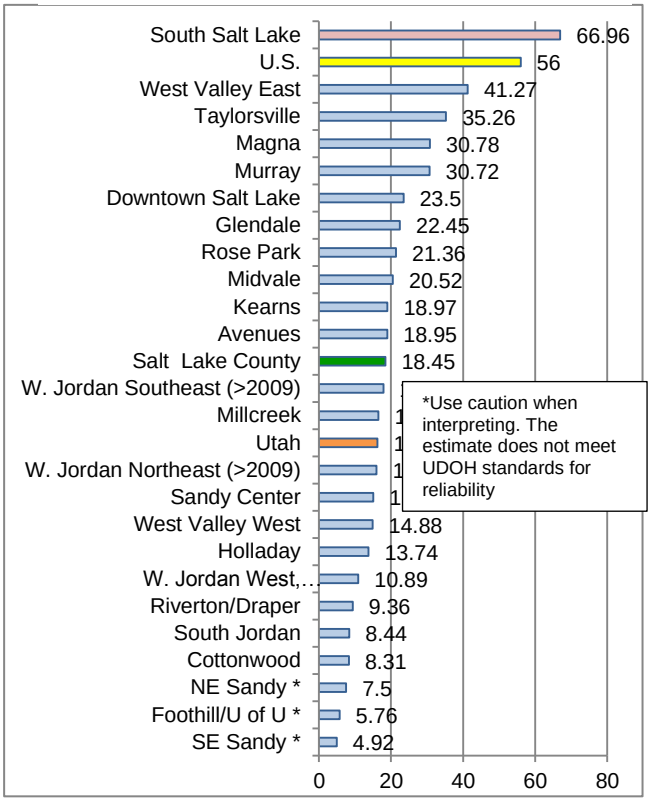
[55] Stone, J, & Hoffman GJ (2010). Medicare hospital readmissions: Issues, policy options and PPACA. *Congressional Research Service.* Obtained 10 July 2012 from: http://www.hospitalmedicine.org/AM/pdf/advocacy/CRS_Readmissions_Report.pdf

| *Healthy People 2020* Objective | | | |
|---|---|---|---|
| ***RD–11: Reduce hospitalizations among adults with chronic obstructive pulmonary disease per 10,000 adults 45 years and older*** | | | |
| Salt Lake County 2010 | Utah 2009 | U.S. 2007 | *Healthy People 2020* Target |
| 18.45 | 16.25 | 56 | 50.1 |

Salt Lake County and the state both meet the *HP2020* target of 50.1/10,000 rate for hospitalization of adult COPD patients. However, one Small Area of Salt Lake County, South Salt Lake, exceeds the target by almost 17 points.

Given the air quality in the Salt Lake Valley and the aging population, COPD is a cause for concern. The 2012 General Session of the state of Utah Legislature adopted the "House Concurrent Resolution Regarding, and Prevention of, Chronic Obstructive Pulmonary Disease [sic]" (HCR014) emphasizing the importance of this category of diseases.

**Figure 31. Hospitalizations for COPD for Adults 45+, 2008-2010**




## Infectious Diseases

### Pertussis

Pertussis is a vaccine-preventable disease that has cyclical peaks occurring every three to five years in the United States. The *Community Health Status Indicator (CHSI) Project* gave Salt Lake County a poor rating on Pertussis. However, the data presented are not reflective of the usual rates for pertussis. The data used to rate the County were taken during outbreak years. Extrapolating from the HP2020 targets, Utah and SLCo's target for Pertussis cases (proportionally) are included with the *HP2020* Objectives.

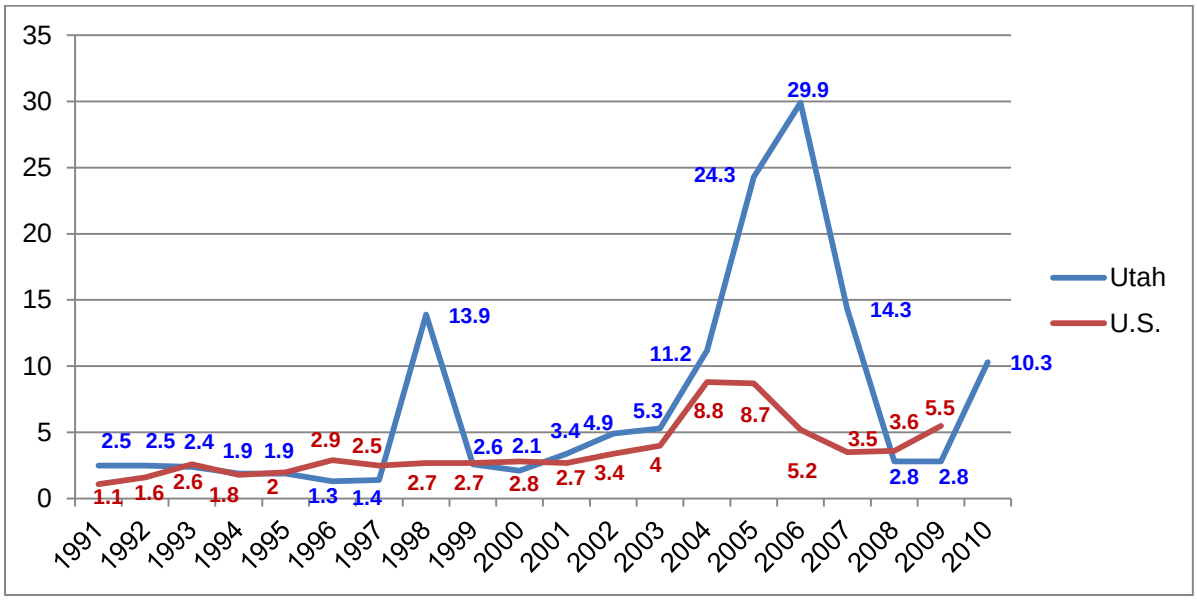
| *Healthy People 2020* Objective | | | |
|---|---|---|---|
| ***IID–1.6: Reduce, eliminate, or maintain elimination of cases of vaccine-preventable diseases: Pertussis (children under age 1)*** | | | |
| Salt Lake County Cases 1999-2010 (yearly avg) | Utah Cases 2000-2005 (yearly avg) | U.S. Cases 2004-2008 (avg) | *Healthy People 2020* Target |
| 14 | 33 | 2,777 | 2,500 |
| SLCoHD Target* | Utah State Target* | *Target based on proportion of HP2020 target by population | |
| 8 | 23 | | |

| *Healthy People 2020* Objective | | | |
|---|---|---|---|
| ***IID–1.7: Reduce, eliminate, or maintain elimination of cases of vaccine-preventable diseases: Pertussis (among adolescents aged 11 to 18 years)*** | | | |
| Salt Lake County Cases 1999-2010 (yearly avg) | Utah Cases 2000-2005 (yearly avg) | U.S. Cases 2000-2004 (avg) | *Healthy People 2020* Target |
| 26 | 108 | 3,995 | 2,000 |
| SLCoHD Target* | Utah State Target* | *Target based on proportion of HP2020 target by population | |
| 7 | 18 | | |

Pertussis is usually a mild disease in children over 7 and adults but is often severe among infants and moderately severe among children under 7 years of age who are unimmunized or incompletely immunized. Infants under one year of age are at the highest risk for acquiring pertussis and pertussis-associated complications such as pneumonia and inflammation of the brain.

Most children up to the age of 10 years are protected against pertussis by vaccination during infancy and early childhood. The Diphtheria, Tetanus, and Pertussis (DTP) vaccine, introduced in the 1940s, was the vaccine given to infants and children to age 7. This vaccine was not recommended for people 7 years of age or older due to side effects that increased with age. Therefore, because immunity waned over time, adolescents and adults were left unprotected. In 1991, the DTaP vaccine replaced the DTP vaccine. This vaccine, containing pieces of cells rather than whole cells, was developed to reduce the local, systemic and more severe adverse reactions that could occur with the DTP vaccine. DTaP is not approved for people 7 years of age or older.

**Figure 32. Reported Pertussis Cases per 100,000 persons, Utah and U.S., 1991-2010**




Although peaks of infection still occur every 3-5 years, they are not as dramatic. Rates of disease dropped with less than 5000 cases occurring per year. As shown in Figure 33, beginning in 2004, rates nationally and in Utah began to increase. The increase was comprised of adolescents and adults (see Figures 34 for Utah and 35 for Salt Lake County). By 2006 in Utah, nearly 78% of cases had occurred in these age groups.

In 2005, TDaP, a new pertussis vaccine licensed for people aged 11-64 years, was approved by the FDA. Widespread use is thought to have contributed to the decrease in pertussis seen in Utah in 2007. However, since 2008 the pertussis rate in Utah has increased. While the majority of cases are in the age 15 and older population (21/100,000), the incidence in infants is highest at 33/100,000. Complete data tables may be found in Appendix 8.

**Figure 33. Number of Reported Pertussis Cases by Age and Year, Utah, 1995-2009** [56]

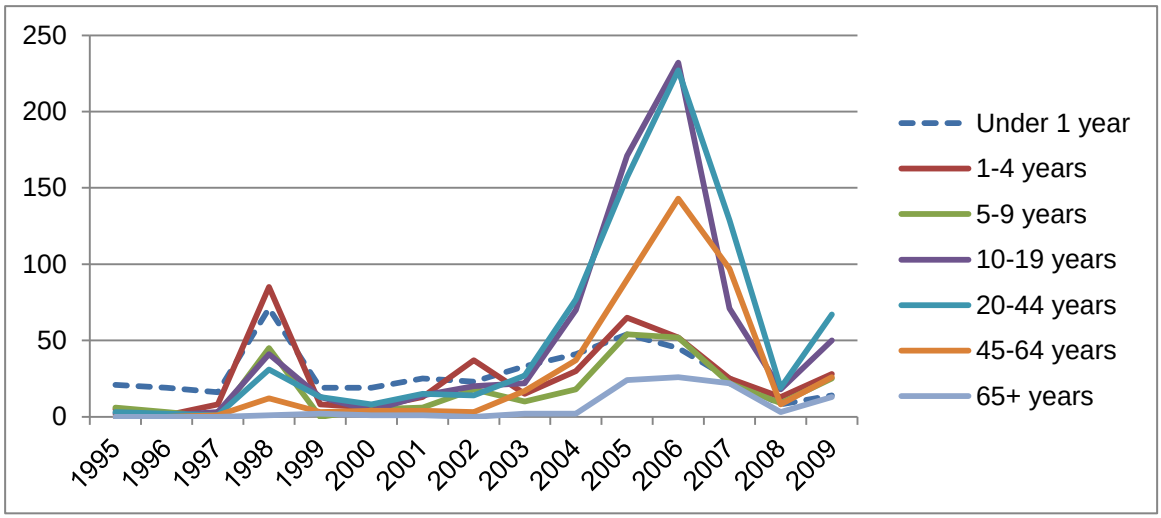
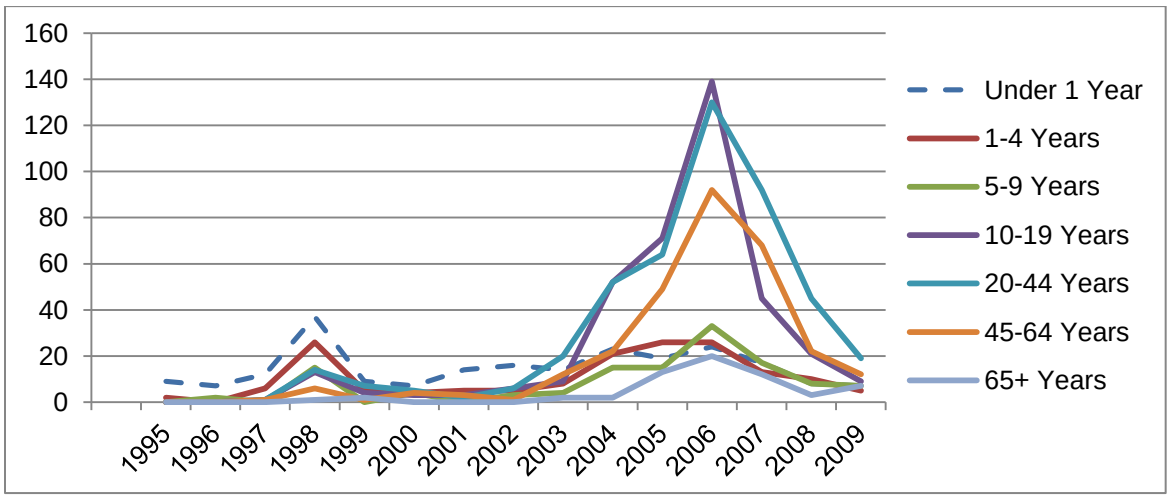



**Figure 34, Number of Reported Pertussis Cases by Age and Year, Salt Lake County, 1995-2009** [57]




Most pertussis cases are seen in adolescents and adults who generally have milder symptoms than children. It is likely under-diagnosed and under-reported because the symptoms frequently do not include the characteristic whooping cough. Unlike adolescents and adults, infants and young children are more likely to be diagnosed because they tend to show the characteristic symptoms which are usually severe and suffer complications including death, especially those one year of age or less. A major source of disease in young children is older siblings and adults.

[56] IBIS-PH. Pertussis Complete Indicator Report. Obtained 25 August 2012 from: http://ibis.health.utah.gov/indicator/view_numbers/PerCas.AgeYr.html
[57] Data provided by Mary Hill, SLCoHD Epidemiologist; 29 August 2012

As of August 11, 2012, the current rate of pertussis in the U.S. is 7.36/100,000. Of the 21 states with pertussis rates above the national average, Utah, at 29.3/100,000, has the 8th highest rate (see Table 9).

**Table 9. States with incidence of pertussis higher than the national incidence rate 7.36/100,000), as of 20 September 2012**

| | | | | | |
|---|---|---|---|---|---|
| Wisconsin | 78.6 | Utah | 29.3 | Illinois | 11.4 |
| Minnesota* | 63.5 | New Mexico | 22.9 | New Hampshire | 11.4 |
| Washington | 58.1 | Alaska | 18.9 | Arizona | 11.2 |
| Montana | 43.7 | Oregon | 18.3 | Colorado | 11.0 |
| Vermont | 42.0 | Kansas | 14.6 | Pennsylvania | 11.0 |
| Maine | 37.5 | New York State | 12.4 | Idaho | 11.0 |
| Iowa | 37.0 | North Dakota | 11.5 | Missouri | 10.6 |

*Only a small subset of Minnesota pertussis cases have been reported through NNDSS for 2012. This data was accessed from the Minnesota Department of Health web site.

*HP2020* has objectives only for the less than 1 year and 11 to 18 year-old age groups. Both targets are national ones in numbers of cases rather than percentages. The target is not easily translated into a number useful for state and local health departments. Both Utah and SLCoHD have their own targets based on a 10% improvement from a multi-year average.

## HEPATITIS B

SLCo reported 51 cases of Hepatitis B, 21 more than the number of expected cases. Rarely does Salt Lake County have an acute case of Hepatitis B that is contracted in the county. During the 2007, all of the Hepatitis B cases in Salt Lake County were imported. The majority of Hepatitis B cases reported are foreign born and usually diagnosed through pregnancy (Perinatal Hepatitis B cases). As a refugee county, Salt Lake County does not have control over how many refugees are entering in a given year; therefore the County has no impact on reducing the number of Hepatitis B cases in the County. Very rarely will Salt Lake County have an acute case of Hepatitis B because our vaccination rates are high.[58] The five year average for Hepatitis B (2007-2011) was 13, well within the expected number of cases (30).

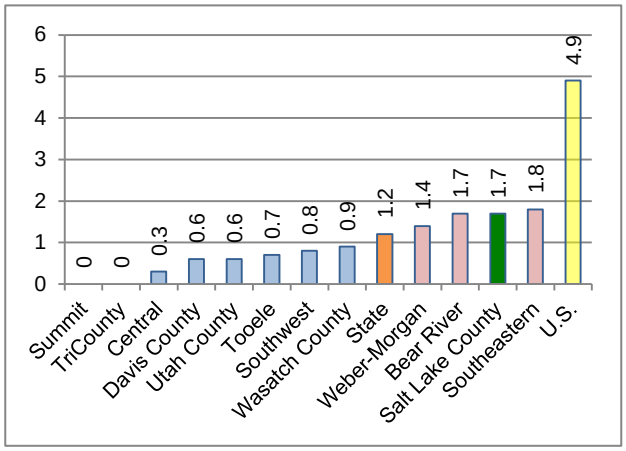
[58] Personal co8mmunication. Email 9 September 2012. Debby Dean, Infectious Disease Bureau Manager

## TUBERCULOSIS

| *Healthy People 2020* Objective | | | |
|---|---|---|---|
| ***IID–29: Reduce tuberculosis rate per 100,000*** | | | |
| Salt Lake County 2010 | Utah 2009 | U.S. 2005 | *Healthy People 2020* Target |
| 1.7 | 1.2 | 4.9 | 1 |

Tuberculosis (TB) is spread when a person with active disease expels airborne particles, usually through coughing or sneezing but can also be spread to another person when organisms are put into the air through speaking or singing. People who become infected with TB usually have no symptoms and are not aware they have been infected; their bodies are able to fight the bacteria to keep it from growing. The organism remains inactive, or latent, during this time and infected people cannot spread the disease. Infected individuals may not experience symptoms following exposure for weeks, months, years, or may never.

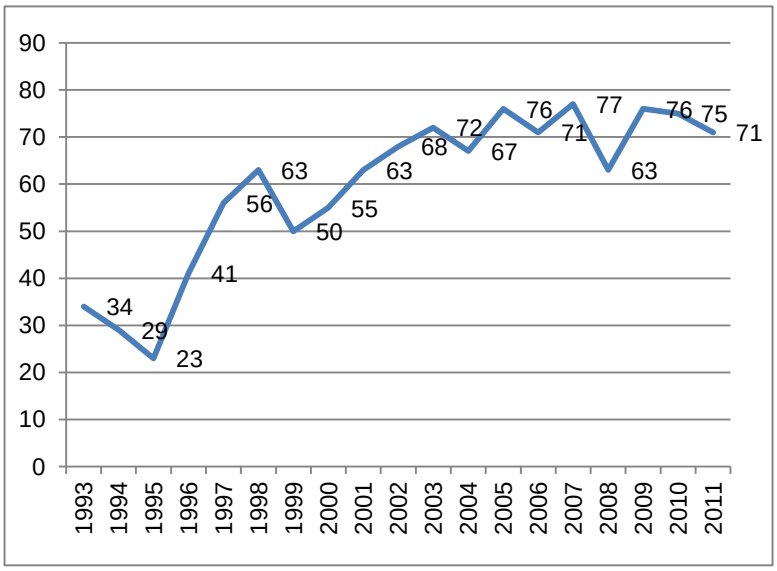
**Figure 35. Tuberculosis Rates per 100,000 by Utah Local Health District, 5-year average 2007-2011**




The bacteria may become active in the future if the immune system cannot fight them. This happens for various reasons including age or the development of chronic disease. People with HIV are at high risk for developing active TB infection. TB usually attacks the lungs, but can also attack other parts of the body such as the kidneys, spine, and brain.

Utah's rate of active tuberculosis, while mirroring the epidemiologic curve of the nation, has consistently been 10 to 12 people fewer per year than the nation (per 100,000).

**Figure 36. Percentage of TB Cases among Foreign Born Persons, Utah, 1993-2011**




Utah is close to the *HP2020* target for this objective. Eight of the twelve local health districts have met the *HP2020* target, but Salt Lake County is one of four that does not (Figure 36).

In 2011, the state had 34 active TB cases. For the five previous years the number ranged from 20-34 cases and averaged 31. Since 1993, Utah has averaged 29% of the nation's rate.

Similar to Hepatitis B, TB among the long-term residents of Salt Lake County has largely been eliminated. However, the TB rate among new arrivals to the valley, especially highly mobile individuals and refugees (Figure

27), continues to rise while the rate in persons born in the U.S. falls.

Persons immigrating to the U.S. from Asia, Mexico, Central America, and South America have had the highest rates of TB since the year 2000 (Figure 38). Since the County takes a large number of refugees and our citizens engage in extended travel to foreign countries, Salt Lake County will always have a large number of persons with tuberculosis.

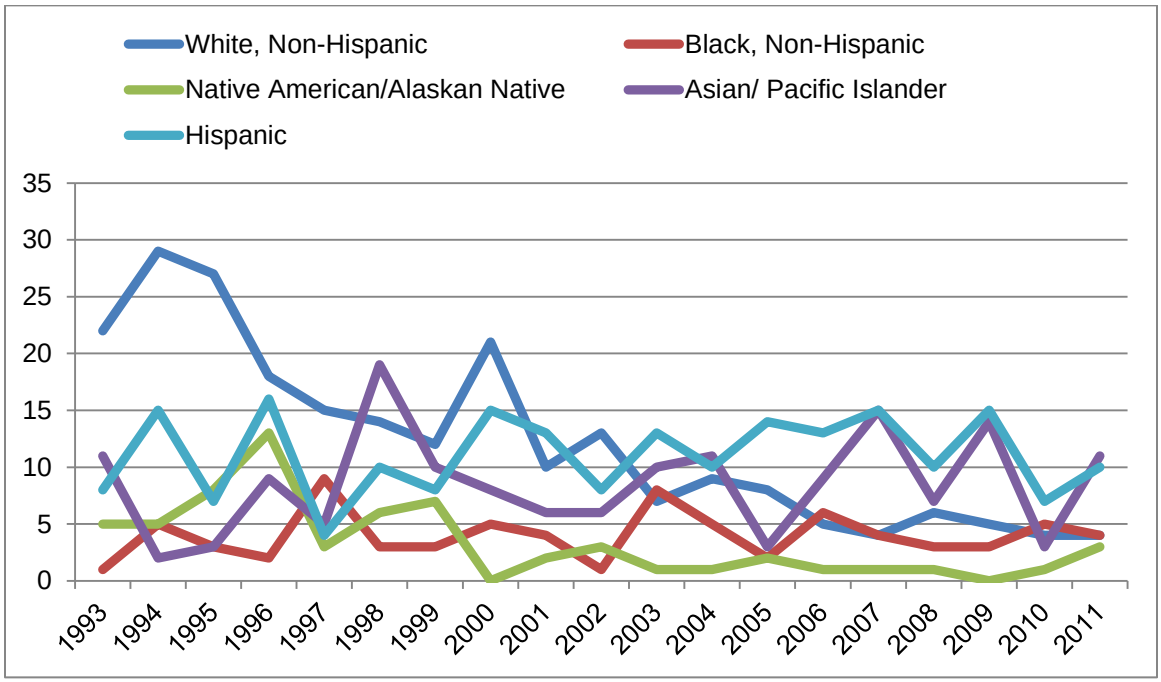



**Figure 37. Number of Tuberculosis Cases by Race/Ethnicity, Utah, 1993-2011**

During 2012, the number of TB cases increased from the previous year and this is expected to continue. Each case has at least twenty-five contacts, and these contacts will require follow-up including interview, skin testing, and (if skin test is positive) a chest x-ray. If the x-ray is positive, if appropriate, and if they agree, treatment for *latent* TB will be administered. If a person is discovered to have *active* TB, the cycle continues.

Professional and community education is necessary. Physicians who are seeing foreign-born patients on a regular basis who present with a cough and that cough does not respond to treatment (especially if there is a chronic disease co-morbidity), should consider doing a skin test and follow-up x-ray to rule out TB. Hospital and emergency department staff should consider the same if a patient with an underlying chronic condition presents with a fever of undetermined origin.

## Sexually Transmitted Infections

### Chlamydia

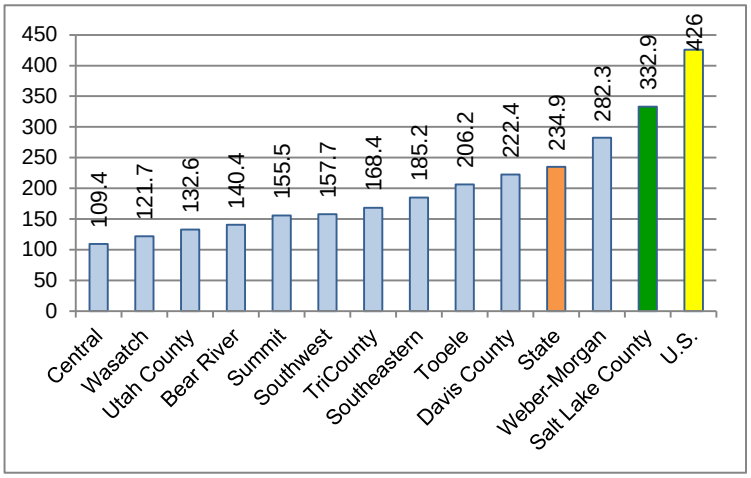
Over 19 million cases of chlamydia occur annually. CDC maintains that although sexually transmitted infection (STI) remains a significant public health problem, it is largely unrecognized by the public, policymakers, and healthcare professionals. Almost half of STIs occur in the 15 to 24 year old population, and the financial burden is upwards of $15.9 billion annually. Chlamydia is currently the most frequently reported notifiable disease in the United States. 1,307,893 cases occurred in the U.S. during 2010. Of these, 71% were among those aged 15 to 24.

Chlamydia is the most common bacterial STI in North America and is one of the major causes of tubal infertility, ectopic pregnancy, pelvic inflammatory disease, and chronic pelvic pain. Susceptibility to more serious infections such as HIV also increases when an individual is infected with chlamydia. In addition, pregnant women with chlamydia can pass the infection to their infant during delivery, potentially resulting in pneumonia or neonatal ophthalmia.

*HP2020* objectives focus only on the 15-24 year old age group in general and specifically those who are treated in family planning clinics and the National Job Training Program. A more general *HP2020* objective and target are under development; it will be "STD-2: Reduce Chlamydia rates among females aged 15-44." Since local, state, and national rates are available for the total number of people with Chlamydia infections and since all but a few *HP2020* targets are based on a 10% decrease in the base rate (which is the national rate for 2007), a target can be inferred. The table below compares the known rates with the expected HP2020 target. Based on current data, both Salt Lake County and Utah fall within the target for 2020.

| **(Inferred) *Healthy People 2020* Objective** | | | |
|---|---|---|---|
| ***No number – Reduce Chlamydia infection rate per 100,000*** | | | |
| Salt Lake County 2010 | Utah 2010 | U.S. 2010 | *Healthy People 2020* Target |
| 332.9 | 234.9 | 426 | 383 |

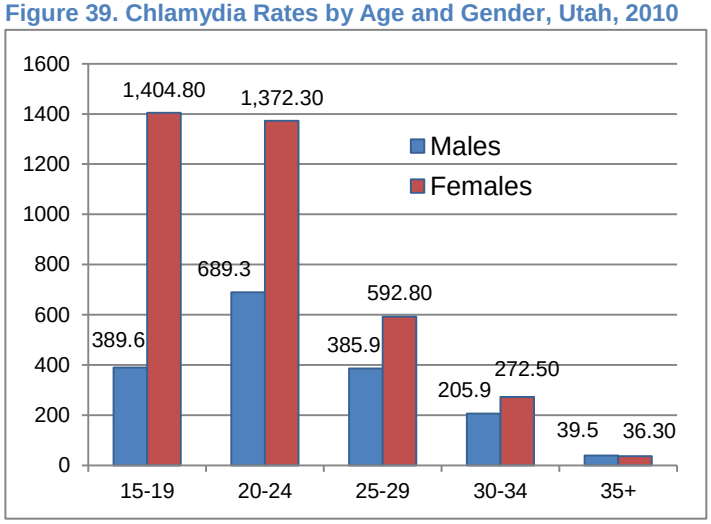
**Figure 38. Chlamydia Rates for All Ages, by LHD, 2010**




Utah ranked 46th in the nation for chlamydia rate per 100,000, however, Salt Lake County has the highest Chlamydia rate in the State (Figure 39).

Small Area data are not available.

**Figure 39. Chlamydia Rates by Age and Gender, Utah, 2010**




The age group of highest interest is the 15 to 19 year old group (Figure 40). The U.S. rate for females was 3,270 per 100,000 while Utah's rate was 1,405 per 100,000 – 43% lower than the national rate. Compared to the U.S. rate for males (735.5), the Utah rate of 389.6 was 47% lower.

## Immunizations

Immunizations are the most cost effective disease prevention measure. Vaccine development has been cited by the U.S. Public Health Service as one of the Ten Great Public Health Achievements of the 20th Century. Immunization rates are a good indicator of an area's ability to prevent certain diseases. Two key immunization rates for children are tracked: Immunization rate of children at 24-months and rate at kindergarten entrance.

Immunization rates for Salt Lake County reflect vaccine administered by Vaccine For Children (VFC) program providers (physicians, hospitals, clinics, Federally Qualified Community Health Centers) as well as vaccine given by the SLCoHD.

### Two Year Olds

By age two, children are recommended to have 4 doses of diphtheria, tetanus, and acellular pertussis (DTaP), 3 doses of polio,1 dose of measles-mumps-rubella (MMR), 3 doses of hepatitis B, 3 doses of haemophilus influenza, type b (Hib), and 1 dose of varicella vaccines. This is referred to as 4:3:1:3:3:1. *HP2020* Objective IID-7 is to "Achieve and maintain effective vaccination coverage levels for universally recommended vaccines among young children." The first six sub-objectives cover the 4:3:1:3:3:1 and provide a window for completion between 19- and 35-months.

| ***Healthy People 2020* Objective** | | | | |
|---|---|---|---|---|
| ***IID–7: Achieve and maintain effective vaccination coverage levels (percentage) for universally recommended vaccines among young children (by 19-35 mos)*** | | | | |
| Sub-Objective | Salt Lake County 2009 | Utah 2011 | U.S. 2010 | *Healthy People* 2020 Target |
| IID-7.1 4 doses DTaP | 67.9 | 79.5 | 85 | 90 |
| IID-7.2 3 doses Hib | 88.0 | 90.1 | 57 | 90 |
| IID-7.3 3 doses Hep B | 83.9 | 85.5 | 94 | 90 |
| IID-7.4 1 dose MMR | 83.0 | 86.3 | 92 | 90 |
| IID-7.5 3 doses Polio | 87.5 | 91.1 | 94 | 90 |
| IID-7.6 1 dose Varicella | 81.8 | 87.8 | 91 | 90 |

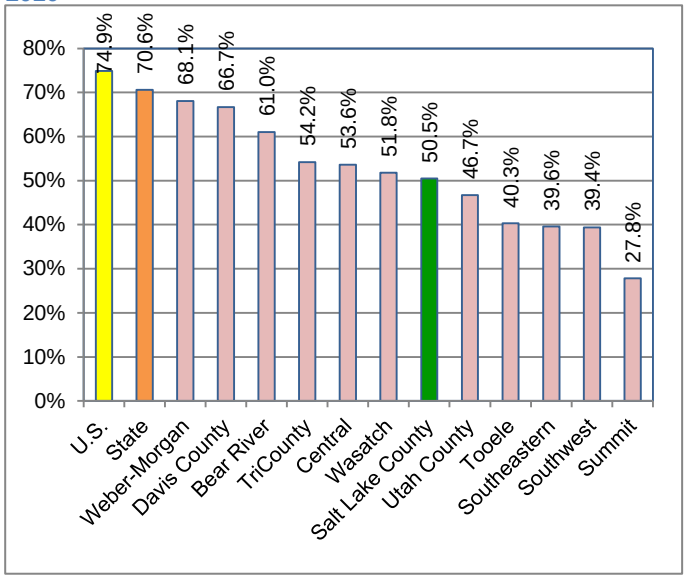
The percentages for each vaccine indicate the number of children who had had the total recommended number of dose of that particular vaccine.

| ***Healthy People 2020* Objective** | | | |
|---|---|---|---|
| ***IID–8: Increase the percentage of children aged 19 to 35 months who receive the recommended doses of DTaP, polio, MMR, Hib, hepatitis B, varicella, and pneumococcal conjugate vaccine (PCV).***[59] | | | |
| Salt Lake County 2009 | Utah 2010 | U.S. 2008 | *Healthy People* 2020 Target |
| 59.8 | 70.6 | 74.9 | 80 |

[59] This number is not the average of the number who are up to date on each antigen. The rate reflects the number of children who are up to date on all vaccines. For example, a child may be compete on five vaccines, but not on Varicella. That child would bring the averages up for the other five antigens, and down for the varicella (100%, 100%, 100%, 100%, 100%, 0%). This child would not be considered "complete".

Salt Lake County falls in the middle of the state for percentage of up-to-date vaccinations for two year olds. None of the local health districts meet the *HP2020* target of 80% (Figure 41).

**Figure 40. 4:3:1:3:3:1 Coverage, by Local Health District, 2010**




## KINDERGARTEN

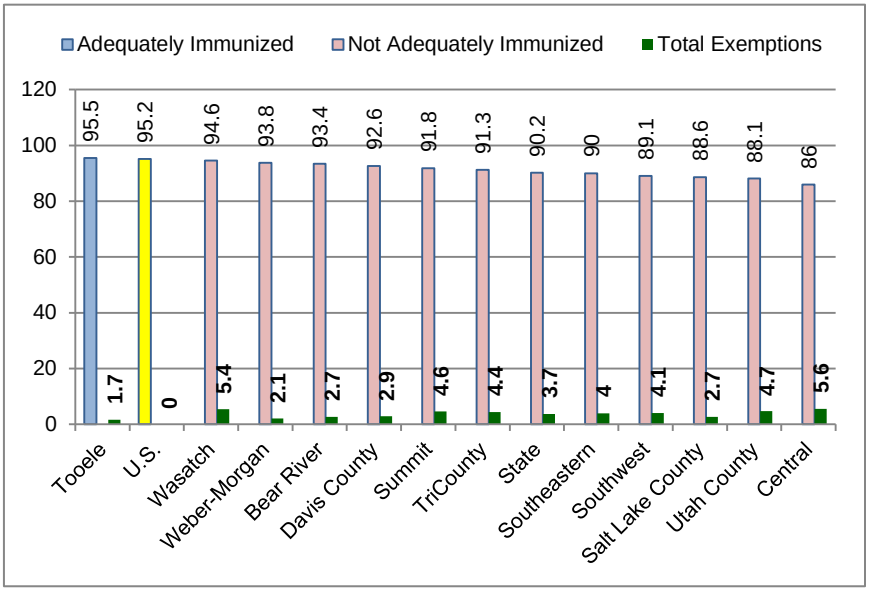
| ***Healthy People 2020* Objective** | | | | |
|---|---|---|---|---|
| ***IID–10: Maintain adequate vaccination coverage levels (percentage) for children in kindergarten*** | | | | |
| Sub-Objective | Salt Lake County 2011* | Utah 2010* | U.S. 2008 | *Healthy People 2020* Target |
| IID-10.1 4 or more doses DTaP | Composite percentage is the average of the school district reports on up-to-date kindergarteners at school entry | 79.5 | 95 | 95 |
| IID-10.2 2 or more dose MMR | | 85.5 | 95 | 95 |
| IID-10.3 3 or more doses polio | | 90.1 | 96 | 95 |
| IID-10.4 3 or more doses (hepB) | | 91.1 | 96 | 95 |
| IID-10.5 2 or more dose varicella | | 87.7 | 94 | 95 |
| Composite | 88.6* | 90.2* | 95.2 | 95 |

Immunization Program. Average percentage in Salt Lake County is determined by the average of 5 school districts.
*Per Rich Lakin, Sr. Research Analyst, UDOH

By kindergarten, SLCo's vaccination rate increased to 88.6%. While this is a remarkable increase, only Central Utah and Utah County Health Districts have lower rates. The county still has a way to go to meet the *HP2020* objective of 95%.

