2019 Community Health Needs Assessment

Jane Phillips Medical Center | Washington County, Okla.

✚ St. John

△ Ascension

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Report authors and consultants

Overall report – Annie Smith, LMSW, MPH, director of community engagement, Ascension St. John; Kimberly Will, community engagement coordinator, Ascension St. John; and Sara Gadd, human trafficking program manager, Ascension St. John

Secondary Data: Community Overview – Tulsa Health Department

Secondary Data Analysis and Scoring – Conduent Healthy Communities Corp.

Community Health Forum – Tavis Phan, MPH, DrPH candidate (public health practicuum student at time of internship)

Community Focus Groups and Online Survey – Kimberly Cassie, PhD, MSSW, MA, assistant professor for The University of Oklahoma Anne and Henry Zarrow School of Social Work

Community health forum participants

Bartlesville Examiner-Enterprise: Roseanne McKee, reporter and copy editor

Bartlesville Public Schools: Stephanie Curtis, executive director

Bartlesville Regional United Way: Lisa Cary, CEO and executive director

Hopestone Cancer Support Center: Deborah Halpin, executive director

Oklahoma Cancer Specialists and Research Institute: Rhonda Potter, office lead

Rogers State University: Bruce McGowan, associate vice president, and Ronda Riden-Wilson, campus services coordinator

SAFE-NOW: Lori Moynihan, RN, CFN, SANE-A, SANE-P, executive director

State of Oklahoma: John Ford, state senator

Washington County Health Department: Sandra Schmidt, accreditation coordinator

Washington County Wellness Initiative: M'Liss Jenkins, MS, LPC, LMFT, coordinator

Washington County focus group participants

Washington County survey respondents

Introduction

It's said that home is where the heart is. And the home of Ascension St. John is our community. Since the arrival of its founding sponsor, the Sisters of the Sorrowful Mother, in Tulsa in 1914, the heart of St. John's mission has been to meet the needs of the communities it serves, especially those most vulnerable.

To ensure our efforts best meet the needs of our communities and will have a lasting and meaningful impact, each of St. John's six hospitals conduct a triennial community health needs assessment (CHNA). The needs of populations deemed vulnerable are a central focus of the assessment.

> According to the Catholic Health Association of the United States, a CHNA is "a systematic process involving the community to identify and analyze community health needs and assets in order to prioritize, plan and act upon unmet community health needs."

CHNAs help identify the most pressing needs of our communities, build relationships with community partners, and direct resources where they are most needed. This community-driven process has the potential to leverage resources, enhance program effectiveness and strengthen communities. The process serves as the foundation for identifying those in greatest need, recognizing existing assets and resources, developing strategic plans and mobilizing hospital programs and community partners to work together to promote the health and well-being of the community. CHNAs are essential to community building and health improvement efforts. These powerful tools have the potential to be catalysts for immense community change.

The 2010 Patient Protection and Affordable Care Act, more commonly known as the Affordable Care Act (ACA), requires nonprofit, tax-exempt hospitals to conduct a CHNA every three years. To meet requirements, hospitals must analyze and identify the health needs of their communities, then develop and adopt an implementation strategy to meet the identified needs. The findings from the assessment and implementation strategy are made widely available to the public.

This report includes the following:

- A description of the community served by the hospital
- The process and methods used to obtain, analyze and synthesize secondary and primary (community input) data
- The significant health needs in the community, taking into account the needs of those most vulnerable and geographic areas of greatest need
- The process and criteria used to prioritize the most significant health needs of the community
- An overview of the prioritized health needs to be addressed in this CHNA cycle, as well as needs that will not be part of the implementation strategy
- An evaluation of the impact of any actions that were taken by the hospital and health system since the preceding CHNA to address those priority health needs

St. John's six hospital facilities — St. John Medical Center, St. John Owasso, St. John Broken Arrow, St. John Sapulpa, Jane Phillips Medical Center and Jane Phillips Nowata Health Center — conducted the first set of CHNAs and implementation strategies in fiscal year 2013. The second cycle of CHNAs and implementation strategies was completed in FY 2016. Over the past three years, the health system and its hospitals have worked diligently to address a set of prioritized health needs based on our FY 2016 assessments and implementation strategy. An updated set of CHNAs were conducted by St. John's six hospitals during FY 2019.

St. John is pleased to present the 2019 CHNA reports for each of its six hospitals, providing an overview of the significant community health needs identified in the communities served by each hospital. This report is the Jane Phillips Medical Center (JPMC) CHNA. For the purposes of this assessment, JPMC's primary service area, or community, is defined as Washington County, Okla.

The goal of this report is to offer a meaningful understanding of the most pressing health needs across the Washington County community, as well as to guide planning efforts to address those needs. Special attention has been given to the needs of vulnerable populations, unmet health needs or gaps in services, and input gathered from the community. Findings from this report will be used to identify, develop and target hospital, health system and community initiatives and programming to better serve the health and wellness needs of our community.

For an executive summary of this report, see Appendix 1.

Our Health System

Established in 1926 with the opening of St. John's Hospital (now St. John Medical Center) in Tulsa, Okla., Ascension St. John is a fully integrated healthcare delivery system encompassing six hospitals and more than 90 clinics and facilities in eastern Oklahoma and southeastern Kansas. St. John was founded by our legacy sponsors, the Sisters of the Sorrowful Mother.
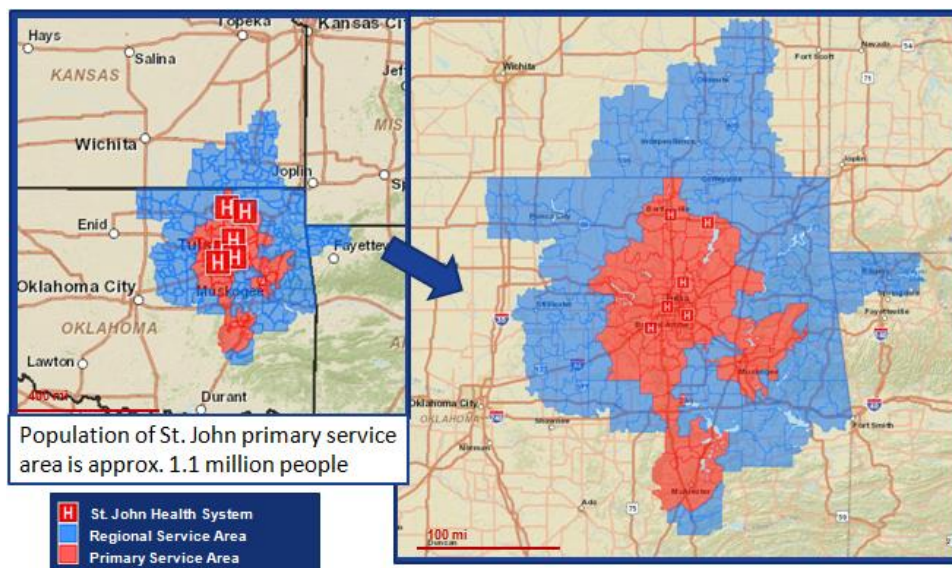
Now, St. John is part of Ascension, the largest nonprofit health system in the U.S. and the world's largest Catholic health system. Ascension is dedicated to transformation through innovation across the continuum of care and committed to delivering compassionate, personalized care to all, with special attention to those living in poverty or otherwise deemed vulnerable. Ascension operates about 2,500 sites of care — including 141 hospitals and more than 30 senior living facilities — in 22 states and the District of Columbia. With Ascension, St. John has access to additional resources to help us continue to transform the quality of care we provide our patients.

St. John is organized as a tax-exempt integrated healthcare delivery system. Our mission is to continue the healing ministry of Jesus Christ by providing medical excellence and compassionate care to everyone we serve. Across the region, St. John provided more than $109 million in community benefit and care of people living in poverty in fiscal year 2018. In fiscal year 2018, Ascension provided nearly $2 billion in care of people living in poverty and other community benefit programs.

Together, St. John and Ascension are focused on delivering healthcare that is safe, healthcare that works and healthcare that leaves no one behind. St. John serves as an important safety-net provider of a broad continuum of healthcare services to the citizens of northeastern Oklahoma and the surrounding region. The health system's service area contains 260 ZIP codes in 32 counties in Oklahoma, Kansas and Arkansas. The health system's primary service area is around 1.1 million people (Figure 1). We are working to transform healthcare not just in our local communities, but across the nation, promoting high quality and cost effectiveness and emphasizing prevention, holistic wellness and episodic care.

St. John hospitals include St. John Medical Center, St. John Owasso, St. John Broken Arrow, St. John Sapulpa, Jane Phillips Medical Center and Jane Phillips Nowata Health Center, together having about 800 beds in service. Each of these six hospitals operates a full-service, 24-hour, 365-day emergency room providing both urgent and emergency care to all individuals, regardless of their ability to pay. St. John also has an array of partner and subsidiary healthcare facilities. Other St. John entities include Regional Medical Laboratory (RML), St. John Clinic and St. John Urgent Care. St. John joint ventures include Oklahoma Cancer Specialists and Research Institute, Prairie House Assisted Living & Memory Care, and Tulsa Bone & Joint Associates.

Figure 1: St. John service area

Population of St. John primary service area is approx. 1.1 million people

St. John Health System
Regional Service Area
Primary Service Area

Facts and figures

- St. John owns six hospitals in northeastern Oklahoma, with about 800 total beds in service.
- Around 7,000 associates work within St. John (not including ministry-wide functions or joint ventures).
- St. John owns and operates St. John Clinic, which operates as a multi-specialty physician clinic, employing more than 500 physicians, physician assistants, nurse practitioners and certified nurse anesthetists. St. John Clinic has dozens of physician offices and clinics (including Urgent Care clinics) throughout Tulsa and northeastern Oklahoma.
- St. John owns RML, one of the region's largest reference laboratories, providing services to many hospitals and physician practices throughout the area.
- St. John owns 50 percent of CommunityCare Managed Health Care Plans of Oklahoma, one of the area's largest health insurers. CommunityCare offers many healthcare insurance options for individuals and families, including the region's highest-rated Medicare Advantage plan for those 65 or older.
- St. John touches the lives of thousands of patients every day:
  - More than 52,000 annual hospital admissions, including 14,000 "observation" patients.
  - More than 31,000 annual surgeries performed in St. John hospitals. St. John also is a minority owner in two ambulatory surgery centers that perform more than 28,000 annual outpatient surgeries.
  - More than 3,800 annual births at St. John hospitals.
  - More than 148,000 annual patient visits to St. John hospital emergency departments.
  - More than 83,000 annual urgent care visits to Urgent Care clinics.
  - Nearly 500,000 annual patient visits to St. John Clinic physician offices.
  - RML performs more than 9.1 million annual laboratory tests.

Mission, Vision and Values

Our Mission, Vision and Values guide everything we do at St. John and Ascension. They are foundational to our work to transform healthcare and express our priorities when providing care and services, particularly to those most in

need. As the health system develops initiatives to address needs within the communities we serve, we strive to ensure that our Mission, Vision, and Values are upheld.

Mission

Rooted in the loving ministry of Jesus as healer, we commit ourselves to serving all persons with special attention to those who are poor and vulnerable. Our Catholic health ministry is dedicated to spiritually-centered, holistic care which sustains and improves the health of individuals and communities. We are advocates for a compassionate and just society through our actions and our words.

Vision

We envision a strong, vibrant Catholic health ministry in the United States which will lead to the transformation of healthcare. We will ensure service that is committed to health and well-being for our communities and that responds to the needs of individuals throughout the life cycle. We will expand the role of laity, in both leadership and sponsorship, to ensure a Catholic health ministry in the future.

Values

Service of the poor: generosity of spirit, especially for people most in need
Reverence: respect and compassion for the dignity and diversity of life
Integrity: inspiring trust through personal leadership
Wisdom: integrating excellence and stewardship
Creativity: courageous innovation
Dedication: affirming the hope and joy of our ministry

Jane Phillips Medical Center

Jane Phillips Medical Center (JPMC) is a 105-bed hospital located in the city of Bartlesville, Okla. After becoming affiliated with St. John in 1996, JPMC became fully integrated into the health system in 2002. A board of directors governs the hospital and ensures that comprehensive medical services are available to residents of northeastern Oklahoma and southeastern Kansas, regardless of whether or how they can pay. JPMC offers a full range of services, including 24/7 emergency care, general medicine, surgery, cardiopulmonary care, maternal and infant care, cancer treatment, orthopedics, sleep diagnostics, rehabilitation and physical medicine, imaging, critical care and wound care. JPMC physicians, nurses and specialists work with state-of-the-art technologies to provide high-quality care.

JPMC touches the lives of thousands of patients and their loved ones every day:

- More than 6,600 annual hospital admissions, including "observation" patients
- More than 5,400 annual surgeries performed
- More than 500 annual births
- More than 28,000 annual patient visits to the emergency department
- More than 62,000 "other" annual patient visits for diagnostic testing and treatment

With quality as a top priority, JPMC is nationally recognized and has received various recent awards, including the following:

- Recognized as a recipient of both the Mission: Lifeline® Gold Receiving Quality Achievement Award and Mission: Lifeline EMS Gold Plus Award from the American Heart Association
- Named one of the "Top 100 Rural & Community Hospitals" in the U.S. by iVantage Health Analytics and The Chartis Center for Rural Health in 2018
- Achieved recertification of the Pulmonary Rehab Program by the American Association of Cardiovascular and Pulmonary Rehabilitation; JPMC's program was the first to be certified in Oklahoma in 2014

- Received the American College of Cardiology's NCDR ACTION Registry Platinum Performance Achievement Award, the highest level, in 2017

Community Served

The definition of the community served by the hospital provided the foundation on which our community health needs assessment (CHNA) and subsequent implementation strategy decisions were based. In defining the community served by Jane Phillips Medical Center (JPMC), the following were taken into consideration:

- General geographic area
- Geopolitical definitions
- Primary and regional service areas
- Patient population
- Areas and populations served by the hospital's community benefit programs
- Opportunity areas, or geographic areas encompassing at-risk, vulnerable and/or underserved populations
- Availability of health information and data

JPMC serves the entire northeastern Oklahoma region, as well as parts of Kansas and Arkansas. The primary service area is Washington County, Okla., and the surrounding counties. However, JPMC serves patients who live throughout the northeastern Oklahoma region and beyond. For the purposes of this CHNA, the "community served" is defined as Washington County (see Figure 2). The decision to focus on the geopolitical definition of Washington County was largely influenced by the fact that a significant number of patients who utilize JPMC services reside in Washington County. In fact, an estimated 52.7 percent of inpatient and outpatient visits originated from Washington County in the 2018 calendar year. Within Washington County, the top five ZIP codes of patient origin in CY 2018 were 74006, 74029, 74022, 74051 and 74061.

In addition to the fact that a large number of patients served by the hospital reside in Washington County, most public data is available at the county level. Additional factors influencing the definition of the community were the areas and populations served by the hospital's community benefit programs and the geographic areas for populations deemed heavily at-risk or vulnerable. A number of the hospital's community benefit programs serve residents in Washington County. Many of these programs serve residents who are living in poverty and deemed particularly vulnerable.

JPMC is based out of the city of Bartlesville, and the bulk of the community's population is concentrated in and around the city. Accordingly, Bartlesville serves as the primary area of focus within the Washington County community. JPMC's community health improvement efforts that result from this CHNA will primarily center on Bartlesville. However, an effort was made to focus on the health needs and assets of Tulsa County as a whole, and our efforts will also extend to other cities and towns within Washington County based on lessons learned through our work with the Bartlesville community.

Figure 2: Washington County map
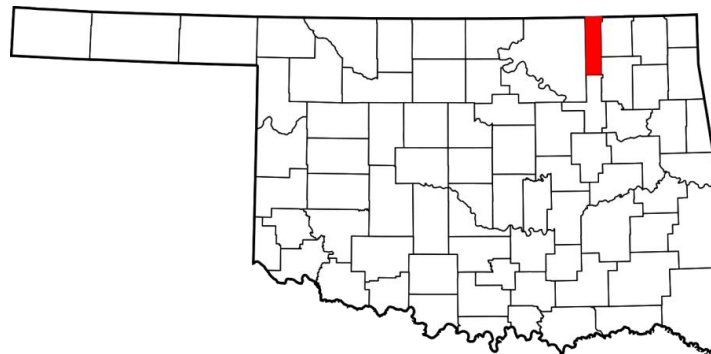
Washington County is located in the U.S. state of Oklahoma. Its county seat and largest city is Bartlesville. Founded at statehood in 1907, it was named after U.S. President George Washington. Before statehood, the area was part of lands owned by the Osage Nation and later the Cherokee Nation in Indian Territory.[1] Several oil companies set up headquarters in the county over the years, most notably Phillips Petroleum Co. (now ConocoPhillips) in Bartlesville.

Washington County, located in northeastern Oklahoma, is the smallest county by square miles in the state. Counties adjacent to Washington County include Montgomery and Chautauqua counties in Kansas and Nowata, Rogers, Tulsa and Osage counties in Oklahoma. The cities and towns officially recognized in Washington County are Bartlesville, Copan, Dewey, Ochelata, Ramona and Vera.

According to the American Community Survey, Creek County had an estimated population of 51,867 in 2017.[2] The population density for the county is about 123 people per square mile.[3] The median age is 40 years, and 90.6 percent of adult residents have attained a high school diploma or higher. An estimated 14 percent of residents live below the poverty line.[2] Washington County's largest industries by employment are healthcare, manufacturing, retail, education and hospitality.

City of Bartlesville

JPMC is based out of the city of Bartlesville. Bartlesville is located in northeastern Oklahoma and is about a one-hour drive north of Tulsa, accessible by Interstate 75 and U.S. Route 60. Bartlesville has an estimated population of about 36,400 residents, making it the largest city in Washington County. An estimated 14.9 percent of residents live below the poverty line.[2]

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[1] The Encyclopedia of Oklahoma History and Culture by the Oklahoma Historical Society (retrieved from www.okhistory.org/publications)
[2] 2013-2017 American Community Survey 5-Year Estimates by the American Community Survey (retrieved from https://factfinder.census.gov)
[3] QuickFacts by the U.S. Census Bureau (retrieved from www.census.gov/quickfacts)

CHNA Process: Methodology

Community health needs and assets for Washington County were determined using a combination of secondary and primary data (community input). Secondary data is existing data that has already been collected and published by another party. Secondary data about the health status of the population at the state and county level is routinely collected by governmental and non-governmental agencies through surveys and surveillance systems. In contrast, primary data is new data and is collected or observed directly through firsthand experience. Many methods can be used to gather community input, including key informant interviews, focus groups, listening circles, community meetings and forums, and surveys.

Including multiple data sources as well as resident and stakeholder input is especially important when prioritizing community health needs. If alternative data sources support similar conclusions, then confidence is increased regarding the most pressing health needs in a community. Data included in this assessment were obtained through multiple sources and methods designed to gather both qualitative and quantitative information. Qualitative data is descriptive information, and quantitative data is numeric information. Data collection methods and sources used in this assessment include the following:

- Comprehensive review of secondary data
- Six community health forums with around 120 community leaders and 13 health system leaders (one forum with 11 community leaders and three health system leaders in Washington County)
- Twenty-two focus groups with 233 community members (two focus groups with 19 community members in Washington County)
- Online survey of 801 community members (89 in Washington County)
- Input from the public health workforce and local coalitions/partnerships
- Input from the health system's Community Engagement Committee

A comprehensive review of secondary data sources served as the foundation for assessing the community. Recognizing its vital importance in understanding the health needs and assets of the community, this assessment primarily focused on gathering and summarizing community input. Accordingly, input from community members, community leaders and representatives, local coalitions/partnerships, and health system leadership was obtained to expand upon information gleaned from the secondary data review. A concerted effort was made to obtain community input from persons who represent the broad interests of the community, including those with special knowledge and expertise of public health issues and populations deemed vulnerable.

Detailed descriptions of our approach, the secondary data and community input used in this assessment, and the methods of collecting and analyzing this information are included in the sections that follow.

Our Approach

To effectively identify and address the health needs of a community, it is essential to have an understanding of health and the conditions that contribute to health and well-being. According to the World Health Organization, health is defined as a "state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity."[4] A person's state of health is a result of several interwoven and contributing factors and levels of influence. Accordingly, our goal was to follow a more holistic approach to assessment and community health improvement. This assessment reflects a multitude of factors influencing the health of our community.

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[4] World Health Organization. (1948). *Preamble to the Constitution of the World Health Organization*. Adopted by the International Health Conference, N.Y. 19-22 June, 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100) and entered into force on 7 April 1948.

Social-ecological model

The social-ecological model (SEM) of health is a public health framework used to describe the multilevel systems of influence that explain the complex interaction between individuals and the social context in which they live and work (see Figure 3). The SEM provides a framework to help understand the various factors and behaviors that affect health and wellness. Health and well-being is shaped not only by behavior choices of individuals, but also by complex factors that influence those choices within the social environment through reciprocal causation.[5,6] With this model, we can closely examine a specific health issue in a particular setting or context. For example, the model can help identify factors that contribute to heart disease in specific populations. With this knowledge, effective heart disease interventions can be developed for a specific population with the greatest impact in mind.

Human behavior is difficult to change and is nearly impossible to modify without understanding the environment in which one lives. To promote behavior that supports health and wellness, efforts need to focus on behavior choices and the multitude of factors that influence those choices. The SEM helps identify factors that influence behavior by considering the complex interplay between five hierarchical levels of influence: 1) individual or intrapersonal, 2) interpersonal, 3) institutional or organizational, 4) community, and 5) societal/public policy factors (see Figure 3). The model demonstrates how the changes and interactions between these five levels over the course of one's life affect health and wellness. Through utilizing the SEM, the likelihood of developing sustainable interventions with the broadest impact on health and wellness is increased.

Figure 3: social-ecological model of health

Source adapted from: Hanson, D., Hanson, J., Vardon, P., McFarlane K., Lloyd, J., Muller, R., et al. (2005). The injury iceberg. An ecological approach to planning sustainable community safety interventions. Health Promotion of Australia, 16(1), 5-10.

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[5] Hanson, D., Hanson, J., Vardon, P., McFarlane K., Lloyd, J., Muller, R., et al. (2005). The injury iceberg. An ecological approach to planning sustainable community safety interventions. *Health Promotion of Australia, 16*(1), 5-10.
[6] McLeroy, K.R., Bibeau, D., Steckler, A. & Glanz, K. (1988). An ecological perspective on health promotion programs. *Health Education Quarterly, 15*(4), 351-377.

Determinants of health

Health is a complex and multidimensional concept. The Centers for Disease Control and Prevention describes health as "influenced by the health care we receive, our own choices and our communities."[7] To better understand the factors that contribute to the health of our community, this assessment utilizes a population health model developed by the University of Wisconsin Population Health Institute known as the county health rankings model (see Figure 4).

Figure 4: University of Wisconsin Population Health Institute's county health rankings model

Source: Courtesy of University of Wisconsin Population Health Institute. (2016). County Health Rankings & Roadmaps. Retrieved from: www.countyhealthrankings.org.

Health outcomes signify a community's overall health. Two types of health outcomes are typically assessed: length of life (how long people live) and quality of life (how healthy people feel while alive).[8] Health factors contribute to health and are otherwise known as determinants of health. There are five commonly recognized determinants of health[9]:

1. Biology and genetics
2. Clinical care

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[7] Centers for Disease Control and Prevention. (2015). *Community Health Improvement Navigator*. Retrieved from: http://www.cdc.gov/chinav/.

[8] University of Wisconsin Population Health Institute. (2016). *County Health Rankings & Roadmaps.* Retrieved from: www.countyhealthrankings.org.

[9] Centers for Disease Control and Prevention. (2014). *NCHHSTP Social Determinants of Health: Definitions*. Retrieved from: http://www.cdc.gov/nchhstp/socialdeterminants/definitions.html.

3. Health behaviors
4. Physical environment
5. Social and economic factors

This assessment focuses on four of the five aforementioned determinants of health: clinical care, health behaviors, physical environment and socioeconomic factors. Each of these determinants of health is, in turn, based on several measures (see Figure 4).[7] Some determinants of health are more modifiable than others. It is important to note that clinical care alone is not enough to improve community health, as it only accounts for 20 percent of the factors that influence health.[6] Together, clinical care and health behaviors account for only 50 percent of the intervenable factors that contribute to health. Socioeconomic factors and the physical environment account for the remaining 50 percent of impactable health determinants (see Figure 5)[6]. Therefore, to have a greater impact on the health of the community, it is important to focus on all four determinants of health for assessment and intervention.

Figure 5: social determinants of health
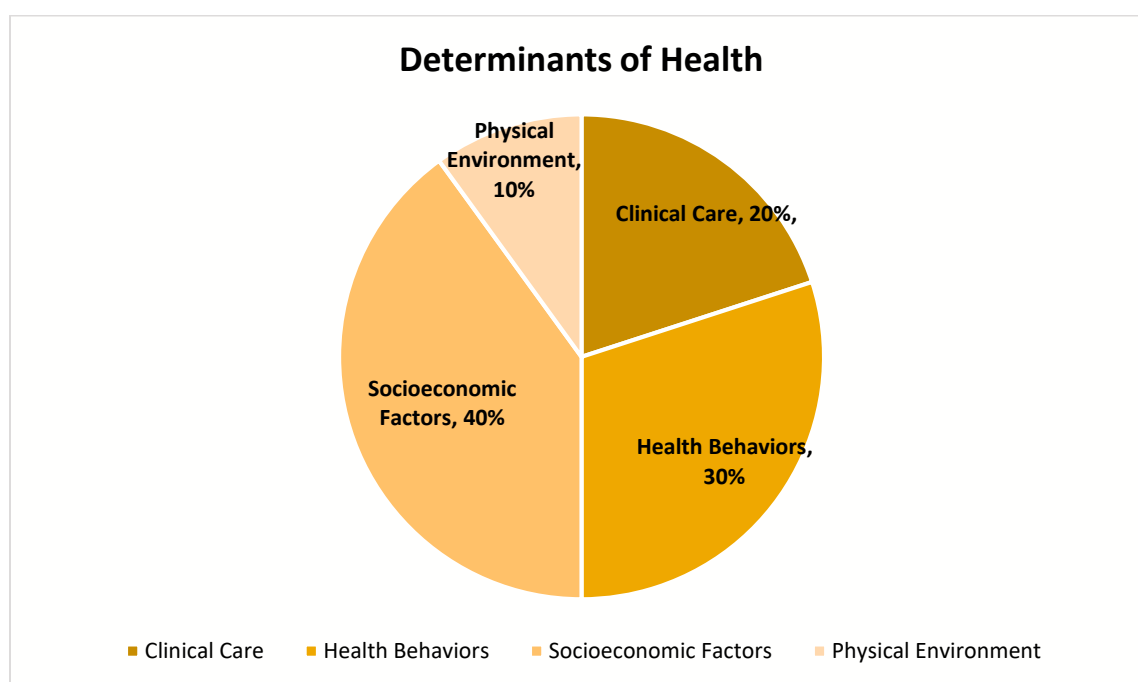
Determinants of Health

Physical Environment, 10%
Clinical Care, 20%,
Socioeconomic Factors, 40%
Health Behaviors, 30%

■ Clinical Care ■ Health Behaviors ■ Socioeconomic Factors ■ Physical Environment

Source: University of Wisconsin Population Health Institute. (2016). County Health Rankings & Roadmaps. Retrieved from: www.countyhealthrankings.org.

Health disparities

As aforementioned, this community health needs assessment (CHNA) process included input from the broad community, as well as populations deemed underserved, at-risk or otherwise vulnerable. To highlight the health needs of these populations, this assessment examines health disparities in the community served. Health disparities are defined by Healthy People 2020 as "a particular type of health difference that is closely linked with social, economic and environmental disadvantage."[10]

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[10] U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. (2010). *The Secretary's Advisory Committee on National Health Promotion and Disease Prevention Objectives for 2020. Phase I report: Recommendations for the framework and format of Healthy People 2020. Section IV: Advisory Committee findings and recommendations*. Retrieved from: http://www.healthypeople.gov/sites/default/files/PhaseI_0.pdf.

Certain disadvantaged populations are at greater risk of experiencing of health disparities. Health People 2020 asserts "health disparities adversely affect groups of people who have systematically experienced greater obstacles to health based on their racial or ethnic group; religion; socioeconomic status; gender; age; mental health; cognitive, sensory or physical disability; sexual orientation or gender identity; geographic location; or other characteristics historically linked to discrimination or exclusion."[7]

Health inequities and health equity

Health inequities are closely linked to health disparities and are also closely examined in this assessment. Health inequities are "differences in health that are avoidable, unfair and unjust."[11] Health inequities are closely associated with social, economic and environmental conditions. In contrast, health equity is focused on the elimination of health and healthcare disparities. Healthy People 2020 defines health equity as the "attainment of the highest level of health for all people."[9] In short, health equity pertains to efforts to ensure that all people have full and equal access to opportunities that enable them to lead healthy lives.

Social determinants of health

When examining health disparities health inequities, it is important to consider the social determinants of health. These conditions include the social, economic and physical factors and resources contributing to a range of environments and settings and are often responsible for health disparities and inequities. According to Healthy People 2020, there are five generally recognized categorical types of social determinants of health[12]:

> Healthy People 2020 describes social determinants of health as the "conditions in the places where people live, learn, work and play" that affect a wide range of health risks and outcomes."

1. Economic stability
   - Access to economic and job opportunities
   - Poverty
   - Food security
   - Housing stability
2. Education
   - Access to higher education opportunities
   - High school graduation
   - Early childhood education and development
   - Language
   - Literacy
3. Social and community context
   - Social cohesion and support
   - Availability of community-based resources and resources to meet daily living needs
   - Discrimination
   - Incarceration
4. Health and healthcare
   - Access to healthcare services (e.g., primary and specialty care)
   - Health literacy

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[11] U.S. Department of Health and Human Services, Office of Minority Health. National Partnership for Action to End Health Disparities. (2010). *The National Plan for Action.* Retrieved from: http://www.minorityhealth.hhs.gov/npa/templates/browse.aspx?&lvl=2&lvlid=34.

5. Neighborhood and physical (built) environment
    - Environmental conditions (e.g., exposure to toxins and other physical hazards, green spaces, physical barriers, aesthetics of environment)
    - Access to sidewalks and bike lanes
    - Safe and affordable housing
    - Access to healthy foods
    - Public safety (e.g., crime and violence)

Addressing health disparities, health equity and social determinants of health through community building and improvement initiatives is an important component of improving the health of the community. Therefore, indicators of health-related health disparities, health equity and social determinants of health are a central focus of this assessment and our health system's community health improvement efforts. Central to our efforts to improve the health of individuals and communities is our focus on promoting health and well-being of all people — and a commitment to health equity and eliminating barriers to good health.

Geographic Areas of Greatest Need

Our health and well-being are products of not only the health care we receive, but also the places where we live, learn, work and play.[6] As a result, our ZIP code can be more important than our genetic code. Identifying areas of greatest need was an important component of this assessment, as it helped us to identify where there are at-risk and vulnerable populations most in need. This allows us to ensure our efforts include programs to address vulnerable populations, as such programs and populations have the potential for greatest gains.[6]

Priority Populations

Although this assessment aims to include information on all populations in the geographic area, a special effort was made to incorporate information on the health and well-being of priority populations, or those most in need. Priority populations focused on in this assessment include, but were not limited to, people living in poverty, children, pregnant women, older adults, people who are uninsured and underinsured, members of ethnic or minority groups, members of medically underserved populations, and otherwise vulnerable or at-risk populations. This focus ensures alignment with our mission and that subsequent implementation strategies specifically meet the needs of the most vulnerable.

Community Engagement and Collaboration

The process of conducting CHNAs and developing implementation strategies serves as an ideal opportunity for St. John to initiate and strengthen mutually beneficial relationships within the communities we serve. Recognizing this opportunity and the fact that we cannot do this work alone, we engaged, partnered and collaborated with a diverse set of community stakeholders in this process. These stakeholders represented a variety of community sectors, including community members, nonprofit and community-based organizations, safety-net providers, local schools and educational institutions, local government officials and agencies, churches and other faith-based organizations, healthcare providers, private businesses, community developers, law enforcement agencies, community health centers, healthcare consumer advocates, and the public health workforce. It is important to note that each sector in the community, including community members, has a unique role. Each sector brings critical strengths and insights to our collaboration.

Working together has a greater impact than working alone. Engaging the community and joining forces with community stakeholders allows all involved to share in the experience of understanding community health needs and to work collaboratively with the communities we serve. Working in partnership with a diverse set of community stakeholders ensures we are well-positioned to help improve health outcomes among vulnerable and disparate

populations. This work will ultimately allow us to address the social determinants of health to measurably improve the health outcomes of the entire community. Furthermore, it is our hope that our engagement of the community will serve to empower community-driven solutions for community health improvement.

Limitations and Information Gaps

Although it is quite comprehensive, this assessment cannot measure all possible aspects of health and cannot represent every possible population within Washington County. This constraint limits the ability to fully assess all the community's health needs.

For example, certain population groups such as the transient population, institutionalized people or those who only speak a language other than English or Spanish may not be adequately represented in the secondary data and community input. Other population groups such as lesbian/gay/bisexual/transgender+ residents, undocumented residents and members of certain racial/ethnic or immigrant groups might not be identifiable or might not be represented in numbers sufficient for independent analysis. In addition, the following challenges resulted in limitations for assessing the health needs of the community:

- Irregular intervals of time in which indicators are measured
- Changes in standards used for measuring indicators
- True service area encompasses several partial counties, but most health data is not available at that level
- Some sources of valuable data are completed with grant funds or budgeted under a prior administration and not repeated, so comparisons cannot be made
- Inconsistencies in reported data
- Limitation in representation from all sectors of the community
- Not all health process and outcome measures available through secondary health data were reviewed due to the broad focus of the assessment

Despite the data limitations, we are reasonably confident of the overarching themes and health needs represented through our assessment data. This is based on the fact the data collection included multiple methods, both qualitative and quantitative, and engaged the hospital as well as participants from the community.

Secondary Data: Community Overview

In identifying the health needs and assets of Washington County, a review of publicly available secondary data was conducted. Ascension St. John consulted with the Tulsa Health Department for the data collection and analysis presented in this section.

Methodology and Sources

The most current secondary data was reviewed for the purpose of providing a comprehensive overview of the community. A variety of non-governmental and governmental data sources were used, including a broad set of indicators from local, state and federal agencies. Indicators are measurements that summarize the state of health and quality of life in the community. County, state and national level public health surveillance was an especially important source of secondary data. Specific data source citations are included throughout the report.

In addition to general indicators of health status, this assessment includes indicators covering many of the social determinants of health. Measures that reflect the health and well-being of priority populations, or those most in need, were also included. Some data comparisons were made at the ZIP code, region, county, state and national levels to allow for evaluation of geographic disparities. Other data considerations included trends over time, county and state level rankings, benchmark comparisons at the state and national levels, organizational needs and priorities, and disparities by age, gender, race/ethnicity, income level and educational attainment. Additionally, the U.S. Department of Health and Human Service's Healthy People 2020 initiative goals were used as indicators for areas for improvement or success.

Recommendations by Ascension, the Catholic Health Association of the United States, the Centers for Disease Control and Prevention, the Oklahoma State Department of Health, the United Health Foundation, the American Hospital Association's Association for Community Health Improvement, and the University of Wisconsin Population Health Institute were considered in determining which health indicators to review. Additional considerations were the indicators reviewed and reported in the partnering entities' assessments as well as the availability of secondary data.

The review covered the following health indicator topics:
- Demographics
- Health outcomes
  - Health outcomes ranking
  - Health status
    - Life expectancy
    - Mortality (causes of death)
    - Hospital utilization
    - Mental health and substance abuse
    - Maternal and child health
    - Infectious diseases
- Health factors
  - Health factors ranking
  - Social and economic factors
    - Educational attainment
    - Unemployment

- Social environment
  - Clinical care
    - Access to care
    - Quality of care
  - Health behaviors and risk factors
    - Fruit and vegetable consumption
    - Physical activity
    - Weight (obese/overweight)
    - High blood pressure and blood pressure management
    - Dental care
    - Teen births
    - Tobacco use
    - Alcohol consumption
    - Drug use
  - Physical (built) environment
    - Air and water quality
    - Housing and transit
    - Food access
    - Access to physical activity opportunities

Oklahoma continues to rank near the bottom in multiple key health status indicators. Many of these outcomes are related to conditions that Oklahomans must live with every day. Poverty, lack of insurance, limited access to primary care, and inadequate prenatal care contribute to the poor health status of our residents, along with risky health behaviors associated with these determinants, such as low fruit/vegetable consumption, low physical activity and a high prevalence of smoking. In 2018, Oklahoma ranked 47th in the nation in health, according to the United Health Foundation.[12] Similar to the state, Washington County ranks poorly in multiple key health status indicators.

Demographics

Population

Total population

The total population is presented simply as the number of individuals living in each ZIP code, according to the 2016 5-year population estimates by the American Community Survey.[13]

Why is this indicator important?

The numeric size of the population is used as the basis for deriving many of the rates for the community health indicators presented later in this report, such as ZIP code specific rates and gender, age, and racial/ethnic specific rates.

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[12] America's Health Rankings by the United Health Foundation (retrieved from www.americashealthrankings.org/ok)
[13] U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates
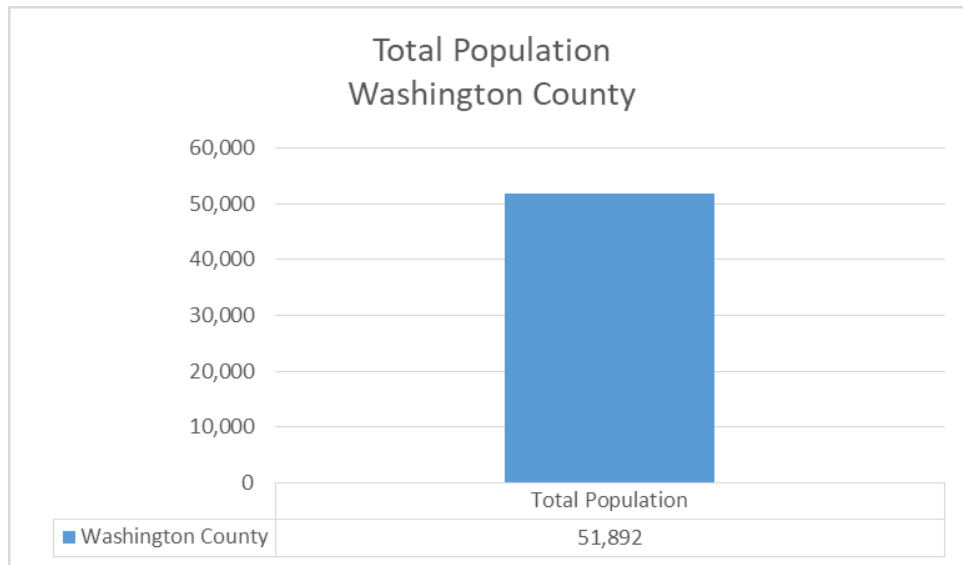
**Total Population
Washington County**

	Total Population
■ Washington County	51,892

Source: U.S. Census Bureau, 2009-2013 5-Year American Community Survey, 2012-2016 American Community Survey 5-Year Estimates

How are we doing?

The Washington County population size of 51,892 has remained relatively stable from 2012 to 2016 with changes in this time frame numbering only in the hundreds. Older age groups have captured a greater relative share of the population over the past several decades, while the share represented by children has declined.

For many of the indicators, when the data was broken down by specific demographics (age group, race, ethnicity), there were too few cases to be reported within the year and/or the time-period specified, and the data was suppressed.

**Gender
Washington County**

	Males	Females
■ Washington County	48.5%	51.5%
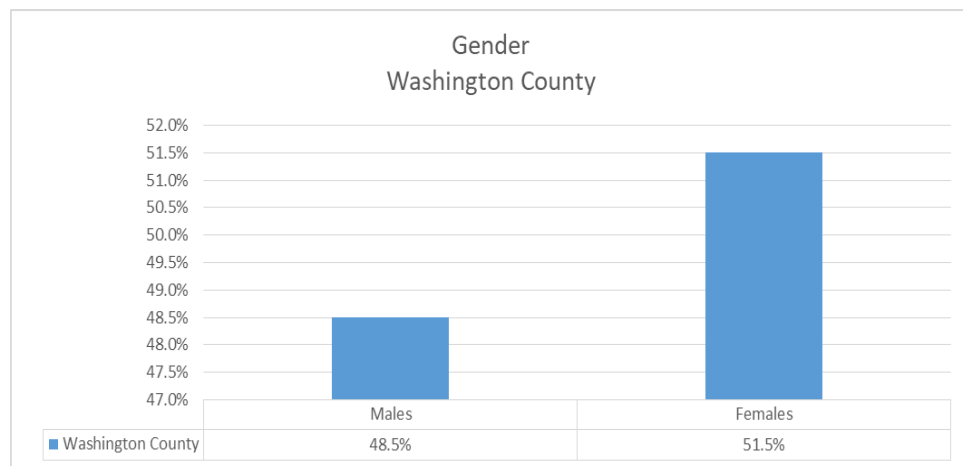
Source: 2016 American Community Survey 5-year estimates

Studying population demographics indicates that the percentage of females was higher than males across Washington County.
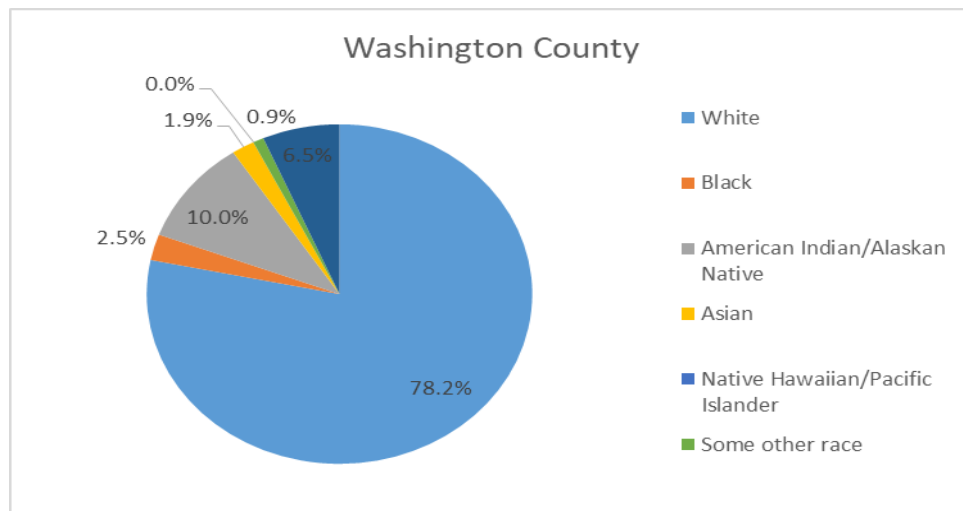
Source: 2016 American Community Survey 5-year estimates

Although the highest percentage of the population in Washington County is white (78.2%), it is important to note that 10.0% is American Indian/Alaskan Native and 6.5% is Native Hawaiian/Pacific Islander.
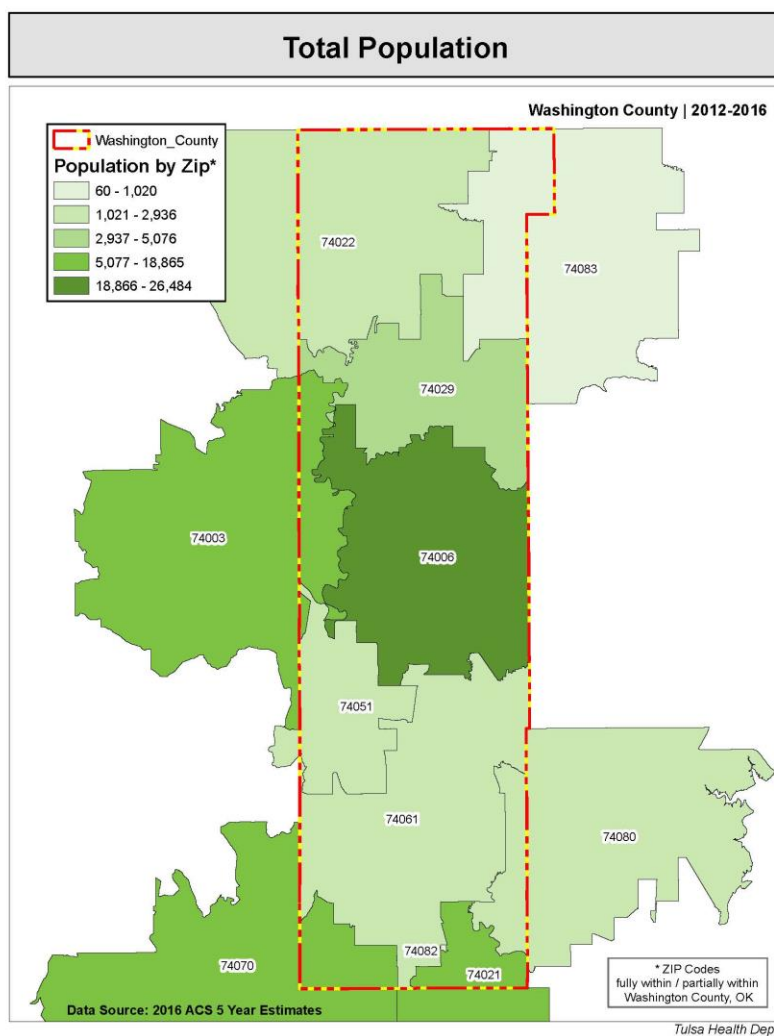
The ZIP code with the largest population in Washington County (18,866 – 26,484) is 74006 (Bartlesville). Additionally, Bartlesville covers portions of 74051 and 74003 which increases the population totals. The area with the lowest population (60-1020) is ZIP code 74083 (Wann/Copan).

Please note that the majority of ZIP code 74080 (Talala area) is located in Roger's County, ZIP code 74070 (Skiatook) crosses multiple counties, and 74003/74022 is part of Osage County. Please note that the majority of ZIP code 74083 is in Nowata County and will be reflected in greater detail in the Nowata County analysis. Additionally, 74083 (Wann/Noxie) has the lowest population totals which could affect the outcome of the data.

Population change

This demographic indicator is presented as the percentage change in the population within each ZIP code from the 2012 Census to the 2016 American Community Survey 5-year estimates. There was minimal change in ZIP code boundaries in this intervening period.

Why is this indicator important?

Trends in general population growth and decline help target specific locations and/or demographic groups where public health efforts should be focused to ensure adequate access to community-based programs.

How are we doing?
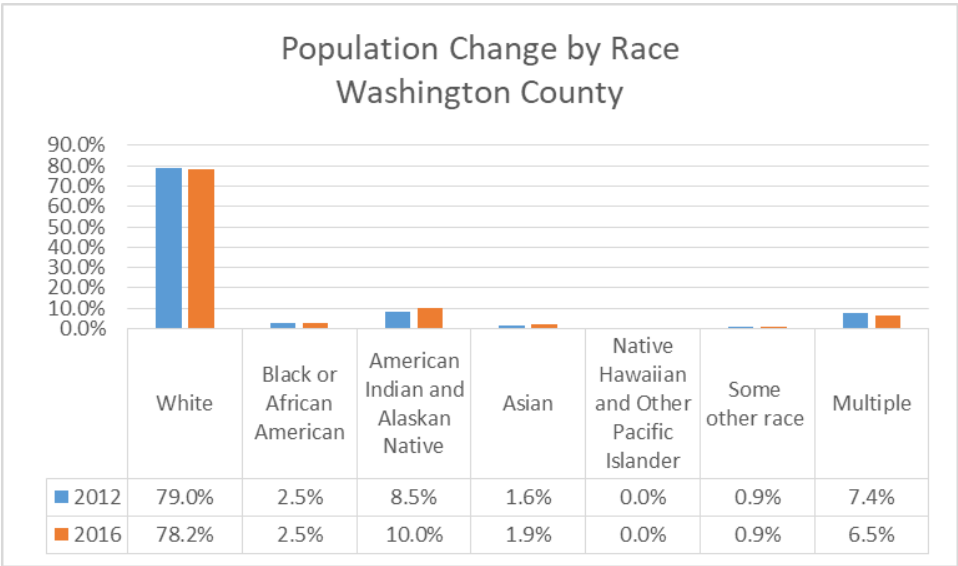
|	White	Black or African American	American Indian and Alaskan Native	Asian	Native Hawaiian and Other Pacific Islander	Some other race	Multiple
■ 2012	79.0%	2.5%	8.5%	1.6%	0.0%	0.9%	7.4%
■ 2016	78.2%	2.5%	10.0%	1.9%	0.0%	0.9%	6.5%

Source: U.S. Census Bureau, 2009-2013 5-Year American Community Survey, 2012-2016 American Community Survey 5-Year Estimates

The biggest change noted was an increase of people reported to be Native American or Alaskan Native in Washington County, which rose from 8.5% in 2012 to 10.0% in 2016.
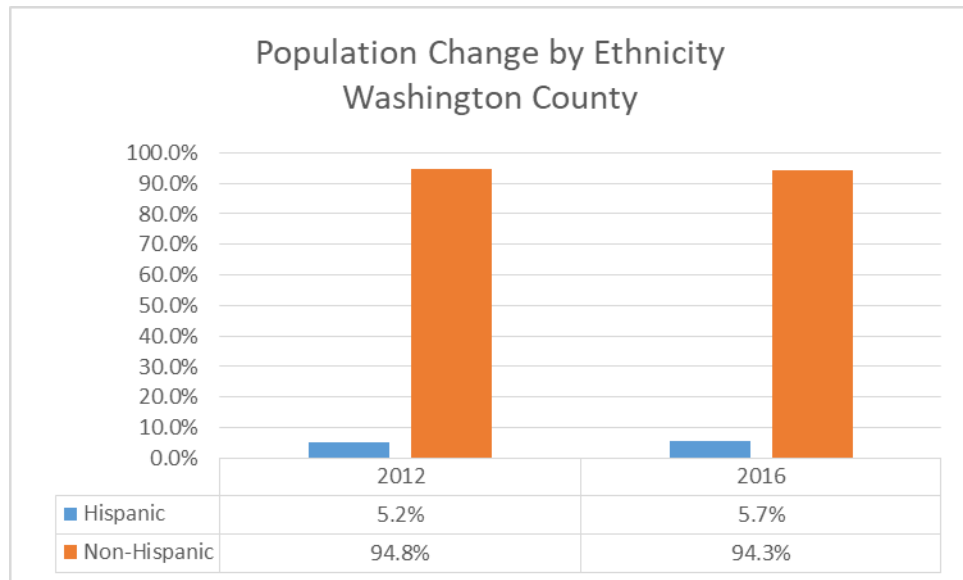
Population Change by Ethnicity
Washington County

	2012	2016
■ Hispanic	5.2%	5.7%
■ Non-Hispanic	94.8%	94.3%

Source: U.S. Census Bureau, 2009-2013 5-Year American Community Survey, 2012-2016 American Community Survey 5-Year Estimates

There was very little change in the distribution of Hispanics and Non-Hispanics in Washington County between 2013 and 2016.

Households with limited English

This demographic indicator reports the percentage of the population aged 5 and older living in Limited English speaking households. A "Limited English speaking household" is one in which no member 14 years old and over (1) speaks only English at home or (2) speaks a language other than English at home and speaks English "very well."

Why is this indicator important?

This indicator is significant as it identifies households and populations that may need English-language assistance. These indicators are relevant because an inability to speak English well creates barriers to healthcare access, provider communications, and health literacy/education.

How are we doing?

Households with Limited English
Washington County

	Washington County	Oklahoma	United States
■ Limited English	0.7%	2.2%	4.5%
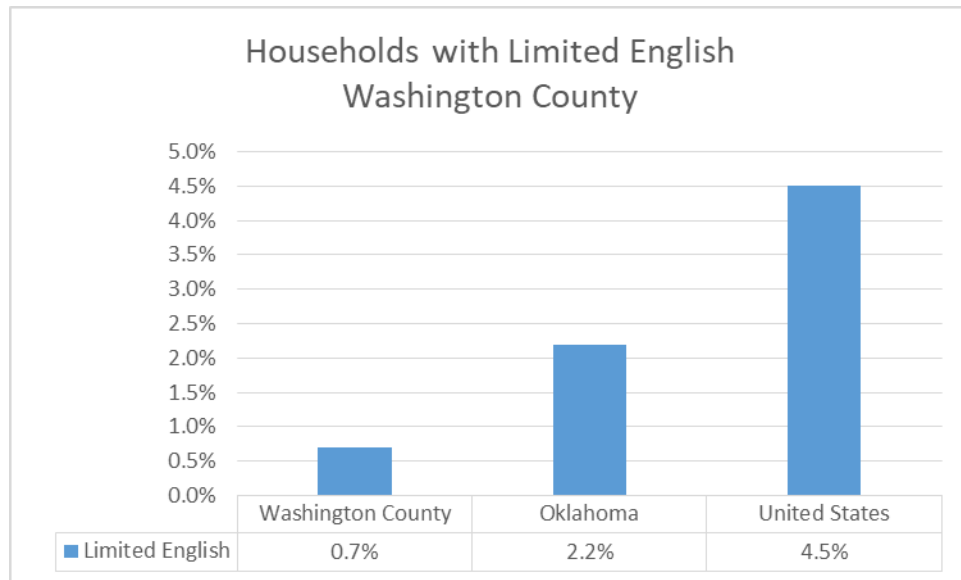
Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

Compared to Oklahoma and the United States as whole, the percentage of people who reportedly speak limited English in Washington County is 0.7% which is very small.

Veterans

This demographic indicator reports the percentage of the veterans among the civilian population who are 18 years and older, according to the 2016 5-year population estimates by the American Community Survey.

Why is this indicator important?

This indicator is significant as it identifies veterans and their needs at the community level. Data about veterans helps plan and fund programs that provide assistance or services for veterans and evaluate other programs and policies to ensure they fairly and equitably serve the needs of veterans. These statistics are also used to enforce laws, policies, and regulations against discrimination in society.

How are we doing?

Percentage of Veterans
Washington County

	Washington County
■ Percentage of Veterans	9.9%

Veterans by Age
Washington County

	18 to 34	35 to 54	55 to 64	65 to 74	75 and over
Washington County	10.5%	19.0%	14.1%	22.4%	33.9%
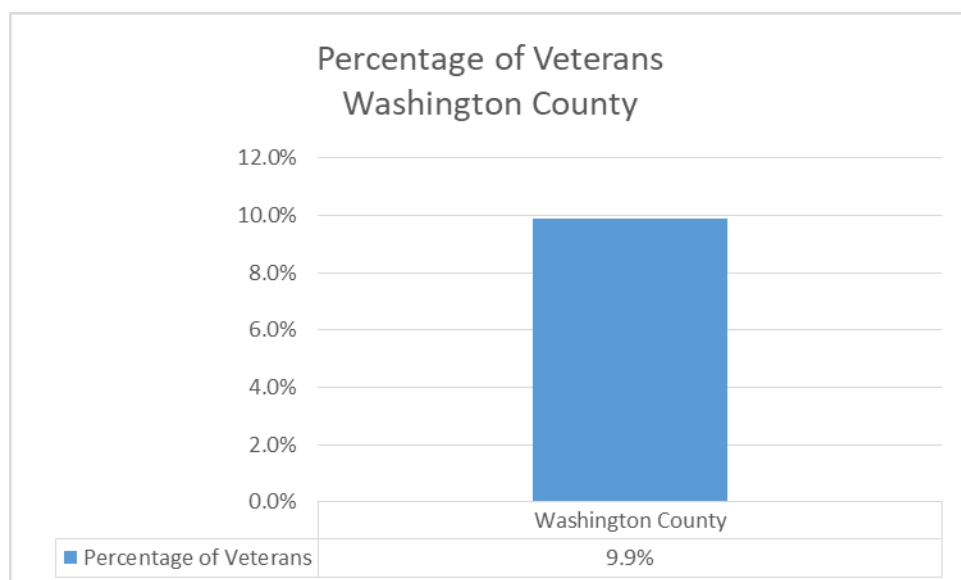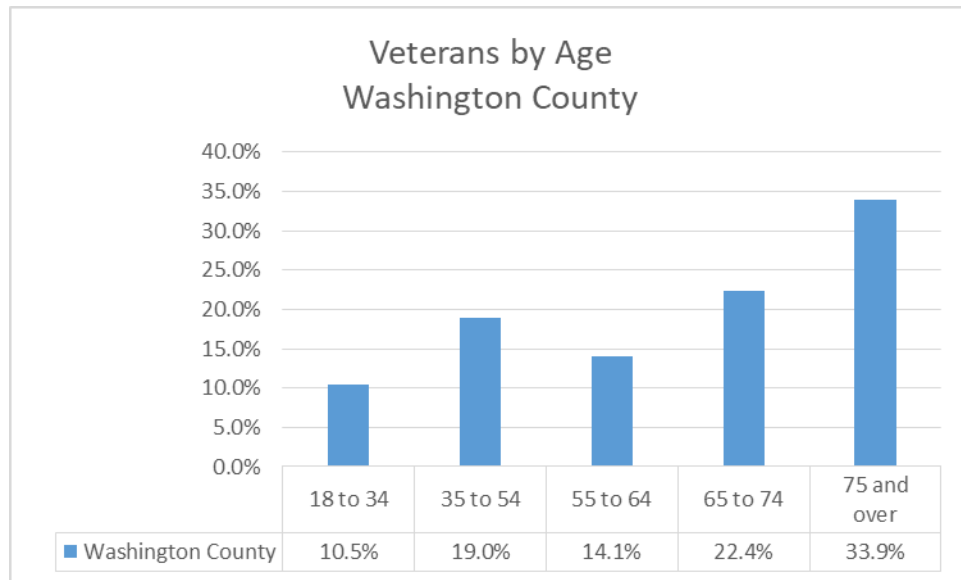
Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

At over 33%, the largest percentage of veterans in Washington County are 75 and over.
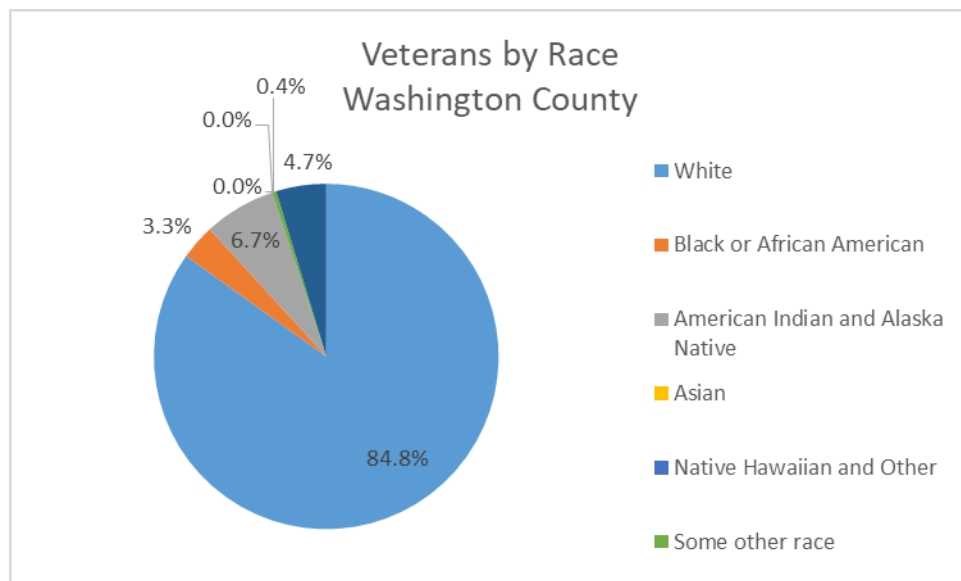
Veterans by Race
Washington County

- White — 84.8%
- Black or African American — 3.3%
- American Indian and Alaska Native — 6.7%
- Asian — 0.0%
- Native Hawaiian and Other — 4.7%
- Some other race — 0.4%
- 0.0%

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

Although the highest percentage of the veteran population in Washington County is white (84.8%), it is important to note that 6.7% are American Indian/Alaskan Native.

