



Utah Primary Care Needs Assessment 2021

Utah Department of Health
Office of Primary Care and Rural Health
Primary Care Office



**This project was supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant U68HP11436-10-00, Primary Care Office. This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS, or the U.S. Government.*



Acknowledgements

The Utah Department of Health Office of Primary Care and Rural Health would like to thank the Comagine Health Research and Evaluation team for providing the telehealth assessment and compiling the report; the Rural Health Association of Utah for their contribution to this assessment, and the time spent collecting and compiling the qualitative data; and all focus group members and key informant interviews for their time and valuable insights.

Table of Contents

- Executive Summary..... 1
- Introduction 2
- Utah Overview 3
- Demographics 5
- Medically Underserved Areas and Barriers to Accessing Care 7
 - Disparities in SES Status 8
 - Rural Communities..... 9
 - American Indians 10
- Utah’s Primary Care Workforce 10
 - Workforce Shortages in Utah..... 11
 - Addressing Primary Care Workforce Shortages in Utah 13
- Primary Care Needs Ranking and Health Status 15
 - Methodology..... 15
- Results..... 18
- Indicators of Health Care Access..... 20
- Indicators of Health Status..... 26
- Social Determinants of Health 32
- Discussion..... 34
- Next Steps 35
- Conclusion..... 36
- Appendix A: Utah Small areas..... 37
- Appendix B: 2018 Focus Groups Methodology and Themes..... 41
- Appendix C: Telehealth Utilization..... 44
- References 52

Executive Summary

Access to primary medical care, dental, and mental/behavioral health services influences health outcomes. The Utah Primary Care Office (PCO) exists to increase access to these services in rural and underserved communities in Utah. The Primary Care Needs Assessment (PCNA) looks at various indicators of health access and health status, followed by social determinants of health, to understand the needs of communities with regard to access to primary medical care, dental, and mental/behavioral health services. The intention is to identify areas of greatest need and increase access in those areas.

The volume and distribution of the healthcare workforce contributes to a community's ability to access care. In Utah, the workforce is maldistributed throughout the state, resulting in Health Professional Shortage Areas (HPSAs). An HPSA is defined as an area with too few healthcare providers to meet the needs of the population.

In order to understand the primary care needs in Utah, quantitative data for selected health access and health status indicators were collected and analyzed by Utah small area (SA). SAs were ranked, based on the data, to assign the level of primary care need. The PCO also conducted focus groups and key informant interviews throughout the state in 2018. Participants were asked about the challenges they/their communities face in access to primary medical care, dental, and mental/behavioral health services. They were also asked about their top health concerns and strategies to address workforce shortages. These findings are also reflected in this assessment.

The majority of the SAs with the greatest and least need were all located within Salt Lake County. Based on our rankings, 69% of rural SAs fell in the worst two quartiles, which indicates an increased burden overall on rural areas. Focus groups in rural and urban areas identified similar challenges in access to care, such as an inability to afford needed care, a lack of awareness of resources or services available, and long wait times to get appointments. In addition to these universal challenges, rural areas also identified some challenges unique to them: traveling long distances for care, especially specialty care; fewer options for insurance providers; and a lack of resources to provide services for the homeless and low-income people who live in their communities.

Indicators of health access, status, and social determinants of health were also evaluated individually. Some areas ranked among the best five SAs for some indicators and worst five SAs for others. However, common trends were also present across all indicators. Several areas fell consistently among the five worst SAs for each indicator, including several rural areas. Likewise, several areas, primarily urban, consistently fell among the five best SAs for each indicator.

As evidenced throughout the research process, access to primary care services can improve health outcomes. Due to the disparities across the state in both healthcare access and outcomes, it is apparent steps need to be taken in order to increase access to primary medical care, dental, and mental/behavioral health services. Now the needs have been identified, we can work within our office and with other partners and organizations to help mitigate the needs by increasing healthcare workforce recruitment activities to areas of need and establish projects designed to reduce specific needs.

Introduction

The delivery of high-quality and efficient healthcare services is largely dependent on the size of the healthcare workforce (1). The Utah Department of Health (UDOH) Office of Primary Care and Rural Health (OPCRH) Primary Care Office (PCO) was created to increase the volume of the healthcare workforce in rural and underserved areas in Utah. The PCO aims to assess and address the primary care needs throughout the state in regard to access to primary care services and its workforce. We provide technical assistance to the vulnerable populations identified through our assessments and the primary medical care, dental, and mental/behavioral health care providers who serve them. We facilitate solutions and strategies for meeting those needs, administer multiple activities to increase provider recruitment and retention to those areas, and respond to program inquiries. We inform the allocation of federal resources to the vulnerable areas by designating health professional shortage areas (HPSAs) and medically underserved areas and populations (MUA/Ps). Funding for these activities comes through a cooperative agreement between the PCO and the Health Services and Resources Administration (HRSA) of the U.S. Department of Health and Human Services (HHS).

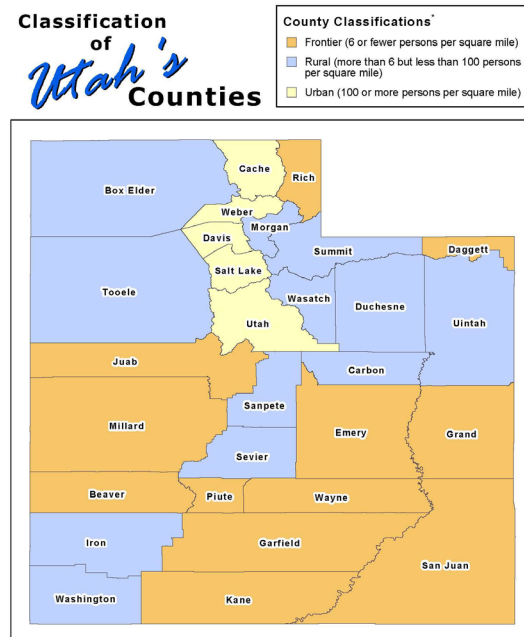
The purpose of the Primary Care Needs Assessment is to identify the areas of Utah with the greatest unmet primary healthcare needs and determine how those needs will be addressed. The findings from this assessment will help Utah's PCO and OPCRH prioritize our recruitment and retention activities. It will also allow us to focus our collaboration with partners to ensure that observed needs are addressed. Additionally, the assessment will help us work toward one of the strategic priorities for the Utah Department of Health, to have the healthiest people in the country (2). The assessment will look at Utah's demographics and how they affect access to primary care services, where the healthcare workforce shortages currently exist, and what primary care needs exist throughout the state. Then, we will discuss current needs and disparities and how they can be addressed, both through activities of OPCRH and through collaboration with other state partners and organizations.

Utah Overview

Utah is the 13th largest state in the country, spanning more than 84,899 square miles. While large geographically, Utah is relatively small in terms of population. As of 2021, Utah ranked 30th overall for population size in the United States and 41st overall for population density. Utah is, therefore, a predominantly rural state. Out of the 29 counties, 83% are designated as either rural (more than six but fewer than 100 persons per square mile) or frontier (six or fewer persons per square mile) counties and only 17% are urban (3) (Figure 1).

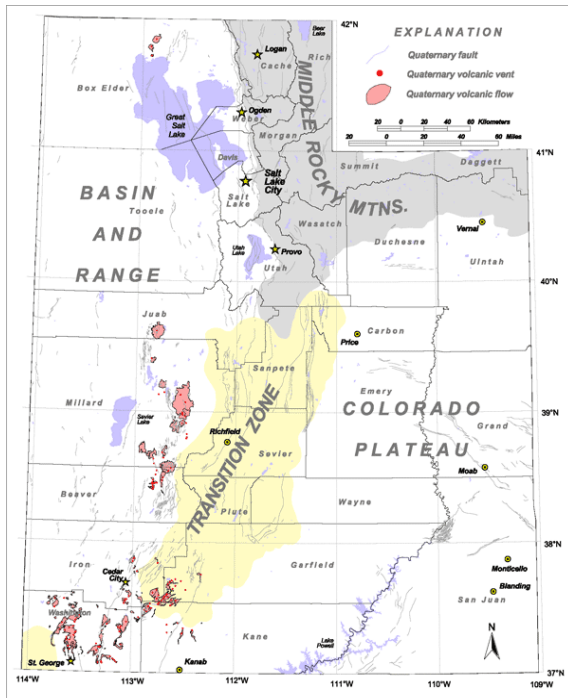
One characteristic that makes Utah unique is its ecological and climatic diversity. It is this diversity that has determined where people have settled and where resources are located. The state is comprised of three major geological provinces: the Great Basin, Colorado Plateau, and Rocky Mountain, each with its own climate, landforms, soils, and vegetation (Figure 2). The Great Basin region, located in the western part of the state, is characterized by its flatlands, small

Figure 1-Map of Classification of Utah's Counties



* The county classifications are based on population density per square mile. Source: Table 6. Population density by land use (frontier, rural and urban) and county of residence: Utah, 2014, Utah's Vital Statistics: Births and Deaths, p 5-11. Office of Primary Care & Rural Health, Utah Department of Health February 2016

Figure 2-Utah's Ecological Provinces



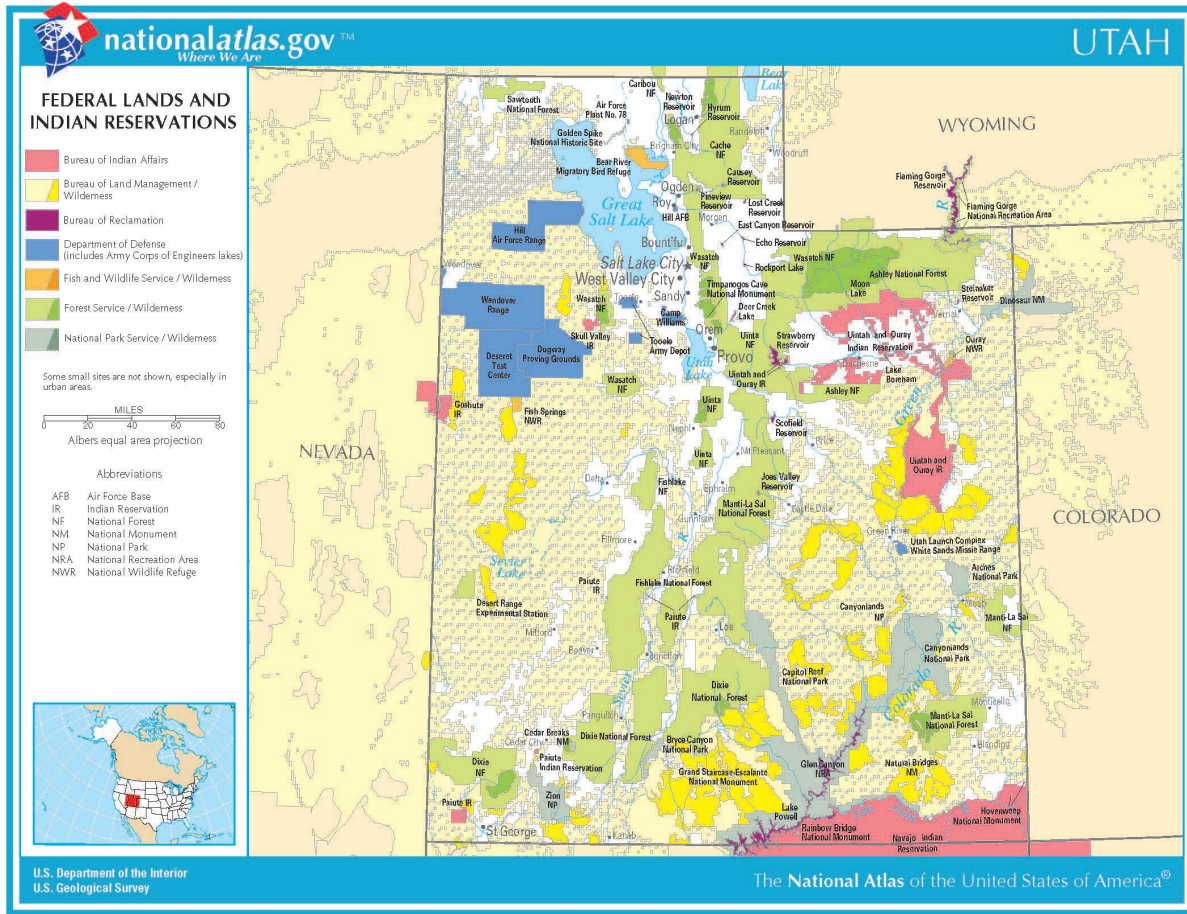
Physiographic provinces, Quaternary faults, Quaternary volcanic rocks, and Quaternary volcanic vents in Utah (after Stokes, 1977; Hecker, 1993, and Black and others, 2000).

mountain ranges, and an arid climate. The Colorado Plateau, located in the southeast part of the state, is known for its layered, multi-colored sedimentary rocks, and large hydrocarbon deposits. Due to its beauty and unique land formations, this region contains five national parks, six national monuments, and a number of state parks. Like the Great Basin region, this region is also relatively flat and arid in nature. Finally, the Rocky Mountain region, located in the northeast corner of the state, is an extension of the Rocky Mountain range that runs from Canada to Arizona. Due to its mountainous nature and higher elevation, this region tends to be more humid, leading to more inclement weather during the winter months (4).

The five urban counties are all located in the northernmost part of the state, along the border between the Rocky Mountain and Great Basin regions. People first settled in this area because of its ecological advantages. The Great Basin portion provided flat, livable land and the Rocky Mountains provided a valuable source of water. These urban counties make up approximately 5.8% of the state and house

approximately 79% of the population (5). The remaining 21% of the population live dispersed throughout the 24 remaining ecologically diverse rural and frontier counties (5).

Figure 3-Map of Utah's Federal Lands and Indian Reservations



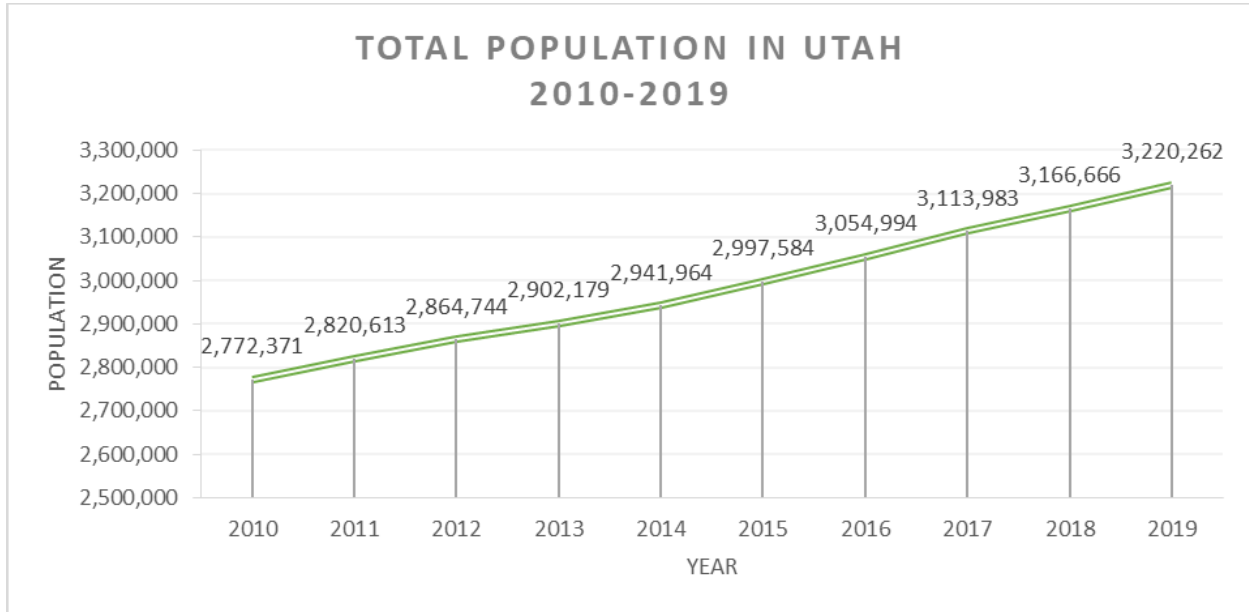
Another characteristic that makes Utah unique is the proportion of its land owned by the federal government. Currently, various federal agencies own approximately 63% of the land in Utah. Uses or designations of this land include: air force bases, Indian reservations, national forests, national monuments, national parks, national recreation areas, and national wildlife refuges (Figure 3). Since the government owns this land and much of it is protected, the majority of it is uninhabited. These uninhabited lands create ecological barriers leading to geographic isolation between many rural communities, including those who live on or near the Indian reservations (6). Tribal lands make up approximately 4% of Utah and are all located in rural or frontier counties. The Ute Tribe and Navajo Nation have the most Tribal land within the state. The Navajo Nation is located in the southeast corner in San Juan County and the Ute Indian Tribe of the Ouray and Uintah Reservations is located further north in parts of Uintah, Duchesne, and Grand counties. Other Tribes with land in the state include the Paiutes, Goshutes and Shoshones. These smaller reservations are scattered throughout the state in various rural and frontier counties (7).

Demographics

Population

In 2019, Utah's total population was 3,220,262 (Figure 4). The population has been steadily increasing at a rate of 1-2% per year and has increased a total of 16% since 2010; the fastest growing state in the nation (8)(9).

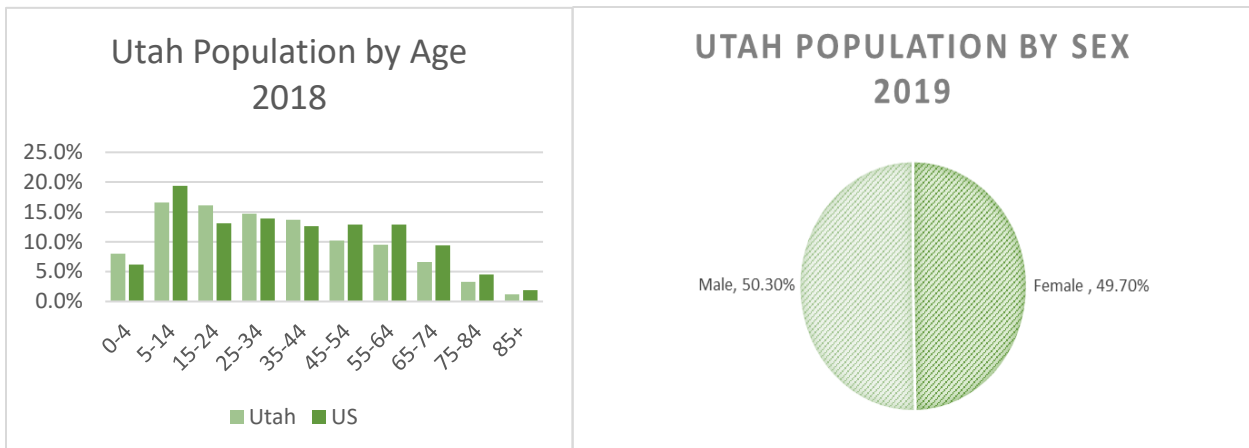
Figure 4-Total Population Change in Utah Since 2010



Age and Sex

Utah currently has the youngest population in the United States, with a median age of 30.3 years old. The population younger than age 18 is significantly higher than the national average, which lowers the overall average age in the state (8). While the average age remains low, the population is aging and between 2010 and 2016, the percentage of the population older than 65 increased from 9% to 10.1% (10). Statewide, differences in sex are not significant (Figure 5).

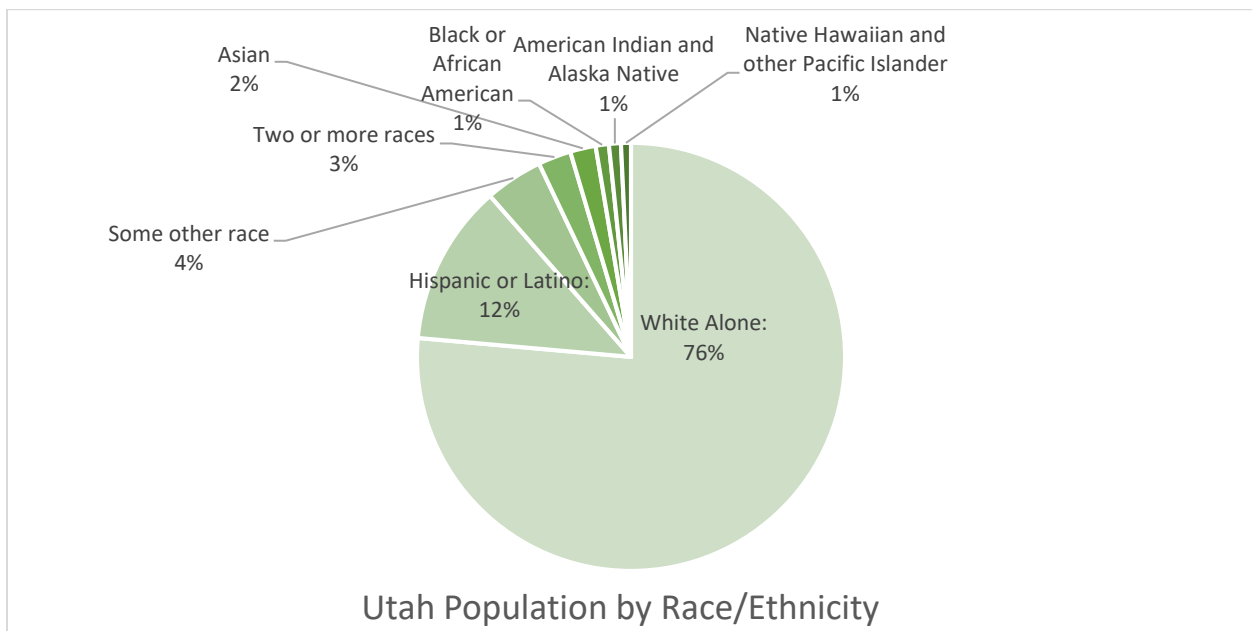
Figure 5-Utah Population by Age and Sex



Race and Ethnicity

In Utah, a majority (79%) of the population self-identifies as persons who are non-Hispanic White. The largest racial minority group in the state is persons who are Hispanic/Latino, comprising approximately 13.8% of the population. Other racial/ethnic groups present include persons who are: Native Hawaiian or Pacific Islander, American Indian or Alaska Native, Asian, Black or African American, and multiple races. Although persons who are non-Hispanic White are currently the predominant race in Utah, population growth trends suggest the state as a whole is becoming less racially homogenous. Between 2010 and 2016, the number of persons who are non-Hispanic White grew only 8%, while the racial minority group populations grew 20.3% (11).

Figure 6-Utah Population by Race/Ethnicity



Socioeconomic Status

As a whole, the state of Utah falls above the national average in annual household income and below the national average for percentage of the population living in poverty. In 2016, the average annual household income was \$67,481, compared with \$59,039 in the U.S (12). The percentage of people living in poverty in Utah was 9.0%. While Utah does exceed the national average in most socioeconomic indicators, Utah falls short in the percentage of the population with advanced degrees and per

Table 1-Socioeconomic Indicators.

	Utah	US
Persons Living in Poverty:	9.0%	13.1%
Median Household Income	\$68,395	\$60,336
Per Capita Income	\$26,907	\$31,177
Educational Attainment		
Some College	24.7%	20.3%
Assoc. Degree	10.2%	8.6%
Bachelor's Degree	22.8%	20.0%
Advanced Degree	12.0%	12.6%

capita income. However, the discrepancy between per capita and household income is unsurprising due to the large 18 and younger population in the state (13).

Religion

Utah’s population is predominantly Christian. In 2017, 73% of adults in Utah reported affiliation with one of the Christian denominations (Table 2). The most prevalent Christian denomination is the Church of Jesus Christ of Latter-Day Saints (LDS or Mormon), whose membership accounts for 55% of the Utah population (14). The strong religious values of the LDS church regarding healthy behaviors have permeated culture and policy in many Utah communities.