County immunization data is collected by school district. There are five school districts in Salt Lake County. Kindergarten vaccination rates for each school district are Granite, 93.3%; Canyons, 91%; Jordan, 88.4%; Murray, 86%; and Salt Lake, 84.1%. Although the school district reports are submitted per antigen, UDOH reports by totals only.

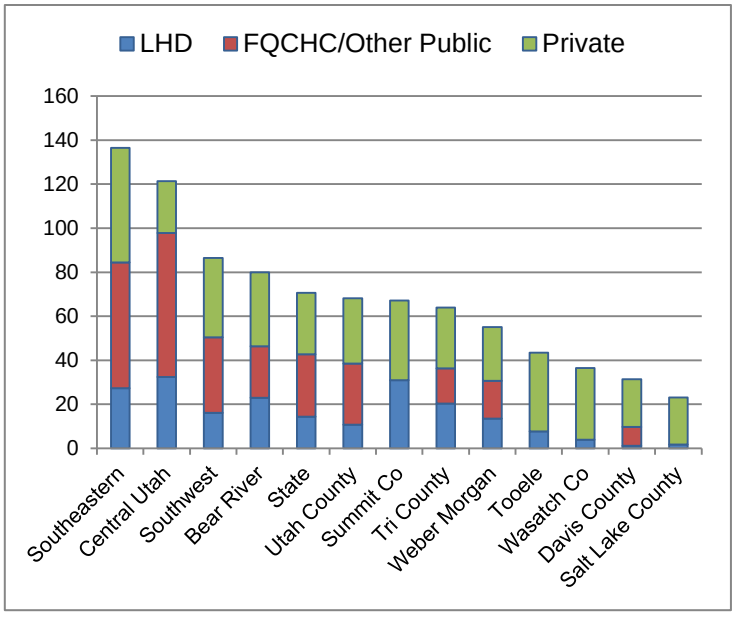
**Figure 41. Children Adequately Immunized and Number of Exemptions at Kindergarten Entry, by LHD, 2011**




Tooele County Health Department has the highest rate of vaccination coverage for children entering kindergarten and is the only health department in Utah that has reached the *HP2020* target of 95% [60]. Salt Lake County ranks 10th of 12 (Figure 42).

Immunization data also examine missed opportunities for vaccinations according to provider type. The SLCoHD ranks very well, apparently taking almost full advantage of opportunities to vaccinate. Private providers make up the largest percentage of missed opportunities in Salt Lake County, but still have fewer missed opportunities when compared with other counties (Figure 43).

**Figure 42. Missed Immunization Opportunities per 100 Patients, by LHD, 2009**



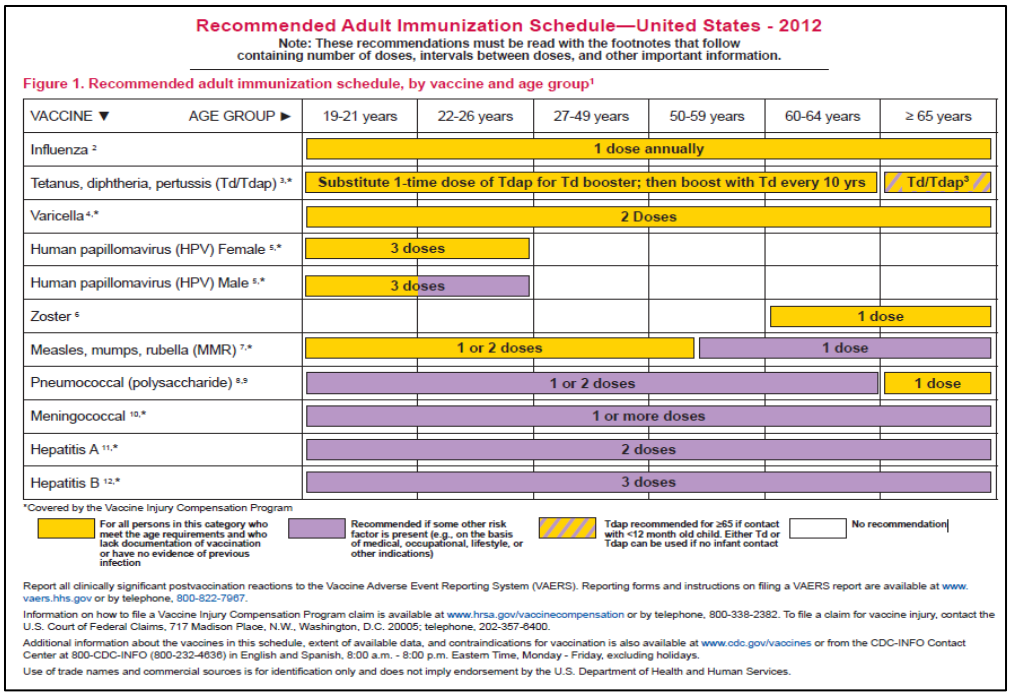

## ADULTS

In the past, recommended adult immunizations were rather limited consisting of influenza, pneumococcal, and tetanus-diphtheria vaccines. During the past few years, others have been recommended and a schedule was developed to guide decisions.

At present, employers and schools may require certain vaccines as a condition of employment; otherwise vaccines are voluntary. While parents are conscientious about vaccinations for their children, most are not aware of recommendations for themselves. Figure 44 provides the currently recommended vaccines and schedule for administration for adults.

[60] Personal communication with Rich Lakin, Sr. Research Analyst, UDOH Immunization Program, 16 July 2012.

### Figure 43. Recommended Adult Immunization Schedule, 2012



**Recommended Adult Immunization Schedule—United States - 2012**

Note: These recommendations must be read with the footnotes that follow containing number of doses, intervals between doses, and other important information.

Figure 1. Recommended adult immunization schedule, by vaccine and age group[1]

| VACCINE ▼ / AGE GROUP ► | 19-21 years | 22-26 years | 27-49 years | 50-59 years | 60-64 years | ≥ 65 years |
|---|---|---|---|---|---|---|
| Influenza [2] | 1 dose annually | | | | | |
| Tetanus, diphtheria, pertussis (Td/Tdap) [3,*] | Substitute 1-time dose of Tdap for Td booster; then boost with Td every 10 yrs | | | | | Td/Tdap[3] |
| Varicella [4,*] | 2 Doses | | | | | |
| Human papillomavirus (HPV) Female [5,*] | 3 doses | | | | | |
| Human papillomavirus (HPV) Male [5,*] | 3 doses | | | | | |
| Zoster [6] | | | | | 1 dose | |
| Measles, mumps, rubella (MMR) [7,*] | 1 or 2 doses | | | 1 dose | | |
| Pneumococcal (polysaccharide) [8,9] | 1 or 2 doses | | | | | 1 dose |
| Meningococcal [10,*] | 1 or more doses | | | | | |
| Hepatitis A [11,*] | 2 doses | | | | | |
| Hepatitis B [12,*] | 3 doses | | | | | |

*Covered by the Vaccine Injury Compensation Program

For all persons in this category who meet the age requirements and who lack documentation of vaccination or have no evidence of previous infection

Recommended if some other risk factor is present (e.g., on the basis of medical, occupational, lifestyle, or other indications)

Tdap recommended for ≥65 if contact with <12 month old child. Either Td or Tdap can be used if no infant contact

No recommendation

Report all clinically significant postvaccination reactions to the Vaccine Adverse Event Reporting System (VAERS). Reporting forms and instructions on filing a VAERS report are available at www.vaers.hhs.gov or by telephone, 800-822-7967.

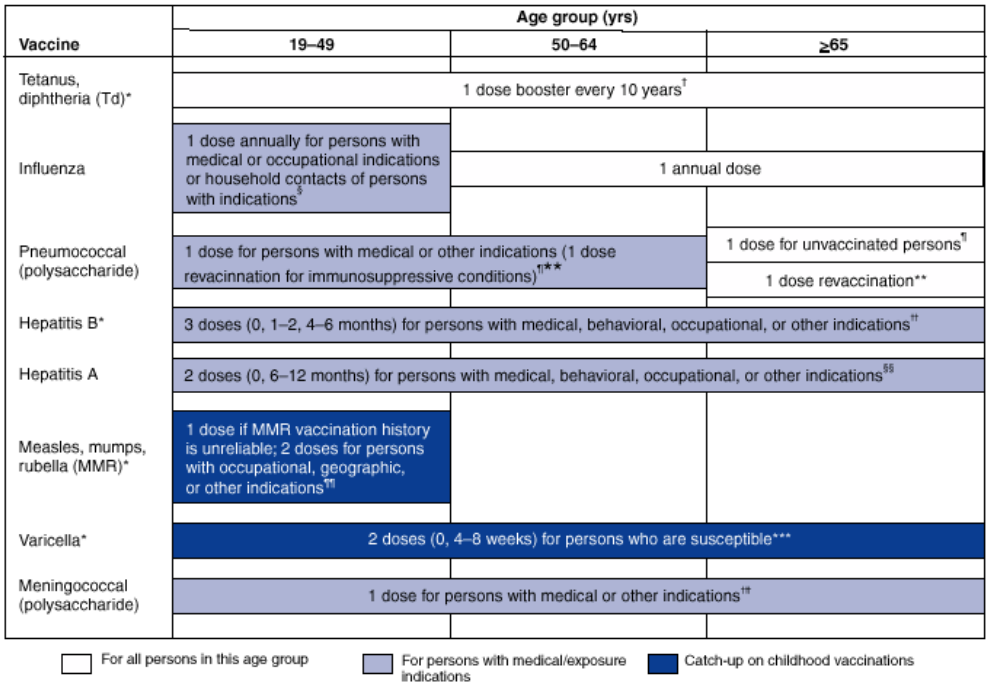
Information on how to file a Vaccine Injury Compensation Program claim is available at www.hrsa.gov/vaccinecompensation or by telephone, 800-338-2382. To file a claim for vaccine injury, contact the U.S. Court of Federal Claims, 717 Madison Place, N.W., Washington, D.C. 20005; telephone, 202-357-8400.

Additional information about the vaccines in this schedule, extent of available data, and contraindications for vaccination is also available at www.cdc.gov/vaccines or from the CDC-INFO Contact Center at 800-CDC-INFO (800-232-4636) in English and Spanish, 8:00 a.m. - 8:00 p.m. Eastern Time, Monday - Friday, excluding holidays.

Use of trade names and commercial sources is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services.

The recommended adult immunization schedule (Figure 44) has changed dramatically from 2002, the first year that an adult immunization schedule was recommended by CDC [61]. At that time all vaccines other than tetanus diphtheria, influenza for those 65 and older, and pneumonia for unvaccinated 65 and older were the only recommended vaccinations unless you were over 19 with a medical, occupational, and/or behavioral indication.

### Figure 44. Recommended Adult Vaccination Schedule 2002-2004



| Vaccine | Age group (yrs) 19–49 | 50–64 | ≥65 |
|---|---|---|---|
| Tetanus, diphtheria (Td)* | 1 dose booster every 10 years† | | |
| Influenza | 1 dose annually for persons with medical or occupational indications or household contacts of persons with indications§ | 1 annual dose | |
| Pneumococcal (polysaccharide) | 1 dose for persons with medical or other indications (1 dose revacinnation for immunosuppressive conditions)¶** | | 1 dose for unvaccinated persons¶<br>1 dose revaccination** |
| Hepatitis B* | 3 doses (0, 1–2, 4–6 months) for persons with medical, behavioral, occupational, or other indications†† | | |
| Hepatitis A | 2 doses (0, 6–12 months) for persons with medical, behavioral, occupational, or other indications§§ | | |
| Measles, mumps, rubella (MMR)* | 1 dose if MMR vaccination history is unreliable; 2 doses for persons with occupational, geographic, or other indications¶¶ | | |
| Varicella* | 2 doses (0, 4–8 weeks) for persons who are susceptible*** | | |
| Meningococcal (polysaccharide) | 1 dose for persons with medical or other indications††† | | |

For all persons in this age group

For persons with medical/exposure indications

Catch-up on childhood vaccinations

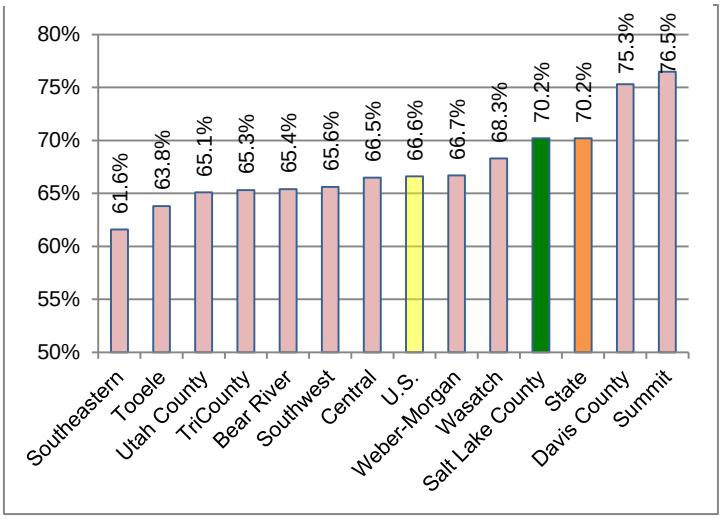
[61] MMWR (October 11, 2002). Notice to Readers: Recommended Adult Immunization Schedule --- United States, 2002—2003. Obtained 24 July 2013 from: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5140a5.htm.

## Influenza Vaccine

| *Healthy People 2020 Objective* | | | |
|---|---|---|---|
| ***IID–12.7: Increase the percentage of adults aged 65 and older who are vaccinated annually against seasonal influenza*** | | | |
| Salt Lake County 2010 | Utah 2010 | U.S. 2010 | *Healthy People 2020* Target |
| 70.2 | 62.6 | 66.6 | 90 |

Older people, infants, and young children are more susceptible to seasonal influenza – the elderly because of chronic disease and weakened immune systems and the young from immature immune systems. Most of the deaths occur in the elderly population when illness with influenza causes greater susceptibility to pneumonia.

**Figure 45. Percent of Adults 65+ Vaccinated Against Seasonal Flu, by LHD, 2010**




Nationally, an average of 114,000 people are hospitalized for influenza at a cost of over $4.6 billion dollars a year in medical costs and $12 billion a year in associated costs like lost wages, etc. This vaccine is completely covered under Medicare B.

Even though Salt Lake County's influenza vaccination rate is above the national rate, and equal to the state rate, the County has a long way to go to reach the *HP2020* target of 90% (Figure 46).

## Pneumococcal Vaccine

| *Healthy People 2020 Objective* | | | |
|---|---|---|---|
| ***Increase the percentage of adults who are vaccinated against pneumococcal disease*** <br> ***IID–13.1: Non-institutionalized adults aged 65 and older*** <br> ***IID–13.2: Non-institutionalized high risk adults 18-64*** <br> ***IID–12.3: Institutionalized adults aged 18 and older in LTC or nursing homes*** | | | |
| Salt Lake County 2011* | Utah 2011 | U.S. 2010 | *Healthy People 2020* Target |
| 73.6* | 70.4* | 70 | 90 |

*Data are available only for influenza vaccination of 65+ adults by health district

Influenza and pneumonia are grouped together as the 9th leading cause of death in Utah because the symptoms are often indistinguishable. These are preventable diseases and causes of death for the elderly and infants under one year of age. The hospitalization rate (per 10,000) for infants was 49.4 and 117.2 for those 65+. The rate for all other ages was only 12.7.

The vaccine is recommended for all adults ages 65 and older, people with chronic illnesses (e.g. diabetes, heart, lung or kidney disease), and people with compromised immune systems

including HIV. Boosters are recommended for people aged 65+ who received the vaccine before age 65, people who received a transplant, people with chronic kidney disease, and people with compromised immune systems.

As with influenza vaccine, Salt Lake County is doing better than the state and nation (Figure 46). Four of Utah's LHDs are doing better than Salt Lake County, but none are close to the *HP2020* target (Figure 47).

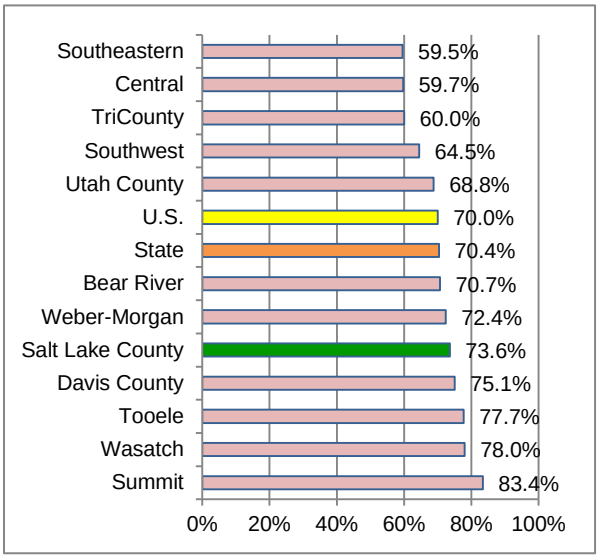



**Figure 46. Percent of Adults 65+ Vaccinated Against Pneumococcal Disease, by LHD, 2011**

### Herpes Zoster (Shingles) Vaccine

Shingles (herpes zoster) is a painful, blistering skin rash caused by the varicella-zoster virus, the virus that causes chickenpox.

| ***Healthy People 2020* Objective** | | | |
|---|---|---|---|
| ***IID–14: Increase the percentage of adults who are vaccinated against zoster*** | | | |
| Salt Lake County | Utah | U.S. 2008 | *Healthy People 2020* Target |
| No data | No data | 7 | 30 |

After the chicken pox disease resolves, the virus remains inactive in certain nerves in the body. Years later, the virus may become active causing a disease called "shingles." While the exact reason for this reactivation of the virus is unclear, there are some common characteristics among patients: older than age 60, chicken pox before age one, and immune system weakened by disease or medications. Shingles does not occur if there has never been a chicken pox infection. One in three people in the U.S. who have had chicken pox may develop the disease.[62]

Shingles can be quite debilitating. In addition to the initial symptoms of tingling and/or burning, painful rash, and then blisters, other symptoms may include abdominal pain, fever and chills, general ill feeling, genital sores, headache, joint pain, swollen glands, muscle weakness, difficulty in moving facial muscles, drooping eyelids, hearing loss, loss of eye motion, taste problems, and vision problems.[63]

While the disease subsides within two to three weeks, there can be temporary or permanent weakness or paralysis of the nerves that cause movement in the area affected. The pain may persist. More severe outcomes include blindness, deafness, encephalitis, and sepsis.

## Special Projects in Immunization

The SLCoHD has three special project vaccines in progress:

- "Americares US Projects". The SLCoHD received 2000 doses of TDaP in 2011 for use by Women, Infants, and Children Program (WIC) clients and their family members who have

[62] CDC, Shingles (Herpes Zoster) Home Page. Obtained 12 Oct 2012 from: http://www.cdc.gov/shingles/index.html
[63] Ibid.

no insurance. The program has been extended to include women in the "Be Wise Program" – uninsured clients who are visited by the SLCoHD Public Health Nurses.

- Another special project vaccine program is provision of Twinrix® (Hepatitis A and B combination vaccine by GlaxoSmithCline) for clients who use the City Clinic's STI program. These clients are considered to be at high risk for contracting and transmitting hepatitis. This vaccine comes from UDOH.
- Free Hepatitis B vaccine provided from the UDOH through the Infectious Disease Bureau as part of Utah's Perinatal Hepatitis B program is available for pregnant and postpartum women, their partners, and children, when the woman is diagnosed with Hepatitis B.

In the past, the SLCoHD has participated with UDOH to make Hepatitis B and Twinrix® vaccines available at all of the Family Health Services clinics for uninsured adults. Four years ago SLCoHD participated in a special project providing Gardasil® HPV vaccine at the South Main Clinic to uninsured women.

| ***Healthy People 2020* Objective** | | | |
|---|---|---|---|
| ***OH–7: Increase the proportion (percentage) of children, adolescents, and adults who used the oral health care system in the past 12 months*** | | | |
| Salt Lake County 2010 | Utah 2010 | U.S. 2007 | *Healthy People 2020* Target |
| 71.3 | 72.7 | 44.5 | 49 |

## Oral Health

Oral diseases ranging from dental caries (cavities) to oral cancers cause pain and disability for millions of Americans. Five times more common than asthma and seven times more common than hay fever, tooth decay is the single most common chronic disease of U.S. children.[64] The impact of oral disease does not stop at the mouth and teeth. Increasing evidence has linked oral health, particularly periodontal (gum) disease, to several chronic diseases including diabetes, heart disease, and stroke. In pregnant women, poor oral health has also been associated with premature births and low birth weight.[65,66] These conditions may be prevented in part with regular visits to the dentist. In 2007, only 44.5% (age adjusted) of people age 2 and older had a dental visit in the past 12 months – a rate that has remained essentially unchanged over the past decade.

Forty-five percent of school-aged children have decayed teeth; 94% of adults have had or do have dental caries.[67] Twenty-two percent of children in Utah are not covered by dental insurance which resulted in 13% of children not getting dental care when they needed it. However, one quarter of children of ethnic and racial minorities were unable to obtain needed care.

[64] UDOH, DFH&P, OHP, DRP (2012). The Oral Health Status of Utah's Children, Results from the 2010 Oral Health Survey. January 12, 2012. Obtained from: http://health.utah.gov/oralhealth/pdf/oralHealthReport_2011.pdf
[65] Bensley L, VanEenwyk J, Ossiander EM. Associations of self-reported periodontal disease with metabolic syndrome and number of self-reported chronic conditions. Prev. Chronic Dis. 2011;8(3):A50. Available from http://www.cdc.gov/pcd/issues/2011/may/10_0087.htm
[66] *J Am Dent Assoc*. 2006;137(suppl.2). Available from http://jada.ada.org/content/137/suppl_2.toc
[67] IBIS-PH: http://ibis.health.utah.gov/indicator/view/UntDenDecChi6_8.NoChart.html

Although the *HP2020* objective includes children and adolescents as well as adults, only the Salt Lake County population of adults has met the *HP2020* objective.

In the attempt to reduce dental carries, Salt Lake County began fluoridating potable water, which was not naturally fluoridated, in October 2003. To date there have been no in-depth studies that show the impact of fluoridation on prevention of dental carries. The 2010 Oral Health Status of Utah's Children Survey found that children who met the criteria of long-term optimal levels of fluoride either from fluoridated water or fluoride supplements had substantially fewer decayed, missing, or filled teeth compared to children without optimal fluoride levels.

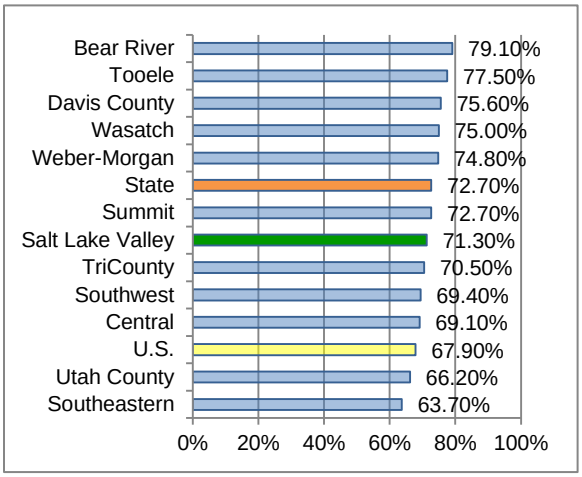



**Figure 47. Percent of Adults who Reported a Dental Visit in the Past Year, by LHD, 2010**

**Table 10. Oral Health Problems in Children 2000, 2005, 2010**

| Health Problem | 2000 | 2005 | 2010 |
|---|---|---|---|
| Prevalence of Caries | 58.4% | 55.3% | 50.5% |
| Untreated Decay | 22.1% | 21.4% | 16.7% |
| Sealant Rate | 49.9% | 45.1% | 36.1% |

Comparing data from the current and previous (2000, 2005) state Oral Health Status Surveys, the oral health of Utah's children has improved.

While there are no data for Small Areas or counties available in IBIS-PH regarding dental health and only limited data for Utah as a whole, Utah's status on *Healthy People 2020* objectives has been assessed through the Oral Health Survey. The findings are:

| ***HP2020* Objective** | Utah 2010 | HP2010 Target | *HP2020* Target |
|---|---|---|---|
| ***OH–1.2: Reduce the percentage of children aged 6-9 years with dental caries in their primary and permanent teeth*** | 51.7 | 42 Unmet | 49.0 Unmet |
| ***OH–2.2: Reduce the percentage of children aged 6-9 years with untreated dental decay in their primary and permanent teeth*** | 17.0 | 21 Met | 25.9 Met |
| ***OH–12.2: Increase the percentage of children aged 6 to 9 years who have received dental sealants on one or more of their primary and permanent teeth*** | 26.1 | 50 Unmet | 28.1 Unmet |
| ***OH–7*: Increase the percentage of children aged 2 and older that had a dental visit in the past 12 months*** | 57.8 | NA | 49.0 Met* |

*Although not reported since sample of children was 6-9 years of age only and *HP2020* objective includes all children. However, for the population of 6-9 year olds, the 57.8% who had visited a dentist within the previous 6months meets the target for that age group

Salt Lake County has a fair number of free and low cost clinics, and a number of other providers that accept Medicaid, CHIP, Primary Care Network, and Uninsured individuals such as:

- Maliheh (Free Clinic)
- Stephen D Ratcliffe & Central City Community Health Centers
- Salt Lake Community College Dental Hygiene Program
- Utah Partners for Health (urgent care for elementary students)
- Utah Department of Health's Dental Care Clinic
- U of U Dental Clinic at Greenwood Health Center[68]

In addition, the University of Utah and the Rosemont College are adding schools of dentistry that may provide services to low income populations as clinical experience for students. On May 1, 2012, the 4th Street Clinic received a grant of almost $3 million which will allow expansion of dental services.

## Mental Health

The burden of mental illness in the United States is among the highest of all diseases, and mental disorders are among the most common causes of disability. Recent figures suggest that in 2004 approximately 1 in 4 adults in the United States had a mental health disorder in the past year[69]—most commonly anxiety or depression—and 1 in 17 had a serious mental illness. Mental health disorders also affect children and adolescents at an increasingly alarming rate. In 2010, 1 in 5 children in the United States had a mental health disorder, most commonly attention deficit hyperactivity disorder (ADHD). It is not unusual for either adults or children to have more than one mental health disorder.

Mental health is essential to a person's well-being, healthy family and interpersonal relationships, and the ability to live a full and productive life. People including children and adolescents with untreated mental health disorders are at high risk for many unhealthy and unsafe behaviors including alcohol or drug abuse, violent or self-destructive behavior. Suicide was the 11th leading cause of death in the United States for all age groups and the second leading cause of death among people age 25 to 34.

Mental health disorders also have a serious impact on physical health and are associated with the prevalence, progression, and outcome of some of today's most pressing chronic diseases including diabetes, heart disease, and cancer. Mental health disorders can have harmful and long-lasting effects including high psychosocial and economic costs not only for people living with the disorder, but also for their families, schools, workplaces, and communities.[70]

On two measures of mental health (major depressive episodes and suicides) for adults, Salt Lake County does not have favorable rates when compared to either the state or *HP2020* target. Data for Small Areas are not available.

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[68] Utah Department of Health. Dental Resource Guide, State of Utah. Obtained August 15, 2012 from: http://health.utah.gov/oralhealth/pdf/statewideOHP.pdf

[69] Reeves WC, Strine TW, Pratt LA, et al. Mental illness surveillance among adults in the United States. *MMWR*. 2011;60(3):1–32. Atlanta, GA: Centers for Disease Control and Prevention. Available from http://www.cdc.gov/mmwr/preview/mmwrhtml/su6003a1.htm?s_cid=su6003a1_w

[70] *Healthy People 2020*. Leading Health Indicators. Mental Health. Available at: http://healthypeople.gov/2020/LHI/mentalHealth.aspx

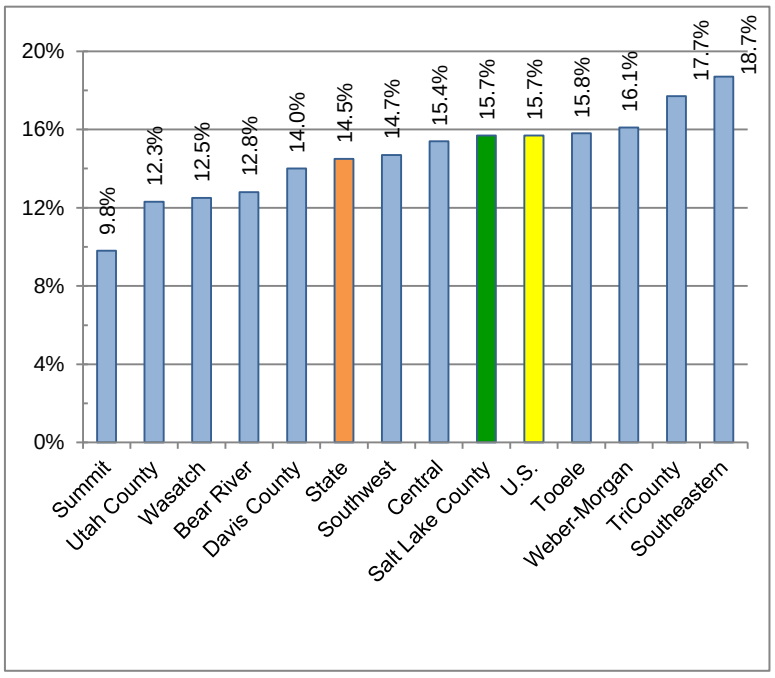
| ***Healthy People 2020* Objective** | | | |
|---|---|---|---|
| ***MHMD–4.2: Reduce the percentage of adults aged 18 years and older who experience major depressive episodes (MDE)*** | | | |
| Salt Lake County 2006 | Utah 2006 | US 2008 | *Healthy People 2020* Target |
| 11.06 | 9.95 | 6.8 | 6.1 |

*Data source: http://www.samhsa.gov/data/substate2k8/statefiles/UT.htm*

| ***Healthy People 2020* Objective** | | | |
|---|---|---|---|
| ***MHMD–1: Reduce the suicide rate for adults to 10.2 suicides per 100,000.*** | | | |
| Salt Lake County Rate 2006-2009 | Utah Rate 2006-2009 | US Rate 2007 | *Healthy People 2020* Target |
| 16.6 | 15.8 | 11.3 | 10.2 |

There are no *HP2020* mental health objectives directly impacted by public health. Public health can assist mental health organizations with educational/informational endeavors and advocating for services.

**Figure 48. People Who Report Seven or More Poor Mental Health Days, by LHD, 2009-2010**




Health-related quality of life is a multi-dimensional concept that includes domains related to physical, mental, emotional and social functioning. It goes beyond direct measures of population health, life expectancy and causes of death, and focuses on the impact of health status on quality of life. An emerging concept of health-related quality of life is well-being, which assesses the positive aspects of a person's life, such as positive emotions and life satisfaction.

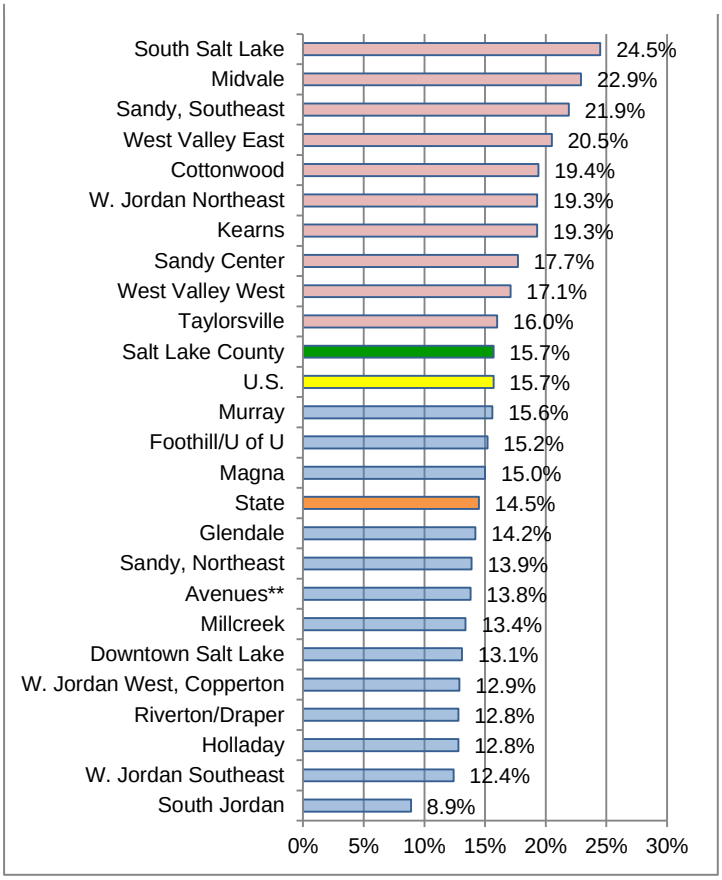
Self-report of health status is considered to be a predictor of certain health outcomes including mortality, morbidity, and functional health status. Healthy People 2020 staff is working on this measure, but currently there is no objective. Figures 48 and 49 examine reported poor mental health days by health district and small areas.