Health Outcomes

Examining a community's health outcomes allows linkages between social determinants of health and outcomes to be assessed. By comparing, for example, the prevalence of certain chronic diseases to indicators in other categories (e.g., poor diet and exercise) with outcomes (e.g., high rates of obesity and diabetes), various causal relationship may emerge, allowing a better understanding of how certain community health needs may be addressed.

Health outcomes ranking

This indicator demonstrates overall rankings in health outcomes for counties throughout the state. The healthiest county in the state is ranked #1. The ranks are based on two types of measures: how long people live (length of life) and how healthy people feel while alive (quality of life). The distribution of health outcomes is based on an equal weighting of length and quality of life. This information is based on the County Health Rankings & Roadmaps courtesy of the University of Wisconsin Population Health Institute.[14]

Why is this indicator important?

The overall rankings in health outcomes represent how healthy counties are within the state.

How are we doing?

The map below demonstrates the distribution of health outcomes in Oklahoma. Lighter shades indicate better performance in the respective summary rankings. In 2019, Washington County ranked 11th out of 77 counties in Oklahoma in health outcomes. This was an improvement from 18th out of 77 in 2018, 16th out of 77 in 2017, and 17th out of 77 in 2016.

2018 Oklahoma health outcomes map
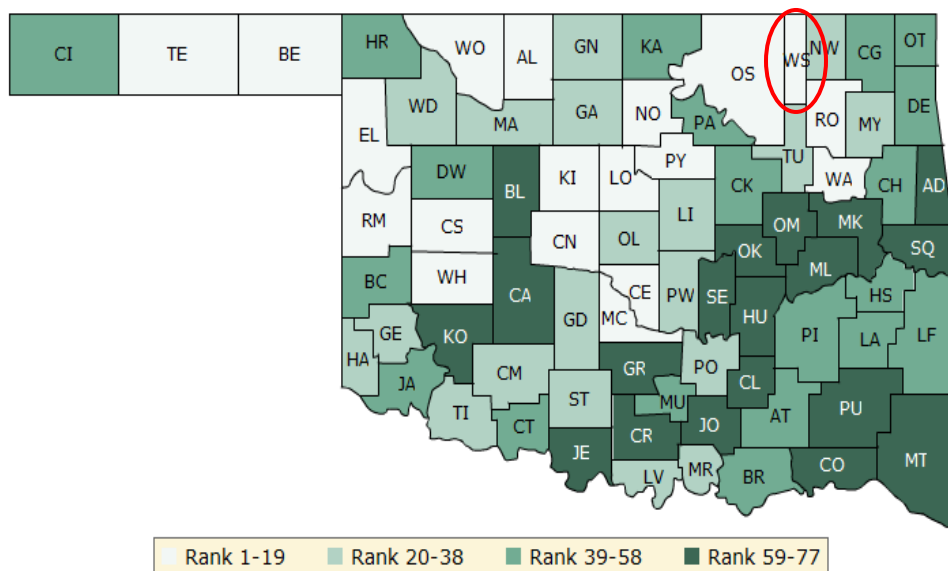
Source: University of Wisconsin Population Health Institute. (2018). *County Health Rankings & Roadmaps.* Retrieved from: www.countyhealthrankings.org.

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[14] University of Wisconsin Population Health Institute. (2018). *County Health Rankings & Roadmaps.* Retrieved from: www.countyhealthrankings.org.

Source: County Health Rankings

The graph above shows that Washington County dropped from 16 of 77 in 2017 to 18 of 77 in 2018.

2018 county health rankings for the 77 counties in Oklahoma

County	Health Outcomes	Health Factors	County	Health Outcomes	Health Factors	County	Health Outcomes	Health Factors	County	Health Outcomes	Health Factors
Adair	75	77	Delaware	52	58	Lincoln	44	38	Pittsburg	63	52
Alfalfa	2	13	Dewey	48	24	Logan	6	15	Pontotoc	37	29
Atoka	57	75	Ellis	19	6	Love	41	20	Pottawatomie	39	33
Beaver	20	5	Garfield	24	27	Major	25	12	Pushmataha	77	67
Beckham	42	37	Garvin	58	55	Marshall	31	47	Roger Mills	4	28
Blaine	45	31	Grady	21	18	Mayes	50	50	Rogers	10	9
Bryan	38	44	Grant	22	3	McClain	17	7	Seminole	71	64
Caddo	73	63	Greer	36	53	McCurtain	70	72	Sequoyah	69	71
Canadian	3	1	Harmon	23	45	McIntosh	72	68	Stephens	32	49
Carter	67	48	Harper	12	10	Murray	54	34	Texas	11	25
Cherokee	62	57	Haskell	51	73	Muskogee	66	66	Tillman	29	36
Choctaw	76	76	Hughes	46	70	Noble	13	11	Tulsa	15	14
Cimarron	61	19	Jackson	43	22	Nowata	34	54	Wagoner	9	17
Cleveland	7	4	Jefferson	64	60	Okfuskee	74	69	Washington	18	23
Coal	60	74	Johnston	68	59	Oklahoma	27	21	Washita	30	32
Comanche	26	40	Kay	33	42	Okmulgee	53	56	Woods	5	8
Cotton	56	43	Kingfisher	1	2	Osage	28	39	Woodward	14	30
Craig	35	35	Kiowa	65	51	Ottawa	59	61			
Creek	40	46	Latimer	55	62	Pawnee	47	41			
Custer	16	26	Le Flore	49	65	Payne	8	16			

Source: University of Wisconsin Population Health Institute. (2018). *County Health Rankings & Roadmaps.* Retrieved from: www.countyhealthrankings.org.

Health status

Life expectancy

Life expectancy is the average additional number of years a person can expect to live at a certain age. The term 'life expectancy' it is generally referring to the average number of years a person may expect to live when they are born. Here, the three-year totals for life expectancy at birth are given for county and ZIP code.

Why is this indicator important?

Life expectancy trends, along with other health indicators, can help public health officials identify health disparities in the community and measure health improvement outcomes. Health officials can use this information to implement health policies and interventions to target issues that negatively and positively impact health within the community.

How are we doing?
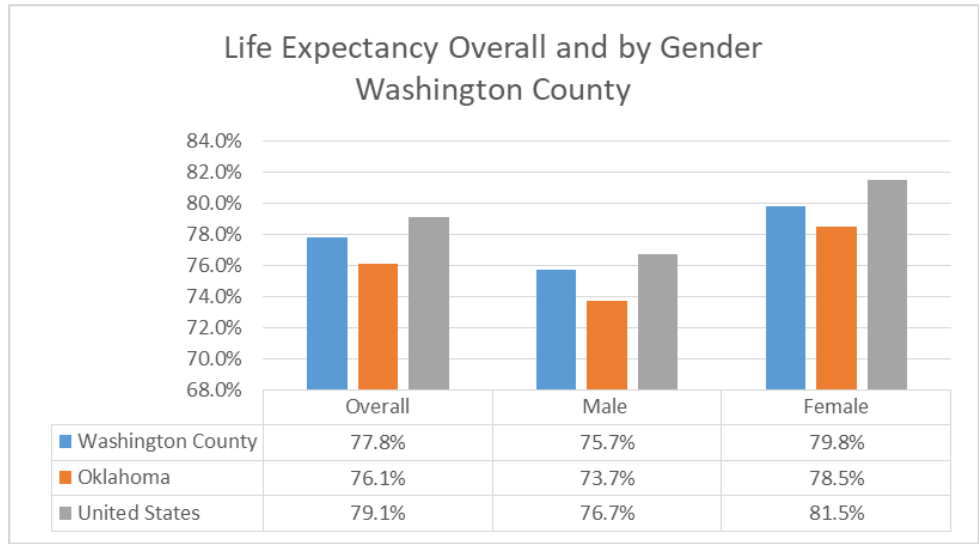
Source: https://vizhub.healthdata.org/subnational/usa 2014 Data

The latest available life expectancy data for this assessment was for 2014. The graph above shows life expectancies broken down by gender for Washington County compared to Oklahoma overall and the United States. Life expectancies for both genders and in total were lower for Oklahoma than for the United States, with male life expectancy approximately five years less than female life expectancy. Life expectancies for Washington County were higher than those for Oklahoma but lower than those for the United States.

Overall mortality

The mortality rate from all causes is presented as the number of deaths per 100,000 population, over the years 2014-2016. The rates were age-adjusted to account for differences in age distribution among localities, ZIP codes, and races/ethnicities.

Why is this indicator important?

Mortality rates are important in the measurement of disease and health as it relates to public health planning. Analyzing trends in mortality in specific demographic groups over time can reflect changes in health and highlight areas that need to be targeted through public health services and interventions.[15, 16]

How are we doing?

Mortality rates in Washington County were consistently lower than the rate for Oklahoma. However, overall mortality rates for Washington County and the state of Oklahoma are both higher than the overall mortality rate for the U.S.[17]

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[15] Australian Institute of Health and Welfare. (2016). *Why are Mortality Data Important?* Retrieved from: http://www.aihw.gov.au/why-are-mortality-data-important/.

[16] Braveman P, Arkin E, Orleans T, Proctor D, and Plough A. What Is Health Equity? And What Difference Does a Definition Make? Princeton, NJ: Robert Wood Johnson Foundation, 2017.

[17] NCHS, National Vital Statistics System, Mortality

Age-Adjusted Mortality Rate by Gender
Washington County

	2014		2015		2016		2017	
	Male	Female	Male	Female	Male	Female	Male	Female
Washington	1,011.90	761.8	959.80	693.3	1,025.70	719.2	966.60	733.7
Oklahoma	1,042.20	773.8	1,058.20	772.5	1,035.50	761.3	1,048.00	777.6
US	855.1	616.7	863.2	624.2	861	617.5	864.5	619.7
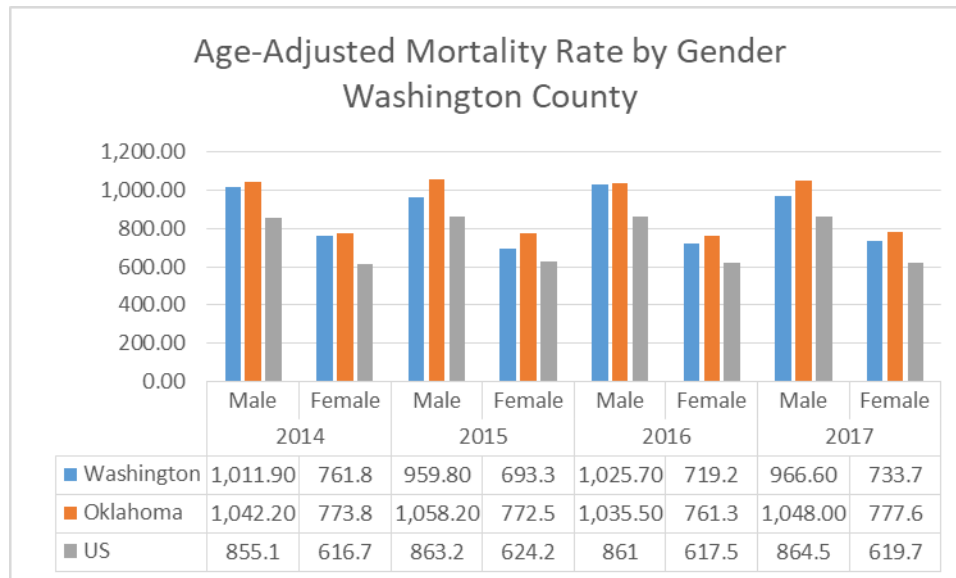
As illustrated in the above graph, mortality rates by gender in Washington County remained stable over the course of the time period examined, with rates for males consistently higher than rates for females.

Top Causes of Death, Males
Washington County

Cause	2014	2015	2016
Diseases of heart	281.8	249.2	298.6
Malignant neoplasms	218.8	224.7	203.5
Non Rankable Causes	115.3	99.2	136.2
Chronic lower respiratory diseases	47.7	59.7	54.0
Cerebrovascular diseases	38.6	42.9	53.4
Accidents (unintentional injuries)	49.8	45.9	45.8
Diabetes mellitus	31.2	29.0	34.7
Nephritis, nephrotic syndrome and nephrosis	25.5		14.6
Alzheimer's disease	22.6	31.8	32.6
Intentional self-harm (suicide)	36.9		47.1
Influenza and pneumonia		42.9	15.4
Chronic liver disease and cirrhosis		26.7	

Calculations may have been suppressed due to small cell size (less than 5 deaths/populations less than 20). All rates are deaths per 100,000 population.

Top Causes of Death, Females Washington County

Cause	2014	2015	2016
Diseases of heart	173.7	184.9	181.6
Malignant neoplasms	175.3	127.5	164.3
Non Rankable Causes	146.7	96.1	100.3
Cerebrovascular diseases	61.3	42.8	27.7
Chronic lower respiratory diseases	48.1	36.2	41.5
Alzheimer's disease	30.1	37.3	27.3
Accidents (unintentional injuries)	52.0	25.5	49.0
Diabetes mellitus	13.1	27.1	11.4
Influenza and pneumonia		17.5	10.9
Nephritis, nephrotic syndrome and nephrosis		21.9	10.5
Essential (primary) hypertension and hypertensive renal disease			17.7
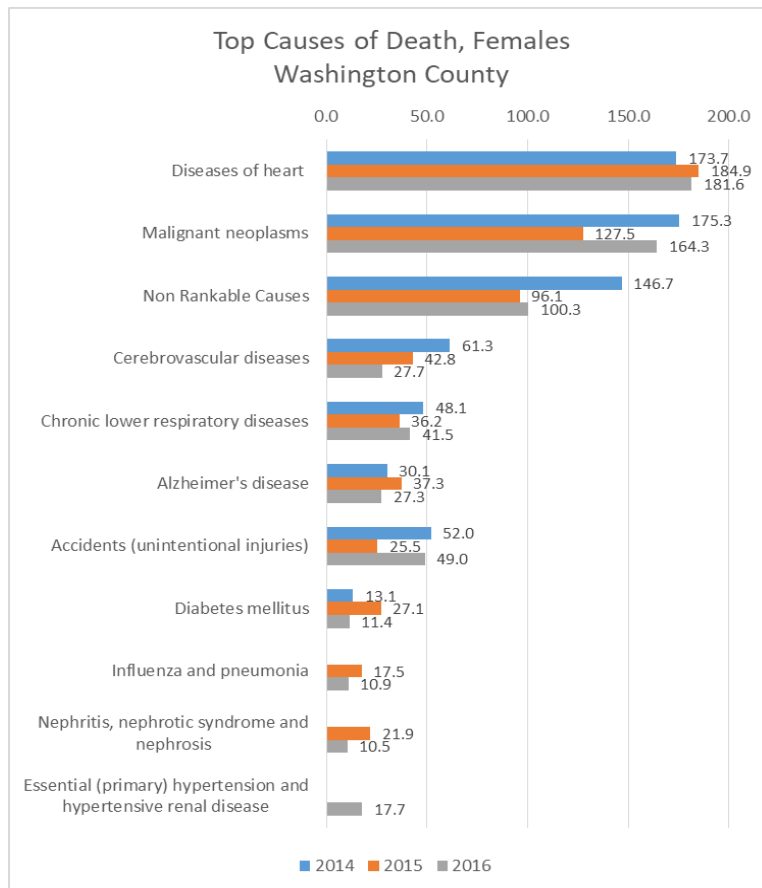
Calculations may have been suppressed due to small cell size (less than 5 deaths/populations less than 20). All rates are deaths per 100,000 population.

Top causes of death for males and females in Washington County reflect the same pattern as those in the other counties examined in this assessment as well as those for Americans nationwide.

Age-Adjusted Mortality Rates by Race
Washington County

	White	Black	American Indian	Asian/Pacific Islander
■ 2014	850.8	842.9	1275.6	
■ 2015	796.9	585.0	1180.3	
■ 2016	851.0	1402.6	951.9	

Sources: Oklahoma State Department of Health, Center for Health Statistics,
Health Care Information, Vital Statistics 2014 to 2016, Oklahoma Statistics on
Health Available for Everyone

Age-adjusted rates based on 2000 US population standard. All rates are deaths per 100,000 population.

Mortality rates among the white population in Washington County remained relatively stable over the time period examined in this assessment. Mortality rates among the black population in Washington County decreased from 2014 to 2015, then rose sharply from 2015 to 2016. Mortality rates among the American Indian population in Washington County showed a slight downward trend from 2014 to 2016.

Deaths From All Causes

Washington County | 2014-2016

Washington County
Age-adjusted Death Rates
Per 100,000 Pop. by Zip*
- < 42.0
- 42.0 - 130.6
- 130.7 - 208.7
- 208.8 - 1,334.2
- 1,334.3 - 4,379.1

* ZIP Codes
fully within / partially within
Washington County, OK

Data Source: 2014-2016 Vital Stats., CHI, OSDH

Tulsa Health Dept.
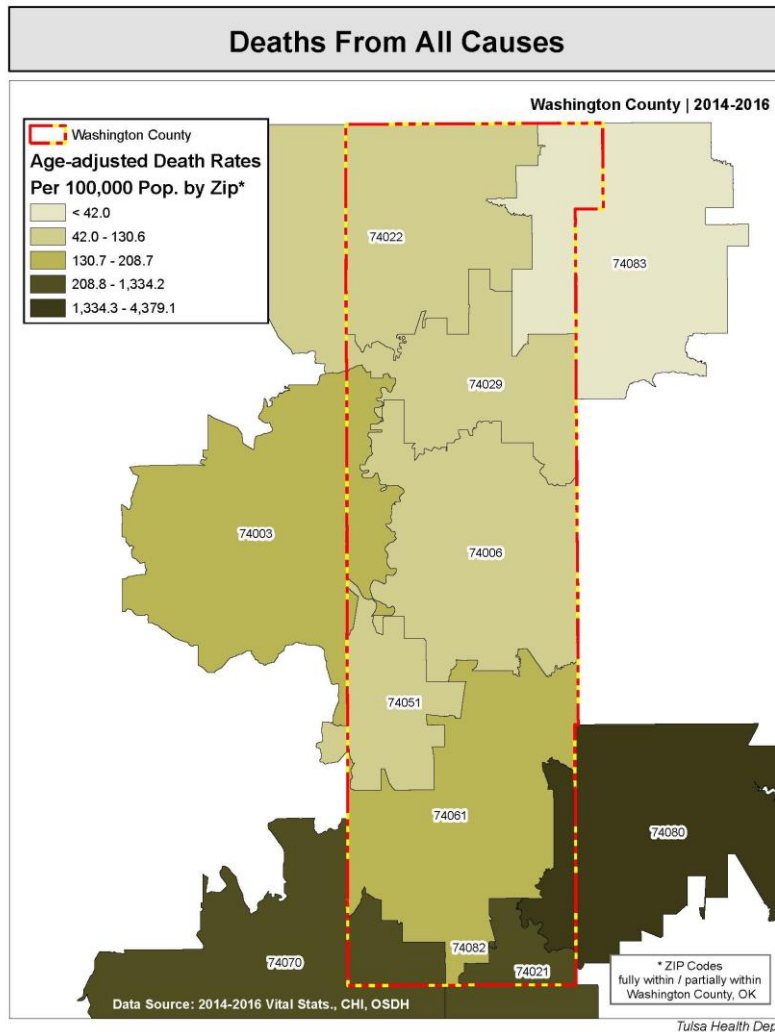
The highest death rates by ZIP code in Washington County include 74080 (Talala area), 74070 (Skiatook) and 74021 (Owasso/Collinsville).

Please note that the majority of ZIP code 74080 (Talala area) is located in Roger's County, ZIP code 74070 (Skiatook) crosses multiple counties, and 74003/74022 is part of Osage County.

Diabetes mortality

The diabetes death rate is the number of deaths due to diabetes mellitus per 100,000 population over the years 2014-2016. The rates were age-adjusted to account for differences in age distribution among locations, ZIP codes and races/ethnicities.

Why is this indicator important?

Diabetes mellitus (commonly known as diabetes) affects an estimated 29.1 million people in the United States and is also the seventh leading cause of death nationally. It increases the all-cause mortality rate 1.8 times compared to persons without diagnosed diabetes, doubles the risk of heart disease and is the leading cause of kidney failure, lower limb amputations and adult-onset blindness.[18]

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[18] Diabetes. Healthy People 2020. U.S. Department of Health and Human Services.

How are we doing?
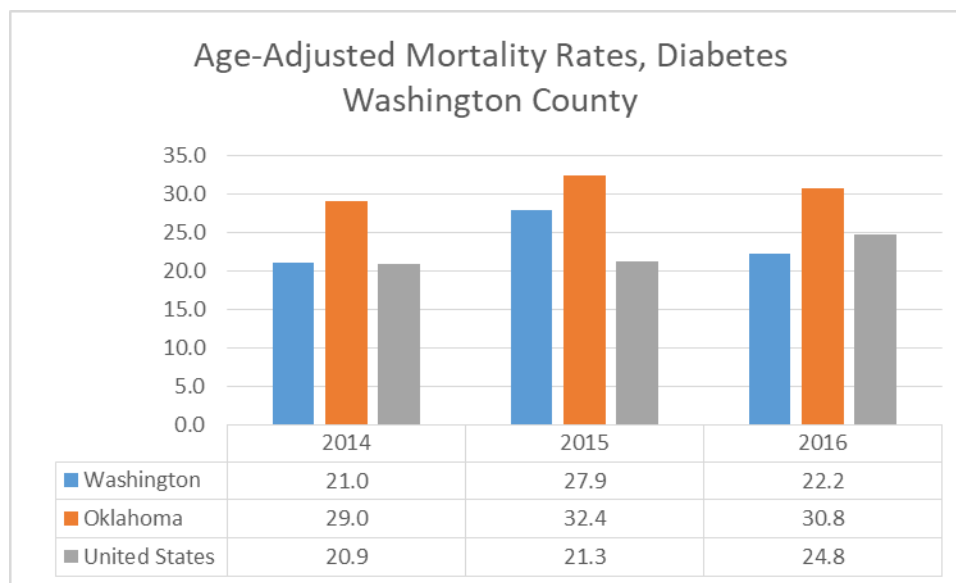
Age-Adjusted Mortality Rates, Diabetes
Washington County

	2014	2015	2016
■ Washington	21.0	27.9	22.2
■ Oklahoma	29.0	32.4	30.8
■ United States	20.9	21.3	24.8

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care
Information, Vital Statistics 2014 to 2016, Oklahoma Statistics on Health Available for Everyone
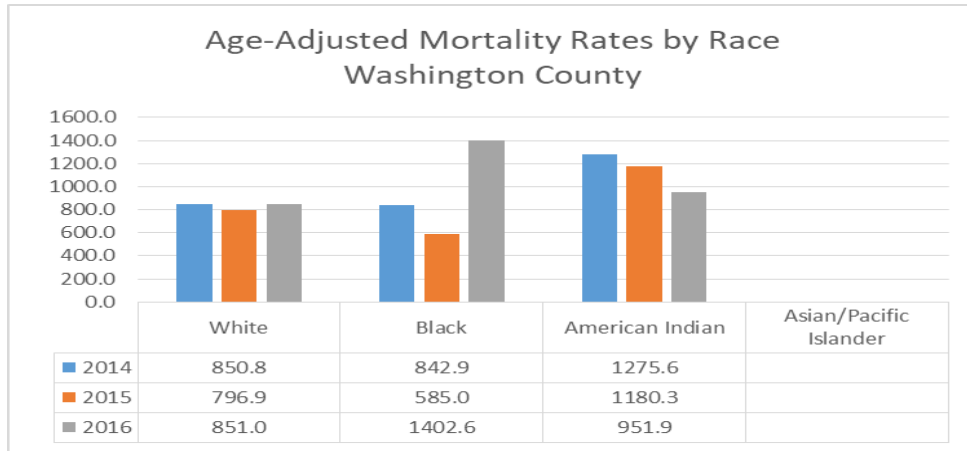
Age-adjusted rates based on 2000 US population standard. All rates are deaths per 100,000 population.

In Washington County over the time-period 2014 to 2016 the mortality rates for diabetes increased from 20% to 27.9% and then significantly decreased again back to down to 22.2%. In contrast, Oklahoma had a slight increase from 2014 to 2015 but then decreased in 2016 while the United States only had increases each year.

Cardiovascular disease mortality

The mortality rate from heart disease, or cardiovascular disease, is presented as the number of deaths from heart disease per 100,000 population over the years 2014-2016. The rates were age-adjusted to account for differences in age distribution among locations, ZIP codes and races/ethnicities.

Why is this indicator important?

Heart disease has been the number one cause of death for Oklahomans and United States residents, for many years. The most common type of heart disease in the U.S. is coronary heart disease. Risk factors for heart disease include conditions such as high cholesterol, high blood pressure and diabetes, behaviors such as tobacco use, poor diet, physical inactivity, obesity, excessive alcohol use and genetic factors. Most of these risk factors can be controlled through healthy lifestyle choices, and well as medications when necessary.[19]

How are we doing?

From 2014-2016, the age-adjusted death rate from heart disease in Washington County increased slightly from 292.7 in 2014 to 293.9 in 2016.

In 2016, Washington County had a heart disease death rate of 293.9 which was slightly higher than that of Oklahoma (287.4). However, all years from 2014-2016 were higher than the death rate in the United States. Washington County did not meet the Healthy People 2020 goal of 100.8 deaths per 100,000 population.

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[19] Heart Disease Fact Sheet. Centers for Disease Control and Prevention.

Age -Adjusted Mortality Rates
Major Cardiovascular Diseases
Washington County

	2014	2015	2016
■ Washington County	292.7	277.7	293.9
■ Oklahoma	287.6	295.5	287.4
■ United States	167.0	168.5	165.5

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Vital Statistics 2014 to 2016, Oklahoma Statistics on Health Available for Everyone

Age-adjusted rates based on 2000 US population standard. All rates are deaths per 100,000 population.

Age-Adjusted Mortality Rates
Major Cardiovascular Diseases by Gender
Washington County

	2014	2015	2016
■ Male	348.0	319.2	363.2
■ Female	248.1	237.6	238.8
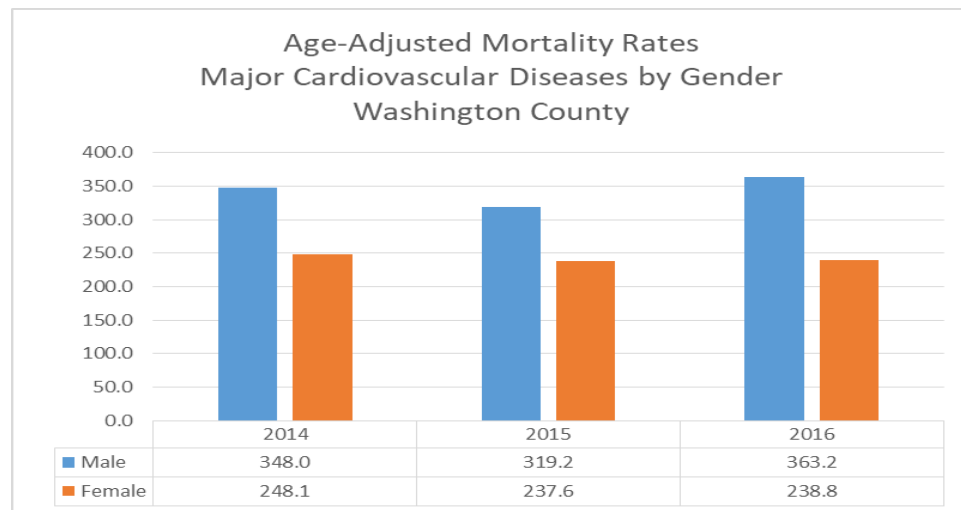
There were slight variations in mortality rates by gender from 2014 to 2016, but overall, the pattern remained the same, with males having a consistently higher mortality rate for major cardiovascular diseases than females.

Cancer mortality

The mortality rate from cancer is presented as the number of deaths from all cancers per 100,000 population, over the years 2014-2016. The rates were age-adjusted to account for differences in age distribution among locations, ZIP codes and races/ethnicities.
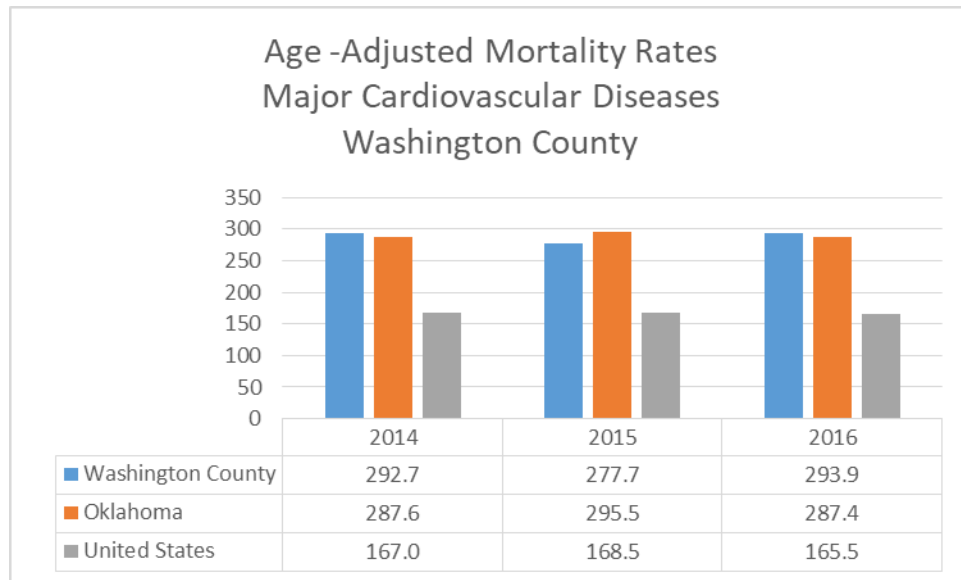
Why is this indicator important?

Cancer was the second leading cause of death from 2014-2016. Continued advances in cancer research, detection and treatment have resulted in a decline in both incidence and death rates for all cancers, although it is still one of the leading causes of death in the United States. More than half of all individuals who develop cancer will be alive in five

years. Many cancers are preventable by reducing risk factors such as use of tobacco products, physical inactivity and poor nutrition, obesity, and UV light exposure. Other cancers can be prevented by getting vaccinated against human papillomavirus and hepatitis B virus. Cancer screenings are also effective at identifying some types of cancer early, often in highly treatable stages. These include breast, cervical and colon cancer. [20]

How are we doing?

In 2016, the cancer mortality rate was 181.7 deaths per 100,000 population in Washington County. This was similar to Oklahoma (177.9) and higher than the United States (155.8; most recent available data from 2015). Only the U.S. met the Healthy People 2020 national goal of 160.6 cancer deaths per 100,000 individuals.

Age-Adjusted Mortality Rates, Cancer
Washington County

	2014	2015	2016
■ Washington County	194.4	170.3	181.7
■ Oklahoma	179.9	184.2	177.9
■ United States	161.2	158.5	155.8

Age-Adjusted Mortality Rates, Cancer by Gender
Washington County

	2014	2015	2016
■ Male	218.8	224.7	203.5
■ Female	175.3	127.5	164.3

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Vital Statistics 2014 to 2016, Oklahoma Statistics on Health Available for Everyone

Age-adjusted rates based on 2000 US population standard. All rates are deaths per 100,000 population.

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[20] Cancer. Healthy People 2020. U.S. Department of Health and Human Services.

Again, males had a consistently higher mortality rate from cancer than females in Washington County from 2014 to 2016.

Asthma mortality
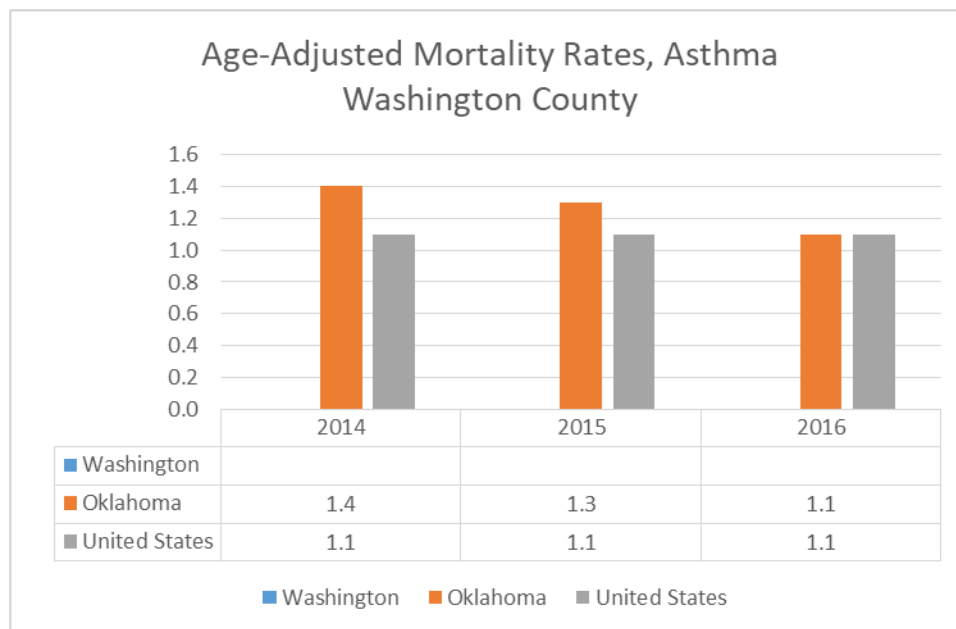
Age-Adjusted Mortality Rates, Asthma
Washington County

	2014	2015	2016
■ Washington			
■ Oklahoma	1.4	1.3	1.1
■ United States	1.1	1.1	1.1

■ Washington ■ Oklahoma ■ United States

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Vital Statistics 2014 to 2016, Oklahoma Statistics on Health Available for Everyone

Calculations may have been suppressed due to small cell size (less than 5 deaths/populations less than 20)

Although there is no data for Washington County, the graph above shows a rate of 1.1 for deaths from asthma in Oklahoma which is the same as it was for the United States.

Lung disease mortality

Lung disease includes chronic bronchitis and emphysema (collectively referred to as chronic obstructive pulmonary disease or COPD). The death rate from lung disease is presented as the number of deaths per 100,000 population over the years 2014-2016. The rates were age-adjusted to account for differences in age distribution among locations, ZIP codes and races/ethnicities.
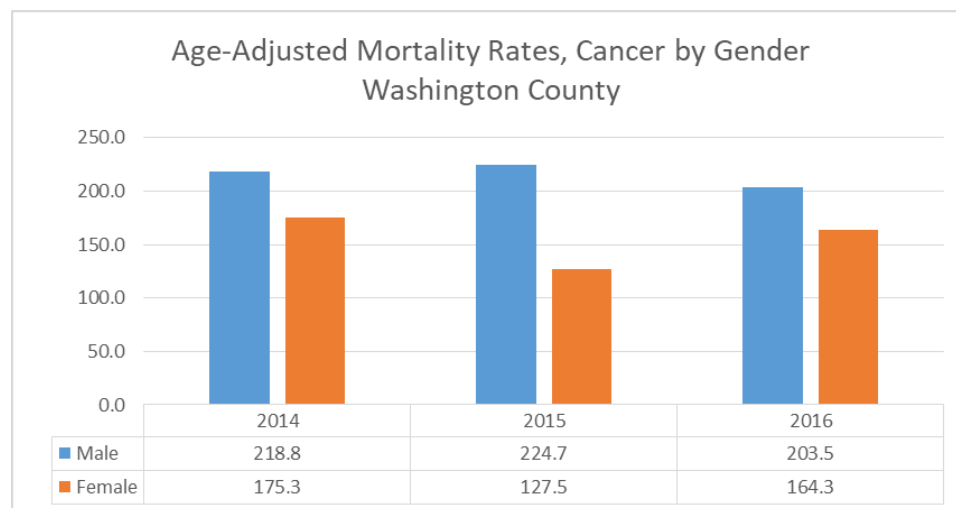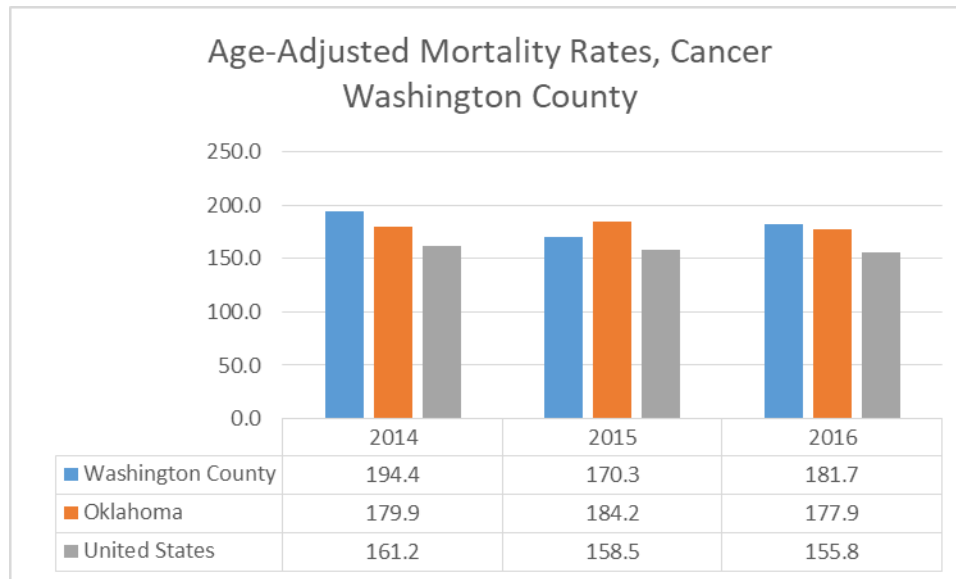
Why is this indicator important?

Tobacco smoke (including secondhand smoke) is a key factor for the development of COPD, although exposure to air pollutants, genetic factors and respiratory factors can also play a role. Currently, about 14.8 million adults in the U.S. have been diagnosed with COPD, and an additional 12 million people have not yet been diagnosed. This causes a significant burden on the healthcare system, including higher insurance rates and lost productivity.[21]

How are we doing?

Although data were not available for Washington County specifically, data was available for Oklahoma and the United States.

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[21] Respiratory Diseases. Healthy People 2020. U.S. Department of Health and Human Services.

Lung disease mortality by race/ethnicity
Source: Mortality_ race ethnicity
Filter: Chronic lower respiratory diseases - Lung Disease, 2014-2016

Legend: Oklahoma, Tulsa County
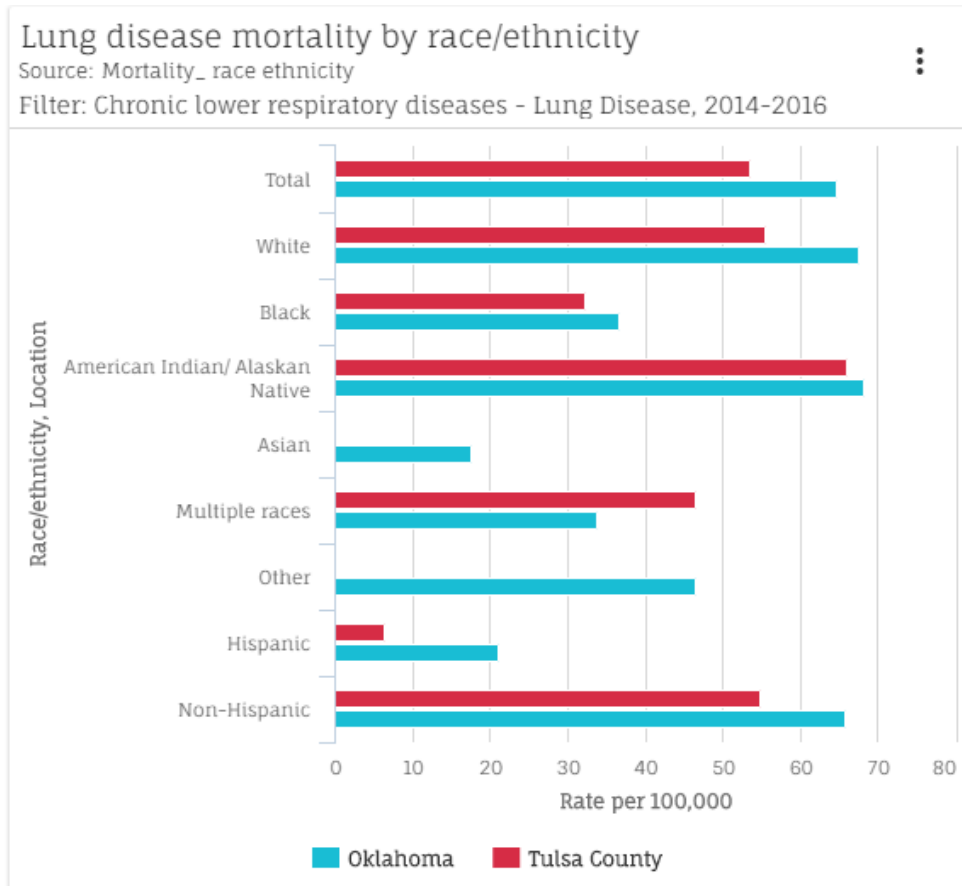
Source: Tulsa Health Department, LiveStories: Mortality, 2018

For the State of Oklahoma, the death rate due to lung disease was highest among those who are White, American Indian/ Alaskan Natives and Non-Hispanics.

Lung disease mortality by year
Source: Mortality_location
Filter: Chronic lower respiratory diseases - Lung Disease

Legend: Oklahoma, Tulsa County, US
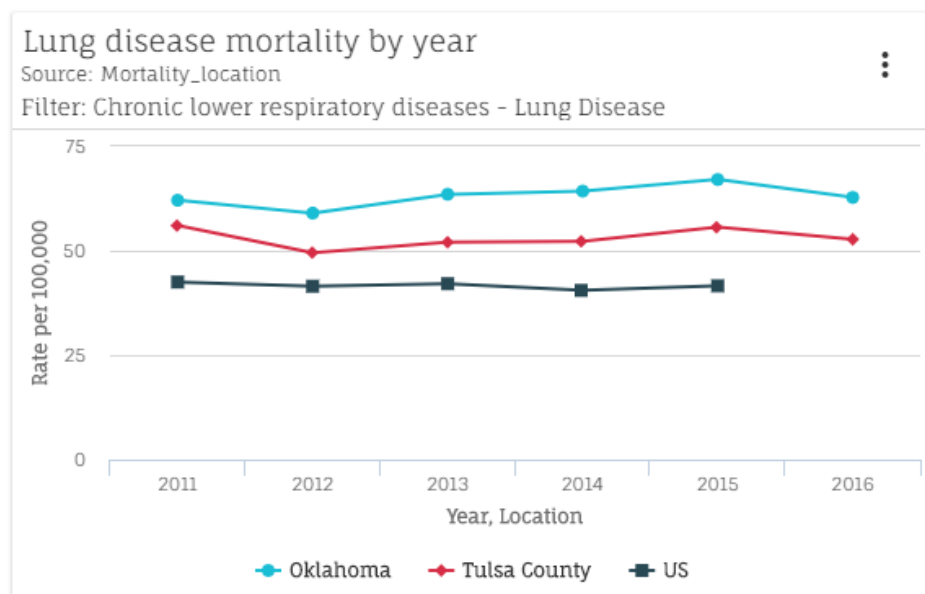
Source: Tulsa Health Department, LiveStories: Mortality, 2018

In 2016, the lung disease death rate for Oklahoma (62.8) was much higher than the rate in the United States (41.6; most recent available data from 2015).

Hospital utilization

This indicator is an estimate of the use of acute care hospitals by county residents during 2016. An acute care hospital is a short-term hospital (generally less than 30 days) where a patient is treated for a brief but severe episode of illness, for conditions that are the result of disease or trauma, and during recovery from surgery. It is presented as the number of hospital discharges per 1,000 population.

Why is this indicator important?

Hospital inpatient utilization data give an indication of the magnitude and types of illnesses experienced by a population. It also identifies trends in age, gender, and race/ethnicity distributions among those who are admitted to the hospital. These data can be used to gain the attention of policy makers, identify public health priorities, and focus public health programs. The data is also important for conducting epidemiological studies of diseases.[22]

How are we doing?

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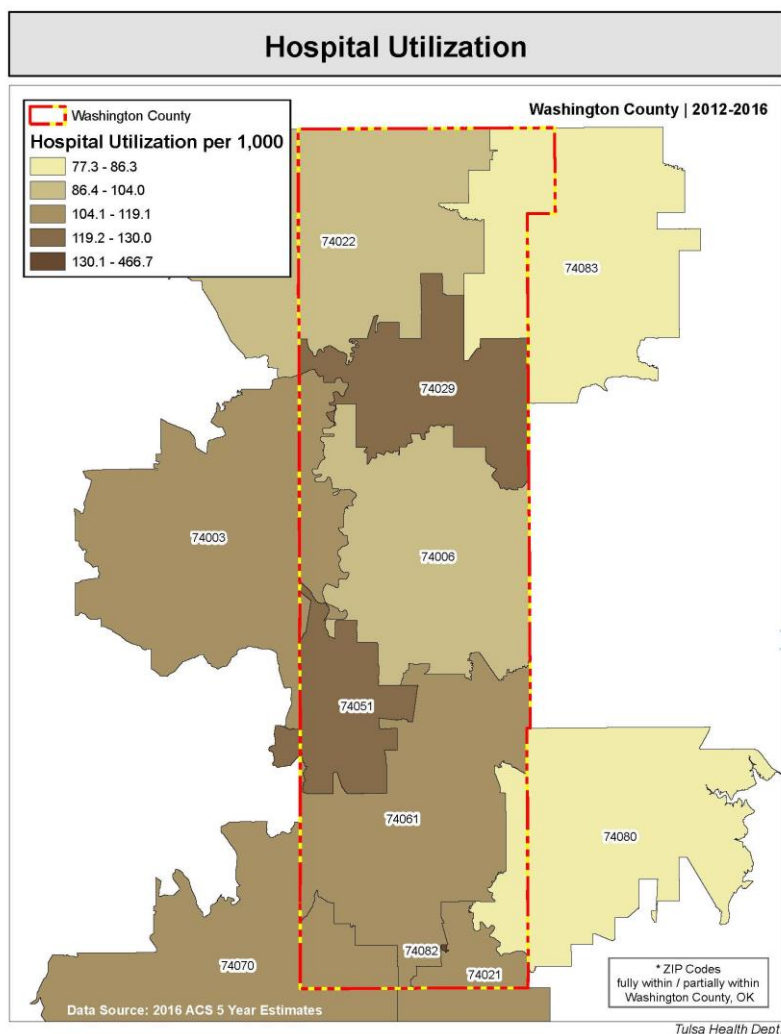
[22] Hospital Discharge Data. New York State Department of Health.

In Washington County, hospital utilization rates were high in ZIP codes 74029 (Dewey) and 74051 (a portion of Bartlesville).

Primary Payer, Hospital Discharge All Facilities

	Medicare	Commercial Insurance	Medicaid	Medicare Managed	Self-Pay, No Insurance	Champus/Tricare/VA	Indian Health	Medicaid Pending	Workers Comp	MVA Accident Liens	Other
2014	35.9%	29.4%	13.1%	11.6%	5.3%	1.5%	1.2%	1.0%	0.5%	0.4%	0.0%
2015	36.3%	29.3%	13.2%	11.7%	5.5%	1.6%	1.3%	0.5%	0.4%	0.3%	0.0%
2016	36.3%	27.7%	13.5%	11.9%	6.3%	1.6%	1.4%	0.2%	0.3%	0.4%	0.3%
2017	36.2%	27.7%	13.1%	12.5%	6.7%	1.7%	1.3%	0.0%	0.3%	0.2%	0.3%
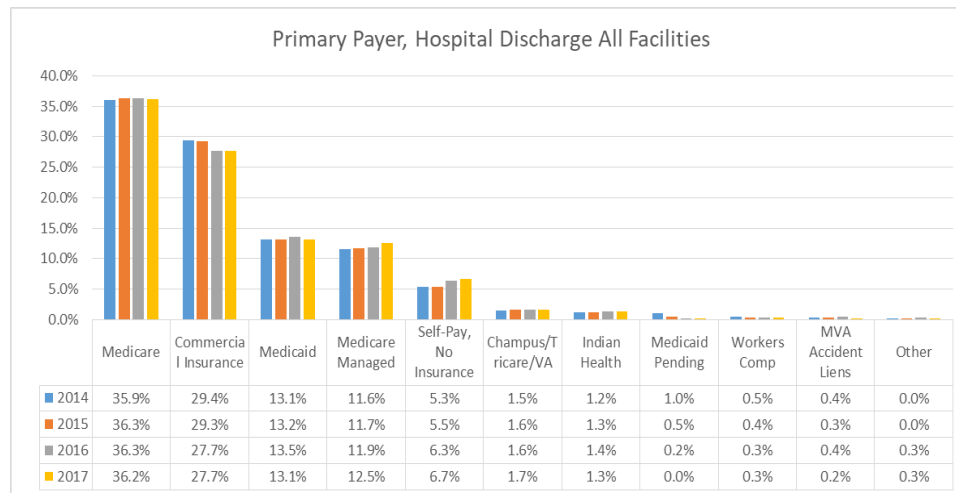
Source: St. John's Information System, 2014 to 2017

The primary sources of payment for all of St. John's facilities from 2014 to 2017 in the region were Medicare, Commercial or Private Insurance, Medicaid and Medicare Managed.

The following tables break down the primary payer at hospital discharge for Jane Phillips Medical Center.

Primary Payer, Hospital Discharge - Jane Phillips Medical Center, Washington County

	Medicare	Commercial Insurance	Medicaid	Medicare Managed	Self-Pay, No Insurance	Medicaid Pending	Indian Health	Champus/Tricare/VA	Workers Comp	Other	MVA Accident Liens
2014	45.4%	25.3%	18.0%	3.2%	0.4%	6.6%	0.6%	0.2%	0.2%	0.0%	0.0%
2015	46.7%	23.8%	17.8%	3.6%	3.0%	3.0%	1.1%	0.9%	0.1%	0.0%	0.0%
2016	50.4%	19.7%	17.3%	4.5%	5.1%	0.1%	1.4%	1.2%	0.1%	0.2%	0.0%
2017	51.4%	20.3%	15.9%	4.8%	5.1%	0.0%	1.1%	1.1%	0.1%	0.1%	0.0%
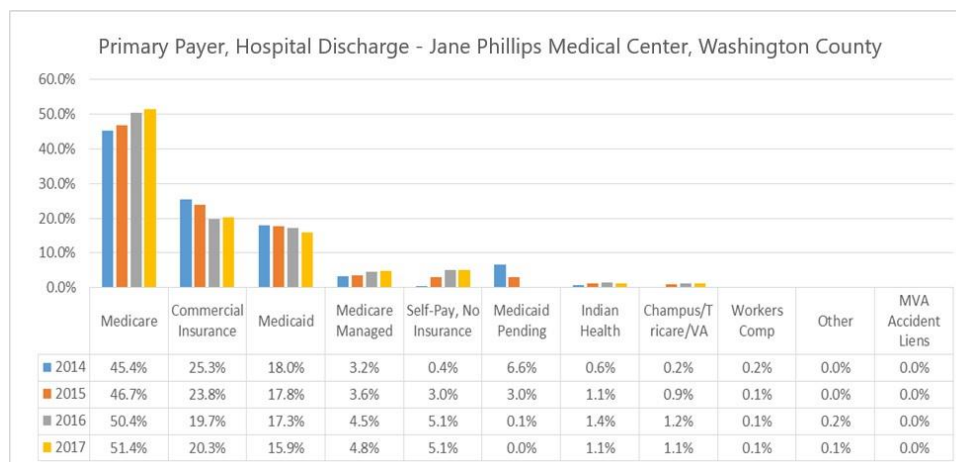
Source: St. John's Information System, 2014 to 2017

Between 2014 and 2017, the primary payment sources at hospital discharge Jane Phillips Medical Center included the same top primary payers in the top 4 or 5, Medicaid, Commercial or Private Insurance, Medicaid and Medicare Managed, although some of the facilities had Self-Pay, No Insurance. Medicare was the number one payer at hospital discharge.

Top 10 Major Disease Categories for Hospital Discharges - All Facilities
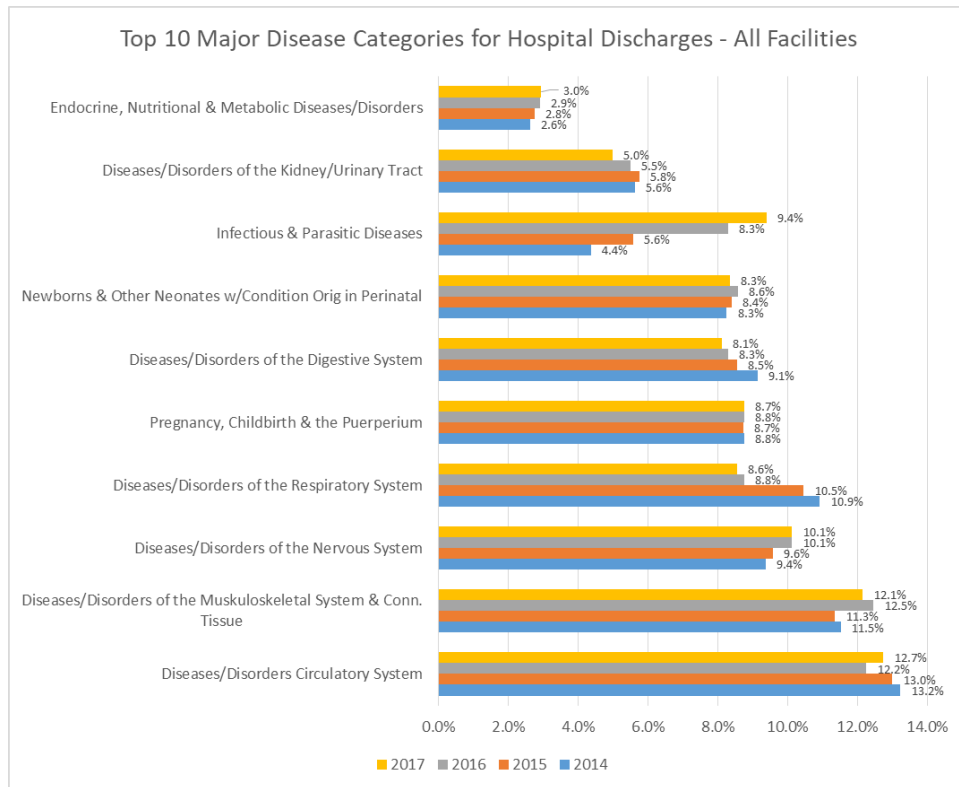
Source: St. John's Information System, 2014 to 2017

The above graph shows the top 10 major disease categories for hospital discharges for all of Ascension St. John's facilities in the region from 2014 to 2017. Diseases/Disorders of the circulatory system were the number one disease category for the time-period examined in this assessment, followed very closely by diseases/disorders of the musculoskeletal system and connective tissue.

Disease categories that showed increases from 2014 to 2017 were diseases/disorders of the musculoskeletal system and connective tissue (from 11.5% to 12.1%), diseases/disorders of the nervous system (9.4% to 10.1%), endocrine, nutritional and metabolic diseases/disorders (from 2.6% to 3%) and, showing very large increases each year since 2014, infectious and parasitic diseases (from 4.4% to 9.4%). Diseases that showed overall decreases from 2014 to 2017 were diseases/disorders of the circulatory system (13.2% to 12.7%), diseases/disorders of the respiratory system (from 10.9% to 8.6%), and diseases/disorders of the kidney/urinary tract (from 5.6% to 5%).