Table 2-Breakdown of Religions Represented in Utah

Christian	73%
Mormon	55%
Evangelical Protestant	7%
Mainline Protestant	6%
Historically Black Protestant	<1%
Catholic	5%
Orthodox Christian	<1%
Jehovah's Witness	<1%
Other Christian	<1%
Non-Christian Faiths	4%
Jewish	<1%
Muslim	1%
Buddhist	1%
Hindu	<1%
Other World Religions	<1%
Other Faiths	2%
Non-Religious/Unaffiliated	22%

Medically Underserved Areas and Barriers to Accessing Care

As a state, Utah ranks high in health outcomes and healthcare access-related indicators. In 2020, the United Health Foundation published its 31st annual America’s Health Rankings Report, which listed Utah as the sixth healthiest state in the country in terms of health outcomes, including behavioral health, mortality, and physical health (15). This high ranking, however, does not paint an accurate picture of the state. On a community level, Utah has significant socioeconomic and health-related disparities. There are communities with exceptionally high socioeconomic status (SES) and positive health outcomes and communities that are exceedingly unhealthy and disadvantaged. These underserved communities have significantly lower rates of access to primary and preventive services and subsequently worse health outcomes.

Disparities in SES Status

Socioeconomic status has a significant impact on an individual's health outcomes and ability to afford health care. In Utah, there are significant socioeconomic disparities between racial/ethnic groups and geographic communities. The poverty rates for racial/ethnic minorities are considerably higher than rates for persons who are non-Hispanic White. Persons who are American Indian or Alaskan Native have the highest poverty rate among the racial/ethnic minority groups at 23.0%, which is approximately 14.0% greater than the poverty rate among persons who are non-Hispanic White (16) (Figure 8). Among geographic communities, these disparities are even more prevalent. Poverty rates between Small Health Statistical Areas range from only 2.1% to 38.9% (17).

Utah uninsured rates are comparable with the national average but vary significantly between communities (18). Both rural and urban underserved communities with lower socioeconomic status tend to have higher uninsured rates, reduced access to the primary care and preventive services and, consequently, worse health outcomes. Figure 7 highlights the poverty rates of Utah's small areas.

Figure 7-Percent of Population in Poverty

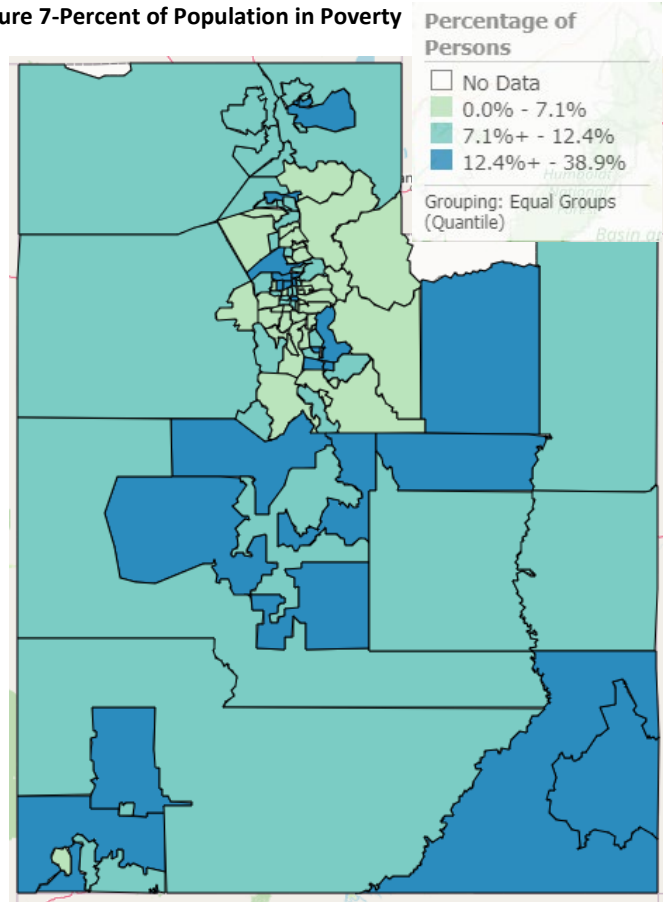
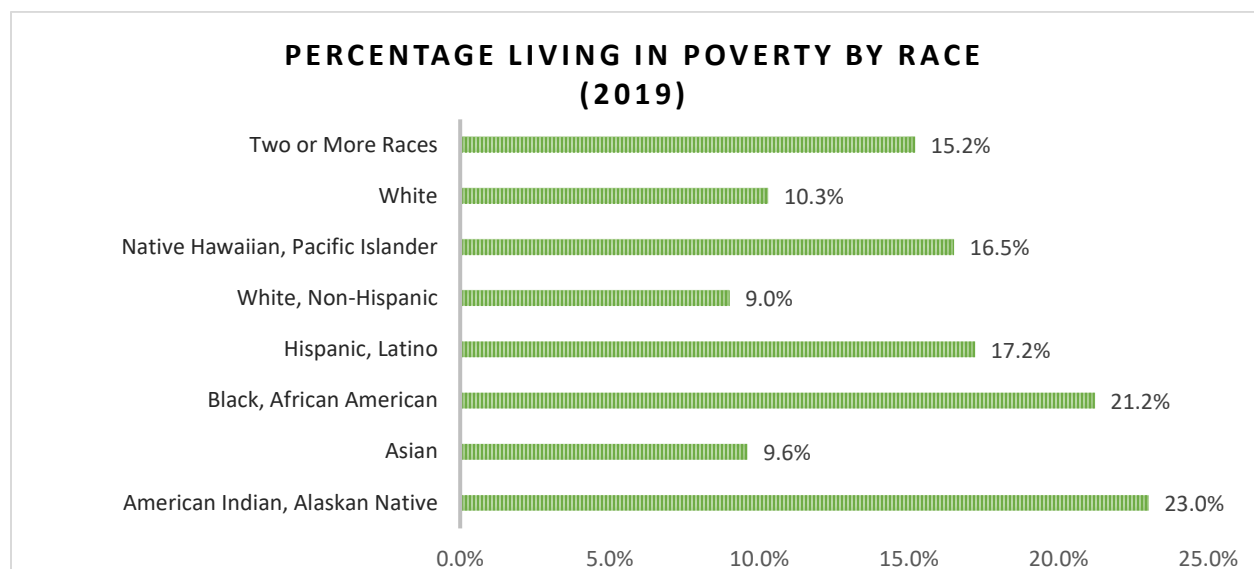


Figure 8 - Percentage of Utah Population in Poverty by Race

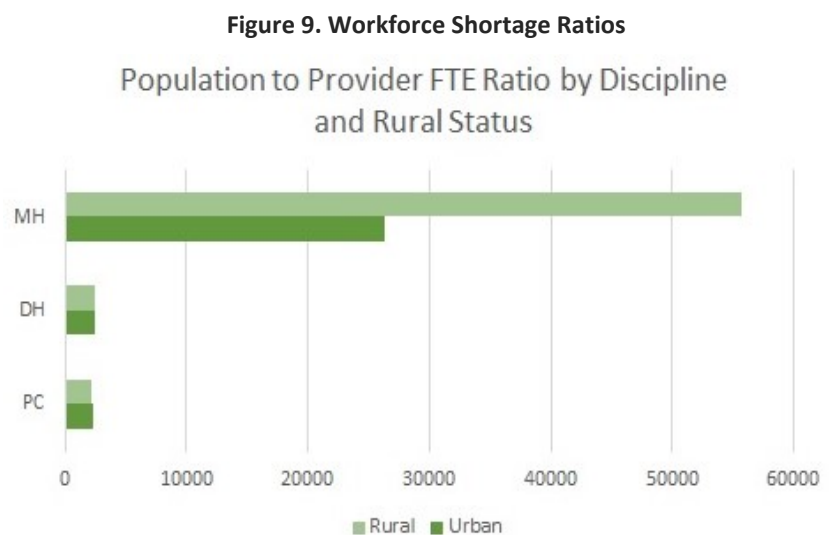


Rural Communities

As previously discussed, the state of Utah is predominantly rural. Rural and frontier counties make up 94.2% of the state and house approximately 21.5% of the population. While there are significant health outcome and access disparities among urban communities, rural communities have worse health outcomes and face greater barriers in access to necessary health care services than their urban counterparts (17). Some of the major barriers faced in rural communities include the following:

Health Insurance Coverage and Ability to Afford Care: The inability to afford care is a major barrier to access in rural communities. From 2014 to 2019, uninsured rates in most rural communities were higher than the state average of 12.1%. Washington County, a county in southwest Utah, reached an uninsured rate of 28.1%. (19) In addition to higher uninsured rates, studies have shown rural communities have limited options, if any, for low-cost or charity healthcare, making it increasingly difficult for rural, uninsured individuals to access care (20).

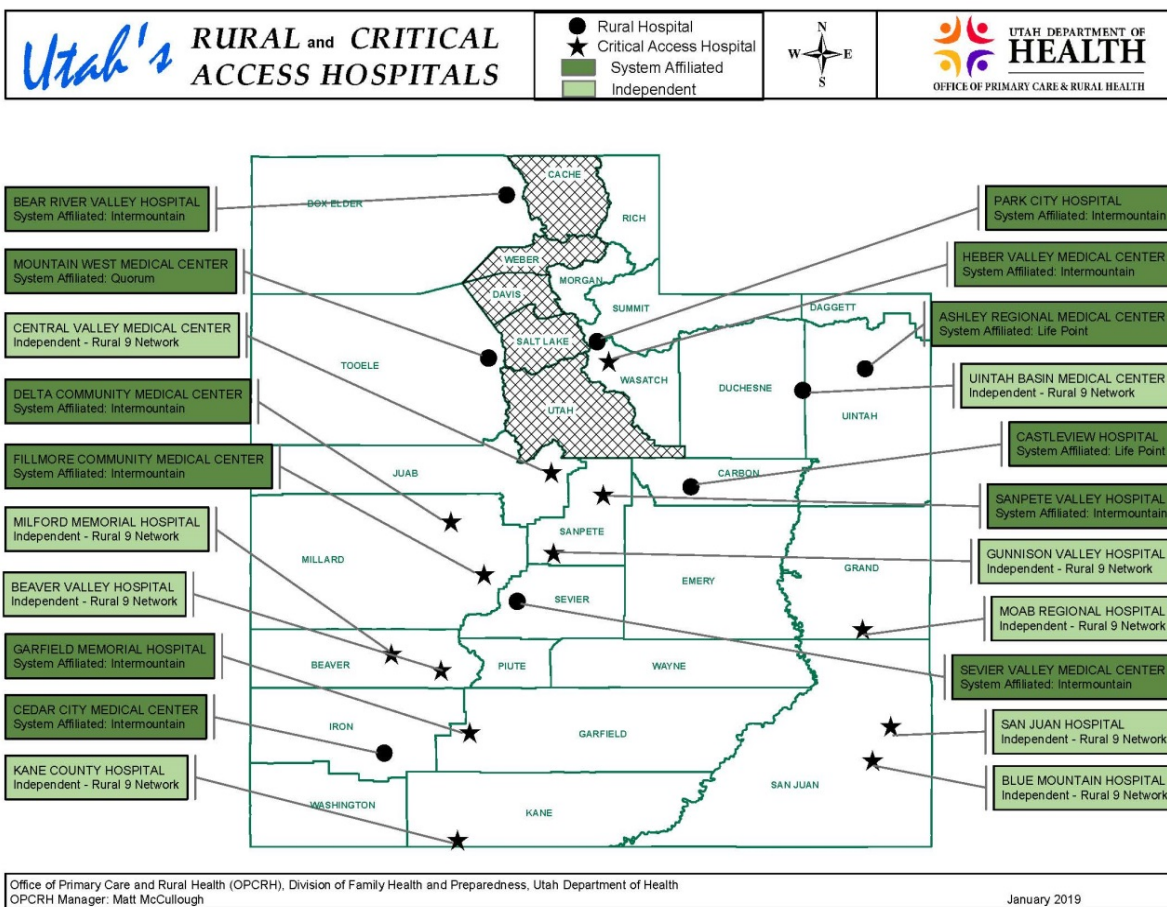
Workforce Shortages: In rural communities, physician supply limits available services (20). In Utah, rural areas have significantly fewer mental health (MH) providers to care for the community than urban areas. Ensuring access to providers and preventive services is, therefore, more difficult in rural communities. Figure 9 illustrates this disparity. The data is current as of February 2021.



Poor Health Literacy: Health literacy is important in communication with the physicians and understanding personal health care needs. Health literacy is linked to educational attainment (20). Overall, Utah has higher educational attainment than the U.S. average (see Table 1). However, the level of education is disproportionately distributed to favor the urban areas of the state.

Geographic Isolation and Transportation to Care: In Utah, most rural counties have only one small hospital, if any hospital at all (Figure 10). As previously discussed, Utah has a large amount of federally-owned land that creates geographic barriers and isolation among rural communities. Since the population in these areas tends to be more spread out, individuals may have to drive longer distances than their urban counterparts to access care. Unlike urban counties with affordable public transportation options, individuals who lack transportation resources may have no way to access needed medical care. Rural communities located near the five urban counties (i.e., Summit County, Tooele County, Morgan County), however, tend to have improved access to health services and subsequently better health outcomes.

Figure 10-Utah's Rural and Critical Access Hospitals



American Indians

People who are American Indian, unlike the other racial/ethnic minority groups in the state, reside predominantly in rural areas. As of 2019, there were approximately 30,537 individuals who are American Indian in Utah (21). The largest rural populations are in the counties with the largest Tribal lands: Uintah County and San Juan County. People who are American Indian who live on the reservations face even greater challenges in access to care based on geographic isolation and lack of resources than their counterparts who live off the reservation. In addition to the barriers specific to living in rural areas and reservations, this group also has higher rates of poverty, lower educational attainment, higher uninsured rates, and worse health outcomes compared with other racial/ethnic minority groups (see Figure 8) (11) (22).

Utah's Primary Care Workforce

The primary care workforce is a vital component in providing necessary primary preventive care services to the population. For the purpose of this needs assessment, the following specialties are considered primary care:

- Family Practice
- Internal Medicine

- Obstetrics/Gynecology
- Pediatrics
- General Dentistry
- Psychiatry

A sufficient primary care workforce for the population size can help ensure the basic healthcare needs of a population are met (1).

Workforce Shortages in Utah

Health care provider shortages are a pronounced problem in rural areas. Approximately 20% of the total U.S. population live in rural areas, but fewer than 10% of physicians practice in rural areas (91). Provider shortages are not restricted to rural areas only, but also exist in underserved urban areas (24). Since the implementation of the Patient Protection and Affordable Care Act (ACA), many programs have been created to improve primary care workforce shortages to better meet the primary care needs of the U.S. population (25). However, the federally-funded Primary Care Office (PCO) worked to address healthcare workforce shortages for many years prior to the ACA. The primary activity of Utah’s PCO is to determine which areas in the state have a shortage of primary care, dental, and mental health providers. This needs assessment is intended to help prioritize the areas of greatest need so we can focus on disparity reduction in the state through various recruitment and retention activities and reduce the provider shortages throughout the state.

Health Professional Shortage Areas

The Utah PCO is actively engaged in the process to identify and address workforce shortages in Utah. The primary activity is to identify healthcare workforce shortage areas and submit applications to HRSA for designation as Health Professional Shortage Areas (HPSAs). These designations are based on current census data and health care provider data for the state. HPSAs can be determined for three different disciplines: primary care, dental health care, and mental health. Additionally, there are three types of HPSAs: geographic, population, and facility. Geographic and population-based HPSAs factor in the number of primary care providers in the area and the population for whom poverty status has been determined. In addition to the number of providers, a population-based HPSA also considers the percentage of the population who meet high-risk criteria (e.g., the percentage of the population who is low-income or eligible for Medicaid/Medicare is greater than 30%). HRSA sets a minimum population to provider ratio, based on the discipline, in order to be considered a shortage area. Table 3 outlines the

Table 3-Population to Provider Ratios for HPSA Designation

HPSA Type	HPSA Discipline		
	Primary Care	Dental Health	Mental Health
Geographic	3,500:1	5,000:1	30,000:1
Population	3,000:1	4,000:1	20,000:1

minimum required population to provider ratios. A facility HPSA designation is granted to facilities that treat high-risk populations, such as correctional facilities, state mental hospitals, and federally-qualified health centers. Each designated HPSA receives a score

of one to 25 for primary care and mental health HPSAs and one to 26 for dental HPSAs, to reflect the degree of the shortage. A one means a minimal shortage while 25 or 26 means an extreme shortage of health professionals (18).

Medically Underserved Areas/Populations

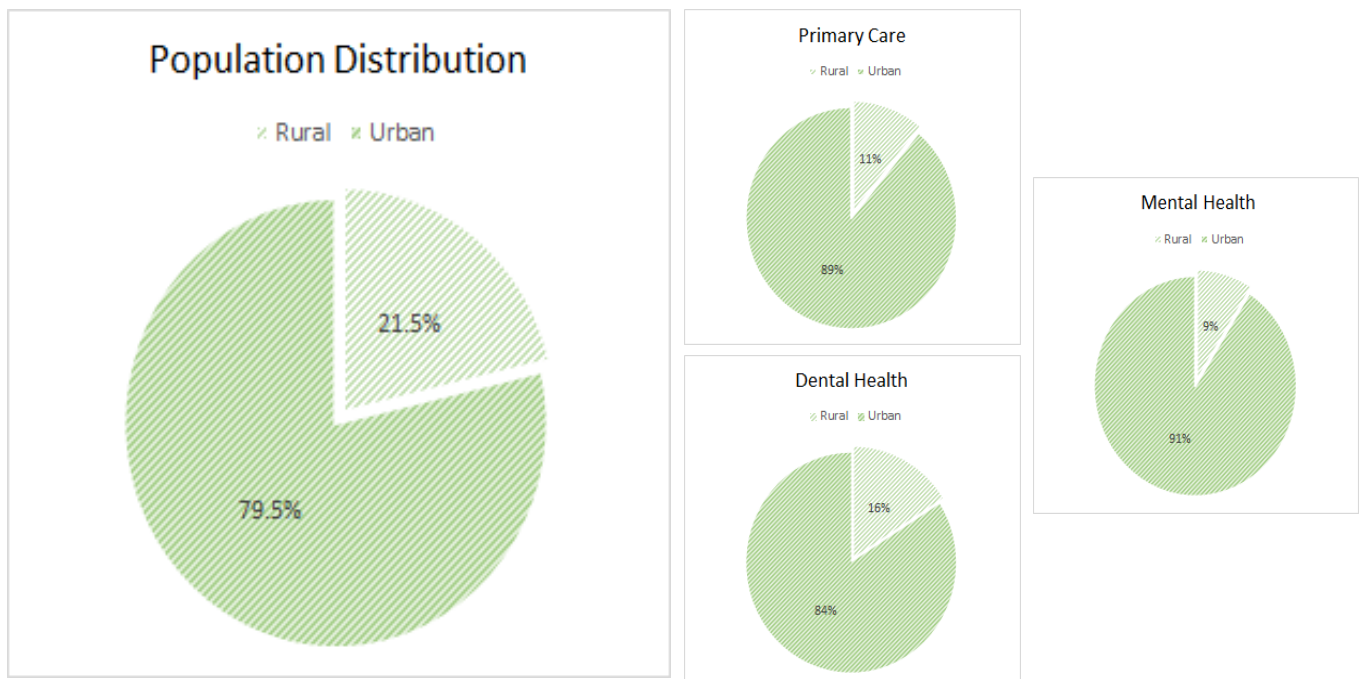
Medically underserved areas/populations (MUA/Ps) identify geographic areas or specific population groups with limited access to primary care services. The level of underservice for an area is determined by the population to provider ratio, the percentage of the population below the federal poverty level, the percentage of the population older than age 65, and the infant mortality rate. Once identified, HRSA applies a scoring criterion to the area or population in question. The score is between zero and 100. Zero represents completely underserved. If the area or population receives a score of 62.0 or less, it qualifies for designation as an MUA/P (26).

Shortages in Utah

Based on data collected by the Office of Primary Care and Rural Health as of September 2021, there are a total of 1,397 primary care providers, 1,440 dentists, and 119 psychiatrists in Utah (27). While that appears to be a lot providers for Utah's population, those providers are not evenly distributed throughout the state which creates a maldistribution of services.

In addition to HPSA designations, further evidence suggests the distribution of healthcare providers is disproportionate to where the population resides in the state. This is illustrated by the number of providers in Utah who practice in rural communities, based on the proportion of Utah's population who live in rural areas. Figure 11 below, shows 21.5% of Utah's population live in rural areas, but only 11% of primary care providers work there. It is similar for mental health providers (9%) and dental health providers (16%). This trend is not unique to Utah. Nationally, about 20% of the population live in rural areas, but only about 11% of physicians practice in rural areas (29). As discussed earlier, a lack of access to care leads to a multitude of health concerns. The average primary care needs rank for all rural SAs is 41, while for urban it is 54 (lower means less need). Given the amount of federally-owned land in Utah which spread out the population and the small number of providers who work in rural areas, rural residents travel longer distances to access primary care than their urban counterparts. This can be taxing

Figure 11-Population and Provider Distribution between Urban and Rural SAs



and potentially act as a deterrent to seeking care. This indicates that, overall, rural areas in Utah have greater difficulty with access to care.

Addressing Primary Care Workforce Shortages in Utah

The Office of Primary Care and Rural Health has taken steps to recruit providers to shortage areas in rural Utah. A study, published earlier this year, identified factors that make physicians more likely to work long term in rural areas. Medical students who have been exposed to rural practice during their early years and their education are more likely to choose rural practice. Additionally, physicians who have positive experiences during these exposures and who receive a financial incentive are also likely to practice rurally. It is also important for the physician and his/her family to find positive community resources wherever they practice (24). In accordance with the guidelines listed in the research, OPCRH participates in several activities to help address workforce shortages throughout the state. The state and federal governments administer these programs to recruit and retain providers, provide financial support, and connect rural and underserved communities with resources to help meet healthcare needs. In addition to the programs administered through OPCRH, Utah utilizes other public health programs to address these physician shortages. Several of the programs implemented in Utah follow these findings, with a focus on positive rural experiences during health care training along with good financial incentives.

Programs Administered Through the Office of Primary Care and Rural Health (OPCRH)

Table 4-Number of Providers Recruited Under Recruitment Tools Administered by OPCRH

Recruitment Program	Number of Providers
National Health Service Corps	200
J-1 Visa Waiver	17
Rural Physicians Loan Repayment Program	12
Health Care Workforce Financial Assistance Program	15
Behavioral Health Workforce Reinvestment Initiative	58
Total	302

Several of the programs administered by the OPCRH specifically aim to recruit providers to underserved and rural areas. Table 4 shows the number of providers who practice in Utah under one of these recruitment tools as of September 2021. The number of providers changes as participants begin and end the program. For current numbers, please contact OPCRH.

National Health Service Corps (NHSC): NHSC is a federally-funded program designed to recruit and retain providers in designated shortage areas. Administered by HRSA, it provides funding for student loan repayment to healthcare professionals who practice within HPSAs. Eligible healthcare facilities can use this

as a recruiting tool. The facilities can apply to become an NHSC approved site. The PCO reviews and submits all the site applications. The approval of a site application is dependent on the HPSA score. The higher the score, the more likely a site will be approved. Once approved, a site can recruit new primary care providers to apply for the student loan repayment program through NHSC (30).

Conrad 30 J-1 Visa Waiver: Another program aimed at recruiting providers to these areas is the Conrad 30 J-1 Visa Waiver. Foreign physicians who come to the U.S. to complete their residency come on a J-1 visa. However, one of the visa requirements involves returning to their home country for two years, upon

completion of their residency, before returning to the U.S. These physicians can apply for visa waivers if they secure employment to work within a designated HPSA or MUA/P, or if the facility can provide documentation that they serve an underserved population (31).