In the United States and Salt Lake County, 15.7% of adults reported having seven or more days of poor mental health in the past 30 days; in Utah this number was 14.5%.[71] SLCo residents

[71] IBIS-PH. http://IBIS-PH.health.utah.gov/indicator/view/HlthStatMent.Ut_US.html

report more poor mental health days than the state. Examining Small Area data indicates that 10 out of 23 SAs in SLCo report a higher percent of poor mental health days than does the nation. High rates were reported in South Salt Lake City (24.5%) and Midvale (22.9%), where other areas like South Jordan (8.9%) and West Jordan (12.4%) had much lower rates.[72]

**Figure 49. People Who Report Seven or More Poor Mental Health Days, by Small Area, 2009-2010**

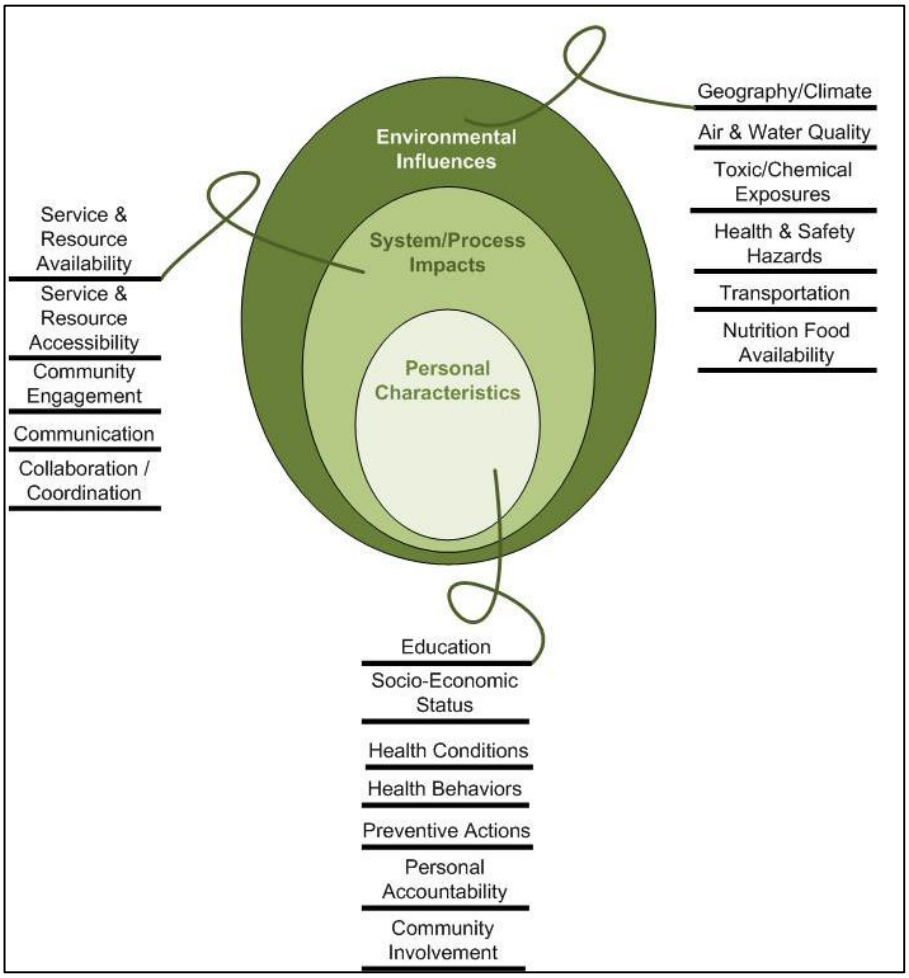



The public treatment capacity for mental health and substance abuse is not adequate to meet the need. It is estimated that in Salt Lake County there are 35,237 adults and 12,548 children that need treatment. In 2010 only 10,927 adults and 4,354 children were able to be served.[73]

[72] IBIS-PH. http://IBIS-PH.health.utah.gov/indicator/view/HlthStatMent.SA.html
[73] Dept. of Human Services, Division of Substance Abuse and Mental Health. December 2010. *Facing Recovery Together,* Obtained 26 Sept 2012 from http://www.dsamh.utah.gov/docs/2010_annual_report_for_web.pdf

## Determinants of Health

**Figure 50. Factors Influencing the Community's Health**




Change to health-promoting behaviors in populations cannot be accomplished through individual knowledge and behavior change alone. Literature shows that the causes of ill health that affect populations have social and environmental elements that must be changed as well.[74] This section discusses the individual, social, and environmental determinants of health that must be addressed. This section of the Community Health Assessment follows closely the model entitled "Factors Influencing the Community's Health" which developed from the focus groups and was further defined by other data sources.

### Individual Determinants of Health

People can choose to participate in certain health promotion programs or in certain behaviors that are not conducive to good health. While behaviors are not health conditions on their own, they can lead to major health problems in the future. Health promotion activities may not prevent diseases on their own, but they can maximize a person's ability to manage disease.

#### Perceived Quality of Health

Self-assessed health status is a measure of how an individual perceives his or her health—rating it as excellent, very good, good, fair, or poor. Self-assessed health status has been

[74] (2003) Wilkinson, R.G., marmot, M.G.(eds.). World Health Organization Regional Office for Europe. *Social Determinants of Health: The Solid Facts, (2nd ed.)*. Denmark: World Health Organization.

validated as a useful indicator of health for a variety of populations and allows for broad comparisons across different conditions and populations.[75] In 2009, 15.1% of individuals in the United States reported their health to be fair or poor[76] compared with 14.5% of Utah's population and 13.5% of Salt Lake County's population. The number of individuals reporting fair or poor health days increases with age.

## Preventive Actions

Preventive actions can identify risk factors for disease or provide a resource for early detection of disease. These actions include illness-specific screening procedures, cholesterol screening, and routine check-ups.

### Illness-Specific Screening Procedures

SLCo has low rates for screening procedures that identify specific conditions early: mammograms for breast cancer screening, colonoscopies for colorectal cancer screening, and pap tests for cervical cancer screening. Two other health indicators are also low below *HP2020* targets.

### Cholesterol Screening

In Salt Lake County, 70% of the population is screened for cholesterol. This rate is 1% higher than the state, but is more than 12% below the *HP2020* target.

### Routine Medical Checkups

Six health districts have more adults who have seen a medical provider for a check-up in the last 12 months than does Salt Lake County (60.1%). This places SLCo only slightly above the Utah average (58.9%) and significantly below the U.S. average (66.9%). No *HP2020* objective currently exists for routine medical checkups.

## Unhealthy Behaviors

In addition to social and environmental factors impacting health conditions, health is influenced by personal behaviors such as binge drinking, smoking, unhealthy diet, or failure to exercise. Of the seven personal behaviors identified in the *County Health Roadmaps Project*, Salt Lake County compares favorably on three measures: Adult Obesity (SLCo 25%, national target 25%, state 25%); Physical Inactivity (18%, 21%, 18%, respectively); and Motor Vehicle Crash Death rate per 100,000 (11, 12, 13). The County also compares favorably to the national target, but is behind the State, related to Adult Smoking (12%, 14%, 10%). The County lags behind both the State and national targets related to excessive (or binge) drinking, STD/STIs, and teen birth rates.

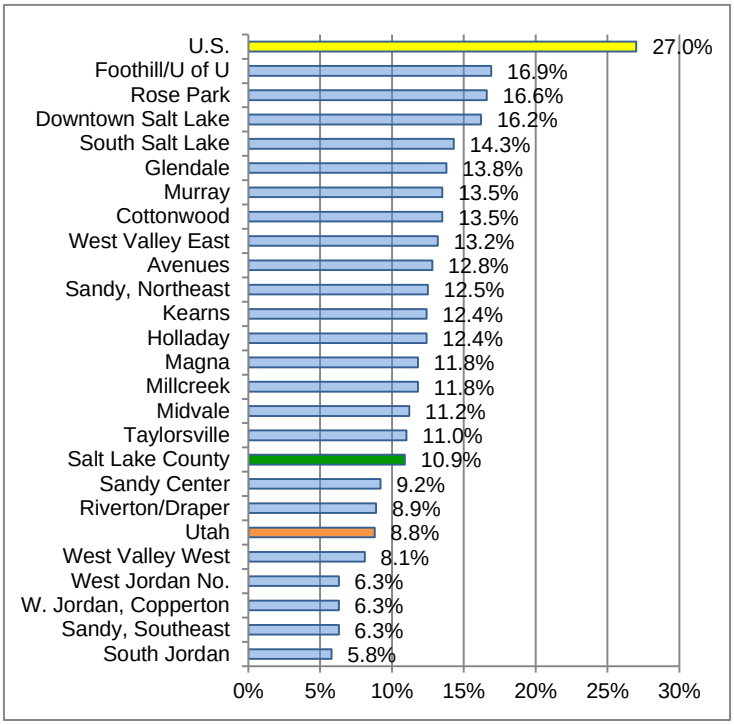
### Binge Drinking

Binge drinking can lead to negative health consequences and is an indicator of potential alcohol abuse. Nationally, the problem is focused on young adults. Alcohol is associated with injuries (especially automobile) and violence (especially among young males). Among childbearing women, binge drinking can lead to fetal alcohol syndrome. Prenatal alcohol exposure, during the first 6-8 weeks of pregnancy when a woman may not know she is pregnant can lead to birth defects.

[75] Idler E, Benyamini Y (1997). Self-rated health and mortality: A review of 28 studies. *J Health Soc. Behav. 38*(1):21-37
[76] *Healthy People 2020*. General Health Statue. Self-assessed health status. Obtained 15 Aug 2020 from: http://www.healthypeople.gov/2020/about/GenHealthAbout.aspx#one

| *Healthy People 2020* Objective | | | |
|---|---|---|---|
| ***SA–14.3: Reduce the percentage of persons binge drinking during the past 30 days*** | | | |
| Salt Lake County 2008-2010 | Utah 2010 | US 2008 | *Healthy People 2020* Target |
| 10.9 | 8.2 | 27 | 24.3 |

**Figure 51. Percentage of Utah Adults 18+ Who Have Engaged in Binge Drinking During the Past 30 Days, by Small Area, 2008**




The percentage of adults who reported binge drinking has fluctuated tremendously from a high of 12% in 1989 to a low of 7.7% in 1997.

Figure 52 shows that all Small Areas of Salt Lake County are currently well below the *HP2020* objective. Even the Small Area with the highest binge drinking rate (Foothill/U of U) does not exceed the national target rate.

## Smoking

It is general knowledge that smoking is the major leading cause of disease and death in the U.S. claiming more than 1,150 lives per year. It causes or contributes to numerous diseases and exacerbates almost every chronic condition.

Table __. Effects of Smoking on Health

| Increases the Risk for: | Contributes To: | Causes: |
|---|---|---|
| • Heart disease,<br>• Respiratory disease<br>• Cancer of the Lungs, Larynx, Esophagus, Mouth, Bladder | • Heart disease<br>• Respiratory disease<br>• Cancer of the Cervix, Pancreas, Kidneys | • Premature birth<br>• Low birth weight<br>• Stillbirth<br>• Infant death |

Data is available for Salt Lake County and Small Areas. However, data is available only at the state level for adolescent smoking.

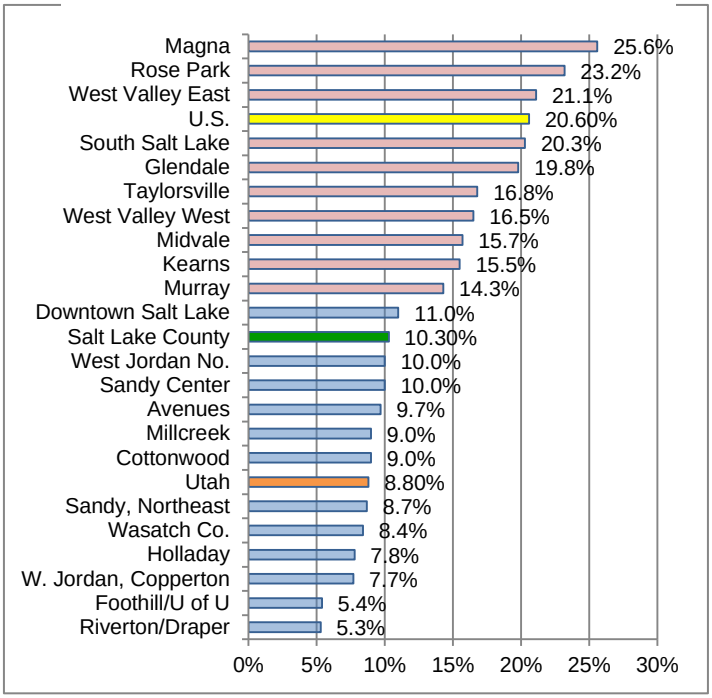
| *Healthy People 2020* Objective | | | |
|---|---|---|---|
| ***TU–1.1: Reduce % of aged 18 years and older using tobacco who were smokers in 2008*** | | | |
| Salt Lake County 2008-2010 | Utah 2010 | US 2008 | *Healthy People 2020* Targets |
| 10.3 | 8.8 | 20.6 | 12 |

Utah, as a whole, and Salt Lake County compare favorably with the *HP2020* target for adult smoking (Figure 53). However, 10 of the 22 Small Areas in the county have smoking rates higher than the target.

Children and adolescents who smoke are at a greater risk than adults for development of chronic disease and cancers due to additional length of exposure to toxins. In the future, one-third of these adolescents will die of tobacco-related disease.

In addition, adolescent smokers are at risk for impaired growth and weaker immune systems. Compared with non-smoking peers, they are less physically fit and less committed to education. It is harder for those who begin smoking as adolescents to quit smoking than for those who begin as adults. Utah data is collected for high school students' grades 9-12. Rates have decreased consistently since 1995; Utah consistently ranks lower than the U.S.

**Figure 52. Percent of Utah Adults 18+ Who Smoke, by Small Area, 2008**




| ***Healthy People 2020* Objective** | | | |
|---|---|---|---|
| ***TU–2.2: Reduce percentage of adolescents aged 17 and under using tobacco who were smokers in 2009*** | | | |
| Salt Lake County 2005-2011 | Utah 2005-2011 | US 2009 | *Healthy People 2020* Targets |
| Not available | 7.4 | 19.5 | 16 |

The highest rate since data collection began in 1991 occurred in 1993 for boys (19%) and 1995 for girls (16.9%). Since 1991, boys in Utah have consistently had higher smoking rates than girls except during the 1999-2003 time period. Rates for girls have dropped at a consistent rate since 1995 while the rate for boys spiked between 2005 and 2009 but decreased again in 2011. As a state, Utah with 7.4% is doing much better than the HP2020 Target of 16%.

## Poor Nutrition

Good nutrition is an important is important for maintaining health. Good nutrition depends upon a family or individual's ability to afford healthy foods and access healthy foods as well as making the lifestyle choice to do so and maintain a healthy weight[77] and maximize response to health stressors. As stated in the obesity section, in addition to affordability, people's choices may be limited to an array of poor options. If resources are unavailable, people are limited in their ability to make healthy choices.

[77] CDC. (2011, July 19). *Overweight and Obesity*. Retrieved August 2, 2011, from CDC: http://www.cdc.gov/obesity/data/adult.html

Utah has one of the highest rates of food insecurity in the nation. As many as one in five Utah households with children experienced food hardship in 2010, meaning that at some point the family did not have enough money to buy sufficient food. Families are not only visiting pantries to avert a temporary food crisis – instead pantries are now a staple in many households' strategy for feeding themselves, and are figured into their monthly food budgets [78]. In 2007 the entire Community Action Program food bank program served 100 clients/day. In 2013, the busiest pantry serves that number. Between 2007 and 2009 demand has increased 269% [77].

Though research on food environment is still in its early stages, there is strong evidence that access to fast food restaurants and residing in a food desert correlate with a high prevalence of overweight, obesity, and premature death.[79,80,81] Supermarkets traditionally provide healthier options than convenience stores or smaller grocery stores,[82] but supermarkets may not be located within reasonable travelling distance. Food Deserts are discussed in a future section.

### Overeating

Obesity and Overweight were discussed in an earlier section.

### Low Vegetable and Fruit Consumption

Fruits and vegetables contain essential nutrients that help prevent many diseases. Not having access to fresh fruits and vegetables constitutes an important barrier to consumption and is related to premature mortality.[83] Fruit and vegetable intake data are collected in two very different ways by Healthy People and IBIS-PH. This difference results in two possible scenarios for extrapolating 2020 outcomes for Utah and SLCo. The first is to set a 2020 target to match the increases in consumption per person reflected in the *HP2020* targets (80% for fruit and 35.7% for vegetables) or to seek a 10% increase which reflects the usual target for most objectives in *HP2020.*

Current dietary recommendations have discontinued using the term "servings" as a measure due to confusion about portion size. Progress on *HP2020* targets is difficult to determine with different data types.

If the first scenario is chosen:

| ***Healthy People 2020* Objective** | | | | |
|---|---|---|---|---|
| ***NWS–14*** | ***Increase the contribution of fruits to the diet of the population aged 2 and older*** | | | |
| ***NWS–15.1*** | ***Percentage of Adults who report having 3 or more vegetable serving/day*** | | | |
| SLCo 2008-2010 | | Utah 2010 | US 2001-2004 | *HP2020* Target |
| ***NWS–14*** | NA | No data | 0.5C /1000 Cal | 0.9C /1000 Cal* |
| ***NWS–15.1*** | NA | No data | 0.8C /1000 Cal | 1.1C /1000 Cal** |

[78] Community Action Program. 2013 Annual Report. Retrieved 29 June 2013 from http://www.slcap.org/SLCAP_Annual_Report.pdf.
[79] Ahern M, Brown C, Dukas S. A national study of the association between food environments and county-level health outcomes. *The Journal of Rural Health*. 2011;27:367-379.
[80] Taggart K. Fast foot joints bad for the neighborhood. *Medical Post*. 2005;41.21:23.
[81] Schafft KA, Jensen EB, Hinrichs CC. Food deserts and overweight schoolchildren: evidence from Pennsylvania. *Rural Sociology*. 2009;74:153-277.
[82] Wrigley N, Warm D, Margetts B, Whelan A. Assessing the impact of improved retail access on diet in a 'food desert': a preliminary report. *Urban Studies*. 2002;39.11:2061-2082
[83] Brownson RC, Haire-Joshu D, Luke DA. Shaping the context of health: a review of environmental and policy approaches in the prevention of chronic diseases. *Annual Rev Public Health* 2006;27:341-70.

| *(Inferred) Healthy People 2020* **Objective** | | | | |
|---|---|---|---|---|
| ***NWS–14*** | ***Increase the contribution of fruits to the diet of the population aged 2 and older*** | | | |
| ***NWS–15.1*** | ***Percentage of Adults who report having 3 or more vegetable serving/day*** | | | |
| SLCo 2008-2010 | | Utah 2010 | US 2001-2004 | *HP2020* Target |
| ***NWS–14*** | 32.4 | 31.5 | 32.2 | 58 (80% increase) |
| ***NWS–15.1*** | 24.3 | 24.6 | 26 | 36 (37.5% increase) |
| * 80% increase ** 37.5% increase | | | | |

Under scenario one, none of the Utah Small Areas meet the *HP2020* targets. The percentage of residents reporting at least two servings of fruit ranged between 40% and 47.6% for the top four Small Areas. The four highest fruit consuming Small Areas were Sandy, SE; Foothill/U of U; West Jordan, North; and Cottonwood. The scenario *HP2020* Target is 58%. The four lowest scoring Small Areas were: Glendale, Magna, West Jordan/Copperton, and West Valley East. The range for these four was 24.4 to 26.8 which is about half of the highest percent areas.

If the second scenario is chosen*:*

| ***Healthy People 2020* Objective** | | | | |
|---|---|---|---|---|
| ***NWS–14*** | ***Increase the contribution of fruits to the diet of the population aged 2 and older*** | | | |
| ***NWS–15.1*** | ***Percentage of Adults who report having 3 or more vegetable serving/day*** | | | |
| SLCo 2008-2010 | | Utah 2000-2009 | US 2000-2009 | *Possible targets* |
| ***NWS–14*** | 32.4 | 31.6 | 32.9 | 36.2 |
| ***NWS–15.1*** | 30.6 | 26 | 26.5 | 29.2 |

*Healthy People 2020* tends to look at a 10% improvement above baseline (U.S. rate) for the 2020 target. Under scenario two, the assumption is that a 10% improvement would be the target UDOH would set if data continued to be collected by IBIS-PH in the same way. The evaluation is reflected in Figures 49 and 50.

Salt Lake County as a whole and nine of its Small Areas meet the potential target for fruit consumption of 36.2% for the year 2020 (Figure 53). The lowest reporting Small Area (Glendale) reports half as many residents eat 2 or more servings of fruit than the highest reporting Small Area (Sandy SE).

Under scenario two, Salt Lake County as a whole has met the 2020 target of 29.2% for vegetable consumption reporting that they have 3 servings of vegetables/day (Figure 54). Salt Lake County residents eat more vegetables than does the state or U.S. However, all but 3 Small Areas are below the 2020 target. Glendale, again the lowest reporting Small Area consumes half as many vegetable servings as the highest, Foothill/U of U.

**Figure 54. Percentage of Adults Who Reported having 2 or More Servings of Fruit per Day, by Small Areas, 2000-2009**

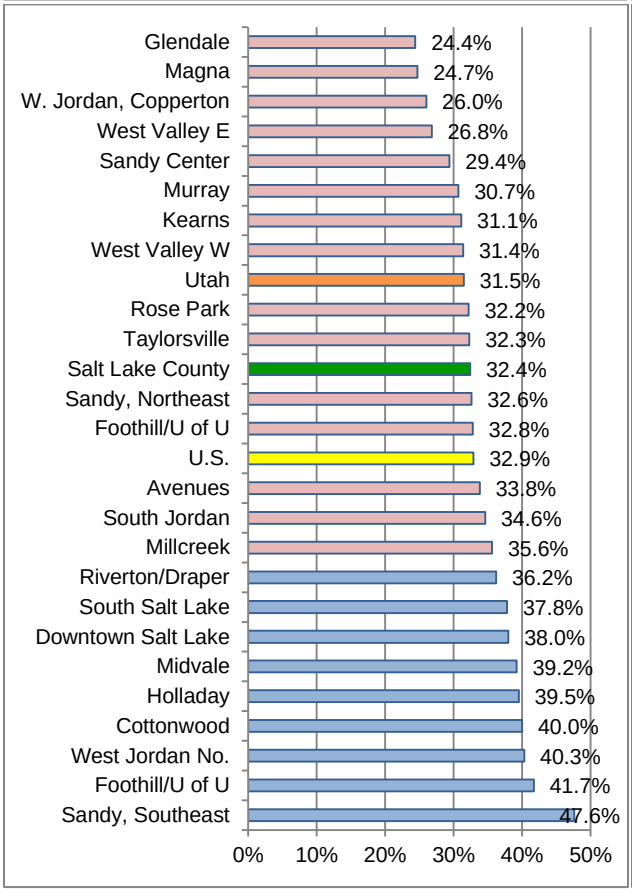
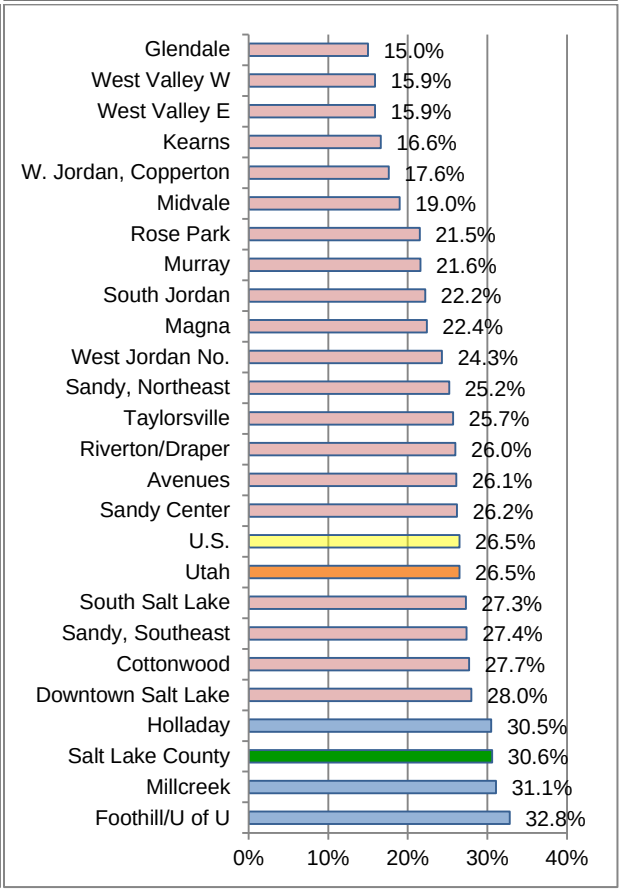



**Figure 53. Percentage of Adults Who Reported having 3 or More Servings of Vegetables per Day, by Small Areas, 2000-2009**




## Limited Physical Activity

Physical activity can improve the lives of people of all ages, whether or not they suffer from chronic illness or limited physical abilities. Physical activity can reduce the risk of a number of conditions:

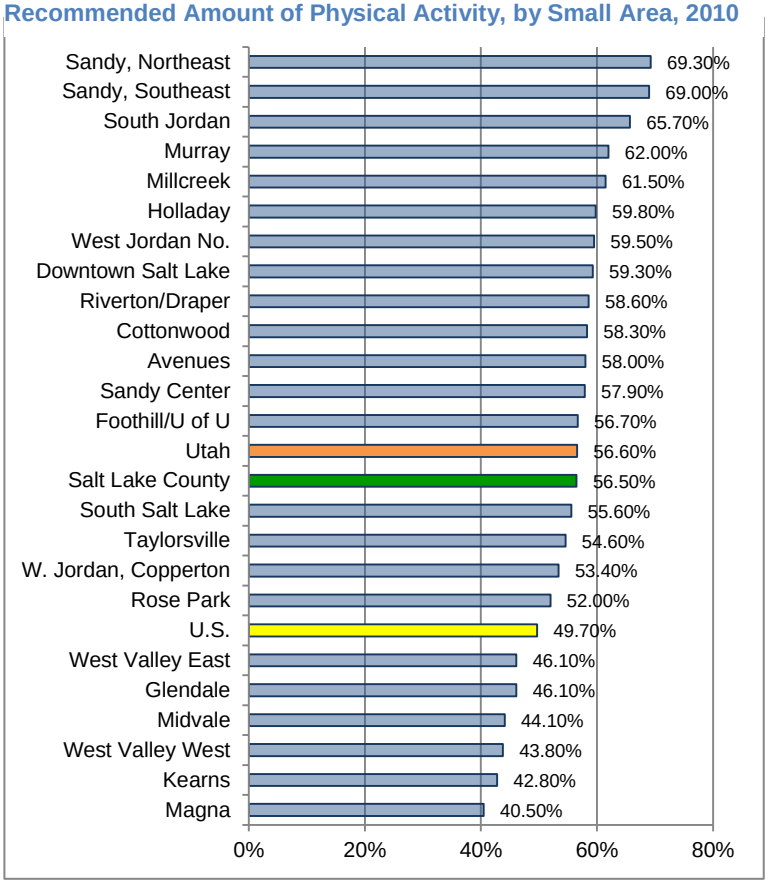
| Among adults: | Among children and adolescents: |
|---|---|
| • Early death | • Improve bone health |
| • Coronary heart disease | • Improve cardio-respiratory health |
| • Stroke | • Improve muscular fitness |
| • High blood pressure | • Decrease levels of body fat |
| • Type 2 diabetes | • Reduce symptoms of depression |
| • Breast and colon cancer | |
| • Falls | |
| • Depression | |

| *Healthy People 2020* Objective | | | |
|---|---|---|---|
| ***PA–1**: Reduce the percentage of adults who engage in no leisure time physical activity* | | | |
| Salt Lake County 2008-2010 | Utah 2010 | US 2001-2004 | *Healthy People 2020* Target |
| 43.5* | 43.4* | 36.2** | 32.6** |

*Derived from IBIS-PH data set (18 April 2012) (100% minus percent who engage in leisure time physical activity).
**Healthy People 2020 (2001-4 baseline) is percent who do not engage in leisure time activity.

There are no comparative data available in IBIS-PH that match *HP2020* data either for adults or adolescents. The data presented in Figures 51 and 52 represent the corollary to the HP2020 objective – those who meet the recommendations for leisure time physical activity.

**Figure 55. Percentage of Adults Who Report Getting the Recommended Amount of Physical Activity, by Small Area, 2010**

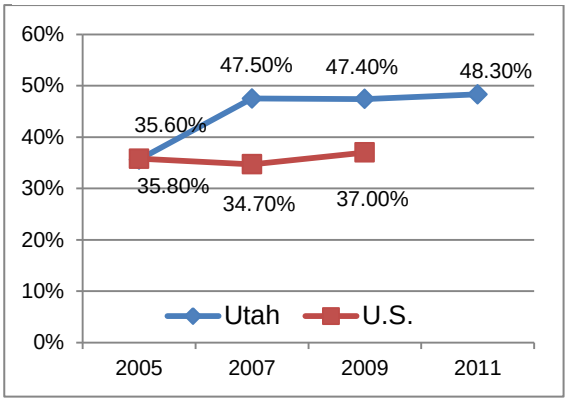



From what data are available on IBIS-PH, both Salt Lake County and Utah are doing better than the U.S. population as a whole when it comes to getting the recommended amount of exercise (Figure 56). However, this is somewhat contradicted by the obesity data. Accessing accurate data on exercise is important for future planning.

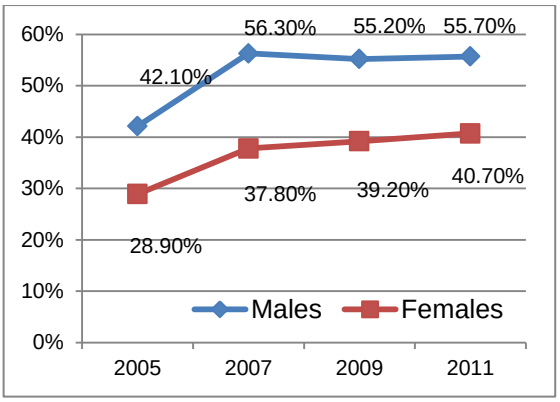
The percentage of Salt Lake County residents ages 18 and older who report light or moderate physical activity for at least 30 minutes 5 or more times per week or who report vigorous physical activity for at least 20 minutes 3 or more times per week is 56.5%. This is nearly identical to the state average and is higher than the national average of 49.7%. Utah youth who get the recommended amount of exercise are 55.7% for males in grades 9 through 12 (2011) and only 40.7% for females.

| Utah State 2020 Data | | | |
|---|---|---|---|
| ***Percentage of high school students who reported participating in physical activity meet HHS physical activity guidelines for Americans, Grades 9-12*** | | | |
| Salt Lake County 2008-2010 | Utah 2005-2011 | US 2005-2009 | *Healthy People 2020* Target |
| Data not available | 44.7* | 35.8 | None |

**Figure 56. Percentage Of Adolescents Who Report Getting the Recommended Amount of Physical Activity, 2005-2011**




**Utah & U.S.**




**Male & Female**

Utah has consistently had higher rates of exercise in adolescents than the U.S. as a whole. Males tend to exercise more than females Figure 57).

## Social Determinants of Health

The World Health Organization defines “social determinants of health” as "the conditions in which people are born, grow, live, work, and age” that affect their health.[84] Conditions are influenced by the distribution of resources, power, and money which result in the differences in health status in communities. Social determinants of health address the root causes of poor health.

Access to resources that promote health is also important. County residents as well as community partners that we consulted with in focus groups mentioned that resources may be too far away or cater to only a limited demographic. Other resources may be located within a reasonable distance but cost too much. Still others are not in areas of the community that some feel are safe.

Access to comprehensive, quality healthcare services is important for the achievement of health equity and for improving the quality of life for everyone. Access to good quality, affordable health care is one problem many Utahns face. There are many problems that can hinder access to health care including geographic, linguistic, cultural, and economic barriers.

### Community Resources for Health Promoting Activities [85]

### Parks

Salt Lake County has many different types of parks and plenty of open spaces. Parks in Salt Lake County are divided between county owned and operated, city owned and operated and jointly owned and operated. There are no standardized park classifications other than state, county, and city ownership and operation.

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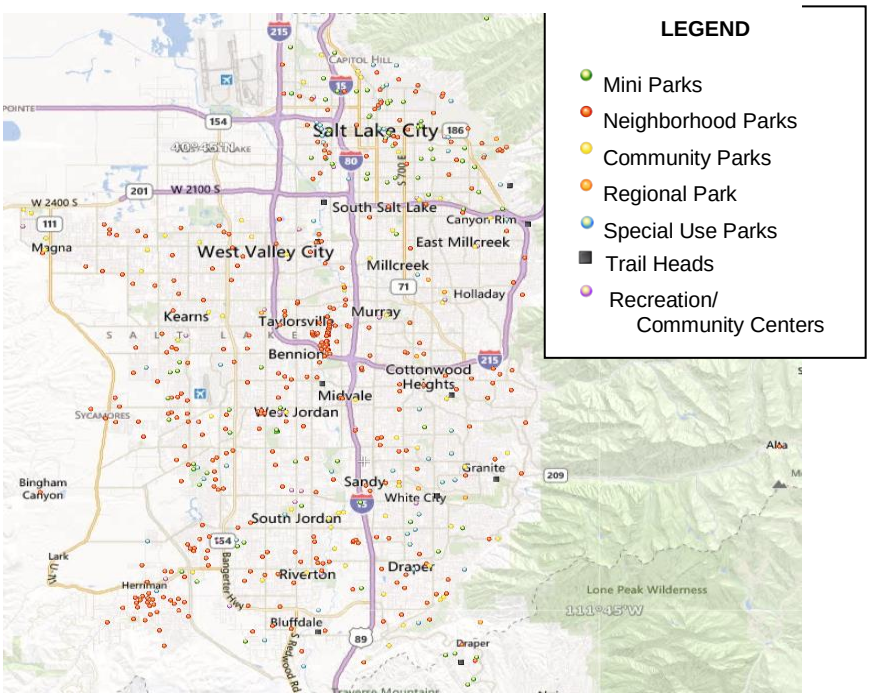
[84] WHO, Social determinants of health. Obtained 20 March 2012 from http://www.who.int/social_determinants/en/

[85] [85] http://www.slcgov.com/node/675
http://townofalta.com/town_parks.php
http://www.bluffdale.com/Public%20Works/Bluffdale%20City%20Capital%20Improvement%20Plan--Adopted.pdf
http://gis.chcity.org/public-maps-gallery/V1.4/map.html?webmap=10df4236baed458abe7ee50e2a97171c
http://www.cottonwoodheights.com/ http://www.draper.ut.us/Facilities.aspx?page=list&search=1&CID=4
http://www.herriman.org/city-departments/parks-rec/ http://www.cityofholladay.com/img/File/holladaycityonlinemap.html
http://www.midvalecity.org/dp.aspx?p=42 http://www.murray.utah.gov/index.aspx?nid=310
http://recreation.rivertoncity.com/parks.html http://sandy.utah.gov/government/parks-and-recreation/parks-division/city-parks.html
http://sandy.utah.gov/fileadmin/downloads/parksrec/PDF/2013_Sandy_Brochure_Printer_Copy.pdf

Locating park information can be difficult. Salt Lake County lists their own parks, but information on the rest of the parks in the county is up to each city or township. Larger cities like Sandy and Draper issue brochures about parks and recreation opportunities, as well as the amenities for most of their parks. Smaller cities list their parks, but not what the parks have to offer. There are the smaller parks that are listed only on maps. A definitive list of all parks and amenities in one location is needed.