Hospital readmissions

Top 10 Major Disease Categories for Hospital Discharge Washington County

Disease Category	2017	2016	2015	2014
Endocrine, Nutritional & Metabolic Diseases/Disorders	3.2%	3.2%	3.3%	2.7%
Diseases/Disorders of the Kidney/Urinary Tract	5.9%	5.6%	5.0%	4.8%
Diseases/Disorders of the Nervous System	7.2%	6.6%	4.7%	6.2%
Diseases/Disorders of the Muskuloskeletal System & Conn. Tissue	10.6%	10.4%	6.0%	7.5%
Diseases/Disorders of the Digestive System	8.1%	8.5%	9.4%	8.3%
Diseases/Disorders of the Respiratory System	8.3%	9.0%	9.6%	9.1%
Infectious & Parasitic Diseases	10.1%	10.1%	8.2%	8.0%
Newborns & Other Neonates w/Condition Orig in Perinatal	10.3%	10.6%	12.2%	12.3%
Pregnancy, Childbirth & the Puerperium	10.8%	11.0%	12.7%	12.8%
Diseases/Disorders Circulatory System	14.4%	14.3%	15.0%	12.8%

Source: St. John's Information System, 2014 to 2017

At Jane Phillip's Medical Center, the top major disease category at hospital discharge was diseases/disorders of the circulatory system. This category showed an overall upward trend from 2014 to 2017 from 12.8% to 14.4%). The second two top major disease categories at hospital discharge were basically tied; diseases related to pregnancy, childbirth and the puerperium and conditions related to newborns and other neonates with conditions originating in perinatal period. These two categories showed overall downward trends from 2014 to 2017. At this facility, as at the others discussed above, there was an increase in infectious and parasitic diseases from 8% in 2014 to 10.1% in 2017. This facility also saw an upward trend in diseases/disorders of the musculoskeletal system and connective tissue, from 7.5% in 2014 to 10.6% in 2017.

Hospital Readmissions by Region

	Washington County	SJBA - Tulsa County	SJMC - Tulsa County	SJO - Tulsa County	SJS - Tulsa County
2014	181	73	3087	36	24
2015	219	59	2832	50	22
2016	320	62	2717	39	14
2017	330	59	2850	43	14
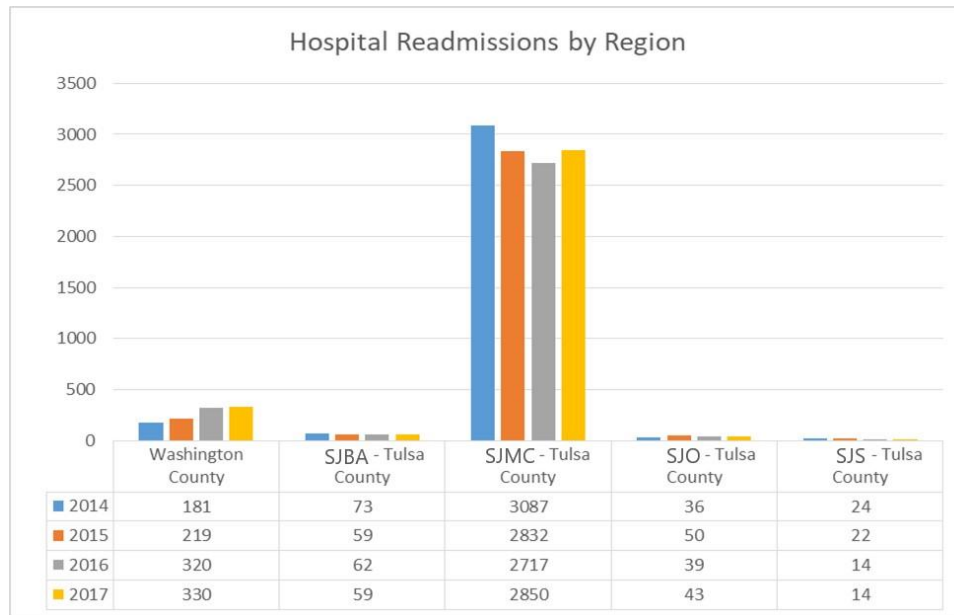
Source: St. John's Information System, 2014 to 2017. Data for 2014 were not available in Nowata.

The graph above shows the number of hospital readmissions at Jane Phillips Medical Center in Washington County as compared to the hospitals within Ascension St. John.

Mental health and substance abuse

Mentally unhealthy days in the past month

This indicator represents the average number of mentally unhealthy days reported in past 30 days (age-adjusted). This measure is based on survey responses to the question: "Thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?" The value is the average number of days a county's adult respondents report that their mental health was not good. The measure is based on 2011-2016 BRFSS data and is age-adjusted to the 2000 U.S. population.[23]

Why is this indicator important?

Overall health depends on both physical and mental well-being. Measuring the number of days when people report that their mental health was not good, i.e., poor mental health days, represents an important facet of health-related quality of life.

How are we doing?

For the purposes of this assessment, the Northeast region consists of Creek County, Washington County, and Nowata County. Data for the specific measure were not available at the county level for these communities.

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[23] Oklahoma State Department of Health (OSDH), Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2011 to 2016, on Oklahoma Statistics on Health Available for Everyone (OK2SHARE).

Percentage of Respondents Reportiing "Mentally Unhealthy Days in the Past Month" Northeast Region and Oklahoma
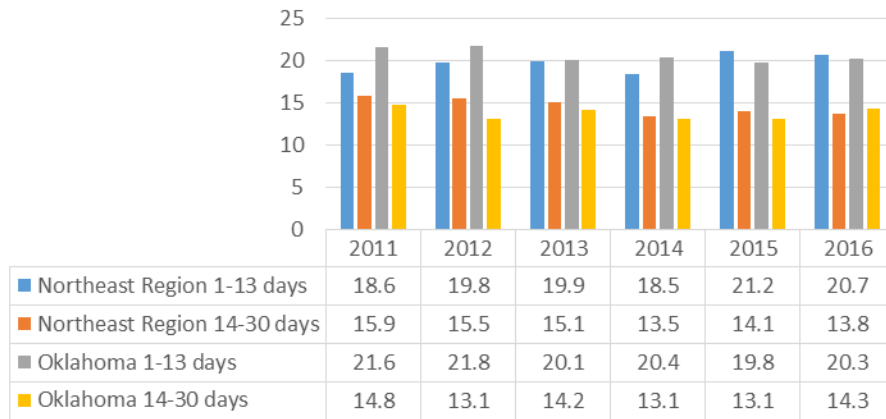
	2011	2012	2013	2014	2015	2016
Northeast Region 1-13 days	18.6	19.8	19.9	18.5	21.2	20.7
Northeast Region 14-30 days	15.9	15.5	15.1	13.5	14.1	13.8
Oklahoma 1-13 days	21.6	21.8	20.1	20.4	19.8	20.3
Oklahoma 14-30 days	14.8	13.1	14.2	13.1	13.1	14.3

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2011 to 2016, Oklahoma Statistics on Health Available for Everyone

Data by county were not available for this indicator, so it was examined for the Northeast Region of Oklahoma, which includes the other three primary Oklahoma counties served by Ascension St. John (Creek, Nowata and Washington). When looking at self-reported "mentally unhealthy days," both regions showed the highest percentages of people who reported mentally unhealthy days in the past 1-13 days, rather than the past 14-30 days. These percentages for both regions remained consistently around 20%.

Percentage of Respondents Reporting "Mentally Unhealthy Days in the Past Month" by Gender Northeast Region and Oklahoma
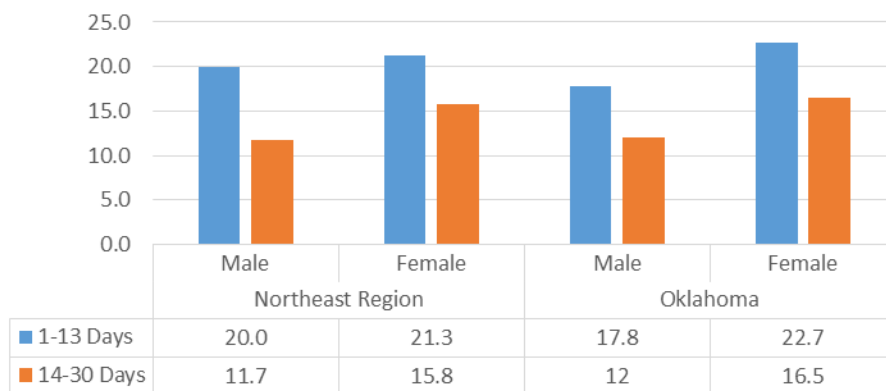
	Male	Female	Male	Female
	Northeast Region		Oklahoma	
1-13 Days	20.0	21.3	17.8	22.7
14-30 Days	11.7	15.8	12	16.5

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2011 to 2016, Oklahoma Statistics on Health Available for Everyone

Both males and females had higher percentages reporting having mentally unhealthy days in the past 1-13 days than in the past 14 to 30 days, with females consistently reporting higher percentages than males.

Percentage of Respondents Reporting "Mentally Unhealthy Days in the Past Month by Age Group Northeast Region and Oklahoma
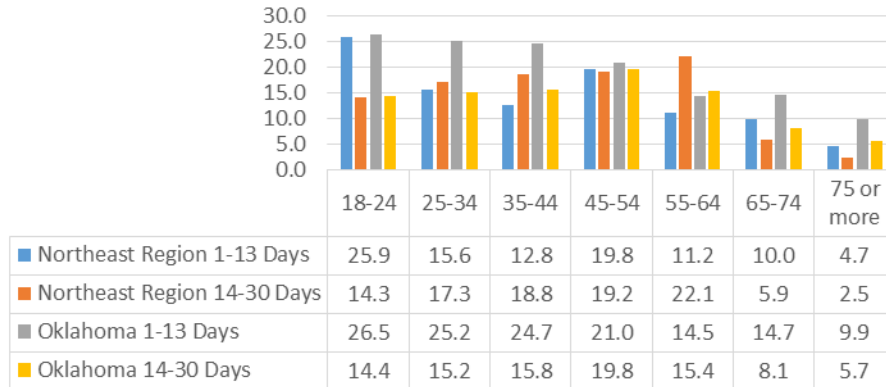
	18-24	25-34	35-44	45-54	55-64	65-74	75 or more
Northeast Region 1-13 Days	25.9	15.6	12.8	19.8	11.2	10.0	4.7
Northeast Region 14-30 Days	14.3	17.3	18.8	19.2	22.1	5.9	2.5
Oklahoma 1-13 Days	26.5	25.2	24.7	21.0	14.5	14.7	9.9
Oklahoma 14-30 Days	14.4	15.2	15.8	19.8	15.4	8.1	5.7

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2011 to 2016, Oklahoma Statistics on Health Available for Everyone

From 2011 to 2016, the age group with the highest percentage reporting having had mentally unhealthy days in the past month (past 1-13 days) was 18 to 24-years old in the Northeast Region of Oklahoma at 25.9%. The pattern seems to show higher percentages of younger people reporting mentally unhealthy days in the past 1-13 days, while those from 35 to 64 have higher percentages reporting mentally unhealthy days in the past 14-30 days. The percentages of those reporting having had mentally unhealthy days in the past month drop sharply for both areas at age 65 and older.
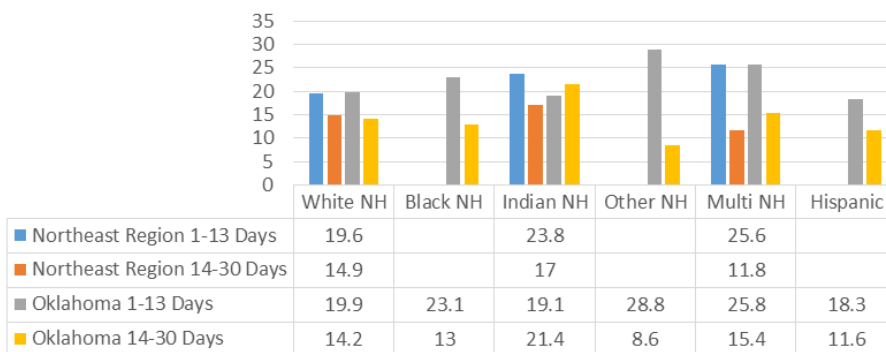
Percentage of Respondents Reporting "Mentally Unhealthy Days" in the Past Month by Race/Ethnicity Northeast Region and Oklahoma

	White NH	Black NH	Indian NH	Other NH	Multi NH	Hispanic
Northeast Region 1-13 Days	19.6		23.8		25.6	
Northeast Region 14-30 Days	14.9		17		11.8	
Oklahoma 1-13 Days	19.9	23.1	19.1	28.8	25.8	18.3
Oklahoma 14-30 Days	14.2	13	21.4	8.6	15.4	11.6

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2011 to 2016, Oklahoma Statistics on Health Available for Everyone

Depression

This indicator is presented as the percentage of adults who reported that they had ever been diagnosed with a depressive disorder, based on 2015 BRFSS data.

How are we doing?

For the purposes of this assessment, the Northeast region consists of Creek County, Washington County, and Nowata County. Data for the specific measure were not available at the county level for these communities.

Percentage of Respondents with Reported Depressive Disorder Northeast, Oklahoma and U. S.

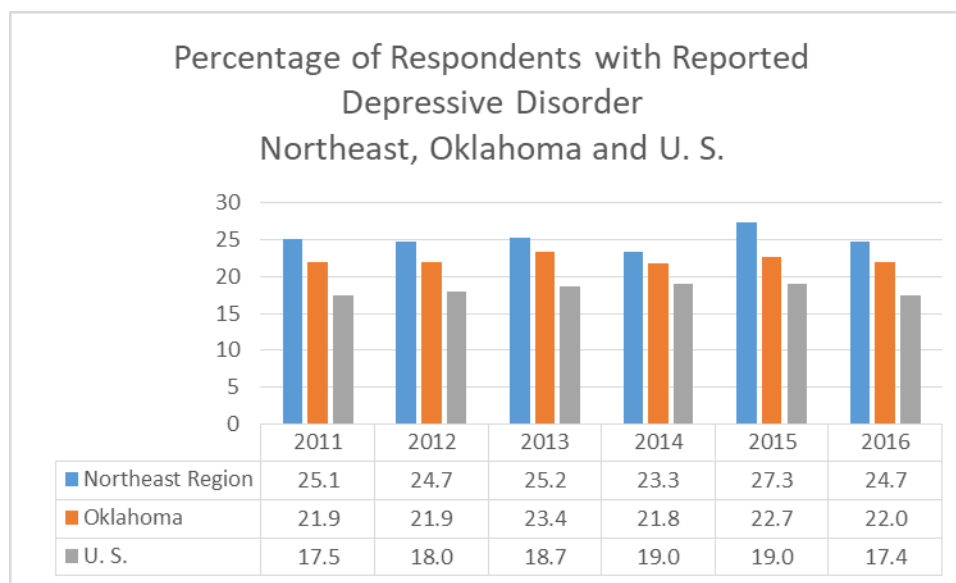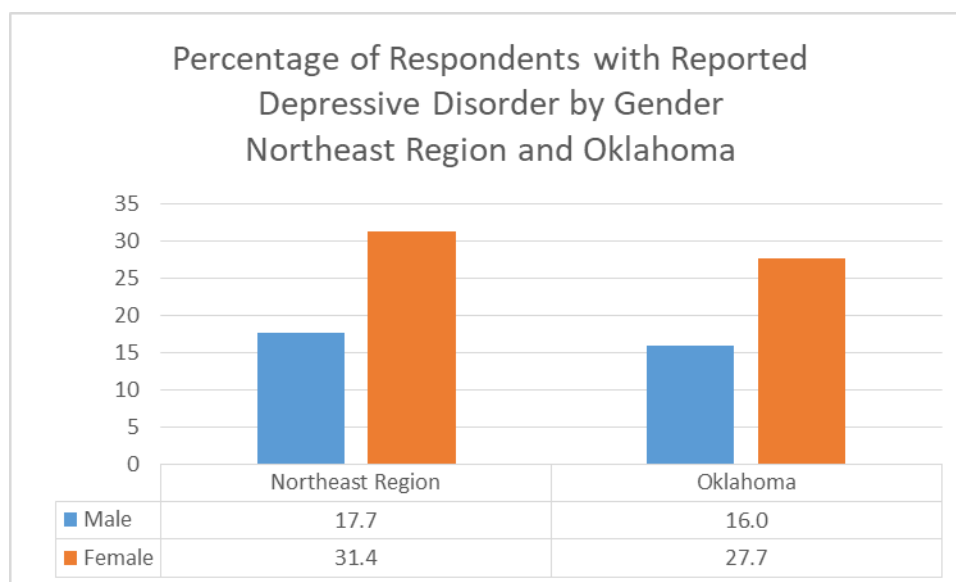|	2011	2012	2013	2014	2015	2016
Northeast Region	25.1	24.7	25.2	23.3	27.3	24.7
Oklahoma	21.9	21.9	23.4	21.8	22.7	22.0
U. S.	17.5	18.0	18.7	19.0	19.0	17.4

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2011 to 2016, Oklahoma Statistics on Health Available for Everyone

For those reporting having a depressive disorder, percentages remained relatively stable for the Northeast Region from 2011 to 2016 with the Northeast region having consistently higher percentages than both Oklahoma and the U.S.

Percentage of Respondents with Reported Depressive Disorder by Gender Northeast Region and Oklahoma

	Northeast Region	Oklahoma
Male	17.7	16.0
Female	31.4	27.7

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2011 to 2016, Oklahoma Statistics on Health Available for Everyone

For both the Northeast Region and Oklahoma, females had significantly higher percentages of those reporting having a depressive disorder, with percentages close to two times those reported by males.

Percentage of Respondents with Reported Depressive Disorder by Age Group
Northeast Region and Oklahoma

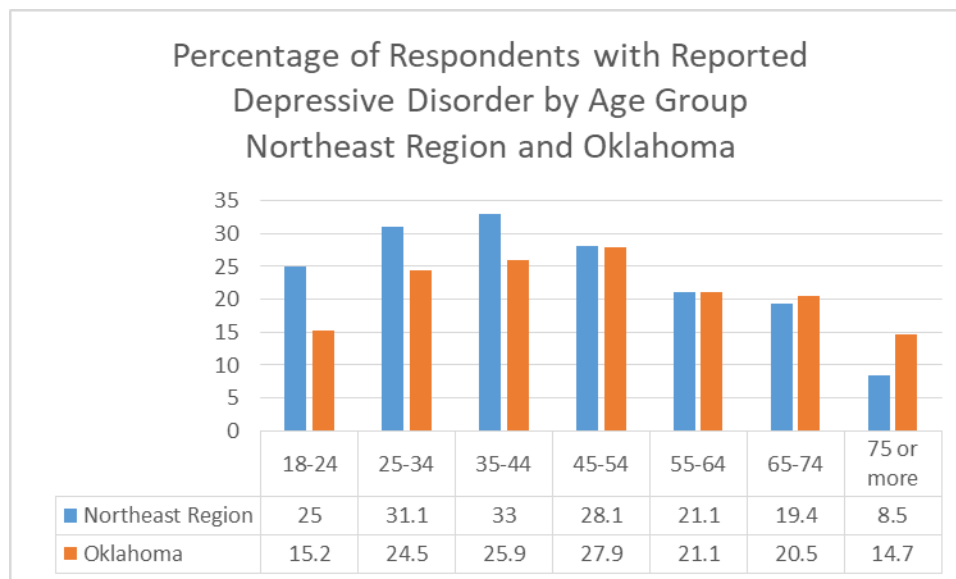|	18-24	25-34	35-44	45-54	55-64	65-74	75 or more
Northeast Region	25	31.1	33	28.1	21.1	19.4	8.5
Oklahoma	15.2	24.5	25.9	27.9	21.1	20.5	14.7

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2011 to 2016, Oklahoma Statistics on Health Available for Everyone

For those in the Northeast region, the highest percentage of those reporting having a depressive disorder were in the 35-44 age group with the percentages decreasing as age increases.

Percentage of Respondents with Reported Depressive Disorder by Educational Attainment
Northeast Region and Oklahoma

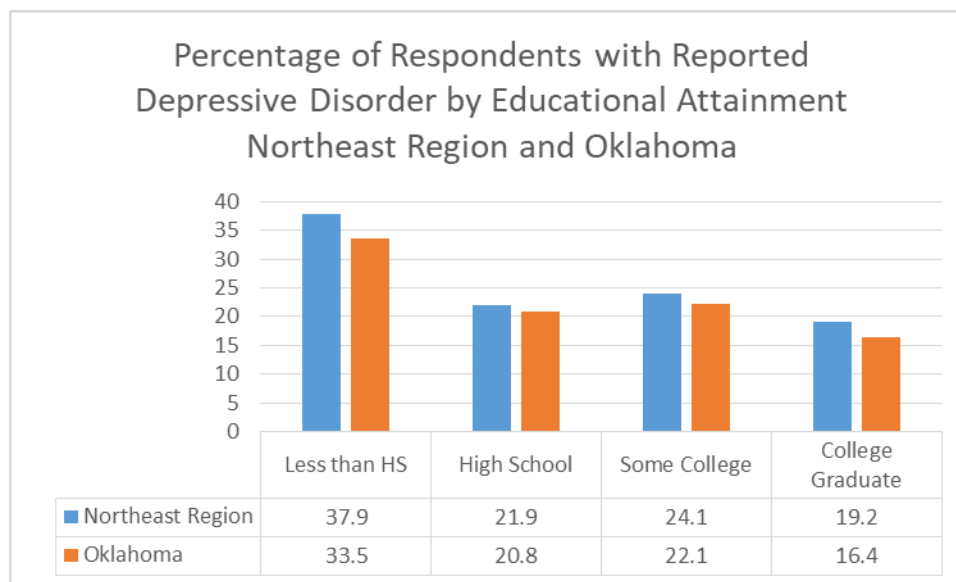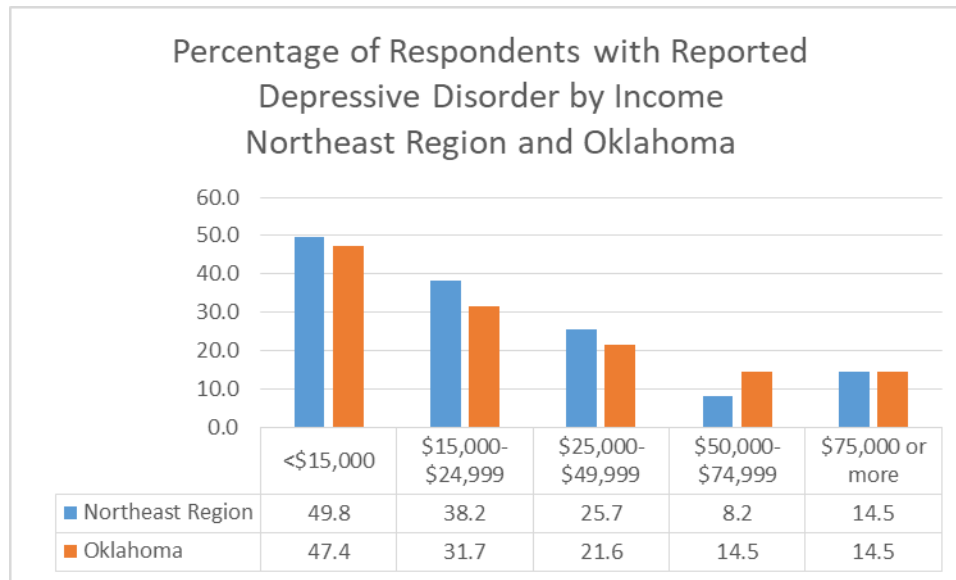|	Less than HS	High School	Some College	College Graduate
Northeast Region	37.9	21.9	24.1	19.2
Oklahoma	33.5	20.8	22.1	16.4

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2011 to 2016, Oklahoma Statistics on Health Available for Everyone

The Northeast region had more than double the percentage of those with a depressive disorder who had less than a high school education.

Percentage of Respondents with Reported Depressive Disorder by Income Northeast Region and Oklahoma

	<$15,000	$15,000-$24,999	$25,000-$49,999	$50,000-$74,999	$75,000 or more
Northeast Region	49.8	38.2	25.7	8.2	14.5
Oklahoma	47.4	31.7	21.6	14.5	14.5

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2011 to 2016, Oklahoma Statistics on Health Available for Everyone

The highest percentage of those with a depressive disorder for the Northeast region were in the $15,000 to $24,999 income category (30.3%).

Mental health and substance abuse visits

This indicator is presented as the number of individuals who received outpatient mental health services and substance abuse services funded by Medicaid or Oklahoma Department of Mental Health and Substance Abuse Services per 1,000 population. Demographic data is presented for unique clients only. It is important to note that this indicator does not include any mental health and substance abuse visits that were paid for through private insurance, self-pay, Veteran's Affairs, tribal healthcare, etc. Outpatient substance abuse services does not include social support groups such as Alcoholics Anonymous or Narcotics Anonymous, or inpatient rehab services.

Why is this indicator important?

Mental health is a state of successful performance of mental function, resulting in productive activities, fulfilling relationships with other people, and the ability to adapt to change and to cope with challenges. It is essential to personal well-being, family and interpersonal relationships and the ability to contribute to community or society. Mental health disorders are the leading cause of disability in the United States and Canada, accounting for 25 percent of all years of life lost to disability and premature mortality. Mental health and physical health are closely connected. Mental health plays a major role in people's ability to maintain good physical health. Mental illnesses, such as depression and anxiety, affect people's ability to participate in health-promoting behaviors. In turn, problems with physical health, such as chronic diseases, can have a serious impact on mental health and decrease a person's ability to participate in treatment and recovery.[24]

In 2012, an estimated 23.1 million Americans age 12 and older needed treatment for substance abuse. Substance abuse generally refers to alcohol and both prescription and illegal drug abuse. Disorders related to substance abuse cause some of the highest rates of disability and disease burden in the U.S. This can result in high costs to families, employers, and publicly funded health care systems. Additionally, chronic diseases such as diabetes and heart disease

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[24] Mental Health and Mental Disorders. Healthy People 2020. US Department of Health and Human Services.

can be caused by drug and alcohol use. Addressing the impact of substance use alone is estimated to cost Americans more than $600 billion each year.[25]

How are we doing?
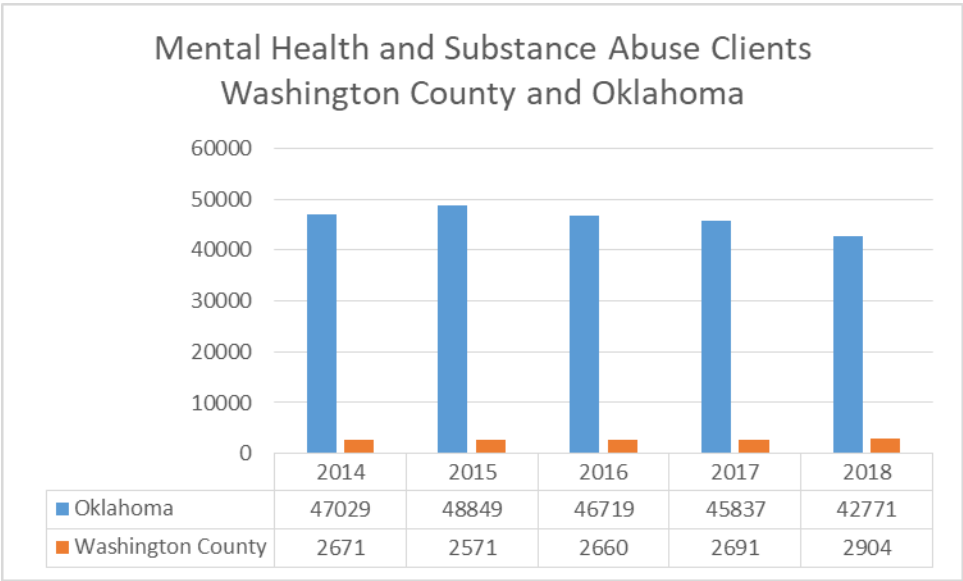
Source: ODMHSAS Online Query System

The graph above shows the raw numbers of mental health and substance abuse clients for Washington County and for the state of Oklahoma overall. Washington County showed a steady and significant increase from 2014 to 2018, while the state of Oklahoma overall showed a decrease for the same time-period.

Suicide mortality

The mortality rate from suicide is presented as the number of deaths from suicide per 100,000 population, over the years 2014-2016. The rates were age-adjusted to account for differences in age distribution among locations, ZIP codes and races/ethnicities.
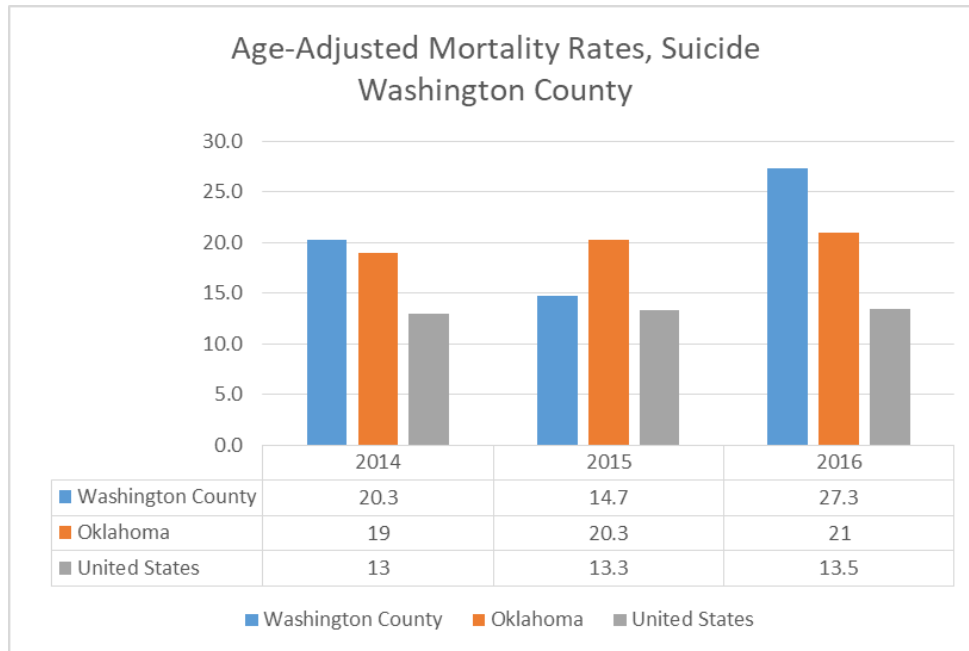
Why is this indicator important?

Although the causes of suicide are complex and determined by multiple factors, the goal of suicide prevention is to reduce risk factors and increase factors that promote resilience (protective factors). Risk factors include family history of suicide or child maltreatment, previous suicide attempts, history of mental disorders and substance abuse and barriers to mental health treatment. Protective factors include effective clinic care for mental, physical, and substance abuse disorders, family and community support and easy access to a variety of clinical interventions and support for help seeking. Prevention aims to address all levels of influence (individual, relationship, community and societal).[26]

How are we doing?

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[25] Prevention of Substance Abuse and Mental Illness. Substance Abuse and Mental Health Services Administration.
[26] Injury Prevention and Control: Suicide: Risk and Protective Factors. Centers for Disease Control and Prevention.

Age-Adjusted Mortality Rates, Suicide
Washington County

	2014	2015	2016
■ Washington County	20.3	14.7	27.3
■ Oklahoma	19	20.3	21
■ United States	13	13.3	13.5

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care
Information, Vital Statistics 2014 to 2016, Oklahoma Statistics on Health Available for Everyone

Calculations may have been suppressed due to small cell size (less than 5 deaths/populations less than 20). Age-adjusted rates based on 2000 US population standard. All rates are deaths per 100,000 population.

Mortality rates for suicide originally decreased from 2014 to 2015 but then sharply increased in Washington County from 2015 to 2016 (14.7 deaths per 100,000 population in 205 to almost double that at 27.3 deaths per 100,000 population in 2016).

Suicide mortality by zip code
Source: Mortality_zip code
Filter: Suicide, 2014-2016
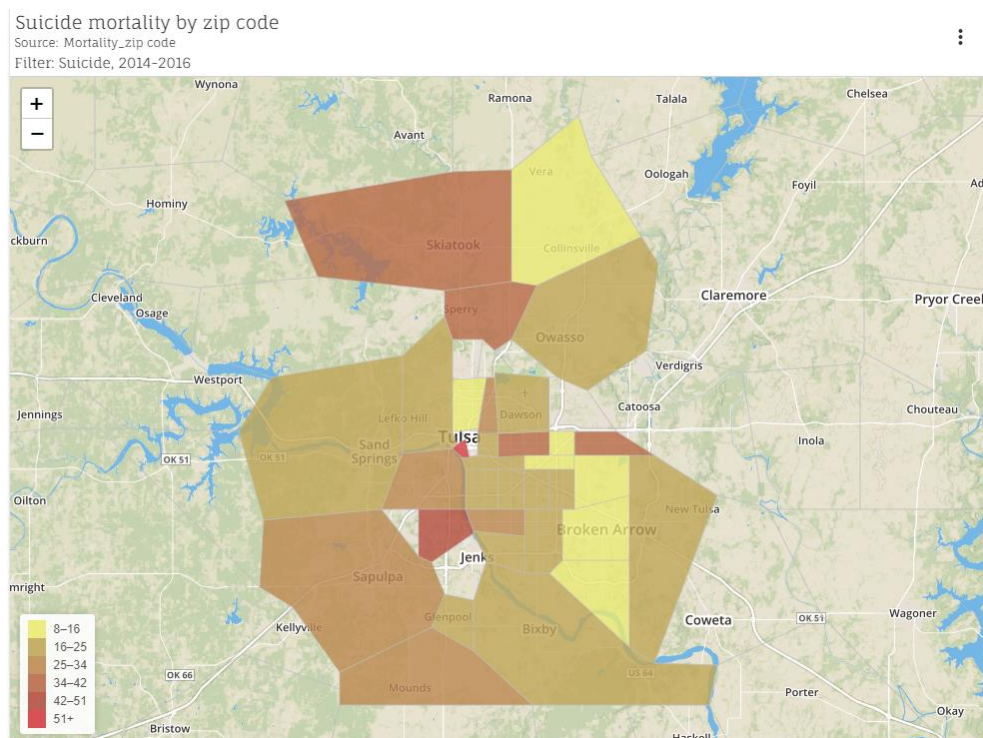
Alcohol dependency

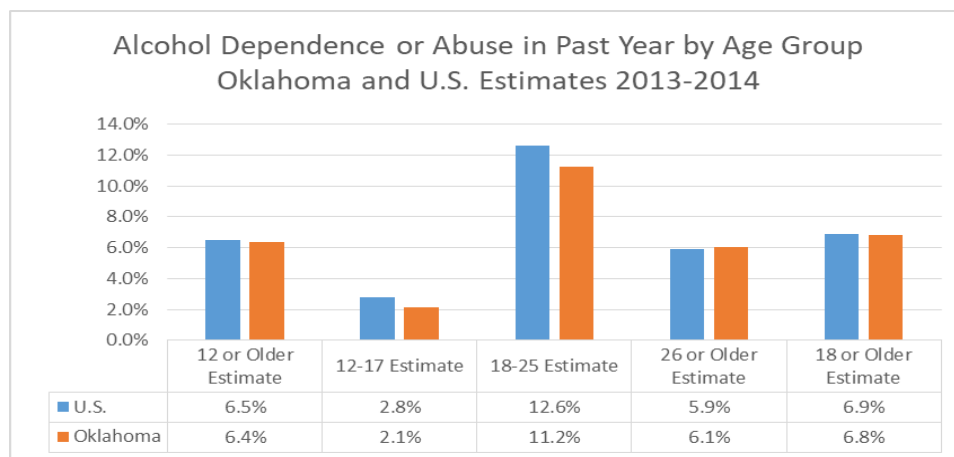This indicator represents the percentage of teens (12-17) and adults (18+) reporting alcohol dependence in the past year. Dependence is based on definitions found in the 4th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV).23 The values were reported are from the Substance Abuse and Mental Health Services Administration (SAMHSA), Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health (NSDUH), 2013 and 2014.

Why is this indicator important?

When consumed in excess, alcohol is harmful to the health and well-being of those that drink as well as their families, friends, and communities.

How are we doing?

Alcohol Dependence or Abuse in Past Year by Age Group
Oklahoma and U.S. Estimates 2013-2014

	12 or Older Estimate	12-17 Estimate	18-25 Estimate	26 or Older Estimate	18 or Older Estimate
U.S.	6.5%	2.8%	12.6%	5.9%	6.9%
Oklahoma	6.4%	2.1%	11.2%	6.1%	6.8%

Sources: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2013 and 2014

The graph above shows the latest available data on alcohol dependence or abuse in the past year for Oklahoma and the U.S. overall for 2013-2014. In all age categories except the 26 and older category, Oklahoma has lower percentages than the U.S. overall. The highest percentages for both the U.S. and Oklahoma are in the 18-25 age range.

Illicit drug dependency

This indicator represents the percentage of teens (12-17) and adults (18+) reporting illicit drug dependence or abuse in the past year. Dependence and abuse are based on definitions found in the 4th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV).23 The values were reported are from the Substance Abuse and Mental Health Services Administration (SAMHSA), Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health (NSDUH), 2013 and 2014.

Why is this indicator important?

When consumed in excess, alcohol is harmful to the health and well-being of those that drink as well as their families, friends, and communities.

How are we doing?

Illicit Drug Dependence or Abuse in the Past Year
By Age Group
State and U. S. Estimates 2103-2014

	12 or Older Estimate	12-17 Estimate	18-25 Estimate	26 or Older Estimate	18 or Older Estimate
U.S.	2.6%	3.5%	7.0%	1.8%	2.6%
Oklahoma	2.4%	3.0%	6.3%	1.6%	2.3%

Sources: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2013 and 2014

Percentages of illicit drug dependence in both Oklahoma and the U.S. overall are dramatically higher in the 18-25-year-old age group than in any other age group. This indicator was not available at the county or region level.

Drug- and alcohol-induced mortality rates

Over 70,000 (70,237) drug overdose deaths occurred in the United States in 2017. The age-adjusted rate of overdose deaths increased significantly by 9.6% from 2016 (19.8 per 100,000) to 2017 (21.7 per 100,000). Opioids—mainly synthetic opioids (other than methadone)—are currently the main driver of drug overdose deaths. Opioids were involved in 47,600 overdose deaths in 2017 (67.8% of all drug overdose deaths).[27]

As heroin use has increased, so have heroin-related overdose deaths. During 2017, over 15,000 people died from drug overdoses involving heroin in the United States, a rate of almost 5 deaths for every 100,000 Americans.[28] Heroin-related overdose deaths increased five-fold from 2010 to 2017.[29] From 2016-2017, heroin overdose death rates remained stable.[16] In 2017, males aged 25-44 had the highest heroin death rate at 14.8 per 100,000, which was a decrease of -4.5% from 2016.

Heroin overdoses alone - in Oklahoma, 2016 there were 53 heroin overdoses alone for rate of 1.4. In 2017 there were 61 heroin overdoses for a rate of 1.6.[30]

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[27] CDC/NCHS, National Vital Statistics System, Mortality

[28] Scholl L, Seth P, Kariisa M, Wilson N, Baldwin G. Drug and Opioid-Involved Overdose Deaths – United States, 2013-2017(https://www.cdc.gov/mmwr/volumes/67/wr/mm675152e1.htm?s_cid=mm675152e1_w). Morb Mortal Wkly Rep. ePub: 21 December 2018.

[29] Hedegaard H, Miniño AM, Warner M. Drug overdose deaths in the United States, 1999–2017. NCHS Data Brief, no 329. Hyattsville, MD: National Center for Health Statistics. 2018.

[30] SAMHSA, Center for Behavioral Health Statistics and Quality, https://www.samhsa.gov/data/

Age-Adjusted Mortality Rates, Drug/Alcohol Induced, Washington County

	2015	2016	2017
■ Washington County			
■ Oklahoma	32.1	36.3	35
■ United States	26.3	30.3	32.4

■ Washington County   ■ Oklahoma   ■ United States
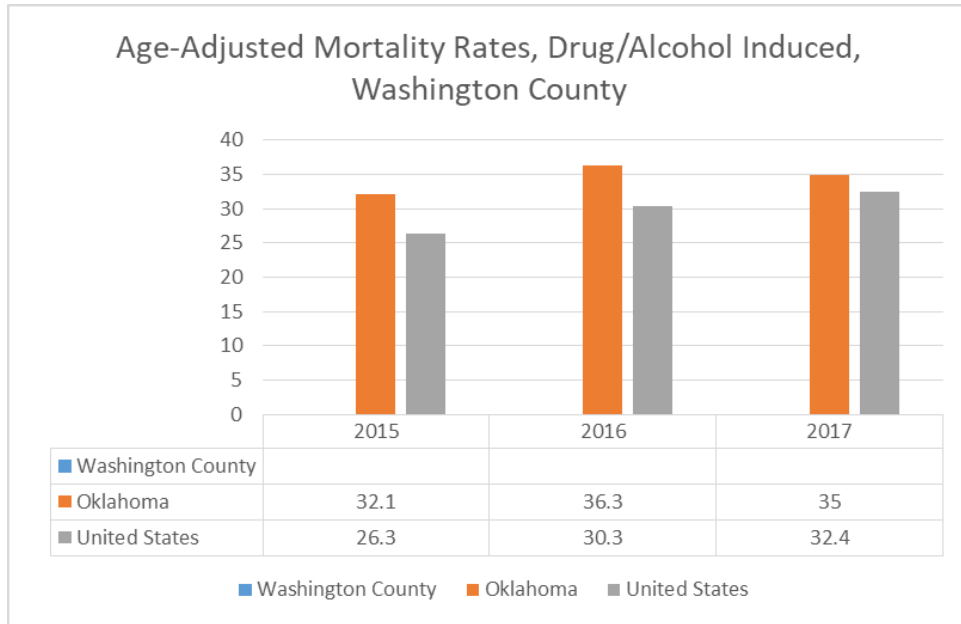
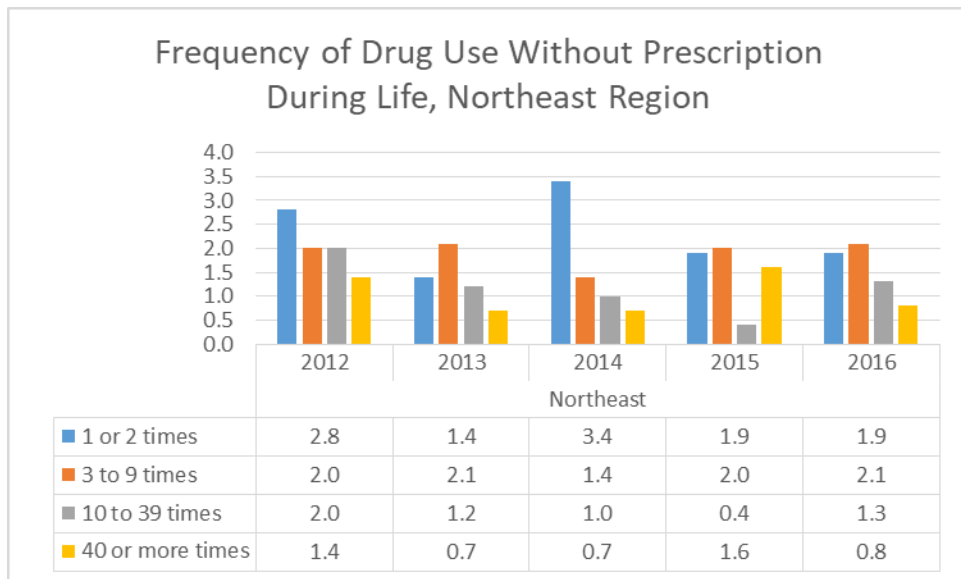Source: Centers for Disease Control and Prevention, National Center for Health Statistics.
Underlying Cause of Death 1999-2017 on CDC WONDER Online Database, released December 2018.

Compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Rate Per 100,000.

The graph above shows age-adjusted mortality rates for drug/alcohol related for Oklahoma and the United States. Looking at the numbers, Oklahoma is consistently higher than the United States in regard to drug/alcohol induced mortality rates.

Frequency of Drug Use Without Prescription During Life, Northeast Region

Northeast

	2012	2013	2014	2015	2016
■ 1 or 2 times	2.8	1.4	3.4	1.9	1.9
■ 3 to 9 times	2.0	2.1	1.4	2.0	2.1
■ 10 to 39 times	2.0	1.2	1.0	0.4	1.3
■ 40 or more times	1.4	0.7	0.7	1.6	0.8

Source: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2011 to 2016, Oklahoma Statistics on Health Available for Everyone

Calculations may have been suppressed due to cell size less than 5 or total less than 50.

The graph above shows the frequency of prescription drug use without a prescription by region for the time-period 2011 to 2016.

For the purposes of this assessment, the Northeast region consists of Creek County, Washington County, and Nowata County. Data for the specific measure were not available at the county level for these communities.

There were too few cases to break down by age, sex, race/ethnicity and socioeconomic status for both prescription use without prescription in life and in past 30 days. There were only cases in past 30 days for 2013, and no other breakdowns were possible due to suppressed data.
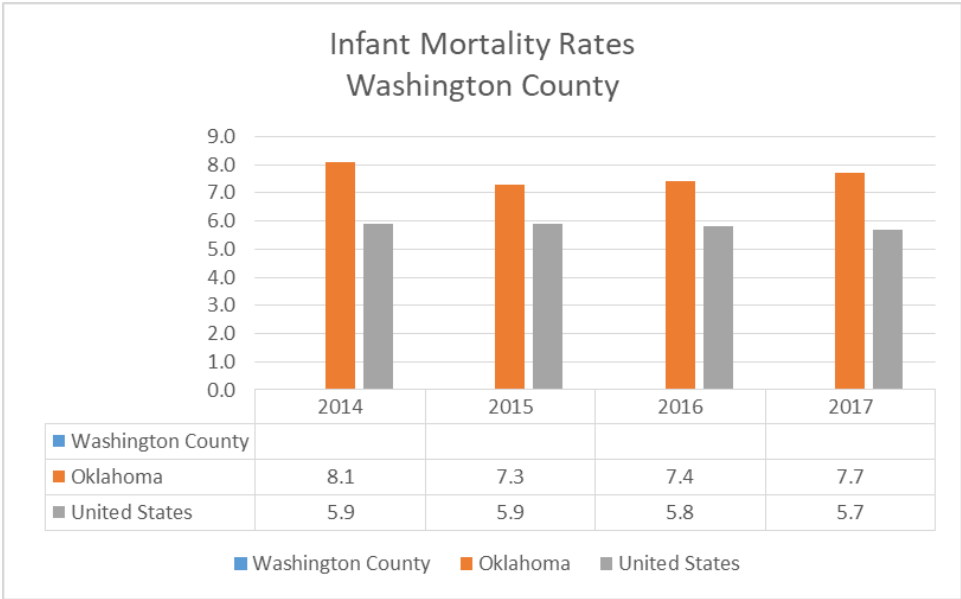
Maternal and child health

Infant mortality

Infant mortality is defined as the death of a child in the first year of life. The infant mortality rate is presented as the number of infant deaths per 1,000 live births, over the years 2014-2016.

Why is this indicator important?

Infant mortality is often used as an indicator to measure the health and well-being of a community because factors affecting the health of an entire population can also influence the mortality rate of infants. There are obvious disparities in infant mortality by age, race, and ethnicity of the mother. Some of the causes of infant mortality are serious birth defects, premature birth, SIDS, maternal complications of pregnancy, and injuries such as suffocation. Many of these factors can be influenced by good preconception and prenatal care for mothers.[31]

How are we doing?

Infant Mortality Rates
Washington County

	2014	2015	2016	2017
■ Washington County				
■ Oklahoma	8.1	7.3	7.4	7.7
■ United States	5.9	5.9	5.8	5.7

■ Washington County   ■ Oklahoma   ■ United States

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Vital Statistics 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

Calculations may have been suppressed due to cell size less than 5 or total less than 50. All Infant Mortality Rates are deaths per 1,000 births.

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[31] Reproductive Health: Infant Mortality. Centers for Disease Control and Prevention.

Although data was only available Oklahoma and the United States, the infant mortality rates increased from did not have much variation from 2014 to 2017.
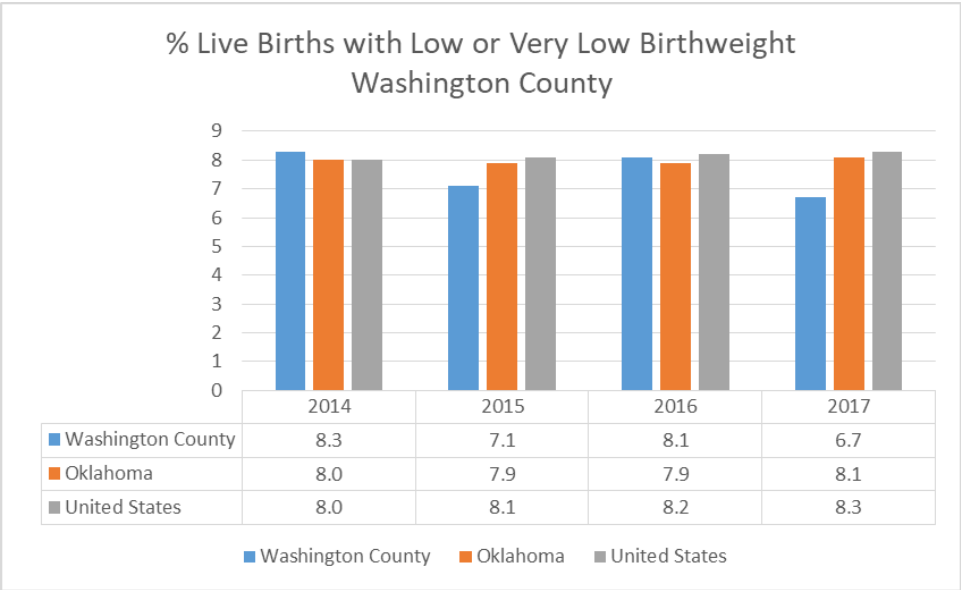
Low birth weight

Low birth weight is defined as infants who weigh less than 2,500 grams (5 pounds, 8 ounces) at birth. Very low birth weight is defined as infants who weigh less than 1,500 grams (3 pounds, 4 ounces). This indicator is expressed as a percentage of all births to county mothers, over the years 2015 – 2017.

Why is this indicator important?

Low birth weight infants who survive are at increased risk for health problems ranging from neurodevelopmental disabilities to respiratory disorders. Risk factors for low birth weight infants include smoking, alcohol use, lack of weight gain, age, low income, low education level, stress, domestic violence or other abuse, and exposure to air pollution or drinking water contaminated by lead. Prevention includes early and regular prenatal care to help identify conditions and behaviors that can result in low birth weight infants.[32]

How are we doing?

**% Live Births with Low or Very Low Birthweight
Washington County**

	2014	2015	2016	2017
Washington County	8.3	7.1	8.1	6.7
Oklahoma	8.0	7.9	7.9	8.1
United States	8.0	8.1	8.2	8.3

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Vital Statistics 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

Calculations may have been suppressed due to cell size less than 5 or total less than 50. Very low < 1500 grams, low 1500-2499 grams.

Since 2014, Washington County has been overall trending downward, in contrast to the US, which has been trending slightly upward (less favorable). Oklahoma met the Healthy People 2020 target of 7.8 percent.

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[32] Low birthweight: March of Dimes.
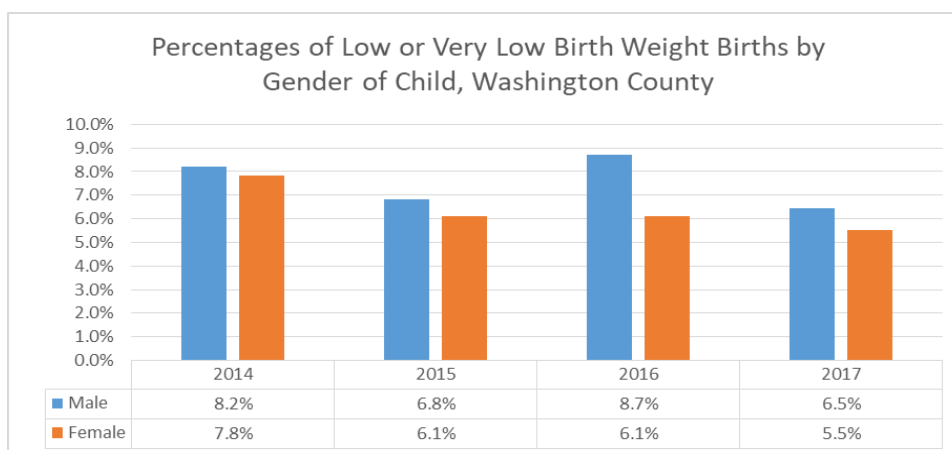
Percentages of Low or Very Low Birth Weight Births by Gender of Child, Washington County

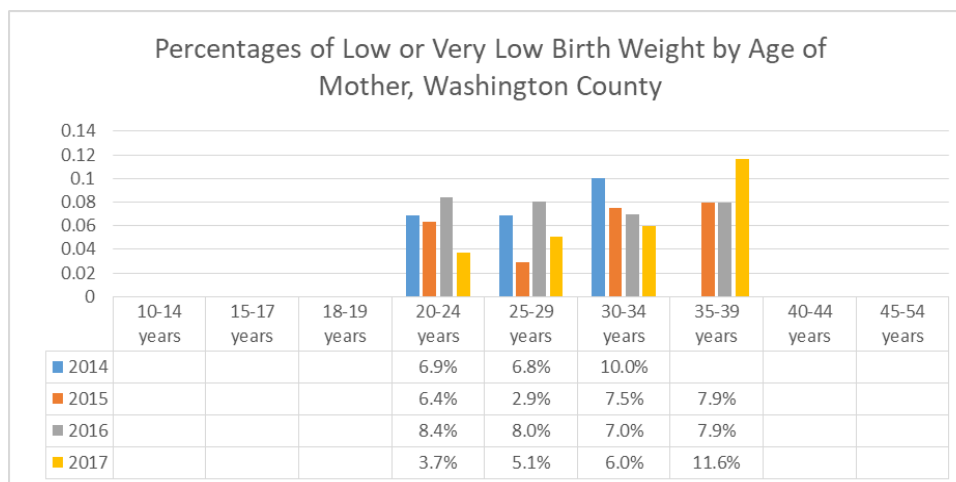|	2014	2015	2016	2017
Male	8.2%	6.8%	8.7%	6.5%
Female	7.8%	6.1%	6.1%	5.5%

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

Very low < 1500 grams, low 1500-2499 grams

Percentages of babies born with low or very low birth weight in Washington County did not vary greatly by gender of the child. Males born with low or very low birth weight ranged from 8.7% in 2016 to 6.5% in 2017, while females born with low or very low birth weight ranged from 7.8% in 2014 to 5.5% in 2017.

Percentages of Low or Very Low Birth Weight by Age of Mother, Washington County

	10-14 years	15-17 years	18-19 years	20-24 years	25-29 years	30-34 years	35-39 years	40-44 years	45-54 years
2014				6.9%	6.8%	10.0%			
2015				6.4%	2.9%	7.5%	7.9%		
2016				8.4%	8.0%	7.0%	7.9%		
2017				3.7%	5.1%	6.0%	11.6%		

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

Very low < 1500 grams, low 1500-2499 grams. Calculations may have been suppressed due to cell size less than 5 or total less than 50.

The highest percentage of babies born with low or very low birth weight in Washington County was among mother age 35 to 39 years old in 2017 (11.6%). The lowest percentage of babies born with low or very low birth rate was among mothers age 25 to 29 years old in 2015 (2.9%). Percentages of babies born with low or very low birth rates among mothers age 30 to 34 showed a downward trend over the time period examined in this assessment, ranging from 10% in 2014 to 6% in 2017.

Infectious disease: sexually transmitted infections/diseases

This indicator includes reported cases of sexually transmitted infections (chlamydia, gonorrhea, syphilis, HIV, and AIDS). It is presented as the number of cases and/or rate per 100,000 of each disease individually. It is presented as newly diagnosed cases.
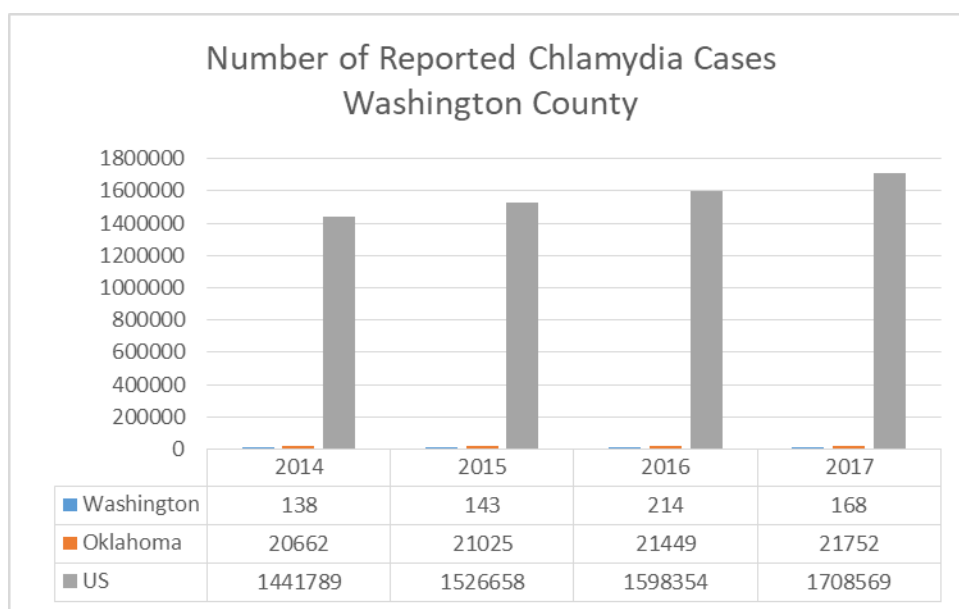
Why is this indicator important?

The Centers for Disease Control and Prevention (CDC) estimates that there are approximately 20 million new sexually transmitted infections (STIs) in the US each year, with almost half of those occurring young adults age 15 - 24. The cost burden of STIs on the health care system is significant- it is estimated to be as high as $16 billion annually. STIs are also commonly undiagnosed and therefore unreported, indicating that the true burden may be much higher.

Untreated STIs can have serious health complications, including reproductive health problems, fetal and perinatal health problems, cancer, and facilitation of sexual transmission of HIV. CDC also estimates that undiagnosed and untreated STIs cause about least 24,000 US women to become infertile each year.[33]

How are we doing?

Chlamydia

	2014	2015	2016	2017
Washington	138	143	214	168
Oklahoma	20662	21025	21449	21752
US	1441789	1526658	1598354	1708569

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Vital Statistics 2014-2017

Although Washington County showed increases each year from 2014 to 2016 in cases of Chlamydia, for the year 2017 there was a significant decrease. This was not true for either Oklahoma or the U.S. which both showed increases every year for all of 2014 to 2017.