Rural Physicians Loan Repayment Program: This state-funded program provides incentive to physicians who practice in rural areas of Utah to help pay back their student loans. Funds provided by the state are matched by the rural hospital that employs the physician. Physicians are obligated, under a two-year contract, to serve in a designated rural health facility (31).

Healthcare Workforce Financial Assistance Program: Similar to the Rural Physicians Loan Repayment Program, this program provides funding to help repay student loans for many levels of healthcare provider, as long as the facility in which they work can demonstrate they serve uninsured and underserved patients. This program requires a two year contract and receives both state and federal funds (31).

Behavioral Health Workforce Reinvestment Initiative: This program provides loan repayment to all levels of behavioral health specialists, from peer support specialists to psychiatrists. This also includes primary care providers who provide behavioral health treatment as a significant portion of their practice. Eligible applicants work in publicly funded facilities. Participants sign a three-year commitment and receive a mix of state and federal funds (31).

Medicare Rural Hospital Flexibility Program: The Medicare Rural Hospital Flexibility Program (FLEX) is a grant program housed in the OPCRH. It is authorized under the Medicare Improvements for Patients and Providers Act to help improve quality of health care in Critical Access Hospitals (CAHs). FLEX helps small, rural hospitals convert to CAHs. This designation enables rural hospitals to gain access to FLEX program resources and receive additional cost-based Medicare and, depending on the state, Medicaid reimbursements. FLEX also assists current CAHs report quality improvement measures, set goals for future improvement, and integrate EMS into regional and local care systems. Additionally, FLEX provides technical assistance to CAHS on the use of health information technology, electronic health records, and health information exchanges (31).

Small Rural Hospital Improvement Program: The Small Rural Hospital Improvement Grant Program (SHIP) receives federal funds to provide financial assistance for up to 21 rural hospitals so they can align with the Patient Protection and Affordable Care Act (ACA). SHIP funds can be used by the participating hospitals for various improvement projects. Some examples of improvement projects include money for the purchase and installation of new medical equipment, participation in staff trainings to improve quality of care and operational efficiency, receipt of accountable care organization conversion support, creation of a shared savings programs, and various consultative services (31).

State Primary Care Grants Program: Utah funds a program that provides grants to private non-profit and public organizations that provide primary care services to uninsured and underserved populations. These funds can be used for projects to improve access to care for these patients, hire additional providers, or directly cover the costs of a visit for eligible patients (31).

Other Public Health Programs in Utah

Utah Area Health Education Centers: The Utah Area Health Education Centers (AHEC) program works with community medical organizations to provide healthcare professional students with educational

opportunities in underserved areas. They help facilitate training experiences for students in rural and underserved urban communities in order to expose future clinicians to these types of practices (32). The Northern Utah AHEC is at Weber State University, the Crossroads Utah AHEC is at Salt Lake Community College, and the Southern Utah AHEC is located at Southern Utah University. The headquarters reside at the University of Utah. AHEC also sponsors an annual primary care summit and an HPV immunization project.

Utah Medical Education Council: The Utah Medical Education Council (UMEC) has similar goals as AHEC to better Utah’s primary care physicians. They conduct research on Utah’s health care workforce, including nursing. The research is used to inform Utah’s health care training programs and influence medical education finance policies. UMEC also facilitates rural healthcare professional training (33).

National Rural Health Association: The National Rural Health Association is a nonprofit organization dedicated to improving rural health through research, education, and advocacy. They provide resources and training on primary care, border health, community health workers, oral health, veteran health, and other issues present in rural communities (34). There are State Rural Health Association chapters in nearly all U.S. states, including Utah. The Rural Health Association of Utah is housed at Southern Utah University, along with the rest of the Utah Center for Rural Health. They host an annual conference, with a focus on current rural needs and resources. They also provide research and survey services for OPCRH (35).

Association for Utah Community Health: The Association for Utah Community Health is a private, nonprofit organization designated by HRSA as the Primary Care Association for Utah. They provide technical assistance to potential and existing health centers throughout the state to improve health outcomes, finances, and quality of care. Additionally, they work in advocacy, health promotion, and encourage community engagement (36).

National Rural Recruitment and Retention Network (3RNet): 3RNet is a nonprofit organization that partners with state primary care organizations across the nation to provide an employment opportunity database for healthcare professionals seeking jobs in rural and underserved areas. The primary care member organization for Utah is the RHAU (37).

Centers for Medicare and Medicaid Services (CMS) HPSA Bonus. Any facility within a geographic HPSA is eligible for a bonus through CMS. CMS will pay a 10% bonus to the facility for all services provided by any physician to Medicare beneficiaries (32).

Primary Care Needs Ranking and Health Status

To identify the areas of Utah with the greatest unmet primary care needs, quantitative data were collected, compiled, and analyzed. Qualitative data from past focus groups and key informant interviews held in 2018 is also included to provide additional context. See Appendix B for the qualitative methodology and themes.

Methodology

Primary Care Needs Ranking and Health Status

For the quantitative data analysis, health indicator data from the Behavioral Risk Factor Surveillance System (BRFSS) found in Utah’s Indicator Based Information System (IBIS) was used. IBIS is a web-based

information system that provides statistical and contextual data surrounding the health of Utah residents and the state of healthcare. Annually, the BRFSS randomly surveys individuals across the state and asks questions regarding their health status. The BRFSS datasets can be queried through IBIS, and allows the dataset to be downloaded and analyzed on a community level, not just county level.

The community-level classifications found on IBIS are known as small areas (SAs). SAs are geographic boundaries created by UDOH to provide a clearer picture of health statistics at a community level. ZIP Code areas within counties were used to create small areas with populations ranging from 8,000 to 86,000 (39). A list of all Utah SAs and corresponding ZIP codes can be found in Appendix A. The quantitative analysis is based on data from SAs, because there are significant disparities in health outcomes between areas in urban counties that are masked when looking at countywide data. For example, our analysis suggests Salt Lake County houses both the top and bottom five SAs in the state for health outcomes. Our staff agreed that being able to identify these specific disparities not only between counties but within counties is beneficial in understanding the primary care needs of all residents of Utah.

To determine which health indicators would be used for this assessment, all the health indicators in IBIS were evaluated for relevance. The IBIS health indicators were included in our analysis if it directly related to access to primary medical care, dental care, and/or mental health services; it is a focus area for the state of Utah; and significant disparities were apparent either between Utah and the U.S., or between small areas across Utah. The literature for each indicator selected was then reviewed to determine whether the relationship between the indicator and access to healthcare services was scientifically supported. Five different indicators were selected that illustrate access to care. Three major health status indicator categories were also selected, with specific measures in each one. Table 5 outlines the selected indicators.

Table 5 - Selected Indicators for Analysis

Access to Care	Unable to afford care due to cost
	Personal health care provider
	Routine medical checkup
	Routine dental care
	No health insurance coverage
Mental Health	Mental health status during past 30 days
	Doctor ever told depressive disorder measure
	Direct physical, emotional, or sexual abuse
	Substance abuse in the household
Precursors to Chronic Disease	Obesity/overweight

Table 5 - Selected Indicators for Analysis

	Doctor diagnosed hypertension
	Doctor diagnosed high cholesterol
Overall Health	General health status past 30 days
	Physical health status past 30 days

For the selected indicator categories, IBIS was searched to find all indicators with a queryable dataset from BRFSS and broken down by SA. Only the indicators that met those requirements were included in the quantitative analysis. Each indicator was ranked from worst to best by small area. Then, all indicators were averaged to assign an overall Primary Care Need Rank to each SA. The higher the rank, the higher the primary care need. The data included in the rankings are from the years 2014–2019, to ensure an adequate sample size from all SAs. Additionally, socioeconomic status (SES) indicators also available as queryable data sets from the American Community Survey (ACS) 2019 estimates, were ranked.

For the indicators without a queryable data set from BRFSS, but with sufficient data elsewhere, trends across the state will be discussed but are not included in the rankings of small areas.

The Health Indicator Matrix (Table 7) summarizes how the SAs rank in terms of primary and preventive care-related quantitative indicators and SES. The Primary Care Need Rank is the average of all included health indicator rankings. Table 6 highlights the indicators used in the matrix.

Table 6 - Indicators Not Included in Primary Care Need Rank

<i>Socioeconomic Status (SES) Rank</i>	<ul style="list-style-type: none"> • <i>Median Household Income</i> • <i>% of Children in Poverty</i> • <i>% of Persons in Poverty</i> • <i>Educational Attainment (>=bachelor’s degree)</i>
---	---

The SES indicators (Table 6) were not included in the Primary Care Needs Rank, but were ranked separately in order to illustrate the relationship between socioeconomic status and the Primary Care Needs Rank.

All rankings were grouped in quartiles and color-coded accordingly. Figure 12 explains the colors used.

The HPSA Designations for all small areas are also included in the Health Indicator Matrix to allow for comparison between indicator data and health professional shortage areas.

Figure 12 - Legend of Color-Coding

	<i>SA Ranking</i>
	1-25 (most need)
	26-50
	51-75
	76-99 (least need)

Primary Care Needs Ranking and Health Status Limitations

Several limitations with the data needed to be addressed while performing this needs assessment. First, not all the indicators had data from the same data source, or at the small area level. In order to address this, indicators were excluded from the analysis and primary care needs rank that did not have

queryable data from the BRFSS survey. However, because there was still interest in those indicators, they were kept in the discussion of indicators; but excluded from the Primary Care Need Rank. The second limitation was not all the data had a large enough sample size to draw conclusions. Because the data was reported on the small area level, if one area did not have an adequate sample size to be considered adequate data, it was excluded from the analysis, according to the UDOH standards for reliable data. However, to address this, six years' worth of data was included to make sure all sample sizes were sufficient.

Another limitation faced while performing this needs assessment was the geographic regions used for various datasets. For example, overall demographic data from the Census Bureau or the American Community Survey for population estimates only had data available by census tract. Census tract data could not be overlaid with small areas in order to draw conclusions, because they were not created using the same geographic boundaries. Therefore the SES ranking was limited only to the data available in IBIS at the small area level. However, census tract data still paints an accurate picture of the actual SES of the communities, and how it relates to health. The final limitation was the geographic boundaries associated with the Utah Small areas (SAs). Even though they highlighted a lot of variations among the urban counties, they masked variation among the rural counties, because they combined several counties, or parts of counties. However, in October 2018, UDOH released new Utah Small Area designations. There are 99 designations, instead of the original 64. And this helped mitigate some of the masked variations in the rural counties.

Telehealth Utilization

Healthcare insurance claims from the Utah Office of Health Care Statistics, the state's all payer claims database (40)(41) were used. Claims include commercial, Medicaid and Medicare lines of business. Claims from 2019 and 2020 with following telehealth procedure codes in the analysis were included: 98966, 98967, 98968, 98969, 98970, 98971, 98972, 99421, 99422, 99423, 99441, 99442, 99443, 99444, 99495, 99496, G0071, G0406, G0407, G0408, G0425, G0426, G0427, G2061, G2062, G2063.

ZIP codes of the billing providers were captured and then used the SAs to map utilization and look at changes between 2019 and 2020.

Telehealth Utilization Limitations

Claims data only reflects utilization for insured patients. Therefore, telehealth visits by uninsured or self-pay Utahns are not captured in this analysis.

Results

The results of the quantitative analysis are visualized and discussed below, beginning with the Health Indicator Matrix. The Health Indicator Matrix provides a summary of how Utah communities rank with regard to primary care needs. Refer to Tables 5 and 6, and Figure 12 above to explain the matrix (Table 7).

Table 7: Health Indicator Rankings with HPSA Designations

	Access to Care	Perceived Overall Health	Mental Health	Precursors to Chronic Disease	Immunizations	PRIMARY CARE NEEDS RANK	SES				HPSA				PRIMARY CARE NEEDS RANK	Immunizations	Precursors to Chronic Disease	Mental Health	Perceived Overall Health	Access to Care
							SES	PC HPSA	MH HPSA	DH HPSA	DH HPSA	MH HPSA	PC HPSA	SES						
4-29.1 Kearns V2						1	32							47	51					4-26.1 Salt Lake City (Sugar House)
8-40.1 Tooele County (Other)						2	34							40	52					1-2.2 Tremonton
4-20 Magna						3	25							27	53					6-58 St. George
4-23.1 West Valley (East) V2						4	12							73	54					4-36.2 Sandy (Center) V2
4-32 Midvale						5	20							36	55					1-4.2 Hyrum
10-48.1 Provo (West City Center)						6	29							75	55					4-27.1 Holladay V2
12-5 Ben Lomond						7	22							45	55					10-50.2 Payson
12-7 Ogden (Downtown)						8	13							41	58					4-33.2 West Jordan (Northeast) V2
4-21.1 Salt Lake City (Glendale) V2						9	4							32	58					6-59.2 Washington City
9-53.2 Duchesne County						10	28							76	60					10-49.1 Salem City
4-30 Taylorsville (East)/Murray (West)						11	33							78	61					4-39.2 Riverton/Bluffdale
5.1-56.1 Carbon County						12	16							49	62					10-50.1 Utah County (South) V2
4-17 Salt Lake City (Rose Park)						13	6						N/A	63	63					4-35.2 Daybreak
6-59.3 Hurricane/La Verkin						14	34							61	64					6-59.4 Ivins/Santa Clara
4-31 Murray						15	32							57	65					10-43 Pleasant Grove/Lindon
13-57.4 San Juan (Other)						16	3							32	66					1-3.1 Logan V2
13-57.3 Blanding/Monticello						17	21							56	66					1-4.3 Smithfield
6-60 Cedar City						17	20							55	68					4-34.2 West Jordan (West)/Copperton
2-55.1 Richfield/Monroe/Salina						19	20							73	69					3-15.1 North Salt Lake
5.1-56.2 Emery County						19	27							73	70					3-13.2 Syracuse
4-30.1 Taylorsville (West)						21	N/A							84	71					3-14.1 Centerville
4-25 South Salt Lake						22	14							60	72					3-16 Bountiful
4-36.1 Sandy (West)						23	42							73	72					4-39.3 Herriman
1-1 Brigham City						24	42							60	74					11-52 Wasatch County
10-41.1 Eagle Mountain/Cedar Valley						25	50							74	75					10-41.2 Lehi
5.1-57.1 Grand County						26	39							70	76					12-6.1 Weber County (East)
9-53.1 Daggett and Uintah County						27	33							64	76					10-46 Orem (East)
12-9 Roy/Hooper						28	42							81	78					3-13.1 Kaysville/Fruit Heights
10-48.2 Provo (East City Center)						29	36							75	79					3-15.2 Woods Cross/West Bountiful
1-2.1 Box Elder County (Other) V2						30	56							70	80					4-24.2 Salt Lake City (Southeast Liberty)
4-22.1 West Valley (Center)						31	18							91	80					10-42.2 Alpine
4-22.2 West Valley (West) V2						32	35							57	82					1-4.1 Cache County (Other)/Rich County (All) V2
12 Riverdale						33	40							70	83					4-28 Cottonwood
10-44 Orem (North)						33	30							85	84					10-41.3 Saratoga Springs
4-24.1 Salt Lake City (Downtown) V2						35	38							31	85					1-3.2 North Logan
4-34.1 West Jordan (Southeast)						36	42							68	86					4-18 Salt Lake City (Avenues)
3-12 Layton/South Weber						37	52							73	87					10-42.1 American Fork
2-54.4 Central (Other)						38	33							56	88					7-51.2 Summit County (East)
10-49.3 Springville						39	58							80	89					7-51.1 Park City
2-54.2 Delta/Fillmore						40	29							86	90					4-38 Sandy (Southeast)
6-61 Southwest LHD (Other)						41	38							89	91					3-14.2 Farmington
8-40.2 Tooele Valley						42	55							85	92					12-6.2 Morgan County
2-54.1 Nephi/Mona						43	22							86	93					4-35.1 South Jordan V2
2-54.3 Sanpete Valley						44	29							88	94					4-37 Sandy (Northeast)
6-59.1 Washington County (Other) V2						45	26							76	95					4-39.1 Draper
12-8 South Ogden						46	31							96	96					4-26.2 Millcreek (South)
3-11 Clearfield Area/Hooper						47	44							88	97					10-49.4 Mapleton
10-47 Provo/BYU						48	48							83	98					4-26.3 Millcreek (East)
10-45 Orem (West)						49	37							78	99					4-19.1 Salt Lake City (Foothill/East Bench)
10-49.2 Spanish Fork						50	57													

	SA Ranking
	1-25 (Most Need)
	26-50
	51-75
	76-99 (Least Need)
	Fully Covered by HPSA
	Partially Covered by HPSA
	No HPSA

These rankings highlight some important information that merits discussion. First, the matrix clearly illustrates the previously discussed disparities that exist between communities within urban counties. The small area (SA) with the best and worst primary care-related outcomes and highest and lowest needs are both in urban areas, approximately 50 miles apart. Unfortunately, the SAs in rural areas are so geographically large, and the population relatively small, it cannot be determined whether similar disparities also exist within these rural counties. While there are significant disparities present on a community level in urban areas, the rural population shows greater need than their urban counterparts.

The second point the matrix highlights is the relationship between socioeconomic status (SES) and health outcomes. The SES rankings for the top and bottom quartiles align closely with the Primary Care Need Rank. All but three of the SAs in quartile one and all but one of the SAs in quartile four for primary care need are also in that same quartile for SES. This suggests that, in Utah, lower SES is related to poorer health outcomes. SES affects an individual's ability to afford and access necessary medical care. It also can be related to worse health literacy. As discussed previously, educational attainment, one of the indicators factored into the SES ranking, is a strong indicator of health literacy and health outcomes. Thirteen of the 16 rural SAs are in the lowest quartiles (Q1, Q2) for educational attainment, indicating health literacy is another challenge communities in rural Utah face, more so than their urban counterparts.

Finally, the matrix provides further evidence that the volume of the healthcare workforce affects health outcomes. Every SA in the lowest quartile (Q1) has, at least, a partial Health Professional Shortage Area (HPSA) designation for at least one of the three HPSA disciplines (primary care, mental health, or dental health). Several SAs in the highest quartile (Q4), however, do not have any HPSA designation, and ten only have designations for one or two of the disciplines. Fewer than half of these SAs have a designation for primary care.

Indicators of Health Care Access

This section contains a discussion of the indicators and themes with regard to health care access that were evaluated in both the quantitative and qualitative analyses.

Health Insurance Coverage

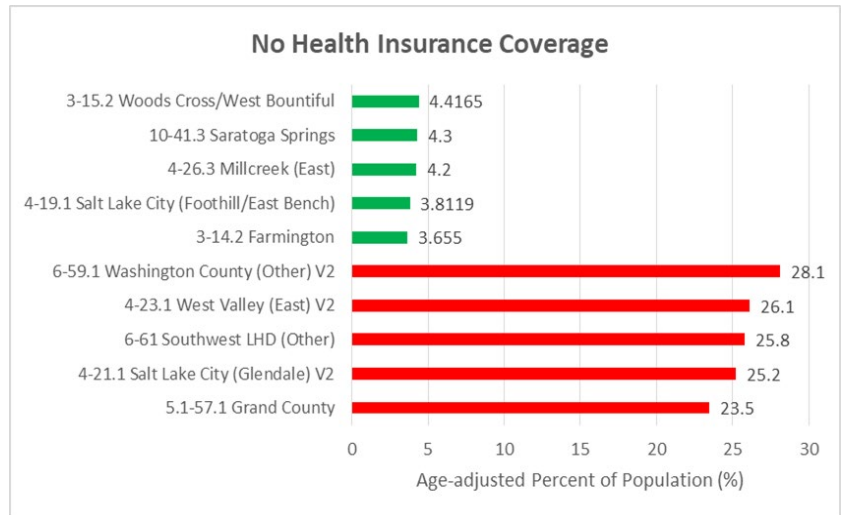
Health insurance coverage has a significant impact on health outcomes within a population. A study conducted by Harvard researchers in 2009 estimated a lack of health insurance and a lack of access to resources associated with health insurance coverage were associated with as many as 44,789 deaths per year in the United States (42). In 2017, 8.8% of the U.S. population was uninsured (43). In 2010, the Patient Protection and Affordable Care Act (ACA) was passed in an effort to expand health insurance coverage. Since ACA was implemented, coverage has expanded to millions of Americans. This coverage expansion is directly associated with a number of health outcome improvements, including:

- Higher rates of a usual source of care
- An ability to afford needed care
- Fewer delays in access to needed care
- Greater access to primary care and preventive services
- More ambulatory care visits
- Increased use of prescription medications and better medication adherence
- Increased testing for diabetes, hypercholesterolemia, and HIV

- Increased rates of diabetes diagnoses and use of diabetes medications
- Improved blood-pressure control, especially among Community Health Center (CHC) patients
- Increased rates of depression diagnoses and relative reductions in rates of depression symptoms
- Decreased preventable disease admissions and Emergency Room visits
- Improved self-reported health (44)(45)

While uninsured rates have decreased significantly over the past decade, it is estimated more than 28.9 million Americans remain uninsured as of 2019 (46). In Utah, 8.6% or 277,300 people remained uninsured in 2019 (47) with up to 28.1% in some of the underserved areas in the state. In Salt Lake County alone, uninsured rates in SAs range anywhere from 3.7% to 28.1%. Figure 13 highlights the five best and worst SAs for health insurance coverage.

Figure 13 - 5 Top and Bottom 5 SAs for Uninsured Rates



The SAs with the highest rates of insurance coverage are all located in urban areas. However, the five areas with the lowest rates include both urban and rural areas. This indicates that, while both rural and urban areas have challenges insuring their residents, rural areas experience this challenge disproportionately more than urban areas.

Respondents in 2018 focus groups discussed the challenges of access to care for the uninsured, with higher rates of uninsured in the more rural areas. Many focus groups, both urban and rural, talked about the gap between individuals who do not qualify for Medicaid and those who can afford insurance. Focus group participants in Carbon/Emery counties witnessed a large gap in quality of care between individuals who qualify for Medicaid and those who are just above the federal poverty level, thus not qualifying for Medicaid. Rural areas that attract large numbers of tourists, such as Garfield and Kane counties, hire seasonal employees, who do not receive health insurance and must find coverage elsewhere. In many rural communities, there is only one insurance provider available through the Healthcare Exchange, which limits options for individuals without employer-provided health insurance.

Cost as a Barrier to Care

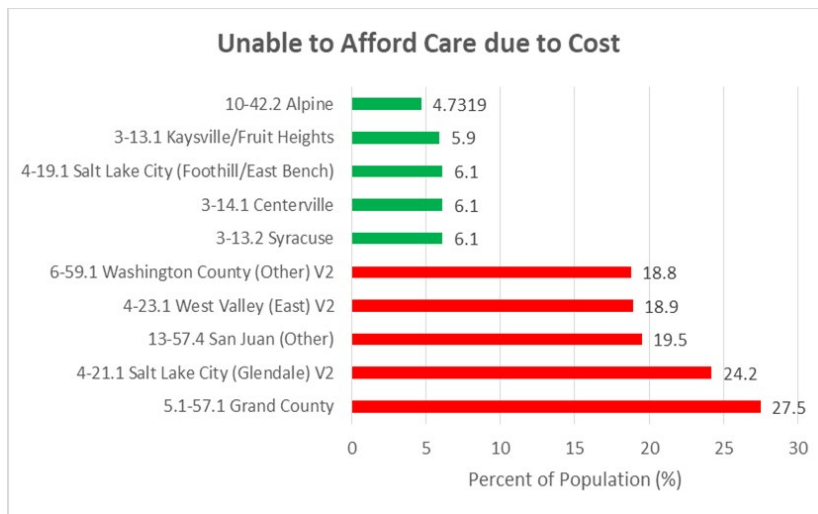
An ability to afford necessary medical care is important to maintain an individual’s health and prevent the onset of serious medical conditions. The ability to afford needed health care has been associated with a number of positive health outcomes, including longer life expectancy and decreased risk of mortality, stroke, and post-neonatal mortality (44) (45). In 2019, 14.2% of adults in Utah indicated they couldn’t receive needed medical care in the past year due to cost (48). In 2011, this number reached its peak at 16.3% and has been steadily declining since (49).