Salt Lake County and city parks can be divided into six classifications; however, not all municipalities in the county define them the same way. In this document, parks are classified the way each municipality has defined them regardless of amenities. A full description of park types can be found in Appendix 9.

**Map 10. Parks and Public Recreational Facilities in Salt Lake County**




As Map 10 provides a general overview of resources in the county. Maps showing closer detail for specific areas of the county can be found in Appendix 10.

The residential side of Salt Lake City proper, the area north of 2100 south and east of I-215 has a balance between Mini and Neighborhood Parks. The area west of I-215 is mostly industrial and has no parks or recreational areas. The middle of the valley from 2100 South moving southward to I-215 shows an uneven distribution of parks and recreational resources. There are no parks designated as Mini Parks in the area and few Neighborhood or Community Parks. The opportunities west of I-215 through Kearns, West Valley City, and Magna are more limited than the south part of the county - there are fewer parks with walking/jogging paths and restrooms.

The parks in the southern half of the valley have more amenities. Although parks may be listed as a Neighborhood Parks, they have playgrounds, walking/jogging paths, drinking fountains and restrooms.

### Recreation Facilities

One study ranked Salt Lake City as the 6th best city in the nation for availability of recreation facilities with 36.5 gyms and fitness centers per million people. Salt Lake City also ranks in the top ten cities for hiking and walking trails [86] Based on this strong foundation, the rest of the City and County facilities add to the number of programs. The Yellow Pages list 376 fitness centers in Salt Lake County. In addition to private for-profit programs, there are many lower cost options.

[86] Huffington Post. Huffpost Healthy Living (July 12, 2013). Cities with the Most Gyms and Fitness Centers. Obtained 20 July 2013 from: http://www.huffingtonpost.com/2012/06/18/cities-gyms-fitness-centers_n_1591614.html

Salt Lake County runs 21 sports and recreation centers located throughout the County primarily in lower income areas. Numerous activities are offered for free, nominal cost, or more. Higher cost activities are those brought into the centers by outside groups such as rock climbing, gymnastics, and self-defense. Fees will vary depending upon the facility and its location. There are some fee adjustments for low-income, but there is still a fee.

Most city and county facilities promote their programs on a Facebook Page. Information on the basic web page is frequently out of date. The information available on Facebook is the most current. However, many people do not use Facebook. Facilities should ensure that the most current information is available on the basic web page. Some cities publish brochures with all of their programs and activities listed. Registration for activities and programs can be done online or in-person. Registration for both begins at the same time which may cause a disadvantage to those without computers or internet access.

### Adaptive Recreation

The County provides many Adaptive Recreation Programs for persons with physical and mental challenges. Programs include: Buddy Soccer, Basket Ball, Sledge Hockey, Boccia Ball, and other wheelchair sports. In addition to team sports other adaptive activities including dance, bowling, and golf are offered. Salt Lake County Adaptive Recreation is a Certified Paralympic Sports Club that supports training and competition in rugby, hockey, track and field, judo, basketball, and softball for youth 13-21 and adults. Adaptive personal fitness programs are also offered. Salt Lake County no longer sponsors the Special Olympics.

### Senior Programs

Salt Lake County provides seventeen senior centers that provide socialization, meals, programs and services for seniors. They are marketed as "community centers and colleges for older adults[87]. Programs include:

- Socialization opportunities for senior citizens in the center including arts and crafts and cards at the senior centers.
- In-Home Services for Frail Seniors who qualify and are at risk for premature placement in nursing homes.
- Chore Services that include lawn mowing, snow shoveling, and yard cleanup.
- Foster Grandparent Program which provides seniors with a small tax-free stipend of $2.65 per hour tax free to work with high-risk and special needs children for 20 hours per week to provide mentoring, tutoring, and emotional support.
- Health and Wellness for the Mind, Body, and Spirit assists seniors to live healthier and more productive lifestyle. The program provides classes on nutrition, exercise, stress management, infectious diseases, chronic diseases, and English for those who speak other languages.
- Health Services provided include physical exams, medical evaluation, immunizations, and screenings for osteoporosis, hypertension, diabetes, cancer, hearing, and podiatric problems.
- Legal Services provided through the Utah Legal Services' Senior Citizen Law Center in the areas of health, housing, public benefits and entitlements, family, and consumer issues. In addition, the Senior Law Project sponsored by Utah Legal Services provides assistance with problems involving wills and estates.
- Meals on Wheels program is administered through Salt Lake County Aging Services.

[87] Salt Lake County Aging Services. Senior Centers. Obtained July 22 2013 from: http://cf9.slco.org/aging/html/centers_overview.html

- Long Term Care Ombudsman program prides advocacy to seniors who feel powerless and vulnerable in terms of abuse, neglect, exploitation, and residents' rights.
- Senior Companions provides seniors a small tax-free stipend of $2.65 per hours tax free to assist other senior to maintain their independence through light housekeeping, meal preparation, socialization, rides to health car appointments and/or providing respite to caregivers,
- Senior Employment Program assists seniors 55 and older with job counseling, leads, resume assistance, and work training.
- Rides for Wellness provides transportations services to medical appointments for seniors without other means of transportation.

### Gaps in Services

The majority of activities for children are during the day, which limits participation for children of working parents. Not all of the events are available at all of the centers. Art, babysitting, horseback riding, and skiing classes are available to anyone. However, most of these are on the east and southeast side of the valley, have a fee. Transportation availability may limit access for people with transportation challenges.

Few programs and activities were offered for 15-18 year olds and the over 60 year olds. While there is some logic to this because of high school activities for the 15-18 year olds, the reality is that many low income students do not have the resources to be involved in school activities. Activities targeted to 60 year olds include walking activities, water aerobics, and yoga. Other activities may be limited due to the availability of programs offered by Senior Centers.

In conclusion, additional Mini Parks are needed on the west side of the valley. More neighborhood parks need walking/jogging paths, working drinking fountains, or working and open restrooms. Community and Recreation Centers should provide some of the same activities to all parts of the valley and give in-person registrants extra time to sign up for classes before on-line registration begins. Websites need to be updated, even if the center or program has a Facebook page, and written publications should be available for those who do not have computers. Activities targeting lower income 15-18 year olds should be considered

## NUTRITIONAL FOOD AVAILABILITY

The USDA and others have linked limited access to nutritional foods to health risks although no direct causal relationship has been established as yet. However, research suggests there is a strong relationship that diet-related diseases are linked to an absence of grocery stores[88]

The According to the Healthy Food Financing Initiative (HFFI),[89] a food desert is defined as a low-income census tract where a significant number or share of residents has minimal access to a large grocery store or supermarket. In order to meet the criteria for a food desert and to qualify as a "low-income community," a census tract must have either a poverty rate of 20% or higher or a median family income at or below 80% of the area's median family income.[90] In order to meet the criteria for a food desert and to qualify as a "low-access community," at least 500 people and/or at least 33% of the census tract's population must reside more than one mile from a large grocery store or supermarket (for rural census tracts, the distance is more than 10 miles).[55] The USDA tract allows locating food deserts by county.[55]

[88] Fife, J. (2012). *Bringing Supermarkets into Food Deserts: An Analysis of Retail Intervention Policies.* University of Missouri – Kansas City. Obtained 29 June 2013 from
[89] DHHS. ND. Healthy Four Financing Initiative. Obtained 2 June 2012 from: http://www.acf.hhs.gov/programs/ocs/resource/healthy-food-financing-initiative-0
[90] USDA. (2011, July 18). *Food Desert Locator*. Retrieved July 31, 2011, from ERS: http://www.ers.usda.gov/Data/FoodDesert/about.html

A large retrospective meta-analysis of food deserts was conducted in 2009. Studies supported the following findings:

- Low income, high ethnic/culturally diverse areas had fewer supermarkets or chain stores and fewer mid-sized to large stores per capita than did advantaged areas.
- Supermarkets in low income areas had smaller selling space
- More convenience stores were found in low income ethnic/culturally diverse areas than middle to high income areas
- Distance to supermarkets was farther in low income areas than in middle to upper income areas.

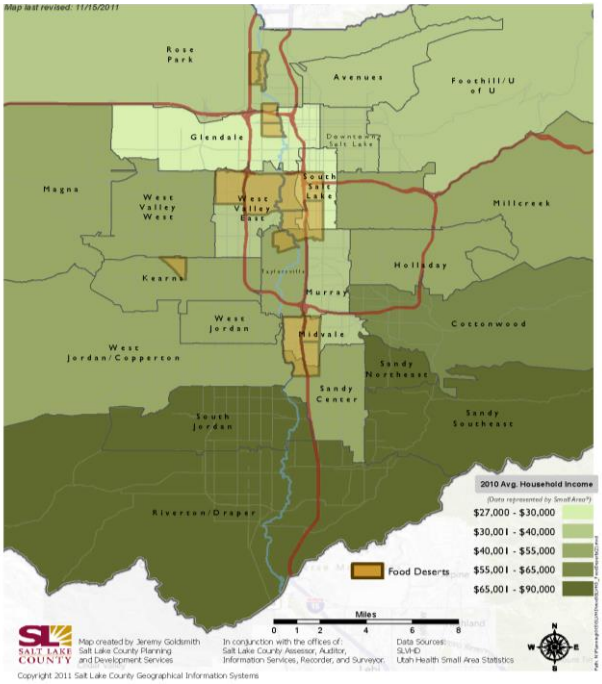
Access to grocery stores, quality of stores in lower income areas, and quality and diversity of produce choices were issues brought up by focus group members as problems in lower income neighborhoods.

A study entitled *Bringing Supermarkets into Food Deserts: An Analysis of Retail Intervention Policies* [91] points out that despite the fact that the existence of food deserts and characteristics of communities with food desert are well documented, there is little agreement about what should be done about them.

There are 5 previously defined Food Desert areas as noted on the Map 11. The USDA identified the following Small Areas as having within them census tracts that meet the criteria for classification as Food Deserts:

- Area 1 Glendale
- Area 2 Rose Park
- Area 3 West Valley City South Salt Lake City Murray Taylorsville
- Area 4 Midvale Sandy
- Area 5 Kearns

**Map 11. Salt Lake County Food Deserts by Household Income**




*Salt Lake City Collaborative Community Food Assessment*

The aforementioned Healthy Food Financing Initiative (HFFI) Food Desert assessment contained some inherent limitations which may apply to the county:

- Applying specific rules to be used nationally to define food deserts rather than considering area differences
- Inability to reflect up-to-date developments for specific areas
- Lacking local information such as the amount of industry or open land in the area

Some of the identified food desert locations, such as Area 2–Rose Park, include large sections of industrial and commercial buildings. Others, such as Area 4–Midvale/Sandy, are now served by new large grocery stores.

[91] Fife, J. (2012). *Bringing Supermarkets into Food Deserts: An Analysis of Retail Intervention Policies.* University of Missouri – Kansas City. Obtained 29 June 2013 from

Responding to these limitations and needing more detailed, localized data, Mayor Ralph Becker of Salt Lake City commissioned a Community Food Assessment that began in August 2011. An initiative of the Mayor's Office of Sustainability and the SLC Food Policy Task Force, this assessment concentrated on reviewing the history and compiling current data on food production, health and nutrition. The next phase introduced in February 2012, is focused on learning how and where community members are getting their food, what guides food decisions, and what challenges residents face in feeding their families and in accessing healthy food. Assessment activities include community meetings and online surveys. The findings from this assessment will provide insight into what factors limit accessibility to food resources for residents and the locations of poor food resource availability in Salt Lake City. This assessment can be used as a template for other communities seeking a better understanding of food availability in their communities.

A draft of the Community Food Assessment results were released at a media event in November 2012. Documents with more details about their assessment are available at http://www.slcgov.com/slcgreen/communityfoodassessment.

Full descriptions of the specific food deserts can be found in **Appendix 11.**

### Food Resources

There are several issues related to the environment that limit the choices people have regarding the foods they eat. The first one is whether or not they have access to food – whether food stores are available. The second issue is whether or not the food is affordable. The third one is whether or not there are alternative food resources available.

Attempts at filling the needs for nutritious foods of the food desert communities are being made through community gardens, farmers' markets, food banks, and smaller food pantries. It is difficult to assess the impact of these attempts since the discrepancy of fresh produce use continues between higher-income communities with more grocery stores and food desert areas.

#### Community Gardens.

According to the CDC, community gardens are defined as collaborative projects that are shared open spaces where all participants help maintain the garden and produce healthy, affordable fresh fruit and vegetables.[92] Community gardens are run by churches, nonprofit organizations, neighborhoods, and by local agencies.[93] In addition, many existing local community gardens are coordinated through the Salt Lake County Urban Farming Office. The following link shows the locations of 38 gardens throughout the county:
http://www.urbanfarming.slco.org/communityGardens/gardenMap.html

#### Food Banks/Pantries.

There are 32 food bank locations in Salt Lake County operated by two large food bank/pantry organizations and seven independents. The Community Action Program runs free emergency food assistance in 5 communities. The Utah Food Bank has 24 food pantries. There are 13 in Salt Lake City, 3 in West Valley City, 3 in Murray, 4 in Midvale, 2 in West Jordan, 2 in Taylorsville, 1 in Riverton, 3 in Magna, and 1 in Kearns. Sandy, South Jordan, Holladay, Herriman, Alta, Bluffdale, Cottonwood Heights, Millcreek, Emigration Canyon, White City, and Copperton do not have any food bank locations.[58]

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[92] CDC. (2010, June 3). *Community Gardens*. Retrieved July 31, 2011, from CDC: http://www.cdc.gov/healthyplaces/healthtopics/healthyfood/community.htm

[93] Collins, L. M. (2011, July 24). Salt Lake County community gardens are as much for friendship as for the food. *Deseret News* .

Currently, there is no *Healthy People 2020* Objective for nutritious food availability. However, one is in the developmental phase:

"NWS-4 (Developmental) Increase the proportion of Americans who have access to a food retail outlet that sells a variety of foods that are encouraged by *Dietary Guidelines for Americans."*

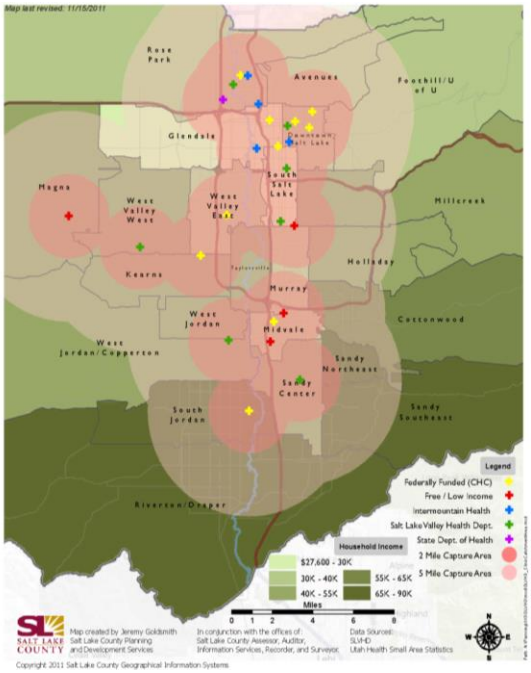
## ACCESS TO HEALTH CARE

Access to health care adversely impacts health outcomes. In a country with the best healthcare resources, inequities exist that limit healthcare resources from reaching many who need them. "We have more care available in the U.S.A., more technology – new innovations … and yet sitting within the shadows of the walls. . .people can't get in the door." [94] Access covers a number of issues: lack of affordability due to lack of insurance is the first reason most mentioned, but other variables limit access as well. These included medically underserved areas, lack of primary care physicians,

Preventive or early care is not within the reach of many Salt Lake County residents. Data indicate that those without healthcare resources wait until they are in crisis before seeking care than seek it through emergency departments. Emergency departments are not structured to provide follow-up or continuity of care. In addition, people seek care for non-urgent illnesses at the emergency room because they either cannot be refused or visits during working hours will result in loss of income.

Lack of primary healthcare providers in an area also limits access, especially in rural areas. Lack of healthcare gatekeepers such as mid-level providers (nurse practitioners and physician assistants) and primary care, family and/or pediatricians also limits access. Language and culture is also a limitation. While not necessarily limiting access, it may limit the quality of care.

**Map 12. Medical Clinic Catchment Areas: Two and Five Mile Radius**




### Medically Underserved Areas

"Medically Underserved Areas and Populations" are designations given by the Health Resource Service Administration. A medically underserved area can be made up of counties, contiguous areas or a group of census tracts where residents face a shortage of primary health care, mental health, or dental providers. Medically underserved areas have a ratio less than one primary care physician per 1,000; one mental health professional per 10,000; and one dentist per 3,000 people. In Salt Lake County in 2009 there were 95 primary care physicians per 100,000 people (ratio 0.95/1000); this number is down from the 2008 estimate of 98.8 primary care physicians (ratio 0.988/1000). The major types of primary care physicians are Family and General Practice, Internal Medicine, Pediatrics and Obstetrics/Gynecology.

[94] Healthcare: Facing Barriers. Catalyst Article: Healthcare: Facing the Barriers. Obtained July 22, 2013 from: http://www.kued.org/productions/healthcare/film/catalyst.php

Physicians tend to be more concentrated in areas with hospitals. The only hospital located on the west side of SLCo was Pioneer Valley Hospital until the opening of Jordan Valley Medical Center in West Jordan in 1983. Three new hospitals have recently opened on the southwest side of the County: Riverton Hospital (Intermountain Healthcare) in November, 2009, and South Jordan Health Center (University of Utah Healthcare) in South Jordan City in 2012, and the Loan Peak Medical Campus in Draper (Mountain Star), a 30 bed hospital located in the southeast part of the county.[95] No new facilities are located in the northwest part of the county.

Other considerations in qualifying as a medically underserved area are percent of population below the federal poverty line, percent of the population age 65 or older (both discussed previously), and infant mortality.

The cutoff for being identified as a medically underserved area is a ranking below 62 on the scale of 0 to 100. The county has three areas considered "Medically Underserved."

- **Glendale Service Area:** Score 61.3. The Glendale Service area is the area between the county line to the north, 2100 South to the south, Interstate 15 to the East and Redwood Road to the West.
- **Midvale Service Area:** Score 61.3. The area of Midvale west of State Street is considered the Service Area.
- **Salt Lake Service Area**: Score 54.7. The Salt Lake Service Area consists of the area between Interstate 15 on the west, 2100 South on the south, state Road 89, Beck Street and Victory Road to the northeast and state Street to 200 East to Canyon Road on the east side.

To demonstrate the availability of medical care to low income individuals, Map 11 indicates the two and five mile catchments areas for clinics serving low income individuals.

The map shows that clinics for low income persons are not necessarily located in the areas of greatest need. Glendale is considered a Medically Underserved Area. Over 22% of the residents of Glendale and 19% of the residents of Rose Park live in poverty. There are two federally funded community health clinics which catch the most eastern edge of Glendale within their two mile radius. The Utah Department of Health is included in this circle, but does not provide direct patient care. About a third of Rose Park (mostly to the eastside which comprises the most populated section) is within two miles of a clinic for low income persons.

Other areas with lower incomes, such as Midvale and South Salt Lake, fare better. As the population center increasingly moves south, future planning should consider more low income clinics west and south of the Interstate 215 loop.

[95] Mountain Star Healthcare. Media release. http://mountainstarhealth.com/dotAsset/83cbcfcc-7870-4e1f-92ff-d078a5ac94f8.pdf&random=19123

| *Healthy People 2020* Objective | | | |
|---|---|---|---|
| ***AHS–3: Increase the percent of persons with a usual primary care provider*** | | | |
| Salt Lake County 2010 | Utah 2010 | US 2007 | *Healthy People 2020* Target |
| 78.3 | 79.2 | 76.3 | 83.9 |

The medical resources in Salt Lake County are seen as a problem to residents not living in poverty as well as to those in poverty. The topic of medical resource availability was mentioned by all focus groups conducted on the west side of SLCo and in the special population focus groups.

## Primary Care Physicians

As each new health care need arises, an individual's first point of contact with the health care system is typically his or her personal doctor. Primary care providers provide continuity of care and the most reasonably priced entry into the healthcare system, certainly a more cost saving entry than EDs.

In most cases a personal doctor can effectively and efficiently manage a patient's medical care because they understand that person's medical history and social background. Having a regular source of health care is also an indicator of overall access to care. However, in SLCo, no SAs meet the HP2020 objective (Figure 58). Only one SA comes close to the target, South Jordan at 83.3% of persons having at least one primary care provider. The SAs with the fewest residents claiming to have at least one primary care provider are Glendale, South Salt Lake, Rose Park, and West Valley City. Glendale is one of the three areas designed as Medically Underserved. The fact that only one SA has met the HP2020 objective indicates that this problem occurs even when health care is available in close proximity to residents,

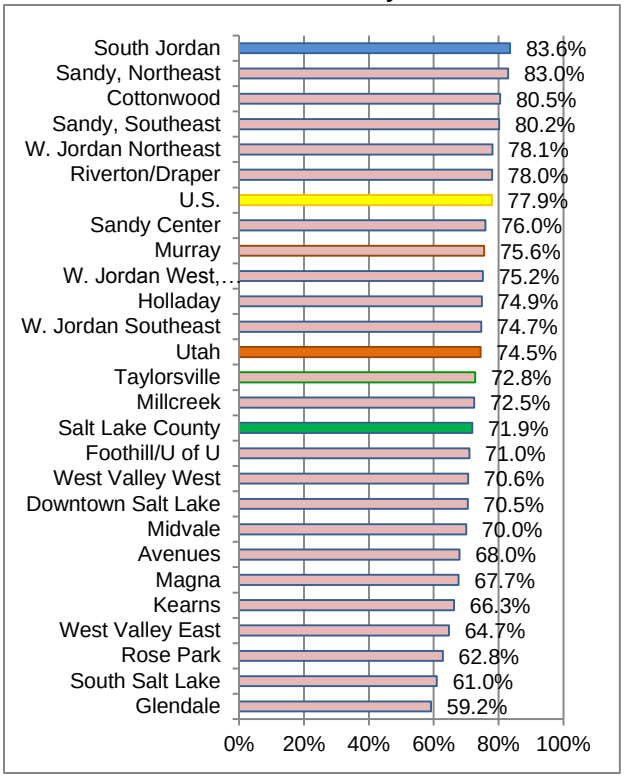


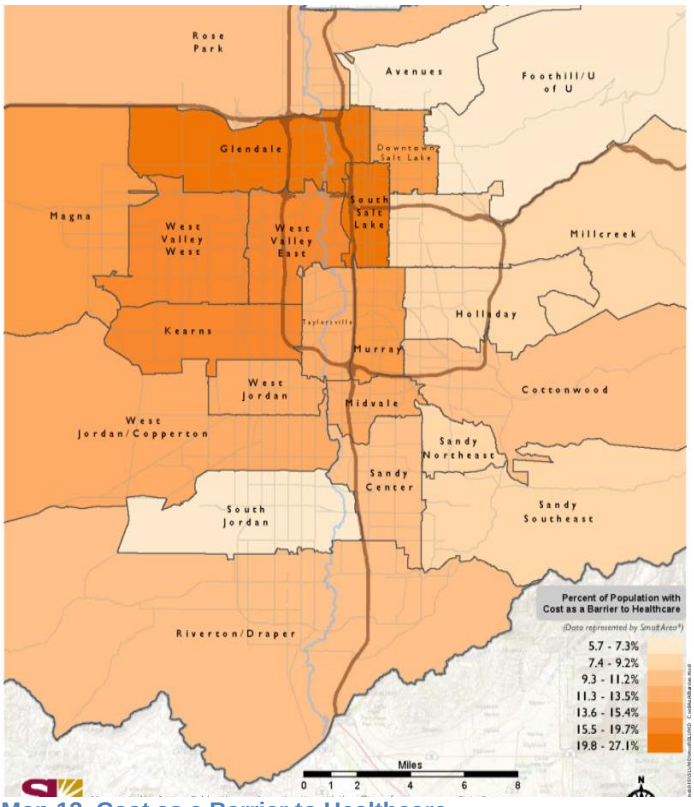

**Figure 57. Percentage of Population Reporting having at Least One Primary Care Provider by Small Area, Utah 2011**

| *Healthy People 2020* Objective | | | |
|---|---|---|---|
| ***AHS–6: Reduce the percentage of individuals who are unable to obtain or experience delay in obtaining necessary medical care, dental care, or prescription medicines*** | | | |
| Salt Lake County 2010 | Utah 2010 | US 2007 | *Healthy People 2020* Target |
| 12.7* | 12.6* | 10 *HP2020*** 15 per IBIS-PH* | 4.2 |

** Utah: Cost as a Barrier to Care in the Past Year, 2008-2010*

** HP2020* does not have a matching Objective or target for cost as a barrier; Utah does not collect data on AHS-6.

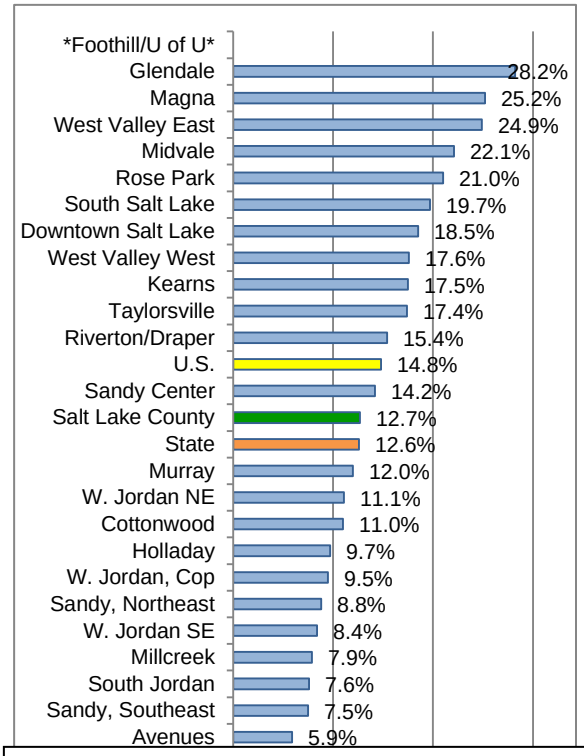
## Cost of Health Care.




Map 13. Cost as a Barrier to Healthcare

The IBIS-PH indicator provides the percent of residents who identify cost as a barrier to receiving care during the previous year. This is not quite the same as the *HP2020* objective stated above which refers to the percent who are unable to obtain medical care.

**Figure 58. Percent Reporting that Cost is a Barrier to Health Care by Small Areas, 2010**




*The Foothill/U of U Small Area data have been suppressed because the estimate does not meet UDOH standards for reliability.

To compound this problem, residents living on the west side of the County reported in their focus groups that cost was a barrier to health care at a higher rate than any other area in the valley. Nearly one quarter of Glendale, Magna, and West Valley East Small Area residents noted that cost was a barrier to health care.[96]

## Health Insurance Coverage

People with health insurance are more likely to have a regular source of healthcare than those who don't and are less likely to delay obtaining needed care. Approximately 14.9% of adult residents under the age of 65 had no health insurance in 2009. In the same year 10.9% of the population was covered by Medicaid and 9.1% was covered by Medicare (including elderly and disabled).

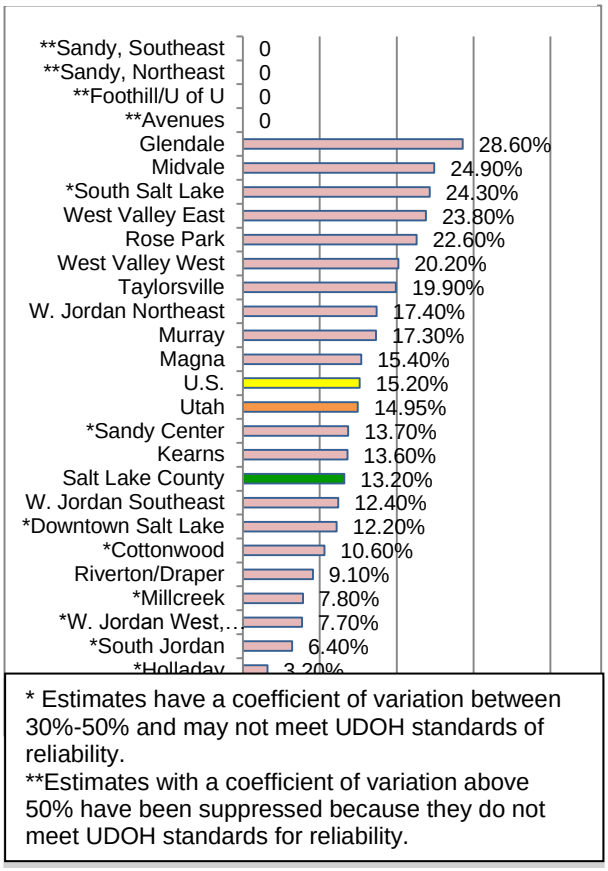
| ***Healthy People 2020* Objective** | | | |
|---|---|---|---|
| ***AHS–1: Increase the percentage of persons with health insurance*** | | | |
| Salt Lake County 2010 | Utah 2010 | US 2007 | *Healthy People 2020* Target |
| 88 | 84.7 (ACS)<br>89.6 (BRFSS) | 83.2 | 100 |

[96] IBIS-PH. Cost as a barrier to health care. Obtained 12 October 2012 from: http://ibis.health.utah.gov/indicator/view_numbers/CosBarHtlhCar.SA.html

The data are soft. Various surveys are measuring in different ways and getting disparate results. A new methodology used in 2011 for the first time promises to solve some of the problems. That survey will use cell phones as well as landlines since there are an ever-increasing number of households that do not have landlines.[97]

The Small Areas within the County again show a huge disparity which is skewed toward the west part of the County. In areas such as Holladay and South Jordan only 3.2% and 6.4% of residents reported having no health insurance. In areas such as Glendale and Midvale 28.6% and 24.9% respectively reported having no health insurance coverage. Figure 59 examines numbers of people per Small Area lacking health insurance in Salt Lake County.

**Figure 59. Percent Of People Without Health Insurance, All Ages, by Small Areas, Utah and U.S., BRFSS and ACS Estimates, 2010**




* Estimates have a coefficient of variation between 30%-50% and may not meet UDOH standards of reliability.
**Estimates with a coefficient of variation above 50% have been suppressed because they do not meet UDOH standards for reliability.

SLCo is behind the *HP2020* target of 100% insurance coverage by 13.2%. Success in meeting this goal depends on the success of the Affordable Care Act. However, the County and all but nine Small Areas have better health insurance coverage than in Utah and the U.S.

## Environmental Determinants of Health

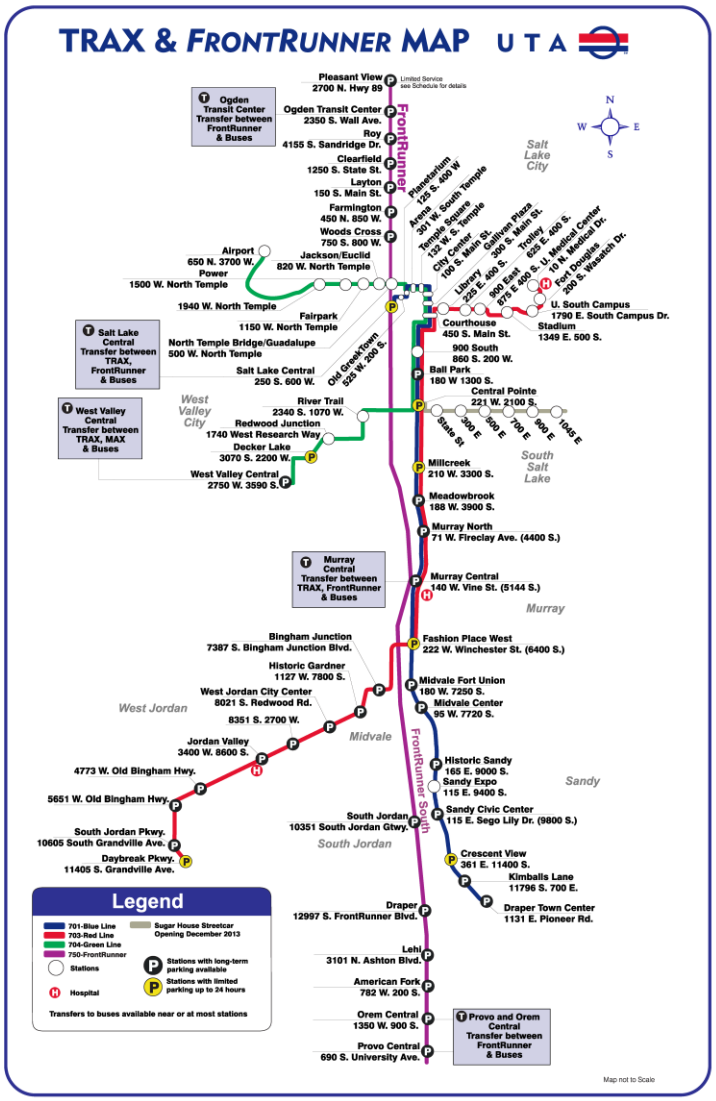
### Public Transportation

#### Methods

The primary public transportation availability in Salt Lake County is through the Utah Transit Authority which provides a number of options:

- **Buses**. More than 495 buses provide transportation within SLCo and between SLCo, Box Elder, Davis, Summit, Tooele, Utah, and Weber Counties.
- **UTA MAX**. In addition to regular bus routes, UTA offers 'bus rapid transit', known as the MAX line, which runs from Magna to the 33rd South TRAX station. Another line is planned along 5600 West. This line mimics TRAX but uses regular buses to expediently get residents from the west side of the county to the TRAX line. Currently under study is a line from Murray City Center through Taylorsville to Salt Lake Community College's main campus.
- **UTA TRAX**. TRAX is a light rail system offering three lines. The Blue line which was the original north-south line opened in 1999 serving Sandy, Midvale, Murray, South Salt Lake City, and Salt Lake City; the Red line which reaches further southwest serving South Jordan, West Jordan as well as Sandy, Midvale, Murray, South Salt Lake City, Salt Lake City, and the University of Utah; and the Green line serving the Salt Lake International Airport, West Valley City, Salt Lake City, South Salt Lake City, Midvale, and Sandy. The Red line extension to Draper opened in August 2013. An additional extension is planned to 146000 South

[97] IBIS-PH, Complete indicator report of health insurance coverage. Obtained: http://IBIS-PH.health.utah.gov/indicator/complete_profile/HlthIns.html




Map 14. Trax and FrontRunner Routes

Paper schedules are also available

- **Sugar House Streetcar**. A streetcar providing transportation from the TRAX line Central Point Station East to McClelland Avenue is due to open in late 2013.
- **FrontRunner**. A commuter rail line that connects Salt Lake County with Pleasant View, Ogden, Roy, Clearfield, Layton, Farmington, Woods Cross, North Temple, Salt Lake Central Station, Murray, South Jordan, Draper, Lehi, American Fork, Orem Central Station and Provo Central Station. Each station has connections to UTA's bus system and park and ride lots. Future extensions will include Brigham City at the mouth of Sardine Canyon which leads to Logan and Utah State University, and south to Payson.