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[33] Sexually Transmitted Diseases. Healthy People 2020. U.S. Department of Health and Human Services.

Number of Reported Chlamydia Cases by Gender
Washington County

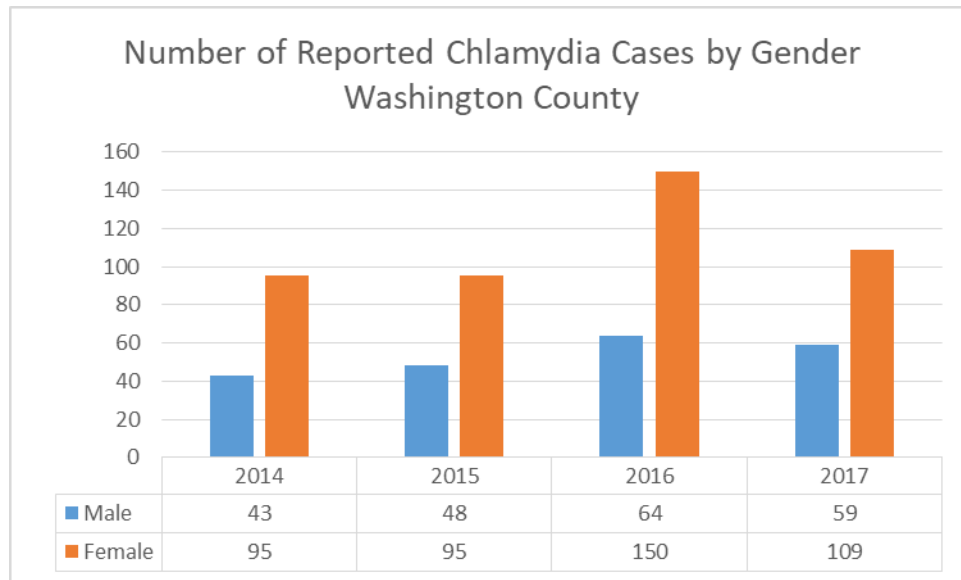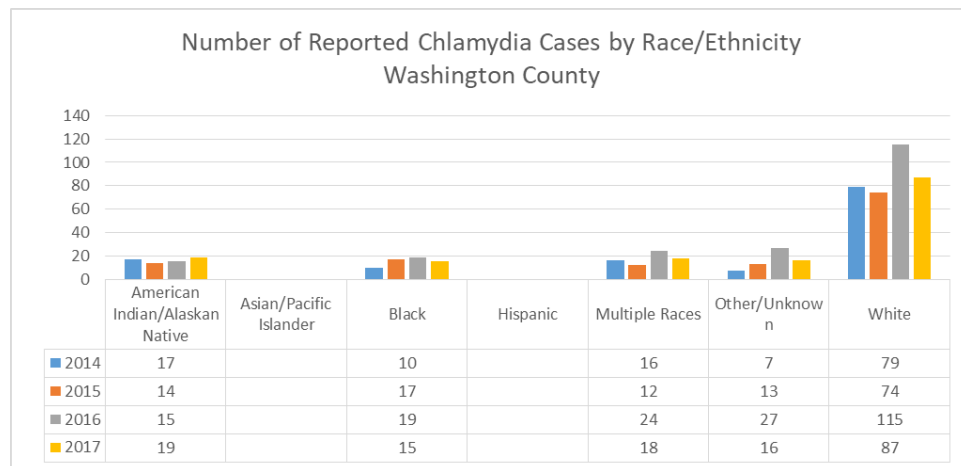|	2014	2015	2016	2017
■ Male	43	48	64	59
■ Female	95	95	150	109

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care
Information, Vital Statistics 2014-2017

Females overwhelmingly had more reported cases of chlamydia than did males over the time period examined in this assessment.

Number of Reported Chlamydia Cases by Race/Ethnicity
Washington County

	American Indian/Alaskan Native	Asian/Pacific Islander	Black	Hispanic	Multiple Races	Other/Unknown	White
■ 2014	17		10		16	7	79
■ 2015	14		17		12	13	74
■ 2016	15		19		24	27	115
■ 2017	19		15		18	16	87

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care
Information, Vital Statistics 2014-2017

Calculations may have been suppressed due to cell size less than 5 or total less than 50.

The graph above shows that the number of cases of chlamydia reported within race categories remained relatively stable over the time-period examined in this assessment.

Number of Reported Chlamydia Cases by Age Group
Washington County

	0 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45+
2014		35	47	32	13	5		
2015		33	64	23	11	10		
2016		51	89	46	18			
2017		59	60	28	9	6		

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care
Information, Vital Statistics 2014-2017

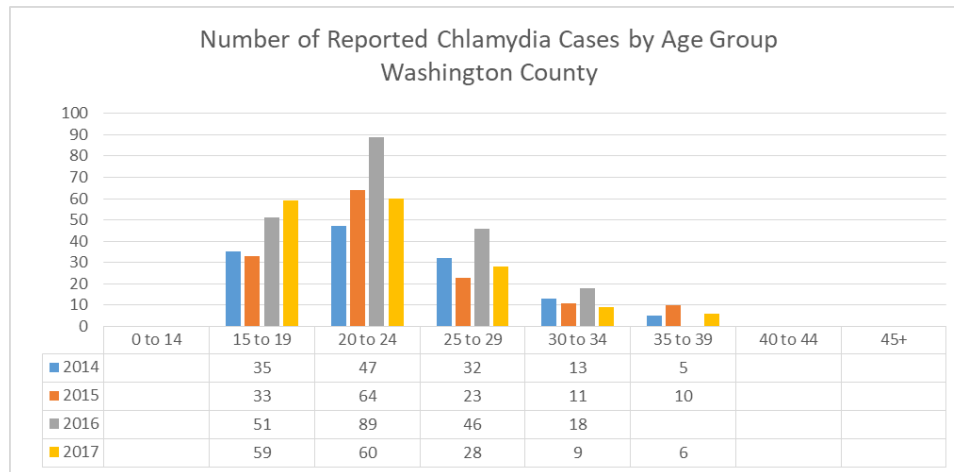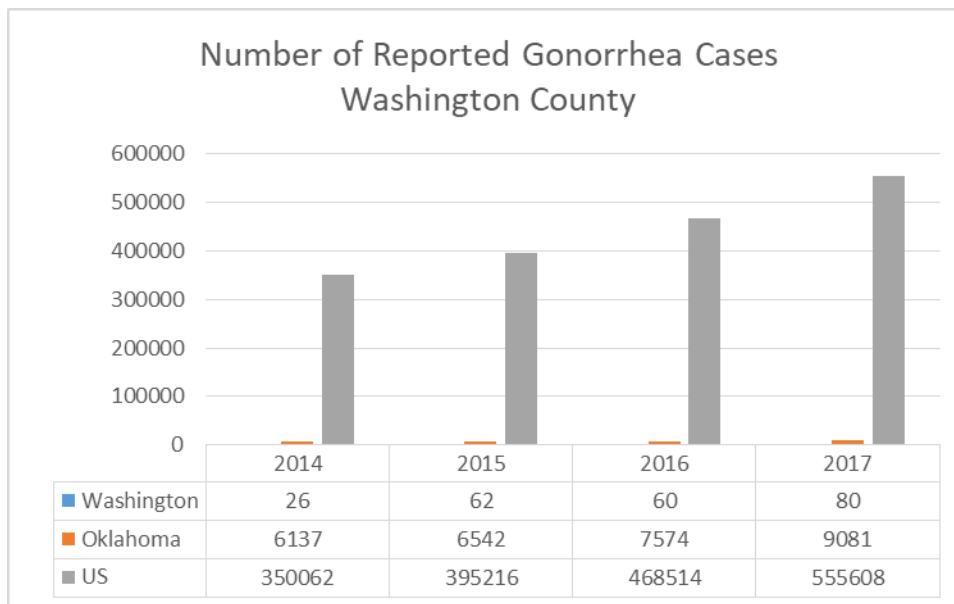The highest number of chlamydia cases reported (89) was in 2016 among the 20 to 24-year old age range.

Gonorrhea

Number of Reported Gonorrhea Cases
Washington County

	2014	2015	2016	2017
Washington	26	62	60	80
Oklahoma	6137	6542	7574	9081
US	350062	395216	468514	555608

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care
Information, Vital Statistics 2014-2017

Cases of Gonorrhea in Washington County rose significantly from 26 in 2014 to 80 in 2017 which matched the increases in both Oklahoma and the US for this same time period.

Number of Reported Gonorrhea Cases by Gender
Washington County

	2014	2015	2016	2017
Male	9	26	23	40
Female	17	36	37	40

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Vital Statistics 2014-2017

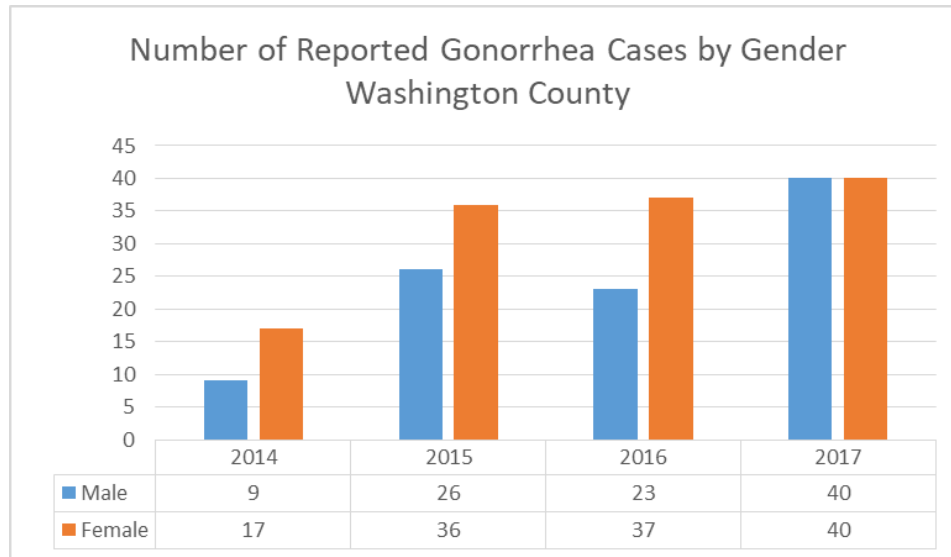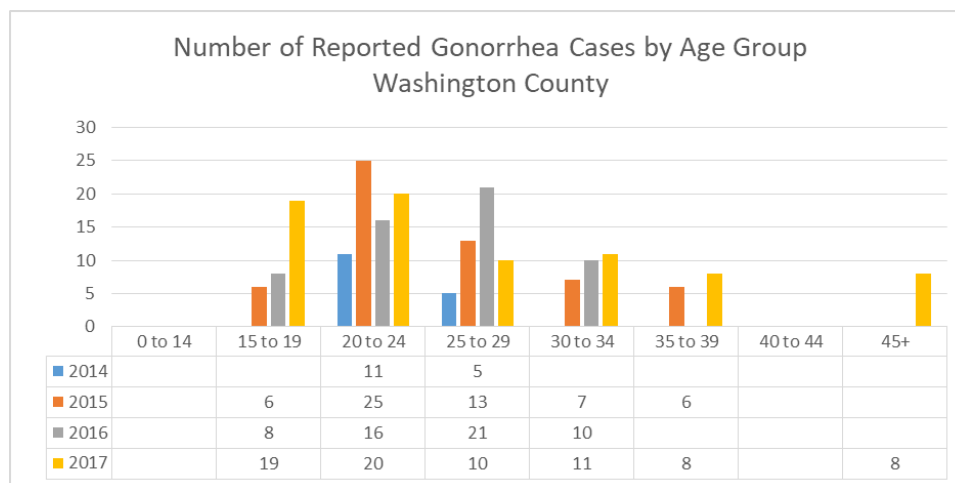Females consistently had higher numbers of reported cases of gonorrhea over the time-period examined in this assessment, however in 2017 the gap between the numbers reported for males and females turned into an equal amount of reported cases at 40 cases for both males and females.

Number of Reported Gonorrhea Cases by Age Group
Washington County

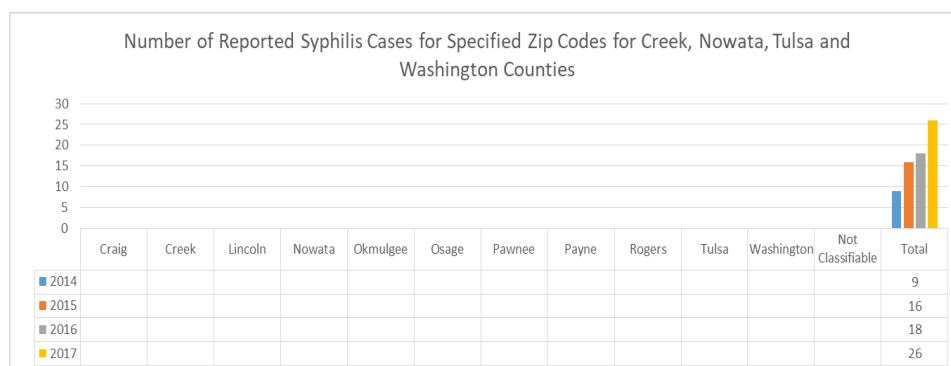|	0 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45+
2014			11	5				
2015		6	25	13	7	6		
2016		8	16	21	10			
2017		19	20	10	11	8		8

Oklahoma State Department of Health (OSDH), Center for Health Statistics, Health Care Information, Vital Statistics 2014-2017.

Calculations may have been suppressed due to cell size less than 5 or total less than 50.

The graph above shows that raw numbers of cases of gonorrhea reported increased in every age group over the time-period examined in this assessment.

Syphilis

Number of Reported Syphilis Cases for Specified Zip Codes for Creek, Nowata, Tulsa and Washington Counties

	Craig	Creek	Lincoln	Nowata	Okmulgee	Osage	Pawnee	Payne	Rogers	Tulsa	Washington	Not Classifiable	Total
2014													9
2015													16
2016													18
2017													26

Oklahoma State Department of Health (OSDH), Center for Health Statistics, Health Care Information, Vital Statistics 2014-2017.

Calculations may have been suppressed due to cell size less than 5 or total less than 50.

Numbers of cases of reported syphilis were too few to be broken down by specified ZIP code. Overall, however, the number of cases of syphilis reported more than doubled from 2014 to 2017 across the region examined in this assessment.
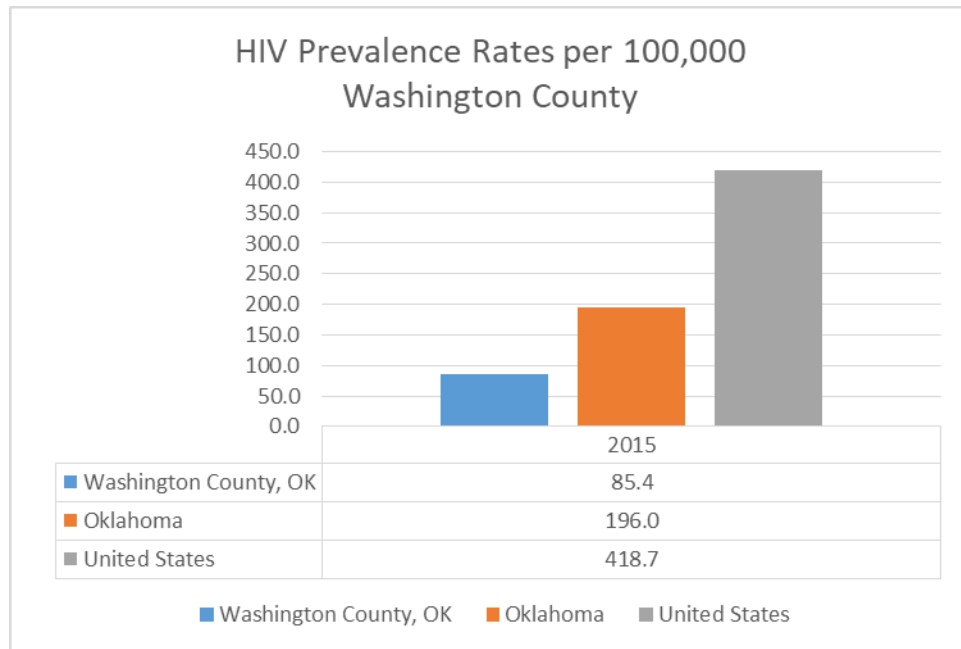
HIV

In 2015, an estimated 39,393 people in the United States were diagnosed with HIV, the virus that causes AIDS. About 1 in 7 people with HIV in the United States do not know that they are infected.
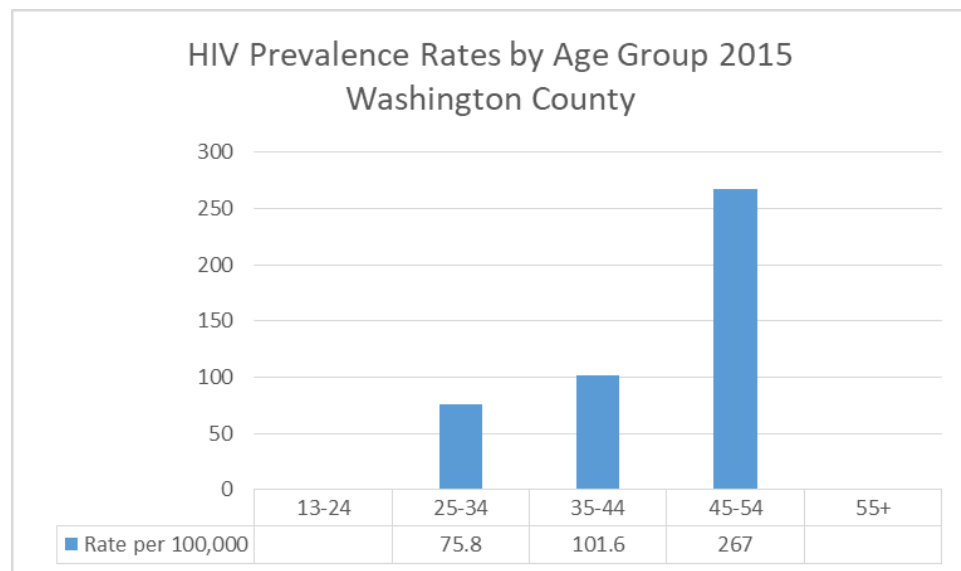
In 2015, an estimated 319 adults and adolescents were diagnosed with HIV in Oklahoma. Oklahoma ranked 27th among the 50 states in the number of HIV diagnoses in 2015.[34]

For the purposes of this assessment, the Northeast region consists of Creek County, Washington County, and Nowata County. Data for the specific measure were not available at the county level for these communities.
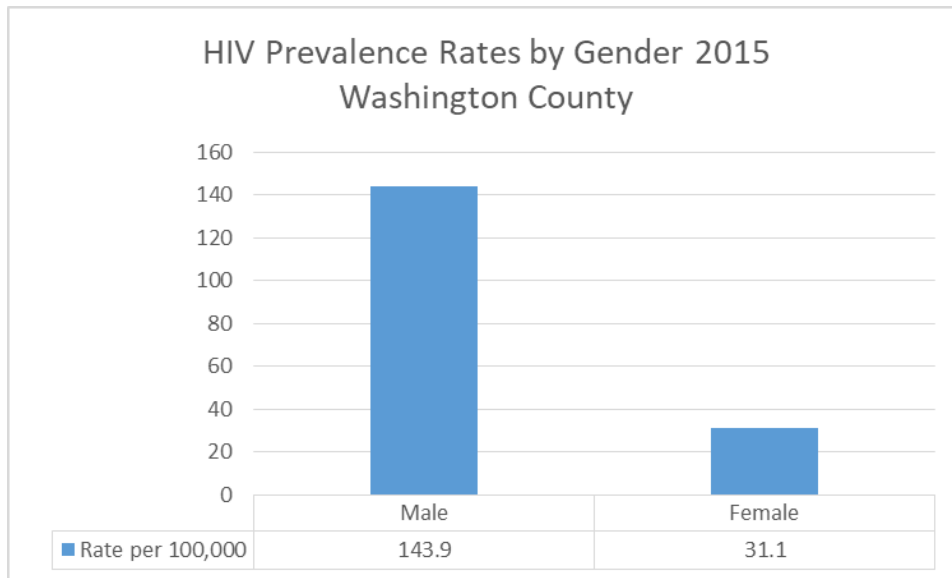
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[34] Centers for Disease Control and Prevention. NCHHSTP AtlasPlus. Updated 2017.
https://www.cdc.gov/nchhstp/atlas/index.htm(https://www.cdc.gov/nchhstp/atlas/index.htm).

HIV Prevalence Rates per 100,000
Washington County

	2015
■ Washington County, OK	85.4
■ Oklahoma	196.0
■ United States	418.7

■ Washington County, OK ■ Oklahoma ■ United States

The latest data available on HIV prevalence rates is for 2015. At this point in time, Washington County had 85.4 cases per 100,000 population while the entire State of Oklahoma combined had 196.
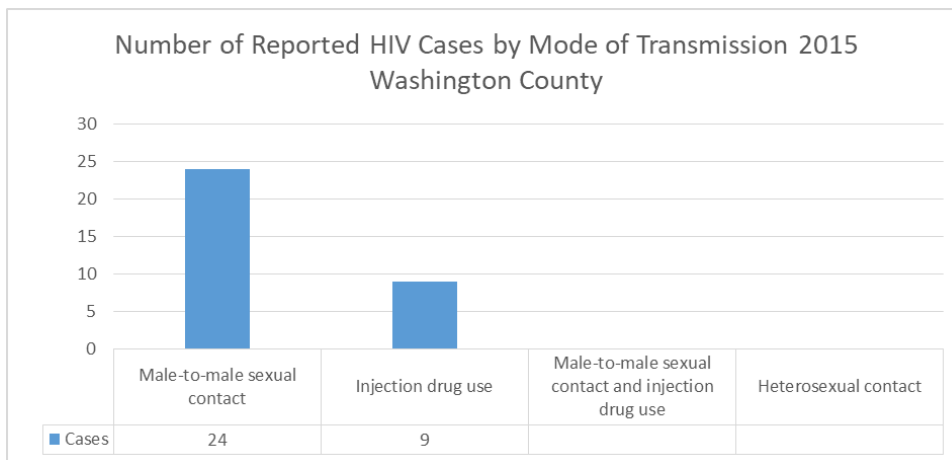
HIV Prevalence Rates by Age Group 2015
Washington County

	13-24	25-34	35-44	45-54	55+
■ Rate per 100,000		75.8	101.6	267	

Source: Centers for Disease Control and Prevention. NCHHSTP AtlasPlus. Updated 2017.
https://www.cdc.gov/nchhstp/atlas/index.htm(https://www.cdc.gov/nchhstp/atlas/index.htm).

Calculations may have been suppressed due to cell size less than 5 or total less than 50.

HIV Prevalence Rates by Gender 2015
Washington County

Rate per 100,000	Male	Female
	143.9	31.1

Source: Centers for Disease Control and Prevention. NCHHSTP AtlasPlus. Updated 2017.
https://www.cdc.gov/nchhstp/atlas/index.htm(https://www.cdc.gov/nchhstp/atlas/index.htm).

Calculations may have been suppressed due to cell size less than 5 or total less than 50.

The graph above shows that the prevalence of HIV in the counties examined in this assessment was consistently higher among males than among females.

Number of Reported HIV Cases by Mode of Transmission 2015
Washington County

Cases	Male-to-male sexual contact	Injection drug use	Male-to-male sexual contact and injection drug use	Heterosexual contact
	24	9		

Source: Centers for Disease Control and Prevention. NCHHSTP AtlasPlus. Updated 2017.
https://www.cdc.gov/nchhstp/atlas/index.htm(https://www.cdc.gov/nchhstp/atlas/index.htm).

Calculations may have been suppressed due to cell size less than 5 or total less than 50.

The above graph shows the number of cases of HIV by the mode of transmission according the latest data available for 2015. Male-to-male sexual contact was the most frequent mode of transmission.
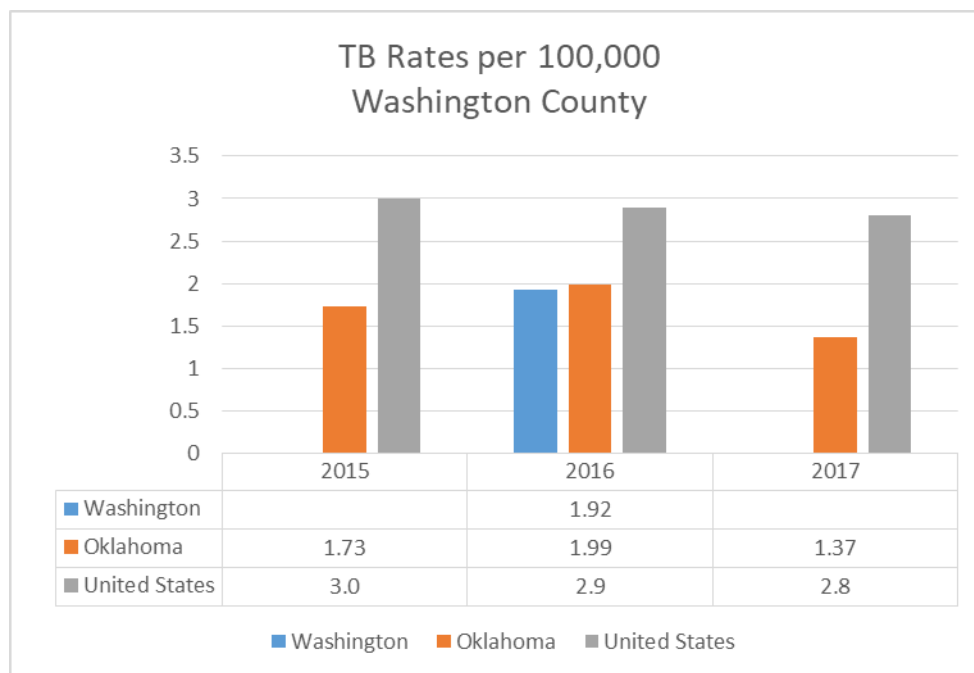
Infectious disease: tuberculosis

This indicator is presented as the number of newly reported cases of tuberculosis per 100,000 population.

Why is this indicator important?

Tuberculosis (TB) is a disease caused by a bacterium called Mycobacterium tuberculosis. It usually affects the lungs but can also attack other parts of the body such as the kidneys, spine, and brain. It is spread through the air when someone with TB of the lungs or throat coughs, sneezes, speaks, or sings. Individuals with TB are treated by taking several drugs for 6 – 12 months. It is very important to take the drugs exactly as prescribed, in order to lower the risk of becoming sick again or developing resistance to the drugs. Worldwide, over nine million individuals become sick with TB each year.[35]

How are we doing?

TB Rates per 100,000 Washington County

	2015	2016	2017
Washington		1.92	
Oklahoma	1.73	1.99	1.37
United States	3.0	2.9	2.8

Source: Public Health Investigation and Disease Detection of Oklahoma system data 2015-2017

Calculations may have been suppressed due to small cell sizes.

The available data for tuberculosis rates were from 2015 to 2017. There were too few cases in Washington County for further analysis to be done by gender, age, race or ethnicity. The graph above shows that for the year 2016, Washington County has a lower rate than Oklahoma and the United States for TB rate.

Health Factors

Health factors are based on four types of measures: health behaviors, clinical care, social and economic, and physical environment factors. Health factors contribute to health and are otherwise known as determinants of health.

Health factors ranking

This indicator demonstrates the overall rankings in health factors for counties throughout the state. The ranks are based on weighted scores four types of measures: health behaviors, clinical care, social and economic, and physical environment factors. The healthiest county in the state is ranked #1. This information is based on the County Health Rankings & Roadmaps courtesy of the University of Wisconsin Population Health Institute.
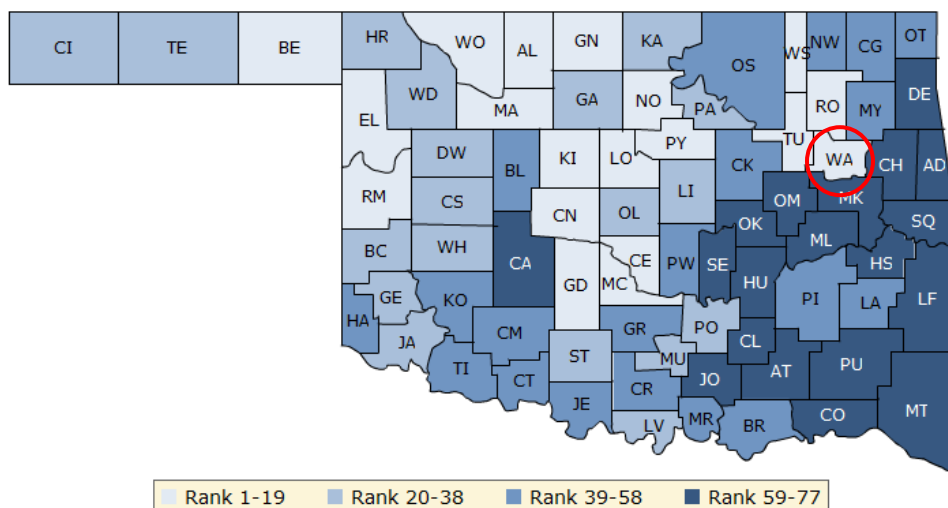
Why is this indicator important?

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[35] Centers for Disease Control and Prevention. (2016). *Tuberculosis Fact Sheet*. Retrieved from: http://www.cdc.gov/tb/publications/factsheets/general/tb.htm.

The overall rankings in health factors represent what influences the health of a county. They are an estimate of the future health of counties as compared to other counties within a state.
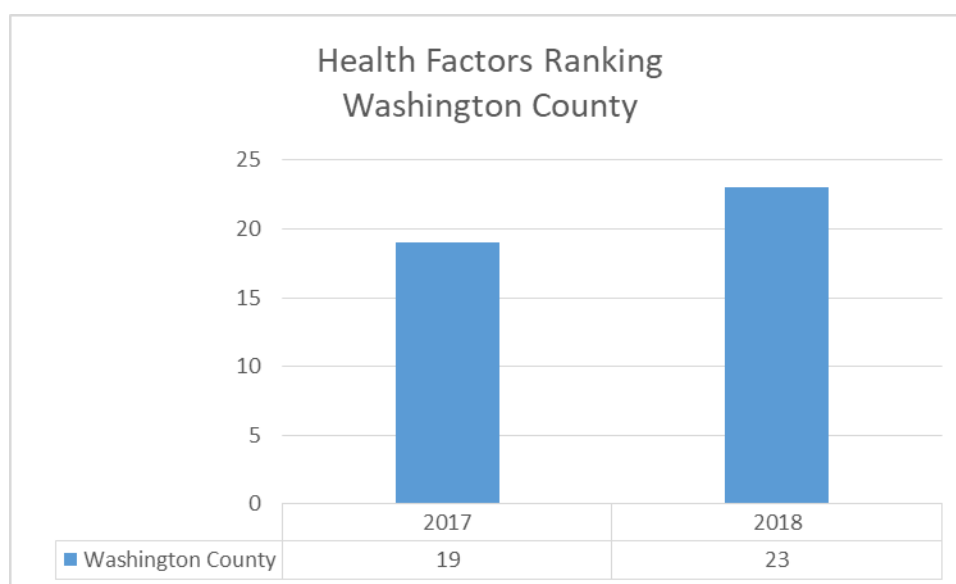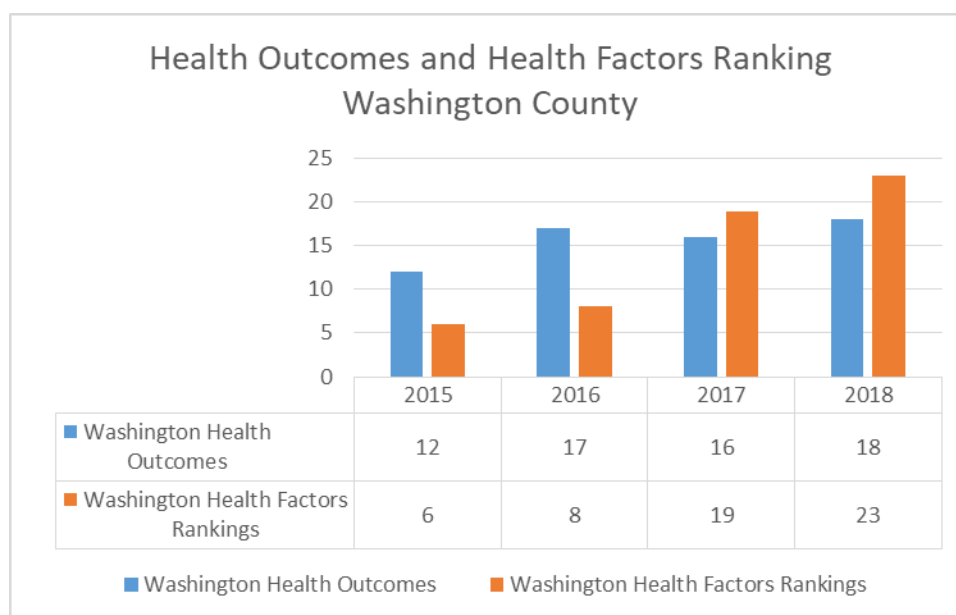
How are we doing?

The map below displays Oklahoma's summary rankings for health factors. Lighter shades indicate better performance in the respective summary rankings. In 2019, Washington County ranked 26th out of 77 counties in Oklahoma in health factors. This ranking worsened, as it was 18th out of 77 in 2018, 19th out of 77 in 2017, and eighth out of 77 in 2016.

Rank 1-19   Rank 20-38   Rank 39-58   Rank 59-77

2018 county health rankings for the 77 counties in Oklahoma

County	Health Outcomes	Health Factors	County	Health Outcomes	Health Factors	County	Health Outcomes	Health Factors	County	Health Outcomes	Health Factors
Adair	75	77	Delaware	52	58	Lincoln	44	38	Pittsburg	63	52
Alfalfa	2	13	Dewey	48	24	Logan	6	15	Pontotoc	37	29
Atoka	57	75	Ellis	19	6	Love	41	20	Pottawatomie	39	33
Beaver	20	5	Garfield	24	27	Major	25	12	Pushmataha	77	67
Beckham	42	37	Garvin	58	55	Marshall	31	47	Roger Mills	4	28
Blaine	45	31	Grady	21	18	Mayes	50	50	Rogers	10	9
Bryan	38	44	Grant	22	3	McClain	17	7	Seminole	71	64
Caddo	73	63	Greer	36	53	McCurtain	70	72	Sequoyah	69	71
Canadian	3	1	Harmon	23	45	McIntosh	72	68	Stephens	32	49
Carter	67	48	Harper	12	10	Murray	54	34	Texas	11	25
Cherokee	62	57	Haskell	51	73	Muskogee	66	66	Tillman	29	36
Choctaw	76	76	Hughes	46	70	Noble	13	11	Tulsa	15	14
Cimarron	61	19	Jackson	43	22	Nowata	34	54	Wagoner	9	17
Cleveland	7	4	Jefferson	64	60	Okfuskee	74	69	Washington	18	23
Coal	60	74	Johnston	68	59	Oklahoma	27	21	Washita	30	32
Comanche	26	40	Kay	33	42	Okmulgee	53	56	Woods	5	8
Cotton	56	43	Kingfisher	1	2	Osage	28	39	Woodward	14	30
Craig	35	35	Kiowa	65	51	Ottawa	59	61			
Creek	40	46	Latimer	55	62	Pawnee	47	41			
Custer	16	26	Le Flore	49	65	Payne	8	16			

Source: University of Wisconsin Population Health Institute. (2018). *County Health Rankings & Roadmaps.* Retrieved from: www.countyhealthrankings.org.

Health Outcomes and Health Factors Ranking Washington County

	2015	2016	2017	2018
■ Washington Health Outcomes	12	17	16	18
■ Washington Health Factors Rankings	6	8	19	23

■ Washington Health Outcomes   ■ Washington Health Factors Rankings

Health Factors Ranking Washington County

	2017	2018
■ Washington County	19	23

Source: County Health Rankings

Washington County lost ground from 2017 to 2018 on this measure, going from 19 out of 77 in 2017 to 23 out of 77 in 2018. *Update: In 2019, Washington County dropped further to 26th out of 77 counties in Oklahoma in health outcomes.

Data indicators specific to the four health measures (social and economic factors, clinical care, health behaviors and physical environment factors) used to compile the health factors rankings were reviewed and are presented below. Social and economic factors are the first health factor measure presented, as they are essential to understanding the barriers to health in the community. Furthermore, the availability of socioeconomic data for specific sub-populations and sub-county geographies provides a framework for identifying the populations most vulnerable to the poor health outcomes identified. Geographic areas of highest need are also presented in this section (based on socioeconomic need).

Social and Economic Factors

Economic and social insecurity often are associated with poor health. Poverty, unemployment, and lack of educational achievement affect access to care and a community's ability to engage in healthy behaviors. Ensuring access to social and economic resources provides a foundation for a healthy community.
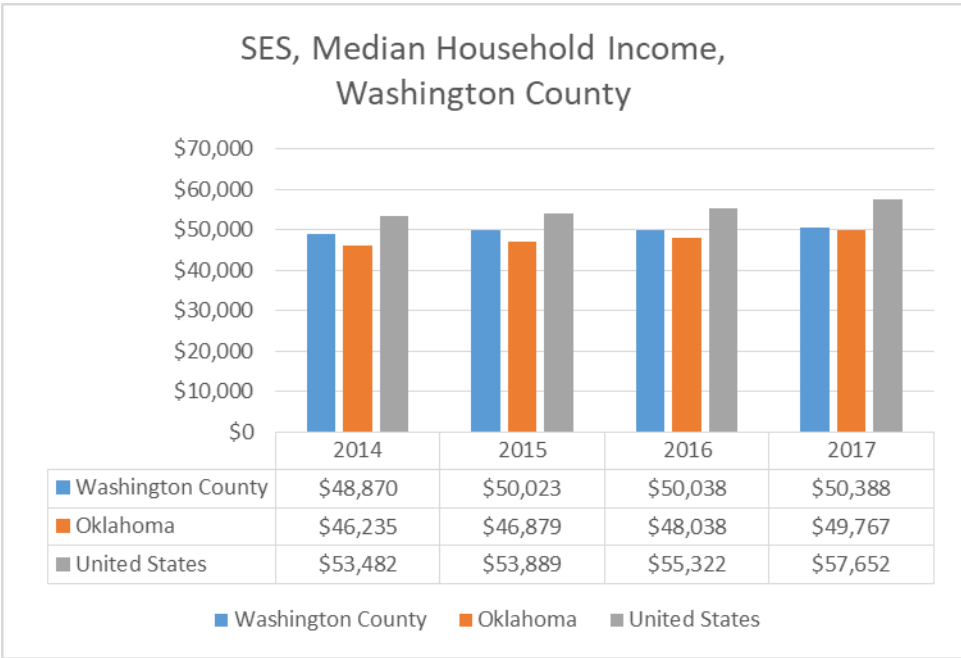
Median household income

The median household income is the mid-point in the range of reported household incomes. Half of households reported incomes above the median income and half of households reported incomes below the median income. Per capita income is the average income of each individual. These measures are both based on 2016 American Community Survey 5-year estimates.

Why is this indicator important?

Income is a common measure of socioeconomic status. Current income provides a direct measure of the quality of food, housing, leisure-time amenities, and health care an individual is able to acquire, as well as reflecting their relative position in society.[36]
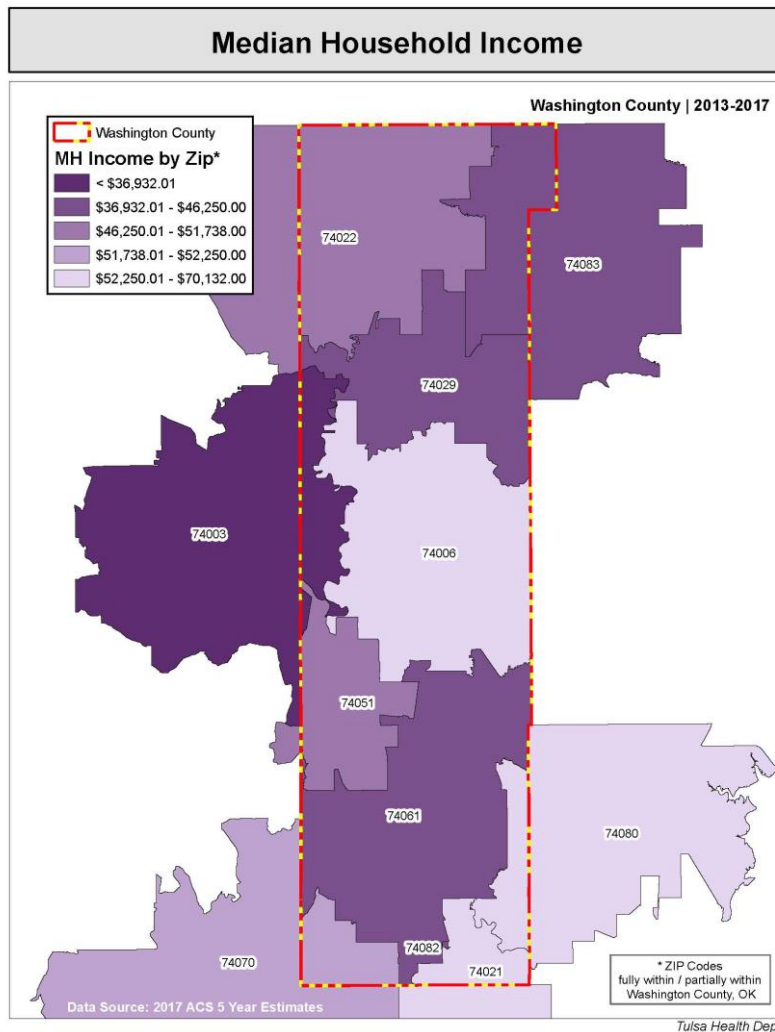
How are we doing?

SES, Median Household Income,
Washington County

	2014	2015	2016	2017
Washington County	$48,870	$50,023	$50,038	$50,388
Oklahoma	$46,235	$46,879	$48,038	$49,767
United States	$53,482	$53,889	$55,322	$57,652

Sources: U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates, 2011-2015 American Community Survey 5-Year Estimates, 2012-2016 American Community Survey 5-Year Estimates, 2013-2017 American Community Survey 5-Year Estimates

Median household incomes increased slightly each year in Washington County and were consistently higher than those in Oklahoma overall but under those of the United States.

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[36] General Data Issues. Healthy People 2010. U.S. Department of Health and Human Services.

Median Household Income

Washington County | 2013-2017

Washington County

MH Income by Zip*
- < $36,932.01
- $36,932.01 - $46,250.00
- $46,250.01 - $51,738.00
- $51,738.01 - $52,250.00
- $52,250.01 - $70,132.00

74022
74083
74029
74003
74006
74051
74061
74080
74070
74082
74021

* ZIP Codes fully within / partially within Washington County, OK

Data Source: 2017 ACS 5 Year Estimates

Tulsa Health Dept.

In Washington County, both the lowest median houshold income of < $36,932.01 and the highest median household income of $52,250.01 - $70,132.00 were found in Bartlesville ZIP codes 74003 and 74006.

Please note that the majority of ZIP code 74080 (Talala area) is located in Roger's County, ZIP code 74070 (Skiatook) crosses multiple counties, and 74003/74022 is part of Osage County.

Population below poverty level

This indicator is the percentage of persons living below the federal poverty level in the past 12 months and is taken from the 2016 American Community Survey. The Census Bureau determines poverty levels using a set of income thresholds that vary by family size and composition. In 2016, the Census Bureau designated that the weighted average poverty threshold for a family of four was $24,563.

Why is this indicator important?

Health outcomes are worse for individuals with low incomes than for their more affluent counterparts. Lower-income individuals experience higher rates of chronic illness, disease, and disabilities, and also die younger than those who have higher incomes. Individuals living in poverty are more likely than their affluent counterparts to experience fair or poor health or suffer from conditions that limit their everyday activities. They also report higher rates of chronic

conditions such as hypertension, high blood pressure, and elevated serum cholesterol, which can be predictors of more acute conditions in the future.[37]
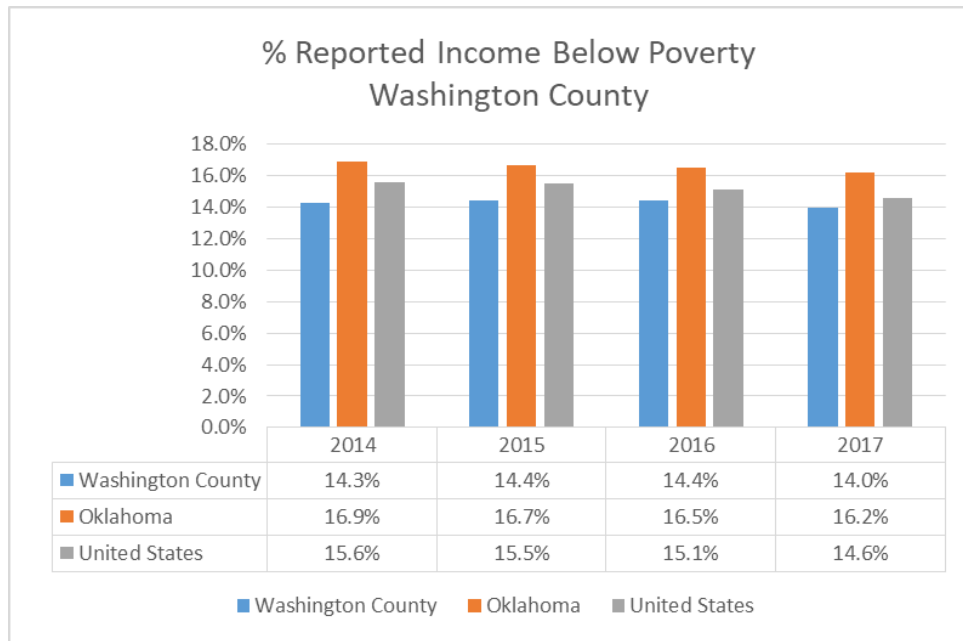
How are we doing?

Population Below Poverty
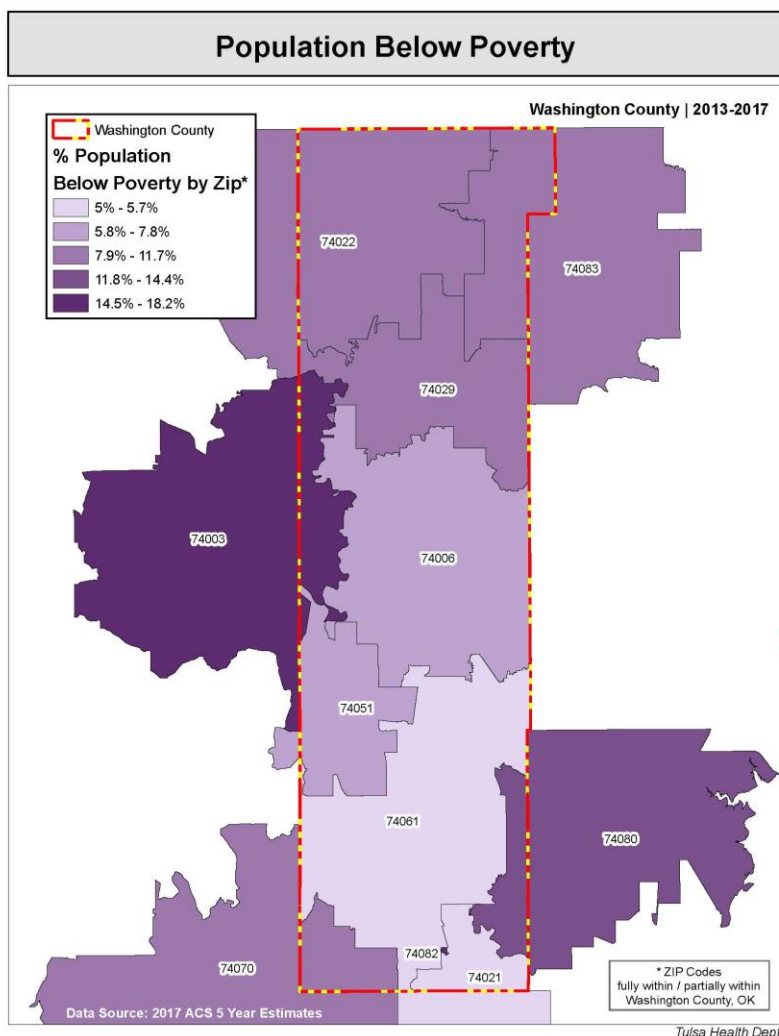
Areas within Washington County that are below poverty at a rate of 14.5% - 18.2% include ZIP code 74003 which makes up very little of Washington County. The majority of the county ranges from 5.8% - 11.7% below poverty.

Please note that the majority of ZIP code 74080 (Talala area) is located in Roger's County, ZIP code 74070 (Skiatook) crosses multiple counties, and 74003/74022 is part of Osage County.
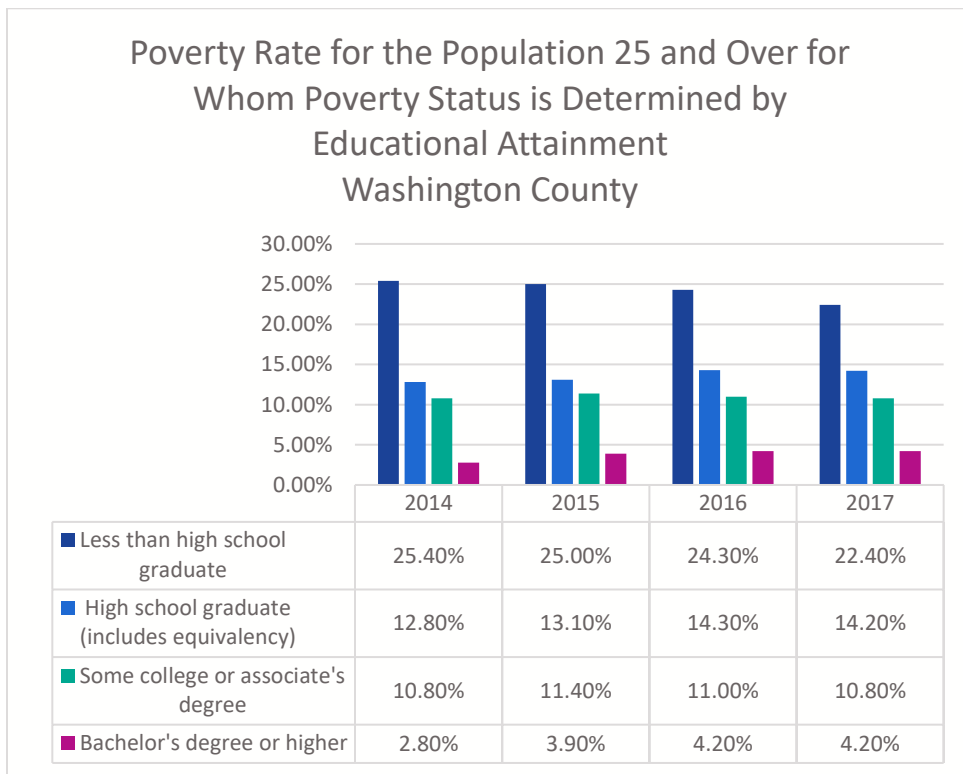
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[37] Poverty in America: Economic Research Shows Adverse Impacts on Health Status and Other Social Conditions as well as the Economic Growth Rate (2007). United States Government Accountability Office.

% Reported Income Below Poverty
Washington County

	2014	2015	2016	2017
■ Washington County	14.3%	14.4%	14.4%	14.0%
■ Oklahoma	16.9%	16.7%	16.5%	16.2%
■ United States	15.6%	15.5%	15.1%	14.6%

■ Washington County ■ Oklahoma ■ United States

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

Washington County had a lower percentage (14%) than Oklahoma and the United States based on 2013-2017 estimates from the U.S. Census Bureau.

Washington County remained relatively the same through each of the years from 2014 to 2017 with the percentage being consistently lower than that of Oklahoma and the United States.

Poverty Rate for the Population 25 and Over for Whom Poverty Status is Determined by Educational Attainment
Washington County

	2014	2015	2016	2017
■ Less than high school graduate	25.40%	25.00%	24.30%	22.40%
■ High school graduate (includes equivalency)	12.80%	13.10%	14.30%	14.20%
■ Some college or associate's degree	10.80%	11.40%	11.00%	10.80%
■ Bachelor's degree or higher	2.80%	3.90%	4.20%	4.20%

In Washington County, as level of educational attainment increased, the percentages of those in poverty decreased dramatically.
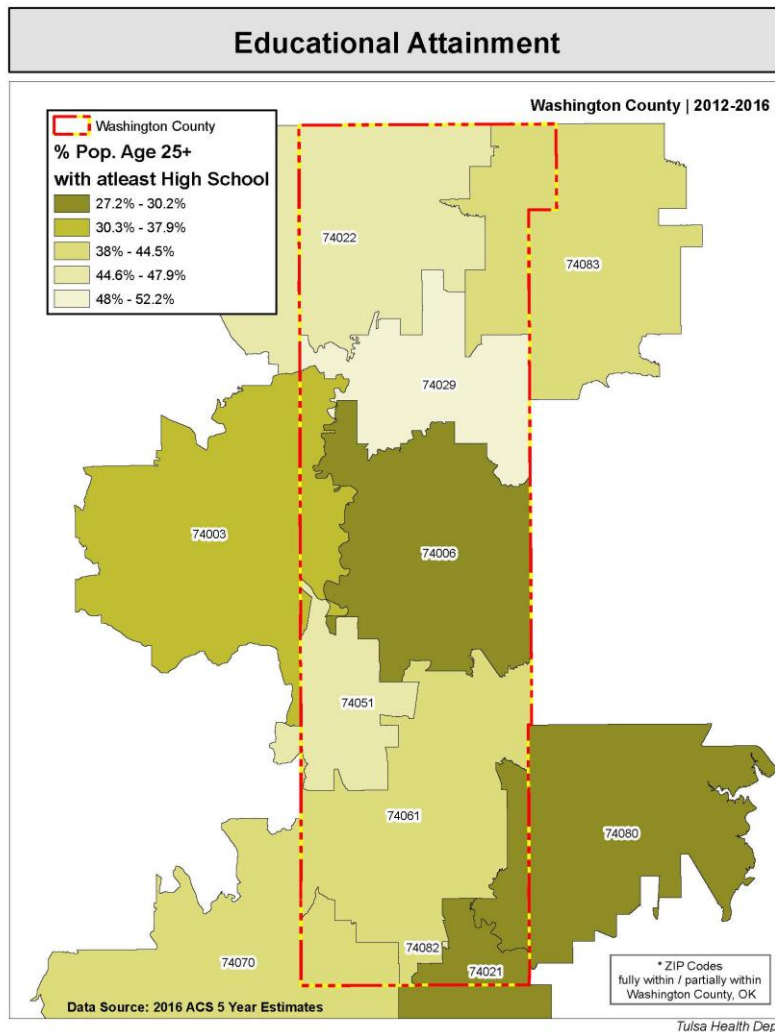
Educational attainment

Educational attainment is defined as completion of at least a high school education by the population age 25 and older. It is presented as a percentage of the total population 25 and older, based on 2016 American Community Survey 5-year estimates.

Why is this indicator important?

Education is a basic component of socioeconomic status, because it shapes future occupational opportunities and achievement. Children from low SES households and communities tend to develop academic skills more slowly and have increased dropout rates, which can perpetuate low SES in the community.[38]

How are we doing?

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[38] Education and Socioeconomic status. American Psychological Association.

Educational Attainment

Washington County | 2012-2016

Washington County
% Pop. Age 25+
with atleast High School
27.2% - 30.2%
30.3% - 37.9%
38% - 44.5%
44.6% - 47.9%
48% - 52.2%

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* ZIP Codes
fully within / partially within
Washington County, OK

Data Source: 2016 ACS 5 Year Estimates

Tulsa Health Dept.

In Washington County, the lowest percentage rate of the population age 25+ that had at least a high school education was 27.2% - 30.2%. This precetange rate was found in ZIP codes 74006 (Bartlesville), 74080 (Talala area) and 74021 (Owasso/Collinsville). The highest rate of the population age 25+ that had at least a high school education was 48% - 52.2% which was found in ZIP code 74029 (Dewey).

Unemployment

This indicator is presented as the percentage of the total civilian labor force (age 16 and older) that was unemployed in 2017, based on American Community Survey 5-year estimates. It is important to note that Bureau of Labor Statistics data for this indicator is often reported in the media, etc. and it is calculated slightly differently.
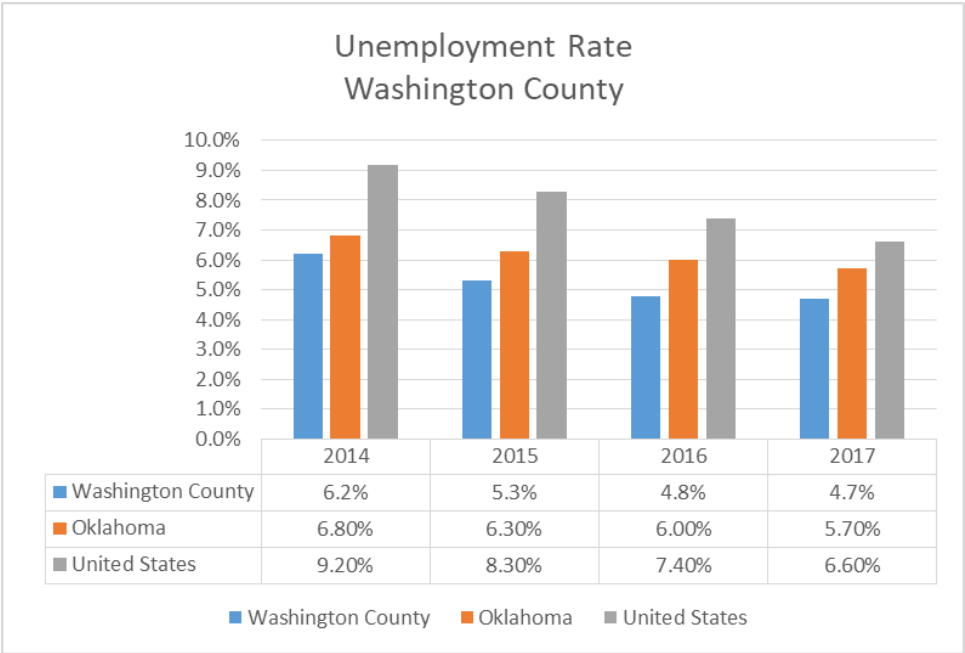
Why is this indicator important?