Nationwide, ACA coverage expansion has decreased the number of individuals unable to afford necessary medical care and the number of individuals who delay seeking needed care (44).

However, this barrier to accessing health care disproportionately affects underserved urban and rural communities with higher poverty and uninsured rates. Consequently, in these underserved communities in Utah, the percentage of those unable to receive care due to cost can reach up to 27.5%, 13.3% higher than the state average (40). Figure 14 highlights the five best and five worst SAs for inability to afford care due to cost.

All the 5 best SAs for low rates of 'unable to afford care due to cost' are in urban areas. Two of the worst SAs are also in urban areas, indicating that geographic differences may not wholly contribute to affording health care. Grand County, the worst SA with 27.5% of residents unable to afford care due to cost, is in a rural and frontier area of the state. Participants in the 2018 focus groups from Grand County indicated they

Figure 14 - 5 Best and 5 Worst SAs for Unable to Afford Care Due to Cost



have the fourth highest rate of intergenerational poverty in the state, and some insurance plans do not cover providers in the area, which requires people to either pay out of pocket, or travel to Salt Lake City or Grand Junction, CO to get care. Both options are not available to many due to the cost.

Other focus groups discussed the difficulty of affording healthcare, for both the uninsured and insured. Many individuals with insurance have difficulty paying premiums, copays, and deductibles. This acts as a deterrent for seeking preventive care, and results in people waiting until they have an emergency to seek medical care. Many focus groups recognized services available for the low-income/uninsured but felt many members of their communities were not aware of these services or were too embarrassed to use them.

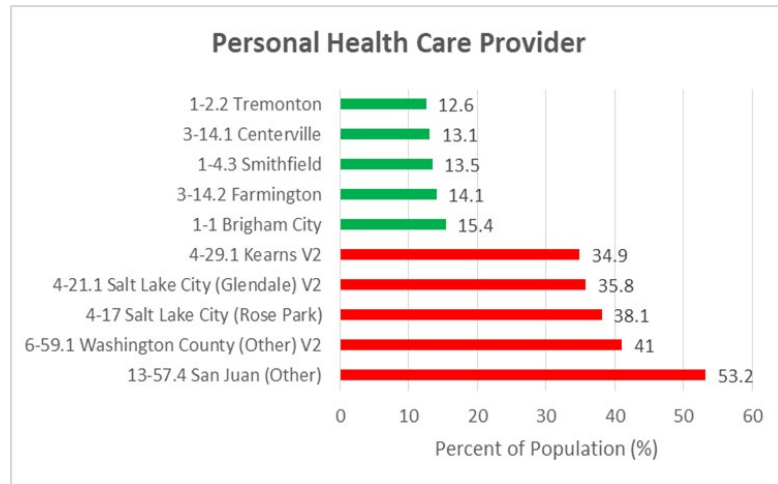
Personal Health Care Provider

Better health outcomes are commonly associated with having a personal health care provider (44). Studies have shown individuals who have a personal primary care provider have more positive health outcomes and lower rates of all-cause mortality, even after controlling for initial health status and demographic characteristics (45). Some of the benefits of a personal provider include increased access to preventive medicine (i.e., screenings, immunizations), chronic disease and condition management, keeping non-emergent issues out of the emergency setting, more incorporation of team-based care, increased familiarity with the patient, and the ability for physicians to provide individualized care (50). In 2019, 73.7% of the Utah population (75.1% in the U.S.) reported having a personal health care provider (51).

Immediately following passage of the ACA, personal provider rates in Utah and the U.S. increased, but have remained relatively stagnant since then.

Again, this barrier to access to health care disproportionately affects underserved urban and rural communities with higher poverty and uninsured rates. In these communities, the age-adjusted percentage of individuals without a personal care provider can be as high as 53.2%, 28.3% higher than the state average (52). Figure 15 highlights the five best and five worst SAs for having a personal health care provider. The San Juan (Other) SA has both the highest percentage of the population without a healthcare provider (53.2%) and has almost 20% of the population who reported they are unable to afford care due to cost (see Figure 14).

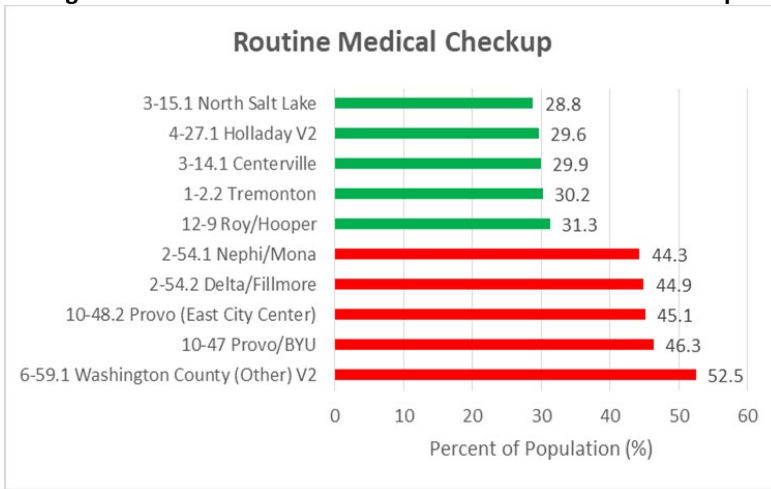
Figure 15 - 5 Best and 5 Worst SAs for Having a Personal Health Care Provider.



Routine Medical Care

Routine medical checkups are important to maintain an individual's health and prevent the onset of serious and preventable medical conditions. Studies have shown that continuity of primary care is associated with better health outcomes and a reduced likelihood of death (53). Some of the benefits of routine medical checks include access to preventive medicine (i.e., screenings, immunizations), chronic

Figure 16-5 Best and 5 Worst SAs for Routine Medical Checkup



disease and condition management, and keeping non-emergent issues out of the emergency setting (50). In 2010, the ACA expanded health insurance coverage to millions of Americans, which increased access to primary care and preventive services (44). In 2019, 66.9% of the Utah population reported receiving a routine medical check in the past 12 months. In rural and underserved

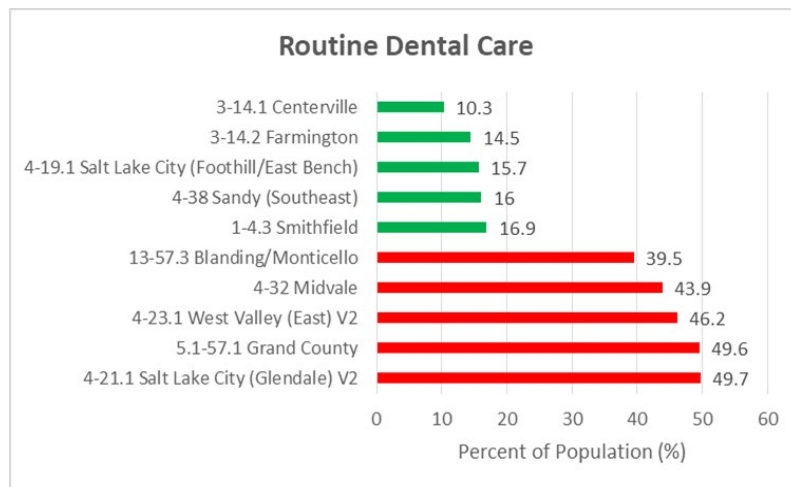
areas with lower SES, however, the proportion who don't receive routine medical checks can be close to half of the population (54). Figure 16 highlights the five best and five worst SAs for having a routine medical checkup.

Routine Dental Care

Oral health can have a significant impact on the overall health and well-being of an individual (55). Poor oral health has been associated with poorer perceived overall health and several negative health outcomes including cardiovascular disease, diabetes, cancer, obesity, and preterm birth (56). Individuals with access to dental care are less likely to have poor oral health and therefore less likely to have related negative health outcomes. A study conducted in Wisconsin found that individuals who reported unmet dental care needs were four times as likely to have untreated cavities, even after controlling for sociodemographic and behavioral factors. Of the individuals who reported unmet dental care needs, 58.8% reported being unable to afford the needed dental care and 44.9% reported lacking dental insurance coverage (57).

In general, the ACA has increased access to dental care for Americans. Under the ACA, dental insurance coverage increased and pediatric dental care was made one of the "ten essential benefits" health insurance plans were required to provide (55). In addition, under the ACA, adult dental benefits were left to the discretion of the states and private insurance companies. Utah was one of 15 states that decreased their dental benefits provided to Medicaid beneficiaries, making dental care access less accessible to lower income adults (56).

Figure 17 - 5 Best and 5 Worst SAs for Routine Dental Care



In 2018, 72% of adults reported visiting the dentist or a dental clinic in the past year (58). Figure 17 highlights the five best and worst SAs for not receiving routine dental care.

Focus groups in almost every area mentioned difficulty in obtaining adequate dental care. While many services were identified, respondents felt they were not accessible. Many dental providers do not accept Medicaid, and school-based services have difficulty providing follow-up care because it is up to the parents of the students to bring the child back. Respondents also mentioned that, even though the federally-qualified health centers provide dental care, many patients still felt they could not afford care if services at the clinic were full.

Provider Availability

Every focus group and key informant interview mentioned provider availability as one of the biggest challenges in access to quality healthcare. The main concern was a lack of mental health providers. Respondents felt there were not enough mental health providers to meet the needs of their communities. This is illustrated by the fact that patients usually have to wait several weeks to get an appointment. In addition to the lack of mental health providers, respondents in the rural focus groups mentioned difficulty in obtaining specialty care, including obstetrics and gynecology, pediatrics, cancer care, and chronic disease management.

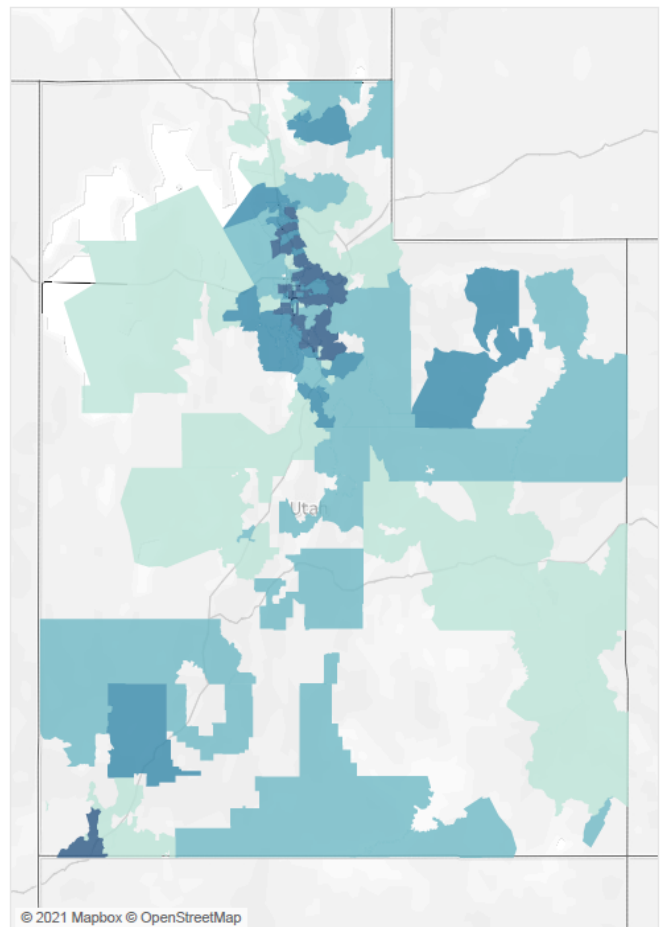
Telehealth Utilization

Telehealth has been lauded as an important tool in increasing access to healthcare services, though utilization and investment in the necessary infrastructure and policies had been slow-moving prior to the COVID-19 pandemic. As the COVID-19 pandemic unfolded, healthcare providers utilized telehealth as a tool to support social distancing, protect healthcare workers, and protect patients who may be particularly vulnerable or high risk (60). As the pandemic and the resulting public health emergency progressed, updated and emergency federal and state rule changes made the adoption and use of telehealth easier for providers and patients (59).

The state of Utah and its small areas saw an increase in telehealth utilization from 2019 to 2020. This aligns with national trends around telehealth utilization. All SAs saw an increase in utilization from 2019 to 2020, with a range of percentage increase from 11% (for those who had any telehealth claims in 2019, 17 SAs had no telehealth claims in 2019) to a 358,700% increase in telehealth claims.

Figure 18 - Total Volume Change by Small area (2019-2020)

Total volume change 2019 to 2020, by small health area
The St. George small health area increased from 253 to 10,134 telehealth claims in this period.



Excluded small health areas had zero telehealth claims for providers located in zip codes assigned to those areas in both years. Duplicate (resubmitted) claims are included but do not affect the results. There were 5 or fewer duplicate claims per SHA.

While all SAs in Utah showed an increase in telehealth usage, urban areas demonstrated a greater increase overall, compared to rural areas. For example, only 31% of the rural areas that showed an increase in telehealth usage were in the top two quartiles for growth. Additionally, even though only 29% of all SAs are rural, 44% of the SAs with zero telehealth claims in 2019 were rural. This indicates urban areas were better equipped to scale up telehealth usage in 2020 than rural areas, and that prior to the COVID-19 pandemic, and the emergency expansion of telehealth rules, disproportionately more rural areas did not provide telehealth services.

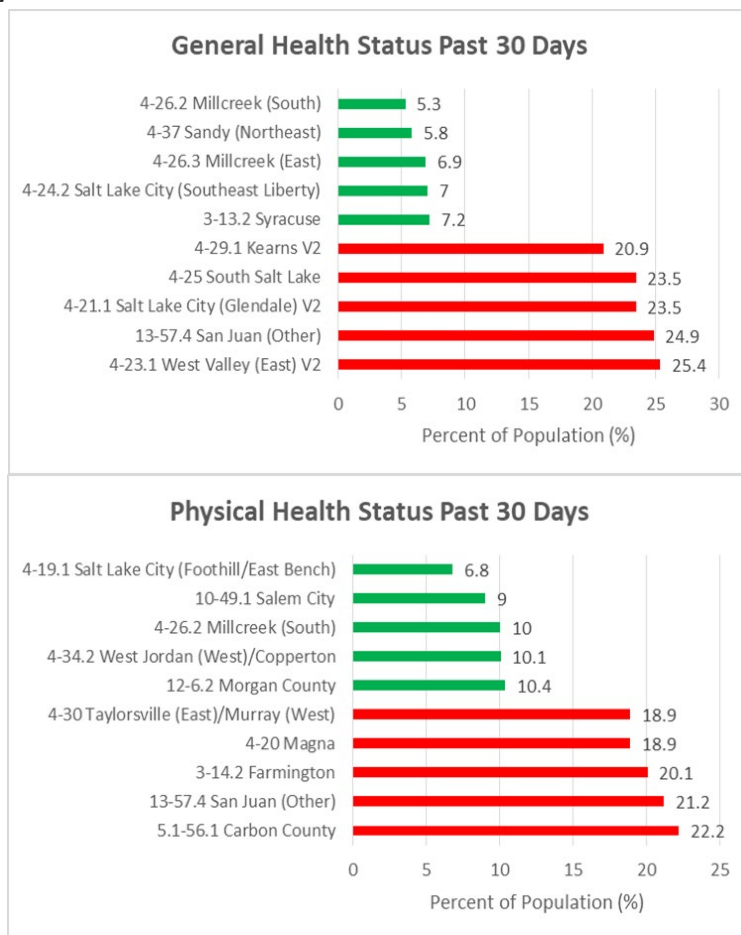
Figure 18 shows total volume change from 2019 to 2020 by small area. A complete ranking by SA and additional details regarding telehealth utilization are available in **Appendix C**.

Indicators of Health Status

Perceived Overall Health

The World Health Organization defines health as a “state of complete physical, mental, and social well-being.” The primary goal of most health professionals is to improve the perceived overall health and well-being of their patients (44). Access to primary care can reduce the likelihood of negative health

Figure 19 - 5 Best and 5 Worst SAs for Self-Reported Health Status and Physical Health.



outcomes and improve the perceived overall health of individuals. Perceived health is also associated with income inequality and has the potential to disproportionately affect lower income communities. Studies have shown, however, that access to a primary care physician significantly reduces the negative effects of income inequality on self-reported health status (61).

In 2019, 14.7% of the Utah population reported their general health status as being either “poor” or “fair” and 14.6% reported having 7+ days of poor physical health in the last month (62). Health disparities in these health indicators are pronounced not only between small areas within the state, but also among

racial/ethnic groups. In 2018, 22% of persons who are Hispanic and 26% of persons who are American

Indian/Alaskan Native in Utah reported “poor” or “fair” health status. These rates were significantly higher than those of persons who are Asian/Pacific Islander (8%) and White (10%)(63). Figure 19 highlights the five best and worst SAs for self-reported health status and self-reported physical health.

As indicated in the graphs, San Juan County is among the five worst SAs for both indicators. San Juan County is ranked number seven. This indicates a relationship between perceived overall health and actual health status. Also, SAs in the Salt Lake City area are ranked in both the highest and lowest of SAs for general health status in the last 30 days, which indicates there are other social determinants of health that might impact health status besides urban/rural status.

Precursors to Chronic Disease/Preventive Care

Cardiovascular disease was the leading cause of death in Utah and the United States in 2019 (64) (65). Several different factors act as precursors to cardiovascular disease as well as other chronic diseases. A focus on these precursors, allows this issue to be addressed from both a preventive and a primary care level. This report focuses on the following indicators based on information provided by the Centers for Disease Control and Prevention (CDC): diabetes, high blood pressure, high cholesterol, weight, poor diet, physical inactivity, excessive alcohol use, and smoking (66). All of these indicators have been included in the quantitative analysis except for diet and physical inactivity, which will be examined as a subset of weight, as studies are not yet conclusive on the effectiveness of primary care involvement in improving physical activity and nutrition as individual factors. As previously discussed, all of the indicators included in this Needs Assessment will be discussed from a primary care perspective.

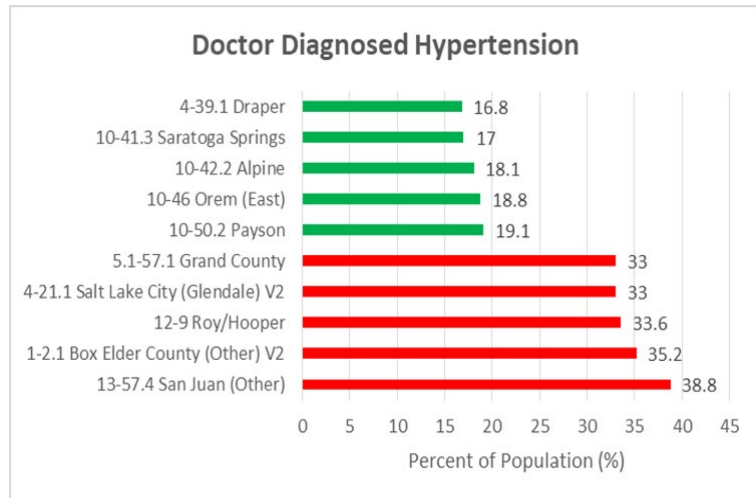
Focus group respondents indicated preventive care does not receive high priority in their lives. Some reasons for this include scarcity of services, cost of services, and the perception that preventive care is not important. Many important preventive screenings, including well-child checks and diabetes screenings, are often delayed. Many individuals expressed a need for increased awareness of services.

Prediabetes

Diabetes is one of the risk factors associated with cardiovascular disease. Prediabetes was focused on as the more preventable precursor to type 2 diabetes. In 2018, 10.4% of those surveyed in Utah reported having been told by a doctor that they have prediabetes. The national average for this indicator is 11.0% (67). According to the CDC, following their National Diabetes Prevention Program for lifestyle changes can lead to a 58% decreased chance of developing type 2 diabetes (68). This program, along with other common programs, encourages weight loss, proper nutrition, and moderate-intensity exercise. One of the indicators positively associated with these three risk reduction behaviors is advice from a healthcare provider. Currently only one-third of individuals with prediabetes receive management advice from a primary care provider (69). Additionally, only 7.3% of adults with prediabetes know they have it. Those who are most likely to not know of their prediabetes are those individuals who have access to healthcare but do not have a routine primary care provider (69). This highlights the importance of the relationship between the primary care provider and patient in managing prediabetes and preventing type 2 diabetes.

High Blood Pressure
 High blood pressure, or hypertension, affected 27.0% of Utah's population in 2019 and 30.2% of the national population (70). Primary care providers have an important role to play in regulation and treatment of hypertension. Blood pressure screenings and hypertension treatment are associated with a decrease in cardiovascular disease (71). According to a study conducted in 2014, 20% of U.S. adults with hypertension report access-to-care challenges, including health insurance status, having a personal doctor, and cost barriers (72). Figure 20 highlights the five best and worst SAs for diagnosed high blood pressure.

Figure 20 - 5 Best and 5 Worst SAs for Diagnosed High Blood Pressure

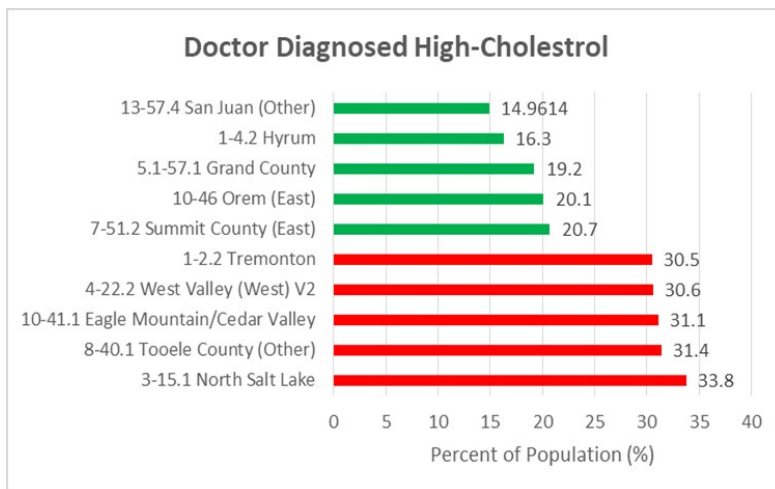


As seen in the graph, San Juan County is the worst five SAs for this indicator, with a difference of 22.0%. This is more than two times greater than the rate of diagnosed high blood pressure in the best SA, Draper. To support this finding, as discussed in the focus groups, many individuals in rural communities do not have a primary care provider, do not receive regular medical checks, and do not receive preventive care. This is due to the difficulty of access to these services in rural areas.

High Cholesterol

High cholesterol is another precursor to cardiovascular disease. Primary care providers play an important role in high cholesterol prevention and management by conducting screenings and providing treatments, both of which have been shown to decrease the incidence of cardiovascular disease. Adults

Figure 21 - 5 Best and 5 Worst SAs for Diagnosed High Cholesterol



older than age 20 should receive a cholesterol screening every five years. Nationwide, in 2011, 74.4% of the population had their cholesterol checked in the past five years and in 2015, 27.2% of the population had doctor-diagnosed high cholesterol. In Utah in 2019, 24.4% of the population had doctor-diagnosed high cholesterol and only 70.5% of individuals in 2013 had their cholesterol levels checked in the previous five years (73) (74). Figure 21 highlights the five best and worst SAs for diagnosed high cholesterol.