### Cost

TRAX round trip passes are $5.00 regardless of distance traveled. That cost is only $2.50 for seniors and disabled.

Punch cards and monthly passes are available. Regular passes are good for bus and TRAX travel for a month. Adult cost is $83.75; Student cost is $62.50; and Senior and Disabled cost is $41.75. A trip planner is offered on the website.

## AIR QUALITY

Air pollution currently poses a severe and immediate threat to the public's health. Asthma and COPD, health maladies that can be exacerbated by polluted air, are on the rise in Salt Lake County (see Respiratory Diseases).

### Air Quality and Topography

The topography of Salt Lake County is primarily a valley that is generally surrounded by high mountains and partially bordered by the Great Salt Lake. These physical features combined with periods of stagnant air, winter-time temperature inversions, and the emission of air pollutants from mobile and stationary sources typical of a metropolitan area impact the health of Salt Lake County residents and contribute to the climate change. Air quality influences participation in physical activity and affects severity of disease for people in older age groups and those with respiratory allergies or illnesses. Air pollution currently poses an immediate threat to the public's health. Asthma and COPD, health maladies that can be exacerbated by polluted air, are on the rise in Salt Lake County (see Respiratory Diseases).

## Air Quality and Climate Change

In 2009 the EPA declared that carbon dioxide and other greenhouse gases were an endangerment to public health. The consequences of these emissions include increased temperature and drought, more extreme storms, a rise in sea level and political instability. This is not a new finding. Individual scientists beginning with Charles David Keeling have reported their data on global warming since the 1960s. Reputable scientific organizations (The American Academy of Sciences, American Public Health Association, National Environmental Health Association, and the United Nations Intergovernmental Panel on Climate Change) have documented this for at least 15 years. Recent extreme heat events (Europe 2003, Russia 2010, United States and Utah 2012) have brought this message home to the general public.

Salt Lake County residents will directly feel some climate changes and emissions produced by residents are partially to blame. For several years the SLCoHD has encouraged voluntary behavior changes to reduce emissions from fossil fuels including the 2009 Health Department Proclamation, The Declaration of Independence from Fossil Fuels, and the Clear the Air Challenge. These programs have encouraged individuals to make personal changes to reduce emissions, but these efforts have not produced sufficient reductions to significantly alter the course of climate change. It is worthwhile to continue these programs, but more is needed.

## Criteria Pollutants

In addition to the greenhouse gasses, the EPA has identified six criteria pollutants. They are: ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxides, and lead. Salt Lake County meets federal standards for most of these pollutants. Lead and nitrogen dioxide have never been significant problems. Sulfur dioxide routinely exceeded the standard in the 1970s but has not reached high levels for over 30 years – better controls by industrial sources are primarily responsible for this. Carbon monoxide was frequently above the standard during the 1970s and 1980s. This changed in the 1990s following new vehicle emissions standards and initiation of the I/M (Inspection and Maintenance) Program, and SLCo was declared a carbon monoxide attainment area in 1999. Despite successes with four of the six criteria pollutants, residents continue to be exposed to levels of particulate matter and ozone above the health standards.

At this time in Salt Lake County, only ozone and particulate matter are serious threats to public health. The concentration of both of these air pollutants is extremely dependent upon meteorology. Ozone is formed by a complex reaction involving volatile organic compounds and oxides of nitrogen in the presence of sunlight. Generally exceedances of the ozone standards require a temperature above 90 degrees Fahrenheit. The opposite is true for particulate matter. Temperature inversions during the winter trap cold air in the valley which becomes stagnant. As pollutants are generated, the concentration increases due to the smaller volume of air trapped below the inversion. When this occurs, the National Ambient Air Quality Standards (NAAQS) may be exceeded.

| ***Healthy People 2020* Objective** | | | |
|---|---|---|---|
| ***EH-1: Reduce the number of days the Air quality Index (AQI) exceeds 100*** | | | |
| Salt Lake County 2000-2010 | Utah 2000-2010 | U.S. Rate 2008 | *Healthy People 2020* targets |
| 32 (PM plus Ozone) | Not Available* | 11 days | 10 days |

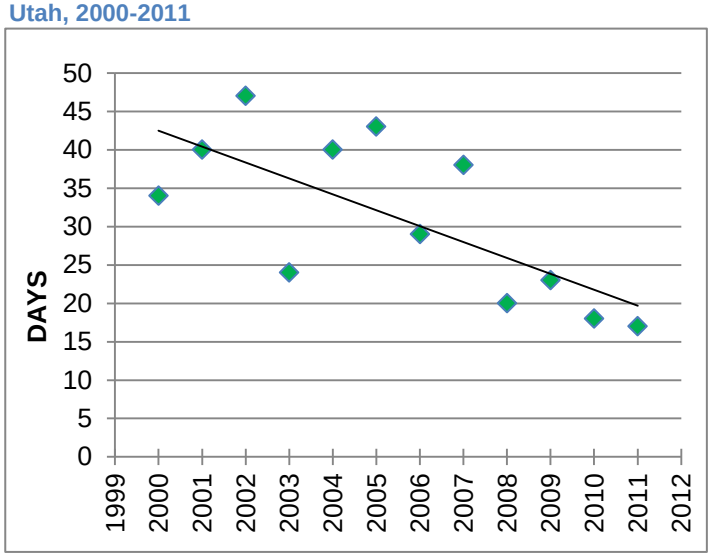
*There are no monitors for Ozone or Particulate Matter in most of the counties in state. Therefore no state rate is available.

The Air Quality Index (AQI) is an index for reporting daily air quality.[98] It denotes how clean or unhealthy the air is, and what associated health effects might be. The AQI focuses on health effects that may be experienced within a few hours or days after breathing unhealthy air. The AQI is calculated for four major air pollutants regulated by the Clean Air Act: ground-level ozone, particle pollution, carbon monoxide, and sulfur dioxide. For each of these pollutants, EPA has established standards to protect public health. The higher the AQI value, the greater the level of air pollution and the greater the health concern. For example, an AQI value of 50 represents good air quality with little or no potential to affect public health, while an AQI value over 300 represents air quality so hazardous that everyone may experience serious effects. See Table 9 for more detail on each level.

**Table 11. AQI Levels of Health Concern**

| Air Quality Index (AQI) Values | Levels of Health Concern | Colors |
|---|---|---|
| 0 to 50 | Good | Green |
| 51 to 100 | Moderate | Yellow |
| 101 to 150 | Unhealthy for Sensitive Groups | Orange |
| 151 to 200 | Unhealthy | Red |
| 201 to 300 | Very Unhealthy | Purple |
| 301 to 500 | Hazardous | Maroon |

**Figure 60. Number of Days the AQI Exceeded 100 by Year, Utah, 2000-2011**




Each day concentrations of the major pollutants are monitored and recorded at more than 1,000 locations across the county. These raw measurements are converted into a separate AQI value for each pollutant (ground-level ozone, particle pollution, carbon monoxide, and sulfur dioxide) using standard formulas developed by EPA. The highest of these AQI values is reported as the AQI value for that day.

In large cities (more than 350,000 people), state and local agencies are required to report the AQI to the public daily. Many smaller communities also report the AQI as a public health service. When the AQI is above 100, agencies must also report which groups, such as children or people with asthma or heart disease may be sensitive to that pollutant. If two or more pollutants have AQI values above 100 on a given day, agencies must report all the groups that are sensitive to those pollutants. Figure 61 shows how many days per year that the AQI exceeded 100 for Salt Lake County,

Many cities also provide forecasts for the next day's AQI. These forecasts help local residents protect their health by alerting them to plan their strenuous outdoor activities for a time when air

[98] United States Environmental Protection Agency (EPA)

quality is better. The AQI is a national index, so the values and colors used to show local air quality and the levels of health concern are the same everywhere in the United States.

## Ozone

Salt Lake County was officially re-designated to "attainment status" for ozone by the EPA in 1997 and remains in attainment. However the levels of ozone measured are extremely close to the EPA standard of 75 parts per billion (PPB).

**Figure 61. Number of Days Ozone AQI Exceeded 100 by Year, SLCo, 2000-2011**

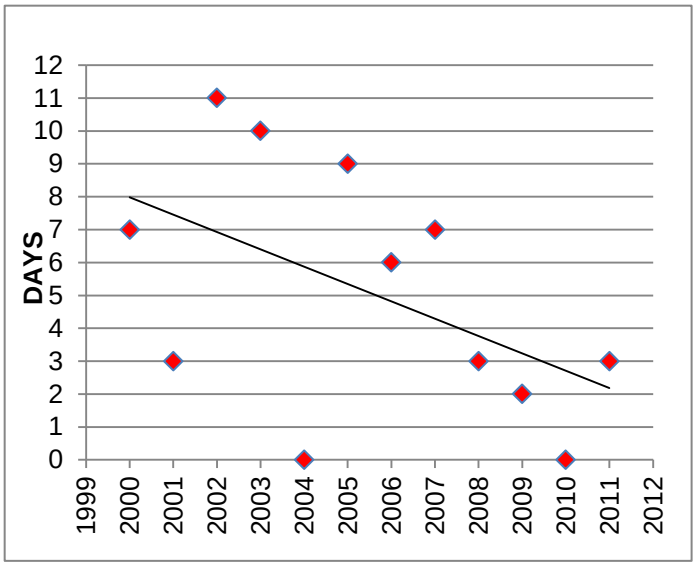



Figure 62 provides a historical perspective of the days that the Hawthorne Monitoring site (700 East and 1700 South) exceeded 100 on the AQI.

A significant portion of the measured levels of ozone is caused by background levels. The background level is approximately 50 PPB. Background levels refer to the levels of ozone that occur naturally or are transported in from downwind sources. In fact many of the national parks in the west have background levels that are close to the standards even though they are located far away from industrialized communities.

Some scientists believe that the standards should be lowered. This may result in Salt Lake County moving into a "non-attainment" status even though the levels of ozone have not increased.

## Particulate Matter (PM10/2.5)

Particulate matter is divided into two categories based on size: PM10 and PM2.5. PM10 is less than 10 micrometers in diameter, which is about one-seventh the width of a strand of human hair. PM10 is typically made up of "fugitive dust" (sand and dirt blown by winds from roadways, fields, and construction sites). PM2.5 consists of particulate 2.5 micrometers in diameter or less. Primary PM2.5 is directly emitted into the atmosphere from combustion sources and includes fly ash from power plants, carbon black from cars and trucks, and soot from fireplaces and woodstoves. Most PM2.5 and some PM10 are not emitted directly but are a condensation or a reaction product from gaseous emissions, primarily VOC and NOx. All of these sources of air pollution

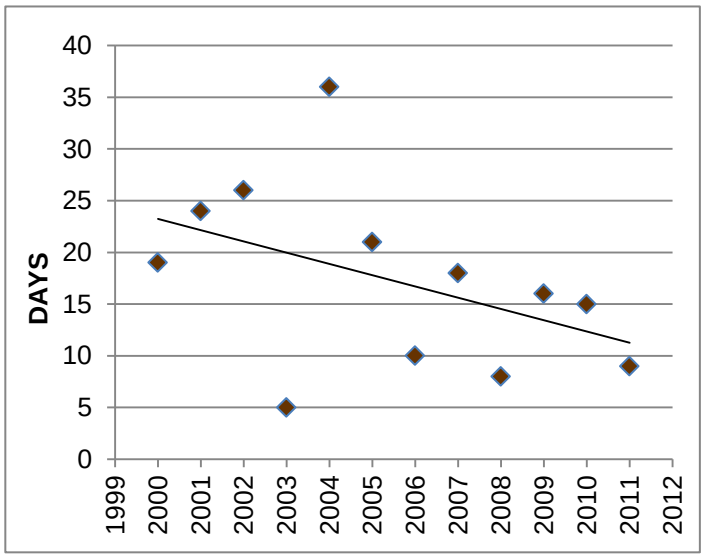



**Figure 62. Number of Days Particulate Matter M2.5 AQI Exceeded 100 by Year, SLCo, 2000-2011**

are caused by factors that are modifiable.

Particulate matter is a criteria pollutant due to its adverse health effects. Because of the small size it can become imbedded in human lung tissue, exacerbating respiratory diseases and cardiovascular problems. This is particularly problematic for sensitive groups such as children, elderly, or others with sensitive lungs. Studies show that chronic exposure can increase the odds of lung damage, bronchitis, asthma, lung cancer, and early death.

Salt Lake County is currently in the "non-attainment" category for PM10. A request to re-designate Salt Lake County to "attainment" for PM10 was submitted to EPA in 2005. The re-designation is pending.

Winter temperature inversions provide ideal conditions for particulates to become trapped and build up to unhealthy concentration levels. Particulate matter sometimes exceeds federal standards in the stagnant winter months. Figure 62 illustrates the trend in days exceeding 100 on the AQI in Salt Lake County at the Hawthorne site.

### Current Controls

In 2011 Utah was responsible for approximately 80 million tons of $CO_2$ emissions, and residents of Salt Lake County were responsible for a significant portion of those emissions. The SLCoHD has operated a vehicle Inspection and Maintenance (I/M) Program for the County since 1984 to reduce air pollution. Motorists take their vehicles to authorized test stations for annual tests to ensure that their vehicles are working properly and not polluting the air. The program has been successful in reducing emissions of VOC, NOx and CO, thereby preventing many unhealthy days and hastening the attainment of the CO and Ozone standards. It continues to provide benefits for reduction of PM2.5 and Ozone - our current criteria pollutant concerns.

Current and future levels of air pollution are dependent on several factors including improved technology, growth, personal habits, and energy costs. As a result of the improvement in vehicle technology, as the number of newer vehicles replace older ones the average emissions per vehicle decrease. However, dramatic population growth and the vehicle miles traveled by individual vehicles continue to increase. One thing that is helpful with regard to growth in reducing pollution concentration is that the area over which the pollution is emitted increases. Many organizations including SLCoHD have encouraged voluntary changes in personal habits to reduce emissions (such as choosing alternative transportation). Finally, a dramatic increase in the cost of energy also has an effect on reducing emissions in that people use less energy and decrease combustion. Increasing awareness of the seriousness of the health effects associated with air pollution—particularly climate change—will likely increase the contribution that changes in personal habits will provide to reduce air pollution.

In the past, these factors have combined to a show a reduction in air pollution inventories (tons per year):

| Year | VOC | NOx | PM2.5 |
|---|---|---|---|
| 2005 | 48,500 | 38,100 | 4,860 |
| 2008 | 41,900 | 31,000 | 3,760 |

In summary, Salt Lake County is in compliance with the NAAQS for Lead, Nitrogen Oxide, Sulfur Dioxide, Carbon Monoxide and PM10. Ozone and PM2.5 still pose acute health issues for residents of the county.

## WATER QUALITY

Water pollution can occur in the form of biological (worms, bacteria, protozoa), chemicals (oil, gasoline, paint, household chemicals, medical by-products, asbestos, pesticides, road salt, lead, mercury), and radiation (uranium, titanium). Contamination can harm humans, wildlife, fish, and/or the environment. Sources of contamination include: septic systems, leakage of underground storage tanks, broken pipelines, hazardous waste sites, industrial dumping, landfills, agricultural chemicals and fertilizers, and atmospheric deposition of airborne contaminants that form acid rain. Processes, procedures, policies, and laws are in place to control many of these threats to our culinary water and recreational water, but problems may occur despite these controls.

The SLCoHD Bureau of Water Quality and Household Hazardous Waste (WQ/HHW) regulates public swimming pools, solid waste, processing facilities, individual waste water and drinking water systems. The bureau also manages the collection of household hazardous waste and operates a pollution prevention program to assist businesses in reducing their waste streams and becoming more eco-friendly.

### Public Water Systems

In 1974 The Safe Drinking Water Act (SDWA) was passed by Congress to assure that all publicly-consumed drinking water is safe. The EPA was tasked with setting the standards and overseeing a federal drinking water program. The SDWA has been amended several times to be current with scientific knowledge. The law applies to all public water systems (PWS) – defined as a piped system with at least 15 service connections or serving an average of 25 people or more daily at least 60 days per year. PWSs are divided into three categories based on the type of service, each of which is subject to different requirements. Although the EPA sets the criteria for clean water, most states have delegated authority to oversee the program in their jurisdiction. The Utah Division of Drinking Water (DDW) manages Utah's program in conjunction with the SLCoHD WQ/HHW for Salt Lake County.

The SLCoHD WQ/HHW ensures public water systems comply with and meet EPA's water standards by routinely evaluating them. Evaluations consist of conducting sanitary surveys and performing investigative bacteriological sampling of private (individual drinking water regulation #11) and public drinking water (Utah Title R309) systems. The SLCoHD WQ/HHW averages approximately 435 investigative water samples per year and quickly responds to contamination issues. In SLCo a bad water sample is usually traced to a source other than drinking water, such as a dirty tap or bad collection technique but, if necessary, disinfection/flushing occurs until no presence of an indicator remains. Dead end lines that are not flushed frequently can allow organisms to grow and should be routinely purged.

In 2012 a routine SLCoHD WQ/HHW investigative sample of a junior high returned positive for T. Coliform. Subsequent repeat samples confirmed a contamination issue existed but did not find any fecal coliform. The school and local water department were immediately notified and precautions were undertaken to keep staff and children from drinking the water until disinfection and flushing of the schools lines confirmed samples were clean. No confirmed illness resulted and the school was closed briefly with minimal disruption.

When public water systems are tested or otherwise found to be in noncompliance with the EPA's water standards, the department pursues enforcement actions as outlined in Ordinance, Rules, and Regulations. The enforcement actions include warning letters, Notices of Violations (NOV), and criminal actions. NOV Penalties vary up to $10,000 per day per violation.

Common NOVs are for storm water discharges consisting of restaurant grease, hydrocarbons, surfactants, cleaning compounds, pesticides, concrete wastewater, and hazardous materials. Sampling is done depending on the event or contamination involved. In illicit discharges, the SLCoHD involvement begins when an event occurs and lasts until mitigation is complete and may involve multiple stakeholders. Mitigation efforts include cleaning gutters, storm drain boxes, and storm drain lines, placing absorbent pads and booms in waterways, as well as removing contaminated soils.

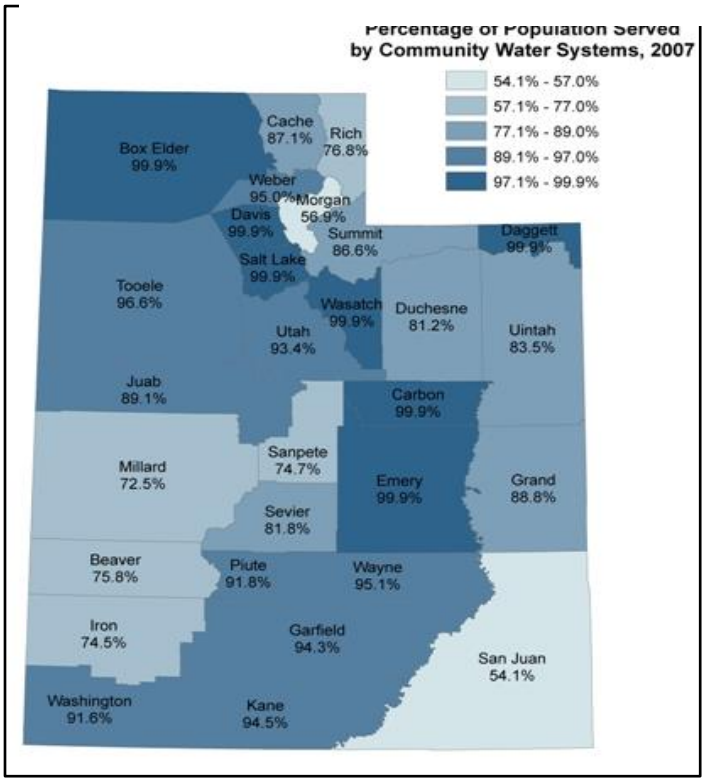
For the first two quarters of 2012, the SLCoHD WQ/HHW responded to 223 emergency response complaints and is pursuing 17 NOV for illicit discharges into the storm drain. In 2013 we are projected to have a 6% increase above the yearly average for the past 5 years which is an annual average of 425 responses. The penalties issued for 2011 totaled $122,945.35.

Environmental Health emergencies are handled though a 24/7 on-call emergency response number which is 385-468-8888.

## Private Water Systems

To maximize the number of citizens who receive high quality water meeting EPA standards, the DDW and SLCoHD regularly audit private water systems to determine if they meet the requirements to become a public water system. If a system meets the criteria, they are officially notified by the DDW and become subject to public water system requirements (Utah Title R309). In the past two years, several new systems (Cottonwood Cove and the Wasatch Mountain Club) were identified and added to a growing list of SLCo Public Water Systems (PWS) (Map 15). The SLCoHD currently monitors and inspects 74 PWSs. UDOH data indicate that 99.9% of Salt Lake County residents are served by water meeting the standards of the SDWA.

**Map 15. Percentage of Utah Population Served by Community Water Systems, 2007**




SLCoHD Water Quality and Hazardous Waste plays an active role in protecting and monitoring the watershed areas (Watershed Regulation #14 and Waste Water Disposal Regulation #13). Regulations and ordinances help protect the long-term quality of drinking water for SLCo residents. The protections provided include septic system set-backs from streams, lakes, ditches, rivers, ponds, wetlands, and drinking water wells**,** requirements for black water (toilet waste) holding tanks, preservation of wetlands, and restrictions for a variety of contamination sources such as business or homeowner activities that would contaminate these water courses: Waste water runoff, pesticides, stream alterations, or construction byproducts (paint, concrete, oil).

In addition to inspection of water systems and protection of water sources, the SLCoHD routinely conducts permitted facility inspections of food establishments, cosmetology shops, and K-12 schools for problems. Part of the inspection involves looking for and rectifying cross connection or backflow issues to prevent potential contamination of drinking water.

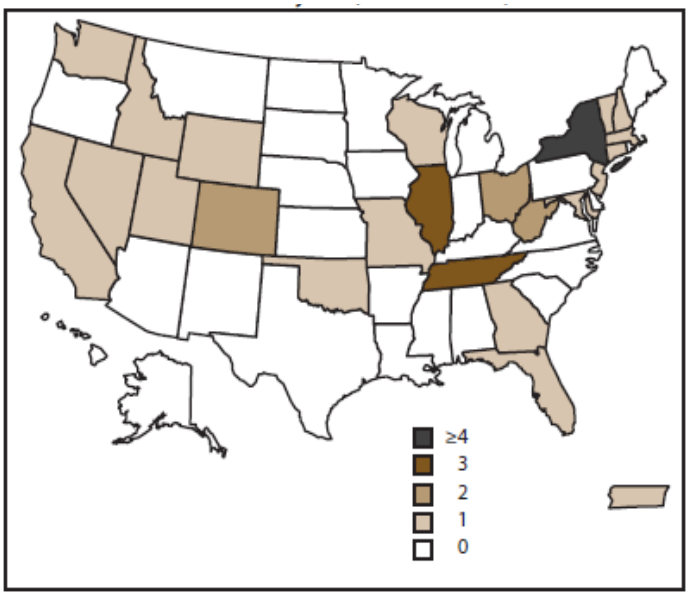
## Water-Borne Diseases

Two criteria must be met for an event to be defined as an outbreak associated with drinking water:

- Two or more persons must be linked epidemiologically by time, location of exposure to water, and illness characteristics
- The epidemiologic evidence must implicate water as the probable source of illness.

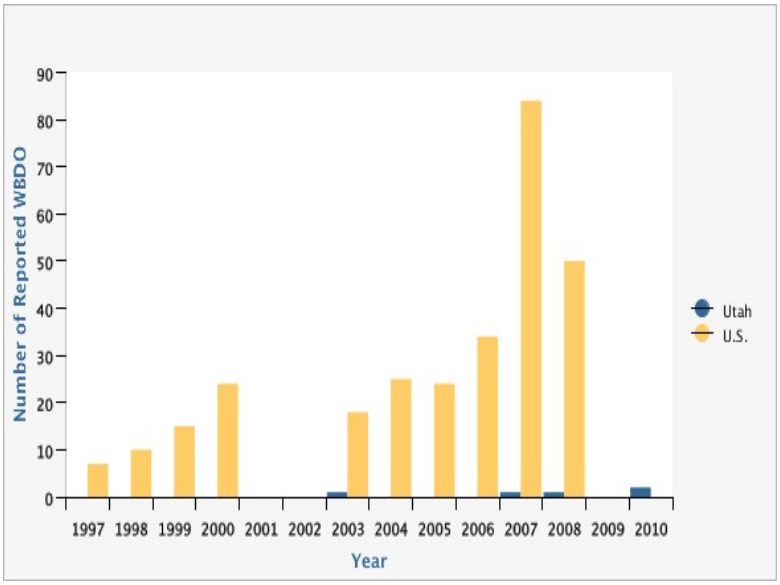
Since 1999 there have been no verifiable water-borne disease outbreaks or illnesses in Salt Lake County attributable to Public Drinking Water. In 2007-2008, CDC documented one waterborne disease outbreak in Utah linked to drinking water (Map 16). This was a Campylobacter case in a non-community public drinking water system at a camp not in Salt Lake County.

**Map 16. CDC Waterborne Disease and Outbreak Surveillance System, Number of waterborne disease outbreaks associated with drinking water (n = 36), 2007–2008**




Looking ahead, the SLCoHD is committed to improving five environmental areas to ensure the availability of clean water in SLCo: energy efficiency, recycling, pollution prevention, overall sustainability, and water conservation. The Salt Lake County Green Business program targets these areas by encouraging local businesses to improve their environmental practices and educating them in green business tips such as low flow water devices and pre-rinse dishwasher spraying to save upwards of $1,300 and 90,000 gallons of water per year.

**Figure 63. Number of Reported Waterborne Disease Outbreaks by Year, Utah and U.S., 1997-2010**




### Legionella Contamination

The SLCoHD continues to receive sporadic reports of Legionella bacteria present in water systems. Few of the reports rise to the level of a confirmed outbreak (as defined by finding two or more unrelated cases linked by time and place). Two cases of note are described below.

October 2010-July 2011. The SLCoHD received two reports of travel-associated legionellosis resulting in deaths of the individuals. The common denominator in both cases was a hotel at the south end of the valley where both individuals stayed in late July 2010. Original sampling of the facility found significant numbers of Legionella *pneumophila* serotype 1 in the three water heaters serving the guest rooms (98000, 64000, 28000 cfu). Organisms were recovered in

guest rooms but at significantly lower levels. Samples of the incoming cold water supply were negative for Legionella.

Remediation consisted of installing a thermostatic mixing valve on the common outlet of the water heaters. This allowed the temperature of the water heaters to be maintained at $160^0$F+ without presenting a scalding risk to the guests. The water heaters and guest room outlets were flushed a number of times. The hot water temperature in the guest rooms was maintained at about $122^0$F. Over the next several months, the water heaters were periodically heated to $170^0$F or higher and drained. Sampling occurred during this period. Between February and July 2011, all samples were negative for legionella. At that time, sampling was discontinued.

September 2012-October 2012. The SLCoHD received a report of a confirmed death from legionellosis at an assisted living center in Salt Lake County. The facility also reported an unusually high number of cases of pneumonia, possibly caused by Legionella *pneumophila*. While this did not fall under the category of a confirmed outbreak, the SLCoHD Bureau of Epidemiology felt an investigation should be conducted. The facility had 12 water heaters serving the resident rooms. Samples were taken from the water heaters serving the room associated with the confirmed death occurred as well as from fixtures in the room. Additional random samples were taken from other water heaters, resident rooms, and the incoming water supply. Legionella was isolated from the water heater serving the deceased person's room (48000 cfu) as well as the fixtures (12000 cfu). The incoming water supply was negative. Other samples were positive for Legionella but at lower levels.

Remediation consisted of installing thermostatic mixing valves on all water heaters. Water heaters were flushed and maintained at $160^0$F or higher. Outlet temperatures in the resident rooms were maintained at $110^0$F due to scalding possibilities with an elderly population. All showerheads and faucet aerators were removed, cleaned and disinfected. Subsequent sampling found reduced levels of Legionella in the range of 12000-7300 cfu (sampling this time was a combination of water and swab samples of the fixtures). Water heaters were again flushed as were fixtures in the resident rooms. The results of the sampling found fixtures in one room positive for Legionella. Facility management stated this room had been vacant for a number of months, which would allow for significant biofilm growth. At this time, sampling was discontinued. Follow-up sampling will be conducted in 6 months.

### Public Beaches

Salt Lake County has few public recreational beaches and has not had any significant beach closures in the past five years other than a voluntary closure of a beach in a private subdivision due to an Ascariasis (intestinal worm parasite) outbreak.

### Public Pools and Spas

During the latter half of 2007, SLCoHD collaborated and coordinated with health officials and many community partners (including pool operators) across the Wasatch Front to investigate and control a large community-wide outbreak of cryptosporidiosis. Statewide, over 1,900 people became infected with *Cryptosporidium* from June 1, 2007 to November 30, 2007. Health districts most affected included Salt Lake, Utah, Davis, Weber-Morgan and Bear River; cases were first reported outside of Salt Lake County.

A total of 684 lab-confirmed cases of cryptosporidiosis were reported to the SLCoHD. By comparison, only 5 cases are expected during this same time period each year. By mid-November, all restrictions were lifted and all jurisdictions reported a drastic decrease in cases, indicating the outbreak had come to an end. The CDC information warned that similar events could reoccur. However, due to enhanced surveillance, public education, and coordination with outside agencies, an increase in Crypto cases in subsequent years has not been found. Ultimately, the public is responsible for adhering to these guidelines in order to prevent the

spread of disease through public water venues and to other people. This is why SLCoHD has a press conference each year to remind the public of their role in prevention.

### Water Contaminants

SLCo is committed to EPA's goal of protecting human health and America's waters by protecting and restoring recreational and drinking water sources to reduce human exposure to contaminants that might be contained in them. Since 1975, SLCo government has engaged in regional water quality planning. Between 1985 and 1992, the SLCoHD assumed responsibility for the program. In 1997, the program was placed directly under the SLCo Public Works Department which currently operates the program as the SLCo Watershed Planning and Restoration Program. This program has engaged in numerous restorations, assessment, and planning activities since its inception. The primary goals of the program include assessment and restoration of streams and other water resources in the Jordan River sub-basin, stewardship planning, and environmental education outreach.

The scientific assessments and subsequent bioengineered restoration projects are carried out on a cooperative partnership basis with local municipalities, service districts and state/federal agencies. The program typically leverages local financial contributions with federal and state grants targeted at specific stream or lake restoration measures to accomplish its goals.

#### Chemical Spills

Red Butte Creek had significant damage to the aquatic life and vegetation in June 2010 when 33,600 gallons of crude spilled from a Chevron pipeline in the Wasatch mountain foothills and then again in December of that year when another 21,000 gallons escaped from a cracked valve but did not enter the creek. The riparian ecosystem of Red Butte Creek sustained serious damage as a result of the crude oil releases.

SLCo's Watershed Planning & Restoration Program was one of the 14 projects selected by the Division of Water Quality to receive Chevron mitigation funds. Using stream bank bioengineering techniques, this project proposes to restore vegetation with minimal impact and maximum benefit to the ecosystem. Replanting native riparian shrubs that were destroyed will help restore the many benefits that trees and shrubs provide to riparian ecosystems, including 1) a source of food and habitat for terrestrial and aquatic organisms, 2) stabilizing stream banks with their extensive root systems, 3) helping to protect water quality by preventing erosion and slowing overland flows of rain and snowmelt, and 4) reducing in-stream flows. The program will target the stretch of creek that flows through the University of Utah campus from just below Red Butte Garden to just above Foothill Blvd – approximately 4,580 feet of stream length.

A second project mitigating the Chevron pipeline oil spill was selected by the DDW and will be completed by SLCoHD. At the time of the spills, SLCoHD was not able to monitor the air quality parameters of concern. The SLCoHD was awarded $30,000 to enhance their capability to monitor air quality during similar events.

#### Landfill Leaching

Landfills are required in Health Regulation #1 (Solid Waste Management and Permitting) to monitor groundwater. This monitoring occurs twice a year for municipal landfills and once per year for construction and demolition landfills. These reports are submitted to SLCoHD Bureau of WQ/HHW for review. In addition, the regulation requires statistical analysis over time to look for increases in background levels of contaminants. The Health Department performs groundwater monitoring for Waste Control Management Construction and Demolition Landfill due to permit violations. These activities are funded with the bond required by the regulation at the time of permit application.

### Other

Leaking underground storage tanks, cemetery washouts, and above or underground gas storage tanks are all monitored by Utah Division of Environmental Quality.

## COMMUNITY CONTRIBUTION

An issue with many community assessments is that community resident input is limited to a formal questionnaire, requiring answers to specific questions that are either multiple choice or short answer. The liability with this approach is the respondents are forced into pre-determined choices. The response choices provided are usually based on the developers' assumptions and points of view.

Any large, formal assessment should be grounded in the problems and processes identified by the residents and professionals serving the communities through their lived experiences. With this as an assumption guiding the SLCoHD assessment, the Accreditation Committee chose a qualitative approach, using focus groups as a way to solicit information about community problems from its residents.

Focus groups are one method of collecting community-focused data. Because of the possibility of differing points of view, focus groups were held with community residents only, community professionals/partners only, and a combination of the two. To accomplish this, two rounds of focus groups were conducted. The first round was designed to identify health problems; the second was aimed at identifying solutions.

Public health impacts all aspects of society, a wide variety of perspectives were sought as the groups were planned. Representation was sought from two groups. The first group, referred to as "community" was the community at large, which included neighborhood leadership, and residents of various ages and ethnicities. The second group, referred to as "partners" was comprised of individuals providing service to the communities. Members of this group included representatives from health providers, government, businesses, religious organizations, charitable foundations, community organizations, ethnic organizations, nursing schools, emergency response and environmental health. In addition, three special population focus groups were conducted: refugees, Hispanic, and American Indian.