Health insurance is a major determinant of access to both preventive and acute health care. Most Americans rely on employer-provided insurance. Thus, unemployment affects their access to health services, due to both loss of employer-sponsored health insurance and reduced income. Unemployed adults have poorer mental and physical health than employed adults; this pattern is also found for insured and uninsured adults. Unemployed adults are less
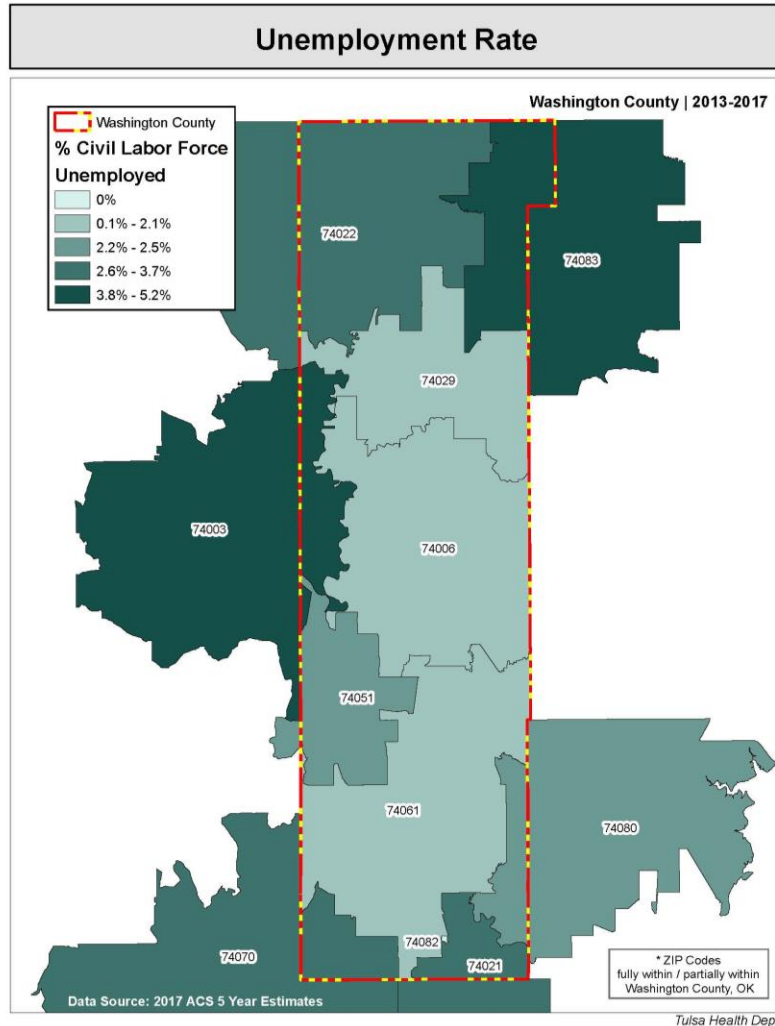
likely to receive needed medical care and prescription drugs due to cost than the employed in each insurance category.[39]

How are we doing?

The overall unemployment rate in 2017 for Washington County was 4.7 percent. This was slightly lower than Oklahoma (5.7 percent) and also lower than the United States (6.6 percent). The unemployment rate in Washington County has been decreasing since 2014. This trend is consistent with trends in Oklahoma and the US.

Unemployment Rate Washington County

	2014	2015	2016	2017
■ Washington County	6.2%	5.3%	4.8%	4.7%
■ Oklahoma	6.80%	6.30%	6.00%	5.70%
■ United States	9.20%	8.30%	7.40%	6.60%

■ Washington County   ■ Oklahoma   ■ United States

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[39] Health and Access to Care among Employed and Unemployed Adults: United States, 2009–2010. National Center for Health Statistics. Centers for Disease Control and Prevention.

Unemployment Rate

Washington County | 2013-2017

Washington County

% Civil Labor Force Unemployed
- 0%
- 0.1% - 2.1%
- 2.2% - 2.5%
- 2.6% - 3.7%
- 3.8% - 5.2%

74022
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74029
74003
74006
74051
74061
74080
74070
74082
74021

* ZIP Codes fully within / partially within Washington County, OK

Data Source: 2017 ACS 5 Year Estimates

Tulsa Health Dept.

The majority of Washington County has an unemployment rate of 0.1% - 2.1% which includes the cities of Dewey, Bartlesville, and Ramona.

Social environment

Social environments lacking safe living environments and supportive social networks present a high public health risk for serious illness and premature death. Without a network of support and a safe community, individuals and families cannot thrive.

Violent crime

This indicator is defined as the number of violent crimes (homicide, rape, robbery and aggravated assault) per 100,000 population in the county.
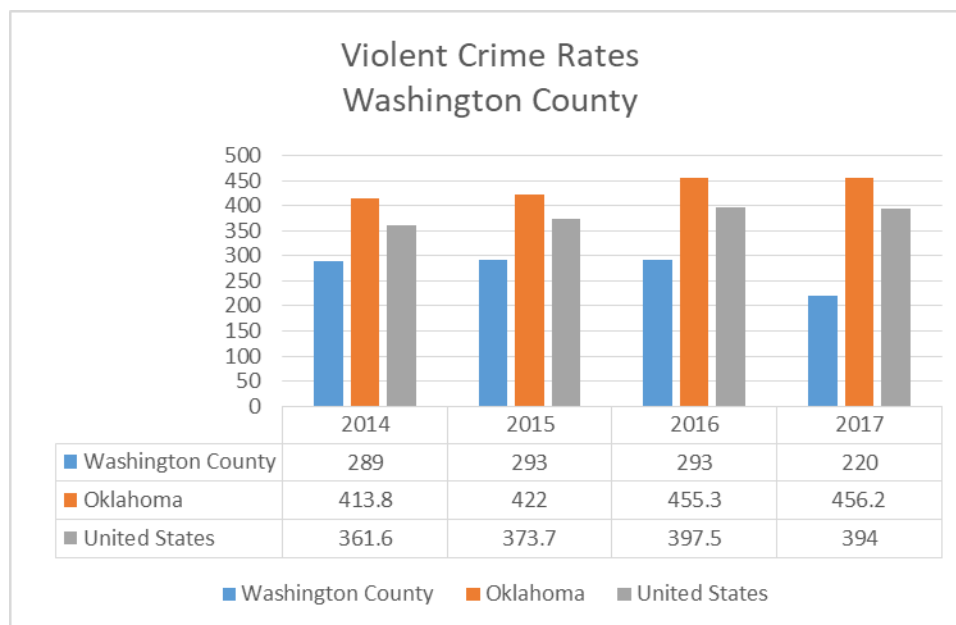
Why is this important?

Violent crime is a visible risk to health as it can result in premature death as well as poor mental health, disability, and high medical costs.[40] Both physical and mental trauma can be experienced as a result of violent behavior. Violence can also have an effect on communities - it can reduce productivity, decrease property values and disrupt social

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[40] Injury and Violence Prevention. Healthy People 2020. U.S. Department of Health and Human Services.

services.[41] Public health interventions that focus on social norms, relationships, community environments and societal-level factors can influence violence.[25]

How are we doing?

After an increase from 2014 to 2015/2016, the crime rates in Washington County dropped drastically in 2017 from 293 to 220. This is in contrast to the rate of violent crime seen in both Oklahoma and the United States.

Violent Crime Rates Washington County

	2014	2015	2016	2017
Washington County	289	293	293	220
Oklahoma	413.8	422	455.3	456.2
United States	361.6	373.7	397.5	394

Homicide mortality

The mortality rate from homicide (murder) is presented as the number of deaths from homicide per 100,000 population over the years 2014 – 2017. The rates were age-adjusted to account for differences in age distribution among locations, ZIP codes and races/ethnicities. Rates were based on the residence of the victim; not the location of the crime.
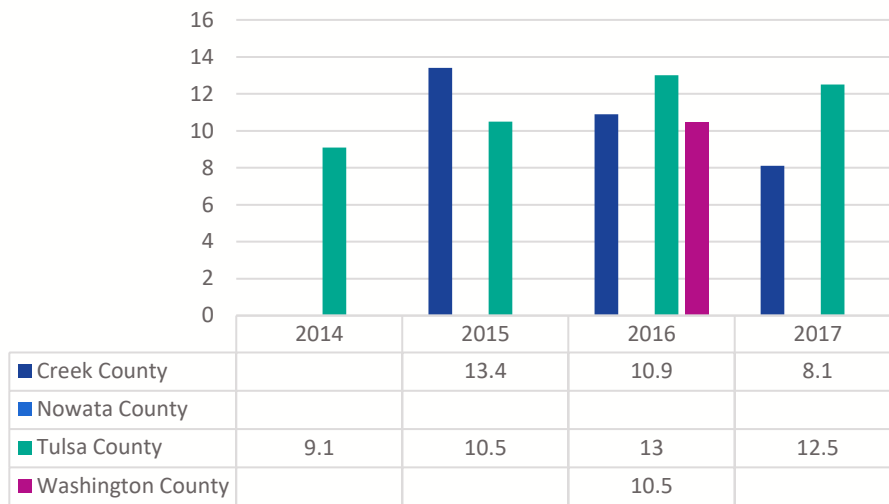
Why is this indicator important?

Almost three-quarters of the total homicides in 2016 were caused by assault with firearms. In the U.S., there are significant disparities in homicide deaths by age, race/ethnicity and sex. The homicide rate is particularly high among young, black males.[42]

How are we doing?

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[41] Violence Prevention. Centers for Disease Control and Prevention.

[42] Health Disparities in Homicides Fact Sheet. Centers for Disease Control and Prevention.

Age-Adjusted Homicide Death Rates by County

	2014	2015	2016	2017
■ Creek County		13.4	10.9	8.1
■ Nowata County				
■ Tulsa County	9.1	10.5	13	12.5
■ Washington County			10.5	

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Vital Statistics 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

Calculations may have been suppressed due to small cell size (less than 5 deaths/populations less than 20). All rates are deaths per 100,000 population. Age-adjusted rates based on 2000 US population standard.

As shown in the graph above, Washington Counties had too few cases per year to be able to break any of them down by age, gender, race or ethnicity. The data that was available for Washington County showed that the age-adjusted death rate was 10.5 in 2016 which was less than Creek County and Tulsa County.

Unintentional injuries (accidents)

Unintentional injuries (accidents) include motor vehicle accidents, accidental falls, drownings, fires, and poisonings. The death rate from unintentional injuries is the number of deaths per 100,000 population, over the years 2014 – 2017. The rates were age-adjusted to account for differences in age distribution among locations, ZIP codes, and races/ethnicities.

Why is this indicator important?

Accidental poisonings can include unintentional drug overdoses, as well as poisonings from household chemicals or carbon monoxide.[43]

Motor vehicle safety prevention efforts often aim to improve car/booster seat and seat belt use, reduce impaired driving, as well as focus on high risk groups such as child passengers, teen drivers and older adult drivers.[44]

Risk factors for falls include lower body weakness, difficulties with walking and balancing, vision problems, foot pain or poor footwear and home hazards such as uneven steps or clutter that could be tripped over. Most falls are caused by a combination of risk factors.[45]
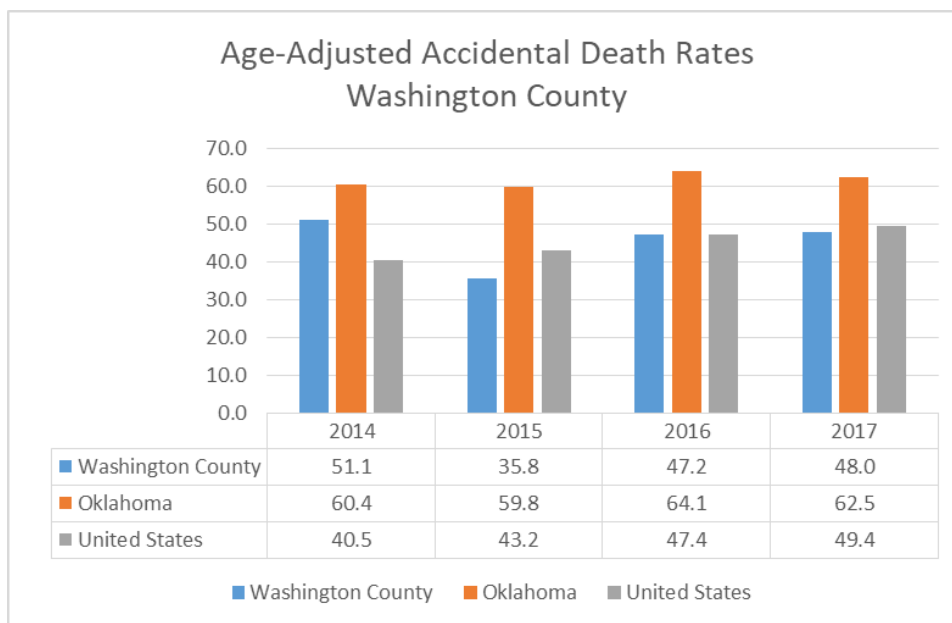
How are we doing?

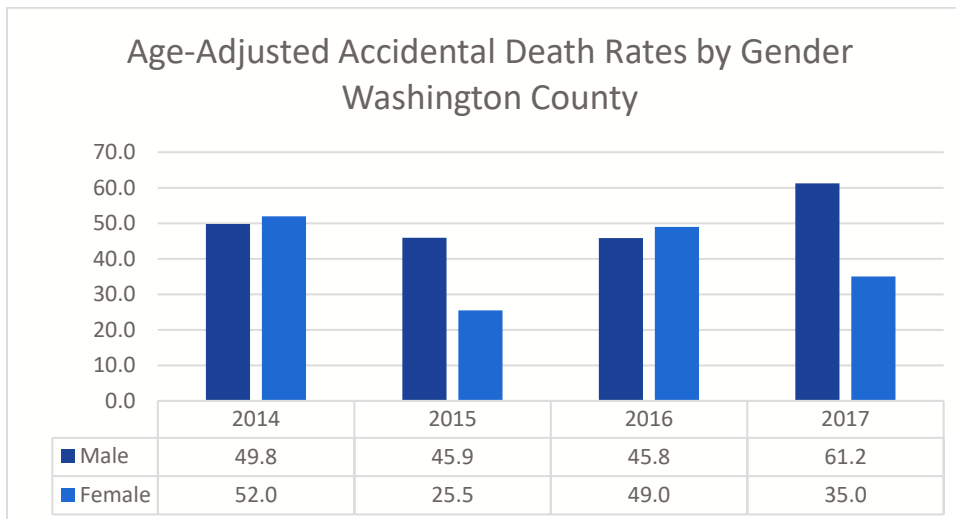[43] Tips to Prevent Poisonings. Centers for Disease Control and Prevention.
[44] Motor Vehicle Safety. Centers for Disease Control and Prevention.
[45] Important Facts about Falls. Centers for Disease Control and Prevention.

In 2017, Washington County had an age-adjusted unintentional injury death rate of 48. This was lower than Oklahoma (62.5) and the U.S. (49.4). None of these regions met the Healthy People 2020 target of 36.0 deaths from unintentional injuries per 100,000 population.

Age-Adjusted Accidental Death Rates
Washington County

	2014	2015	2016	2017
■ Washington County	51.1	35.8	47.2	48.0
■ Oklahoma	60.4	59.8	64.1	62.5
■ United States	40.5	43.2	47.4	49.4

■ Washington County   ■ Oklahoma   ■ United States

Age-adjusted rates based on 2000 US population standard. All rates are deaths per 100,000 population. Calculations may have been suppressed due to small cell size (less than 5 deaths/populations less than 20).

Age-Adjusted Accidental Death Rates by Gender
Washington County

	2014	2015	2016	2017
■ Male	49.8	45.9	45.8	61.2
■ Female	52.0	25.5	49.0	35.0

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Vital Statistics 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

All rates are deaths per 100,000 population. Age-adjusted rates based on 2000 US population standard.

Accidental death rates in Washington County showed much variation from 2014 to 2017 when broken out by gender. There is not a discernable pattern present. Additionally, there were too few cases of accidental deaths in Washington County for any meaningful breakdowns by race or ethnicity to be calculated.
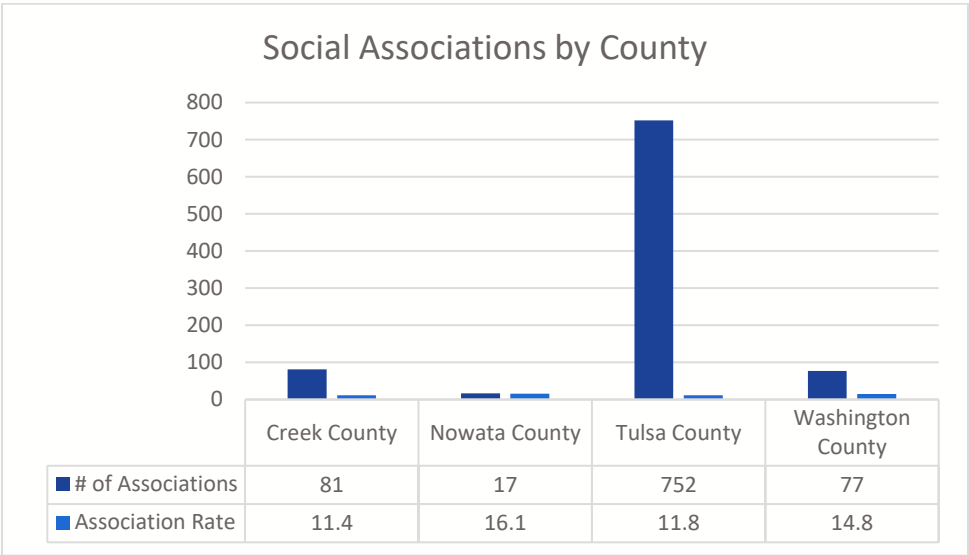
Social and emotional support

Social associations

Social associations measure the number of organizations per 10,000 population in a county. The numerator is the number of organizations or associations in a county. Associations include membership organizations such as civic organizations, bowling centers, golf clubs, fitness centers, sports organizations, political organizations, labor organizations, business organizations, and professional organizations. Social Associations do not measure all of the social support available within a county.

Data and business codes are self-reported by businesses in a county. County Health Rankings used the primary business code of organizations, which in some cases may not match up with our notion of what should be labeled as a civic organization. This measure does not take into account other important social connections offered via family support structures, informal networks, or community service organizations, all of which are important to consider when understanding the amount of social support available within a county.[46]

How are we doing?

Social Associations by County

	Creek County	Nowata County	Tulsa County	Washington County
■ # of Associations	81	17	752	77
■ Association Rate	11.4	16.1	11.8	14.8

Source: Social Associations From County Health Rankings, number of membership associations per 10,000 population, 2015

All of the counties included in this assessment ranked within the top 20 counties in Oklahoma in terms of their Social Association Rates from County Health Rankings as defined above.
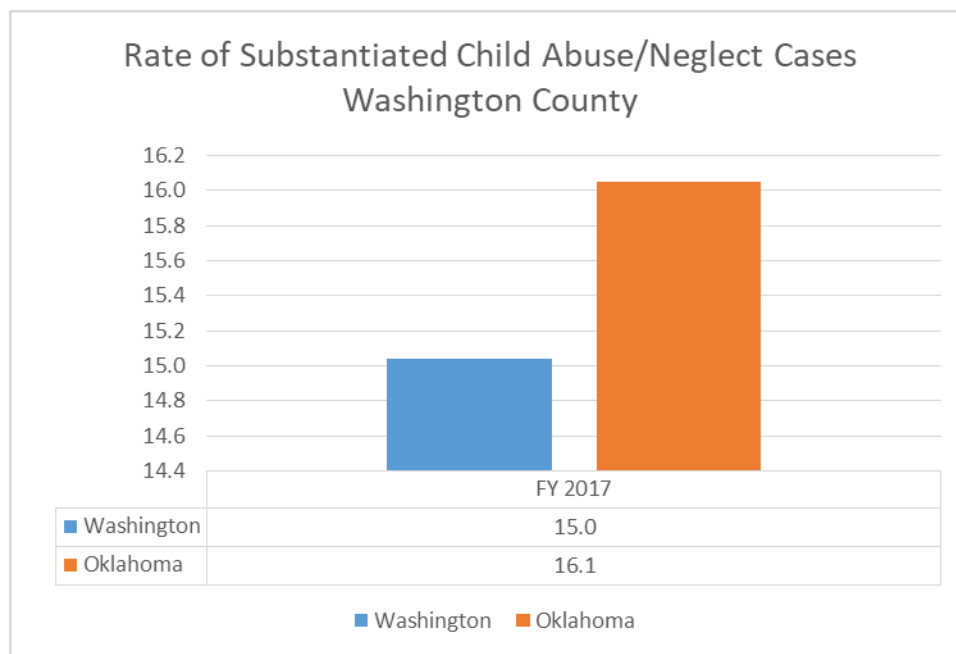
Child abuse and neglect

The Oklahoma Department of Human Services (OKDHS) assesses all accepted reports of alleged child abuse and neglect and, if necessary, investigates individuals responsible for the child's care. Investigations are conducted when the report contains allegations of serious threats to the child's safety, whereas assessments are conducted when the allegation of abuse or neglect does not constitute a serious or immediate threat to a child's health or safety. This indicator is presented as the number of confirmed cases of child abuse or neglect per 1,000 children. Please note that these rates reflect a duplicated count of children confirmed to be victims of child abuse and neglect. The child abuse and neglect data presented below are the latest available from the Oklahoma Department of Human Services for the state's FY2017 and provide a point-in-time snapshot of this indicator for this assessment.

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[46] County Health Rankings, http://www.countyhealthrankings.org/learn/explore-health-rankings/what-and-why-we-rank/health-factors/social-and-economic-factors/family-social-support/social-associations.

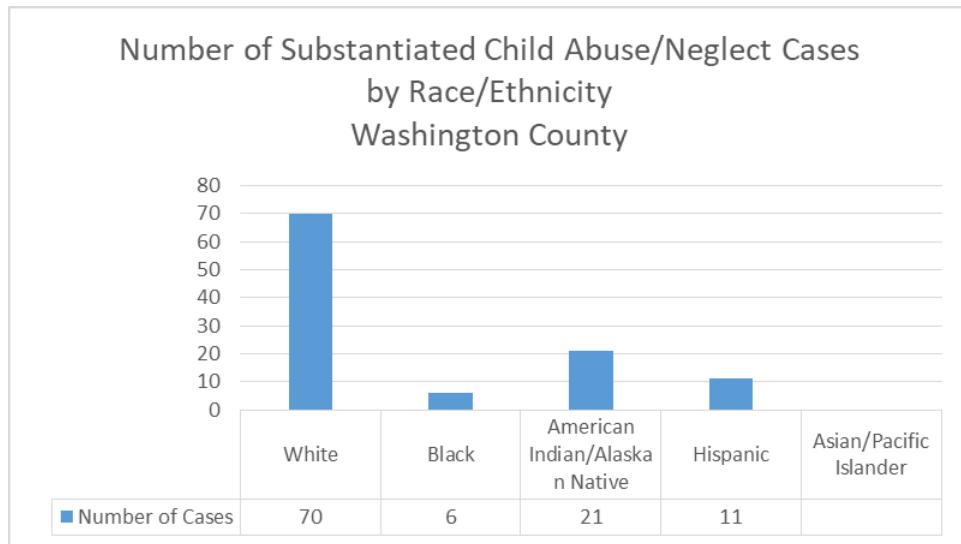*Why is this indicator important?*

Healthy and safe environments are important to the well-being and development of children. Victims of child abuse are at higher risk of having a number of adverse outcomes throughout their life, including physical, psychological, and behavioral consequences. Physical consequences include abusive head trauma, impaired brain development, and poor physical health. Psychological consequences include difficulties during infancy, poor mental and emotional health, cognitive difficulties, and social difficulties. Behavioral consequences include difficulties during adolescence, juvenile delinquency, adult criminality, substance abuse, and abusive behavior.[47]

How are we doing?

Rate of Substantiated Child Abuse/Neglect Cases
Washington County

	FY 2017
■ Washington	15.0
■ Oklahoma	16.1

■ Washington   ■ Oklahoma

Washington County, at 15.0, had rates below the overall rate of Oklahoma at 16.1 in substantiated child abuse/neglect cases.

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[47] U.S. Department of Health and Human Services. (2016). *Child Welfare Information Gateway: Long-Term Consequences of Child Abuse and Neglect Fact Sheet.* Retrieved from: https://www.childwelfare.gov/pubs/ factsheets/long_term_consequences.pdf.

Number of Substantiated Child Abuse/Neglect Cases by Race/Ethnicity Washington County

	White	Black	American Indian/Alaskan Native	Hispanic	Asian/Pacific Islander
Number of Cases	70	6	21	11	

Source: Child Abuse and Neglect Statistics SFY 2017 July 2016 - June 2017, Oklahoma Department of Human Services

Looking at substantiated child abuse/neglect cases, the two largest categories were white and American Indian/Alaskan Native with those in the White category being more than triple of the American Indian/Alaskan Natives.
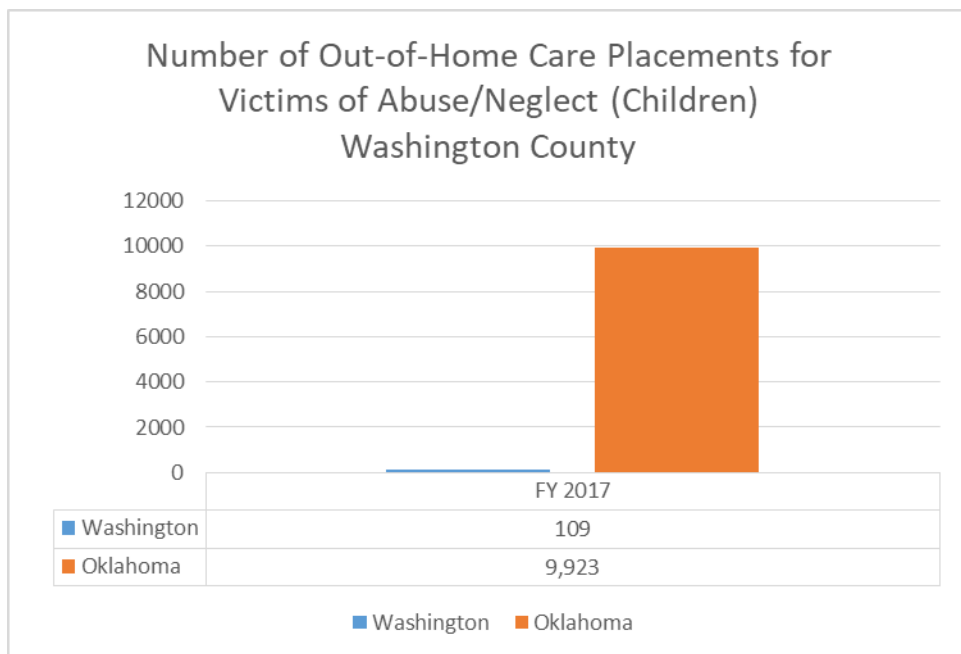
Number of Out-of-Home Care Placements for Victims of Abuse/Neglect (Children) Washington County

	FY 2017
Washington	109
Oklahoma	9,923

Source: Child Abuse and Neglect Statistics SFY 2017 July 2016 - June 2017, Oklahoma Department of Human Services

The graph above shows the number of out-of-home care placements for child victims of abuse and neglect for the county and for the state of Oklahoma as a whole.
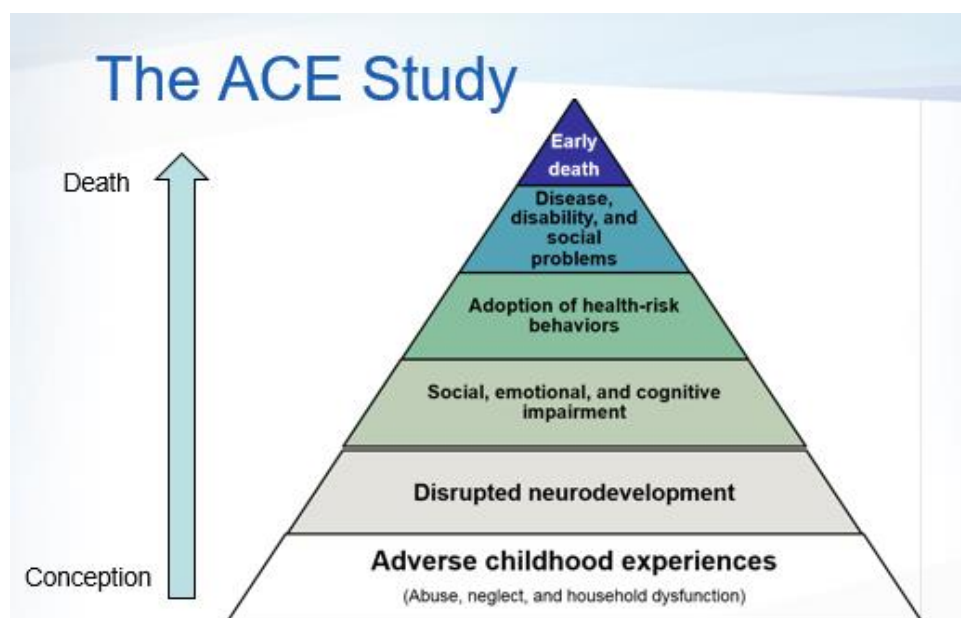
Adverse childhood experiences (ACEs)

The Adverse Childhood Experiences (ACE) study – a collaboration between the Centers for Disease Control and Prevention and Kaiser Permanente's Health Appraisal Clinic in San Diego, with lead researchers Robert Anda, MD and Vincent Felitti, MD, in the late 1990s – found correlations between childhood neglect, abuse and household dysfunction with later-life health and well-being. This is one of the largest investigations ever conducted to assess relationships between child maltreatment and later-life health and well-being.[48] The data presented below are the latest available from Oklahoma State Department of Health (OSDH), Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2014 to 2016, on Oklahoma Statistics on Health Available for Everyone (OK2SHARE).

Why is this indicator important?

This study has received renewed interest in recent years as a conceptual model to examine the potential for changes in well-being through the life cycle of the child. The implications for our state are dramatic with the large number of children experiencing child abuse and neglect, incarcerated parents, single parenting, as well as other negative indicators.

The study found that children who experience adverse childhood trauma may have disrupted neurodevelopment which increases their risk for school failures and ultimately poorer well-being throughout the life span, including greater incidences of premature death. Risk for health problems increases as number of ACEs increases. Adolescent pregnancy, early initiation of sexual activity and long-term psychosocial consequences have been shown to correlate inversely with childhood family strengths – the greater the number of strengths, the lower the risk of these events occurring.[49]

Source: Centers for Disease Control and Prevention. *Adverse Childhood Experiences.* Retrieved from: https://www.cdc.gov/violenceprevention/acestudy/.

A child's early years matter because early relationships and experiences help shape the architecture and wiring of the brain, creating either a sturdy or fragile foundation for a young child's cognitive, emotional and behavioral development. Nurturing relationships with parents and other caregivers, as well as stimulating and educationally rich

[48] Centers for Disease Control and Prevention. *Adverse Childhood Experiences.* Retrieved from: https://www.cdc.gov/violenceprevention/acestudy/.
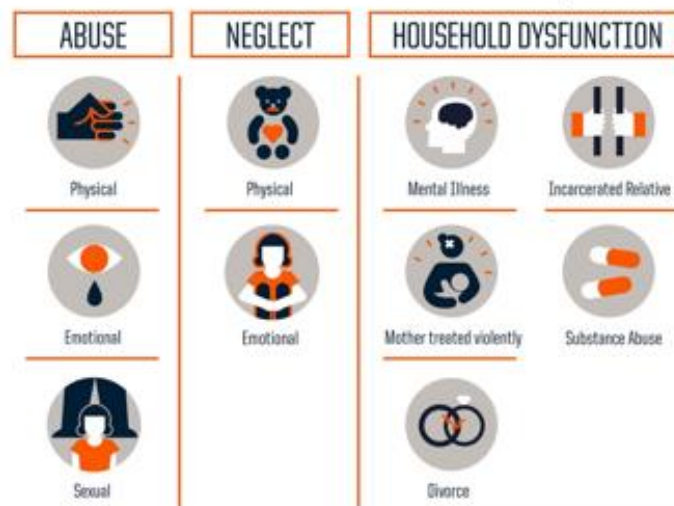[49] Felitti, V.J. et al. (1998). Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults. *American Journal of Preventive Medicine (14)*4, 245 – 258.

environments, help young children thrive. But the experience of poverty and related risk factors — such as poor parenting, inadequate nutrition, frequent moves and changes in non-parental caregivers, insufficient cognitive stimulation and unsafe environments — can suppress brain development and have lasting effects.[34]

Adverse childhood experiences include, but are not limited to:

- Recurrent physical abuse
- Recurrent emotional abuse
- Sexual abuse
- An alcohol or drug abuser in the household
- An incarcerated household member
- Household member who is chronically depressed, suicidal, institutionalized or mentally ill
- Mother being treated violently
- One or neither parent living with child
- Emotional or physical neglect

Adverse childhood experiences

ABUSE	NEGLECT	HOUSEHOLD DYSFUNCTION	
Physical	Physical	Mental Illness	Incarcerated Relative
Emotional	Emotional	Mother treated violently	Substance Abuse
Sexual		Divorce	

Source: Centers for Disease Control and Prevention. *Adverse Childhood Experiences.* Retrieved from: https://www.cdc.gov/violenceprevention/acestudy/.

Any one of these experiences may be traumatic enough by itself to create changes in neurodevelopment, but the increase in the number of adverse childhood experiences increases the correlation with negative lifetime outcomes. According to the study, approximately 13% of average middle-class Americans experienced 4 or more of these conditions as a child (15% of women, 9% of men).[34]
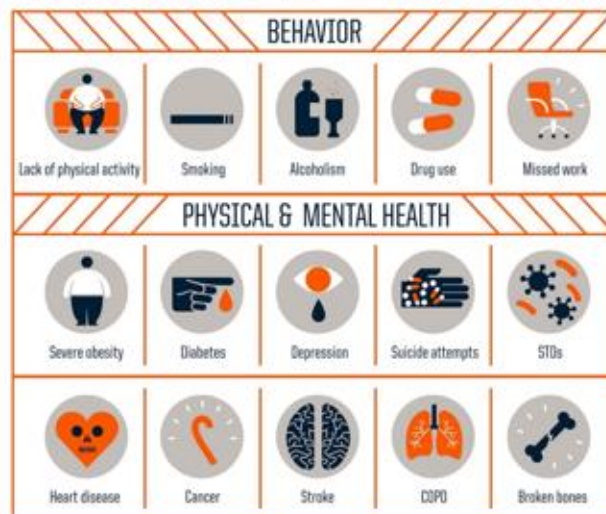
WHAT IMPACT DO ACEs HAVE?

As the number of ACEs increases, so does the risk for negative health outcomes

RISK

0 ACEs   1 ACE   2 ACEs   3 ACEs   4+ ACEs

Source: Centers for Disease Control and Prevention. *Adverse Childhood Experiences.* Retrieved from: https://www.cdc.gov/violenceprevention/acestudy/.

Some of the resulting conditions include drug, alcohol and nicotine addiction, obesity, depression and suicide, unintentional pregnancy, heart disease, cancer and premature death.[34]

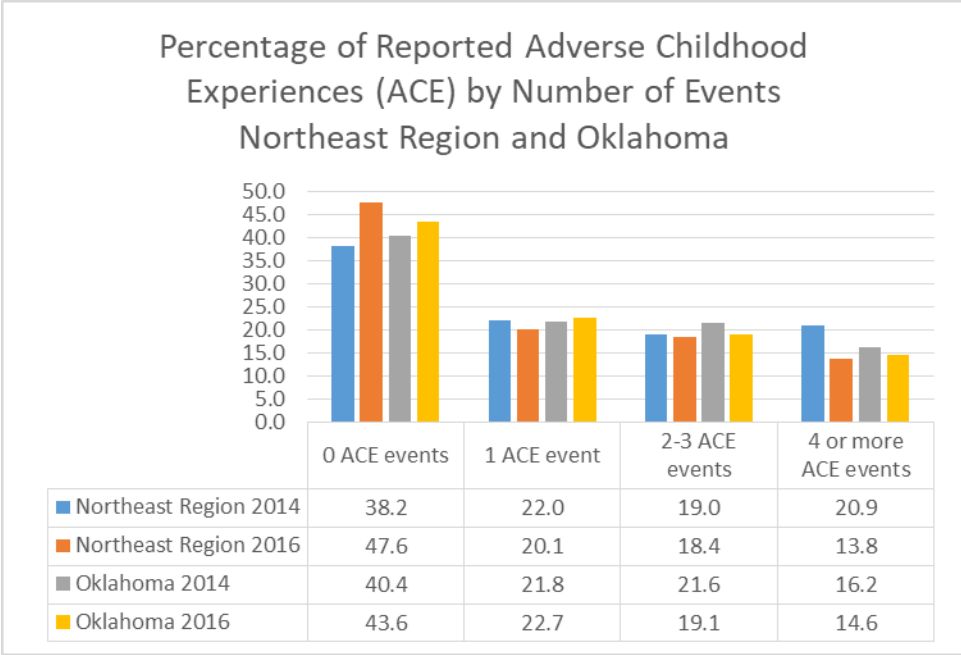## The higher the ACEs, the higher the risks

BEHAVIOR

Lack of physical activity	Smoking	Alcoholism	Drug use	Missed work

PHYSICAL & MENTAL HEALTH

Severe obesity	Diabetes	Depression	Suicide attempts	STDs
Heart disease	Cancer	Stroke	COPD	Broken bones

Source: Centers for Disease Control and Prevention. *Adverse Childhood Experiences.* Retrieved from: https://www.cdc.gov/violenceprevention/acestudy/.

A child's relationships and experiences matter. Early intervention can prevent, or at least reduce, some of the negative effects associated with adverse childhood experiences.

How are we doing?

Oklahoma ranked 41st in the nation and had the ninth highest percent of children experiencing two more ACES (26.6%) in the nation in 2018.[50]

For the purposes of this assessment, the Northeast region consists of Creek County, Washington County, and Nowata County. Data for the specific measure were not available at the county level for these communities.

Percentage of Reported Adverse Childhood Experiences (ACE) by Number of Events Northeast Region and Oklahoma

	0 ACE events	1 ACE event	2-3 ACE events	4 or more ACE events
Northeast Region 2014	38.2	22.0	19.0	20.9
Northeast Region 2016	47.6	20.1	18.4	13.8
Oklahoma 2014	40.4	21.8	21.6	16.2
Oklahoma 2016	43.6	22.7	19.1	14.6

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2014 to 2016, Oklahoma Statistics on Health Available for Everyone

Records with unknown values are excluded from the analysis. Calculations may have been suppressed due to cell size less than 5 or total less than 50.

For the Northeast Region, percentages of those experiencing one or more adverse childhood experience decreased while those reporting 0 adverse childhood experiences increased.

Incarceration

This indicator examines the number of justice-involved individuals in corrections facilities, the rate of female incarceration, and incarceration trends within the state. Estimates are based on data from the Oklahoma Department of Corrections and the Bureau of Justice Statistics.

Why is this indicator important?

The health disparities that exist in our communities are especially evident in the population that cycles in and out of our jails and prisons. For many obvious reasons, justice-involved populations in prison are among the unhealthiest members of society. Most come from impoverished communities where chronic and infectious diseases, drug abuse and other physical and mental stressors are present at much higher rates than in the general population. Health care in those communities also tends to be poor or nonexistent.

The experience of being locked up — which often involves dangerous overcrowding and inconsistent or inadequate health care — exacerbates these problems or creates new ones. Justice-involved populations have very high rates of

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[50] United Health Foundation. America's Health Rankings: Adverse Childhood Experiences. Retrieved from: https://www.americashealthrankings.org/explore/health-of-women-and-children/measure/ACEs/state/OK

physical illness, mental illness, and substance use disorders. And their health problems have significant impacts on the communities from which they come and to which they return.

How are we doing?

Despite efforts to reduce incarceration, Oklahoma's incarnated justice-involved population is growing at a steady pace. The trend includes a surge of state justice-involved populations being held in county jails in recent months and the rate of women in prison reaching its highest recorded level.

Incarceration rates were not available at the county or region level. The graphs below present data for incarceration rates for the State of Oklahoma and the United States.
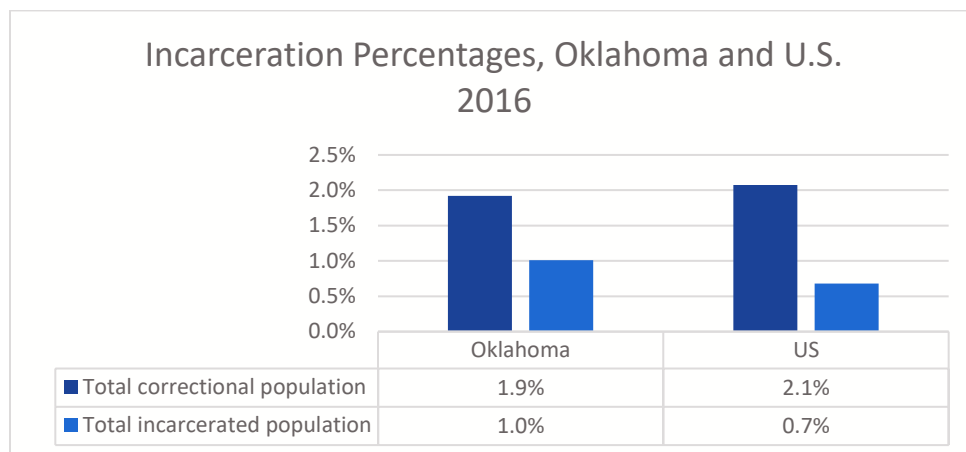
Incarceration Percentages, Oklahoma and U.S. 2016

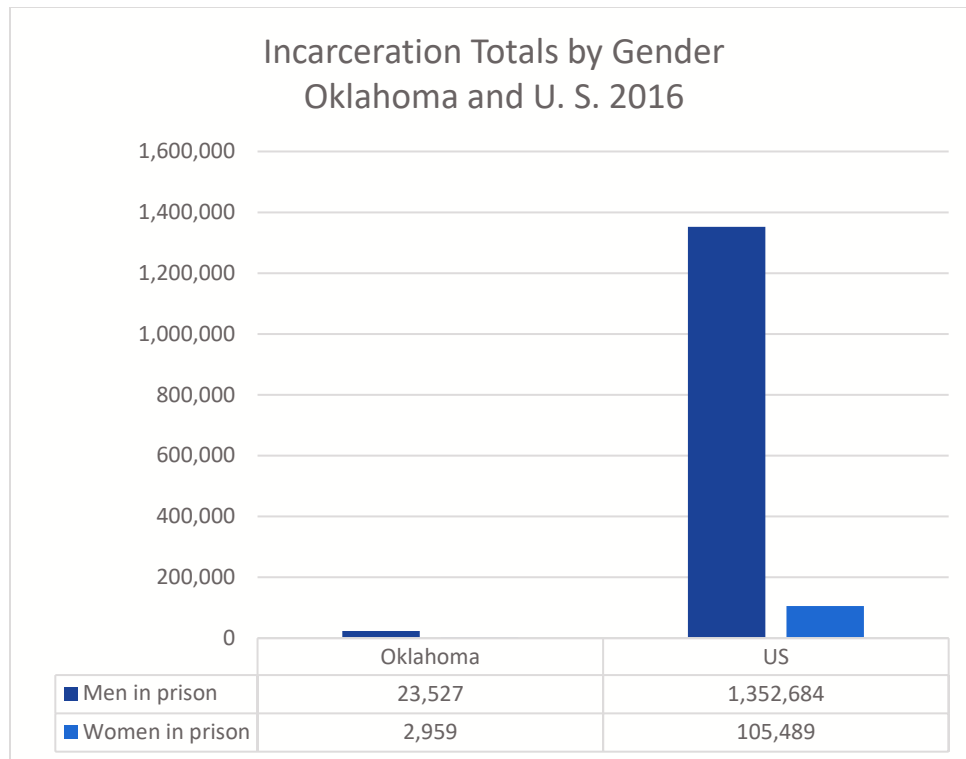|	Oklahoma	US
■ Total correctional population	1.9%	2.1%
■ Total incarcerated population	1.0%	0.7%

Source: Corrections Population: U.S. Bureau of Justice Statistics; The Sentencing Project

The state of Oklahoma had a lower percentage than the U.S. for the percentage of the total correctional population, but a higher percentage than the U.S. for the percentage of the total incarcerated population.

Incarceration Rates, Oklahoma and U.S. 2016

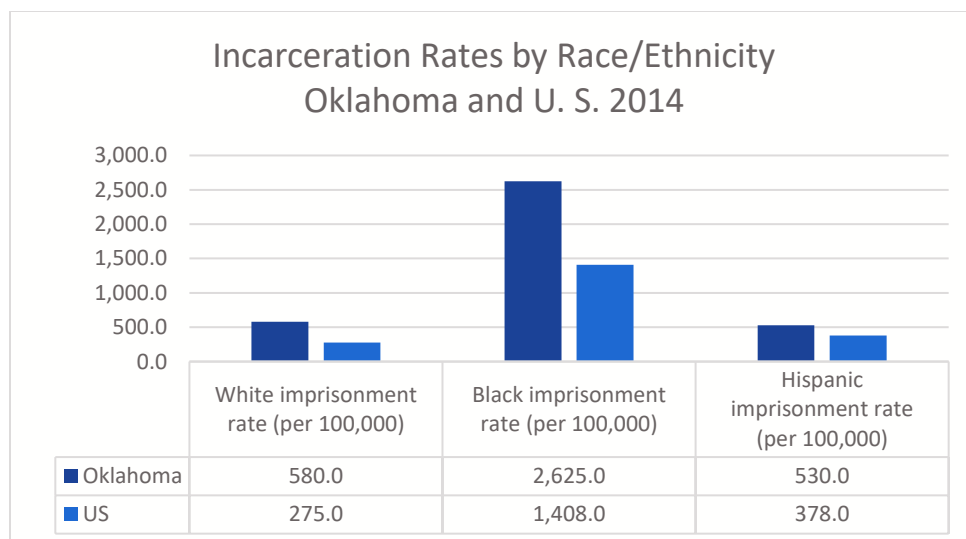|	Oklahoma	US
■ Incarceration rate	1,010.3	678.8
■ Correctional population rate	1,922.3	2,076.1
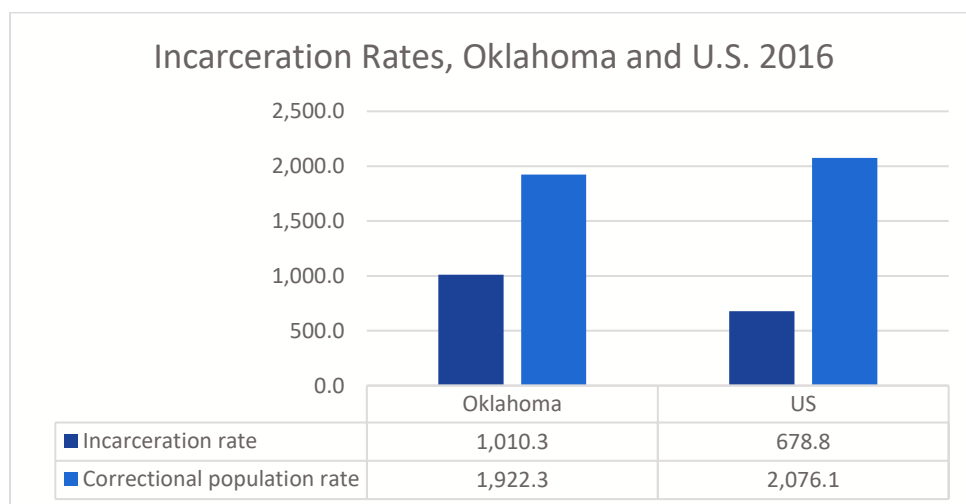
Source: Corrections Population: U.S. Bureau of Justice Statistics; The Sentencing Project

Oklahoma had a higher incarceration rate (1,010.3) than the U.S. overall (678.8), but a lower correctional population rate (1,922.3) than the U.S. overall (2,076.1).

Incarceration Totals by Gender
Oklahoma and U. S. 2016

	Oklahoma	US
■ Men in prison	23,527	1,352,684
■ Women in prison	2,959	105,489

Source: Corrections Population: U.S. Bureau of Justice Statistics; The Sentencing Project

The graph above basically gives a snapshot of the number of men and women incarcerated in the state of Oklahoma and the U.S. in 2016.

Incarceration Rates by Race/Ethnicity
Oklahoma and U. S. 2014

	White imprisonment rate (per 100,000)	Black imprisonment rate (per 100,000)	Hispanic imprisonment rate (per 100,000)
■ Oklahoma	580.0	2,625.0	530.0
■ US	275.0	1,408.0	378.0

Source: Corrections Population: U.S. Bureau of Justice Statistics; The Sentencing Project

Incarceration rates by race reveal that both the U.S. and Oklahoma have higher rates for the black population than for the white and Hispanic populations. For each racial/ethnic category shown in the above graph, Oklahoma had higher incarceration rates than did the U.S. overall.
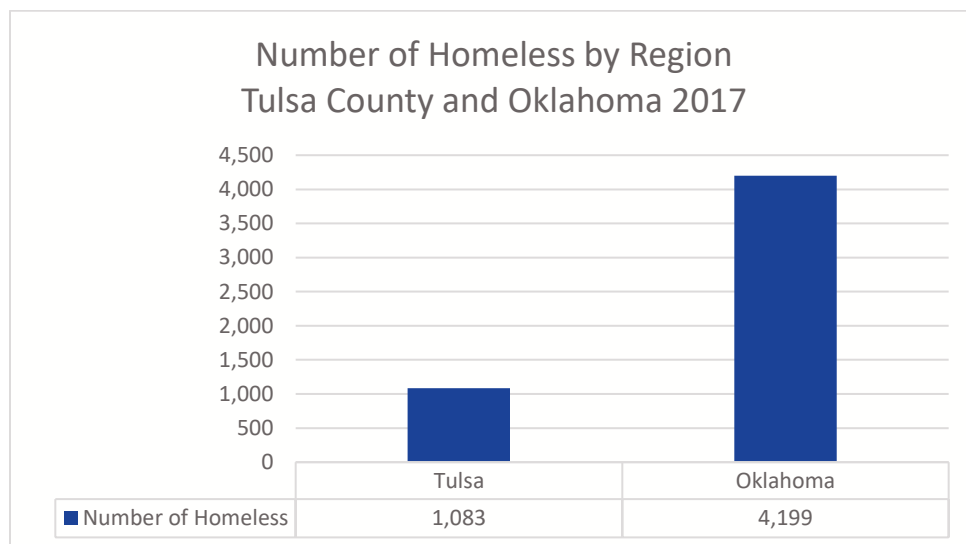
Homelessness

The annual Point -In-Time (PIT) count offers a snapshot of homelessness—of both sheltered and unsheltered homeless populations— on a single night. One-night counts are conducted across our nation during the same week in January using the same Department of Housing and Urban Development (HUD) standards. Communities across the nation typically conduct their PIT counts during a defined period of time (e.g., dusk to dawn) on a given night to minimize the risk of counting any person more than once.

Why is this indicator important?

Homelessness is a growing public health problem. It is associated with behavioral, social and environmental risks that lead to poor health outcomes such as heart diseases, cancer, liver disease, kidney disease, skin infections, HIV/AIDS, pneumonia, and tuberculosis. Furthermore, homelessness often presents barriers to healthcare access. As a result, people experiencing homelessness have a life expectancy that is estimated to be about 25 – 35 years shorter than the general population.[51]
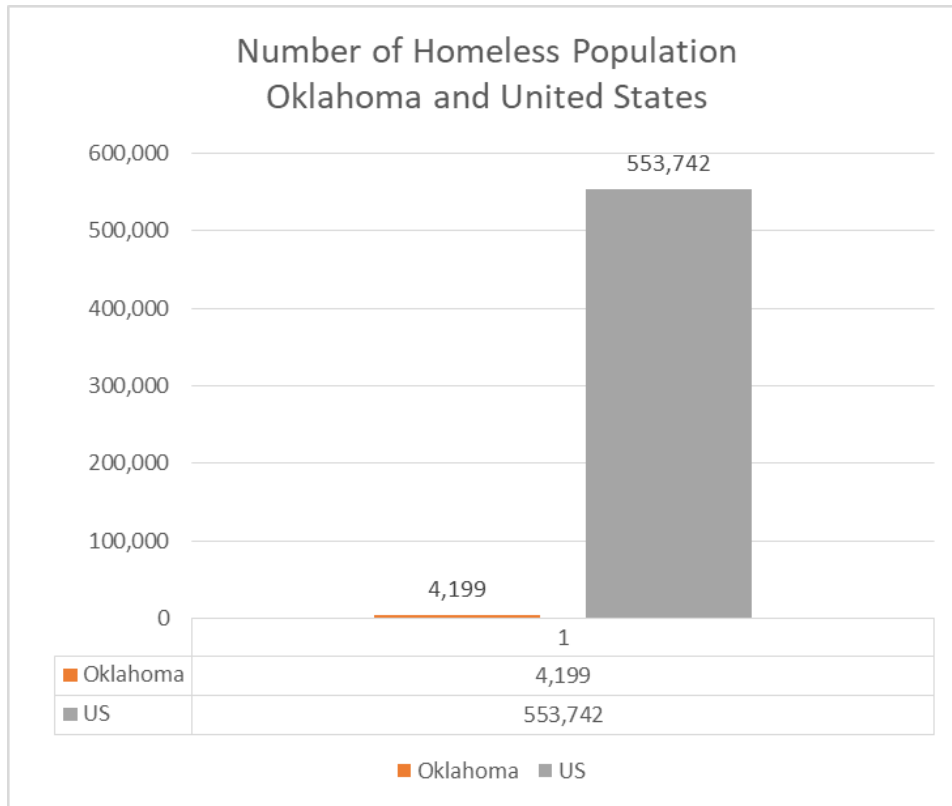
How are we doing?

Data on homelessness was only available for Tulsa County, Oklahoma, and the United States as a whole for 2017. The following graphs give a point-in-time snapshot of homelessness for these three geographical areas.

Number of Homeless by Region
Tulsa County and Oklahoma 2017

	Tulsa	Oklahoma
Number of Homeless	1,083	4,199

Source: Tulsa Data: 2018, https://csctulsa.org/housing-homelessness/; OK, US data: 2017, https://www.hudexchange.info/resources/documents/2017-AHAR-Part-1.pdf

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[51] National Coalition for the Homeless. (2016). *Health Care and Homelessness*. Retrieved from: http://www.nationalhomeless.org/factsheets/health.html.

Number of Homeless Population
Oklahoma and United States

	1
Oklahoma	4,199
US	553,742

Oklahoma — 4,199
US — 553,742

The estimated number of homeless for the U.S. overall for 2017 was 554,000, according to the U.S. Department of Housing and Urban Development. This means that the homeless population in Oklahoma accounted for less than 1% (approximately 0.75%) of the total homeless population in the U.S. in 2017.
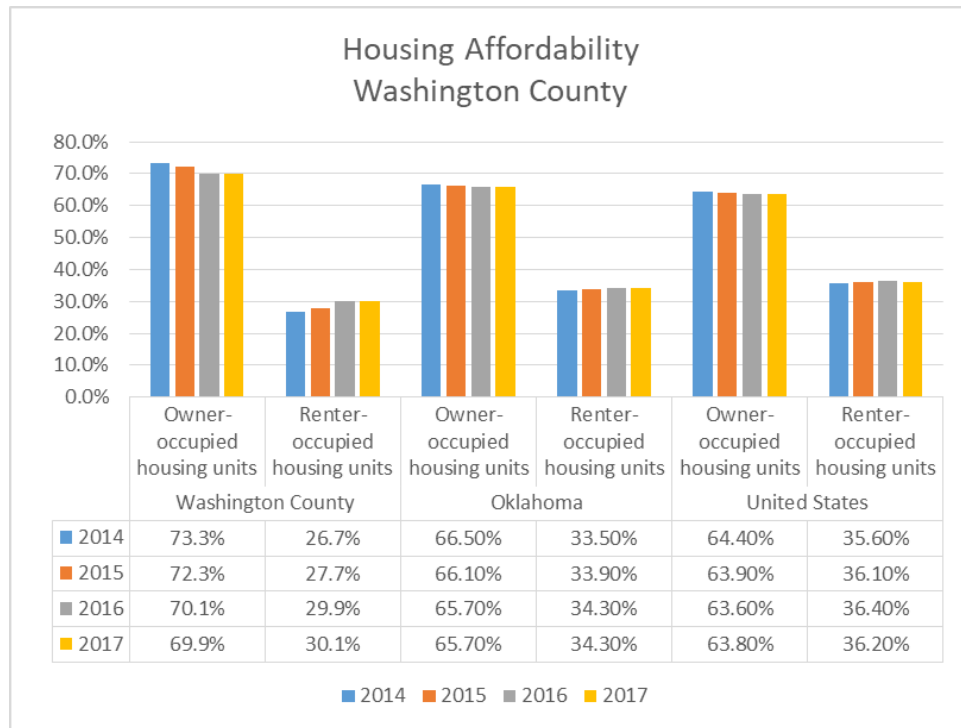
Housing affordability

This indicator reports the percentage of the households where housing costs exceed 30% of total household income. This indicator provides information on the cost of monthly housing expenses for owners and renters.