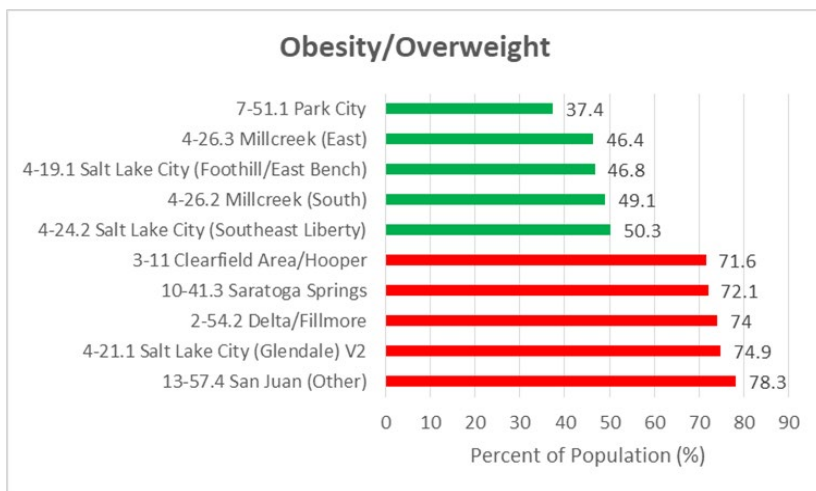
Both the best and the worst SAs for diagnosed high cholesterol include both urban and rural SAs. Interestingly, the San Juan SA ranked very poorly for general health status but ranks very favorable for rates of diagnosed high cholesterol. However, knowing that screening rates are a lot lower in rural communities, it is possible cases of high cholesterol go undiagnosed.

Obesity

Weight can also be a precursor to cardiovascular disease. Being overweight and/or obese, defined by BRFSS as having a BMI greater than or equal to 25, affects 64.9% of the Utah population and 66.5% of the national population (75). Both behavioral and genetic factors cause overweight/obesity (75).

Primary care providers have a role in weight management through patient counselling. According to one study, counselling is associated with positive behavioral change leading to a modest amount of weight loss (76). Physical activity levels and diet both affect weight loss and are addressed as part of weight management. Figure 22 highlights the five best and worst SAs for obesity. Once again, San Juan County is among the worst five SAs for obesity.

Figure 22. 5 Best and 5 Worst SAs for Overweight/Obese



Mental Health

Mental illness is prevalent in the state of Utah. In 2019, significantly more Utah residents reported a depression diagnosis from their healthcare provider than in the U.S. (23.0% compared with 19.1%) (77). Suicide and rape rates were also significantly higher in Utah than in the U.S. (78)(79). Addiction, substance use disorder, and trauma (including sexual violence) are related to increased rates of depression and other mental health disorders (80)(81). However, research also indicates increased access to primary medical care and mental health services can improve some of the negative health outcomes associated with mental health disorders, such as severe depression, anxiety disorder, suicide, and drug abuse/overdose (82)(83). According to the Robert Wood Johnson County Health Rankings, mental health status not only varies by geographic location, it also varies by race and ethnicity. In the 2021 report, in the least healthy county in Utah, San Juan County, reported an average of 3.5 poor mental health days per month (84).

For the purpose of the analysis, the following mental health indicators were included: mental health status in the past thirty days, depressive disorder diagnosis, and adverse childhood experiences (ACEs) related to direct physical, emotional, or sexual abuse and substance abuse in the household. These indicators each had a queryable dataset through IBIS from the BRFSS survey.

Even though there were not queryable datasets, due to the recent emphasis in the state of Utah on opioid abuse and suicide prevention and the connection with primary care and mental health services, they are included in the discussion of mental health.

Opioid Use

Opioid use is a prevalent problem in the U.S. Opioids are a class of drug that includes legal, prescription painkillers, and illicit compounds, such as heroin (92). Opioids accounted for 70.6% of all overdose deaths in the United States in 2019 (93). According to the CDC, Utah has seen a “significant increase” in suspected opioid overdoses from February 2019 to February 2020 (94), with 571 drug overdose deaths in 2019 (95). Data from the CDC Morbidity and Mortality Weekly Report (MMWR) indicates overdose deaths from prescription opioids is decreasing, but death from illicit compounds, such as heroin and synthetic fentanyl is increasing (96). The opioid epidemic has impacted rural and urban communities at different rates. Opioid-related drug overdose deaths were higher in rural communities from the mid-2000s to 2017, but the rates were similar between urban and rural communities in 2018 and 2019 (97).

In 2017, the Utah Department of Health (UDOH) launched a campaign to address the opioid crisis in Utah, called Stop the Opidemic. The goal is to educate the public on the dangers of prescription opioid abuse (98). Then, in January 2018, UDOH released updated clinical guidelines on prescribing opioids for pain treatment. This will help guide healthcare providers with proper treatment and management of pain for their patients, to prevent under treating or over treating pain (99).

Suicide

Utah also has high rates of suicide, especially among adolescents. From 2017-2019, Utah had the fifth highest age-adjusted suicide rate in the United States which made it the 8th leading cause of death in Utah (85). Graphs for suicide and drug deaths were obtained from different data sources than the rest of the quantitative data and was not included in the overall primary care needs ranking. The following SAs had the higher age-adjusted rates of death by suicide than the state average in 2017-2019: Duchesne County, Ivins/Santa Clara, SLC (Downtown), Central Utah Health Department (Other), Southwest LHD (Other), and Ben Lomond. Four of the six SAs are all located in rural or frontier regions of the state. Similar to primary care health services, there are also barriers to providing mental health services in rural communities. These barriers include stigma of accessing mental health services, the availability of mental health providers, and the physical accessibility of services (86).

Among the focus groups and key informant interviews, the number one concern was mental health. This included substance/opioid use disorder and addiction, suicide, sexual violence, depression/anxiety, and general mental health. This was discussed in relation to many social determinants of health, including poverty, homelessness, and employment. Throughout the discussions, the two biggest barriers to address these concerns were identified as the lack of mental health providers and the stigma associated with mental health.

Figure 23 - 5 Best and 5 Worst SAs for Depressive Disorder Diagnosis

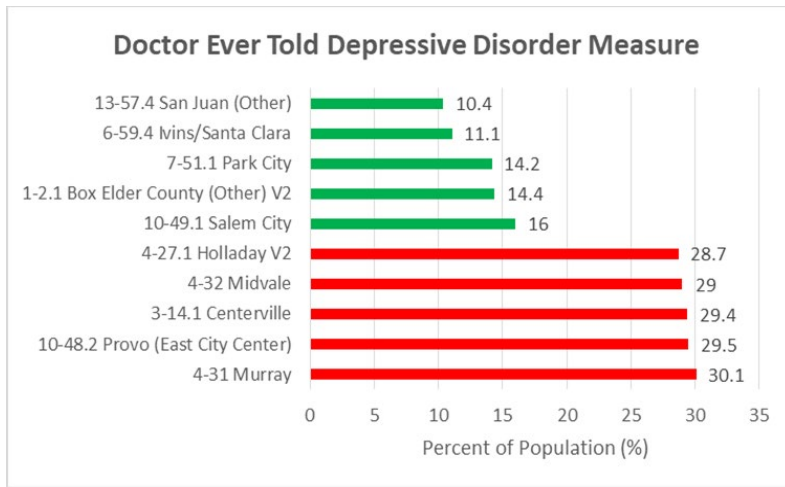
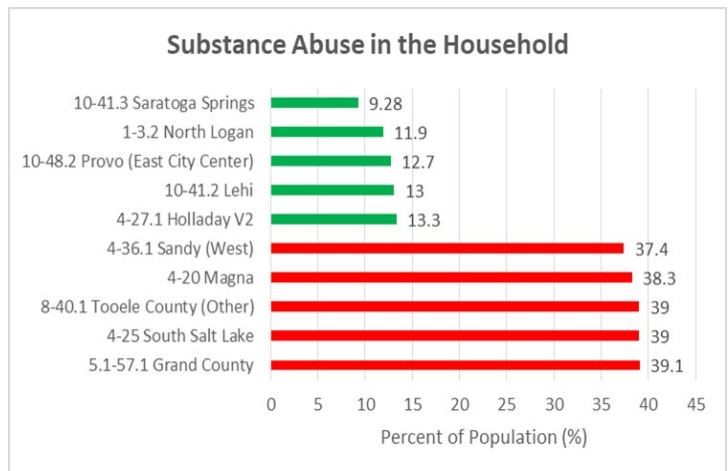
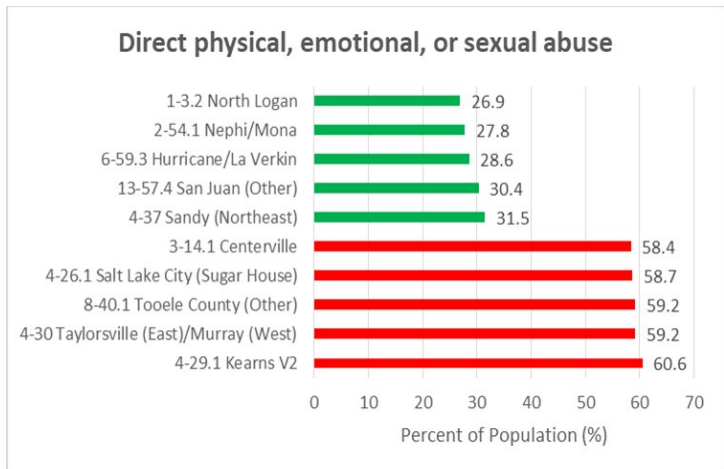


Figure 23 describes the five best and five worst SAs for depressive disorder diagnosis. Interestingly, all but one of the SAs with the lowest percent of the population with a diagnosed depressive disorder measure are in rural communities, and all of the SAs with the highest percentages are in urban areas. Additional inquiry would be needed to understand why this is, but given the challenges around access to mental and physical health services in rural communities, this

observation could be more related to access than actual prevalence. Focus groups also raised the issue of stigma as it relates to mental health concerns. The stigma related to seeking help for mental health concerns was cited as a barrier to accessing care and a reason for the high mental health needs in the communities.

Figure 24 highlights the five best and worst SAs for experiencing two adverse childhood experiences (ACEs): experienced direct physical, emotional, or sexual abuse and substance abuse in the household. The worst SAs for these two indicators were primarily located in urban areas, apart from Tooele County and Grand County.

Figure 24 - 5 Best and 5 Worst SAs for Adverse Childhood Experiences (ACEs): Experienced Direct Physical, Emotional, or Sexual Abuse and Substance Abuse in Household



Social Determinants of Health

Social determinants of health (SDOH) are the factors in an individual’s external environment that affect their health. These were also studied in both the quantitative and qualitative analysis. These indicators were divided into four categories: economic stability, physical environment, education, and community and social support.

Economic Stability

Income and poverty

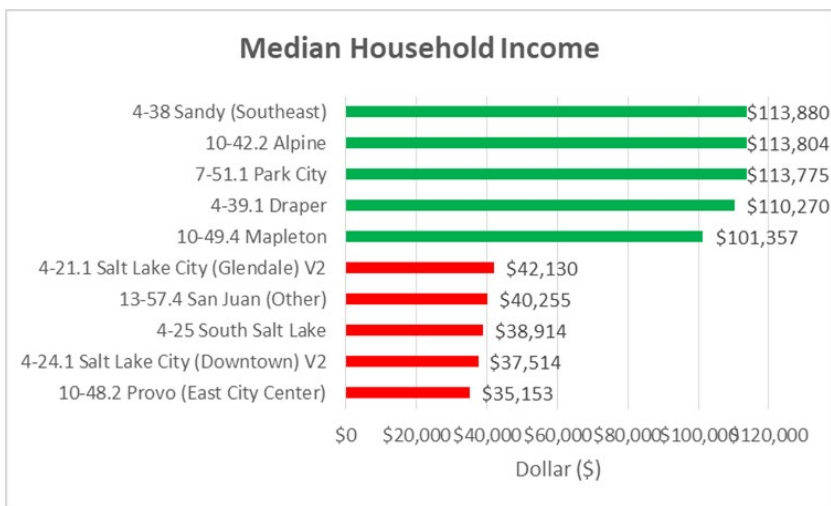
The income level of Utah residents, per capita and per household, varies between SAs. According to the CDC, income level and poverty affects health in more ways than just the ability to afford care. It also affects access to healthy food options, impacts stress levels, and correlates with adverse health outcomes (87). While the poverty rate for Utah is significantly lower than the national average, rates and income level vary greatly between SAs, with some areas as high as 38.9% and as low as 2.1% of persons living in poverty (17).

Various participants in the focus groups, predominantly within the rural counties, mentioned poverty as a challenge to access to healthcare. The top concerns among the participants were related to mental health and its association with poverty and children living in poverty, mainly due to intergenerational poverty. Thus, poverty and access to care have been perceived as a “big fight” in education, with many students homeless or destitute.

Intergenerational poverty (IGP) exists when two or more successive generations of a family continue in the cycle of poverty, as measured through utilization of public assistance for at least 12 months as an adult and at least 12 months as a child (88). Since 2012, Utah has utilized research and data to embark on a strategic campaign to ensure the state is the national leader in promoting the well-being of children who experience IGP (88). In 2019, 45% of children and only 4% of adults who experienced

IGP received preventive healthcare (89). Figure 25 highlights the five best and five worst SAs for median household income while Figure 26 highlights the five best and worst SAs for persons who live in poverty and children who live in poverty. Areas consistently in the worst five areas for the previously discussed health indicators are also in the worst five areas for income, including San Juan. This illustrates the relationship between income and health outcomes.

Figure 23 - 5 Best and 5 Worst SAs for Median Household Income



Education

Educational Attainment

According to the CDC, higher educational attainment is a predictor of better health (87). Similar to poverty, the percentage of individuals with a college degree in Utah is significantly higher than that of the U.S. (90). However, it again varies greatly across communities, with rates as low as 9.5% in San Juan, and 61.3% in SLC (Avenues) and 72.8% in SLC (Foothill/East Bench).

Figure 27 highlights the five best and worst SAs for the population older than age 25 who have a bachelor's degree or higher. Most of the best and worst SAs are all located in Salt Lake County. As seen in economic stability, several SAs consistently among the worst five for the previously discussed health indicators are also in the worst five SAs for educational attainment, including San Juan County.

Figure 24 - 5 Best and 5 Worst SAs for Persons Living in Poverty and Children Living in Poverty

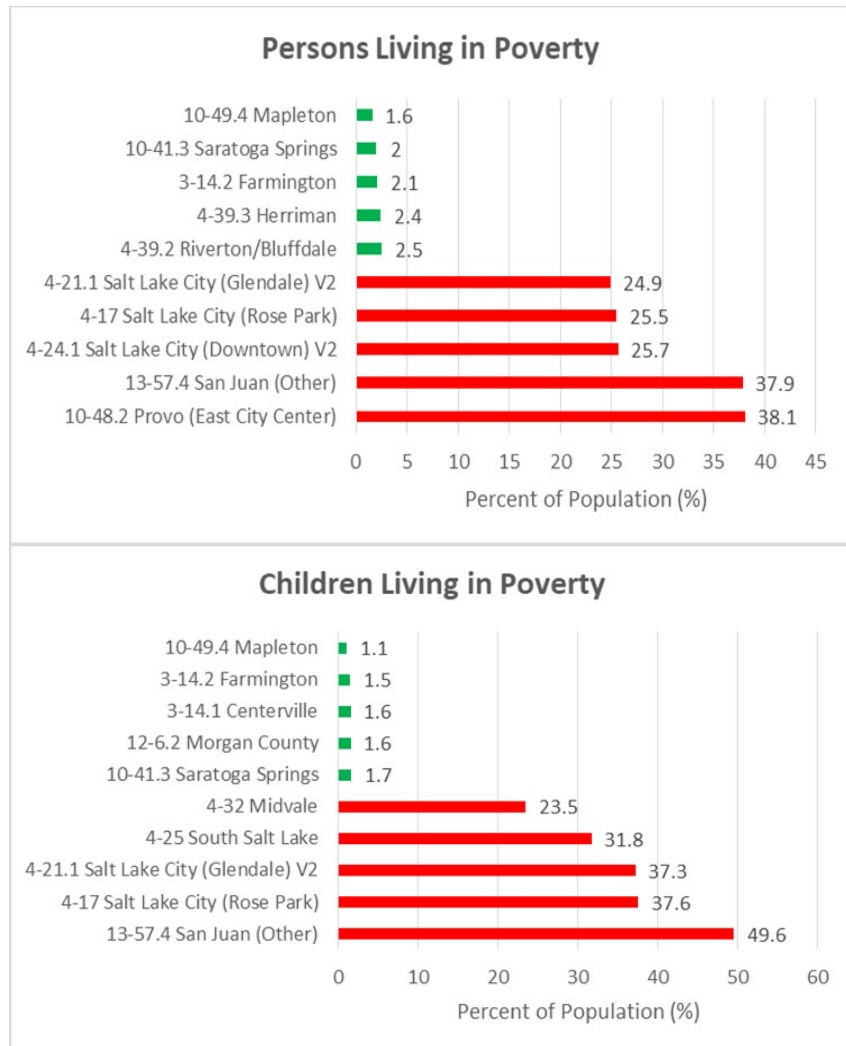
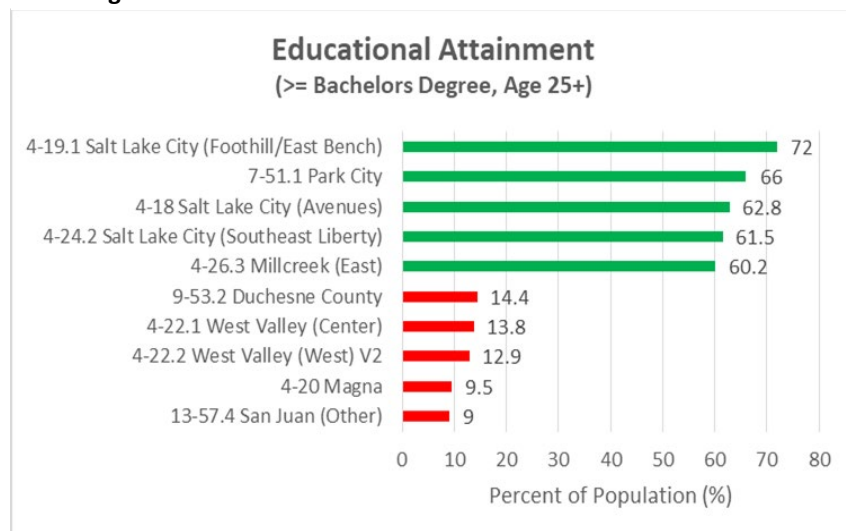


Figure 25 - 5 Best and 5 Worst SAs for Educational Attainment



Discussion

As illustrated by these findings, primary care needs vary significantly across the state, depending on geographic location and socioeconomic status. Additionally, higher primary care need is related to lower socioeconomic status. The general needs of the state can be seen by examination of the overall results and further action can focus on the goal of addressing those needs. Further examination can focus on specific areas and/or indicators, to identify strategies to reduce the needs.

Healthcare Workforce

As identified in this needs assessment, several federally designated Health Professional Shortage Areas (HPSAs) exist across the state of Utah. These designations highlight areas found to have too few primary care, dental, or mental/behavioral health providers to meet the needs of the population. HPSAs exist in both rural and urban areas, which indicates provider shortages exist everywhere. Additionally, both urban and rural areas identified this as an issue, regardless of HPSA status. Mental health providers were cited as the biggest challenge between urban and rural communities alike. However, urban communities specifically mentioned being unable to obtain specialty care in their communities, because of a lack of specialists, including obstetrics and gynecology, diabetes care, and oncology. Again, this highlights the gap in the provision of healthcare between urban and rural communities.

Access to Care

According to the findings of this needs assessment, areas with lower SES have less access to primary care, dental, and mental health services. This is demonstrated by the fact that for each of the access to care indicators; health insurance coverage, unable to afford care due to cost, routine medical/dental checks, and having a personal care provider, certain areas consistently appear in the worst five SAs. In addition to socioeconomic status, there are other factors that can affect an individual's ability to access care, such as transportation and health literacy. Rural counties residents reported more challenges with transportation to and from appointments, the need to travel further distances to obtain needed care, a lack of awareness about what resources were available/how to access those resources, and a lack of understanding how to manage their health. Rural focus groups discussed all of these as reasons for not seeking out primary and preventive care services. In other words, while financial barriers and SES restrict access to healthcare, regardless of geographic location, rural areas face more, additional challenges to access to healthcare, which has a negative impact on their health in other ways.

Telehealth

The rapid and robust increase in telehealth utilization between 2019 to 2020 demonstrates the interest and need for continued access to this type of service. However, additional data and time will be needed to meaningfully explore the impact of telehealth utilization on health outcomes—particularly for chronic disease management.

Relatedly, this uptick in telehealth utilization can be attributed to the emergency regulations and provisions that enabled providers and patients to use telehealth. This includes changes in payments to providers and technology requirements. As Utah moves through the COVID-19 pandemic and considers how expanded telehealth access will remain in the state, a few key factors should be considered related to equity and access. First, insurance providers will need to establish payment for telehealth services in a way that adequately supports providers in delivering care in a new way. Second, providers will need to ensure access to telehealth services is distributed in an equitable way, with consideration toward internet and broadband access, language services and insurance coverage. Similarly, it is important to

acknowledge the disparity in access to high-speed internet in rural and frontier areas—this can be prohibitive in access to video services, many of which are required for telehealth reimbursement.

Health Status

Of all the indicators of health status that were evaluated, mental health and obesity were most commonly identified among focus group participants. Neither indicator seemed more common in rural or urban areas. They were more commonly related to SES, rather than geographic location. However, preventive indicators, such as cancer screenings, immunizations, and chronic disease screenings (e.g., blood pressure and cholesterol) were worse for areas with more restricted access to care, specifically the more rural areas.

Social Determinants of Health

The social determinants of health studied highlighted an increased burden on rural areas which lacked resources to address them, specifically poverty and homelessness. For the specific indicators studied for economic stability, several areas consistently appeared among the five best and worst SAs. Sandy, Farmington/Centerville, Syracuse/Kaysville, and South Jordan were consistently among the five best SAs. Conversely, San Juan County, Grand County, Rose Park, West Valley, and South Salt Lake were consistently among the five worst SAs. Again, this highlights the increased economic hardship faced by rural communities in Utah.

Next Steps

With the completion of the primary care needs assessment, it is important to identify the next steps in order to improve the health of all Utahns. In addition to the Utah PCO utilizing this information to help inform the areas that would benefit most from HPSA designation, these are three recommendations of steps for OPCRH and all other interested agencies to take to address the identified needs.

1. Pursue relationships to foster collaboration and information sharing to address disparities.

Interested parties should reach out to other programs and organizations that work to address needs in any of the indicator areas discussed, including healthcare workforce needs. Shared information can increase the capability of programs to meet the specific needs they were designed to address. Collaboration allows programs and organizations to share resources. For example, the Utah PCO has access to data with regard to all the primary care providers in the state. The PCO also has information and programs to help recruit providers to underserved areas. OPCRH can collaborate with rural hospitals and clinics to increase the use of these programs in rural areas. Additionally, rural hospitals and clinics can work with the Utah PCO to update provider data and ensure only the most accurate data is used when determining and updating HPSAs. Furthermore, OPCRH can collaborate with community-based partners, such as the Association for Utah Community Health (AUCH), to share information that would increase access to services at community health centers and other federally-qualified healthcare facilities. Finally, OPCRH can contract with subject matter experts to provide trainings and webinars to share best practices to improve access to primary care services.

2. Expand programs and develop and support sustainable frameworks for new programs that will help address disparities.

There are many programs in place that bring primary care services and resources to underserved and rural communities. These include, but are not limited to, the following:

- Mobile clinics
 - Dental
 - Cancer screening
- Project ECHO
 - Other telehealth programs
- Healthcare provider loan repayment programs
- State Primary Care grants
- Community health centers
- Rural health clinics
- Medicaid/Medicare
- Safety net clinics

While these programs help to address the needs, much more can be done. Expansion of these programs will not only bring even more resources to these areas but will also open the door for more collaboration on programs to further close the gap between communities. For example, collaboration between a mobile clinic and a community education campaign can lead to a program that would train and empower community health workers to educate their communities on the resources provided by the mobile clinic. Another example would be a policy or programmatic framework to bring more mental health providers, specifically psychiatrists or psychiatric services, to rural Utah. As a final example, communities can identify the programs operating in their area and engage in activities to improve or expand these programs through increased funding, increased education, or increased available resources.