Community and special population focus groups were held during February and March, 2011. The partner focus groups were held on March 11, 2011. All but one focus group lasted 60 to 90 minutes.

### Data Generation

#### Community Focus Groups

Salt Lake County was subdivided into six sections that reflect areas of similar demographics. Demographic aspects considered in participant selection were income, race/ethnicity, socioeconomic status, ages of residents, age of the establishment of the city/area, housing type, and city boundaries. These aspects were not formally researched, but rather considered and agreed upon by each focus group organizer through common knowledge, experience in the community, and known community dynamics. Efforts were made to recruit a representative group from each community section (see Appendix 12).

Six community focus groups were conducted. One focus group was held in each community section. Participants were solicited by email and phone calls. Community leaders were asked

to recruit general community residents and refer them to the SLCoHD. In addition, walk-ins were welcomed. A total of 69 people (31 community group participants and 38 special population participants) participated in our six community resident focus groups and three special population groups.

Focus groups were audio recorded with permission. Notes were taken on large chart paper during the proceedings so participants could verify that their ideas were being interpreted correctly. The recordings from the initial community and partner/professional groups were transcribed and analyzed for themes using ETHNOGRAPH v.6, a qualitative data management computer program.

Community focus groups were held during the evenings or on Saturdays. Snacks were provided, but other types of incentives or compensation for participants' time were not provided. This decision was made because of budget constraints and the intent to recruit proactive community members. Attendance varied between groups with some having only two participants and others having up to eight. Each focus group had one facilitator and one note taker. A semi-structured questionnaire (see **Appendix 13**) was used to guide discussion.

### Special Population Groups

Three additional groups were asked or requested to participate in this health assessment process: refugees, Spanish-speaking, and American Indians. Lutheran Social Service, Centro de la Familia, and the Urban Indian Walk-In Center (respectively) assisted us in recruitment and/or hosting these special focus groups.

### Refugees

Lutheran Social Service holds English classes with various refugee groups. Eight refugees from countries such as Somalia, Burundi, and Burma participated. Most participants were familiar with English, but needed interpreters to help express complex ideas. However, only one interpreter was available. While this interpreter spoke several of their languages, she did not speak all.

Main ideas from this group were:

- Language barrier prevents real integration into society as well as communication to healthcare providers.
- Lack of education and career training (exacerbated by the language barrier) prevents finding good jobs.
- Without good jobs, refugees cannot become self-sufficient or get health insurance. This reliance on government programs and low-/no-cost healthcare leads to poor health outcomes.

### Spanish-speaking

Requests were made to cultural and community leaders to help select participants as well as to advertise to their community members. Guadalupe School, Midvale Community Building Community (CBC), SLCoHD South Main Clinic, and Centro de la Familia were some of the organizations who sent participants. Five Spanish-speaking community members attended. The discussion was taped and notes were taken by the facilitators. The Centro de la Familia generously let SLCoHD use their large meeting facility.

The following are highlights from the focus group:

- Major health concerns includes childhood chronic disease, high rates of childhood obesity and lack of physical activity, lack of preventive screenings, and other conditions such as autism, diabetes, lupus, tuberculosis, and depression.
- There is a lack of health information and education in the Spanish-speaking community, and a lack of health information resources in Spanish.
- Difficulty accessing health insurance including CHIP, high cost of health care resources including emergency care, and lack of access to preventive care including contraception for women.

### American Indian

This group was serendipitously developed when SLCoHD learned the Urban Indian Walk-In Center was conducting a focus group with urban American Indians to find out what their health concerns were, what they needed (resources), and their problems with the current healthcare system. A SLCoHD emergency preparedness staff member of American Indian heritage facilitated the focus group, and incorporated some of the questions developed for the original CHA into focus groups. Permission to collect data for SLCoHD's assessment was obtained prior to the event from the Urban Indian Walk-in Center as well as the participants prior to the discussion. There were 25 participants from various tribes.

This focus group identified the following health concerns:

- Diabetes, alcohol, and mental health issues.
- Predisposing factors related to these health problems were lack of availability of good foods, both from the cost and availability in the communities. A lack of understanding what balanced nutrition entails was not a factor
- Lack of affordable health care, especially mental health services.
- Lack of transportation was seen as a mitigating factor in seeking services and food.

Partnerships between the Urban Indian Walk-In Center and public and private entities were seen as a method to gain better understanding and access to services. Grant application was seen as another possible method to increase understanding and access to services.

## Partner Focus Groups

### Round 1

All partner focus groups were conducted the same day, March 23, 2011. The partner community group was recruited through postal mail using "save-the-date" postcards, followed by a more descriptive invitation and explanation letter. Follow up emails and phone calls were made when proper contact information was gained and when participants had not yet returned an RSVP. Of the 298 partners invited, 87 participated in the first focus group.

All participants initially met together for an orientation on the purpose and the process of the focus groups. They then broke into eight groups, each with a facilitator and note taker. Groups lasted 60 to 90 minutes. The same semi-structured facilitator's guide used for the community focus groups was used (see Appendix 13) to guide the discussion.

### Round 2

The second round combined professional/partners with the community residents and was scheduled one month later. 56 partners/professionals participated, in which 52 attended the first set of focus groups and 4 were new to the process. This group was combined with three interested community members. Analysts took the main themes derived from the first round and categorized the issues as Health Problems, Environmental Concerns, and Process Issues.

The framework for the second, combined focus groups was based upon these categories (see **Appendix 14**).

The second round was designed to identify solutions. The format included a general session where the participants prioritized the issues identified during the first session and then broke into individual focus groups to discuss possible solutions. In prioritizing the issues the participants were asked to consider the following factors in assigning their priority:

- Number of people impacted.
- Overall impact on the community.
- Which condition, if addressed would create the greatest gains for the community.

In a group session, each partner/resident was given five votes to cast between health problems and environmental concerns (members were allowed to cast their votes in any way, i.e. casting all votes for only one issue rather than split them up between five). Totals were summed and the top six problems were assigned to six different focus group facilitators. Mental health and substance abuse issues were combined into one group. Group members were then asked to participate in the group with the issue they preferred for discussion. Participants were charged with identifying priority problems, issues, and potential solutions. They were also asked to discuss their topics in the context of the process issues listed.

## Data Management

Focus groups were audio recorded with permission and notes were taken on large chart paper to facilitate discussion, summarize points, and allow participants to verify that their ideas were being interpreted correctly.

The recordings from Round 1 community and partner/professional groups were professionally transcribed and analyzed for themes using ETHNOGRAPH v.6, a qualitative data management computer program. The transcripts were analyzed by three persons: one SLCoHD doctorally-prepared qualitative researcher with content analysis experience and two public health graduate students from the University of Utah. Intra-rater reliability procedures for transcription coding were established. Themes were identified and presented in written format (see Partner Focus Group Discussions in Themes section).

### Establishing Validity

While quantitative approaches seek to explain a phenomenon, qualitative approaches seek to generate understanding of a phenomenon. As such, evaluation of reliability and validity for each approach is different. Credibility and Triangulation are accepted as two methods of establishing reliability and validity for qualitative approach.

- **Credibility** is defined as the degree to which the findings reflect the experience or thoughts of the participants. This was established during the prioritization process at which time participants had the opportunity to review the findings.
- **Transferability** is established when findings can be transferred to other situations or populations. The fact that the partner groups identified the same problems and issues as the community groups supports transferability.
- **Confirmability** is established by checking and rechecking the data collection and analysis procedures for bias or distortions. Consensus in establishing the groups for participation and establishing inter-rater reliability in analysis and coding procedures among those analyzing the focus group data help to confirm these findings.
- **Triangulation** is the validation of data through cross verification from two or more sources and/or research methodologies in the study of the same phenomenon. Toward

this end, an analysis of demographic, morbidity, and mortality data as well as a review of *Healthy People 2020* Objectives and performance targets, IBIS-PH data related to Utah performance on health indicators, and other empirical data sources support focus group findings.

## Focus Group Findings

Focus group discussions can be divided into two foci: 1) Health-specific issues focusing on diseases and their predisposing factors, and 2) Variables affecting health**.** The community and partner focus groups identified the following health issues as the most critical for public health in Salt Lake County:

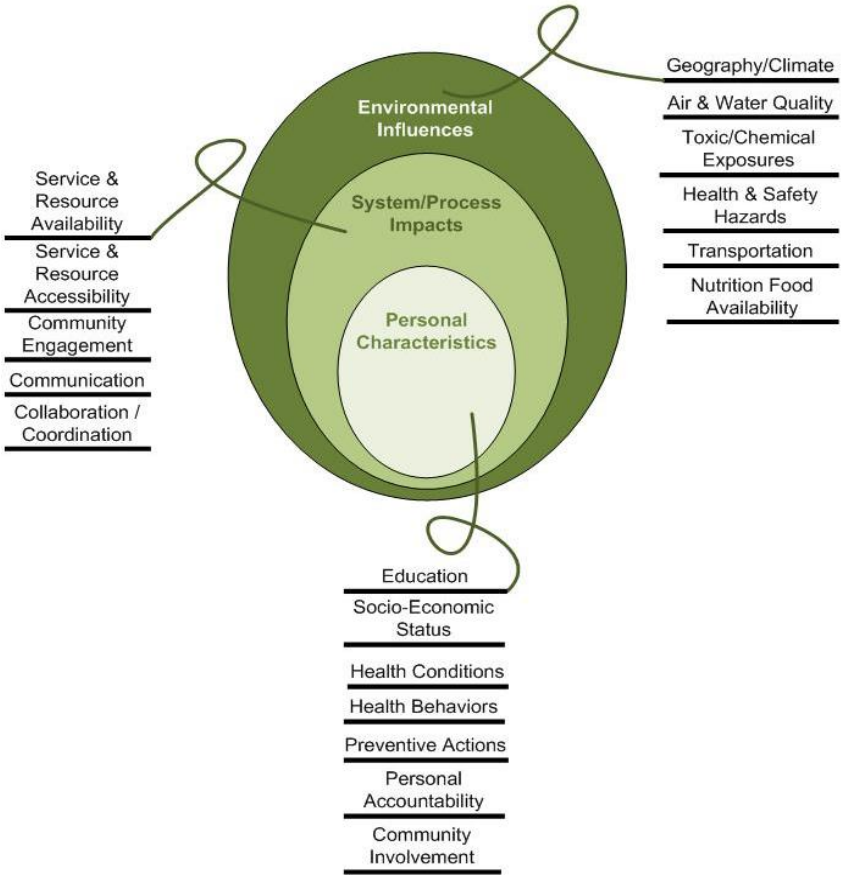
- Air Pollution
- Communicable Diseases
- Chronic Conditions or Diseases (Obesity, Heart Disease, and Diabetes)
- Water Pollution
- Mental Health & Substance Abuse

### Themes

Comparative analysis of the emerging themes between and among the focus groups indicated there is consistency among communities and community agencies regarding health problems and concerns. As the analysis progressed, it was apparent the issues fell into three categories or themes: Personal Characteristics, Environmental Influences, and Process/System Impacts.

The focus group data provides a framework delineating potential barriers and challenges for improving the identified health-specific issues. Clearly discussed at each focus group was the concern that numerous individual, system, and environmental factors have, do, and will impact any intervention proposed. Figure 60 depicts the factors at issue. The model was derived from analysis of the focus group discussions and will be used as the framework for discussing the findings from both the focus group, demographic, and community health data.

Figure 64. Factors Influencing the Community's Health




## COMMUNITY FOCUS GROUP DISCUSSIONS

### Personal Characteristics

Personal characteristics that influence a person's health were identified. Included in the list of personal characteristics were health conditions, health behaviors, preventive action, education, socio-economic status, personal accountability, and community involvement.

- Health conditions or illnesses included primarily chronic disease which leads functional limitations, thus limiting the types and/or venues of activities people can participate in.
- Health behaviors include decisions about whether or not to participate in healthy behaviors, such as eating healthy foods.
- Preventive action refers to residents' decisions to seek preventive services such as immunization, annual examinations or various screening procedures.
- Personal accountability is the willingness of an individual to take responsibility for one's decisions and behaviors.
- Community involvement refers to a person's willingness to be proactive and involved in programs, groups, or other activities at the community level to influence decision making.

These decisions are dependent not only on residents' choices to practice these activities, but also on the availability of personal resources, such as disposable income and time to take advantage of the available resources, as well as the knowledge about health promotion activities offered.

In general, focus group participants believed everyone has a personal responsibility to make the best choices for themselves when it comes to health. The system can provide the resources, but not the motivation. Residents have a responsibility to help guide the decisions government makes about the resources for their communities. In addition, community leaders and resources in the community need to reach out to community residents to seek their ideas and assistance in motivating other community members.

### Process/System Issues

Process and system issues tended to dominate the discussions over environmental influences and personal characteristics. System issues discussed by participants focused on availability of resources in the community and residents' ability to access them. Resources necessary to maintain health included: availability of markets providing the opportunity for appropriate food choices, public education about healthy lifestyles, safe walking paths, etc.

Inequities and barriers such as socioeconomic status and age were a recurring topic. The observation that grocery stores in poorer areas do not carry the same quality of healthy foods such as fruits and vegetables as stores in more affluent areas was mentioned frequently. In addition, food choices available at grocery stores in lower income areas are limited or unhealthy. Some participants mentioned prices for healthy foods are higher.

Elderly participants voiced concern that recreation resources available in their communities are more focused on youth programs rather than providing a mix including indoor activities for the elderly who are concerned about weather and safety.

While people do have a personal responsibility for their health, the focus group members believe their tax dollars should be used to facilitate community health and well-being in the best possible way for the community. Limited funding to support health programs and resources was acknowledged. The limited funding should be used to benefit as many as possible so community input from residents across various demographics should be solicited.

Every focus group expressed concern about government officials and program leader's infrequent engagement of the community for input. Communities in general believed they have limited opportunity for input into decisions made on their behalf. In addition, the participants identified problems between community leaders and elected or bureaucratic entities and problems within and between elected officials and bureaucratic agencies that result in poor decision making regarding resources. Interagency communications and collaborations need improvement.

### Environmental Influences

Air pollution was mentioned by all focus groups as the most significant environmental issue. Other environmental hazards frequently mentioned were property management issues related to trash, insects, critters, hoarding, disrepair, and abandonment. The climate's impact on availability of year-round use of outside resources is limited which places greater emphasis on the need for indoor recreation opportunities.

Ability to access facilities providing health promoting programs and activities was consistently mentioned. Transportation was discussed as a major barrier. Not only are few transportation options available in lower income communities, there is also the belief that the newly expanding communities (in the southwest region of the county) do not need to create infrastructure for public or alternative transportation options.

The distance to health care facilities is a problem for many without transportation, yet the focus group members believe that the availability of low income healthcare resources is currently sufficient.

## Partner Focus Group Discussions

### Air Quality

Participants from the air quality focus group agreed that environmental influences were not as significant as the system impacts to air quality. System impacts, such as transportation issues and a lack of recreation facilities were a concern to focus group participants.

The transportation concerns focused on traffic and automobile related pollution, and a lack of alternatives to automobiles (e.g. TRAX and bike lanes). Participants mentioned that the UDOT advisories are not effective since the advisories are only seen on the road while commuting to work. Participants mentioned the TRAX system takes too long, the wait time from train to train creates an undue burden thus making the system inconvenient. Until Utah has better alternatives to driving participants do not feel that people will drive less.

Participants mentioned that greater emphasis on carpooling and idle-free campaigns could be helpful. There are current programs such as the Clear Air Challenge that have been successful, and participants feel would be well suited for an expanded purpose. However, participants believe that improving public transportation would have the most significant impact on reducing automobile traffic.

A lack of individual motivation was also mentioned. Participants mentioned that most people are unaware of their personal contribution to poor air quality and thus are not motivated to change behaviors. In addition, participants mentioned that people don't take responsibility for their behaviors. Participants specifically discussed how every school has parents who sit and idle for 10 minutes or longer while waiting for children. The lack of education or enforcement of idle-free programs makes this a poor situation.

Participants mentioned that partnering with local services would improve the public perception of their impact on air quality. They felt that SLCoHD becoming involved would be helpful since people respect the health department. Participants also mentioned that an improvement in the available programs would reduce the need to drive. A more walking-friendly environment or parents to stop idling at schools would be important. Many people don't understand that being idle-free all the time would help more than they realize.

### Obesity

Participants from the obesity focus group discussed that system impacts and personal characteristics are entirely at fault for the rise in childhood obesity. Participants agreed the most significant factors affecting child obesity include a lack of health-related facilities, a lack of nutritious foods as alternatives to fast foods, and a lack of education or a sense of responsibility on an individual's part.

Participants discussed that a significant barrier to preventing obesity is that children do not have easy access to parks, recreation facilities, or gyms. When parks are far from the residence, it becomes a safety concern for children to go and play since they must travel through busy street and business districts. There are few bike and walking trails available, which also limit where children may play. Recent economic trends have also limited the number of families with memberships to gyms or recreational facilities. The cost of obtaining a gym membership, or of driving to parks on a regular basis has become cost prohibitive.

The focus group participants mentioned that creating more accessible bike and walking lanes, and easier access to parks could positively impact childhood obesity. They discussed how government support should create opportunities for easier access. Organizations such as 211 Information and Referral, Gold Medal Schools, UDOH Physical Activity Nutrition and Obesity Program (PANO), and organized sports leagues could be used to impact a greater number of people. They concluded that these programs are already in place, and being a part of an organization is more likely to cause children to participate than just going to the park independently.

Participants discussed that the greatest issues in child obesity are nutrition and diet. Fast food is easily accessible, cheap, and requires little preparation or cooking. This creates an incentive for working or busy parents to rely on unhealthy foods for meals. In addition, there are limited education resources available to teach kids to eat fruit or vegetables for snacks instead of junk food.

Participants suggested a nutrition education outreach program that partners with community and church groups. Healthy food is available, but when people go grocery shopping, they buy packaged dinners rather than fruits, vegetables, and other healthy foods. An educational approach should address these habits, and teach kids what to eat at school so they can ask for healthy foods from parents.

### Water Quality

Participants from the water quality focus group discussed how environment-related issues and system impacts are the predominant issues in water quality. They discussed how natural contamination and man-made waste disposal are polluting water. Participants discussed how the lack of enforcement for cleanup laws allows people to dump waste and let their animals leave waste without cleaning up. This contamination affects both surface and ground water. The decisions people make are impacting urban land. Participants also discussed how insect populations are contaminating waters with waste and disease. Insects that spread diseases are becoming more problematic.

Participants also discussed how system impacts can harm water quality. They talked about how people are uninformed and uneducated about the legal and environmental consequences of their behaviors. Participants agreed there is a lack of adequate water facilities, which causes people to utilize natural water sources for recreation, such as rivers and lakes. These natural water sources are then contaminated by people's careless decisions.

Participants discussed how influential organizations could partner with government agencies to better enforce and educate the public about waste dumping and conserving natural water sources.

### Communicable Disease

Group members were asked to describe the perfect scenario for combating communicable disease and several ideas emerged. The perfect scenario would translate to a vaccination rate of 100 percent, as well as utilizing other types of preventive care, such as keeping sick children home from school to prevent the spread of disease. In addition, community, local and state governments need to be prepared for the spread of disease. Another element contributing to the perfect scenario is education. Education, especially spearheaded by school districts was seen as important. To position ourselves better to address the problem, education would also need to be focused on reducing the stigma around diseases such as STDs and emphasize

preventative measures. Members also felt cultural competence was important and supported the idea of approaching educational information from a culturally-important perspective.

Partners in building the perfect scenario were identified as 4th Street Clinic, Planned Parenthood, the current immunization system, organizations utilizing community buildings, mayors, schools and institutions of higher education, healthcare providers, wildlife biologists, veterinarians, senior citizen volunteers, legislators, lobbyists, non-profits who serve undocumented populations, United Way, 211 Information and Referral, agriculture and food departments. Group members felt the most logical groups for leading such efforts were the local and state health departments, legislators, community leaders such as clergy and cultural representatives.

Group members expressed concerns around process issues including: transportation to clinics, proximity to clinics, and general access problems (affordability, capacity restraints, and convenience).

Exactly how to inform the public about communicable diseases involved the persistence of the message, simplicity, incentives, and the use of current news on epidemics, playing on already understood concepts such as natural disaster and emergency preparedness, and using the media and professionals to make the health department and its message more visible in the community.

Suggestions on the enhanced use of public relations and making SLCoHD more visible included:

- Educate the population about public health.
- Promote the concept that public health is public safety.
- When the spotlight is focused on SLCoHD (such as a measles outbreak), utilize the opportunity to promote public health.
- Discuss collateral damage from events, for example the tangible and intangible costs associated with a measles outbreak.
- Stress how events are linked and how one action impacts another. For example unvaccinated children are at risk and put others at risk.
- Work more closely with veterinarians. Animals can cause disease (plague, tularemia).
- Continue to work closely with mayors and local officials.
- Better utilization of social media tools, such as Twitter and Facebook.
- Improve education and access to care by creating a presence at local clinics, health fairs, and places people go.

## CONCLUSIONS AND RECOMMENDATIONS

The interplay of individual, social, and environmental determinants of health makes the monitoring, maintenance, and improvement of the public's health a challenging and unrelenting but vital task. To impact and improve the public's health there must be an understanding of this interplay. This report, through the use of quantitative and qualitative data endeavors to outline the basics of these interrelated factors. The health of the public impacts and is impacted by all facets of society. Just as the community must accept some responsibility to provide the resources to support the health of the community, so must the residents acknowledge their roles and take not only personal responsibility for their own health, but also participate in community-wide health improvement programs, citizen advisory and advocacy activities. Agencies, organizations, and coalitions coordinating among themselves and with policy and decision

makers can maximize the benefits of limited resources. By working together with the community, all will gain.

Overall, the health of SLCo compares favorably to the nation, but there is still a distance to go in order to reach the goal of becoming the healthiest county in the state and in the nation. While some areas of the county meet all or nearly all of the health standards, some meet very few. Efforts will be concentrated to help these failing areas improve with the understanding that there are underlying factors that play into the negative outcomes.

However there are significant challenges that must be met, both physically and sociologically. SLCo's population is expected to continue to increase, and is expected to shift in concentration from the east center of the valley to the southwest section. This shift will not only create new demands for facilities, it may increase the physical gap between those who are elderly or those with low incomes or poor education to those who are younger, have greater mobility or are more affluent. In addition, the population is aging and increasing in ethnic and cultural diversity. These factors need to be considered when the demand for new facilities or evaluation of existing facilities arises.

SLCoHD made the following observations:

- Community Members were engaged in a meaningful way. This assessment is the product of the efforts of a variety of players, not the least of which were residents and community leaders. As discussed earlier, invited community partners included a number of nontraditional partners such as wildlife biologists, chambers of commerce, unions, major employers, private nonprofits, religious organizations, and funding organizations. Through this effort, and the planned process for the Community Health Improvement Plan, SLCoHD will leverage resources, and through the combined genius of the group, better identify practical, cost-effective solutions to pressing community health problems.
- Community leaders and professionals/partners learned they had many of the same community interests, needs, and some over-lapping programs. At each group, participants exchanged information and committed to work together informally on projects in the future. The seeds of community participation were sown at the focus groups as new and renewed partnerships emerged from the process. SLCoHD's plan is to nurture willingness to participate, provide structure and enable committed community members to work with one another on common goals. SLCoHD has learned of several efforts in the community, among them: 1) A fledging effort between SLCoHD and a hospital where physicians will prescribe healthy lifestyle training to their obese or smoking patients, and SLCoHD will provide qualified health educators; 2) An insurance company in cooperation with an area school is providing physical activity training, nutrition education, and healthy snacks in an effort to impact obesity in school age children.
- Leveraging resources is more essential than ever. As funding for programs continues to decrease, using the dollars in the most efficient and effective manner will maximize outcomes. It is the need to leverage resources that drives many of the decisions agencies make as they seek collaborations with other agencies. Long standing barriers between types of agencies will need to be confronted and worked through. SLCoHD heard this loud and clear in the focus groups.

For the purposes of this report, SLCoHD noted two general categories of issues – **Overarching** and **Specific**:

## Overarching Issues

During the course of this review, SLCoHD identified the following macro issues impacting community health. Not surprisingly many of these same issues plague other components of society. These issues include:

- System issues
- Process issues
- Usefulness of the data
- Geographic Location

### System Issues

#### COMMUNITY

- Service and resource availability to community members
- Service and resource accessibility for community members
- Coordination and communication between agencies and community leadership

#### AGENCY

- Continue to improve the collaborations that were initiated as a result of this effort
- Continue to utilize interns from area universities
- Continue to expand opportunities for collaboration

### Process Issues

- Communication and collaboration between agencies
- Coordination of services, e.g. to avoid such things as two low-cost clinics within a few blocks of each other
- Engagement of community members in health-related decision making for the community

### Data Availability and Usefulness

- Small area data does not correlate with municipal boundaries.
- IBIS-PH Health Indicators frequently do not match Healthy People 2020 Objectives.
- Need for data reported at the county level and small area levels. For example, some of the indicators for diabetes are only available at the national level.
- Small Area data are confusing to municipalities. Many municipalities are divided and share in small area data with other municipalities yet only one small area bears its name.
- Work with IBIS-PH to ensure that indicators reflect data needs for determining progress on *Healthy People 2020* objectives.
- Provide consistency collection of immunization data at the state and local levels. Currently, Salt Lake, Davis and Tooele counties use a CDC approved system to track vaccinations, while the state uses a system based on sampling methodology. The state-estimated rates tend to be lower than those calculated by the local health departments. At a minimum, the official state figures should be derived using the same methodology.

### Geographic Location

Where people live can impact their health. In SLCo, as with most medium to large population centers, there are pockets of poor public health. As discussed in this report, the areas of Glendale, Rose Park, Magna and to a lesser extent, West Valley and South Salt Lake are the most troubled areas in terms of community health. The question then becomes what can be done to impact some of these areas given that income and education are generally considered

to be the best predictors of a community's health. Ironically, these are the most difficult to impact, and require the most time and funding. That is not to say that nothing can be done, as many things are being done or can be done. Short- and long-term solutions can be sought only when there is an awareness of a problem and a willingness to combat it. SLCoHD's hope is that this report (along with several others) will serve as a catalyst to begin that journey.

## Specific Issues

In addition to the overarching issues, there are a number of smaller, more discrete issues. Among those identified in this report are:

- Relative rankings compared to peer or neighboring counties
- Shifting demographics
- Selected diseases
- Social determinants of health
- Individual determinants of health
- Environmental concerns

### Improve County Rankings

Rankings of counties are a good barometer of how well a county is doing in comparison to its peer counties and its neighboring counties. According to the data described in this report, SLCo is in the middle of the pack. To improve and become the healthiest county, SLCo must strategically identify geographic areas that are lagging, and develop interventions to impact the problem issues. This effort must in collaboration with community partners.

- Work with organizations that design and conduct county ranking reports so data used to rank and report clearly reflect the county they purport to represent.
- Work with community partners to impact critical issues and use county rankings to help guide and prioritize efforts.
- In collaboration with community partners, target small areas having challenges in meeting *Healthy People 2020* targets for additional assistance.

### Respond to and prepare for shifting demographics

Arrival of new residents (many of whom are immigrants), aging of existing residents, and a marked shift in population to the southwest quadrant are the central demographic issues facing SLCo. Elderly individuals will tend to be located in the suburban southeast area of the valley, and in the lower-income urban northern areas including the Avenues, Rose Park, and Glendale. At the same time, the more affluent southwest area will be bursting with young families. The new arrivals, based in large part on their incomes will tend to distribute themselves along income lines and/or in neighborhoods with fellow immigrants. The implications of this shift are significant. In terms of community health, including more services for an increasingly frail population in one area, greater linguistic and cultural resources for an increasingly diverse population in another, and increased demand for immunizations and family health services in yet another. In addition, increased pressure on infrastructure issues related to water and sanitary needs wherever the population expands.

To better prepare for these changes SLCoHD recommends:

- Locate facilities in the southwest quadrant, an area of projected high growth.
- Work to ensure the availability of services for elderly in the southeast and for youth and young families in the southwest.

- Insure greater cultural sensitivity and multiple language availability.

## Diseases and Selected Health Problems

Although SLCo is generally meeting the objectives established in the *Healthy People 2020* effort, there are significant sectors of SLCo that are not reaching the targets. In general this means that while Sandy, South Jordan, Foothill/University areas and others are consistently meeting or exceeding the targets, there are a few areas such as Glendale, Rose Park and Magna that consistently have difficulty meeting the targets. One approach for assisting these areas might be to assist community leaders to collaborate with agencies and organizations to identify and develop interventions for health issues and focus resources on these communities.

### Obesity

Obesity can be a predisposing, precipitating factor, or the direct cause for many health problems including diabetes, heart disease, orthopedic problems. Obesity affects breathing, the ability to exercise, endurance, as well as making existing health problems worse. Obesity was identified in focus groups, data, and community ranking reports as one of the major community health issues facing SLCo. Of note, the percentage of obese adults in Utah more than doubled in 22 years. For example, only 12% of Avenues residents are considered obese, compared to nearly 40% of Magna's residents. Of extreme concern is the increase in obesity among children. As has been seen earlier, some small areas are healthier than others.

## Social determinants of health

Social determinants of health are recognized as key factors influencing the public's health. As part of this assessment, SLCoHD accounted for income, education, risky behaviors, access to nutritious foods, and access to care as critical factors impacting the public's health. The direct relationship between these social factors and a disproportionate share of illness and perceived poor health is evident in the findings. Greater investment by policymakers in improving the infrastructures related to the aforementioned social determinants of health is necessary to realize improvement in the health of the residents and health indicators of the aforementioned communities.

## Individual determinants of health

Individual determinants of health are key factors influencing individual health. People have accountability for their own health. While expecting the system to provide accessible services to maintain health, they must avoid unhealthy behaviors such as binge drinking, overeating, and smoking and engage in healthful ones such as exercise, proper nutrition and participation in disease-specific screenings.

## Environmental Concerns

Focus group participants identified air and water as the environmental areas of the greatest concern, proclaiming air pollution as the greatest threat to community health.

### Air Pollution is the Greatest Area of Need

Air pollution and haze has been a concern in the Salt Lake Valley for several years. The cause of the pollution has changed but the problem remains. The Salt Lake Valley is surrounded by mountains; these mountains tend to retain pollutants by restricting cleansing winds. This

problem was noted in Salt Lake City's 1943 City Plan. In the *Problem of Smoke in Salt Lake City* section they note that:

> *Because of peculiarities of its location, Salt Lake City, although not a tremendous smoke producer nevertheless finds smoke an exceedingly serious problem.* It goes on to state: *The location of Salt Lake City in a valley closed on three sides by mountains retards dispersal of smoke. During the winter months the wind velocities are lowest, and long periods of calm weather permit the smoke to accumulate in areas not entirely responsible for its production.*

To combat the problem Salt Lake City established the forerunner of the Bureau of Air Quality; the Smoke Control Division.

The EPA has identified six criteria pollutants. They are: ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxides, and lead. SLCo currently meets federal standards for most of these pollutants. Only ozone and particulate matter are considered by EPA to be serious threats to public health in SLCo. The concentration of both of these air pollutants is extremely dependent upon meteorology. As pollutants are generated, the concentration increases due to the smaller volume of air trapped below the inversion. When this occurs, the National Ambient Air Quality Standards (NAAQS) may be exceeded.

Since 1984, the SLCoHD has operated a Vehicle Inspection and Maintenance (I/M) Program to reduce air pollution. Motorists take their vehicles to authorized test stations for annual tests to ensure that their vehicles are working properly and not polluting the air. The program has been successful in reducing emissions of NOx, CO, and VOCs. Thereby preventing many unhealthy days and hastening the attainment of the CO and Ozone standards. The Vehicle Inspection and Maintenance (I/M) Program continues to provide benefits for the reduction of PM2.5 and Ozone - our current criteria pollutant concerns.

SLCoHD believes that current efforts must be maintained and that as additional technologies become available they be carefully reviewed and if feasible, aggressively adopted. Combatting air pollution must be done on an incremental scale. Public awareness, public policies, technological advancements, and public demand will all be needed to effectively combat air pollution.

### WATER POLLUTION

In general water pollution in SLCo is not a major problem, due in large part to the efforts of the Bureau of Water Quality. That is not to say the problem is solved, as ensuring clean water is an on-going task.

The sources of water pollution are widespread. Water pollution can occur in the form of: bacteria, chemicals (oil, gasoline, paint, household chemicals, medical by-products, asbestos, pesticides, road salt, lead, mercury), and radiation (Uranium, titanium). Contamination can harm humans, wildlife, fish, and/or the environment. Sources of contamination include: septic systems, leakage of underground storage tanks, broken pipelines, hazardous waste sites, industrial dumping, landfills, agricultural chemicals and fertilizers, and atmospheric deposition of airborne contaminants that form acid rain. Processes, procedures, policies, and laws are in place to control many of these threats to our drinking water and recreational water, but problems may occur despite these measures.

## END NOTE

This review considered a few of the health determinants and issues facing SLCo that hold us back from becoming the healthiest county in the nation. There are challenges and related responsibilities to go around, the burden of which must be shared by all involved stakeholders – residents, providers, advocacy groups, and informal and elected officials.

The next step is to come together to develop a Community Health Improvement Plan that reflects the unique roles of each stakeholder in the journey toward becoming the healthiest county in the nation.