Why is this indicator important?

Where we live is at the very core of our daily lives. Housing is generally an American family's greatest single expenditure, and, for homeowners, their most significant source of wealth. Given its importance, it is not surprising that factors related to housing have the potential to help–or harm–our health in major ways. This information offers a measure of housing affordability and excessive shelter costs.

How are we doing?

Housing Affordability
Washington County

	Washington County		Oklahoma		United States	
	Owner-occupied housing units	Renter-occupied housing units	Owner-occupied housing units	Renter-occupied housing units	Owner-occupied housing units	Renter-occupied housing units
2014	73.3%	26.7%	66.50%	33.50%	64.40%	35.60%
2015	72.3%	27.7%	66.10%	33.90%	63.90%	36.10%
2016	70.1%	29.9%	65.70%	34.30%	63.60%	36.40%
2017	69.9%	30.1%	65.70%	34.30%	63.80%	36.20%

Source: U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates, 2011-2015 American Community Survey 5-Year Estimates, 2012-2016 American Community Survey 5-Year Estimates, 2013-2017 American Community Survey 5-Year Estimates

The above graph illustrates that the percentages of homeowners and renters in each county remained remarkably stable from 2014 to 2017.
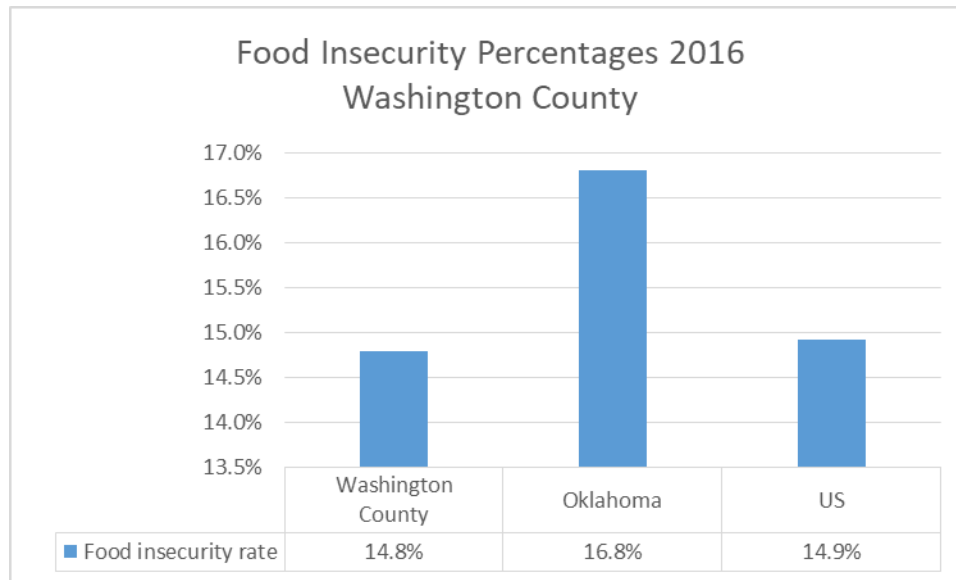
Food insecurity

This indicator reports three different measures: the estimated percentage of the population that experienced food insecurity at some point during the report year. Food insecurity is the household-level economic and social condition of limited or uncertain access to adequate food.

Why is this indicator important?

Food insecurity refers to the inability to afford enough food for an active, healthy life. Associations exist between food insecurity and adverse health outcomes among children adults.

How are we doing?

Food Insecurity Percentages 2016
Washington County

	Washington County	Oklahoma	US
■ Food insecurity rate	14.8%	16.8%	14.9%

Source: Community Commons, 2016

In terms of food insecurity, Washington County (14.8%) was lower than Oklahoma as a whole and almost equal to the U.S.

Clinical Care

Access to care

A lack of access to care presents barriers to good health. The supply and accessibility of facilities and physicians, the rate of uninsurance, financial hardship, transportation barriers, cultural competency, and coverage limitations all affect access.

Rates of morbidity, mortality, and emergency hospitalizations can be reduced if community residents access services such as health screenings, routine tests, and vaccinations. Prevention indicators can call attention to a lack of access or knowledge regarding one or more health issues and can inform program interventions.

Health professional shortage areas

This indicator reports the designation of an area as a Health Professional Shortage Area (HPSA). HPSAs demonstrate a critical shortage of either primary care, dental, or mental health providers, in accordance with the federal U.S. Health Resources and Services Administration (HRSA) Shortage Designation Branch guidelines. There are three types of HPSA designations: Primary Care, Dental, and Mental Health. Each type of HPSA is further classified into one of the following categories: geographic, population group, facility, or automatic. This information was sourced from the Oklahoma State Department of Health Center for Health Innovation and Effectiveness, Office of Primary Care and Rural Health Development's Oklahoma Health Workforce Data Book 2014-2015.

Primary Care HPSA: identifies within an area that there is insufficient access to primary care physicians (M.D. and D.O.) that primarily practice in one of the following specialties: family practice, general practice, internal medicine, pediatrics, OB/GYN, and general geriatrics. A population-to-provider ratio based on the number of provider FTEs (full time equivalents, 1 Full Time Equivalent (FTE) = 40 hours of direct patient care per week) is used to determine eligibility.[52]

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[52] Oklahoma State Department of Health Center for Health Innovation and Effectiveness, Office of Primary Care and Rural Health Development's *Oklahoma Health Workforce Data Book 2014-2015.*

Dental HPSA: Identifies an area's access to dental care. Unlike the Primary Care and Mental Health HPSAs, dental provider FTEs (full time equivalents) are calculated by weighting the number of patient care hours provided by a dentist (general and pediatric) per week by the dentist's age and the number of assistants the dentist employs.[38]

Mental Health HPSA: Identifies an area's access to either psychiatrists only, or core mental health professionals (CMHPs) which include psychiatrists, clinical psychologists, clinical social workers, psychiatric nurse specialists, and marriage and family therapists. Similar to Primary Care and Dental HPSAs, a population-to-provider ratio is used to help determine eligibility. Several different population-to-provider ratios are available for consideration depending on whether the population to-provider ratios include psychiatrists only or include all CMHPs.[38]

HPSA Sub-Categories: Each type of HPSA must be categorized into one of the following categories. Each category has a different set of qualifying criteria.

- **Geographic:** This designation demonstrates a shortage for the total population of an area. (e.g., if a county has a population-to-provider ratio of greater than 3,500 to 1, the entire county is likely a geographic HPSA).
- **Population Group**: This designation demonstrates a shortage of providers for population groups. A population group must be one of the following:
  - Low-income populations (greater than 30% of population with incomes at or below 200% of the federal poverty level)
  - Migrant and/or seasonal farm workers and families
  - Medicaid-eligible
  - Native American/Native Alaskan
  - Homeless populations
  - Other populations isolated from access by means of a specified language, cultural barriers, or handicap.
- **Facility:** Facilities can be designated as a HPSA if the facility is located in a Medically Underserved Area (MUA). Facilities that can apply for this designation include community health centers, rural health clinics, federal correctional facilities, and state hospitals. Some of the factors used to evaluate a facility's designation eligibility are outpatient census, wait times, patients' residences, and in-house faculty.
- **Automatic:** All Federally Qualified Health Centers and Rural Health Clinics that provide access to care regardless of ability to pay receive automatic facility HPSA designation.[38]

HPSA scoring

Each HPSA is given a score by the Shortage Designation Branch based on certain specific criteria for each type of HPSA. This score indicates the degree of shortage. The federal Shortage Designation Branch calculates a score (0 to 25 for both primary care and mental health, and 0 to 26 for dental) with 25 / 26 representing the highest degree of shortage for each designated HPSA. The score is used to prioritize areas of greatest need for providers including National Health Service Corps placements. Each HPSA application is evaluated and scored based on the criteria listed below.[38]

Primary care

- Population-to-provider ratio
- Percent of individuals below 100% of the federal poverty level
- Infant health index (infant mortality rate or low birth weight rate)
- Average travel time or distance to nearest source of non-designated accessible care

Dental care

- Population-to-provider ratio

- Percent of individuals below 100% of the federal poverty level
- Water fluoridation status
- Average travel time or distance to nearest source of non-designated accessible care
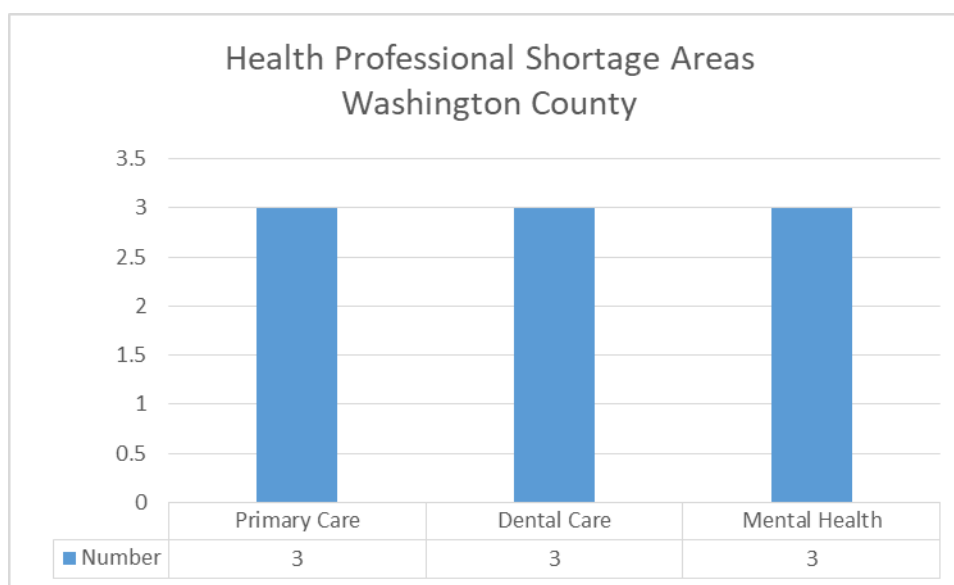
Mental health
- Population-to-provider ratio
- Percent of individuals below 100% of the federal poverty level
- Youth ratio (ratio of children under 18 to adults ages 18-64)
- Elderly ratio (ratio of adults over 65 to adults ages 18-64)
- Substance abuse prevalence
- Alcohol abuse prevalence
- Average travel time or distance to nearest source of non-designated accessible care

Why is this indicator important?

This indicator is relevant because a shortage of health professionals contributes to access and health status issues.

How are we doing?

Source: US HHS: HRSA, 2018, https://data.hrsa.gov

The graph above shows the number of Health Professional Shortage Areas (HPSAs) for the county for primary care providers, dental care providers and mental health providers.

Facilities designated as health professional shortage areas

This indicator reports the number and location of healthcare facilities designated as Health Professional Shortage Areas (HPSAs), defined as having shortages of primary medical care, dental or mental health providers. Facilities can be designated as a HPSA if the facility is located in a Medically Underserved Area (MUA). Facilities that can apply for this designation include community health centers, rural health clinics, federal correctional facilities, and state hospitals. Some of the factors used to evaluate a facility's designation eligibility are outpatient census, wait times, patients' residences, and in-house faculty. Health Professional Shortage Area (HPSA) facility files were acquired from the U.S. Health Resources and Services Administration (HRSA) GIS data warehouse. The point locations of these

institutions, along with their designation type, were intersected with geographic areas to provide a count of the total number of facilities in an area.

Why is this indicator important?

This indicator is relevant because a shortage of health professionals contributes to access and health status issues.

How are we doing?

The following series of table show the HPSA facilities for the county and by type of care provided.

Washington County		
Primary Care		
HPSA Name	**Designation Type**	**Rural Status**
Low Income - Washington County	Low Income Population HPSA	Rural
Cherokee Nation Bartlesville Health Center	Native American/Tribal Facility/Population	Rural
Cooweescoowee Health Center	Native American/Tribal Facility/Population	Rural
Dental Health		
HPSA Name	**Designation Type**	**Rural Status**
Low Income - Washington County	Low Income Population HPSA	Rural
Cherokee Nation Bartlesville Health Center	Native American/Tribal Facility/Population	Rural
Cooweescoowee Health Center	Native American/Tribal Facility/Population	Rural
Mental Health		
HPSA Name	**Designation Type**	**Rural Status**
Low Income - Catchment Area 1	Low Income Population HPSA	Partially Rural
Cherokee Nation Bartlesville Health Center	Native American/Tribal Facility/Population	Rural
Cherokee Nation Cooweescoowee Health Clinic	Native American/Tribal Facility/Population	Rural

Source: US HHS: HRSA, https://data.hrsa.gov

Medically underserved areas

A Medically Underserved Area designation identifies areas with a shortage of healthcare services. Designation is based on the explanation as to why the area in question is rational (similar to the HPSA process) and the documentation of four factors; health care provider-to-population ratio, infant mortality rate, percentage of population below 100% of the federal poverty level, and the percentage of population aged 65 and over. 2018 data
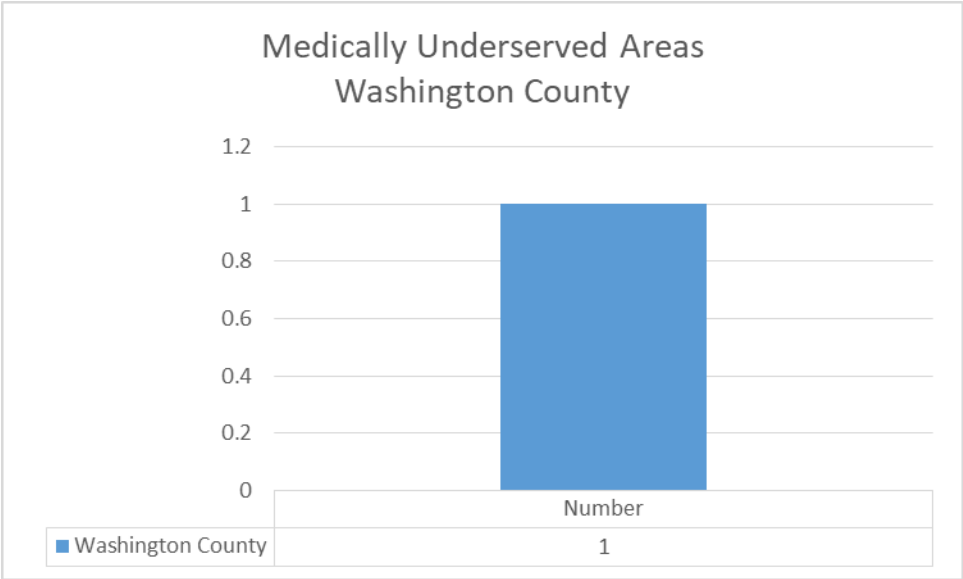
on Medically Underserved Areas was acquired from the U.S. Health Resources and Services Administration (HRSA) data warehouse.

Why is this indicator important?

This indicator is relevant because a shortage of healthcare services leads to access and health status issues.

How are we doing?

According to the US Health Resources and Services Administration (HRSA) data warehouse, there are five areas designated as Medically Underserved Areas in Tulsa County in 2018. Tulsa County is considered a partial Medically Underserved Area.

Medically Underserved Areas
Washington County

	Number
■ Washington County	1

Source: US HHS: HRSA, 2018, https://data.hrsa.gov

The graph above shows the number of Medically Underserved Areas for Washington County.

Top provider specialties

A list of Tulsa County physicians and dentists and their location of practice was obtained from the database ReferenceUSA. Reference USA is an internet-based reference service that compiles data from a number of sources including state licensing information.

Why is this indicator important?

For many people, having good access to health care means having a regular doctor, being able to schedule timely appointments, and being able to find new doctors when needed. Good access to doctors is especially important for people with Medicare—seniors and adults with permanent disabilities—because they are significantly more likely than others to need healthcare services.[53]

How are we doing?

The top specialty listed for Washington County was Emergency Medicine.

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[53] Boccuti, C, Swoope, C, Damico, A, & Neuman, P. (2013). *Medicare Patients' Access to Physicians: A Synthesis of the Evidence.* The Henry J. Kaiser Family Foundation. Retrieved from: http://kaiserfamilyfoundation.files.wordpress.com/2013/12/8526-medicare-patients-access-to-physicians2.pdf.
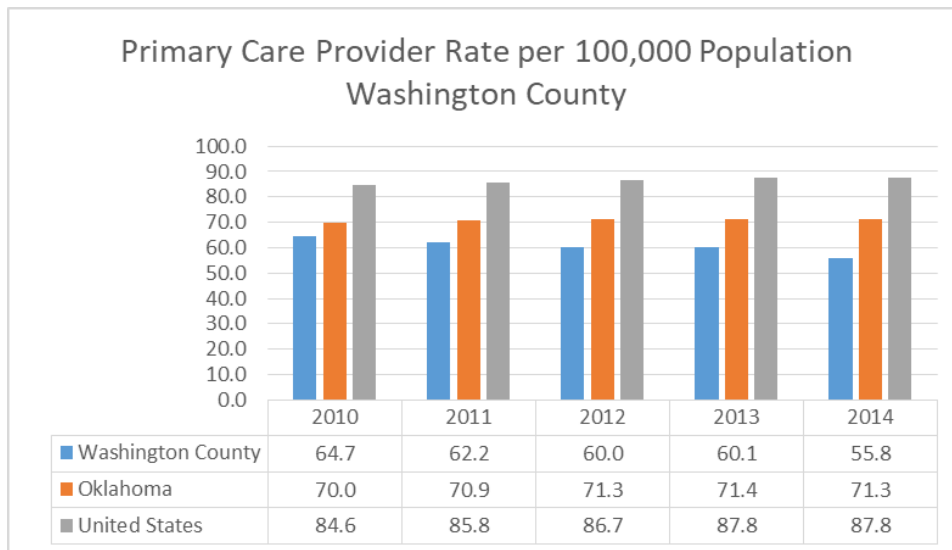
Primary care provider access

This indicator reports the number of primary care physicians per 100,000 population. Doctors classified as "primary care physicians" by the American Medical Association include: General Family Medicine MDs and DOs, General Practice MDs and DOs, General Internal Medicine MDs and General Pediatrics MDs. Physicians age 75 and over and physicians practicing sub-specialties within the listed specialties are excluded. This physician data was acquired from the 2010-2014 Health Resources and Services Administration (HRSA) Area Health Resource File (AHRF).

Why is this indicator important?

This indicator is relevant because a shortage of health professionals contributes to access and health status issues. This indicator is relevant because access to regular primary care is important to preventing major health issues and emergency department visits.

How are we doing?

The rate of primary care physicians per 100,000 population for Washington County has been steadily declining since 2010 and is also low when compared to both Oklahoma and the U.S. In 2014 the Washington County rate was 55.8 compared to the Oklahoma rate of 71.3 and the U.S. rate of 87.8.

Primary Care Provider Rate per 100,000 Population Washington County

	2010	2011	2012	2013	2014
Washington County	64.7	62.2	60.0	60.1	55.8
Oklahoma	70.0	70.9	71.3	71.4	71.3
United States	84.6	85.8	86.7	87.8	87.8

Source: Community Commons

Area	Number of PCP	PCP Ratio
Creek	20	3,540 to 1
Nowata	2	5,270 to 1
Tulsa	710	900 to 1
Washington	27	1,930 to 1
Top U.S. Performers		1,030 to 1
Oklahoma		1,590 to 1

Source: http://www.countyhealthrankings.org/app/oklahoma/2018/measure/factors/4/data, 2015
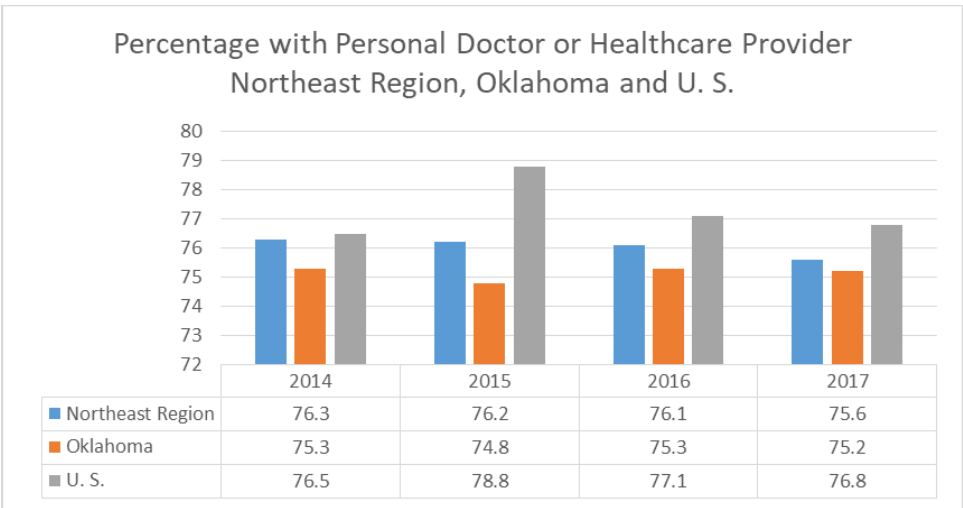
Consistent source of care

This indicator reports the percentage of adults aged 18 and older who self-report that they have at least one person who they think of as their personal doctor or health care provider. This data was acquired from the acquired from analysis of annual survey data from the Center for Disease Control and Prevention's Behavioral Risk Factor Surveillance System (BRFSS) for years 2014-2017.

Why is this indicator important?

This indicator is relevant because access to regular primary care is important to preventing major health issues and emergency department visits.

How are we doing?

For the purposes of this assessment, the Northeast region consists of Creek County, Washington County, and Nowata County. Data for the specific measure were not available at the county level for these communities.

Percentage with Personal Doctor or Healthcare Provider Northeast Region, Oklahoma and U. S.

	2014	2015	2016	2017
Northeast Region	76.3	76.2	76.1	75.6
Oklahoma	75.3	74.8	75.3	75.2
U. S.	76.5	78.8	77.1	76.8

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

Calculations may have been suppressed due to cell size less than 5 or total less than 50.

About 75% of the people in the Northeast Region of Oklahoma were reported to have a personal doctor or health care provider from 2014 to 2017. These percentages remained remarkably steady over the time-period.
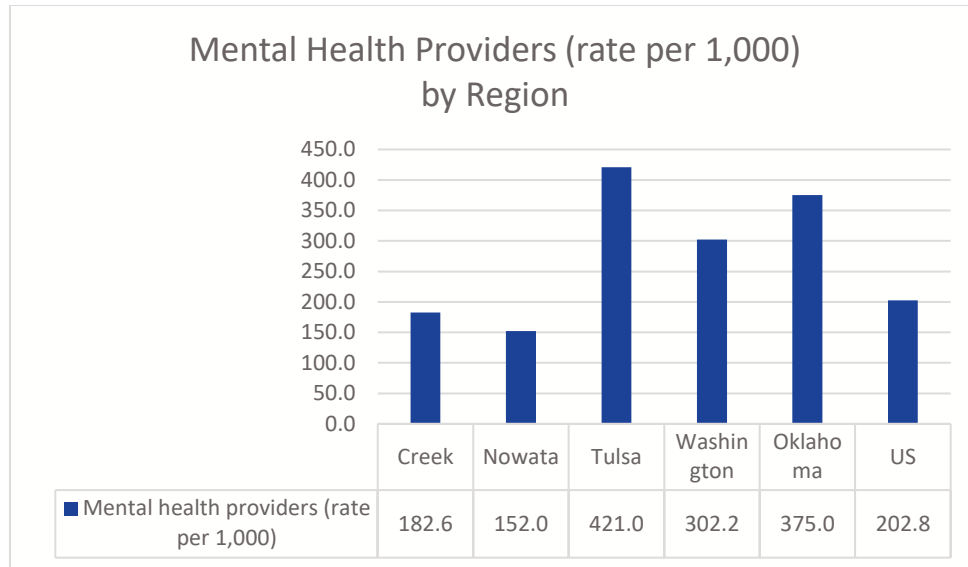
Access to mental health providers

This indicator reports the rate of the county population to the number of mental health providers including psychiatrists, psychologists, clinical social workers, and counselors that specialize in mental health care.

Why is this indicator important?

This indicator is relevant because a shortage of mental health providers contributes to access issues and worsening mental health conditions. Access to mental health services, especially early treatment, greatly improves outcomes and can change the course of an individual's life, increasing the chances for a brighter future.

How are we doing?

Mental Health Providers (rate per 1,000) by Region

	Creek	Nowata	Tulsa	Washington	Oklahoma	US
Mental health providers (rate per 1,000)	182.6	152.0	421.0	302.2	375.0	202.8

Source: Community Commons

The graph above shows the mental health provider rates for all four counties examined in this assessment as compared to the rates for the state of Oklahoma as a whole and for the United States as a whole. Washington County has the next highest rate, at 302.2 mental health providers per 1,000 population, which is higher than the rate for the U.S., but lower than the rate for the state of Oklahoma as a whole.
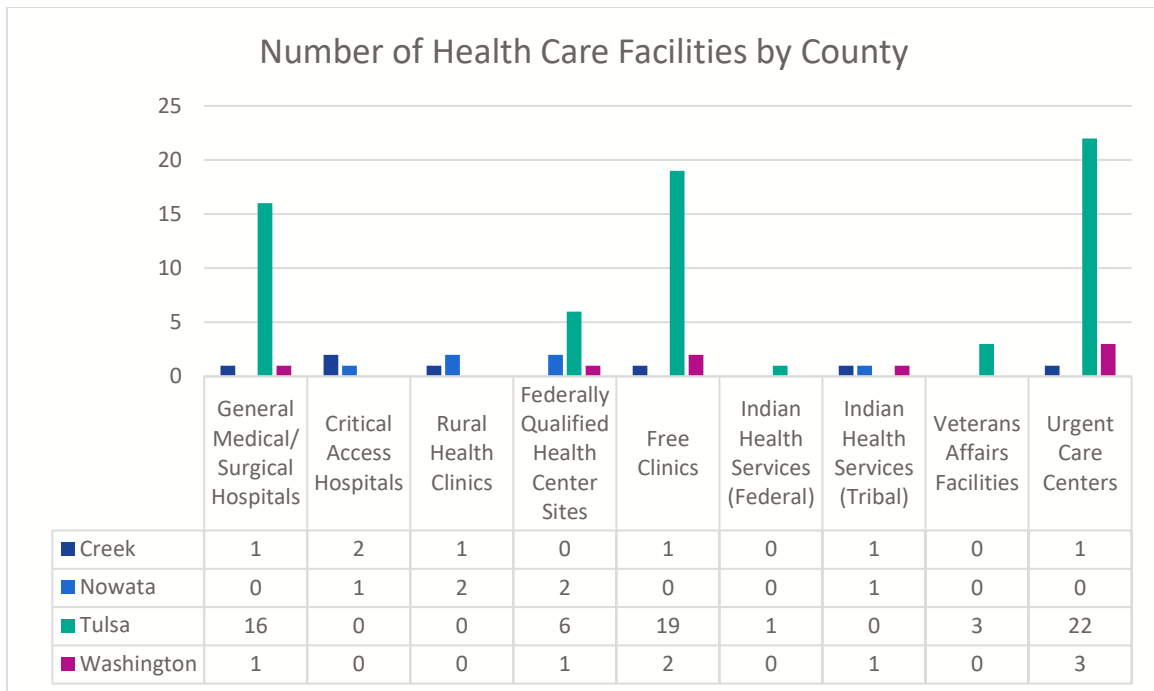
Number of healthcare facilities and beds

This indicator reports the number of healthcare facilities and beds as reported by the Oklahoma State Department of Health Center for Health Innovation and Effectiveness, Office of Primary Care and Rural Health Development's 2014-2015 Oklahoma Health Workforce Data Book.

Why is this indicator important?

This indicator is relevant because the supply and accessibility of facilities and beds affect access and health status.

How are we doing?

Number of Health Care Facilities by County

	General Medical/ Surgical Hospitals	Critical Access Hospitals	Rural Health Clinics	Federally Qualified Health Center Sites	Free Clinics	Indian Health Services (Federal)	Indian Health Services (Tribal)	Veterans Affairs Facilities	Urgent Care Centers
■ Creek	1	2	1	0	1	0	1	0	1
■ Nowata	0	1	2	2	0	0	1	0	0
■ Tulsa	16	0	0	6	19	1	0	3	22
■ Washington	1	0	0	1	2	0	1	0	3

Source: Oklahoma Health Workforce Data Book, Oklahoma State Department Of Health Center For Health Innovation And Effectiveness Office Of Primary Care And Rural Health Development, 2014-2015

The graph above shows the number of health care facilities by type for each of the four counties examined in this assessment. Washington County was reported to have one general medical/surgical hospital, one federally qualified health center, two free clinics, one Indian Health Services provider (tribal), and 3 urgent care centers.
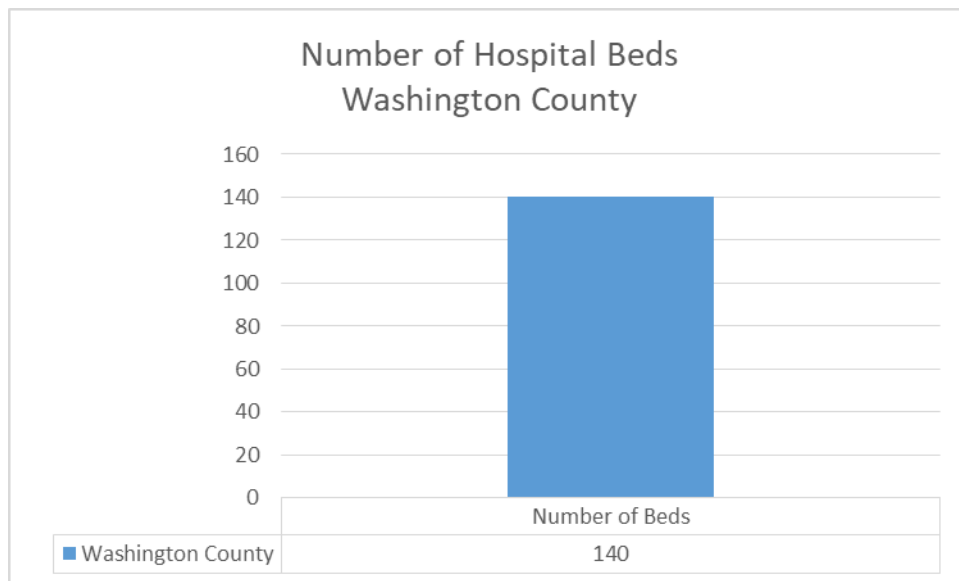
Number of Hospital Beds Washington County

	Number of Beds
■ Washington County	140

Source: Oklahoma Health Workforce Data Book, Oklahoma State Department of Health Center for Health Innovation and Effectiveness Office of Primary Care and Rural Health Development, 2014-2015

The graph above shows the number of hospital beds available in Washington County.

Health insurance coverage

This indicator is the percentage of residents who had health care coverage in 2015-2017, based on American Community Survey 5-year estimates. Insurance coverage rates are shown for children under 18, adults 18-64, and the total population. Adults 65 and over are not shown, as all adults should have health care coverage due to Medicare. Medicaid enrollment is also presented as a separate indicator.
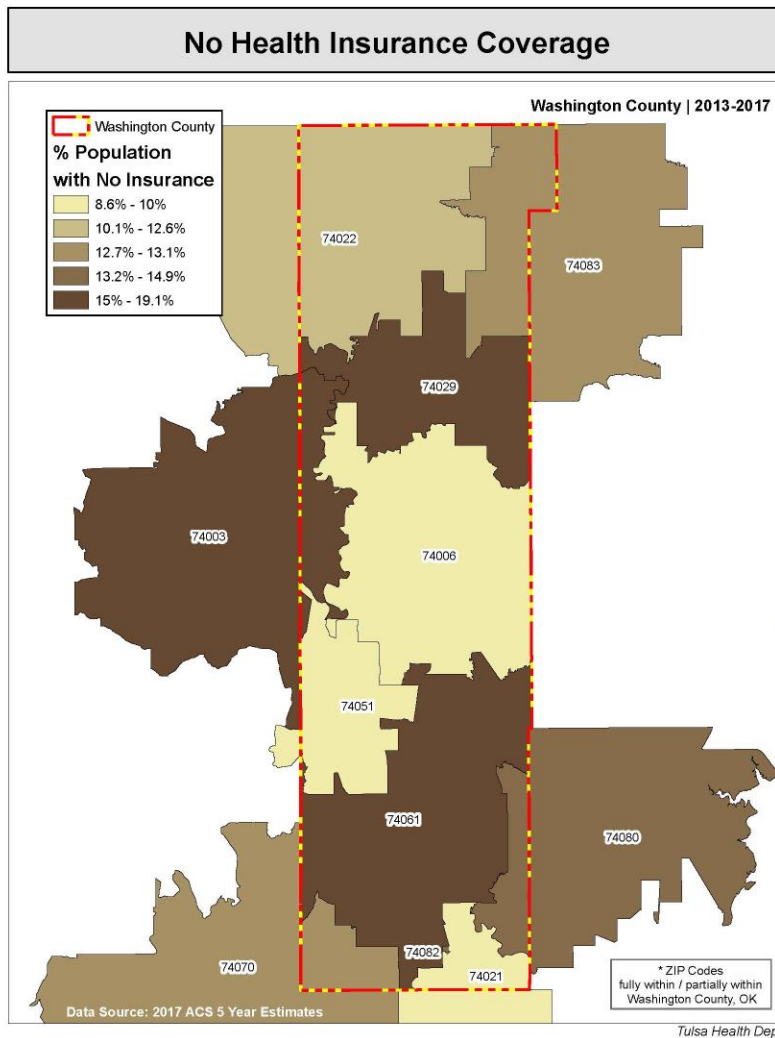
Why is this indicator important?

This indicator is relevant because lack of insurance is a primary barrier to healthcare access including regular primary care, specialty care, and other health services that contributes to poor health status. The lack of health insurance is considered a key driver of health status.
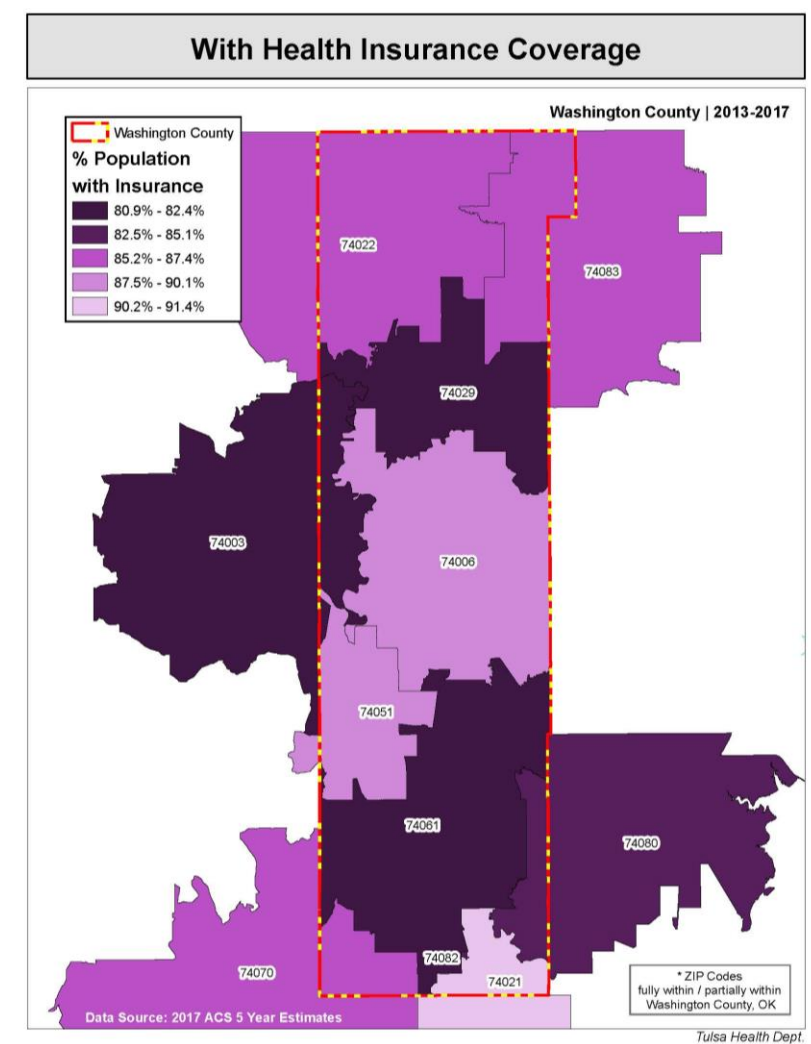
How are we doing?

The lowest precentage of those "with" health insurance coverage in Washington County ranged from 80.9% - 82.4% with the highest rate being 90.2% - 91.4%. Areas at the 80.9% to 82.4% range were ZIP codes 74003, 74061, 74082, and 74029. Only one ZIP code (74021) was in the 90.2% - 91.4% range.

No Health Insurance Coverage

Washington County | 2013-2017

Washington County

% Population with No Insurance
- 8.6% - 10%
- 10.1% - 12.6%
- 12.7% - 13.1%
- 13.2% - 14.9%
- 15% - 19.1%

74022, 74083, 74029, 74003, 74006, 74051, 74061, 74080, 74070, 74082, 74021

* ZIP Codes fully within / partially within Washington County, OK

Data Source: 2017 ACS 5 Year Estimates

Tulsa Health Dept.

The highest percentage rate for lack of health insurance coverage in Washington County (15% - 19.1%) was found in ZIP codes 74003 (Bartlesville area), 74029 (Dewey) and 74061 (Ramona).

Please note that the majority of ZIP code 74080 (Talala area) is located in Roger's County, ZIP code 74070 (Skiatook) crosses multiple counties, and 74003/74022 is part of Osage County.

Medicaid enrollment

Medicaid is an entitlement program that provides medical benefits to low-income individuals and families who have inadequate or no health insurance. This indicator is presented as the percentage of the population enrolled in Medicaid in fiscal year 2017.
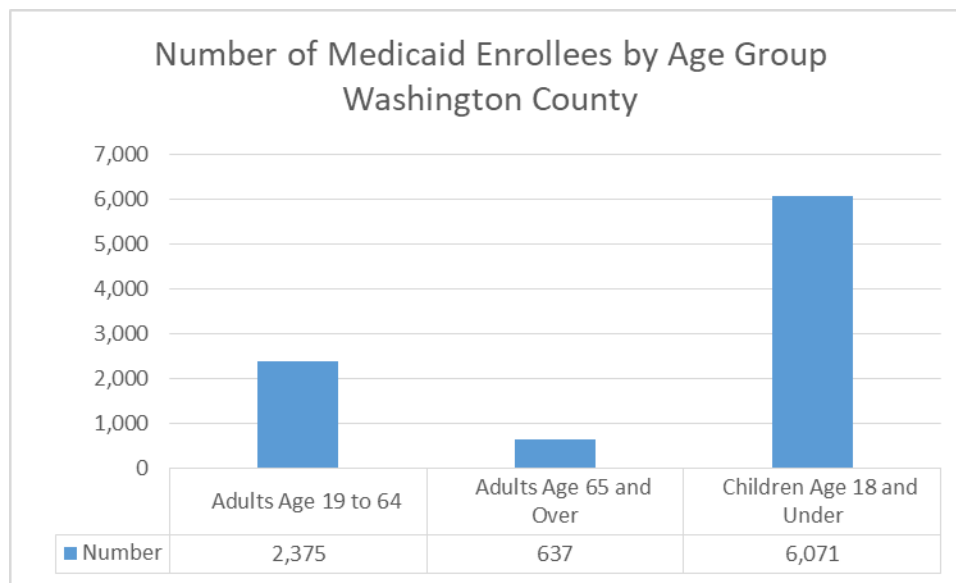
Why is this indicator important?

Medicaid provides health coverage for certain low-income individuals, such as families and children, pregnant women, the elderly and people with disabilities. It covers one in five Americans, including two in five children and three in five nursing home residents.[54] Medicaid coverage of children and pregnant women has led to increased access to care and improved child health and birth outcomes. Relative to the uninsured, adults with Medicaid have increased access to preventive and primary care, reduced out-of-pocket burdens, and they are less likely to forgo care

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[54] Why Does the Medicaid Debate Matter? The Henry J. Kaiser Family Foundation.
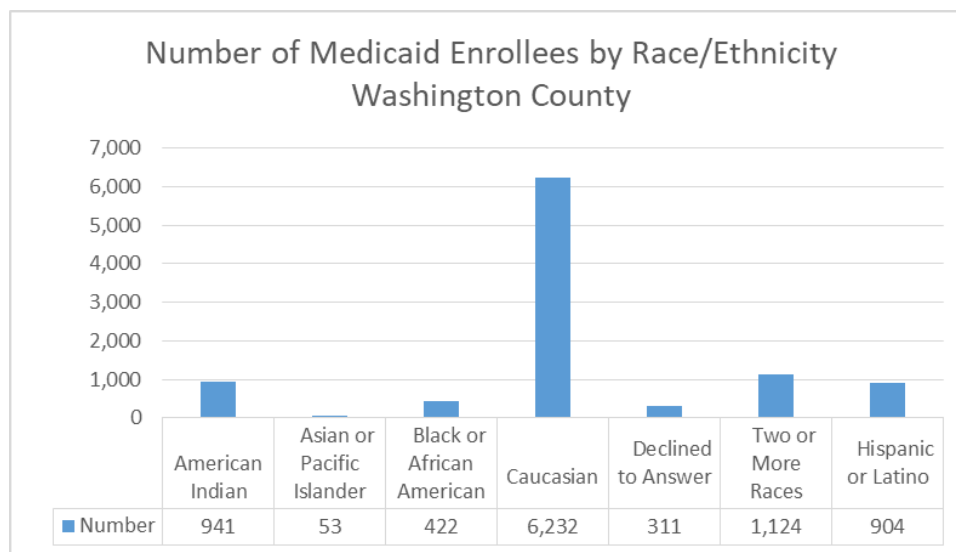
due to cost. However, provider shortages and low provider participation in Medicaid, particularly among specialists, are a major concern.[55]

How are we doing?

Number of Medicaid Enrollees by Age Group
Washington County

Number	Adults Age 19 to 64	Adults Age 65 and Over	Children Age 18 and Under
Number	2,375	637	6,071

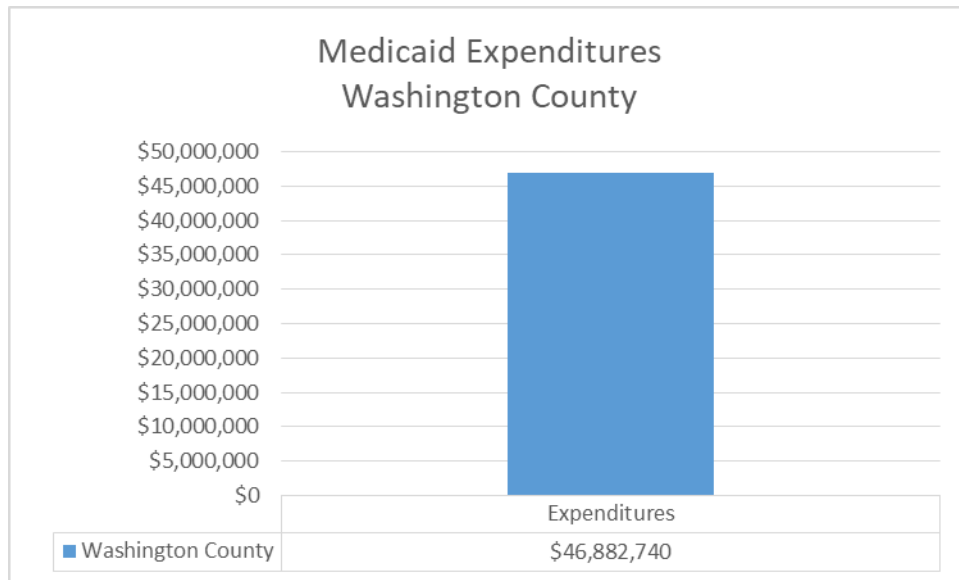Source: November 2018 Fast Facts, www.okhca.org

The graph above shows the number of Medicaid enrollees by age group according to data from the Oklahoma Health Care Authority in November of 2018. The largest numbers of those enrolled in Medicaid in Washington County were for children age 18 and under.

Number of Medicaid Enrollees by Race/Ethnicity
Washington County

Number	American Indian	Asian or Pacific Islander	Black or African American	Caucasian	Declined to Answer	Two or More Races	Hispanic or Latino
Number	941	53	422	6,232	311	1,124	904

Source: November 2018 Fast Facts, www.okhca.org

The graph above shows the number of Medicaid enrollees broken down by racial and ethnic group. In Washington County more Caucasians enrolled in Medicaid than any other race/ethnicity.

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[55] Medicaid: A Primer. The Kaiser Commission on Medicaid and the Uninsured.

Medicaid Expenditures Washington County

	Expenditures
■ Washington County	$46,882,740

Source: November 2018 Fast Facts, www.okhca.org

The graph above shows the Medicaid expenditures for Washington County.

Medicare coverage

This indicator represents the number of aged and/or disabled individuals enrolled in Medicare Part A and/or B through Original Medicare or Medicare Advantage and Other Health Plans during 2016. Medicare enrollment is based on CMS administrative enrollment data and are calculated using a person-year methodology**.**
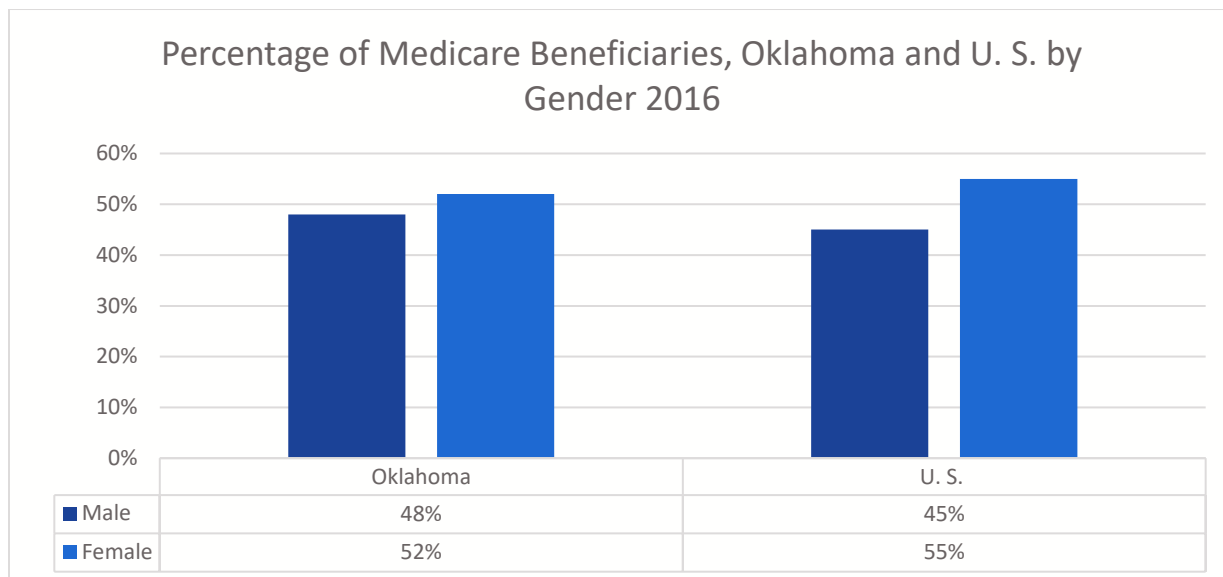
Why is this indicator important?

Medicare provides health coverage for older adults, and people with disabilities. The program protects the well-being and financial security of millions of American families as they age or if they become disabled. Medicare beneficiaries depend on the program to provide critical health services such as preventive services, including flu shots and diabetes screenings, hospital stays, lab tests and critical supplies like wheelchairs and prescription drugs.

How are we doing?

Total Medicare Beneficiaries, Oklahoma and U. S. 2015

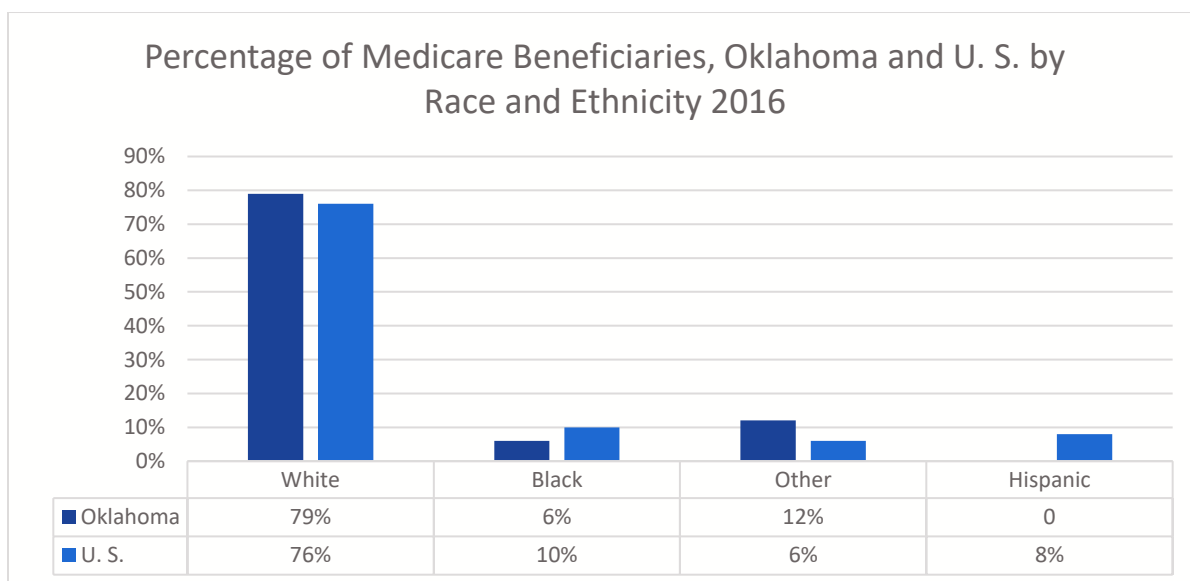|	Oklahoma	U. S.
■ Total Medicare Beneficiaries	678,763	55,504,005
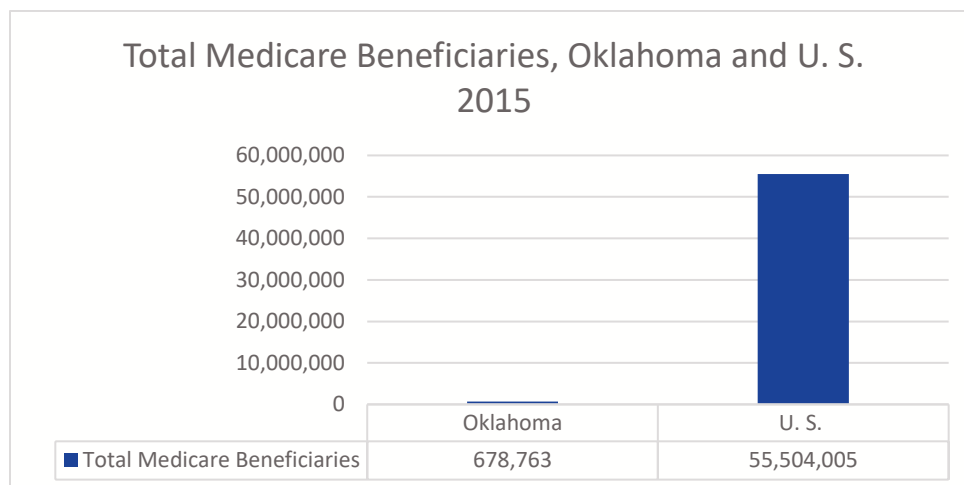
Source: www.kff.org/state-category/medicare/, 2015

The graph above shows the total number of Medicare beneficiaries for the state of Oklahoma as a whole and for the United States. Data at the county level were not available.

Percentage of Medicare Beneficiaries, Oklahoma and U. S. by Gender 2016

	Oklahoma	U. S.
■ Male	48%	45%
■ Female	52%	55%

The graph above shows the percentages of Medicare beneficiaries by gender for the state of Oklahoma and the U.S. overall. Oklahoma showed similar percentages of beneficiaries by gender as were reported for the nation.

Percentage of Medicare Beneficiaries, Oklahoma and U. S. by Race and Ethnicity 2016

	White	Black	Other	Hispanic
■ Oklahoma	79%	6%	12%	0
■ U. S.	76%	10%	6%	8%

The next graph shown above shows the percentages of Medicare beneficiaries by race/ethnicity for Oklahoma as whole compared to those for the nation. Percentages for Oklahoma were very similar to those of the nation, although Oklahoma had more beneficiaries in the category "other" than the U.S. and the U.S. had more beneficiaries of Hispanic origin than Oklahoma.
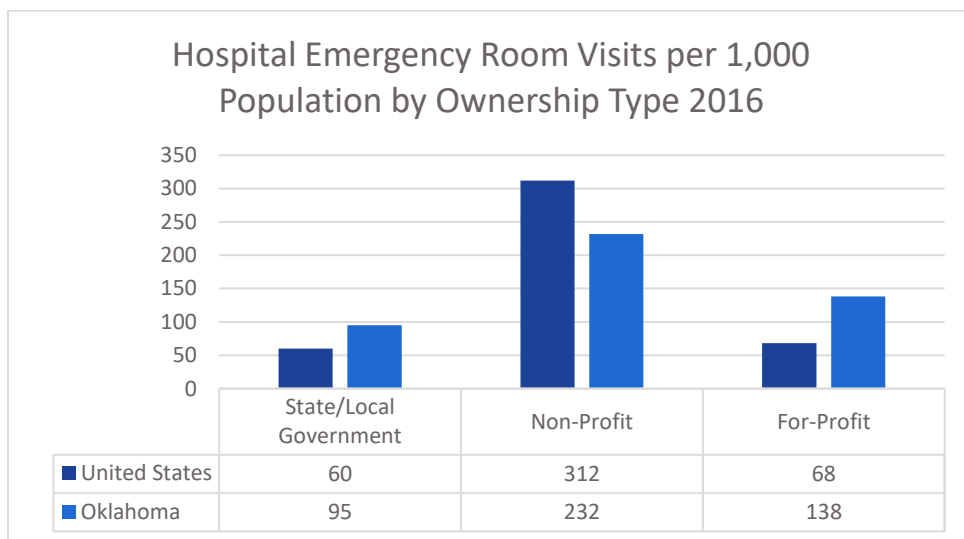
Emergency department visits

This indicator is the number of emergency department (ED) visits by population type.

Why is this indicator important?

Lack of access to adequate and timely health care services can lead to increased use of the hospital ED as a source of primary care. According to the CDC, uninsured adults were more likely than those with private health insurance or a public health plan to visit the emergency department due to having no other place to go. This can place unnecessary strain on the hospital ED.[56]

How are we doing?

Hospital Emergency Room Visits per 1,000 Population by Ownership Type 2016

	State/Local Government	Non-Profit	For-Profit
United States	60	312	68
Oklahoma	95	232	138

Source: https://www.kff.org/other/state-indicator/emergency-room-visits-by-ownership/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D

The graph above shows that Oklahoma had the same pattern of emergency room visits by ownership type as the nation did, with the largest number of visits taking place at non-profit hospital emergency rooms followed by visits to non-profit hospital emergency room and then emergency rooms owned by state or local governments.

Late or no prenatal care

This indicator is defined as births to Tulsa County mothers who had no prenatal care or did not begin prenatal care until after the first trimester (greater than 12 weeks gestation). It is presented as a percentage of all births, over the years 2014-2016.
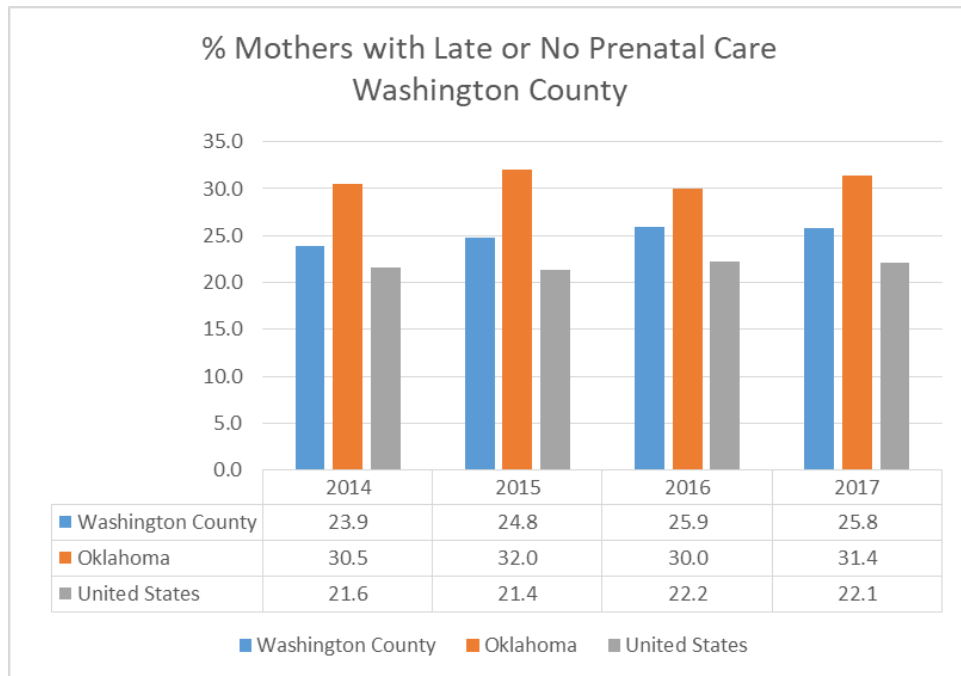
Why is this indicator important?

Prenatal care is medical attention for expecting mothers and their developing babies. It also includes the mother caring for herself by following her healthcare provider's advice, practicing good nutrition, getting plenty of rest, exercising sensibly, and avoiding things that could harm her or her baby, such as smoking and alcohol. Babies born to mothers who received late or no prenatal care are more likely to be born at a low birth weight and are more likely to die.[57]

How are we doing?

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[56] Gindi RM, Cohen RA, Kirzinger WK. Emergency room use among adults aged 18 – 64. Early release of estimates from the National Health Interview Survey, January – June 2011. National Center for Health Statistics. May 2012.