3. OPCRH to maintain and disseminate information with regard to programs and funding opportunities.

OPCRH has resources available to monitor grant opportunities designed to improve health outcomes in rural and underserved communities. Through partners, OPCRH will maintain and publish a list about grant opportunities to allow them to get involved in the health improvement of their people. OPCRH will also increase promotion of the programs available through their office, specifically in workforce recruitment and retention.

Conclusion

As evidenced throughout the research process, access to primary care services can improve health outcomes. Due to the disparities across the state in both healthcare access and outcomes, it is apparent steps need to be taken to increase access to primary medical care, dental, and mental/behavioral health services. Now that needs and next steps have been identified, the OPCRH can work within their office and other partners and organizations to help mitigate the needs through increased healthcare workforce recruitment activities for those areas and establish projects designed to reduce specific needs. Need reduction will help achieve the Utah Department of Health's strategic priority of having the healthiest people.

Appendix A: Utah Small areas

Utah Small Area Information

In order to facilitate reporting data at the community level Utah has been divided into Small Areas. Areas are determined based on specific criteria, including population size, political boundaries of cities and towns, and economic similarity. The health measures that are reported by Small Area are those with events occurring with sufficient frequency to be meaningful. The IBIS query system allows you to query by Small Area for several modules.

To use the Utah Small Area query system select “Advanced Selection” on the “Module Configuration Selection” page.

Local Health District	County	ID #	Utah Small Area	Boundary Designation
Bear River LHD (01)	BOX ELDER	1	Brigham City	ZIP Code 84302
		2.1	Box Elder County (Other) V2	Box Elder County except Brigham City and Tremonton [includes ZIP Codes 84029 (only in Box Elder County), 84301, 84306 (only in Box Elder County), 84307, 84309, 84311, 84313, 84314, 84316, 84324, 84329, 84330, 84331, 84334, 84336, 84340, 84404 (only in Box Elder County), 84412 (only in Box Elder County)]
		2.2	Tremonton	ZIP Codes 84312 (only in Box Elder County), 84337
	CACHE	3.1	Logan V2	ZIP Codes 84321, 84322, 84323, 84326, 84332
		3.2	North Logan	ZIP Code 84341
	CACHE/RICH	4.1	Cache County (Other)/Rich County (All) V2	All of Rich County; Cache County except Logan, North Logan, Hyrum, and Smithfield [includes ZIP Codes 84028, 84038, 84064, 84086, 84304, 84305, 84306 (only in Cache County), 84308, 84312 (only in Cache County), 84318, 84320, 84325, 84327, 84328, 84333, 84338, 84339]
	CACHE	4.2	Hyrum	ZIP Code 84319
		4.3	Smithfield	ZIP Code 84335
	Weber-Morgan LHD (12)	WEBER	5	Ben Lomond
6.1			Weber County (East)	ZIP Codes 84310, 84317, 84414
MORGAN		6.2	Morgan County	All of Morgan County [includes ZIP Codes 84017 (only in Morgan County), 84018, 84033 (only in Morgan County), 84050 (only in Morgan County)]
WEBER		7	Ogden (Downtown)	ZIP Codes 84401, 84402
		8	South Ogden	ZIP Codes 84403, 84408, 84415
		9	Roy/Hooper	ZIP Codes 84067, 84315 (only in Weber County)
		10	Riverdale	ZIP Codes 84056 (only in Weber County), 84405 (only in Weber County), 84409 (only in Weber County)
Davis County LHD (03)	11	Clearfield Area/Hooper	ZIP Codes 84015, 84016, 84056 (only in Davis County), 84089, 84315 (only in Davis County)	
		Layton/South Weber	ZIP Codes 84040, 84041, 84405 (only in Davis County), 84409 (only in Davis County)	
	13.1	Kaysville/Fruit Heights	ZIP Code 84037	
	13.2	Syracuse	ZIP Code 84075	
	14.1	Centerville	ZIP Code 84014	
	14.2	Farmington	ZIP Code 84025	

Local Health District	County	ID #	Utah Small Area	Boundary Designation
Davis County LHD (03)— continued		15.1	North Salt Lake	ZIP Code 84054
		15.2	Woods Cross/West Bountiful	ZIP Code 84087
		16	Bountiful	ZIP Codes 84010, 84011
Salt Lake County LHD (04)		17	Salt Lake City (Rose Park)	ZIP Codes 84116, 84122
		18	Salt Lake City (Avenues)	ZIP Codes 84103, 84150
		19.1	Salt Lake City (Foothill/East Bench)	ZIP Codes 84050 (only in Salt Lake County), 84108, 84158
		20	Magna	ZIP Code 84044
		21.1	Salt Lake City (Glendale) V2	ZIP Codes 84104, 84110, 84145, 84151, 84180
		22.1	West Valley (Center)	ZIP Codes 84120, 84170
		22.2	West Valley (West) V2	ZIP Code 84128
		23.1	West Valley (East) V2	ZIP Codes 84119, 84125, 84126, 84127, 84130, 84131
		24.1	Salt Lake City (Downtown) V2	ZIP Codes 84101, 84102, 84111, 84112, 84113, 84114, 84133, 84147
		24.2	Salt Lake City (Southeast Liberty)	ZIP Code 84105
		25	South Salt Lake	ZIP Codes 84115, 84165
		26.1	Salt Lake City (Sugar House)	ZIP Codes 84106, 84152
		26.2	Millcreek (South)	ZIP Code 84124
		26.3	Millcreek (East)	ZIP Code 84109
		27.1	Holladay V2	ZIP Code 84117
		28	Cottonwood	ZIP Codes 84121, 84171
		29.1	Kearns V2	ZIP Code 84118
		30	Taylorsville (East)/Murray (West)	ZIP Code 84123
		30.1	Taylorsville (West)	ZIP Code 84129
		31	Murray	ZIP Codes 84107, 84157
		32	Midvale	ZIP Code 84047
		33.2	West Jordan (Northeast) V2	ZIP Code 84084
		34.1	West Jordan (Southeast)	ZIP Code 84088
		34.2	West Jordan (West)/Copperton	ZIP Codes 84006, 84081
		35.1	South Jordan V2	ZIP Code 84095
		35.2	Daybreak	ZIP Code 84009
		36.1	Sandy (West)	ZIP Codes 84070, 84091
		36.2	Sandy (Center) V2	ZIP Code 84094
		37	Sandy (Northeast)	ZIP Codes 84090, 84093
		38	Sandy (Southeast)	ZIP Codes 84092, 84138
		39.1	Draper	ZIP Code 84020 (only in Salt Lake County)
		39.2	Riverton/Bluffdale	ZIP Code 84065 (only in Salt Lake County)
		39.3	Herriman	ZIP Code 84096

Local Health District	County	ID #	Utah Small Area	Boundary Designation
Tooele County LHD (08)		40.1	Tooele County (Other)	Tooele County except Tooele Valley [includes ZIP Codes 84022, 84029 (only in Tooele County), 84034 (only in Tooele County), 84069, 84071, 84080, 84083 (only in Tooele County)]
		40.2	Tooele Valley	ZIP Code 84074
Utah County LHD (10)		41.1	Eagle Mountain/Cedar Valley	ZIP Codes 84005, 84013
		41.2	Lehi	ZIP Codes 84020 (only in Utah County), 84043, 84065 (only in Utah County)
		41.3	Saratoga Springs	ZIP Code 84045
		42.1	American Fork	ZIP Code 84003
		42.2	Alpine	ZIP Code 84004
		43	Pleasant Grove/Lindon	ZIP Codes 84042, 84062
		44	Orem (North)	ZIP Codes 84057, 84059
		45	Orem (West)	ZIP Code 84058
		46	Orem (East)	ZIP Code 84097
		47	Provo/BYU	ZIP Codes 84602, 84604 (only in Utah County)
		48.1	Provo (West City Center)	ZIP Codes 84601, 84603
		48.2	Provo (East City Center)	ZIP Codes 84605, 84606
		49.1	Salem City	ZIP Code 84653
		49.2	Spanish Fork	ZIP Codes 84629 (only in Utah County), 84660
		49.3	Springville	ZIP Code 84663
		49.4	Mapleton	ZIP Code 84664
Summit County LHD (07)		50.1	Utah County (South) V2	ZIP Codes 84626, 84633, 84655
		50.2	Payson	ZIP Code 84651
Summit County LHD (07)		51.1	Park City	ZIP Codes 84060 (only in Summit County), 84068 (only in Summit County), 84098
		51.2	Summit County (East)	Summit County except Park City [includes ZIP Codes 84017 (only in Summit County), 84024, 84033 (only in Summit County), 84036 (only in Summit County), 84055, 84061]
Wasatch County LHD (11)		52	Wasatch County	All of Wasatch County [includes ZIP Codes 84032, 84036 (only in Wasatch County), 84049, 84060 (only in Wasatch County), 84068 (only in Wasatch County), 84082, 84604 (only in Wasatch County)]
TriCounty LHD (09)	DAGGETT/ UINTAH	53.1	Daggett and Uintah County	All of Daggett and Uintah Counties [includes ZIP Codes 84008, 84023, 84026, 84035, 84039, 84046, 84052 (only in Uintah County), 84063, 84066 (only in Uintah County), 84076, 84078, 84079, 84085]
	DUCHESNE	53.2	Duchesne County	All of Duchesne County [includes ZIP Codes 84001, 84002, 84007, 84021, 84027, 84031, 84051, 84052 (only in Duchesne County), 84053, 84066 (only in Duchesne County), 84072, 84073]
Central LHD (02)	JUAB	54.1	Nephi/Mona	ZIP Codes 84645, 84648
	MILLARD	54.2	Delta/Fillmore	ZIP Codes 84624, 84631, 84635, 84640

Local Health District	County	ID #	Utah Small Area	Boundary Designation
Central LHD (02) — continued	SANPETE	54.3	Sanpete Valley	ZIP Codes 84627, 84629 (only in Sanpete County), 84634, 84642, 84647
	JUAB/ MILLARD/ PIUTE/ SANPETE/ SEVIER/ WAYNE	54.4	Central (Other)	Central Utah LHD except Nephi/Mona, Delta/Fillmore, Sanpete Valley, and Richfield/Monroe/Salina [includes ZIP Codes 84034 (only in Juab County), 84083 (only in Juab County), 84620, 84621, 84622, 84623, 84628, 84630, 84632, 84636, 84637, 84638, 84639, 84643, 84644, 84646, 84649, 84652, 84656, 84657, 84662, 84665, 84667, 84711, 84712 (only in Piute County), 84715, 84723, 84724, 84728, 84730, 84732, 84734, 84739, 84740, 84743 (only in Piute County), 84744, 84747, 84749, 84750, 84766, 84773, 84775]
	SEVIER	55.1	Richfield/Monroe/Salina	ZIP Codes 84654, 84701, 84754
Southeast LHD (05.1)	CARBON	56.1	Carbon County	All of Carbon County [includes ZIP Codes 84501 (only in Carbon County), 84520, 84526, 84529, 84539, 84542]
	EMERY	56.2	Emery County	All of Emery County [includes ZIP Codes 84501 (only in Emery County), 84513, 84516, 84518, 84521, 84522, 84523, 84525 (only in Emery County), 84528, 84537]
	GRAND	57.1	Grand County	All of Grand County [includes ZIP Codes 84515, 84525 (only in Grand County), 84532 (only in Grand County), 84540]
San Juan LHD (13)	SAN JUAN	57.3	Blanding/Monticello	ZIP Codes 84511, 84535
		57.4	San Juan County (Other)	San Juan County except Blanding/Monticello [includes ZIP Codes 84510, 84512, 84530, 84531, 84532 (only in San Juan County), 84533 (only in San Juan County), 84534, 84536]
Southwest LHD (06)	WASHINGTON	58	St George	ZIP Codes 84770, 84771, 84790, 84791
		59.1	Washington County (Other) V2	Washington County except St. George, Washington City, Hurricane/La Verkin, and Ivins/Santa Clara [includes ZIP Codes 84720 (only in Washington County), 84722 (only in Washington County), 84725 (only in Washington County), 84733, 84746, 84756 (only in Washington County), 84757 (only in Washington County), 84763, 84767, 84774, 84779, 84781 (only in Washington County), 84782, 84783, 84784]
		59.2	Washington City	ZIP Code 84780
		59.3	Hurricane/La Verkin	ZIP Codes 84737 (only in Washington County), 84745
		59.4	Ivins/Santa Clara	ZIP Codes 84738, 84765
	IRON	60	Cedar City	ZIP Codes 84720 (only in Iron County), 84721, 84757 (only in Iron County), 84781 (only in Iron County)
	BEAVER/ GARFIELD/ IRON/KANE	61	Southwest Local Health District (Other)	All of Beaver, Garfield, and Kane Counties; Iron County except Cedar City [includes ZIP Codes 84533 (only in Kane County), 84710, 84712 (only in Garfield County), 84713, 84714, 84716, 84718, 84719, 84722 (only in Iron County), 84725 (only in Iron County), 84726, 84729, 84731, 84735, 84736, 84737 (only in Iron County), 84741, 84742, 84743 (only in Beaver County), 84751, 84752, 84753, 84755, 84756 (only in Iron County), 84758, 84759, 84760, 84761, 84762, 84764, 84772, 84776]

Appendix B: 2018 Focus Groups Methodology and Themes

Methods

Focus Group Locations	
• Beaver	• SLC –
• Box Elder	• Taylorsville/Magna/Kearns
• Cache/Rich	• Sanpete
• Carbon/Emery	• Sevier
• Davis – Hill AFB	• Summit
• Garfield/Kane	• TriCounty
• Grand	• Tooele
• Iron	• Utah – Orem/Provo
• Millard/Piute	• Utah – North
• San Juan	• Utah – South
• SLC – West Valley/Rose Park	• Washington
• SLC – South Jordan/Sandy	• Wayne
	• Weber/Morgan
	• Weber – Ogden

Qualitative data was collected to understand community perspectives. Twenty-five focus groups were conducted, each based on a geographic area and consisting of five to eight people. Participants represented knowledge of local resources and primary care needs. Participants included healthcare providers/administrators, school representatives, parents, social services administrators, local

government representatives, and/or consumers from the community at large. Twenty-seven of Utah’s 29 counties were represented with Juab and Wasatch counties being the only counties not represented. Multiple focus groups were conducted in urban counties in an effort to understand the needs of urban underserved communities, compared with those of more affluent urban areas. Each group was asked the same six questions. All questions were written with the goal of gaining insight into the specific needs with regard to access to primary medical, dental, and mental health care, as well as the strengths of the community in addressing the healthcare needs of the underserved, low-income, and uninsured.

Focus Group Questions
• What do you perceive are the top three most pressing health concerns in your community?
• What do you consider to be your community’s greatest strengths with regard to accessing health care, specifically preventive health services, other primary health care services, dental care, and mental health services?
• Do you feel your community is able to address the health needs of the underserved, low-income, and uninsured within your community?
• What are the biggest challenges your community faces in providing access to appropriate dental health services?
• What are the biggest challenges your community faces in providing access to appropriate behavioral health services?
• What are the biggest challenges your community faces in providing access to primary care and preventive health services?

In addition to the focus groups, 12 key informant interviews were conducted with individuals who have a wide understanding of the issues that affect the provision of primary care services. The following list indicates the organizations/types of organizations that were interviewed:

- Safety net clinics
- Intermountain Foundation
- Planned Parenthood
- Local health departments
- Health Insight
- Association for Utah Community Health
- Utah Hospital Association
- Healthcare advocacy groups
- 211 (United Way)

The key informants were asked the same six questions as the focus groups, followed by a discussion regarding workforce needs and their efforts to meet the needs of their communities.

Qualitative data was sorted and organized by theme. The focus group data was mapped by location and compared with the quantitative data using arcGIS to create and display the data. Since key informant interviews represented organizations and service providers that work statewide, the data was not mapped. Instead, the data was evaluated for frequency of the same themes that were discussed in the focus groups.

Table 6 - Qualitative Themes from the Focus Groups

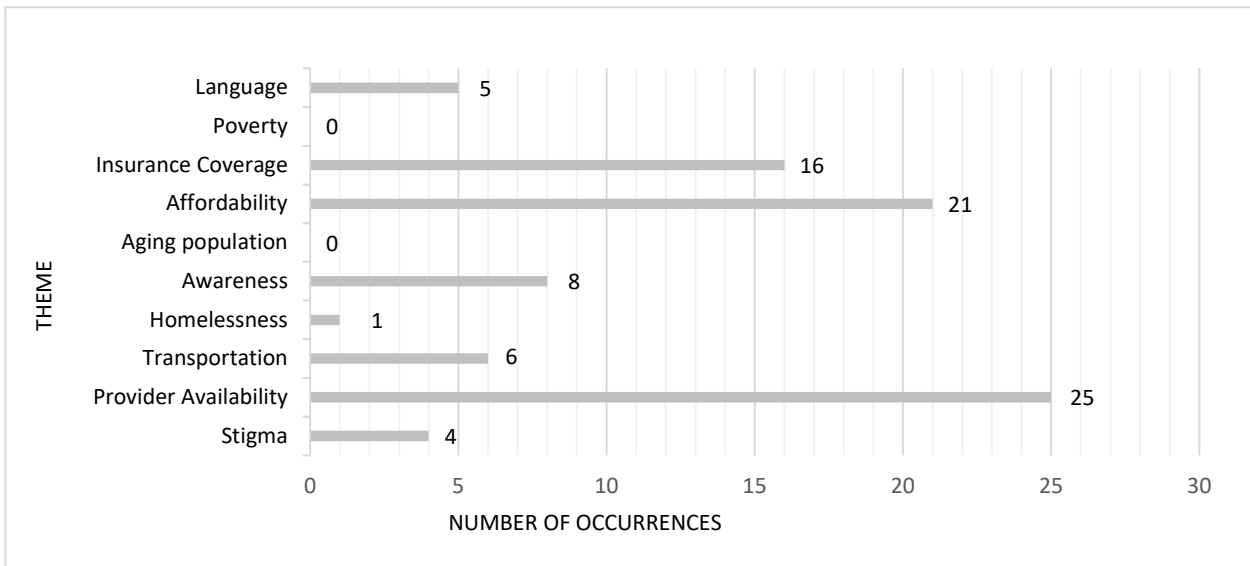
Theme	Beaver	Box Elder	Cache/Rich	Carbon/ Emery	Davis	Garfield/ Kane	Grand	Iron	Millard/ Piute	San Juan
Provider										
Availability	X	X	X	X	X	X	X	X	X	X
Affordability	X	X	X	X	X	X	X	X	X	X
Insurance										
Coverage	X	X	X	X	X	X	X	X	X	X
Poverty	X			X	X	X	X	X		
Stigma	X	X	X	X	X	X	X	X	X	
Language		X	X				X			X
Transportation	X		X	X	X	X	X		X	X
Awareness	X		X	X	X	X	X	X	X	X
Homelessness				X	X			X		
Aging										
Population						X				
Mental Health	X	X	X	X	X	X	X	X		X
Obesity	X	X	X		X					
Theme	Salt Lake	Sanpete	Sevier	Summit	TriCounty	Tooele	Utah	Washington	Wayne	Weber/ Morgan
Provider										
Availability	X	X	X	X	X	X	X	X	X	X
Affordability	X	X	X	X	X	X	X	X	X	X
Insurance										
Coverage	X	X	X	X	X	X	X	X	X	X
Poverty					X					
Stigma	X	X		X			X	X	X	X
Language		X		X						
Transportation		X				X	X	X	X	X
Awareness	X	X	X		X	X	X	X	X	X
Homelessness	X				X	X	X	X		
Aging										
Population	X	X				X	X			X
Mental Health	X	X	X	X	X	X	X	X	X	X
Obesity	X					X	X	X	X	X

Themes

The results from the qualitative analysis are visualized and discussed below. Several common themes emerged in the focus groups and key informant interviews. Table 10 highlights these themes and the counties in which they were discussed during the focus groups.

The following chart (Chart 6) highlights the number of times each of the prevailing themes was discussed during the key informant interviews.

Chart 6 - Key Informant Interview Responses



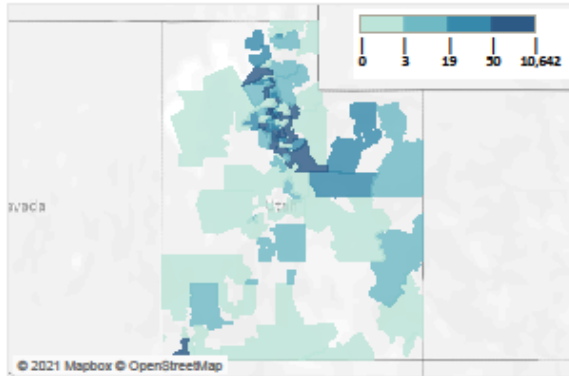
The themes discussed, in both the focus groups and key informant interviews, pertained to challenges in accessing/providing quality primary healthcare and other factors which affect the overall health of communities. Focus groups in every county included discussions about limited provider availability, specifically mental health, dentistry, and specialty care. The cost of care for the uninsured, and the cost of premiums, copays, and deductibles for the insured were cited across all focus groups, regardless of geographic location, as barriers to access to needed care, specifically primary and preventive care. Additionally, most groups discussed how difficult it is for the uninsured in their communities to find care, outside the emergency department.