# APPENDICES

| | |
|---|---|
| Appendix 1 | Graduate Student Assistants |
| Appendix 2 | Criteria for Choosing Health Factors for Review |
| Appendix 3 | County Health Rankings Definitions |
| Appendix 4 | *County Health Roadmaps Project* Detailed Tables |
| Appendix 5 | Small Area Map |
| Appendix 6 | Data Demographic Characteristics of People with Disabilities |
| Appendix 7 | Disability Population Socio-Demographic |
| Appendix 8 | Tables for Pertussis Figures 26 and 27 and Tuberculosis Figure 41 |
| Appendix 9 | Definition of Park Types |
| Appendix 10 | Locations of Parks and Recreation Facilities |
| Appendix 11 | Detailed Descriptions of Salt Lake County Food Deserts |
| Appendix 12 | Focus Group Locations |
| Appendix 13 | Facilitators Guide |
| Appendix 14 | Partner Focus Groups: Second Round Activity |

## Appendix 1 – Graduate Student Assistants

**GRADUATE STUDENT ASSISTANTS**
**ACCREDITATION PROCESS**

| SEMESTER | SCHOOL | NAME | ACTIVITY | MENTOR |
|---|---|---|---|---|
| Spring – Spring 2013 | University of Utah | Suzanne Millward | Data collection (focus groups) and analysis; Community Health Assessment report | Cynthia Morgan<br><br>Jim Thuet |
| Spring 2011 | University of Utah | Sarah Ashitey | Focus Group data analysis | Cynthia Morgan |
| Spring 2011 – June 2012 | University of Utah | Daniel Crouch | Data Analysis for Critical Indicators | Jim Thuet |
| Summer 2012 – Summer 2013 | University of Utah | Daniel Bennion | Community Health Assessment report; Strategic Plan; Domain data collection and organization | Cynthia Morgan<br><br>Brian Bennion |
| Winter 2013 – Summer 2013 | Brigham Young University | Jared Jashinsky | Community Intervention Plan; Domain data collection and organization | Jim Thuet |
| Spring 2013 – Summer 2013 | University of Utah | Brooke Hashimoto | Domain data collection and organization | Jim Thuet |

## Appendix 2 – Criteria for Choosing Health Factors for Review

# Criteria for choosing variables to analyze

| # Times ID'd | Groups ranking problem → / Health and Health-Related Concerns ↓ | County Health Status Indicator Project (CHSI) | Community Health Roadmaps Project (CHRP) | Focus Groups | Health Data | Healthy People 2020 | Comments |
|---|---|---|---|---|---|---|---|
| 4 | Obesity | | X | X | X | X | Obesity is a factor for numerous chronic illnesses |
| 3 | Diabetes | | | X | X | X | |
| 3 | Asthma | | | X | X | X | Both Asthma and COPD are problems with air pollution |
| 2 | COPD | | | | X | X | |
| 1 | Stroke | X | | | | | |
| 3 | Breast Cancer | X | | | X | X | |
| 3 | STDs | | X | | X | X | |
| 3 | Pertussis | X | | | X | X | |
| 3 | Tuberculosis | X | | X | | X | |
| 1 | Hepatitis B | X | | | | | |
| 3 | Suicide | X | | | X | X | |
| 2 | Motor Vehicle Accidents | X | X | | | | |
| | | | | | | | |
| 4 | First Trimester prenatal care | X | X | | X | X | Related to low birth weight |
| 4 | Low Birth Weight babies | X | X | | X | X | |
| 1 | Hispanic Infant Mortality | X | | | | | |
| 4 | Births to Women Under 18 | X | X | | X | X | |
| | | | | | | | |
| | **Individual Behaviors** | | | | | | |
| 2 | Smoking | | X | | | X | |
| 3 | Binge drinking | | X | X | | | |
| 3 | Physical Inactivity | | X | X | | X | |
| 3 | Maintain healthy weight | | X | X | | X | |
| 3 | Cancer Screenings | | X | | X | X | |
| 5 | ○ Mammogram | X | X | X | X | X | |
| 4 | ○ Colorectal | X | | X | X | X | |
| 4 | ○ Cervical | X | | X | X | X | |

# Criteria for choosing variables to analyze

| # Times ID'd | Groups ranking problem → / Health and Health-Related Concerns ↓ | County Health Status Indicator Project (CHSI) | Community Health Roadmaps Project (CHRP) | Focus Groups | Health Data | Healthy People 2020 | Comments |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | **Physical Environment** | | X | | | | |
| 4 | Air Quality | | X | X | X | X | |
| 3 | Limited Access to Healthy Foods | | X | X | | X | |
| 1 | Number of Fast Food Restaurants | | X | | | | |
| 2 | Access to recreational facilities | | X | X | | | |
| 1 | Lack of Transportation | | | X | | | |
| 3 | Water Quality | | | X | X | X | |
| | | | | | | | |
| | **Social/Economic Factors** | | | | | | *Objectives are under development. |
| 3 | Poverty | | X | | X | X* | |
| 3 | Education | | X | | X | X* | |
| 4 | Uninsured / Cost | | X | X | X | X | |
| | | | | | | | |
| | **Clinical Care** | | | | | | |
| 3 | Low cost primary healthcare services | | X | | X | X | |

Community Health problems were identified utilizing five sources:

1. County Health Status Indicator Project which compared Salt Lake County with peer (similar) counties
2. Community Health Roadmaps Project ranked Salt Lake County against other counties in the state by comparing its rank to the other counties in the state.
3. Community and partner focus groups identified problems from their unique perspectives
4. Health Data from IBIS-PH was reviewed to identify areas where Salt Lake County needs improvement.
5. *Healthy People 2020* targets for each of the identified health problems were reviewed.

Criteria for choosing health problems to analyze:

- Identified by 3 or 4 of the above sources as issues for Salt Lake County
- Public Health Core Functions and Essential Public Health Services that frame the public health sphere of responsibility

- Salt Lake County Small Areas rates that were significantly different from county, state, and national rates.
- Condition is somewhat preventable given adoption of healthy behaviors and/or screening
- Improvement in one problem will impact other problems
- Items were related to others to be considered, e.g. lack of recreational facilities is related to physical activity and obesity.

## Appendix 3 – County Health Rankings Definitions

**"Rank (of 26)"**: Of Utah's 29 counties, only 26 are included in the analysis. Rich, Piute, and Daggett counties are "NR: Not Ranked."
**National target**: 90th percentile, i.e., only 10% are better
**Premature Death**: Years of potential life lost before age 75 per 100,000 population (age-adjusted)
**Poor or fair health**: Percentage of adults reporting fair or poor health (age-adjusted)
**Poor physical health days**: Average number of physically unhealthy days reported in past 30 days (age-adjusted)
**Poor mental health days**: Average number of mentally unhealthy days reported in past 30 days (age-adjusted)
**Low birth weight:** Percent of live births with low birth weight (< 2500 grams or 5.5lbs)

**Adult Smoking**: Percent of adults that report smoking >= 100 cigarettes and currently smoking
**Adult Obesity**: Percent of adults that report a BMI >= 30
**Physical inactivity**: Percent of adults aged 20 and over reporting no leisure time physical activity
**Excessive drinking**: Binge plus heavy drinking
**Motor vehicle crash death rate**: Motor vehicle crash deaths per 100,000 population
**Sexually transmitted infections**: Chlamydia rate per 100,000 population
**Teen birth rate**: Teen birth rate per 1,000 female population, ages 15-19

**Uninsured**: Percent of population under age 65 without health insurance
**Primary care physicians**: Ratio of population to primary care physicians
**Preventable Hospital Stays:** Hospitalization Rate for ambulatory-care sensitive conditions per 1,000 Medicare enrollees
**Diabetic Screening**: Percent of diabetic Medicare enrollees that receive HbA1c screening
**Mammography screening**: Percent of female Medicare enrollees that receive mammography screening.

**High School Graduation:** Percent of 9$^{th}$ grade cohort that graduates in 4 years.
**Some College**: Percent of adults aged 25-44 with some post-secondary education
**Unemployment**: Percent of population age 16+ unemployed but seeking work
**Children in Poverty**: Percent of children under age 18 in poverty
**Inadequate social support**: Percent of adults without social/emotional support
**Children in single-parent households**: Percent of children that live in household headed by single parent
**Violent crime rate**: Violent crime rate per 100,000 population

**Air pollution-particulate matter days**: Annual number of unhealthy air quality days due to fine particulate matter.
**Air pollution-ozone days:** Annual number of unhealthy air quality days due to ozone
**Access to recreational facilities**: Rate of recreational facilities per 100,000 population
**Limited access to healthy foods**: Percent of population who are low-income and do not live close to a grocery store
**Fast food restaurants:** Percent of all restaurants that are fast-food establishments

## Appendix 4 – County Health Roadmaps Project Detailed Tables

| HEALTH OUTCOMES<br><br>OVERALL HEALTH OUTCOMES RATE FOR SALT LAKE COUNTY = 12TH | SALT LAKE COUNTY RATE | UTAH RATE | AVERAGE TOP 10 COUNTIES |
|---|---|---|---|
| **MORTALITY RANK** | **7 – SLCo Rank** | | |
| • Premature death (potential life lost before 75) | 6,106 | 6,002 | 5,466 |

| | | | |
|---|---|---|---|
| **MORBIDITY RANK** | **15 – SLCo Rank** | | |
| • Poor or fair health (% reporting age adjusted to 2000 population) | 13% | 13% | 10% |
| • Poor physical health days (# days reported adjusted to 2000 population) | 3.3 | 3.4 | 2.6 |
| • Poor mental health days (# days reported adjusted to 2000 population) | 3.3 | 3.2 | 2.3 |
| • Low birth weight babies (% live births weight <2500 gms) | 7.1% | 6.7% | 6% |

| LEGEND | |
|---|---|
| | Equal to or better than national benchmark |
| | Equal to or better than Utah rate; worse than national benchmark |
| | Less than both national benchmark and state rate |

| HEALTH OUTCOMES<br><br>OVERALL HEALTH FACTOR RATE FOR SALT LAKE COUNTY = 17TH | SALT LAKE COUNTY RATE | UTAH RATE | AVERAGE TOP 10 COUNTIES |
|---|---|---|---|
| **HEALTH BEHAVIORS** | **12 – SLCo Rank** | | |
| • Adult smoking % aged 20> smoking every or most days; >100 cigarettes in lifetime) | 12% | 10% | 14% |
| • Adult obesity (% of aged 20 & > BMI ≥ 30 kg/m2) | 25% | 25% | 25% |
| • Physical inactivity (% of aged 20 & > reporting no leisure time physical activity) | 18% | 18% | 21% |
| • Excessive drinking (binge >4 for women, 5 men on a single occasion past 30 d) | 12% | 9% | 8% |
| • Motor vehicle accident (MVA) rate (all types per 100,000) | 11 | 13 | 12 |
| • STDs (measured by chlamydia rate) | 319 | 225 | 84 |
| • Teen birth rate (per 1000 aged 15-19) | 40 | 35 | 22 |

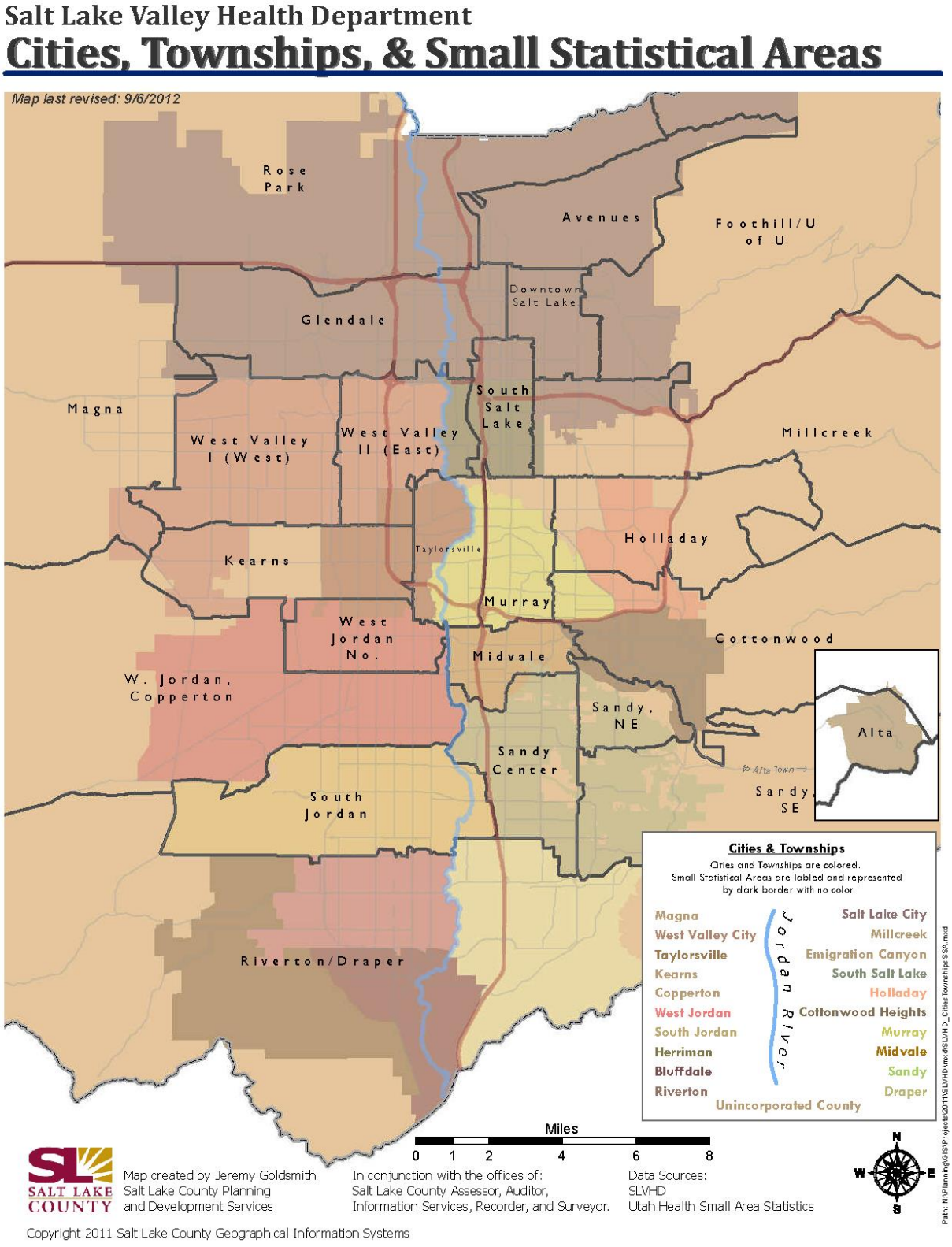
| HEALTH OUTCOMES<br><br>OVERALL HEALTH FACTOR RATE FOR SALT LAKE COUNTY = 17TH | SALT LAKE COUNTY RATE | UTAH RATE | AVERAGE TOP 10 COUNTIES |
|---|---|---|---|
| **CLINICAL CARE** | **5 – SLCo Rank** | | |
| • Uninsured (% <65 years) | 17% | 16% | 11% |
| • Primary care physicians (GP, FM, IM, Peds, OB/GYN) | 808:1 | 1072:1 | 631:1 |
| • Preventable hospital stays (hospital discharge rate for ambulatory sensitive conditions per 1,000 Medicare enrollees) | 36 | 37 | 49 |
| • Diabetic screening (% diabetic Medicare patients – HbA1c screened past year) | 83% | 82% | 89% |
| • Mammography screening (Medicare patients aged 67-69 – 1 within last 2 years) | 62% | 72% | 74% |

| SOCIAL AND ECONOMIC FACTORS | 19 – SLCo Rank | | |
|---|---|---|---|
| • Children in poverty | 18% | 16% | 13% |
| • Inadequate social support | 17% | 15% | 14% |
| • Children in single parent households | 21% | 17% | 20% |
| • Violent crime rate | 378 | 226 | 73 |

| PHYSICAL ENVIRONMENT | 26 – SLCo Rank | | |
|---|---|---|---|
| • Air pollution – particulate matter | 11 | 6 | 0 |
| • Air pollution – ozone | 20 | 12 | 0 |
| • Access to recreational facilities | 8 | 8 | 16 |
| • Limited access to healthy foods | 4% | 7% | 0% |
| • Fast food restaurants | 59% | 58% | 25% |

| LEGEND | |
|---|---|
| | Equal to or better than national target |
| | Equal to or better than Utah rate; worse than national target |
| | Less than both national target and state Rate |

## Appendix 5 – Small Area Map



## Appendix 6 – Demographic Characteristics of People with Disabilities

| POPULATION | Without Disability | | With Disability | |
|---|---|---|---|---|
| | # or % | ± ME* | # or % | ± ME* |
| Total Non-Institutionalized | 935,623 | +/-655 | 87,632<br>8.6% | +/-2,554 |
| | | | | |
| Population under 5 | 89,281 | +/-13 | 643<br>0.7% | +/-268 |
| • With a hearing difficulty | (X) | (X) | 279<br>0.3% | +/-175 |
| • With a vision difficulty | (X) | (X) | 451<br>0.5% | +/-230 |
| | | | | |
| Population 5 to 17 years | 200,799 | +/-312 | 8,492<br>4.1% | +/-910 |
| • With a hearing difficulty | (X) | (X) | 1,296<br>0.6% | +/-397 |
| • With a vision difficulty | (X) | (X) | 996<br>0.5% | +/-305 |
| • With a cognitive difficulty | (X) | (X) | 6,412<br>3.1% | +/-781 |
| • With an ambulatory difficulty | (X) | (X) | 974<br>0.5% | +/-336 |
| • With a self-care difficulty | (X) | (X) | 1,450<br>0.7% | +/-344 |
| | | | | |
| Population 18 to 64 years | 587,285 | +/-580 | 48,475<br>7.6% | +/-1,909 |
| • With a hearing difficulty | (X) | (X) | 11,414<br>1.8% | +/-957 |
| • With a vision difficulty | (X) | (X) | 7,354<br>1.2% | +/-914 |
| • With a cognitive difficulty | (X) | (X) | 21,112<br>3.3% | +/-1,328 |
| • With an ambulatory difficulty | (X) | (X) | 21,200<br>3.3% | +/-1,259 |
| • With a self-care difficulty | (X) | (X) | 7,856<br>1.2% | +/-920 |
| • With an independent living difficulty | (X) | (X) | 15,279<br>2.4% | +/-993 |
| | | | | |
| Population 65 years and over | 58,258 | +/-321 | 30,022<br>34.0% | +/-1,210 |
| • With a hearing difficulty | (X) | (X) | 14,797 | +/-963 |

| | | | | |
|---|---|---|---|---|
| | | | 16.8% | |
| • With a vision difficulty | (X) | (X) | 5,618<br>6.4% | +/-651 |
| • With a cognitive difficulty | (X) | (X) | 7,101<br>8.0% | +/-779 |
| • With an ambulatory difficulty | (X) | (X) | 16,687<br>18.9% | +/-1,008 |
| • With a self-care difficulty | (X) | (X) | 5,697<br>6.5% | +/-678 |
| • With an independent living difficulty | (X) | (X) | 12,144<br>13.8% | +/-888 |
| | | | | |
| SEX | | | | |
| • Male | 469,104 | +/-684 | 43,668<br>8.5% | +/-1,924 |
| • Female | 466,519 | +/-449 | 43,964<br>8.6% | +/-1,878 |
| | | | | |
| RACE AND HISPANIC OR LATINO ORIGIN | | | | |
| • White alone | 801,548 | +/-4,199 | 77,262<br>8.8% | +/-2,499 |
| • Black or African American alone | 14,946 | +/-1,144 | 1,362<br>8.4% | +/-455 |
| • American Indian and Alaska Native alone | 6,584 | +/-878 | 1,368<br>17.2% | +/-565 |
| • Asian alone | 31,869 | +/-1,337 | 2,027<br>6.0% | +/-410 |
| • Native Hawaiian and Other Pacific Islander alone | 15,336 | +/-577 | 661<br>4.1% | +/-217 |
| • Some other race alone | 41,434 | +/-3,703 | 2,588<br>5.9% | +/-571 |
| • Two or more races | 23,906 | +/-2,285 | 2,364<br>9.0% | +/-542 |
| • White alone, not Hispanic or Latino | 685,365 | +/-1,042 | 71,551<br>9.5% | +/-2,333 |
| • Hispanic or Latino (of any race) | 166,143 | +/-309 | 9,459<br>5.4% | +/-1,012 |
| | | | | |

## Appendix 7 - Disability Population Socio-demographic Data [99]

United States

| Subject | Total Civilian | | With a Disability | | Without a Disability | |
|---|---|---|---|---|---|---|
| | Estimate | Margin of Error | Estimate | Margin of Error | Estimate | Margin of Error |
| Population Age 16 and Over | 241,226,085 | +/-45,651 | 34,700,596 | +/-88,766 | 206,525,489 | +/-93,820 |
| **EMPLOYMENT STATUS** | | | | | | |
| Employed | 58.2% | +/-0.1 | 21.5% | +/-0.1 | 64.4% | +/-0.1 |
| Not in Labor Force | 35.1% | +/-0.1 | 73.4% | +/-0.1 | 28.7% | +/-0.1 |
| | | | | | | |
| Employed Population Age 16 and Over | 140,389,581 | +/-130,092 | 7,476,656 | +/-49,688 | 132,912,925 | +/-133,456 |
| | | | | | | |
| **CLASS OF WORKER** | | | | | | |
| Private for-profit wage and salary workers | 70.6% | +/-0.1 | 65.7% | +/-0.3 | 70.9% | +/-0.1 |
| Employee of private company workers | 67.2% | +/-0.1 | 62.4% | +/-0.3 | 67.4% | +/-0.1 |
| Self-employed in own incorporated business workers | 3.4% | +/-0.1 | 3.3% | +/-0.1 | 3.4% | +/-0.1 |
| Private not-for-profit wage and salary workers | 8.0% | +/-0.1 | 9.6% | +/-0.2 | 8.0% | +/-0.1 |
| Local government workers | 7.6% | +/-0.1 | 7.6% | +/-0.2 | 7.6% | +/-0.1 |
| State government workers | 4.6% | +/-0.1 | 5.1% | +/-0.1 | 4.6% | +/-0.1 |
| Federal government workers | 2.8% | +/-0.1 | 3.4% | +/-0.1 | 2.8% | +/-0.1 |
| Self-employed in own not incorporated business workers | 6.2% | +/-0.1 | 8.4% | +/-0.2 | 6.1% | +/-0.1 |
| Unpaid family workers | 0.2% | +/-0.1 | 0.3% | +/-0.1 | 0.1% | +/-0.1 |
| | | | | | | |
| **OCCUPATION** | | | | | | |
| Management, business, science, and arts occupations | 36.0% | +/-0.1 | 26.8% | +/-0.3 | 36.5% | +/-0.1 |
| Service occupations | 18.3% | +/-0.1 | 22.3% | +/-0.3 | 18.1% | +/-0.1 |
| Sales and office occupations | 24.5% | +/-0.1 | 24.7% | +/-0.3 | 24.5% | +/-0.1 |
| Natural resources, construction, and maintenance occupations | 9.1% | +/-0.1 | 9.8% | +/-0.2 | 9.0% | +/-0.1 |
| Production, transportation, and material moving occupations | 12.1% | +/-0.1 | 16.4% | +/-0.3 | 11.8% | +/-0.1 |
| | | | | | | |
| **INDUSTRY** | | | | | | |
| Agriculture, forestry, fishing and hunting, and mining | 1.9% | +/-0.1 | 2.5% | +/-0.1 | 1.9% | +/-0.1 |
| Construction | 6.1% | +/-0.1 | 5.8% | +/-0.1 | 6.1% | +/-0.1 |
| Manufacturing | 10.4% | +/-0.1 | 10.5% | +/-0.2 | 10.4% | +/-0.1 |

[99] Selected economic characteristics for the civilian non-institutionalized population by disability status. 2011 American Community Survey 1-Year estimates. Obtained 15 July 2013 from: http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_11_1YR_S1811&prodType=table

| Subject | Total Civilian | | With a Disability | | Without a Disability | |
|---|---|---|---|---|---|---|
| | Estimate | Margin of Error | Estimate | Margin of Error | Estimate | Margin of Error |
| Wholesale trade | 2.8% | +/-0.1 | 2.5% | +/-0.1 | 2.8% | +/-0.1 |
| Retail trade | 11.6% | +/-0.1 | 13.2% | +/-0.2 | 11.5% | +/-0.1 |
| Transportation and warehousing, and utilities | 5.0% | +/-0.1 | 5.6% | +/-0.2 | 4.9% | +/-0.1 |
| Information | 2.1% | +/-0.1 | 1.7% | +/-0.1 | 2.1% | +/-0.1 |
| Finance and insurance, and real estate and rental and leasing | 6.6% | +/-0.1 | 5.1% | +/-0.1 | 6.7% | +/-0.1 |
| Professional, scientific, and management, and administrative and waste management services | 10.7% | +/-0.1 | 9.7% | +/-0.2 | 10.8% | +/-0.1 |
| Educational services, and health care and social assistance | 23.2% | +/-0.1 | 22.8% | +/-0.3 | 23.2% | +/-0.1 |
| Arts, entertainment, and recreation, and accommodation and food services | 9.4% | +/-0.1 | 9.1% | +/-0.2 | 9.4% | +/-0.1 |
| Other services (except public administration) | 5.0% | +/-0.1 | 5.9% | +/-0.2 | 5.0% | +/-0.1 |
| Public administration | 5.1% | +/-0.1 | 5.5% | +/-0.2 | 5.0% | +/-0.1 |
| | | | | | | |
| **COMMUTING TO WORK** | | | | | | |
| Workers Age 16 and Over | 137,255,602 | +/-133,186 | 7,021,910 | +/-48,559 | 130,233,692 | +/-134,347 |
| Car, truck, or van - drove alone | 76.5% | +/-0.1 | 70.6% | +/-0.3 | 76.8% | +/-0.1 |
| Car, truck, or van - carpooled | 9.7% | +/-0.1 | 12.2% | +/-0.2 | 9.6% | +/-0.1 |
| Public transportation (excluding taxicab) | 5.1% | +/-0.1 | 5.7% | +/-0.1 | 5.0% | +/-0.1 |
| Walked | 2.7% | +/-0.1 | 3.4% | +/-0.1 | 2.7% | +/-0.1 |
| Taxicab, motorcycle, bicycle, or other means | 1.7% | +/-0.1 | 2.5% | +/-0.1 | 1.7% | +/-0.1 |
| Worked at home | 4.3% | +/-0.1 | 5.5% | +/-0.2 | 4.2% | +/-0.1 |
| | | | | | | |
| **EDUCATIONAL ATTAINMENT** | | | | | | |
| Population Age 25 and Over | 202,409,797 | +/-65,979 | 32,566,634 | +/-86,221 | 169,843,163 | +/-113,517 |
| Less than high school graduate | 13.8% | +/-0.1 | 25.8% | +/-0.1 | 11.5% | +/-0.1 |
| High school graduate, GED, or alternative | 28.3% | +/-0.1 | 34.5% | +/-0.1 | 27.1% | +/-0.1 |
| Some college or associate's degree | 29.1% | +/-0.1 | 25.8% | +/-0.2 | 29.7% | +/-0.1 |
| Bachelor's degree or higher | 28.9% | +/-0.1 | 13.9% | +/-0.1 | 31.7% | +/-0.1 |
| | | | | | | |
| **EARNINGS IN PAST 12 MONTHS (IN 2011 INFLATION ADJUSTED DOLLARS)** | | | | | | |
| Population Age 16 and over with earnings | 157,420,883 | +/-139,057 | 9,310,327 | +/-57,182 | 148,110,556 | +/-137,359 |
| $1 to $4,999 or loss | 11.6% | +/-0.1 | 18.9% | +/-0.2 | 11.2% | +/-0.1 |
| $5,000 to $14,999 | 16.9% | +/-0.1 | 23.3% | +/-0.2 | 16.5% | +/-0.1 |
| $15,000 to $24,999 | 15.4% | +/-0.1 | 16.1% | +/-0.2 | 15.4% | +/-0.1 |

| Subject | Total Civilian | | With a Disability | | Without a Disability | |
|---|---|---|---|---|---|---|
| | Estimate | Margin of Error | Estimate | Margin of Error | Estimate | Margin of Error |
| $25,000 to $34,999 | 13.2% | +/-0.1 | 12.0% | +/-0.2 | 13.3% | +/-0.1 |
| $35,000 to $49,999 | 14.8% | +/-0.1 | 11.9% | +/-0.2 | 14.9% | +/-0.1 |
| $50,000 to $74,999 | 14.5% | +/-0.1 | 10.1% | +/-0.2 | 14.7% | +/-0.1 |
| $75,000 or more | 13.6% | +/-0.1 | 7.6% | +/-0.1 | 14.0% | +/-0.1 |
| | | | | | | |
| Median Earnings | 29,638 | +/-70 | 19,735 | +/-203 | 30,285 | +/-39 |
| | | | | | | |
| **POVERTY STATUS IN THE PAST 12 MONTHS** | | | | | | |
| Population Age 16 and over for whom poverty status is determined | 238,696,314 | +/-45,636 | 34,611,534 | +/-88,634 | 204,084,780 | +/-93,574 |
| Below 100 percent of the poverty level | 14.1% | +/-0.1 | 21.7% | +/-0.1 | 12.8% | +/-0.1 |
| 100 to 149 percent of the poverty level | 9.2% | +/-0.1 | 14.6% | +/-0.1 | 8.3% | +/-0.1 |
| At or above 150 percent of the poverty level | 76.7% | +/-0.1 | 63.7% | +/-0.2 | 78.9% | +/-0.1 |
| Population Age 16 and Over | 241,226,085 | +/-45,651 | 34,700,596 | +/-88,766 | 206,525,489 | +/-93,820 |
| EMPLOYMENT STATUS | | | | | | |
| Employed | 58.2% | +/-0.1 | 21.5% | +/-0.1 | 64.4% | +/-0.1 |
| Not in Labor Force | 35.1% | +/-0.1 | 73.4% | +/-0.1 | 28.7% | +/-0.1 |
| | | | | | | |

Utah

| Subject | Total Civilian | | With a Disability | | Without a Disability | |
|---|---|---|---|---|---|---|
| | Estimate | Margin of Error | Estimate | Margin of Error | Estimate | Margin of Error |
| Population Age 16 and Over | 1,994,022 | +/-3,826 | 224,010 | +/-8,891 | 1,770,012 | +/-9,158 |
| **EMPLOYMENT STATUS** | | | | | | |
| Employed | 63.2% | +/-0.5 | 27.3% | +/-1.4 | 67.8% | +/-0.5 |
| Not in Labor Force | 31.3% | +/-0.5 | 68.3% | +/-1.5 | 26.6% | +/-0.5 |
| | | | | | | |
| Employed Population Age 16 and Over | 1,260,754 | +/-10,659 | 61,140 | +/-3,931 | 1,199,614 | +/-10,638 |
| | | | | | | |
| **CLASS OF WORKER** | | | | | | |
| Private for-profit wage and salary workers | 71.7% | +/-0.6 | 66.5% | +/-3.1 | 71.9% | +/-0.6 |
| Employee of private company workers | 67.6% | +/-0.6 | 63.1% | +/-3.2 | 67.8% | +/-0.6 |
| Self-employed in own incorporated business workers | 4.1% | +/-0.3 | 3.5% | +/-1.3 | 4.1% | +/-0.3 |
| Private not-for-profit wage and salary workers | 7.3% | +/-0.4 | 9.2% | +/-2.2 | 7.2% | +/-0.4 |
| Local government workers | 7.0% | +/-0.4 | 6.8% | +/-1.7 | 7.0% | +/-0.4 |
| State government workers | 5.9% | +/-0.3 | 6.4% | +/-2.2 | 5.9% | +/-0.3 |
| Federal government workers | 3.5% | +/-0.3 | 5.1% | +/-1.5 | 3.4% | +/-0.3 |

| Subject | Total Civilian | | With a Disability | | Without a Disability | |
|---|---|---|---|---|---|---|
| | Estimate | Margin of Error | Estimate | Margin of Error | Estimate | Margin of Error |
| Self-employed in own not incorporated business workers | 4.6% | +/-0.3 | 5.6% | +/-1.3 | 4.5% | +/-0.3 |
| Unpaid family workers | 0.1% | +/-0.1 | 0.3% | +/-0.3 | 0.1% | +/-0.1 |
| | | | | | | |
| **OCCUPATION** | | | | | | |
| Management, business, science, and arts occupations | 36.0% | +/-0.8 | 31.9% | +/-3.2 | 36.2% | +/-0.8 |
| Service occupations | 16.3% | +/-0.6 | 16.8% | +/-2.6 | 16.2% | +/-0.6 |
| Sales and office occupations | 26.2% | +/-0.6 | 24.7% | +/-3.4 | 26.3% | +/-0.6 |
| Natural resources, construction, and maintenance occupations | 8.9% | +/-0.4 | 9.4% | +/-1.6 | 8.8% | +/-0.4 |
| Production, transportation, and material moving occupations | 12.7% | +/-0.5 | 17.2% | +/-2.9 | 12.5% | +/-0.5 |
| | | | | | | |
| **INDUSTRY** | | | | | | |
| Agriculture, forestry, fishing and hunting, and mining | 2.0% | +/-0.2 | 2.8% | +/-1.3 | 1.9% | +/-0.2 |
| Construction | 6.1% | +/-0.4 | 6.4% | +/-1.5 | 6.1% | +/-0.4 |
| Manufacturing | 10.7% | +/-0.5 | 10.3% | +/-2.0 | 10.7% | +/-0.5 |
| Wholesale trade | 2.6% | +/-0.2 | 2.0% | +/-0.8 | 2.6% | +/-0.2 |
| Retail trade | 11.8% | +/-0.5 | 12.1% | +/-2.2 | 11.8% | +/-0.5 |
| Transportation and warehousing, and utilities | 5.0% | +/-0.3 | 6.4% | +/-1.8 | 4.9% | +/-0.3 |
| Information | 1.8% | +/-0.2 | 1.7% | +/-0.8 | 1.8% | +/-0.2 |
| Finance and insurance, and real estate and rental and leasing | 6.5% | +/-0.4 | 4.1% | +/-1.1 | 6.6% | +/-0.4 |
| Professional, scientific, and management, and administrative and waste management services | 11.8% | +/-0.5 | 11.3% | +/-1.9 | 11.8% | +/-0.5 |
| Educational services, and health care and social assistance | 22.4% | +/-0.5 | 20.5% | +/-2.4 | 22.5% | +/-0.5 |
| Arts, entertainment, and recreation, and accommodation and food services | 9.2% | +/-0.5 | 9.0% | +/-2.0 | 9.2% | +/-0.5 |
| Other services (except public administration) | 4.8% | +/-0.3 | 6.4% | +/-1.8 | 4.7% | +/-0.3 |
| Public administration | 5.50% | +/-0.3 | 7.1% | +/-2.3 | 5.4% | +/-0.3 |
| | | | | | | |
| **COMMUTING TO WORK** | | | | | | |
| Workers Age 16 and Over | 1,241,051 | +/-10,860 | 59,531 | +/-3,756 | 1,181,520 | +/-10,850 |
| Car, truck, or van - drove alone | 76.6% | +/-0.7 | 69.5% | +/-3.6 | 76.9% | +/-0.7 |
| Car, truck, or van - carpooled | 12.0% | +/-0.5 | 13.2% | +/-2.1 | 12.0% | +/-0.5 |
| Public transportation (excluding taxicab) | 2.5% | +/-0.3 | 6.1% | +/-1.7 | 2.3% | +/-0.3 |
| Walked | 2.4% | +/-0.3 | 3.2% | +/-1.3 | 2.3% | +/-0.3 |
| Taxicab, motorcycle, bicycle, or other means | 1.9% | +/-0.2 | 2.8% | +/-1.0 | 1.9% | +/-0.2 |

| Subject | Total Civilian | | With a Disability | | Without a Disability | |
|---|---|---|---|---|---|---|
| | Estimate | Margin of Error | Estimate | Margin of Error | Estimate | Margin of Error |
| Worked at home | 4.7% | +/-0.4 | 5.3% | +/-1.6 | 4.6% | +/-0.4 |
| | | | | | | |
| **EDUCATIONAL ATTAINMENT** | | | | | | |
| Population Age 25 and Over | 1,589,619 | +/-3,119 | 205,422 | +/-7,828 | 1,384,197 | +/-8,586 |
| Less than high school graduate | 9.6% | +/-0.4 | 15.5% | +/-1.3 | 8.7% | +/-0.5 |
| High school graduate, GED, or alternative | 23.6% | +/-0.6 | 32.3% | +/-1.7 | 22.4% | +/-0.6 |
| Some college or associate's degree | 36.8% | +/-0.7 | 34.3% | +/-2.0 | 37.2% | +/-0.7 |
| Bachelor's degree or higher | 29.9% | +/-0.7 | 17.9% | +/-1.2 | 31.7% | +/-0.7 |
| | | | | | | |
| **EARNINGS IN PAST 12 MONTHS (IN 2011 INFLATION ADJUSTED DOLLARS)** | | | | | | |
| Population Age 16 and over with earnings | 1,414,321 | +/-9,895 | 74,751 | +/-4,430 | 1,339,570 | +/-9,836 |
| $1 to $4,999 or loss | 14.9% | +/-0.5 | 20.8% | +/-2.5 | 14.50% | +/-0.5 |
| $5,000 to $14,999 | 19.0% | +/-0.5 | 20.9% | +/-2.3 | 18.9% | +/-0.5 |
| $15,000 to $24,999 | 14.8% | +/-0.5 | 14.1% | +/-2.0 | 14.8% | +/-0.5 |
| $25,000 to $34,999 | 12.3% | +/-0.5 | 11.4% | +/-1.8 | 12.4% | +/-0.5 |
| $35,000 to $49,999 | 14.4% | +/-0.5 | 15.0% | +/-2.8 | 14.3% | +/-0.5 |
| $50,000 to $74,999 | 13.6% | +/-0.5 | 10.1% | +/-1.9 | 13.8% | +/-0.5 |
| $75,000 or more | 11.0% | +/-0.3 | 7.7% | +/-1.4 | 11.2% | +/-0.3 |
| | | | | | | |
| Median Earnings | 25,936 | +/-416 | 21,121 | +/-1,516 | 26,206 | +/-415 |
| | | | | | | |
| **POVERTY STATUS IN THE PAST 12 MONTHS** | | | | | | |
| Population Age 16 and over for whom poverty status is determined | 1,978,356 | +/-3,826 | 223,445 | +/-8,901 | 1,754,911 | +/-9,152 |
| Below 100 percent of the poverty level | 12.5% | +/-0.6 | 16.8% | +/-1.3 | 12.0% | +/-0.7 |
| 100 to 149 percent of the poverty level | 8.1% | +/-0.5 | 11.9% | +/-1.3 | 7.6% | +/-0.5 |
| At or above 150 percent of the poverty level | 79.4% | +/-0.7 | 71.2% | +/-1.7 | 80.5% | +/-0.8 |