[57] Prenatal Care. Office of Women's Health. U.S. Department of Health and Human Services.

% Mothers with Late or No Prenatal Care
Washington County

	2014	2015	2016	2017
Washington County	23.9	24.8	25.9	25.8
Oklahoma	30.5	32.0	30.0	31.4
United States	21.6	21.4	22.2	22.1

■ Washington County   ■ Oklahoma   ■ United States

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Vital Statistics 2014 to 2017, Oklahoma Statistics on Health Available for Everyone
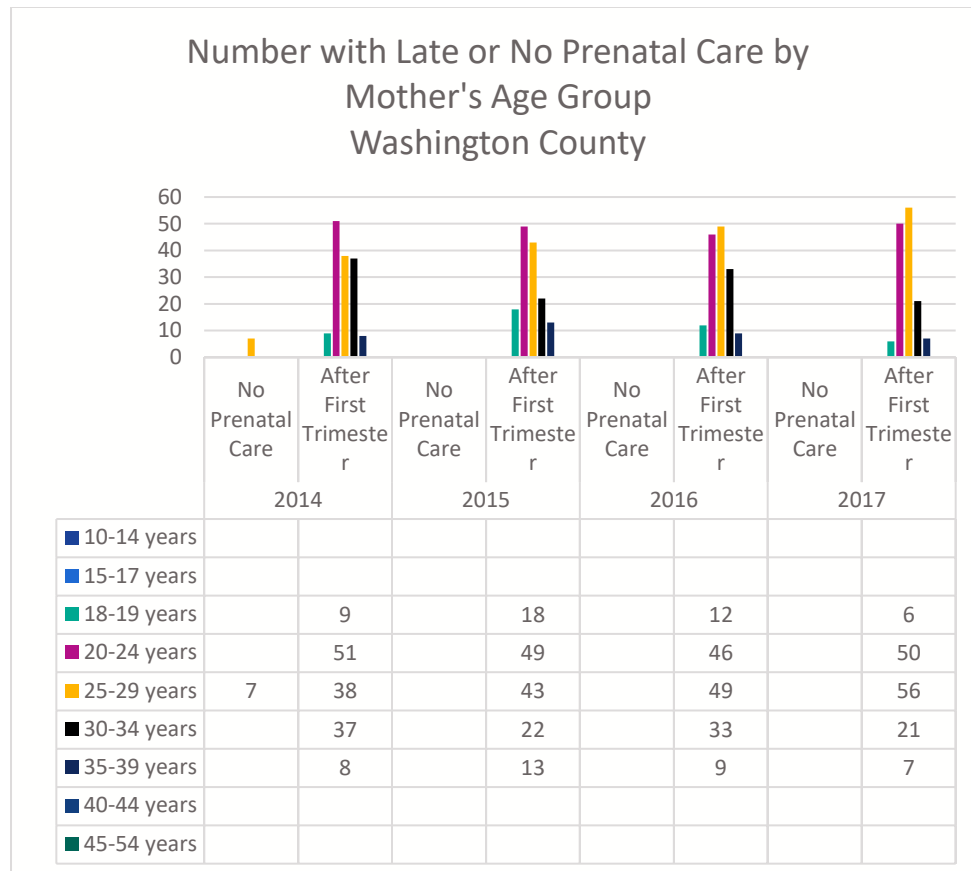
Calculations may have been suppressed due to small cell size (less than 5 births).

The percentage of mothers in Washington County with no prenatal care has risen slightly between 2014 and 2017 however it is still less than the State of Oklahoma as a whole and remains only slightly higher than the United States.

Late or No Prenatal Care
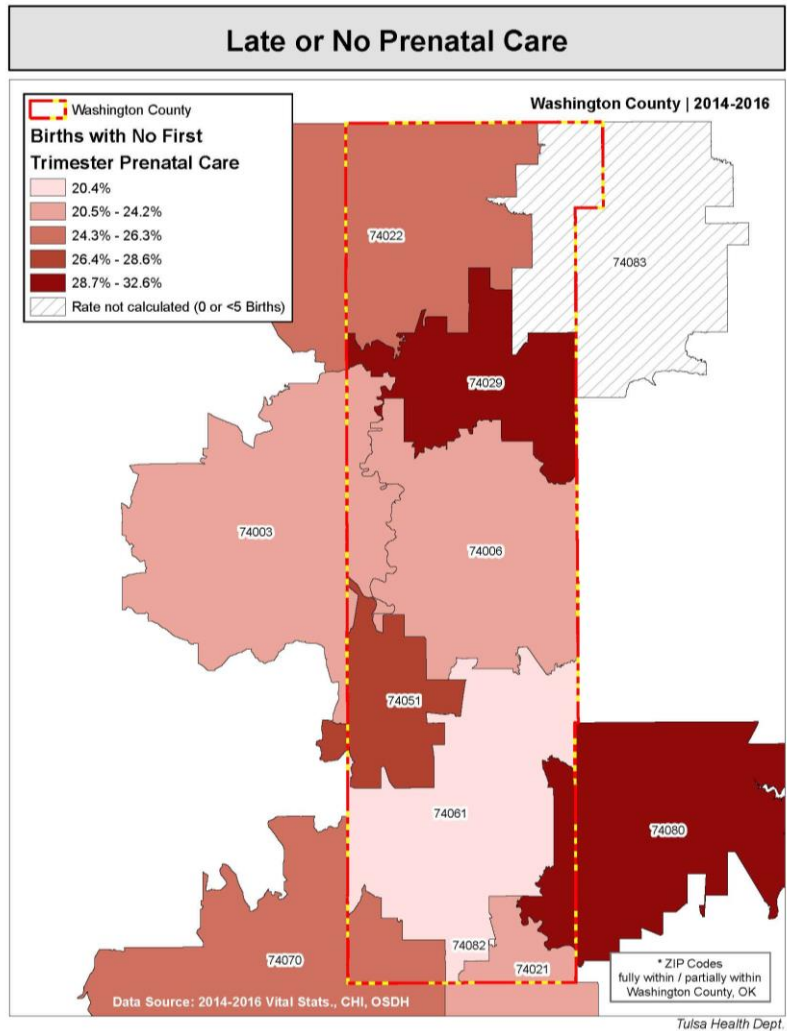
In Washington County ZIP codes 74029 (Dewey) and 74080 (Talala area) have a high birth rate (28.7% - 32.6%) where no first trimester prenatal care was sought.

Please note that the majority of ZIP code 74080 (Talala area) is located in Roger's County, ZIP code 74070 (Skiatook) crosses multiple counties, and 74003/74022 is part of Osage County.

Number with Late or No Prenatal Care by Mother's Age Group Washington County

	2014 No Prenatal Care	2014 After First Trimester	2015 No Prenatal Care	2015 After First Trimester	2016 No Prenatal Care	2016 After First Trimester	2017 No Prenatal Care	2017 After First Trimester
10-14 years								
15-17 years								
18-19 years		9		18		12		6
20-24 years		51		49		46		50
25-29 years	7	38		43		49		56
30-34 years		37		22		33		21
35-39 years		8		13		9		7
40-44 years								
45-54 years								

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Vital Statistics 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

Calculations may have been suppressed due to small cell size (less than 5 births).

There were too few cases in many of the categories on this indicator in Washington County for calculations to be made. The graph above shows only 7 mothers in 2014 in the 25 to 29 age category who reportedly received no prenatal care in Washington County. Age categories that showed decreased numbers of mothers who began receiving prenatal care after the first trimester from 2014 to 2017 were 20 to 24 (slight decrease from 51 to 50) and 30 to 34 (from 37 to 21). The number of mothers who began receiving prenatal care after the first trimester in the 20 to 24 age group remained essentially the same from 2014 to 2017, and the number of mothers who began receiving prenatal care after the first trimester in the age category 25 to 29 increased from 2014 to 2017 from 38 to 56.

Quality of care

High quality health care is timely, safe, effective, and affordable–the right care for the right person at the right time. High quality care in inpatient and outpatient settings can help protect and improve health and reduce the likelihood of receiving unnecessary or inappropriate care.
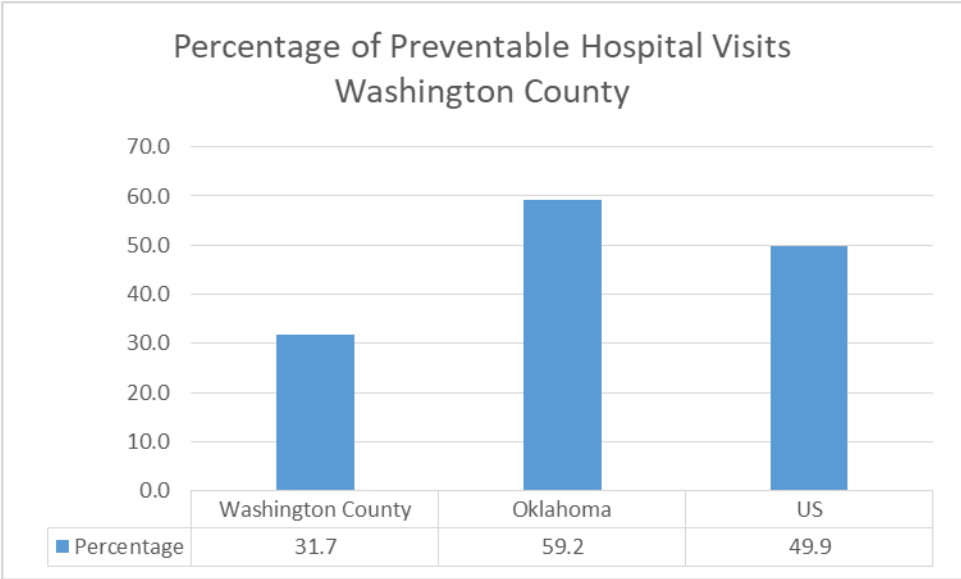
Preventable hospital stays

This indicator reports the discharge rate (per 1,000 Medicare enrollees) for conditions that are ambulatory care sensitive (ACS). ACS conditions include pneumonia, dehydration, asthma, diabetes, and other conditions which could have been prevented if adequate primary care resources were available and accessed by those patients.

Why is this indicator important?

This indicator is relevant because analysis of ACS discharges allows demonstrating a possible "return on investment" from interventions that reduce admissions (for example, for uninsured or Medicaid patients) through better access to primary care resources. Diseases typically associated with preventable hospitalization include diabetes, hypertension, congestive heart failure, angina, asthma, dehydration, bacterial pneumonia and urinary infections. Patients who actively participate in their care and adopt healthy lifestyle behaviors may avoid some hospital admissions. Comprehensive, coordinated outpatient care has been shown to reduce preventable hospitalizations.

How are we doing?

Source: Community Commons

The graph above shows the number of preventable hospital visits for Washington County as well as for the state of Oklahoma overall and the United States. Washington County had a percentage of preventable hospital visits at 31.7% which is significantly lower than both the state of Oklahoma as a whole, and the U.S.
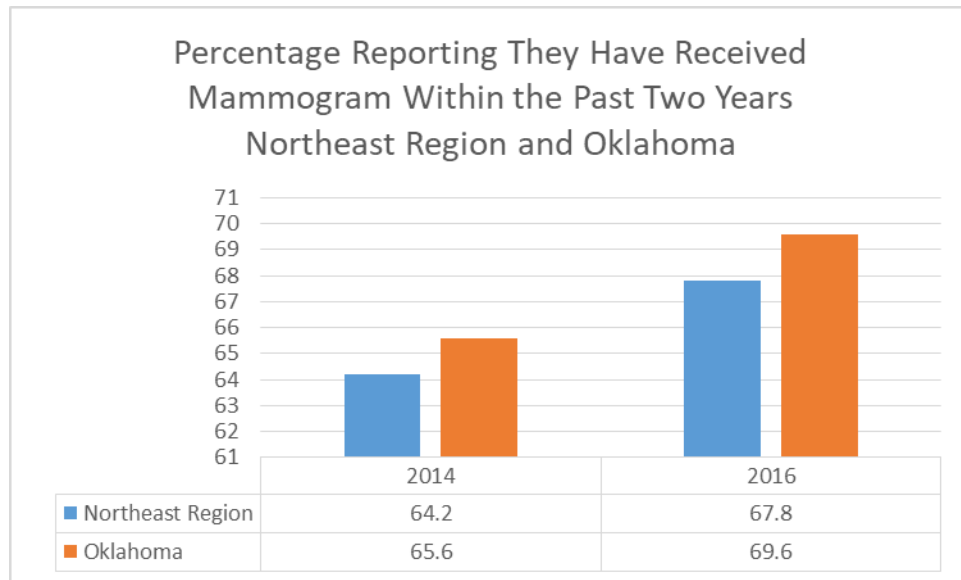
Mammograms

This indicator is the percentage of women in the county over 40 who received a mammogram in the previous two years.

Why is this indicator important?

Breast cancer starts when cells in the breast begin to grow out of control, which usually forms a tumor that can be felt as a lump. After skin cancer, breast cancer is the most common cancer in American woman. The American Cancer Society estimates that in 2018 there will be about 266,120 cases of invasive breast cancer diagnosed and 40,920 women will die from breast cancer. Deaths rates from breast cancer decreased 39 percent from 1989 to 2015, which is believed to be a result of finding breast cancer earlier though screening and increased awareness, as well as better treatments. Mammograms are recommended for women age 45 and older who are at average risk of breast cancer. Women at higher risk are recommended to get an MRI and mammogram annually starting at age 30. High risk includes family history, certain genes, specific medical conditions, or history of radiation.[58]

How are we doing?

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[58] Breast Cancer. American Cancer Society.

Percentage Reporting They Have Received Mammogram Within the Past Two Years Northeast Region and Oklahoma

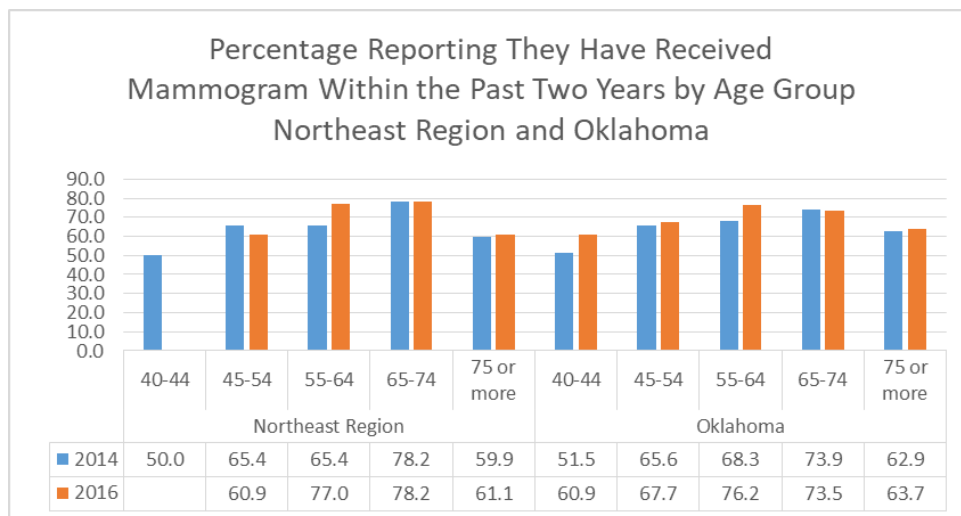|	2014	2016
Northeast Region	64.2	67.8
Oklahoma	65.6	69.6

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

Records with unknown values are excluded from the analysis. Calculations may have been suppressed due to cell size less than 5 or total less than 50.

For the purposes of this assessment, the Northeast region consists of Creek County, Washington County, and Nowata County. Data for the specific measure were not available at the county level for these communities.

The Northeast Region of Oklahoma showed increases from 2014 to 2016 in the percentage of those reporting they had received a mammogram within the past 2 years.

Percentage Reporting They Have Received Mammogram Within the Past Two Years by Age Group Northeast Region and Oklahoma

	Northeast Region					Oklahoma				
	40-44	45-54	55-64	65-74	75 or more	40-44	45-54	55-64	65-74	75 or more
2014	50.0	65.4	65.4	78.2	59.9	51.5	65.6	68.3	73.9	62.9
2016		60.9	77.0	78.2	61.1	60.9	67.7	76.2	73.5	63.7

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

Records with unknown values are excluded from the analysis. Calculations may have been suppressed due to cell size less than 5 or total less than 50.

When examining percentages of those who had received a mammogram within the past two years by age group from 2014 to 2016, for the Northeast Region of Oklahoma, there were 50% of those in the 40 to 44 age group who reported having had a mammogram within the past two years, a larger increase in percentages for the 55 to 64 age group, and age groups 65 to 74 and 75 and older remained relatively stable over the time-period.
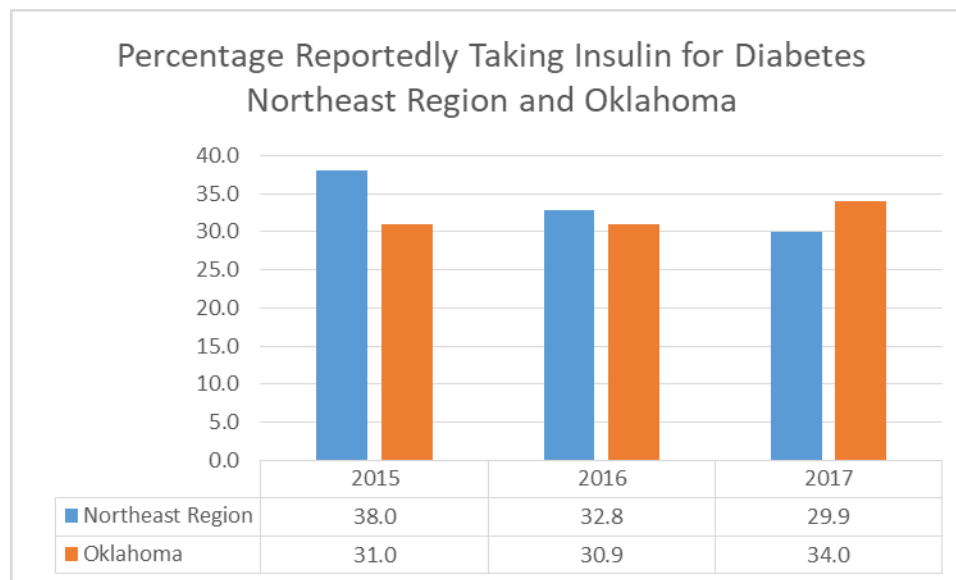
Diabetes treatment

This indicator reports the percentage of residents with diabetes who self-report having taken insulin for diabetes in the past year.

Why is this indicator important?

This indicator is relevant because engaging in preventive behaviors allows for early treatment of health problems. This indicator can also highlight a lack of access to preventive care, a lack of health knowledge, insufficient provider outreach, and/or social barriers preventing utilization of services.
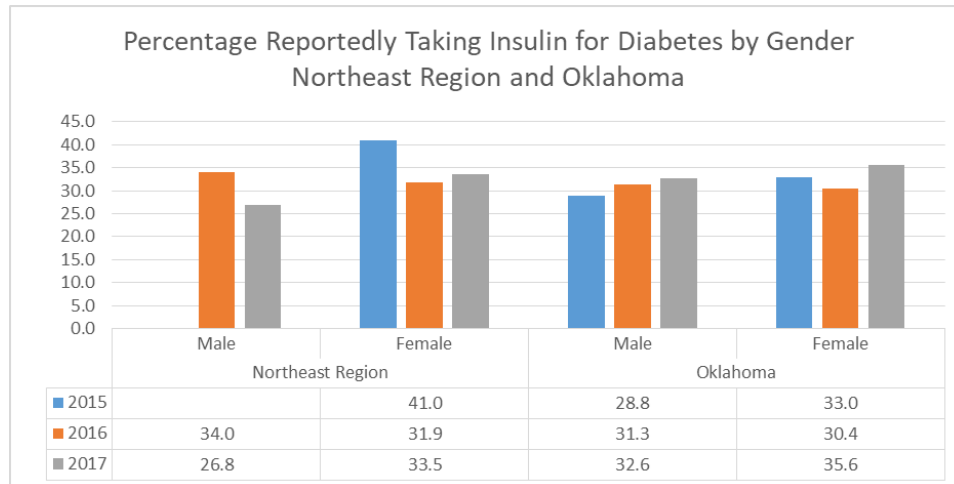
How are we doing?

For the purposes of this assessment, the Northeast region consists of Creek County, Washington County, and Nowata County. Data for the specific measure were not available at the county level for these communities.

Percentage Reportedly Taking Insulin for Diabetes Northeast Region and Oklahoma

	2015	2016	2017
Northeast Region	38.0	32.8	29.9
Oklahoma	31.0	30.9	34.0

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

Records with unknown values are excluded from the analysis. Calculations may have been suppressed due to cell size less than 5 or total less than 50.

The percentages of those reportedly taking insulin for diabetes decreased in the Northeast Region (from 38.0% to 29.9%) while increasing for the State of Oklahoma (from 31% to 34%).

Percentage Reportedly Taking Insulin for Diabetes by Gender
Northeast Region and Oklahoma

| | Northeast Region | | Oklahoma | |
	Male	Female	Male	Female
2015		41.0	28.8	33.0
2016	34.0	31.9	31.3	30.4
2017	26.8	33.5	32.6	35.6

Records with unknown values are excluded from the analysis. Calculations may have been suppressed due to cell size less than 5 or total less than 50.

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

For the Northeast Region, the percentages for both genders decreased across the years for which data was available.

Health Behaviors and Risk Factors

Health behaviors such as poor diet, a lack of exercise, substance abuse, and other risk factors contribute to poor health status.

Fruit consumption

This indicator is the percentage of residents who reported that they consumed less than one serving of fruit daily in 2015 and 2017.
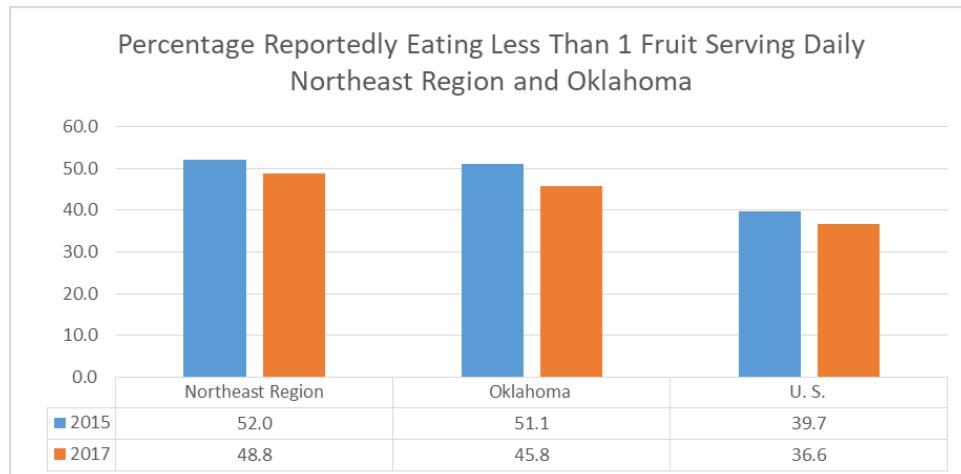
Why is this indicator important?

Fruits and vegetables are part of a well-balanced and healthy diet. Eating more fruits and vegetables along with whole grains and lean meats, nuts, and beans is a way to lose weight or maintain a healthy weight. Along with helping to control weight, diets rich in fruits and vegetables may reduce the risk of some types of cancer and other chronic diseases. Fruits and vegetables also provide essential vitamins and minerals, fiber, and other substances that are important for good health.[59]

How are we doing?

For the purposes of this assessment, the Northeast region consists of Creek County, Washington County, and Nowata County. Data for the specific measure were not available at the county level for these communities.

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[59] Fruits and Vegetables. Centers for Disease Control and Prevention.

Percentage Reportedly Eating Less Than 1 Fruit Serving Daily Northeast Region and Oklahoma

	Northeast Region	Oklahoma	U. S.
2015	52.0	51.1	39.7
2017	48.8	45.8	36.6

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

Records with unknown values are excluded from the analysis. Calculations may have been suppressed due to cell size less than 5 or total less than 50.

The percentage of those who reportedly ate less than 1 fruit serving daily decreased in the Northeast Region of Oklahoma from 52% in 2015 to 48.8% in 2017. Although there was a decrease, these percentages are still higher than that of Oklahoma and the U.S.

Vegetable consumption

This indicator is the percentage of residents who reported that they consumed less than one serving of vegetables daily in 2015 and 2017.

Why is this indicator important?

Most fruits and vegetables are naturally low in fat, sodium, and calories. None have cholesterol. Nutrients that are obtained from fruits and vegetables include potassium, dietary fiber, folate (folic acid), vitamin A, and vitamin C. These nutrients can help lower cholesterol and blood pressure, as well as keep the body healthy overall. Consumption of folate (folic acid) is especially important for women of childbearing age who may become pregnant. Folate (folic acid) lowers the risk of birth defects during fetal development.[60]

How are we doing?

For the purposes of this assessment, the Northeast region consists of Creek County, Washington County, and Nowata County. Data for the specific measure were not available at the county level for these communities.

In 2017, 17% percent of residents in the Northeast Region reported that they consumed less than one serving of vegetables daily.

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[60] Food Groups. Choose My Plate. United States Department of Agriculture.
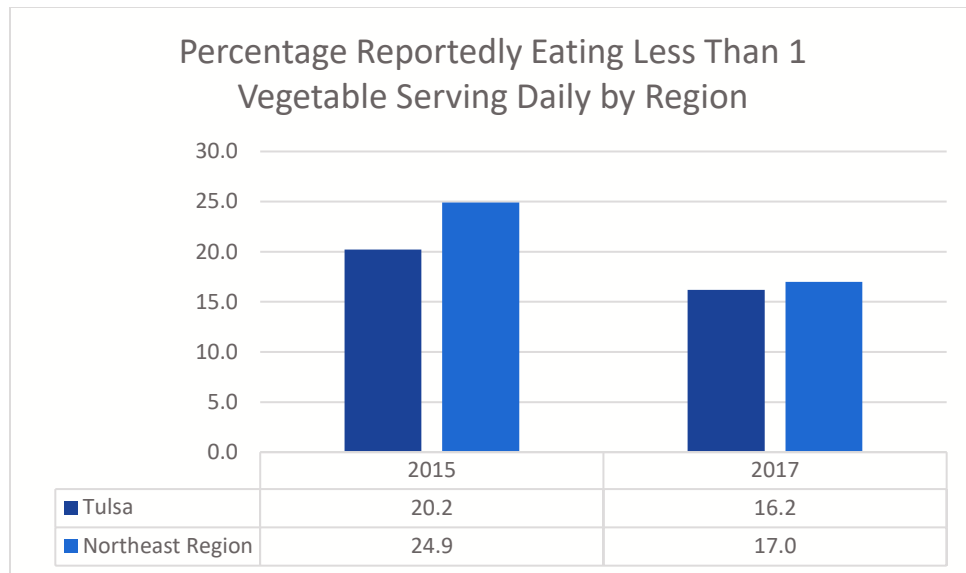
Percentage Reportedly Eating Less Than 1 Vegetable Serving Daily by Region

	2015	2017
Tulsa	20.2	16.2
Northeast Region	24.9	17.0

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

Records with unknown values are excluded from the analysis. Calculations may have been suppressed due to cell size less than 5 or total less than 50.

The Northeast Region showed a sharp decrease from a 24.9% rate in 2015 to a 17% rate in 2017 for those who reported eating less than 1 vegetable serving daily.

Physical activity

This indicator is presented as the percentage of adults in 2014-2017 who reported physical activity in the past month, other than their regular job.
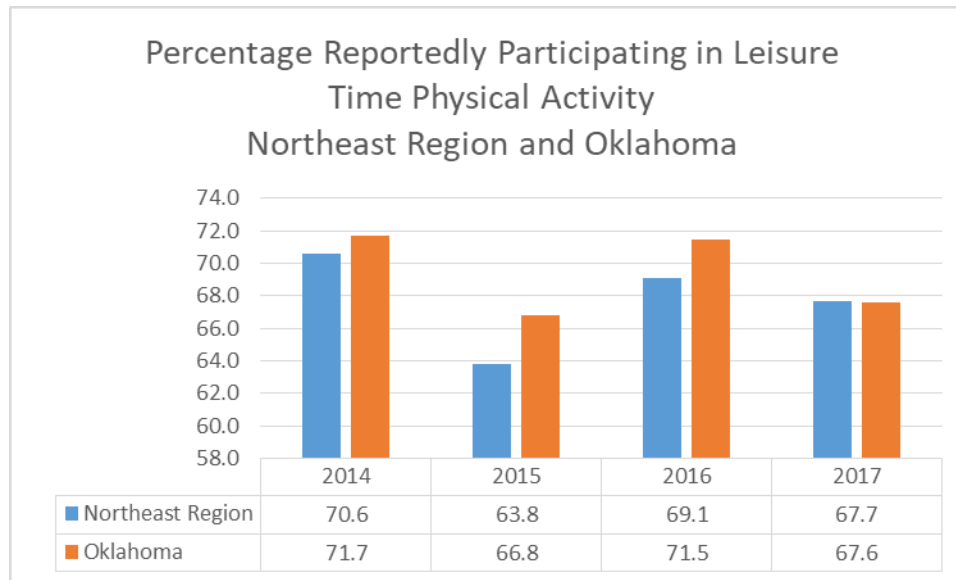
Why is this indicator important?

Regular physical activity can improve the health and quality of life of people of all ages, regardless of the presence of a chronic disease or disability. Among adults and older adults, physical activity can lower the risk of early death, coronary heart disease, stroke, high blood pressure, type 2 diabetes, breast and colon cancer, falls, and depression. Among children and adolescents, physical activity can improve bone health, improve cardiorespiratory and muscular fitness, decrease levels of body fat, and reduce symptoms of depression. For people who are inactive, even small increases in physical activity are associated with health benefits. Although there are many factors that can increase physical activity, some environmental influences include the presence of sidewalks, access to public transportation, low traffic density, and access to a neighborhood or school play area.[61]

How are we doing?

For the purposes of this assessment, the Northeast region consists of Creek County, Washington County, and Nowata County. Data for the specific measure were not available at the county level for these communities.

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[61] Physical Activity. Healthy People 2020. U.S. Department of Health and Human Services.

Percentage Reportedly Participating in Leisure Time Physical Activity
Northeast Region and Oklahoma

	2014	2015	2016	2017
■ Northeast Region	70.6	63.8	69.1	67.7
■ Oklahoma	71.7	66.8	71.5	67.6

Records with unknown values are excluded from the analysis. Calculations may have been suppressed due to cell size less than 5 or total less than 50.

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

The Northeast Region had consistently lower percentages of those who reported participating in leisure time physical activities than the Oklahoma in every year examined except 2017, when the percentage for the Northeast Region was slightly higher than that of Oklahoma.

Weight (obese/overweight)

Overweight is defined by the World Health Organization as individuals who have a body mass index (BMI) greater than or equal to 25. Obesity refers to individuals who have a BMI greater than or equal to 30. BMI is calculated by taking the person's weight in kilograms divided by the square of his height in meters (kg/m2).
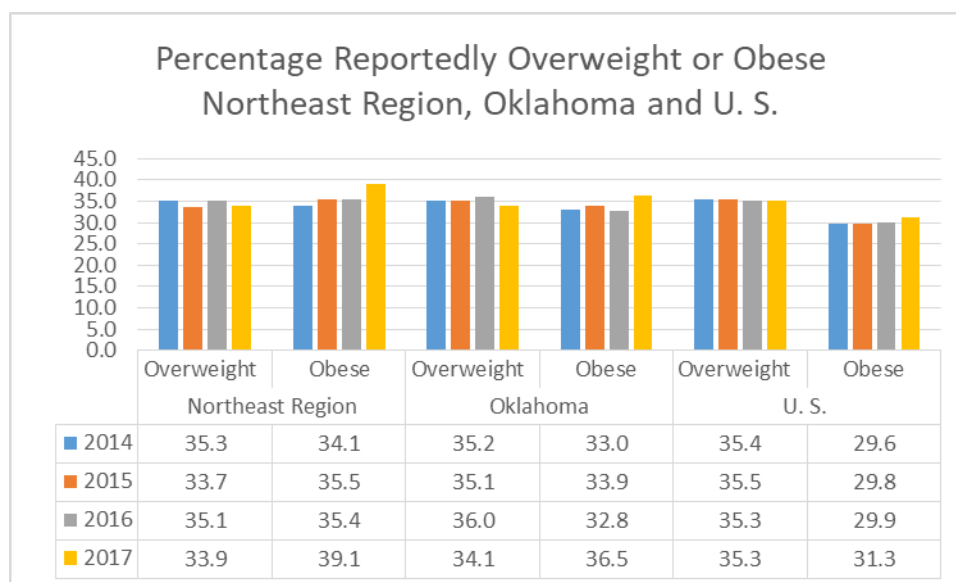
Why is this indicator important?

A variety of factors, including behavioral, environmental, and genetic factors can all play a role in being overweight/obese. Individuals who are overweight or obese have an increased risk of many health conditions: heart disease, type 2 diabetes, certain cancers, hypertension, and stroke, as well as other conditions. Obesity and overweight (and associated health problems) have a significant economic impact on the health system through direct medical costs, lost productivity in the general workforce, and early death. [62]

How are we doing?

For the purposes of this assessment, the Northeast region consists of Creek County, Washington County, and Nowata County. Data for the specific measure were not available at the county level for these communities.

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[62] Overweight and Obesity: Causes and Consequences. Centers for Disease Control and Prevention.

Percentage Reportedly Overweight or Obese
Northeast Region, Oklahoma and U. S.

	Northeast Region		Oklahoma		U. S.	
	Overweight	Obese	Overweight	Obese	Overweight	Obese
2014	35.3	34.1	35.2	33.0	35.4	29.6
2015	33.7	35.5	35.1	33.9	35.5	29.8
2016	35.1	35.4	36.0	32.8	35.3	29.9
2017	33.9	39.1	34.1	36.5	35.3	31.3

Records with unknown values are excluded from the analysis. Calculations may have been suppressed due to cell size less than 5 or total less than 50.

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

There was not much variability, across geographic areas or over the time span examined in this assessment, in the percentages of people who were reportedly overweight or obese. Both geographic areas showed decreases in percentages of those who were reportedly overweight from 2014 to 2017 and increases in the percentages of those who were reportedly obese for the same time-period.

High blood pressure

This indicator is presented as the percentage of residents who had ever been diagnosed with high blood pressure in 2015-2017.
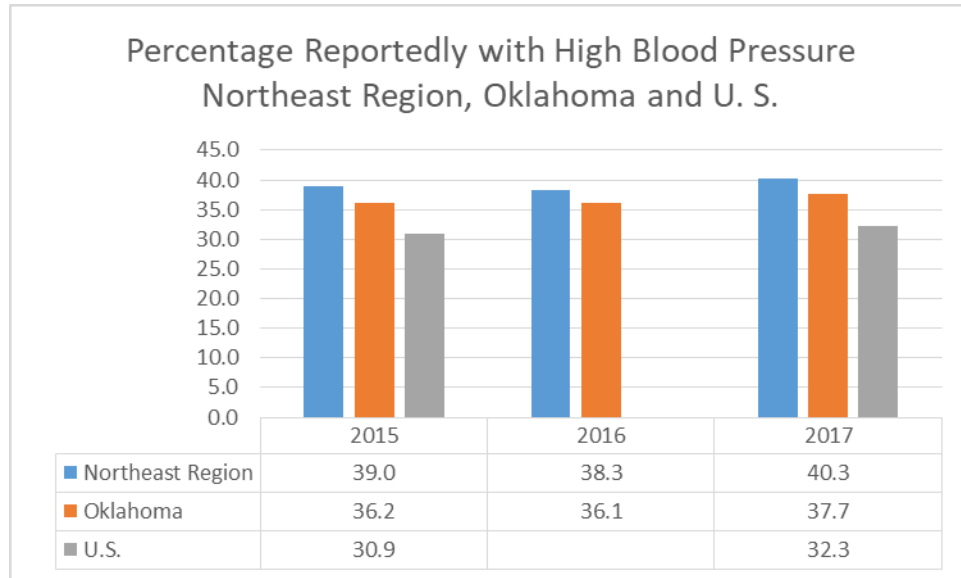
Why is this indicator important?

Uncontrolled high blood pressure can lead to serious health consequences if untreated. It is sometimes called 'the silent killer,' because it has no symptoms, so individuals may not be aware that it is damaging their arteries, heart, and other organs. Possible health consequences include heart disease, stroke, kidney damage, as well as other complications. Risk factors for high blood pressure include family history, age, low physical activity, poor diet, overweight/obese, and high alcohol consumption.[63]

How are we doing?

For the purposes of this assessment, the Northeast region consists of Creek County, Washington County, and Nowata County. Data for the specific measure were not available at the county level for these communities.

In 2017, 40.3 percent of the Northeast Region's residents reported having high blood pressure. This was higher than in Oklahoma (37.7 percent) and the United States (32.3 percent). The county did not meet the Healthy People 2020 national goal of reducing the proportion of individuals with high blood pressure to 26.9 percent.

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[63] High Blood Pressure. American Heart Association.

Percentage Reportedly with High Blood Pressure Northeast Region, Oklahoma and U. S.

	2015	2016	2017
■ Northeast Region	39.0	38.3	40.3
■ Oklahoma	36.2	36.1	37.7
■ U.S.	30.9		32.3

Records with unknown values are excluded from the analysis. Calculations may have been suppressed due to cell size less than 5 or total less than 50.

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

The percentages of those who were reported to have high blood pressure in the Northeast Region remained relatively stable from 2015 to 2017 (39.0% and 40.3% respectively).
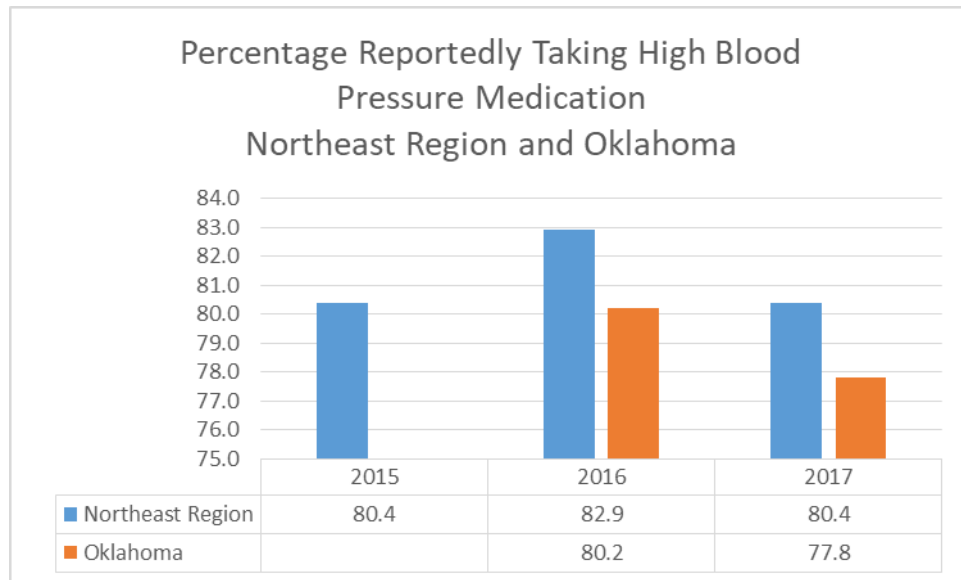
High blood pressure management

This indicator is presented as the percentage of adults who self-reported that they are not taking medication for their high blood pressure according to the CDC's Behavioral Risk Factor Surveillance System (2015-2017).

Why is this indicator important?

This indicator is relevant because engaging in preventive behaviors decreases the likelihood of developing future health problems. When considered with other indicators of poor health, this indicator can also highlight a lack of access to preventive care, a lack of health knowledge, insufficient provider outreach, and/or social barriers preventing utilization of services.

How are we doing?

For the purposes of this assessment, the Northeast region consists of Creek County, Washington County, and Nowata County. Data for the specific measure were not available at the county level for these communities.

Percentage Reportedly Taking High Blood Pressure Medication Northeast Region and Oklahoma

	2015	2016	2017
■ Northeast Region	80.4	82.9	80.4
■ Oklahoma		80.2	77.8

Records with unknown values are excluded from the analysis. Calculations may have been suppressed due to cell size less than 5 or total less than 50.

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

For the Northeast Region, the percentages of those who were reported to be taking medication for high blood pressure started out at about 80% in 2015, had a slight increase in 2016 and then went back up to about 80% in 2017. Although there was no data for Oklahoma for 2015, the data for 2016 and 2017 show that the Northeast Region of Oklahoma is still higher than the State as a whole.
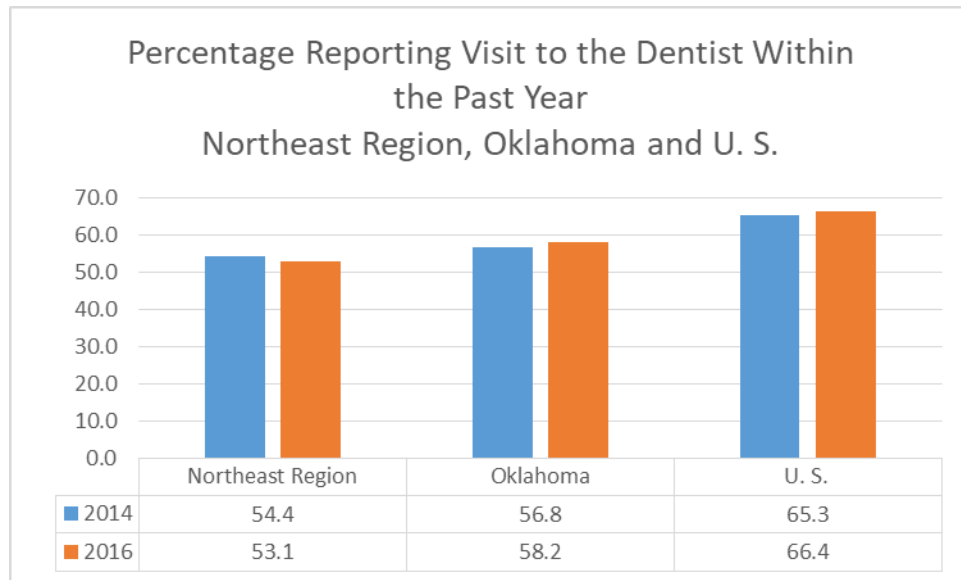
Dental care

This indicator reports the percentage of adults aged 18 and older who self-report that they have not visited a dentist, dental hygienist or dental clinic within the past year.

Why is this indicator important?

This indicator is relevant because engaging in preventive behaviors decreases the likelihood of developing future health problems. This indicator can also highlight a lack of access to preventive care, a lack of health knowledge, insufficient provider outreach, and/or social barriers preventing utilization of services.

How are we doing?

For the purposes of this assessment, the Northeast region consists of Creek County, Washington County, and Nowata County. Data for the specific measure were not available at the county level for these communities.

Percentage Reporting Visit to the Dentist Within the Past Year
Northeast Region, Oklahoma and U. S.

	Northeast Region	Oklahoma	U. S.
2014	54.4	56.8	65.3
2016	53.1	58.2	66.4

Records with unknown values are excluded from the analysis. Calculations may have been suppressed due to cell size less than 5 or total less than 50.

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

The Northeast Region showed a minor decrease from 2014 to 2016 of those who reported visiting a dentist in the past year (from 54.4% to 53.1%) while Oklahoma and the U.S. showed increases.

Teen births

This indicator is presented as the number of live births to Tulsa County teenagers (ages 15 – 17 and 15 - 19) per 1,000 females in this age group, over the years 2014 – 2017.
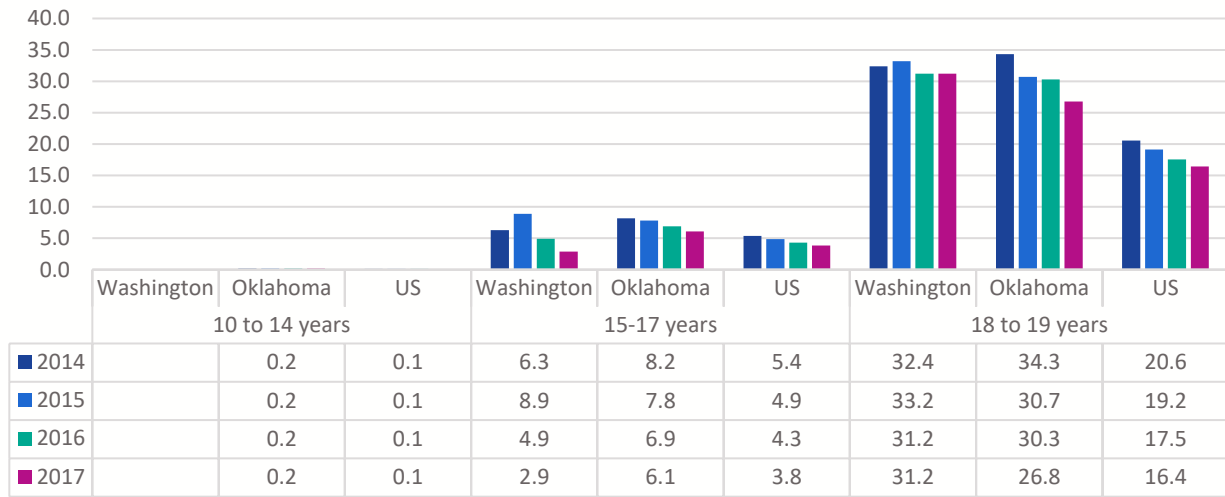
Why is this indicator important?

Although teen birth rates are declining, there are still significant disparities among racial and ethnic minorities, as well as socioeconomically disadvantaged youth of any race or ethnicity. Social and economic costs related to teen parents and childbirth include increased health care and foster care costs, increased high school dropout rates, and lower educational attainment for teen mothers and their children. The children of teen mothers are also more likely to be incarcerated at some time during adolescence, have more health problems, give birth as a teenager, and face unemployment as a young adult.[64]

How are we doing?

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[64] Teen Pregnancy: About Teen Pregnancy. Centers for Disease Control and Prevention.

Teen Birth Rate by Age
Washington County

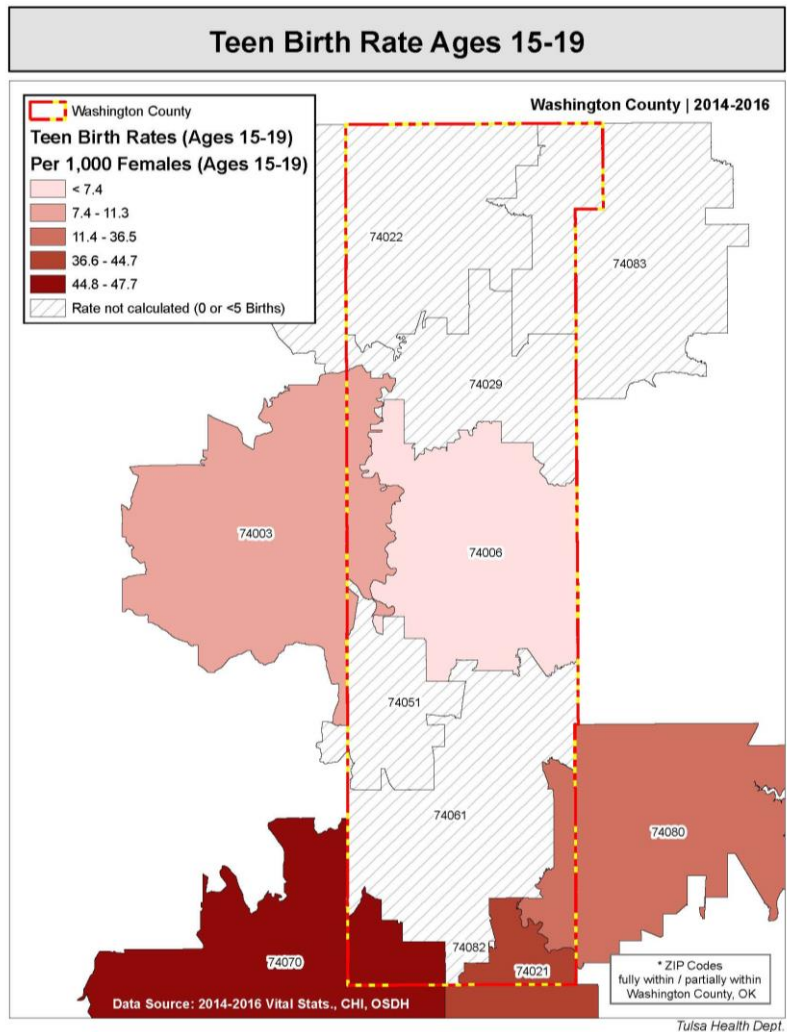| | 10 to 14 years | | | 15-17 years | | | 18 to 19 years | | |
	Washington	Oklahoma	US	Washington	Oklahoma	US	Washington	Oklahoma	US
2014		0.2	0.1	6.3	8.2	5.4	32.4	34.3	20.6
2015		0.2	0.1	8.9	7.8	4.9	33.2	30.7	19.2
2016		0.2	0.1	4.9	6.9	4.3	31.2	30.3	17.5
2017		0.2	0.1	2.9	6.1	3.8	31.2	26.8	16.4

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Vital Statistics 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

Calculations may have been suppressed due to small cell size (less than 5 births). Birth rates are live births per 1,000 population.

Washington County also showed decreases in teen birth rates for all age groups for which data were available from 2014 to 2017. In terms of teen births, Washington County showed an overall decrease from 2014 to 2017 from 8.0 live births per 1,000 population in 2014 to 6.2 live births per 1,000 population in 2017.

Looking closer at the 2017 data, those aged 15-17 showed a significant decrease compared to Oklahoma and the U.S.

When looking at the 2017 data for those aged 18-19 the opposite is true. Washington County had a significant higher teen birth rate than both Oklahoma and the U.S.

Teen Birth Rate Ages 15-19

Washington County | 2014-2016

Washington County

Teen Birth Rates (Ages 15-19)
Per 1,000 Females (Ages 15-19)

< 7.4
7.4 - 11.3
11.4 - 36.5
36.6 - 44.7
44.8 - 47.7
Rate not calculated (0 or <5 Births)

74022
74083
74029
74003
74006
74051
74061
74080
74070
74082
74021

* ZIP Codes
fully within / partially within
Washington County, OK

Data Source: 2014-2016 Vital Stats., CHI, OSDH

Tulsa Health Dept.

Teen birth rates per 1,000 females, ages 15-19 were studied. The majority of the cities in Washington county could not be calculated. Of the five calculated, the area of Washington County with the highest teen birth rate is 74070 (Skiatook).

Please note that the majority of ZIP code 74080 (Talala area) is located in Roger's County, ZIP code 74070 (Skiatook) crosses multiple counties, and 74003/74022 is part of Osage County.

Teen Birth Rates Age Group 18 to 19 by Race/Ethnicity and by County

	White	Black	American Indian	Asian/ Pacific Islander	Hispanic	White	Black	American Indian	Asian/ Pacific Islander	Hispanic	White	Black	American Indian	Asian/ Pacific Islander	Hispanic	White	Black	American Indian	Asian/ Pacific Islander	Hispanic
	Creek County					Nowata County					Tulsa County					Washington County				
2014	47.9		42.3								33.7	42.0	33.8	22.7	47.6	33.4		30.9		
2015	42.9		24.0			35.2					31.7	40.9	22.5	16.3	48.7	33.7		43.7		
2016	38.0		36.8			36.5					30.9	46.1	27.3	9.0	48.0	33.2		31.4		
2017	32.5		35.5			39.1					22.7	39.1	24.2	11.2	30.8	28.4		41.0		

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Vital Statistics 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

Calculations may have been suppressed due to small cell size (less than 5 births). Birth rates are live births per 1,000 population.

Washington County showed a decrease in the birth rate for this age group for those in the white population (from 33.4 live births per 1,000 in 2014 to 28.4 live births per 1,000 in 2017), but an increase in the birth rate for this age group among the American Indian population, from 30.9 live births per 1,000 in 2014 to 41.0 live births per 1,000 population in 2017.

Tobacco use

This indicator is the percentage of Tulsa County residents who smoked cigarettes in 2014-2017.
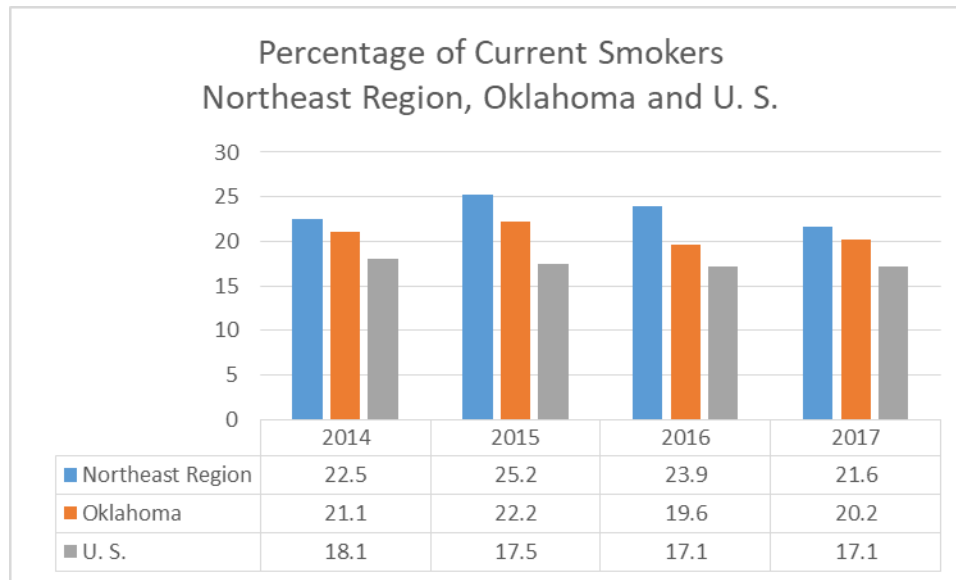
Why is this indicator important?

Tobacco use is the single most preventable cause of death and disease in the United States. Tobacco use causes cancer, heart disease, lung diseases (including emphysema, bronchitis, and chronic airway obstruction), premature birth, low birth weight, stillbirth, and infant death. Secondhand smoke causes heart disease and lung cancer in adults and a number of health problems in infants and children, including severe asthma attacks, respiratory infections, ear infections, and is associated with Sudden Infant Death Syndrome (SIDS). There is no risk-free level of exposure to secondhand smoke.[65]

How are we doing?

For the purposes of this assessment, the Northeast region consists of Creek County, Washington County, and Nowata County. Data for the specific measure were not available at the county level for these communities.

In 2017, 21.6 percent of those in the Northeast Region reported smoking cigarettes on some days or every day (current smokers). This was higher than Oklahoma (20.2 percent) and the United States (17.1 percent). The Northeast Region did not meet the Healthy People 2020 national goal of reducing smoking prevalence to 12.0 percent.

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[65] Tobacco Use. Healthy People 2020. U.S. Department of Health and Human Services.

Percentage of Current Smokers
Northeast Region, Oklahoma and U. S.

	2014	2015	2016	2017
Northeast Region	22.5	25.2	23.9	21.6
Oklahoma	21.1	22.2	19.6	20.2
U. S.	18.1	17.5	17.1	17.1

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

Records with unknown values are excluded from the analysis. Calculations may have been suppressed due to cell size less than 5 or total less than 50.

The percentages of current smokers in the Northeast Region remained somewhat stable during the time-period, ranging from 22.5% in 2014 to 21.6% in 2017.

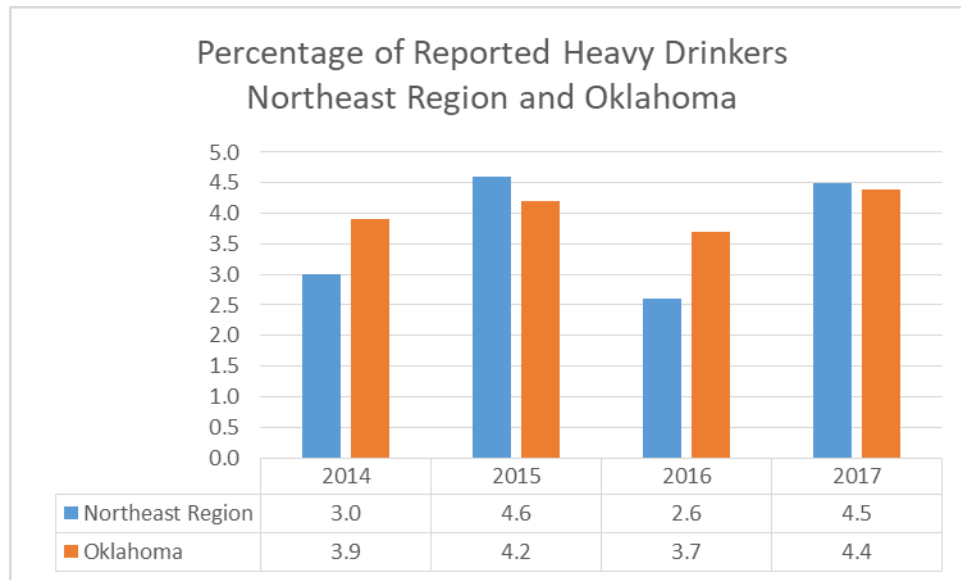**Alcohol consumption: heavy or chronic drinking**

This indicator reports the percentage of adults aged 18 and older who self-report heavy or chronic alcohol consumption (defined as more than two drinks per day on average for men and one drink per day on average for women).

Why is this indicator important?

This indicator is relevant because current behaviors are determinants of future health and this indicator may illustrate a cause of significant health issues, such as cirrhosis, cancers, and untreated mental and behavioral health needs.

How are we doing?

For the purposes of this assessment, the Northeast region consists of Creek County, Washington County, and Nowata County. Data for the specific measure were not available at the county level for these communities.