While many themes were universal across the focus groups, several emerged only from rural groups. This shows, that while many concerns are shared between urban and rural communities, rural areas experience more challenges in access to healthcare. Among these challenges are language barriers, transportation, poverty, and homelessness. While some of these challenges also exist in urban areas, such as poverty and homelessness, rural areas lack the resources to deal with them. Many rural focus groups talked about homelessness in their communities and a lack of adequate shelters. Other rural groups discussed a need for advocates to help low-income individuals apply for welfare benefits

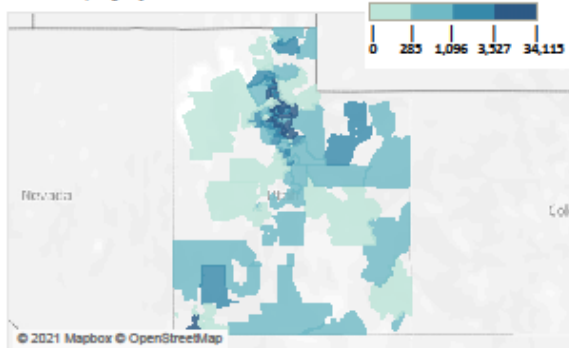
Appendix C: Telehealth Utilization

Utah Small Health Areas Telehealth Utilization

2019 Distribution of fewer than 25,000 telehealth claims, by quartiles



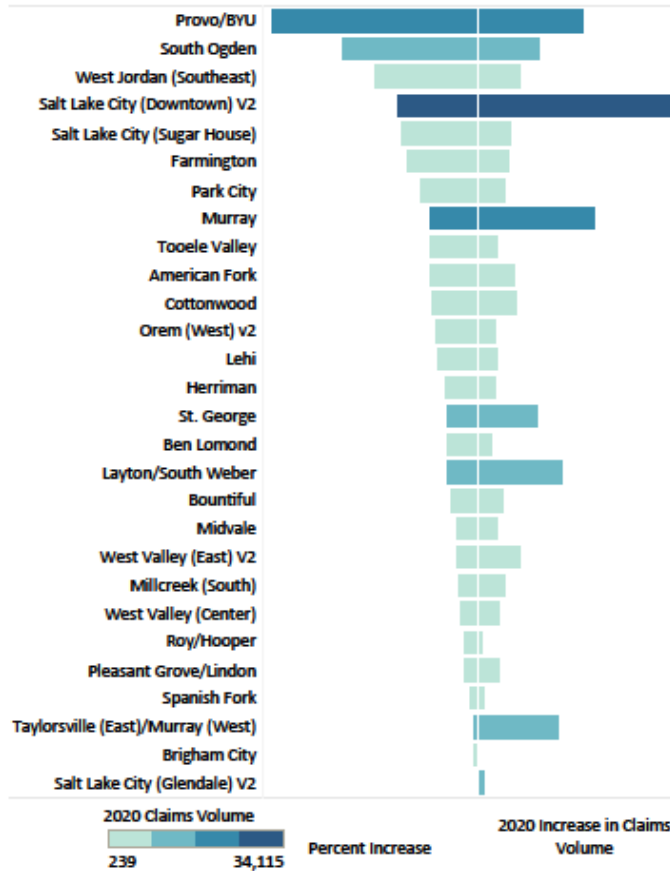
2020 Distribution of more than 330,000 telehealth claims, by quartiles



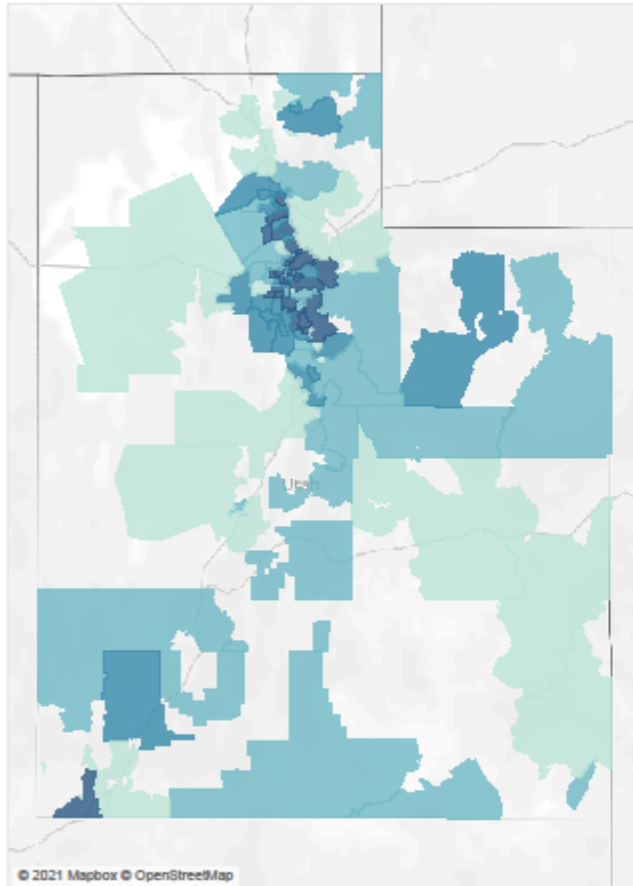
Excluded small health areas had zero telehealth claims for providers located in zip codes assigned to those areas in both years. Duplicate (resubmitted) claims are included but do not affect the results. There were 5 or fewer duplicate claims per SHA.

Small Health Areas (SHA) ranked by percent increase in telehealth claims

For SHA with at least 50 claims in 2019.

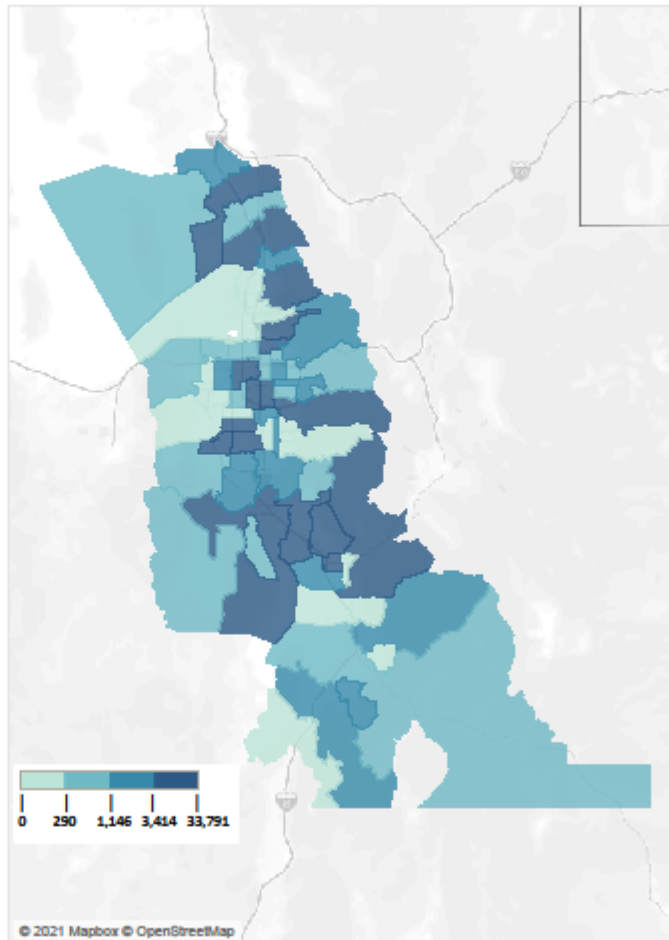


Total volume change 2019 to 2020, by small health area
 The St. George small health area increased from 253 to 10,134 telehealth claims in this period.

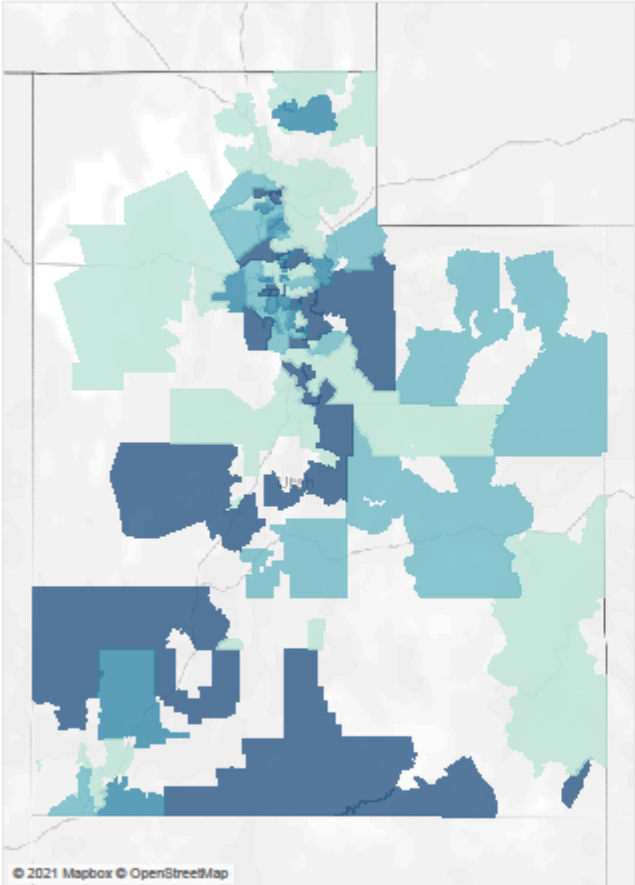


Excluded small health areas had zero telehealth claims for providers located in zip codes assigned to those areas in both years. Duplicate (resubmitted) claims are included but do not affect the results. There were 5 or fewer duplicate claims per SHA.

Davis, Salt Lake and Utah Counties Detail
 Murray and Layton/South Weber increased from 310 and 380 to 19,480 and 14,472 respectively. Salt Lake City (Downtown) went from 324 to 34,115 claims. Provo/BYU increased from 65 to 17,422 from 2019 to 2020.

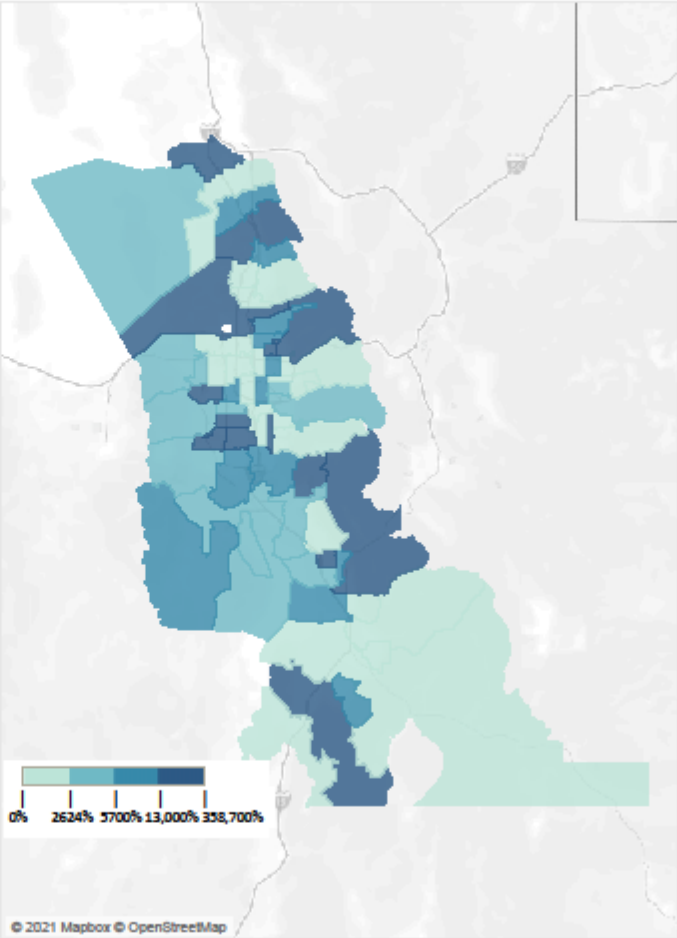


**Percent increase in volume 2019 to 2020,
by small health area**
Sixteen small health areas had zero telehealth claims in 2019.

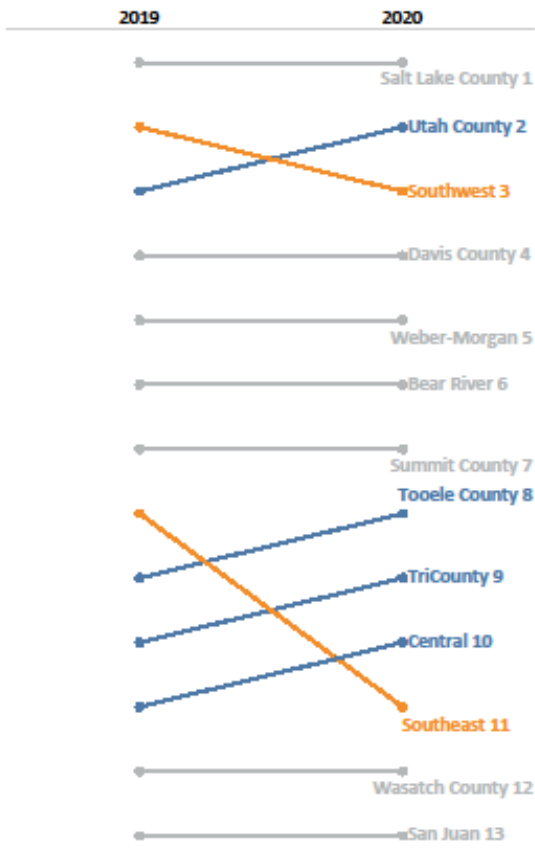


Excluded small health areas had zero telehealth claims for providers located in zip codes assigned to those areas in both years. Duplicate (resubmitted) claims are included but do not affect the results. There were 5 or fewer duplicate claims per SHA.

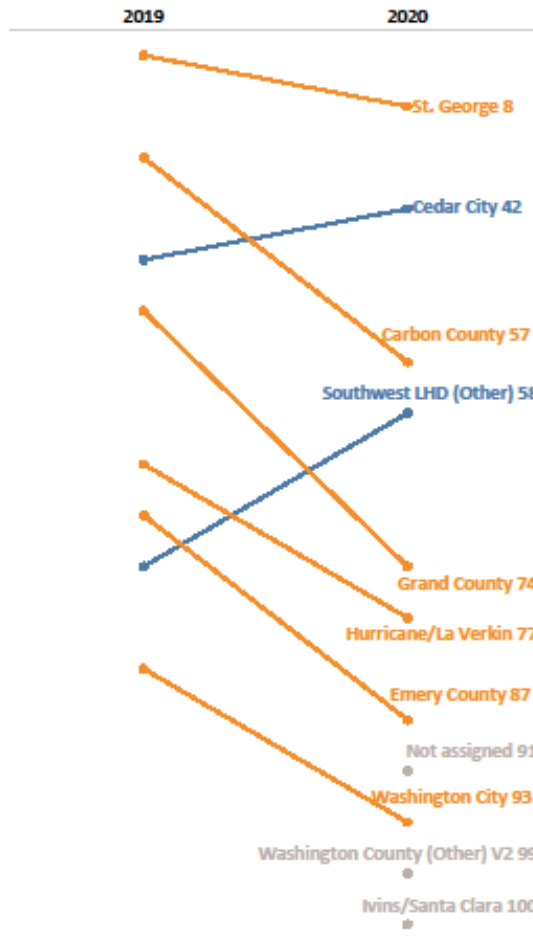
Davis, Salt Lake and Utah Counties Detail
Sandy (Center) and Salt Lake City (Foothills / East Bench) increased from 1 and 2 to 3588 and 5079 claims respectively from 2019 to 2020, which gives those two small health areas the highest percent increase.



Four local health districts rose and two fell in ranking for volume of telehealth claims from 2019 to 2020.



In the Southeast and Southwest Local Health Districts two Small Health Areas rose and the rest fell in ranking for volume of telehealth claims from 2019 to 2020. (Three areas were not assigned in 2019 and so the change in ranking is not known.)

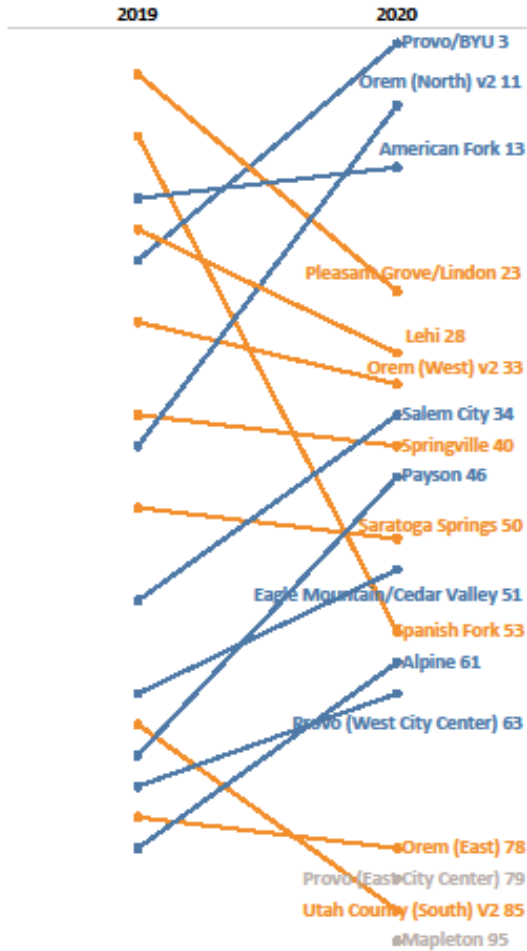


Ranking is a comparison of total telehealth claim volume for each year by local health district and by small health areas. Rankings not shown are for small health areas in local health districts not shown here. A complete list of small health areas with their annual ranking and total claims is available.

Of the three rural Local Health Districts that rose in ranking one Small Health Area rose and the rest fell in ranking for volume of telehealth claims from 2019 to 2020. (Two areas were not assigned in 2019 and so the change in ranking is not known.)



For Utah County Local Health District eight Small Health Areas rose and the rest fell in ranking for volume of telehealth claims from 2019 to 2020. (Two areas were not assigned in 2019 and so the change in ranking is not known.)



Ranking is a comparison of total telehealth claim volume for each year by small health areas. Rankings not shown are for small health areas in local health districts not shown here. A complete list of small health areas with their annual ranking and total claims is available.

2019 Ranking

	Total Claims
1 Salt Lake City (Glendale) V2	10,642
2 Taylorsville (East)/Murray (West)	3,048
3 Layton/South Weber	380
4 Salt Lake City (Downtown) V2	324
5 Murray	310
6 West Valley (East) V2	265
7 St. George	253
8 Pleasant Grove/Lindon	234
9 Millcreek (South)	184
10 West Valley (Center)	156
11 Bountiful	126
12 Spanish Fork	124
13 Midvale	120
14 Cottonwood	108
15 American Fork	102
16 Herriman	72
17 Lehi	65
18 Provo/BYU	65
19 Park City	64
20 Ben Lomond	60
21 South Ogden	59
22 Farmington	58
23 Brigham City	56
24 Orem (West) v2	54
25 Salt Lake City (Sugar House)	54
26 Tooele Valley	54
27 West Jordan (Southeast)	53
28 Roy/Hooper	50
29 Centerville	48
30 North Logan	48
31 Riverdale	48
32 Salt Lake City (Avenues)	44
33 Sandy (West)	43
34 Springville	43
35 South Salt Lake	42

	Total Claims
36 South Salt Lake	42
37 Draper	39
38 Carbon County	37
39 Riverton/Bluffdale	37
40 Holladay V2	36
41 Orem (North) v2	36
42 Tremonton	36
43 Duchesne County	34
44 Daybreak	33
45 Kaysville/Fruit Heights	27
46 Clearfield Area/Hooper	24
47 Cedar City	22
48 Taylorsville (West)	22
49 Morgan County	20
50 Saratoga Springs	19
51 Weber County (East)	19
52 Magna	18
53 Salem City	18
54 Syracuse	18
55 South Jordan V2	17
56 Daggett and Uintah County	16
57 Grand County	16
58 Central (Other)	15
59 Richfield/Monroe/Salina	13
60 Logan V2	12
61 West Jordan (Northeast) V2	12
62 Salt Lake City (Southeast Liberty)	11
63 West Valley (West) V2	10
64 Eagle Mountain/Cedar Valley	9
65 Utah County (South) V2	9
66 Payson	7
67 Provo (West City Center)	5
68 Wasatch County	5
69 Hurricane/La Verkin	4
70 Orem (East)	4

	Total Claims
71 Emery County	3
72 Kearns V2	3
73 Ogden (Downtown)	3
74 Sanpete Valley	3
75 Southwest LHD (Other)	3
76 Summit County (East)	3
77 Salt Lake City (Foothill/East Ben..	2
78 Salt Lake City (Rose Park)	2
79 Alpine	1
80 Delta/Fillmore	1
81 San Juan County (Other)	1
82 Sandy (Center) V2	1
83 Washington City	1
84 West Jordan (West)/Copperton	1

2020 Ranking

	Total Claims
1 Salt Lake City (Downtown) V2	34,115
2 Murray	19,480
3 Provo/BYU	17,422
4 Taylorsville (East)/Murray (West)	16,181
5 Layton/South Weber	14,472
6 Salt Lake City (Glendale) V2	11,761
7 South Ogden	10,373
8 St. George	10,134
9 West Valley (East) V2	7,225
10 West Jordan (Southeast)	7,067
11 Orem (North) v2	6,555
12 Cottonwood	6,433
13 American Fork	6,205
14 Daybreak	5,793
15 South Jordan V2	5,534
16 Salt Lake City (Avenues)	5,521
17 Salt Lake City (Sugar House)	5,442
18 Farmington	5,234
19 Salt Lake City (Foothill/East Bench)	5,079
20 Park City	4,680
21 Millcreek (South)	4,572
22 Bountiful	4,267
23 Pleasant Grove/Lindon	3,745
24 Draper	3,716
25 West Valley (Center)	3,671
26 Sandy (Center) V2	3,588
27 North Logan	3,527
28 Lehi	3,479
29 Tooele Valley	3,382
30 Midvale	3,327
31 Riverton/Bluffdale	3,306
32 Herriman	3,055
33 Orem (West) v2	2,934
34 Salem City	2,789
35 Riverdale	2,467

	Total Claims
36 Ben Lomond	2,399
37 Centerville	2,283
38 Taylorsville (West)	2,281
39 Holladay V2	2,180
40 Springville	2,111
41 Salt Lake City (Southeast Liberty)	2,058
42 Cedar City	2,036
43 Clearfield Area/Hooper	1,990
44 Kaysville/Fruit Heights	1,959
45 Millcreek (East)	1,461
46 Payson	1,450
47 Ogden (Downtown)	1,384
48 Duchesne County	1,296
49 Logan V2	1,276
50 Saratoga Springs	1,206
51 Eagle Mountain/Cedar Valley	1,181
52 South Salt Lake	1,144
53 Spanish Fork	1,122
54 Wasatch County	1,051
55 Roy/Hooper	916
56 Magna	909
57 Carbon County	908
58 Southwest LHD (Other)	832
59 Sandy (West)	829
60 Syracuse	807
61 Alpine	803
62 Daggett and Uintah County	797
63 Provo (West City Center)	653
64 Weber County (East)	639
65 West Jordan (Northeast) V2	626
66 Sandy (Southeast)	625
67 West Valley (West) V2	553
68 Sanpete Valley	473
69 Richfield/Monroe/Salina	470
70 Kearns V2	389

	Total Claims
71 San Juan County (Other)	341
72 Cache County (Other)/Rich Count..	309
73 Central (Other)	308
74 Grand County	306
75 Salt Lake City (Rose Park)	294
76 Tremonton	277
77 Hurricane/La Verkin	269
78 Orem (East)	264
79 Provo (East City Center)	262
80 Delta/Fillmore	256
81 Blanding/Monticello	244
82 Brigham City	239
83 Nephi/Mona	149
84 Tooele County (Other)	121
85 Utah County (South) V2	118
86 Summit County (East)	117
87 Emery County	111
88 Morgan County	70
89 North Salt Lake	57
90 West Jordan (West)/Copperton	55
91 Not assigned	23
92 Hyrum	16
93 Washington City	16
94 Sandy (Northeast)	12
95 Mapleton	11
96 Smithfield	5
97 Woods Cross/West Bountiful	4
98 Box Elder County (Other) V2	2
99 Washington County (Other) V2	2
100 Ivins/Santa Clara	1

Percent Increase Ranking

1	Sandy (Center) V2	358700%
2	Salt Lake City (Foothill/East Bench)	253850%
3	Alpine	80200%
4	Ogden (Downtown)	46033%
5	San Juan County (Other)	34000%
6	South Jordan V2	32453%
7	Southwest LHD (Other)	27633%
8	Provo/BYU	26703%
9	Delta/Fillmore	25500%
10	Wasatch County	20920%
11	Payson	20614%
12	Salt Lake City (Southeast Liberty)	18609%
13	Orem (North) v2	18108%
14	South Ogden	17481%
15	Daybreak	17455%
16	Sanpete Valley	15667%
17	Salem City	15394%
18	Salt Lake City (Rose Park)	14600%
19	West Jordan (Southeast)	13234%
20	Eagle Mountain/Cedar Valley	13022%
21	Provo (West City Center)	12960%
22	Kearns V2	12867%
23	Salt Lake City (Avenues)	12448%
24	Logan V2	10533%
25	Salt Lake City (Downtown) V2	10429%
26	Taylorsville (West)	10268%
27	Salt Lake City (Sugar House)	9978%
28	Draper	9428%
29	Cedar City	9155%
30	Farmington	8924%
31	Riverton/Bluffdale	8835%
32	Clearfield Area/Hooper	8192%
33	North Logan	7248%
34	Park City	7213%
35	Kaysville/Fruit Heights	7156%

36	Hurricane/La Verkin	6625%
37	Orem (East)	6500%
38	Saratoga Springs	6247%
39	Murray	6184%
40	Tooele Valley	6163%
41	American Fork	5983%
42	Holladay V2	5956%
43	Cottonwood	5856%
44	West Valley (West) V2	5430%
45	West Jordan (West)/Copperton	5400%
46	Orem (West) v2	5333%
47	Lehi	5252%
48	West Jordan (Northeast) V2	5117%
49	Riverdale	5040%
50	Magna	4950%
51	Daggett and Uintah County	4881%
52	Springville	4809%
53	Centerville	4656%
54	Syracuse	4383%
55	Herriman	4143%
56	St. George	3906%
57	Ben Lomond	3898%
58	Summit County (East)	3800%
59	Duchesne County	3712%
60	Layton/South Weber	3708%
61	Emery County	3600%
62	Richfield/Monroe/Salina	3515%
63	Bountiful	3287%
64	Weber County (East)	3263%
65	Midvale	2673%
66	West Valley (East) V2	2626%
67	South Salt Lake	2624%
68	Millcreek (South)	2385%
69	Carbon County	2354%
70	West Valley (Center)	2253%

71	Central (Other)	1953%
72	Sandy (West)	1828%
73	Grand County	1813%
74	Roy/Hooper	1732%
75	Pleasant Grove/Lindon	1500%
76	Washington City	1500%
77	Utah County (South) V2	1211%
78	Spanish Fork	805%
79	Tremonton	669%
80	Taylorsville (East)/Murray (West)	431%
81	Brigham City	327%
82	Morgan County	250%
83	Salt Lake City (Glendale) V2	11%

The following SHA are not ranked by percent increase because they had zero telehealth claims in 2019.