Salt Lake County

| Subject | Total Civilian | | With a Disability | | Without a Disability | |
|---|---|---|---|---|---|---|
| | Estimate | Margin of Error | Estimate | Margin of Error | Estimate | Margin of Error |
| Population Age 16 and Over | 765,992 | +/-4,683 | 82,360 | +/-4,683 | 683,632 | +/-5,433 |
| **EMPLOYMENT STATUS** | | | | | | |
| Employed | 66.5% | +/-2.5 | 28.3% | +/-2.5 | 71.1% | +/-0.9 |
| Not in Labor Force | 27.9% | +/-2.6 | 68.2% | +/-2.6 | 23.0% | +/-0.8 |
| | | | | | | |
| Employed Population Age 16 and Over | 509,250 | +/-2,614 | 23,288 | +/-2,614 | 485,962 | +/-6,863 |
| | | | | | | |

| Subject | Total Civilian | | With a Disability | | Without a Disability | |
|---|---|---|---|---|---|---|
| | Estimate | Margin of Error | Estimate | Margin of Error | Estimate | Margin of Error |
| **CLASS OF WORKER** | | | | | | |
| Private for-profit wage and salary workers | 74.2% | +/-5.6 | 68.7% | +/-5.6 | 74.5% | +/-1.1 |
| Employee of private company workers | 70.4% | +/-5.9 | 64.1% | +/-5.9 | 70.7% | +/-1.1 |
| Self-employed in own incorporated business workers | 3.8% | +/-2.5 | 4.6% | +/-2.5 | 3.8% | +/-0.5 |
| Private not-for-profit wage and salary workers | 7.0% | +/-3.0 | 7.7% | +/-3.0 | 6.9% | +/-0.6 |
| Local government workers | 6.1% | +/-2.6 | 7.8% | +/-2.6 | 6.0% | +/-0.5 |
| State government workers | 5.8% | +/-4.9 | 8.5% | +/-4.9 | 5.7% | +/-0.5 |
| Federal government workers | 2.1% | +/-1.5 | 2.2% | +/-1.5 | 2.1% | +/-0.3 |
| Self-employed in own not incorporated business workers | 4.7% | +/-2.5 | 5.1% | +/-2.5 | 4.7% | +/-0.5 |
| Unpaid family workers | 0.1% | +/-0.7 | 0.0% | +/-0.7 | 0.1% | +/-0.1 |
| | | | | | | |
| **OCCUPATION** | | | | | | |
| Management, business, science, and arts occupations | 36.1% | +/-5.2 | 29.9% | +/-5.2 | 36.4% | +/-1.2 |
| Service occupations | 15.2% | +/-3.7 | 13.7% | +/-3.7 | 15.3% | +/-0.9 |
| Sales and office occupations | 27.3% | +/-5.3 | 30.1% | +/-5.3 | 27.2% | +/-1.1 |
| Natural resources, construction, and maintenance occupations | 8.7% | +/-3.3 | 9.5% | +/-3.3 | 8.6% | +/-0.7 |
| Production, transportation, and material moving occupations | 12.7% | +/-4.5 | 16.8% | +/-4.5 | 12.5% | +/-0.8 |
| | | | | | | |
| **INDUSTRY** | | | | | | |
| Agriculture, forestry, fishing and hunting, and mining | 0.9% | +/-0.3 | 0.2% | +/-0.3 | 0.9% | +/-0.3 |
| Construction | 6.0% | +/-2.9 | 6.0% | +/-2.9 | 6.0% | +/-0.7 |
| Manufacturing | 11.2% | +/-4.1 | 13.0% | +/-4.1 | 11.1% | +/-0.9 |
| Wholesale trade | 2.8% | +/-1.7 | 3.2% | +/-1.7 | 2.8% | +/-0.4 |
| Retail trade | 11.9% | +/-3.4 | 10.2% | +/-3.4 | 12.0% | +/-0.8 |
| Transportation and warehousing, and utilities | 5.4% | +/-2.7 | 6.4% | +/-2.7 | 5.3% | +/-0.5 |
| Information | 2.1% | +/-1.3 | 2.1% | +/-1.3 | 2.1% | +/-0.3 |
| Finance and insurance, and real estate and rental and leasing | 8.9% | +/-2.7 | 7.1% | +/-2.7 | 9.0% | +/-0.7 |
| Professional, scientific, and management, and administrative and waste management services | 12.9% | +/-4.2 | 13.1% | +/-4.2 | 12.8% | +/-0.9 |
| Educational services, and health care and social assistance | 20.2% | +/-4.0 | 16.1% | +/-4.0 | 20.4% | +/-0.9 |
| Arts, entertainment, and recreation, and accommodation and food services | 8.6% | +/-2.9 | 8.1% | +/-2.9 | 8.6% | +/-0.9 |
| Other services (except public administration) | 5.0% | +/-2.7 | 6.6% | +/-2.7 | 5.0% | +/-0.6 |
| Public administration | 4.1% | +/-5.0 | 7.8% | +/-5.0 | 3.9% | +/-0.4 |

| Subject | Total Civilian | | With a Disability | | Without a Disability | |
|---|---|---|---|---|---|---|
| | Estimate | Margin of Error | Estimate | Margin of Error | Estimate | Margin of Error |
| | | | | | | |
| **COMMUTING TO WORK** | | | | | | |
| Workers Age 16 and Over | 501,471 | +/-2,566 | 22,925 | +/-2,566 | 478,546 | +/-6,937 |
| Car, truck, or van - drove alone | 76.3% | +/-5.9 | 66.0% | +/-5.9 | 76.8% | +/-1.1 |
| Car, truck, or van - carpooled | 12.0% | +/-4.0 | 13.9% | +/-4.0 | 11.9% | +/-0.9 |
| Public transportation (excluding taxicab) | 3.5% | +/-3.4 | 9.0% | +/-3.4 | 3.2% | +/-0.5 |
| Walked | 2.0% | +/-2.6 | 3.8% | +/-2.6 | 1.9% | +/-0.3 |
| Taxicab, motorcycle, bicycle, or other means | 1.8% | +/-1.2 | 2.4% | +/-1.2 | 1.7% | +/-0.3 |
| Worked at home | 4.5% | +/-2.1 | 5.0% | +/-2.1 | 4.4% | +/-0.6 |
| | | | | | | |
| **EDUCATIONAL ATTAINMENT** | | | | | | |
| Population Age 25 and Over | 628,923 | +/-4,348 | 75,955 | +/-4,348 | 552,968 | +/-4,581 |
| Less than high school graduate | 11.1% | +/-2.3 | 16.70% | +/-2.3 | 10.30% | +/-0.7 |
| High school graduate, GED, or alternative | 23.3% | +/-2.8 | 32.4% | +/-2.8 | 22.1% | +/-1.1 |
| Some college or associate's degree | 34.8% | +/-2.9 | 32.8% | +/-2.9 | 35.1% | +/-1.2 |
| Bachelor's degree or higher | 30.8% | +/-1.9 | 18.1% | +/-1.9 | 32.5% | +/-1.1 |
| | | | | | | |
| **EARNINGS IN PAST 12 MONTHS (IN 2011 INFLATION ADJUSTED DOLLARS)** | | | | | | |
| Population Age 16 and over with earnings | 559,779 | +/-2,818 | 27,518 | +/-2,818 | 532,261 | +/-6,596 |
| $1 to $4,999 or loss | 11.8% | +/-4.0 | 19.90% | +/-4.0 | 11.4% | +/-0.7 |
| $5,000 to $14,999 | 18.0% | +/-3.9 | 20.7% | +/-3.9 | 17.9% | +/-0.9 |
| $15,000 to $24,999 | 15.6% | +/-3.4 | 13.8% | +/-3.4 | 15.7% | +/-0.9 |
| $25,000 to $34,999 | 14.2% | +/-3.5 | 12.7% | +/-3.5 | 14.2% | +/-0.9 |
| $35,000 to $49,999 | 16.3% | +/-4.8 | 18.0% | +/-4.8 | 16.2% | +/-0.8 |
| $50,000 to $74,999 | 13.2% | +/-3.1 | 9.8% | +/-3.1 | 13.4% | +/-0.8 |
| $75,000 or more | 10.9% | +/-1.7 | 5.0% | +/-1.7 | 11.2% | +/-0.6 |
| | | | | | | |
| Median Earnings | 28,086 | +/-2,857 | 22,547 | +/-2,857 | 28,500 | +/-982 |
| | | | | | | |
| **POVERTY STATUS IN THE PAST 12 MONTHS** | | | | | | |
| Population Age 16 and over for whom poverty status is determined | 763,569 | +/-4,701 | 82,301 | +/-4,701 | 681,268 | +/-5,485 |
| Below 100 percent of the poverty level | 12.5% | +/-2.1 | 15.9% | +/-2.1 | 12.10% | +/-1.1 |
| 100 to 149 percent of the poverty level | 7.1% | +/-2.0 | 11.5% | +/-2.0 | 6.5% | +/-0.8 |
| At or above 150 percent of the poverty level | 80.4% | +/-2.8 | 72.6% | +/-2.8 | 81.4% | +/-1.3 |

## Appendix 8 – Tables for Pertussis and Tuberculosis

| Year | Age in Years | | | | | | |
|---|---|---|---|---|---|---|---|
| | < 1 | 1-4 | 5-9 | 10-19 | 20-44 | 45-64 | 65+ |
| 1995 | 21 | 5 | 6 | 2 | 3 | 0 | 0 |
| 1996 | 19 | 1 | 3 | 1 | 2 | 0 | 0 |
| 1997 | 16 | 8 | 0 | 3 | 1 | 1 | 0 |
| 1998 | 71 | 85 | 45 | 41 | 31 | 12 | 1 |
| 1999 | 19 | 8 | 0 | 13 | 13 | 3 | 2 |
| 2000 | 19 | 6 | 5 | 4 | 8 | 4 | 1 |
| 2001 | 25 | 13 | 6 | 14 | 15 | 4 | 1 |
| 2002 | 23 | 37 | 18 | 20 | 14 | 3 | 0 |
| 2003 | 33 | 15 | 10 | 22 | 27 | 17 | 2 |
| 2004 | 41 | 30 | 18 | 70 | 77 | 37 | 2 |
| 2005 | 54 | 65 | 54 | 171 | 157 | 90 | 24 |
| 2006 | 45 | 52 | 52 | 232 | 227 | 143 | 26 |
| 2007 | 25 | 25 | 22 | 71 | 129 | 97 | 22 |
| 2008 | 8 | 13 | 9 | 18 | 19 | 8 | 3 |
| 2009 | 14 | 28 | 25 | 50 | 67 | 26 | 13 |

**Table 12. Numerical Presentation of Figure 27. Number of reported Pertussis cases by age and year, Salt Lake County, 1995-2009**

| Year | Age in Years | | | | | | |
|---|---|---|---|---|---|---|---|
| | < 1 | 1-4 | 5-9 | 10-19 | 20-44 | 45-64 | 65+ |
| 1995 | 9 | 2 | 0 | 0 | 0 | 0 | 0 |
| 1996 | 7 | 0 | 2 | 0 | 0 | 0 | 0 |
| 1997 | 12 | 6 | 0 | 1 | 1 | 1 | 0 |
| 1998 | 37 | 26 | 15 | 13 | 14 | 6 | 1 |
| 1999 | 9 | 5 | 0 | 4 | 7 | 1 | 2 |
| 2000 | 7 | 4 | 4 | 3 | 5 | 4 | 0 |
| 2001 | 14 | 5 | 0 | 3 | 2 | 3 | 0 |
| 2002 | 16 | 5 | 3 | 6 | 6 | 1 | 0 |
| 2003 | 14 | 8 | 4 | 9 | 20 | 12 | 2 |
| 2004 | 23 | 21 | 15 | 52 | 52 | 22 | 2 |
| 2005 | 19 | 26 | 15 | 71 | 64 | 49 | 13 |
| 2006 | 24 | 26 | 33 | 139 | 130 | 92 | 20 |
| 2007 | 17 | 13 | 17 | 45 | 92 | 68 | 12 |
| 2008 | 8 | 10 | 8 | 21 | 45 | 22 | 3 |
| 2009 | 7 | 5 | 7 | 9 | 19 | 12 | 7 |

**Table 11. Numerical Presentation of Figure 26. Number of Reported Pertussis Cases by Age and Year, Utah, 1995-2009**

## APPENDIX 9 – TYPES OF COMMUNITY PARKS

- **Mini Park**. These parks are usually small with mostly grassland. They may have a playground or drinking fountain. These are designated in Green on the maps.

- **Neighborhood Park**. These parks are usually located within a neighborhood for use by the immediate residents. These may have playgrounds, drinking fountains, walking/jogging paths, and space for other activities such as sports fields or courts, picnic, and dog parks. These are designated in Red on the maps.

- **Community Parks.** These parks are large with recreational facilities for indoor or outdoor sports. These will have organized sports and activities for people of all ages. These will have playground, drinking fountain, restrooms, walking/jogging paths as well as sports fields and courts, picnic facilities and dog parks. These are designated in Yellow on the maps.

- **Regional Parks**. Regional parks are very large and cross township and city borders. These may have multiple sections but are managed by one organization. The purpose of these parks is individual outdoor sports such as hiking, climbing, water sports, etc. These may or may not have amenities such as drinking fountains or restrooms. These appear Orange on the maps.

- **Special Use Parks**. Special Use Parks are native areas, detention basins or single designation such as a baseball field. Native areas have no amenities. Detention basins can be used as a park until the basin is needed for water retention. These may have a playground or walking path. Single designation usage such as a baseball diamond may or may not have amenities. These are Blue on the maps.

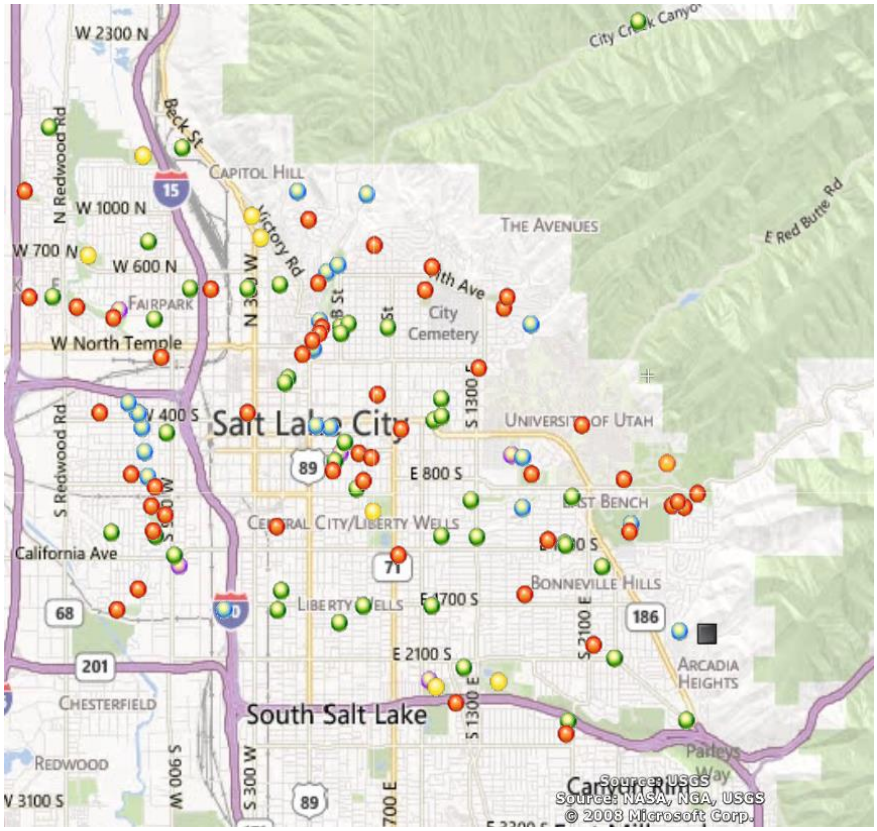
- **Trailheads**. Trailheads are mainly entrances to walkways with no amenities, but space for vehicle parking. These are Black squares on the map.

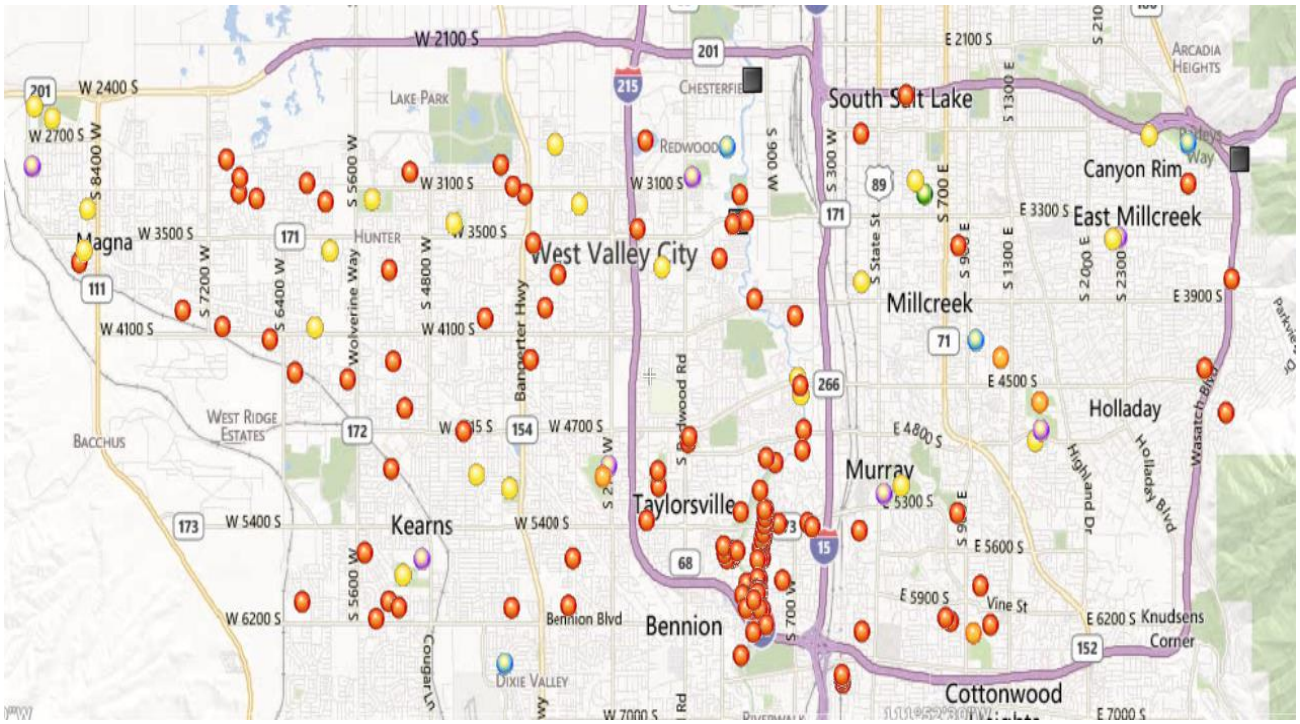
- **Recreation/Community Centers**. Recreation/Community Centers have a building open space and may have playgrounds or walking/jogging paths. These are usually near or part of large parks. Organized events such as sports, arts, dance, and other special interest classes may be available. There is usually a fee associated with using the centers. These are Purple on the maps.

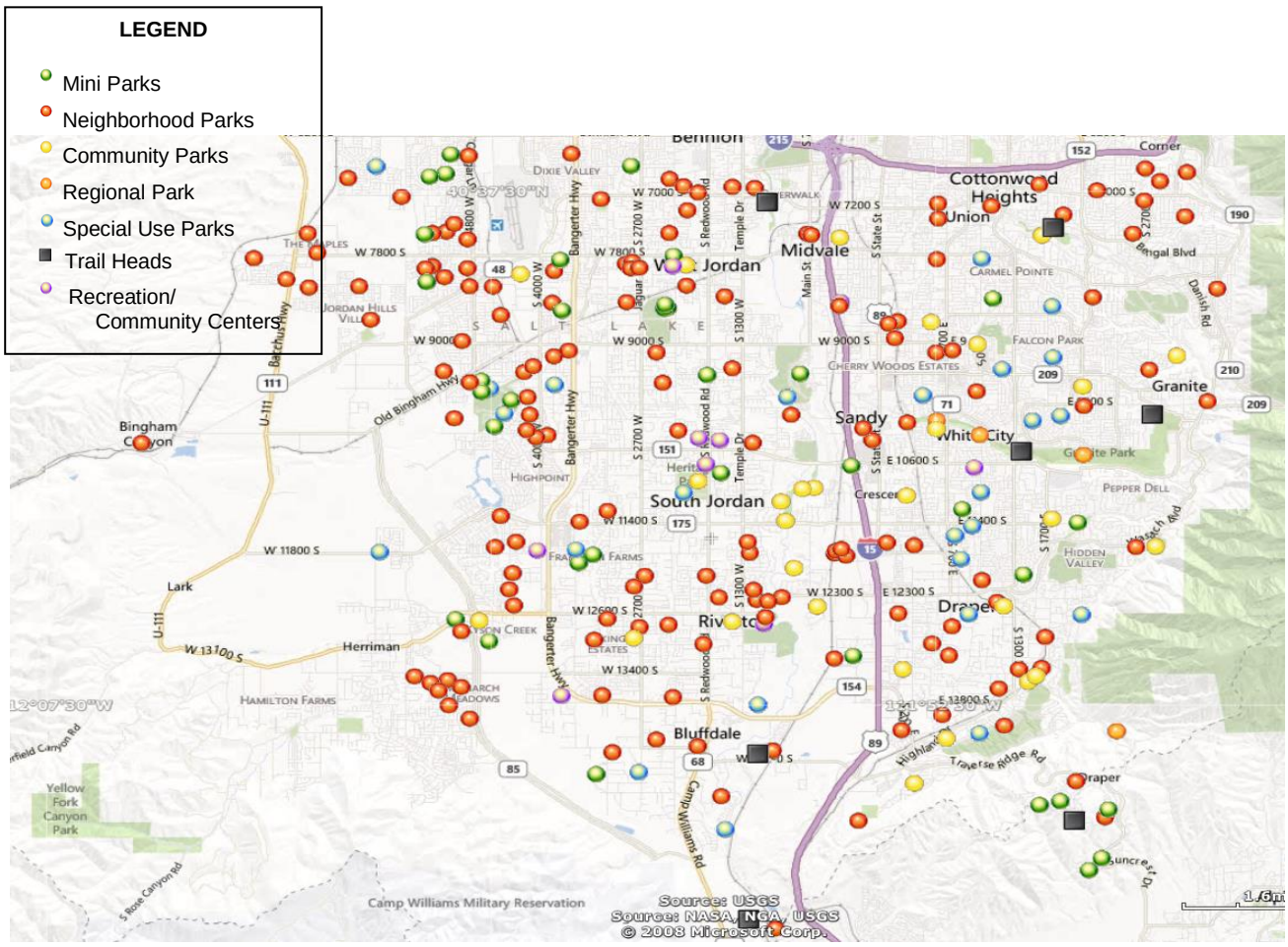
## APPENDIX 10 – LOCATION OF PARKS AND RECREATION FACILITIES

**LEGEND**

- Mini Parks
- Neighborhood Parks
- Community Parks
- Regional Park
- Special Use Parks
- Trail Heads
- Recreation/ Community Centers




LEGEND
Mini Parks
Neighborhood Parks
Community Parks
Regional Park
Special Use Parks
Trail Heads
Recreation/
Community Centers
Cottonwood Heights
Union
Midvale
West Jordan
Sandy
South Jordan
Bluffdale
Draper
Granite
White City
Bingham Canyon
Lark
Herriman
Riverton
Camp Williams Military Reservation
Source: USGS
Source: NASA, NGA, USGS
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## Appendix 11 – SLCo Food Desert Detailed Descriptions

According to the USDA, Salt Lake City has two locations that are considered food deserts. Geographically, the first location is near the Rose Park Golf Course with I-215 to the west. The second location is south of the first location in the Glendale neighborhood – east of the Jordan River with Redwood Road (Hwy 68) to the west. The first location has a population of 8,898 people. 5,456 of those people (61.3%) have low access to food and 866 (9.8%) of these people are considered low-income. The second location has a population of 8,177 people. 1,194 of these people (14.6%) have low access to food and 261 people (3.2%) are considered low-income and also have low access.

Table 10 - Food Desert Tracts

**Exhibit 3.** North Central Salt Lake County Combined Food Desert Tracts

| FIPS Code | Community | | | Total People with low access | | Low income people with low access | |
|---|---|---|---|---|---|---|---|
| | Name | ID | # | # | % | # | % |
| 4903511 | West Valley City | 3305 | 6101 | 2322 | 38.1% | 491 | 8.0% |
| | West Valley City | 3307 | 5707 | 2250 | 39.4% | 275 | 4.8% |
| | West Valley City/South Salt Lake City | 1500 | 2017 | 527 | 26.1% | 136 | 6.7% |
| | West Valley City/South Salt Lake/Murray | 1600 | 6386 | 5202 | 81.5% | 756 | 11.8% |
| | Taylorsville | 3512 | 3474 | 2062 | 59.4% | 178 | 5.1% |
| | | | **23685** | **123**[63] | **52.2%** | **1836** | **7.8%** |

West Valley City (WVC), Taylorsville, Murray and South Salt Lake city (SSL) share five locations that are considered food deserts. Each location borders at least one other and all are generally located with Hwy 201 as the north border, state Street (Hwy 89) as the east, and 3500 South cutting through the center of this triangle shaped area. Combined, these areas contain 23,685 residents and 12,363 (52.2%) have low access to food. Of the total population, 7.8% are low income residents who also have low access to food.

**Exhibit 4.** Midvale/Sandy Combined Food Desert Tracts

| FIPS Code | Community | | | Total People with low access | | Low income people with low access | |
|---|---|---|---|---|---|---|---|
| | Name | ID | # | # | % | # | % |
| 4903511 | Midvale | 2401 | 8672 | 3427 | 39.5 | 966 | 11.2 |
| | Sandy | 2402 | 5089 | 5089 | 100 | 431 | 8.5 |
| | | | **13761** | **8516** | **61.9%** | **1397** | **10.2%** |

Midvale has two contiguous tracts that are considered food deserts. The combined area straddles I-15 with 6500 S as its north border and 9000 S as its south. This area includes the entire west side of Midvale city with both tracts tailing into a few blocks of Sandy city at the south end. Combined, this area has 13,761 residents with 62 percent having low access to food. Of the total population, 1,397 people (10.2%) are people considered low income who also have low access to food. Exhibit 4 shows that the smaller of these two tracts has 100%of residents with low access to food.

Kearns also has only one location. Kearns is located on the west side of all of the other food desert locations. It falls between West Valley City (north of Kearns) and West Jordan (south of Kearns). Kearns has a population of 3,758 people. 943 of those people (25.1%) have low access to food and 362 people (9.6%) from the total population are low-income people who have low access. Salt Lake City, South Salt Lake, and Midvale all have the highest number of people who have low-incomes and have low access to food.

## Appendix 12 – Focus Group Locations


**Focus Groups**

| Area | Date & Time | Location | Facilitator | Scribe |
|---|---|---|---|---|
| 1 | 17 March, 6:00-8:00PM | Sorensen Unity Center | Cindy Morgan | Suzy Millward |
| 2 | 29 March, 6:30-8:30PM | Kearns Community Center | Cindy Morgan | Suzy Millward |
| 3 | 11 March, 6:30-8:30PM | Taylorsville Recreation Center | Cindy Morgan | Suzy Millward |
| 4 | 19 March, 10:00-12:00PM | Riverton Library | Suzy Millward | Cindy Morgan |
| 5 | 09 April, 10:00-12:00PM | Sandy Library | Cindy Morgan | Suzy Millward |
| 6 | 19 March, 1:00-3:00PM | Holladay Library | Cindy Morgan | Suzy Millward |

## Appendix 13 – Facilitator's Guide

**Health Department Community Focus Groups**

March, 2011

Introduction:

The Salt Lake County Health Department is seeking to learn about what our communities and partners feel are the key health concerns for individuals, their communities, and the County. Our Health Department offers many services (e.g., immunizations, health classes, prevention opportunities, emergency services, and environmental health services) but we're not sure if we're meeting the needs in communities and across the County. So, we're asking you to help us. We're here today to learn from you. We have _____ minutes/hours to talk and learn. I'll be facilitating your conversation and _____ will be taking the notes. By the end of today, we'd like to know about what you know that currently exists and is working well and what we, with our partners, should be focusing on over the next few years.

1. First of all, I'd like to know what you believe are the greatest health problems in your community. What problems do you see, hear about, or maybe talk about? Why do you believe these are issues? How about for the County overall?

   *Facilitator: Continue to prompt until everyone has spoken and you feel you've collected as much as you can. Quick review of what you've collected—anything missing?*

2. So, what services or organizations do you know of that are doing work to address these concerns? We've always found it's better to build on existing strengths, if possible. Do you know of things that are working well right now?
   a. Are there areas of duplication in services where some things have a lot of focus and maybe are overlapping?

   *Facilitator: Often, this question leads to some initial silence. People aren't used to being asked what's going well. Keep on prompting, maybe providing some initial ideas/suggestions to get them going.*

3. Ok, so now, where are the gaps? What issues aren't being addressed or aren't being addressed at a sufficient level? What services/supports are missing in the community?

   *Facilitator: After the list completed, define the key categories then lead group through a prioritization exercise—either to vote for top 3-5 issues with a raise of hands (get a total of 5 votes, can use all of them for one, one each, or any mix in between). Could also have people come up with markers and vote with dots. This will let us know the key things they are worried about.*

4. What recommendations do you have for addressing these issues? What kinds of services do you believe would make a difference for the issues you've identified? Who would you like to see working on the issues?

5. *If time:* What would it do for your community if these were addressed? How do you think things would change? *(This will start the group in their thinking about how things could be. May help motivate their future involvement in changes)*

Closing: Thank you for your time and insights. If anything else comes to you, please feel free to contact _____ at _____.

## Appendix 14 – Partner Focus Groups: Second Round Activity

**FOCUS GROUP ACTIVITY**

April 20, 2011

1. Rank health problems and environment concerns
2. Choose one of the top 10 health or environment problems you believe the SLCoHD should focus on during the next 5 years.
3. Go to the location instructed.
4. Focus groups will be formed
5. Discuss Process/System issues related to your health/environment problem.
6. Develop creative approaches to mitigate the process/system issue for your chosen health/environmental problem.

**Note: - The list presents the topic alphabetically**

| Health Problems | Environmental Concerns | Process/System Issues |
|---|---|---|
| Asthma | Air Quality | Abuse of system |
| Cancer | Carbon Monoxide | Accountability (mistakes, delayed care) |
| Cardiovascular Disease | Insects | Addressing the needs of different groups (age, ethnicity, gender, sexual orientation, etc.) |
| Communicable Disease (incl. vaccine-preventable disease) | Property Maintenance (incl. trash, hording, disrepair, abandonment) | Affordability |
| Dental Disease | Rodents & other pests | Availability |
| Diabetes | Second hand smoke (indoor air quality) | Collaboration (horizontal vs vertical [siloed]) |
| Mental Illness (incl. suicide, abuse/neglect) | Toxic Exposures (incl. pesticides) | Communication |
| Obesity | Waste Disposal | Community engagement |
| Sexually Transmitted Diseases (incl. HIV/AIDS) | Water Quality (incl. fluoridation) | Competition |
| Substance Abuse (incl. illicit & prescription drugs, alcohol) | | Funding |
| Teen pregnancy | | Holistic approach to health |
| Tobacco | | Incentives (for professionals & consumers) |
| | | Inequities (poverty, homelessness) |
| | | Language barriers |
| | | Local government support |
| | | Multi-sectorial approach (integrating health into all agencies) |
| | | Responsibility (system vs individual) |

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