Ivins/Santa Clara	
Box Elder County (Other) V2	
Washington County (Other) V2	
Woods Cross/West Bountiful	
Smithfield	
Mapleton	
Sandy (Northeast)	
Hyrum	
Not assigned	
North Salt Lake	
Tooele County (Other)	
Nephi/Mona	
Blanding/Monticello	
Provo (East City Center)	
Cache County (Other)/Rich County (All) V2	
Sandy (Southeast)	
Millcreek (East)	

References

1. Macaia D, Lapão LV. The current situation of human resources for health in the province of Cabinda in Angola: is it a limitation to provide universal access to healthcare? Hum Resour Health [Internet]. BioMed Central; 2017 Dec 28 [cited 2021 Aug 20];15(1):88. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/29282067>
2. D. of Health, "Public Health Indicator Based Information System (IBIS)," IBIS, Apr-2021. [Internet]. [Cited: 20-Aug-2021]. Available: <https://ibis.health.utah.gov/ibisph-view/about/UDOH.html>
3. Utah Population 2019 (Demographics, Maps, Graphs) [Internet]. [cited 2019 Feb 4]. Available from: <http://worldpopulationreview.com/states/utah-population/>
4. provinces-and-county-lines.jpg (499x620) [Internet]. [cited 2018 Apr 9]. Available from: <http://ilovehistory.utah.gov/place/images/maps/provinces-and-county-lines.jpg>
5. Utah Land area in square miles, 2010 by County [Internet]. [cited 2018 Apr 9]. Available from: <https://www.indexmundi.com/facts/united-states/quick-facts/utah/land-area#map>
6. Federal Land Ownership: Overview and Data. [cited 2021 Aug 20]. Available from: <https://fas.org/sgp/crs/misc/R42346.pdf>
7. Federal Lands and Reservations. [cited 2021 Aug 20]. Available from: <https://digitallibrary.utah.gov/awweb/awarchive?type=file&item=45622>
8. U.S. Census, Quick Facts Utah. [cited 2021 Aug 20]. Available from: <https://www.census.gov/quickfacts/UT>
9. Perlich, P. Blog: Utah Leads the Nation in Population Growth, 2010 – 2019. Gardner Policy Institute; 2019 Dec 31. [Internet]. [cited 2021 Aug 20]. Available from: <https://gardner.utah.edu/blog-utah-leads-the-nation-in-population-growth-2010-2019/>
10. Lofquist D, Lugaila T, O'connell M, Feliz S. Households and Families: 2010 2010 Census Briefs. 2012 [cited 2021 Aug 20]; Available from: <https://www.census.gov/prod/cen2010/briefs/c2010br-14.pdf>
11. Total Population Percent Population Change from Previous Year. [cited 2021 Aug 20]; Available from: http://gardner.utah.edu/wp-content/uploads/RaceandEthnicity_FactSheet20170825.pdf
12. IBIS-PH - Health Indicator Report - Utah Population Characteristics: Household Income [Internet]. [cited 2021 Aug 20]. Available from: <https://ibis.health.utah.gov/indicator/view/HHInc.html>
13. IBIS-PH -Complete Health Indicator Report of Utah Population Characteristics: Poverty, All Persons [Internet]. [cited 2021 Aug 20]. Available from: https://ibis.health.utah.gov/ibisph-view/indicator/complete_profile/Pov.html
14. Adults in Utah - Religion in America: U.S. Religious Data, Demographics and Statistics | Pew Research Center [Internet]. [cited 2021 Aug 20]. Available from: <http://www.pewforum.org/religious-landscape-study/state/utah/>
15. America's Health Rankings- Utah, 2020. [cited 2021 Aug 20]. Available from <https://assets.americashealthrankings.org/app/uploads/state-summaries-annual-20201.pdf>
16. IBIS-PH - Query Result - American Community Survey Query Module for Utah Counties and Local Health Districts - Percentage below Poverty Level by Race [Internet]. [cited 2018 Apr 9]. Available from: https://ibis.health.utah.gov/query/result/acs/Pov_Race/Race.html

17. IBIS-PH - Health Indicator Report - Utah Population Characteristics: Poverty, All Persons [Internet]. [cited 2018 Apr 9]. Available from: <https://ibis.health.utah.gov/indicator/view/Pov.SA.html>
18. IBIS-PH - Health Indicator Report - Health Insurance Coverage [Internet]. [cited 2021 Aug 20]. Available from: <https://ibis.health.utah.gov/indicator/view/Pov.SA.html>
19. IBIS-PH – Health Indicator Report – Health Insurance Coverate [Internet]. [cited 2021 Aug 20]. Available from: <https://ibis.health.utah.gov/ibisph-view/indicator/view/HlthIns.SA.html>
20. Healthcare Access in Rural Communities Introduction - Rural Health Information Hub [Internet]. [cited 2018 Apr 9]. Available from: <https://www.ruralhealthinfo.org/topics/healthcare-access>
21. Utah State and County Annual Population Estimates by Single-Year of Age, Sex, and Race/Ethnicity: 2010-2019. [Cited 20 Aug 2021]. Available from: <https://gardner.utah.edu/wp-content/uploads/PopEst-AgeSexRace-FS-Aug2020.pdf?x71849>
22. Health Coverage and Care for American Indians and Alaska Natives – Issue Brief | The Henry J. Kaiser Family Foundation [Internet]. [cited 2018 Apr 9]. Available from: <https://www.kff.org/report-section/health-coverage-and-care-for-american-indians-and-alaska-natives-issue-brief/>
23. Utah Office of Health Care Statistics- About the All Payer Claims Data. [Cited 20 Aug 2021]. Available from: <https://stats.health.utah.gov/about-the-data/apcd/>
24. Parlier AB, Galvin SL, Thach S, Kruidenier D, Fagan EB. The Road to Rural Primary Care: A Narrative Review of Factors That Help Develop, Recruit, and Retain Rural Primary Care Physicians. *Acad Med.* 2018;93(1):130–40.
25. Strengthening the Primary Care Workforce to Meet Population Needs - The Commonwealth Fund [Internet]. [cited 2021 Aug 30]. Available from: <http://www.commonwealthfund.org/publications/newsletters/quality-matters/2011/april-may-2011/in-focus>
26. Medically Underserved Areas and Populations (MUA/Ps) | Bureau of Health Workforce [Internet]. [cited 2021 Aug 30]. Available from: <https://bhw.hrsa.gov/shortage-designation/muap>
27. SDMS Provider Data. September 2021.
28. Office of Primary Care and Rural Health [Internet]. [cited 2021 Aug 30]. Available from: <https://ruralhealth.health.utah.gov/portal/>
29. Health Care Workforce Distribution and Shortage Issues in Rural America [Internet]. [cited 2021 Aug 30]. Available from: <https://www.ruralhealthweb.org/getattachment/Advocate/Policy-Documents/HealthCareWorkforceDistributionandShortageJanuary2012.pdf.aspx>
30. Loan Repayment - NHSC [Internet]. [cited 2021 Aug 30]. Available from: <https://nhsc.hrsa.gov/loanrepayment/>
31. Office of Primary Care and Rural Health [Internet]. [cited 2021 Aug 30]. Available from: <https://ruralhealth.health.utah.gov/workforce-development/primary-care-office-pco/>
32. Utah Area Health Education Center [Internet]. [cited 2021 Aug 30]. Available from: <https://utahahec.org/>
33. Council UME. Utah Medical Education Council: About [Internet]. [cited 2021 Aug 30]. Available from: <https://umec.utah.gov/>
34. State Rural Health Associations | NRHA - NRHA [Internet]. [cited 2021 Aug 30]. Available from: <https://www.ruralhealthweb.org/programs/state-rural-health-associations>

35. Rural Health Association of Utah | Utah Center for Rural Health | SUU [Internet]. [cited 2021 Aug 30]. Available from: <https://www.suu.edu/ruralhealth/>
36. AUCH - Association for Utah Community Health - Overview [Internet]. [cited 2021 Aug 30]. Available from: <https://www.auch.org/about-auch>
37. Utah Rural Healthcare Recruitment and Retention [Internet]. [cited 2021 Aug 30]. Available from: <https://www.3rnet.org/locations/utah>
38. CMS, CM, PCG, Dpipd. HEALTH PROFESSIONAL SHORTAGE AREA PHYSICIAN BONUS PROGRAM. 2017 [cited 2021 Aug 30]; Available from: <https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/Downloads/HPSAfctsh.pdf>
39. Small Health Statistical Areas [Internet]. [cited 2021 Aug 30]. Available from: <https://gis.utah.gov/data/health/health-small-statistical-areas/>
40. About the All Payer Claims Data- Utah Office of Health Care Statistics [Internet]. [cited 2021 Aug 30]. Available from: <https://stats.health.utah.gov/about-the-data/apcd/>
41. <https://stats.health.utah.gov/about-the-data/data-series/>
42. Wilper A, Woolhandler S, Lasser K, McCormick D, Bor D, Himmelstein D. Health Insurance and Mortality in US Adults. American Journal of Public Health [Internet]. 2009 [cited 2021 Aug 10];99(12):2289-2295. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2775760/>
43. Right to Health Care ProCon.org [Internet]. [cited 2021 Aug 10]. Available from: <https://healthcare.procon.org/>
44. Sommers BD, Gawande AA, Baicker K. Health Insurance Coverage and Health — What the Recent Evidence Tells Us. N Engl J Med [Internet]. Massachusetts Medical Society; 2017 Aug 10 [cited 2021 Aug 10];377(6):586–93. Available from: <http://www.nejm.org/doi/10.1056/NEJMs1706645>
45. Pukurdpol P, Wiler JL, Hsia RY, Ginde AA. Association of Medicare and Medicaid Insurance With Increasing Primary Care-treatable Emergency Department Visits in the United States. Pines J, editor. Acad Emerg Med [Internet]. Wiley/Blackwell (10.1111); 2014 Oct 1 [cited 2021 Aug 10];21(10):1135–42. Available from: <http://doi.wiley.com/10.1111/acem.12490>
46. Key Facts about the Uninsured Population | The Henry J. Kaiser Family Foundation [Internet]. [cited 2021 Aug 20]. Available from: <https://www.kff.org/uninsured/fact-sheet/key-facts-about-the-uninsured-population/>
47. IBIS-PH - Health Indicator Report of Health Insurance Coverage [Internet]. [cited 2021 Aug 20]. Available from: <https://ibis.health.utah.gov/ibisph-view/indicator/view/HlthIns.html>
48. IBIS-PH - Health Indicator Report of Cost as a Barrier to Health Care [Internet]. [cited 2021 Aug 23]. Available from: <https://ibis.health.utah.gov/ibisph-view/indicator/view/CosBarHtlhCar.LHD.html>
49. Health Indicator Report of Cost as a Barrier to Health Care [Internet]. [cited 2021 Aug 23]. Available form: https://ibis.health.utah.gov/ibisph-view/indicator/view/CosBarHtlhCar.UT_US.html
50. The importance of a primary care provider - Mayo Clinic Health System [Internet]. [cited 2021 Aug 3]. Available from: <https://mayoclinichealthsystem.org/hometown-health/speaking-of-health/the-importance-of-a-primary-care-provider>

51. IBIS-PH - Health Indicator Report - Personal Doctor or Health Care Provider [Internet]. [cited 2021 Aug 3]. Available from:
https://ibis.health.utah.gov/indicator/view/PriProvUsuPI.UT_US.html
52. IBIS-PH - Health Indicator Report of Personal Doctor or Health Care Provider [Internet]. [cited 2021 Aug 23]. Available from: <https://ibis.health.utah.gov/ibisph-view/indicator/view/PriProvUsuPI.SA.html>
53. Leleu H, Minvielle E. Relationship between Longitudinal Continuity of Primary Care and Likelihood of Death: Analysis of National Insurance Data. [cited 2021 Aug 23]; Available from: <http://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0071669&type=printable>
54. IBIS-PH - Health Indicator Report of Routine Medical Care Visits [Internet]. [cited 2021 Aug 23]. Available from: <https://ibis.health.utah.gov/ibisph-view/indicator/view/RouMedCarVis.SA.html>
55. Valachovic RW. Implications for the Dental Care of Vulnerable Populations if Medicaid Is Cut Back. Acad Med [Internet]. 2018 Feb 6 [cited 2021 Aug 23];1. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/29419548>
56. Baicker K, Taubman S, Allen H, Wright B, Finkelstein A. THE OREGON HEALTH INSURANCE EXPERIMENT: DENTAL CARE. 2014 [cited 2021 Aug 23]; Available from: <http://www.nber.org/oregon/documents/analysis-plan/analysis-plan-dental-2014-11-17.pdf>
57. Malecki K, Wisk LE, Walsh M, McWilliams C, Eggers S, Olson M. Oral Health Equity and Unmet Dental Care Needs in a Population-Based Sample: Findings From the Survey of the Health of Wisconsin. [cited 2021 Aug 23]; Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4455504/pdf/AJPH.2014.302338.pdf>
58. IBIS-PH - Query Result - Utah's Behavioral Risk Factor Surveillance System (BRFSS) Combined Landline and Cell Query Module - Routine Dental Health Care [Internet]. [cited 2018 Mar 23]. Available from:
https://ibis.health.utah.gov/query/result/brfss/LandlineCellAgeAdj5_RouDentHlthCare/RouDentHlthCare.html
59. Utah Medicaid Guidance: Telehealth Q&A for COVID-19 Emergency [Internet]. [cited 11 Aug 2021]. Available from: https://medicaid.utah.gov/Documents/pdfs/covid/COVID-19_TelehealthFAQ1.21.pdf
60. Using Telehealth to Expand Access to Essential Health Services during the COVID-19 Pandemic [Internet]. [cited 24 Aug 2021]. <https://www.cdc.gov/coronavirus/2019-ncov/hcp/telehealth.html>
61. STARFIELD B, SHI L, MACINKO J. Contribution of Primary Care to Health Systems and Health. Milbank Q [Internet]. 2005 Sep [cited 2018 Jan 26];83(3):457–502. Available from: <http://doi.wiley.com/10.1111/j.1468-0009.2005.00409.x>
62. IBIS-PH - Query Result - Utah's Behavioral Risk Factor Surveillance System (BRFSS) Combined Landline and Cell Query Module - General Health Status [Internet]. [cited 2021 Aug 3]. Available from:
https://ibis.health.utah.gov/query/result/brfss/LandlineCellAgeAdj5_GeneralHlthStat/GeneralHlthStat.html
63. Givens M, Jovaag A, Van Dijk J. 2018 County Health Rankings Report- Utah [Internet]. Countyhealthrankings.org. 2018 [cited 2021 Aug 25]. Available from: http://www.countyhealthrankings.org/sites/default/files/state/downloads/CHR2018_UT_v2.pdf

64. National Center for Health Statistics- Deaths and Mortality, 2019. [Internet]. [cited 25 Aug 2021]. Available from: <https://www.cdc.gov/nchs/fastats/deaths.htm>
65. National Center for Health Statistics- Key Health Indicators, Utah, 2019. [Internet]. [cited 25 Aug 2021]. Available from: <https://www.cdc.gov/nchs/pressroom/states/utah/ut.htm>
66. Heart Disease Facts & Statistics | cdc.gov [Internet]. [cited 2021 Aug 25]. Available from: <https://www.cdc.gov/heartdisease/facts.htm>
67. IBIS-PH - Health Indicator Report - Prediabetes [Internet]. [cited 2021 Aug 3]. Available from: https://ibis.health.utah.gov/indicator/view/PreDiab.UT_US.html
68. National Diabetes Prevention Program- About the National DPP. [Internet]. [cited 3 2021 Aug 3]. Available from: <https://www.cdc.gov/diabetes/prevention/about.htm>
69. Geiss LS, James C, Gregg EW, Albright A, Williamson DF, Cowie CC. Diabetes Risk Reduction Behaviors Among U.S. Adults with Prediabetes. *Am J Prev Med* [Internet]. Elsevier; 2010 Apr 1 [cited 2021 Aug 3];38(4):403–9. Available from: <http://linkinghub.elsevier.com/retrieve/pii/S0749379710000097>
70. IBIS-PH - Health Indicator Report - Blood Pressure: Doctor-diagnosed Hypertension [Internet]. [cited 2021 Aug 3]. Available from: <https://ibis.health.utah.gov/indicator/view/HypAwa.html>
71. Berg AO. Screening for high blood pressure: Recommendations and rationale. *Am J Prev Med*. 2003;25(2):159–64.
72. Fang J, Yang Q, Ayala C, Loustalot F. Disparities in access to care among US adults with self-reported hypertension. *Am J Hypertens*. 2014;27(11):1377–86.
73. IBIS-PH - Health Indicator Report - Blood Cholesterol Screening [Internet]. [cited 2021 Aug 9]. Available from: <https://ibis.health.utah.gov/indicator/view/BloCholScr.html>
74. IBIS-PH - Health Indicator Report - Blood Cholesterol: Doctor-diagnosed High Cholesterol [Internet]. [cited 2021 Aug 9]. Available from: <https://ibis.health.utah.gov/indicator/view/BloCholDrDiag.html>
75. IBIS-PH - Health Indicator Report - Overweight or Obese [Internet]. [cited 2021 Aug 9]. Available from: <https://ibis.health.utah.gov/indicator/view/OvrwtObe.html>
76. Rodondi N, Humair J-P, Ghali WA, Ruffieux C, Stoianov R, Seematter-Bagnoud L, et al. Counselling overweight and obese patients in primary care: a prospective cohort study. *Eur J Cardiovasc Prev Rehabil* [Internet]. 2006 Apr 28 [cited 2018 Apr 16];13(2):222–8. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/16575276>
77. IBIS-PH - Health Indicator Report - Depression: Adult Prevalence [Internet]. [cited 2021 Aug 11]. Available from: <https://ibis.health.utah.gov/indicator/view/Dep.html>
78. IBIS-PH - Health Indicator Report - Rape [Internet]. [cited 2021 Aug 10]. Available from: <https://ibis.health.utah.gov/indicator/view/Rape.html>
79. IBIS-PH - Health Indicator Report - Suicide [Internet]. [cited 2021 Aug 10]. Available from: <https://ibis.health.utah.gov/indicator/view/SuicDth.html>
80. Risk of Suicide | NAMI: National Alliance on Mental Illness [Internet]. [cited 2018 Feb 5]. Available from: <https://www.nami.org/Learn-More/Mental-Health-Conditions/Related-Conditions/Risk-of-Suicide>
81. Depression | NAMI: National Alliance on Mental Illness [Internet]. [cited 2018 Feb 5]. Available from: <https://www.nami.org/Learn-More/Mental-Health-Conditions/Depression/Overview>
82. Forman-Hoffman VL, Middleton JC, McKeeman JL, Stambaugh LF, Christian RB, Gaynes BN, et al. Quality improvement, implementation, and dissemination strategies to improve mental health

- care for children and adolescents: A systematic review. *Implement Sci. Implementation Science*; 2017;12(1).
83. McEvoy P, Williamson T, Kada R, Frazer D, Dhliwayo C, Gask L. Improving access to mental health care in an Orthodox Jewish community: A critical reflection upon the accommodation of otherness. *BMC Health Serv Res. BMC Health Services Research*; 2017;17(1):1–15.
 84. County Health Rankings & Roadmaps, 2021 State Level Data and Ranks- Utah. [Internet]. [Cited 2021 Aug 26]. Available from: https://www.countyhealthrankings.org/sites/default/files/media/document/CHR2021_UT.pdf
 85. IBIS-PH- Complete Health Indicator Report of Suicide. [Internet]. [cited 2021 Aug 26]. Available from: https://ibis.health.utah.gov/ibisph-view/indicator/complete_profile/SuicDth.html
 86. Rural Health Information Hub- Rural Mental Health. [Internet]. [Cited 2021 Aug 26]. Available from: <https://www.ruralhealthinfo.org/topics/mental-health>
 87. Social Determinants of Health | CDC [Internet]. Cdc.gov. 2018 [cited 2021 Aug 26]. Available from: <https://www.cdc.gov/socialdeterminants>.
 88. What is Intergenerational Poverty? [Internet]. Jobs.utah.gov. 2018 [cited 2021 Aug 26]. Available from: <https://jobs.utah.gov/edo/intergenerational/whatisigp.pdf>
 89. Utah’s Ninth Annual Report on Intergenerational Poverty, Welfare Dependency and the Use of Public Assistance, 2020. [Internet]. [cited 2021 Aug 27]. Available from: <https://jobs.utah.gov/edo/intergenerational/igp20.pdf>
 90. Health Indicator Report of Utah Population Characteristics: Education Level in the Population. [Internet]. [Cited 2021 Aug 26]. Available from: <https://ibis.health.utah.gov/ibisph-view/indicator/view/EduLevPop.html>
 91. American Hospital Association- Rural Report, 2019. [Internet]. [Cited 24 Sep 2021]. Available from: <https://www.aha.org/system/files/2019-02/rural-report-2019.pdf>
 92. Opioids | National Institute on Drug Abuse (NIDA) [Internet]. [cited 2018 Feb 27]. Available from: <https://www.drugabuse.gov/drugs-abuse/opioids>
 93. Drug Overdose Deaths, Centers for Disease Control and Prevention (CDC) [Internet]. [cited 24 Sept 2021]. Available from <https://www.cdc.gov/drugoverdose/deaths/index.html>
 94. Nonfatal Overdoses: All Opioids, CDC [Internet]. [cited 24 Sept 2021]. Available from <https://www.cdc.gov/drugoverdose/nonfatal/all-opioids.html>
 95. 2019 Drug Overdose Death Rates, CDC [Internet]. [cited 24 Sept 2021]. Available from <https://www.cdc.gov/drugoverdose/deaths/2019.html>
 96. Rudd RA, Seth P, David F, Scholl L. Increases in Drug and Opioid-Involved Overdose Deaths — United States, 2010–2015. *MMWR Morb Mortal Wkly Rep* [Internet]. 2016 Dec 30 [cited 2018 Feb 27];65(5051):1445–52. Available from: <http://www.cdc.gov/mmwr/volumes/65/wr/mm655051e1.htm>
 97. Hedegaard H and Spencer MR. Urban-Rural Differences in Drug Overdose Death Rates, 1999–2019. *NCHS Data Brief, Number 403, March 2021*. [Internet]. [cited 24 Sept 2021]. Available from <https://www.cdc.gov/nchs/data/databriefs/db403-H.pdf>
 98. “Stop the Opidemic” Utahns Share Stories of Loss, Recovery from Opioid Addiction | Utah Department of Health [Internet]. [cited 2018 Apr 17]. Available from: <https://health.utah.gov/featured-news/stop-the-epidemic-utahns-share-stories-of-loss-recovery-from-opioid-addiction>

99. Miner J, Babitz M, Dunn A, Fondario A, Smith M. Utah Clinical Guidelines on Prescribing Opioids for Treatment of Pain Utah Department of Health Utah Medical Association 2018. 2018 [cited 2018 Mar 5]; Available from:
<http://www.health.utah.gov/vipp/pdf/RxDrugs/UtahClinicalGuidelinesOnPrescribing.pdf>