Percentage of Reported Heavy Drinkers Northeast Region and Oklahoma

	2014	2015	2016	2017
Northeast Region	3.0	4.6	2.6	4.5
Oklahoma	3.9	4.2	3.7	4.4

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2014 to 2016, Oklahoma Statistics on Health Available for Everyone

There was quite a bit of variability in the percentages of heavy or chronic drinkers in both the Northeast Region and Oklahoma from 2014 to 2017. The graph above shows that the percentages for the Northeast Region are almost an inverse of the percentages for Oklahoma until 2017, where both areas are basically equal on percentages (4.5% in the Northeast Region and 4.4% in Oklahoma).
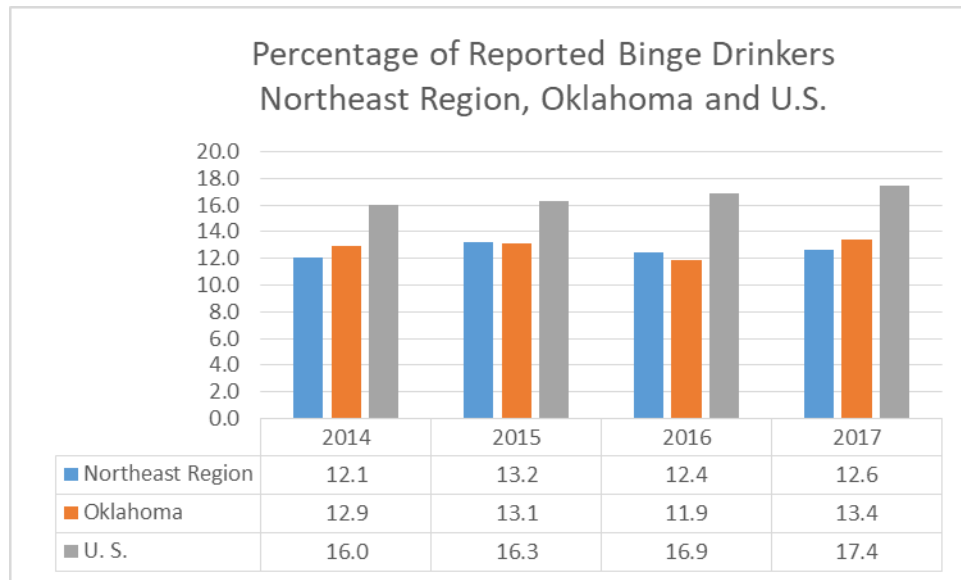
Alcohol consumption: binge drinking

This indicator reports the percentage of adults aged 18 and older who self-report binge drinking (defined as five or more drinks on occasion for men and four or more drinks on occasion for women).

Why is this indicator important?

This indicator is relevant because current behaviors are determinants of future health and this indicator may illustrate a cause of significant health issues, such as cirrhosis, cancers, and untreated mental and behavioral health needs.

How are we doing?

For the purposes of this assessment, the Northeast region consists of Creek County, Washington County, and Nowata County. Data for the specific measure were not available at the county level for these communities.

Percentage of Reported Binge Drinkers Northeast Region, Oklahoma and U.S.

	2014	2015	2016	2017
■ Northeast Region	12.1	13.2	12.4	12.6
■ Oklahoma	12.9	13.1	11.9	13.4
■ U. S.	16.0	16.3	16.9	17.4

Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

Records with unknown values are excluded from the analysis. Calculations may have been suppressed due to cell size less than 5 or total less than 50.

Percentages of those reported to be binge drinkers in the Northeast Region remained relatively stable over the time-period analyzed for this assessment, at 12.1% in 2014 and at 12.6% in 2017. Overall, the percentages in the Northeast Region and in Oklahoma remained lower across all of 2014-2017 than that of the U.S.
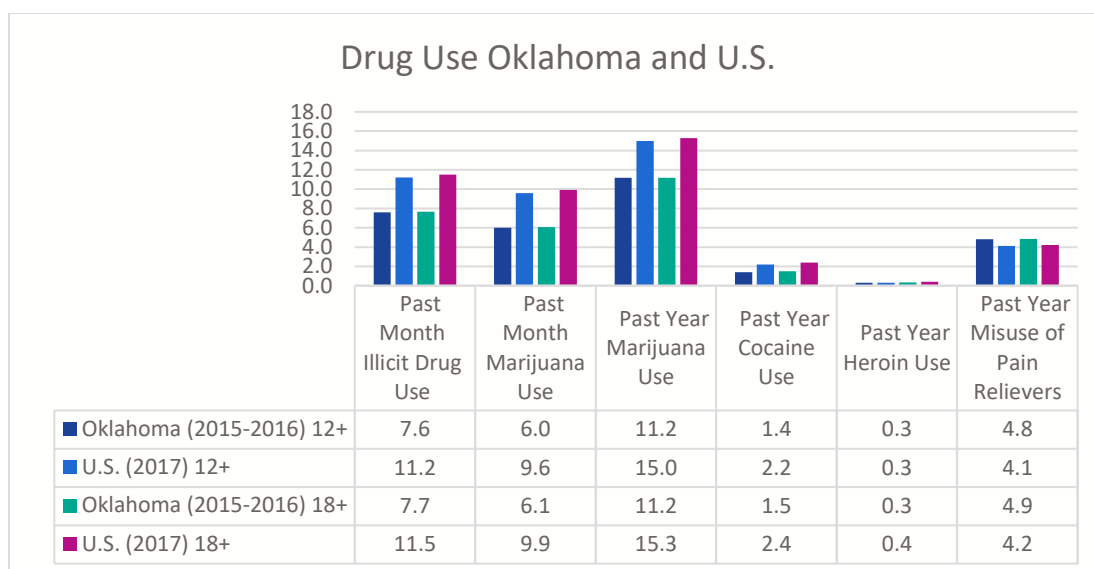
Drug use

This indicator represents the percentage of teens (12-17) and adults (18+) reporting drug use in the past year. The values based on estimates from the Substance Abuse and Mental Health Services Administration (SAMHSA), Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health (NSDUH), 2015-2017.

Why is this indicator important?

Prescription drug misuse and illicit drug use also have substantial health, economic, and social consequences.

How are we doing?

Drug Use Oklahoma and U.S.

	Past Month Illicit Drug Use	Past Month Marijuana Use	Past Year Marijuana Use	Past Year Cocaine Use	Past Year Heroin Use	Past Year Misuse of Pain Relievers
Oklahoma (2015-2016) 12+	7.6	6.0	11.2	1.4	0.3	4.8
U.S. (2017) 12+	11.2	9.6	15.0	2.2	0.3	4.1
Oklahoma (2015-2016) 18+	7.7	6.1	11.2	1.5	0.3	4.9
U.S. (2017) 18+	11.5	9.9	15.3	2.4	0.4	4.2

Source: SAMSHA

Data were not available at the county or regional level when examining drug use. Data is presented in the table above for the U.S. and the state of Oklahoma broken out by age groups 12 and older and 18 and older. When examining the percentage of drug use across categories, the first thing we notice is that the percentages for the two age groups in Oklahoma and in the U.S. as a whole are very similar to each other. For all categories, the U.S. rates are higher than the Oklahoma rates except for heroin use in the past year and the misuse of pain relievers in the past year.

Physical (Built) Environment

A community's health also is affected by the physical environment or built environment. A safe, clean environment that provides access to healthy food and recreational opportunities is important to maintaining and improving community health.

Air and water quality

Clean air and safe water are prerequisites for health. Poor air or water quality can be particularly detrimental to vulnerable populations such as the very young, the elderly, and those with chronic health conditions.

Air quality (ozone)

This indicator reports the percentage of days per year with Ozone (O3) levels above the National Ambient Air Quality Standard of 75 parts per billion (ppb). Figures are calculated using data collected by monitoring stations and modeled to include census tracts where no monitoring stations exist.

Why is this indicator important?

This indicator is relevant because poor air quality contributes to respiratory issues and overall poor health.

How are we doing?

Air Quality (Ozone)
Washington County

	Washington County	Oklahoma	US
■ Ozone	2.6%	2.3%	1.2%
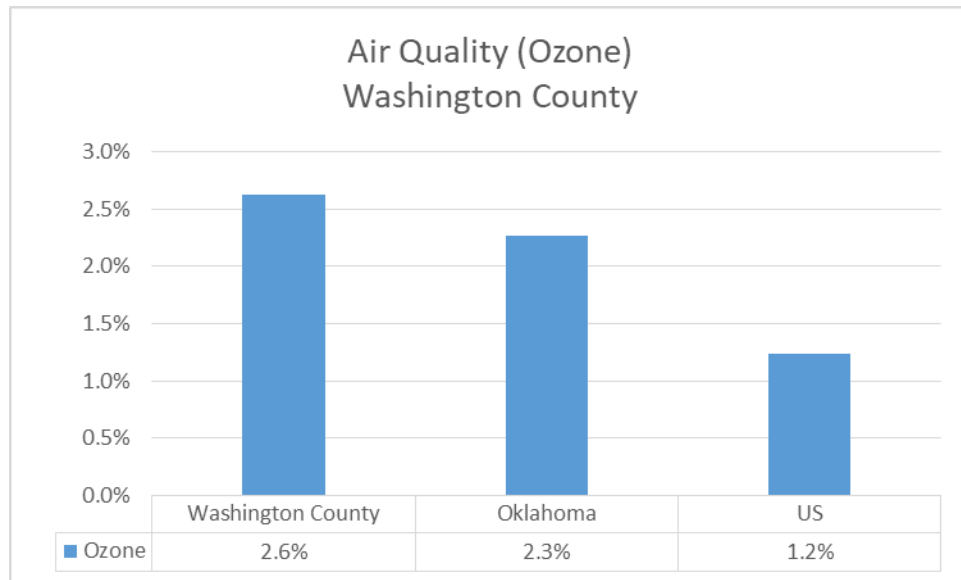
Source: Community Commons

When examining levels of ozone across Washington County, for the state of Oklahoma as a whole, and for the U.S., we can see from the graph above that Washington County had the highest percentage of ozone reported at 2. 6%. This was higher than both Oklahoma as a whole (2.3%) the U.S. (1.2%).

Air quality: pollution (particulate matter)

Air Pollution - Particulate Matter is the average daily density of fine particulate matter in micrograms per cubic meter (PM2.5) in a county. Fine particulate matter is defined as particles of air pollutants with an aerodynamic diameter less than 2.5 micrometers. These particles can be directly emitted from sources such as forest fires, or they can form when gases emitted from power plants, industries and automobiles react in the air.

Why is this indicator important?

The relationship between elevated air pollution, particularly fine particulate matter and ozone, and compromised health has been well-documented. Negative consequences of ambient air pollution include decreased lung function, chronic bronchitis, asthma, and other adverse pulmonary effects. [7]

How are we doing?

Air Quality (Particulate Matter)
Washington County

	Washington County	Oklahoma	US
■ Particulate Matter	0.0%	0.0%	0.1%
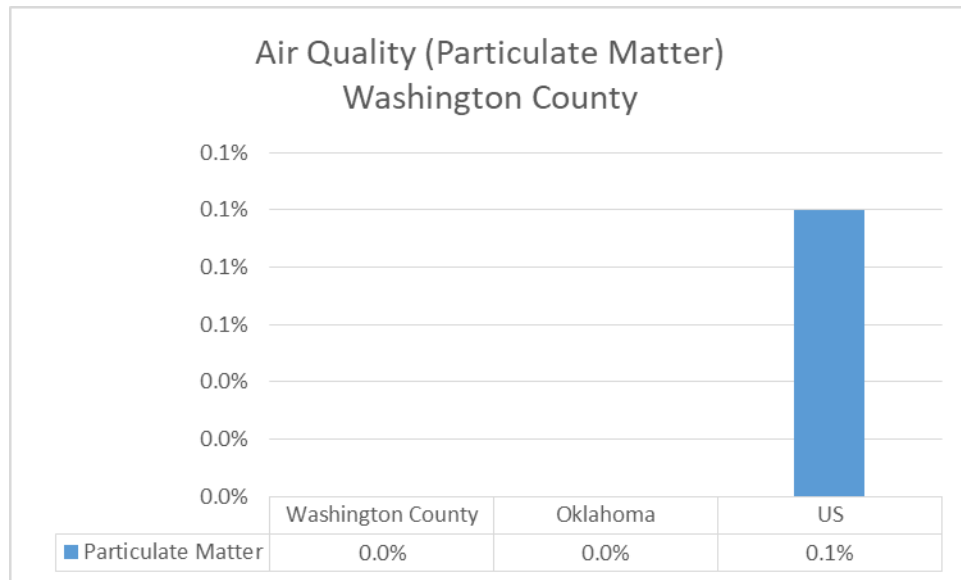
Source: Community Commons

The graph above shows that Washington County as well as the state of Oklahoma as a whole were below the U.S. in terms of air pollution.
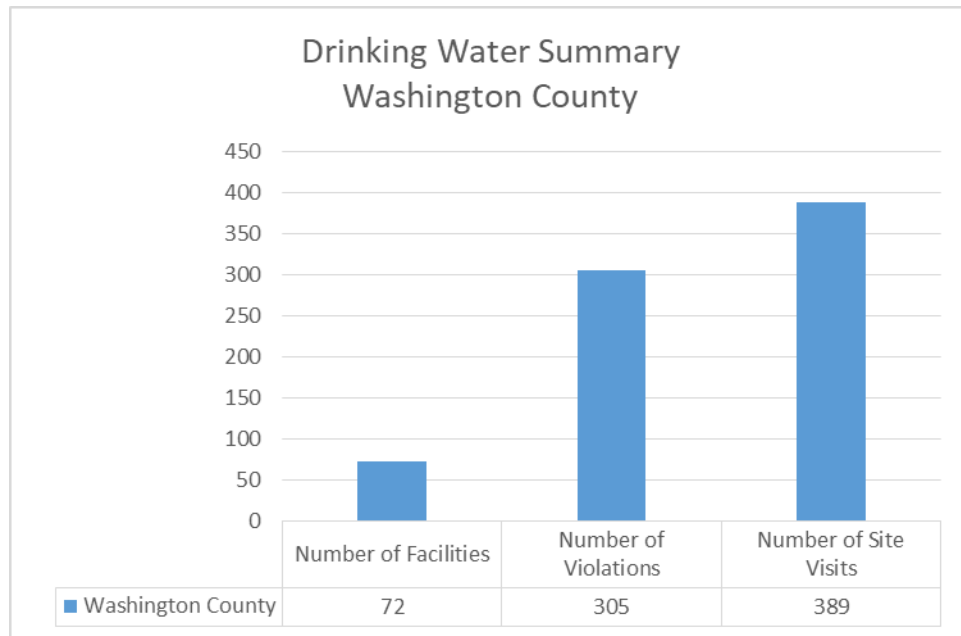
Drinking water

Drinking Water Violations is an indicator of the presence or absence of health-based drinking water violations in counties served by community water systems. Health-based violations include Maximum Contaminant Level, Maximum Residual Disinfectant Level and Treatment Technique violations. A "Yes" indicates that at least one community water system in the county received a violation during the specified time frame; while a "No" indicates that there were no health-based drinking water violations in any community water system in the county.

Why is this indicator important?

Recent studies estimate that contaminants in drinking water sickened 1.1 million people each year. 7 Ensuring the safety of drinking water is important to prevent illness, birth defects, and death for those with compromised immune systems. A number of other health problems have been associated with contaminated water, including nausea, lung and skin irritation, cancer, kidney, liver, and nervous system damage.7

How are we doing?

Drinking Water Summary Washington County

	Number of Facilities	Number of Violations	Number of Site Visits
■ Washington County	72	305	389

Source: SDWIS Fed Reporting Services system

The graph above illustrates that Washington County had 305 violations over 389 site visits to their 72 facilities.

Housing and transit

The housing options and transit systems that shape our communities' built environment affect where we live and how we get from place to place. The choices we make about housing and transportation, and the opportunities underlying these choices, also affect our health.
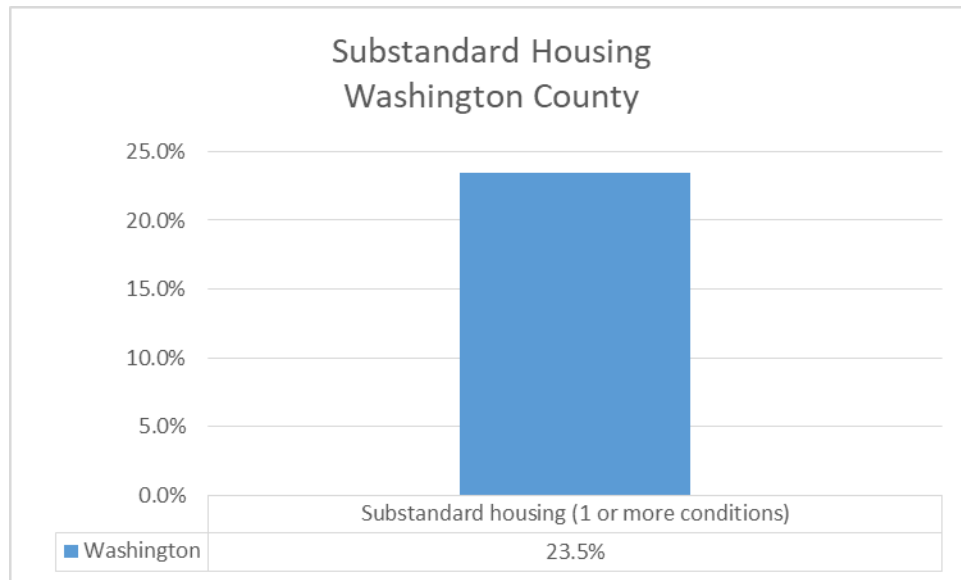
Substandard housing

This indicator is the percentage of households with inadequate kitchen or plumbing facilities, presented separately. Data is from 2017 and is based on American Community Survey 5-year estimates for Washington County.

Why is this indicator important?

Good health depends on having homes that are safe and free from physical hazards such as poor indoor air quality, lead paint, and lack of home safety devices. Adequate housing can protect individuals and families and provide them with security, privacy, stability and control. Inadequate housing can contribute to health problems such as infectious and chronic disease, injuries, and poor childhood development. Families with fewer financial resources are more likely to experience unhealthy and unsafe housing conditions and are usually less able to remedy them, contributing to disparities in health across socioeconomic groups.[66]

How are we doing?

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[66] Braveman P, Dekker M, Egeter S, Sadegh-Nobari T, and Pollack C. Issue Brief #7. Robert Wood Johnson Foundation [cited 11/24/2015].

Source: Community Commons

Washington County shows a 23.5% substandard housing rate based on 1 or more conditions.

Use of public transportation

This indicator reports the percentage of population using public transportation as their primary means of commute to work. Public transportation includes buses or trolley buses, streetcars or trolley cars, subway or elevated rails, and ferryboats (excludes taxi cabs).

Why is this indicator important?

The transportation choices that communities and individuals make have important impacts on health through active living, air quality, and traffic crashes. The choices for commuting to work can include walking, biking, taking public transit, carpooling, or the most damaging to the health of communities which is individuals commuting alone by car. In most counties, the latter is the primary form of transportation to work.

How are we doing?
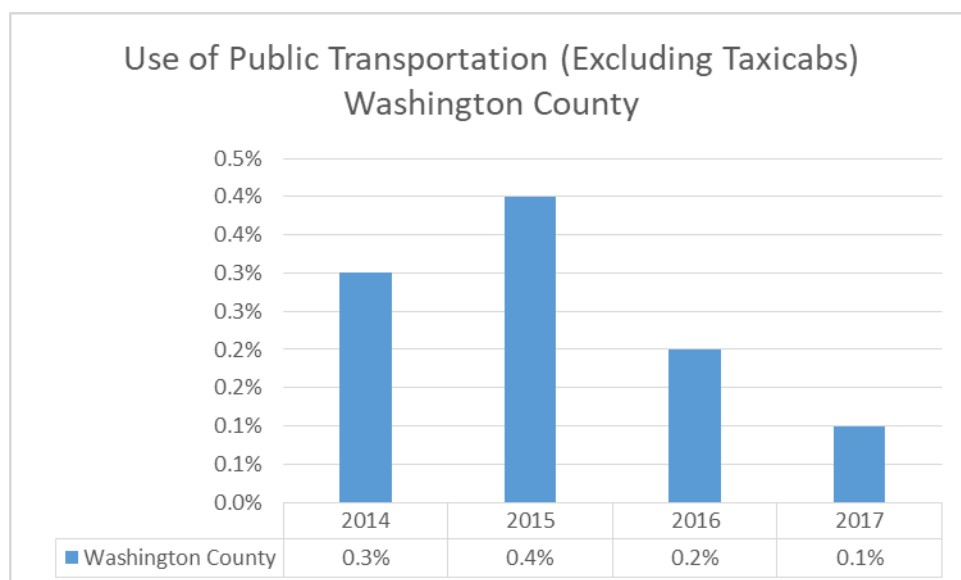
	2014	2015	2016	2017
■ Washington County	0.3%	0.4%	0.2%	0.1%

In Washington County, total percentages of those who reportedly used public transportation are very small, less than 1%.
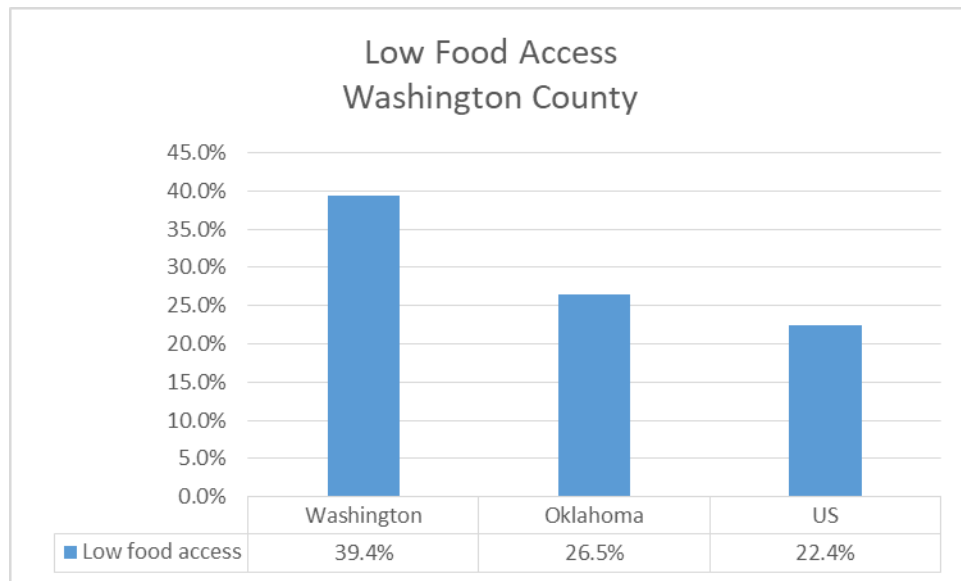
Food access

Low food access

This indicator reports the percentage of the population living in census tracts designated as low food access. Low food access is defined as living more than 1/2 mile from the nearest supermarket, supercenter, or large grocery store.
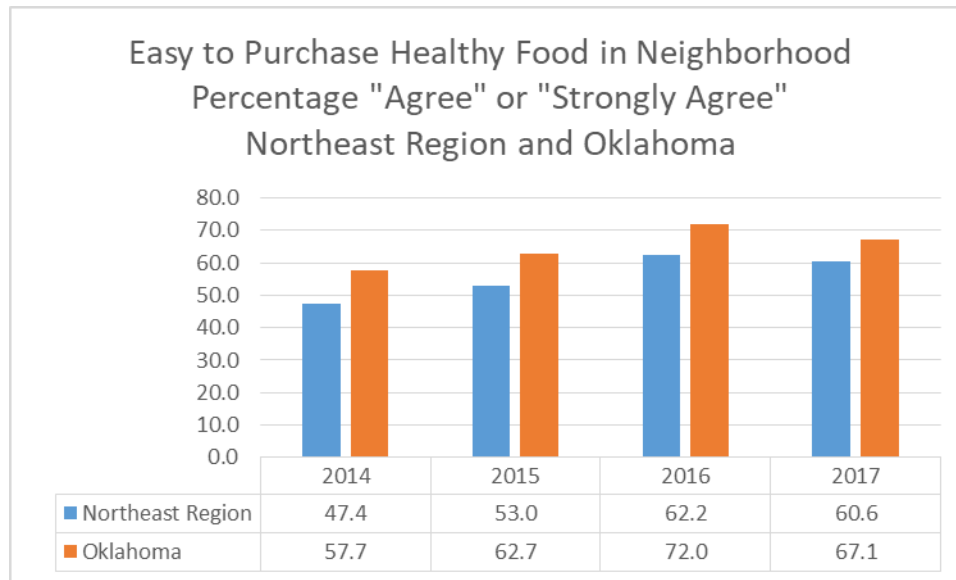
Why is this indicator important?

This indicator is relevant because it highlights populations and geographies facing food insecurity.

How are we doing?

Source: Community Commons

Washington County had a high percentage of low food access at 39.4%. This percentage was higher than both Oklahoma as a whole (26.5%) and the U.S. (22.4%).

Easy to Purchase Healthy Food in Neighborhood
Percentage "Agree" or "Strongly Agree"
Northeast Region and Oklahoma

	2014	2015	2016	2017
■ Northeast Region	47.4	53.0	62.2	60.6
■ Oklahoma	57.7	62.7	72.0	67.1

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

Records with unknown values are excluded from the analysis. Calculations may have been suppressed due to cell size less than 5 or total less than 50.

For the purposes of this assessment, the Northeast region consists of Creek County, Washington County, and Nowata County. Data for the specific measure were not available at the county level for these communities.

Although a high percentage responded "agree" or "strongly agree" to the question of whether they had easy to purchase healthy food in their neighborhood, the State of Oklahoma still scored higher than the Northeast Region.
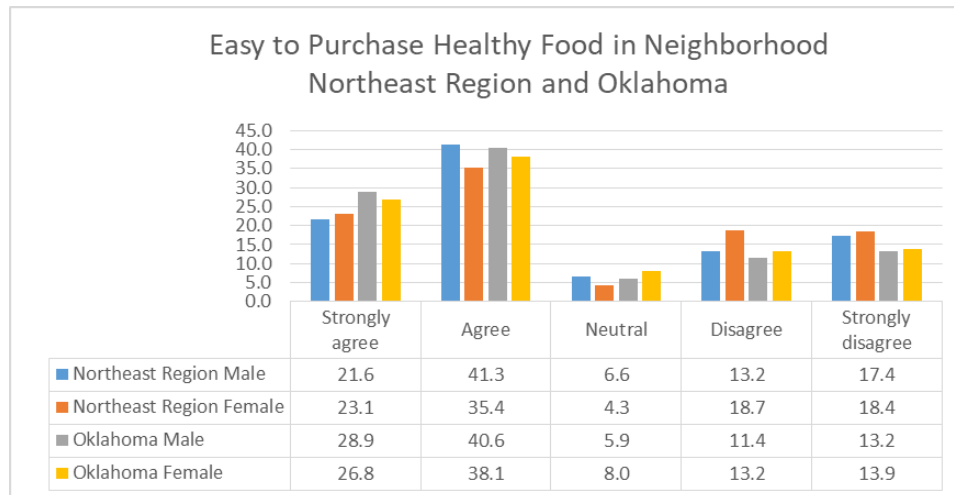
Access to healthy foods

This indicator reports the percentage of population living in census tracts with no or low access to healthy retail food stores.

Why is this indicator important?

There is strong evidence that residing in a food desert is correlated with a high prevalence of overweight, obesity, and premature death. Supermarkets traditionally provide healthier options than convenience stores or smaller grocery stores. Additionally, lack of access to fresh fruits and vegetables is a substantial barrier to consumption and is related to premature mortality.
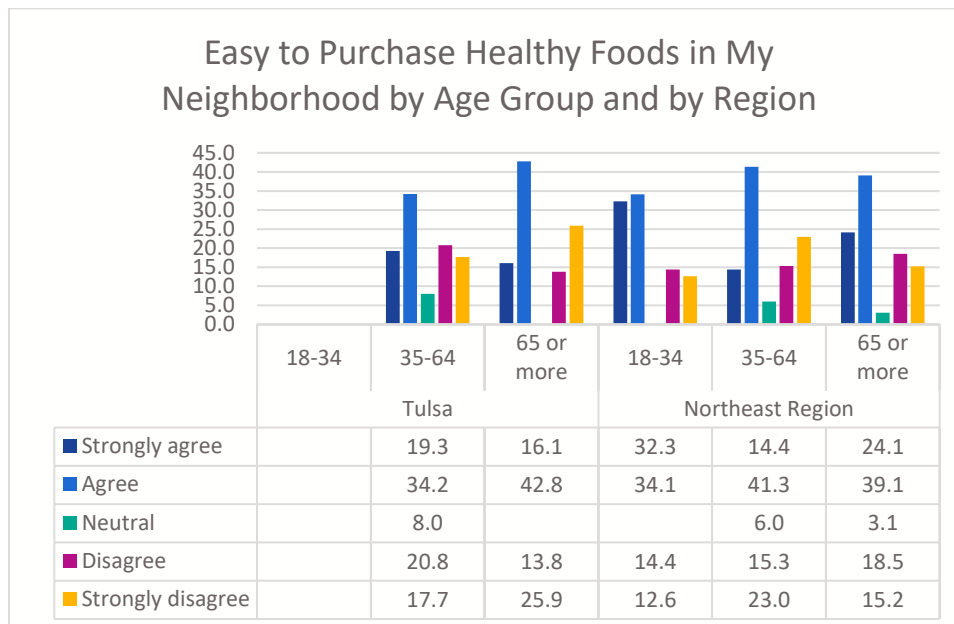
How are we doing?

For the purposes of this assessment, the Northeast region consists of Creek County, Washington County, and Nowata County. Data for the specific measure were not available at the county level for these communities.

Easy to Purchase Healthy Food in Neighborhood Northeast Region and Oklahoma

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
■ Northeast Region Male	21.6	41.3	6.6	13.2	17.4
■ Northeast Region Female	23.1	35.4	4.3	18.7	18.4
■ Oklahoma Male	28.9	40.6	5.9	11.4	13.2
■ Oklahoma Female	26.8	38.1	8.0	13.2	13.9

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

Records with unknown values are excluded from the analysis. Calculations may have been suppressed due to cell size less than 5 or total less than 50.
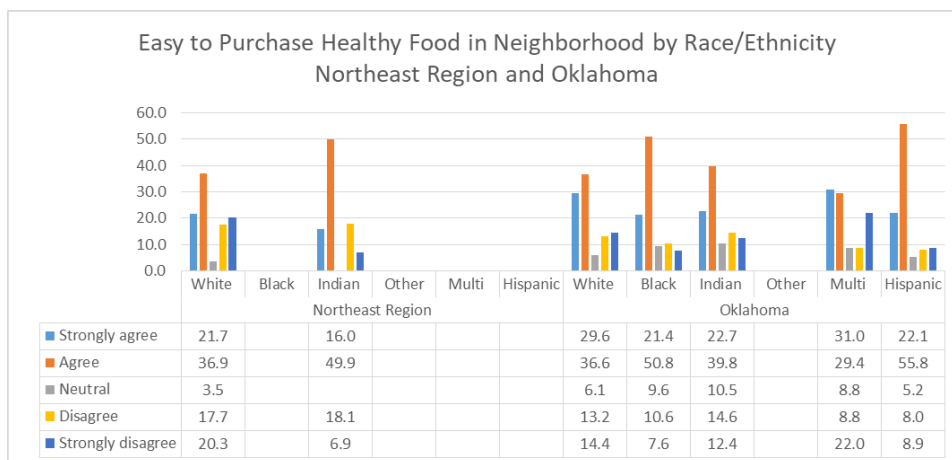
The graph above shows that close to 60% of males and females in each geographic region either agreed or strongly agreed that they had easy to purchase healthy foods in their neighborhood. About 30% of respondents in both geographic regions reportedly disagreed or strongly disagreed with the statement.

Easy to Purchase Healthy Foods in My Neighborhood by Age Group and by Region

		Tulsa			Northeast Region	
	18-34	35-64	65 or more	18-34	35-64	65 or more
■ Strongly agree		19.3	16.1	32.3	14.4	24.1
■ Agree		34.2	42.8	34.1	41.3	39.1
■ Neutral		8.0			6.0	3.1
■ Disagree		20.8	13.8	14.4	15.3	18.5
■ Strongly disagree		17.7	25.9	12.6	23.0	15.2

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

Records with unknown values are excluded from the analysis. Calculations may have been suppressed due to cell size less than 5 or total less than 50.
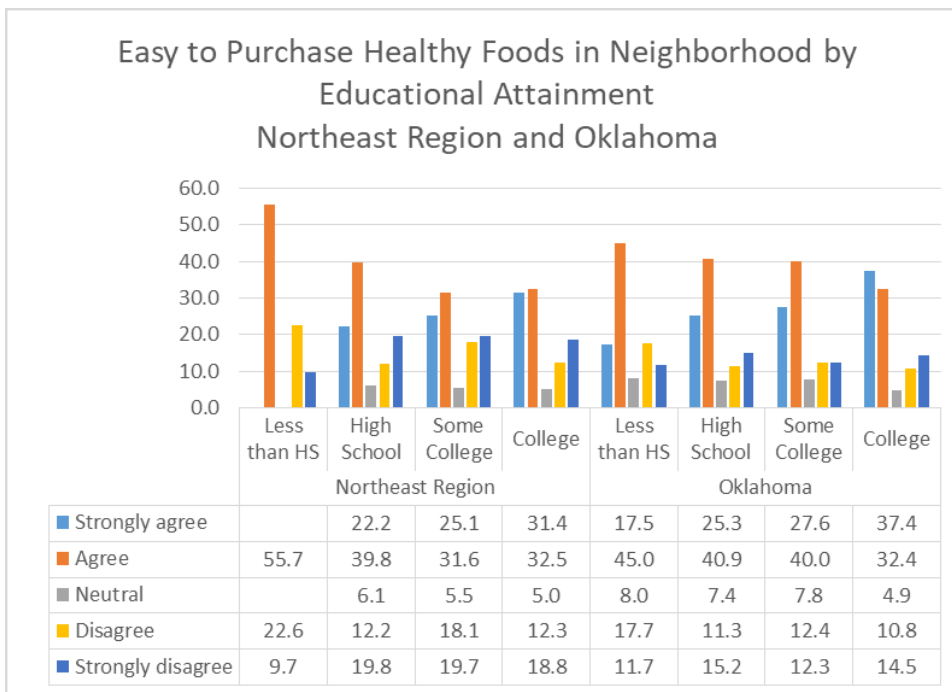
For the most part, the largest percentage of respondents across age groups and across regions agreed that they had easy to purchase healthy foods in their neighborhood. In the age group 65 and older, in both Tulsa County and the Northeast Region, about 40% reported that they disagree or strongly disagree with the statement.

Easy to Purchase Healthy Food in Neighborhood by Race/Ethnicity
Northeast Region and Oklahoma

	White	Black	Indian	Other	Multi	Hispanic	White	Black	Indian	Other	Multi	Hispanic
			Northeast Region						Oklahoma			
Strongly agree	21.7		16.0				29.6	21.4	22.7		31.0	22.1
Agree	36.9		49.9				36.6	50.8	39.8		29.4	55.8
Neutral	3.5						6.1	9.6	10.5		8.8	5.2
Disagree	17.7		18.1				13.2	10.6	14.6		8.8	8.0
Strongly disagree	20.3		6.9				14.4	7.6	12.4		22.0	8.9

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

Records with unknown values are excluded from the analysis. Calculations may have been suppressed due to cell size less than 5 or total less than 50.
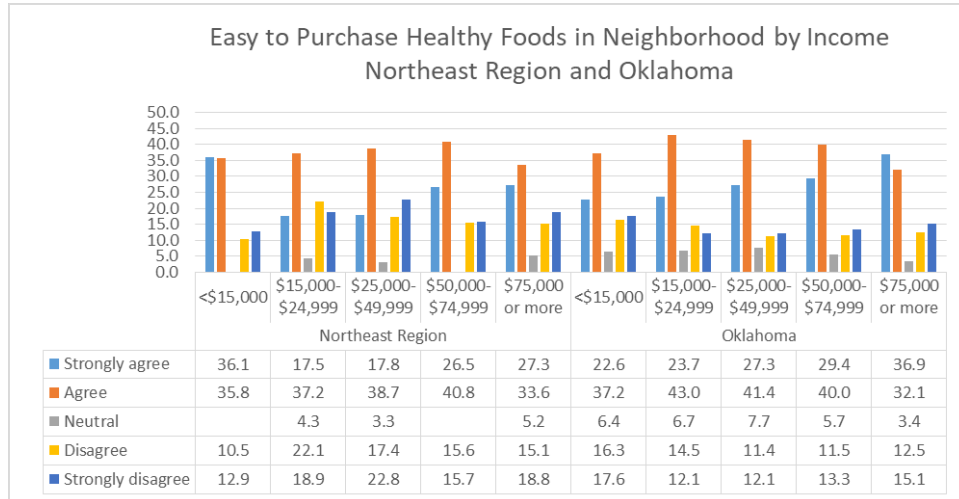
Unfortunately, most of the data on the availability of easy to purchase healthy food was suppressed when broken down by race and ethnicity. The graph above shows that about 60% of white respondents in both regions either agreed or strongly agreed that easy to purchase healthy foods were available in their neighborhoods.

Easy to Purchase Healthy Foods in Neighborhood by Educational Attainment
Northeast Region and Oklahoma

	Less than HS	High School	Some College	College	Less than HS	High School	Some College	College
		Northeast Region				Oklahoma		
Strongly agree		22.2	25.1	31.4	17.5	25.3	27.6	37.4
Agree	55.7	39.8	31.6	32.5	45.0	40.9	40.0	32.4
Neutral		6.1	5.5	5.0	8.0	7.4	7.8	4.9
Disagree	22.6	12.2	18.1	12.3	17.7	11.3	12.4	10.8
Strongly disagree	9.7	19.8	19.7	18.8	11.7	15.2	12.3	14.5

Sources: Oklahoma State Department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2014 to 2017, Oklahoma Statistics on Health Available for Everyone

The largest percentages across levels of educational attainment in both regions either agreed or strongly agreed that they had easy to purchase healthy foods available in their neighborhood.

Easy to Purchase Healthy Foods in Neighborhood by Income
Northeast Region and Oklahoma

		Northeast Region					Oklahoma			
	<$15,000	$15,000-$24,999	$25,000-$49,999	$50,000-$74,999	$75,000 or more	<$15,000	$15,000-$24,999	$25,000-$49,999	$50,000-$74,999	$75,000 or more
Strongly agree	36.1	17.5	17.8	26.5	27.3	22.6	23.7	27.3	29.4	36.9
Agree	35.8	37.2	38.7	40.8	33.6	37.2	43.0	41.4	40.0	32.1
Neutral		4.3	3.3		5.2	6.4	6.7	7.7	5.7	3.4
Disagree	10.5	22.1	17.4	15.6	15.1	16.3	14.5	11.4	11.5	12.5
Strongly disagree	12.9	18.9	22.8	15.7	18.8	17.6	12.1	12.1	13.3	15.1

Again, the majority of respondents either strongly agreed or agreed that they had easy to purchase healthy foods available in their neighborhoods for both geographic regions. The highest percentages of those who either disagreed or disagreed strongly were in the Northeast Region with the $15,000-$24,999 with a percentage of 22.1% saying they disagreed and in the $25,000-$49,999 category there were 22.8% saying they strongly disagreed.

## Access to physical activity opportunities

Access to recreation and fitness facilities

This indicator reports the number per 100,000 population of recreation and fitness facilities as defined by North American Industry Classification System (NAICS) Code 713940.

Why is this indicator important?

This indicator is relevant because the role of the built environment is important for encouraging physical activity. Individuals who live closer to sidewalks, parks, and gyms are more likely to exercise and other healthy behaviors.

How are we doing?

Recreation and Fitness Facility Access
Washington County

	Washington	Oklahoma	US
■ Recreation and fitness facility access	7.9	8.3	11.0
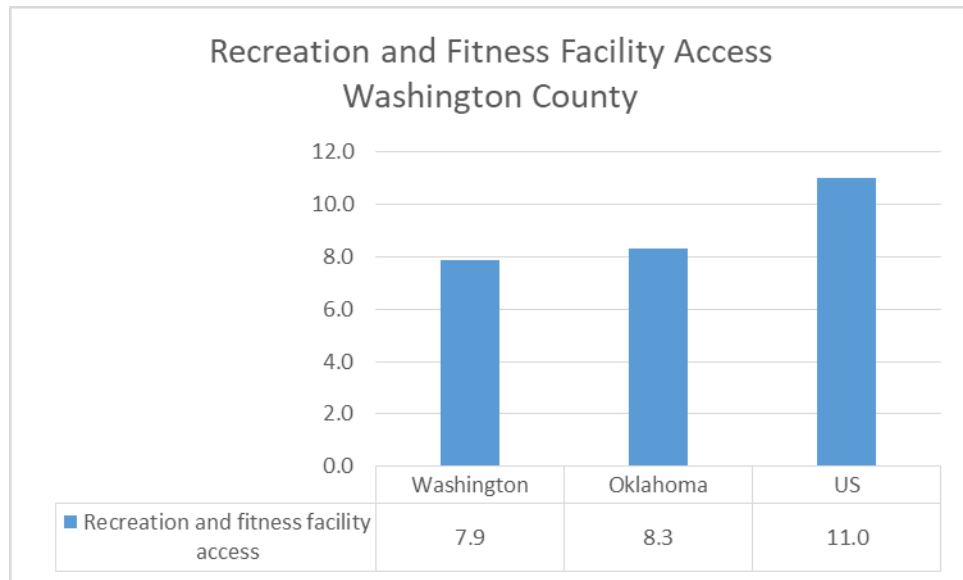
Washington County had fewer recreation and fitness facilities than the state of Oklahoma overall and the U.S.

Secondary Data Analysis and Scoring

Ascension St. John consulted with Conduent Healthy Communities Corp. for support with the secondary data analysis below. The analysis included a comprehensive set of more than 100 community health and quality-of-life indicators covering more than 20 topic areas. Indicator values for Washington County were compared with other counties in Oklahoma and nationwide to compare social, economic and health topics. Other considerations for areas of health need included trends over time; Healthy People 2020 targets; Oklahoma targets; and disparities by age, gender and race/ethnicity. The value for each of these indicators was compared with other communities, nationally or locally set targets and previous time periods. Conduent's data scoring tool was used to systematically summarize multiple comparisons of the data to rank indicators based on highest need.

Figure 6: secondary data analysis and scoring methodology
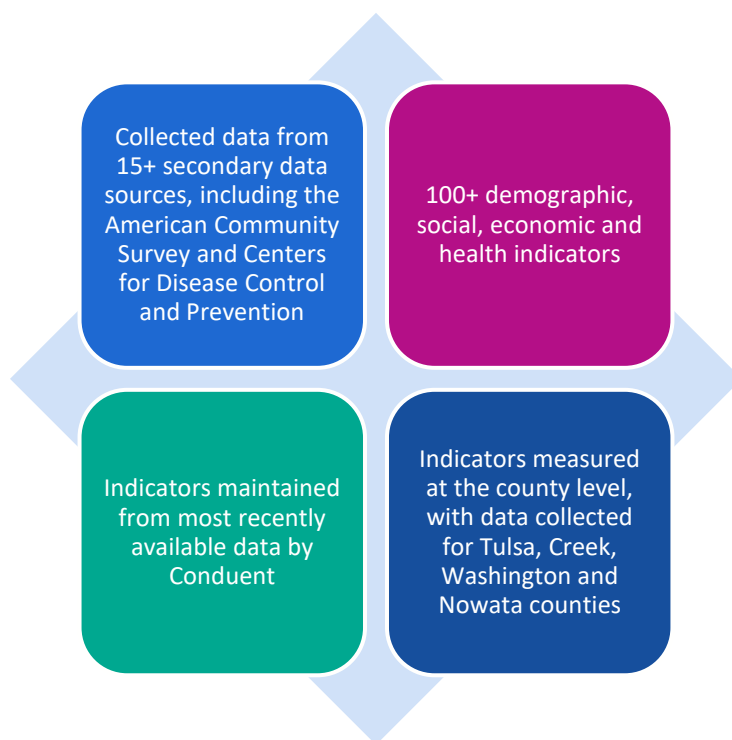
Methodology and Sources

Data scoring consists of three stages, which are summarized in Figure 7. Sources are listed in Appendix 2.

Comparison scores

For each indicator, Washington County was assigned up to five comparison scores based on its comparison with other communities and whether health targets have been met. Comparison scores range from 0-3, where 0 indicates the best outcome and 3 indicates the worst outcome.

Up to five comparison scores were used to assess the status of Washington County. The possible comparisons include a comparison of Tulsa, Creek, Washington and Nowata counties with all Oklahoma counties, all U.S. counties, the Oklahoma state value, the U.S. value and Healthy People 2020 targets. Availability of each type of comparison varied by indicator and was dependent on the data source, comparability with data collected for other communities, and changes in methodology over time. The determination of comparison scores for each type of comparison is discussed in more detail below.

Missing values

Indicator scores were calculated using the comparison scores, the availability of which depended on the data source. If an indicator does not have data for a specific comparison type that is included for indicator score calculations, the missing comparison is substituted with a neutral score. When information is unknown due to lack of comparable data, the neutral value assumes that the missing comparison score is neither good nor bad and does not impact the indicator's weighted average.

Indicator scores

Indicator scores were calculated as a weighted average of comparison scores. Indicator scores range from 0-3, where 0 indicates the best outcome and 3 indicates the worst outcome.

Indicator scores were calculated as a weighted average of all included comparison scores. If none of the included comparison types were possible for an indicator, no score was calculated, and the indicator was excluded from the data scoring results.

Topic scores

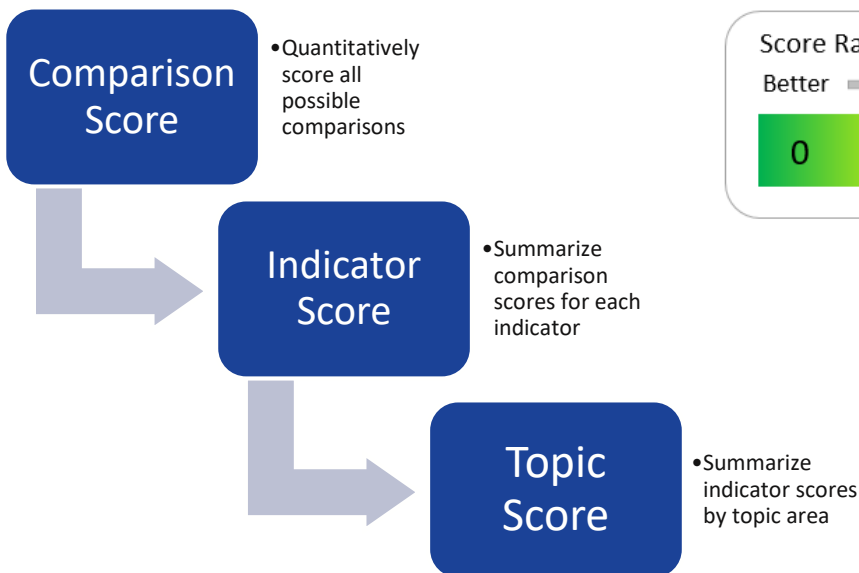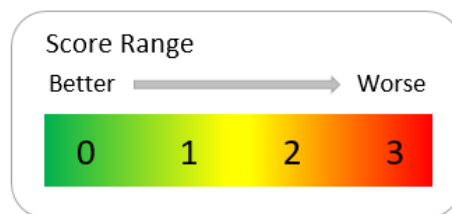**Figure 7: secondary data scoring overview**   **Figure 8: score range**

Indicators were then categorized into topic areas. Topic scores were calculated by averaging all relevant indicator scores, with indicators equally weighted. Topic scores range from 0-3, where 0 indicates the best outcome and 3 indicates the worst outcome. Indicators may be categorized into more than one topic area.

Indicator scores are averaged by topic area to calculate topic scores. Each indicator may be included in up to three topic areas if appropriate. Resulting scores range from 0-3, where a higher score indicates a greater level of need as evidenced by the data. A topic score is only calculated if it includes at least three indicators.

Age, gender and race/ethnicity disparities

When a given indicator has data available for population subgroups, such as age, gender and race/ethnicity, and values for these subgroups include confidence intervals, we are able to determine whether there is a significant difference between the subgroup's value and the overall value. A significant difference is defined as two values with non-overlapping confidence intervals. Confidence intervals are not available for all indicators. In these cases,

disparities cannot be determined because there is not enough data to conclude whether two values are significantly different from each other.

Final Data Summary Scores

Figure 9: final data summary scores by topic for Washington County

Health Topic	Indicators	Score
Women's Health	4	1.88
Mental Health & Mental Disorders	7	1.85
Exercise, Nutrition, & Weight	17	1.64
Diabetes	3	1.54
Children's Health	4	1.51
Heart Disease & Stroke	8	1.49
Immunizations & Infectious Diseases	3	1.47
Older Adults & Aging	22	1.44
Other Chronic Diseases	4	1.40
Respiratory Diseases	7	1.38
Maternal, Fetal & Infant Health	6	1.36
County Health Rankings	6	1.34
Cancer	13	1.32
Access to Health Services	9	1.29
Wellness & Lifestyle	7	1.17
Environmental & Occupational Health	3	1.16
Substance Abuse	6	1.04
Prevention & Safety	4	0.98
Men's Health	3	0.68

Health Determinants	Indicators	Score
Environment	16	1.59
Education	4	1.34
Economy	21	1.21
Transportation	8	1.20
Social Environment	13	1.15
Public Safety	3	0.78

Conduent's Healthy Communities Institute data scoring tool was used to analyze health indicators. Indicator scores were calculated by taking the weighted average of all of the comparisons available for each indicator, for example, all Oklahoma counties, all U.S. counties, the Oklahoma state value, the U.S. value, Healthy People 2020 targets and trends over four years. The availability of each type of comparison varied by the indicator and was dependent on the data source, comparability with data collected from other communities, and changes in methodology over time. Finally, after calculating all of the indicator scores, topic scores were calculated by taking the average of all indicators of related health topics.

The health topic and health determinants tables are listed from the highest level of concern and need to the lowest level. Health topic areas directly related to the health of the population and health determinants are those factors that can affect the health of the individual and population. In these tables, a score of 3 means the most need and concern based on data scoring, while 0 means the least. Generally, scores 1.5 and above would be considered to fall in the worse half of the score range, while a score above 2 indicates definite need.

A list of all secondary data indicators analyzed is included in Appendix 3. Presented in the chart above (see Figure 10) and narrative below is a final summary of data scores.

In Washington County, women's health was found to have the highest topic score, signifying the most need. Interestingly, men's health was the best performing or least concerning topic area based on the data scoring results.

Geographic Areas of Greatest Need

Ascension St. John consulted with Conduent Healthy Communities Corp. for support with identifying geographic areas of greatest need in Washington County. To do so, Conduent developed the SocioNeeds Index® to easily compare multiple socioeconomic factors across geographies. This tool incorporates estimates for six different social and economic determinants of health — income, poverty, unemployment, occupation, educational attainment and linguistic barriers — that are associated with poor health outcomes, including preventable hospitalizations and premature death.

Methodology and Sources

The 2018 SocioNeeds Index, created by Conduent's Healthy Communities Institute (HCI), is a measure of socioeconomic need correlated with poor health outcomes. All ZIP codes, counties and county equivalents in the U.S. were given an index value from 0 (low need) to 100 (high need). To help find the areas of highest need in Washington County, the selected locations were ranked from 1 (low need) to 5 (high need) based on their index value.

Why is this important?

Community health improvement efforts must determine what sub-populations are most in need to most effectively focus services and interventions. Social and economic factors are well-known to be strong determinants of health outcomes; those with a low socioeconomic status are more likely to suffer from chronic conditions such as diabetes, obesity and cancer. The SocioNeeds Index summarizes multiple socioeconomic indicators into one composite score for easier identification of high need areas by ZIP code or county.
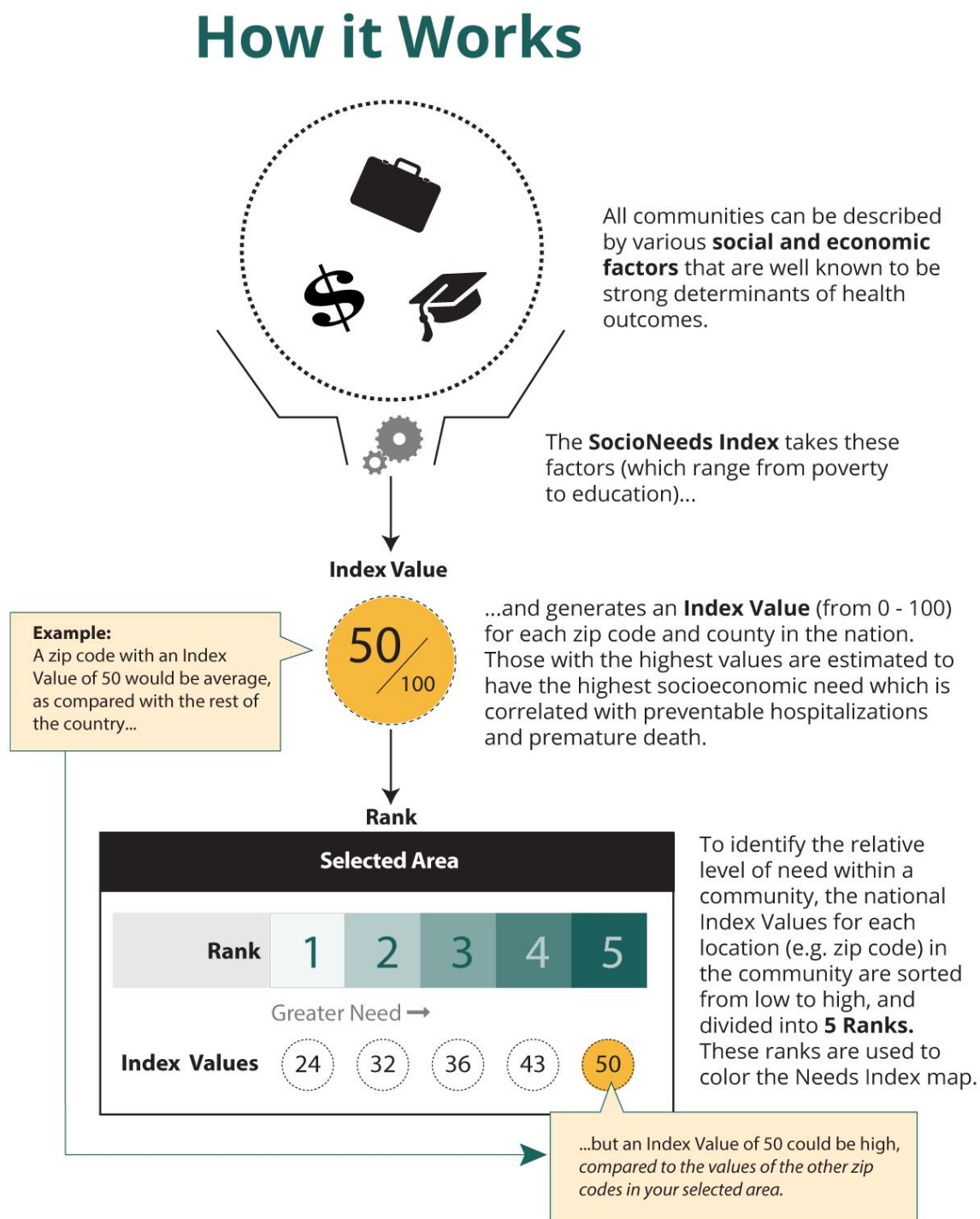
How do I use the SocioNeeds Index?

Within Washington County, the ZIP codes or counties with the highest index values were estimated to have the highest socioeconomic need. The index value for each location was compared with all other similar locations (i.e., counties were compared with other counties, and ZIP codes with other ZIP codes) within the comparison area to assign a relative rank (1-5). ZIP codes were ranked using natural breaks classification, which grouped the ZIP codes into clusters based on similar index values.

What is this tool based on?

The SocioNeeds Index is calculated for a community from several social and economic factors, ranging from poverty to education, that may impact health or access to care. The index is correlated with potentially preventable hospitalization rates and is calculated using Claritas estimates for 2018.

Figure 10: How it works, Socioneeds Index

How it Works

All communities can be described by various **social and economic factors** that are well known to be strong determinants of health outcomes.

The **SocioNeeds Index** takes these factors (which range from poverty to education)...

Index Value

50 /100

Example:
A zip code with an Index Value of 50 would be average, as compared with the rest of the country...

...and generates an **Index Value** (from 0 - 100) for each zip code and county in the nation. Those with the highest values are estimated to have the highest socioeconomic need which is correlated with preventable hospitalizations and premature death.

Rank

Selected Area					
Rank	1	2	3	4	5

Greater Need ➡

Index Values	24	32	36	43	50

To identify the relative level of need within a community, the national Index Values for each location (e.g. zip code) in the community are sorted from low to high, and divided into **5 Ranks.** These ranks are used to color the Needs Index map.

...but an Index Value of 50 could be high, *compared to the values of the other zip codes in your selected area.*

SocioNeeds Index

The SocioNeeds Index, developed at HCI, is a summary measure of socioeconomic need that correlates with poor health outcomes, including preventable hospitalizations and premature death. The SocioNeeds Index incorporates estimates for six different social and economic determinants of health for all ZIP codes across the U.S. These indicators, covering income, poverty, unemployment, occupation, educational attainment and linguistic barriers,

were standardized and averaged to create one composite index value for each ZIP code or county, which ranges from 0 to 100. ZIP codes and counties with higher values are estimated to have a greater socioeconomic need and correlation with poor health outcomes. ZIP codes with a population of 300 people or less are not calculated in the SocioNeeds Index.

The SocioNeeds Index map (see Figure 11) shows the breakdown of all ZIP codes in Washington County. The darker shades of blue on the map represent higher index scores and thus greater need areas, while the lighter blues signify lower need.

In Washington County, the Bartlesville ZIP code 74003 has the highest index value at 79.1, while the lowest index value of 17.5 is found in ZIP code 74006 (see Figure 12). Women and minority populations experience the highest socioeconomic need in the county.

Figures 11 and 12: SocioNeeds Index map and ZIP code ranking for Washington County (total population = 51,932)
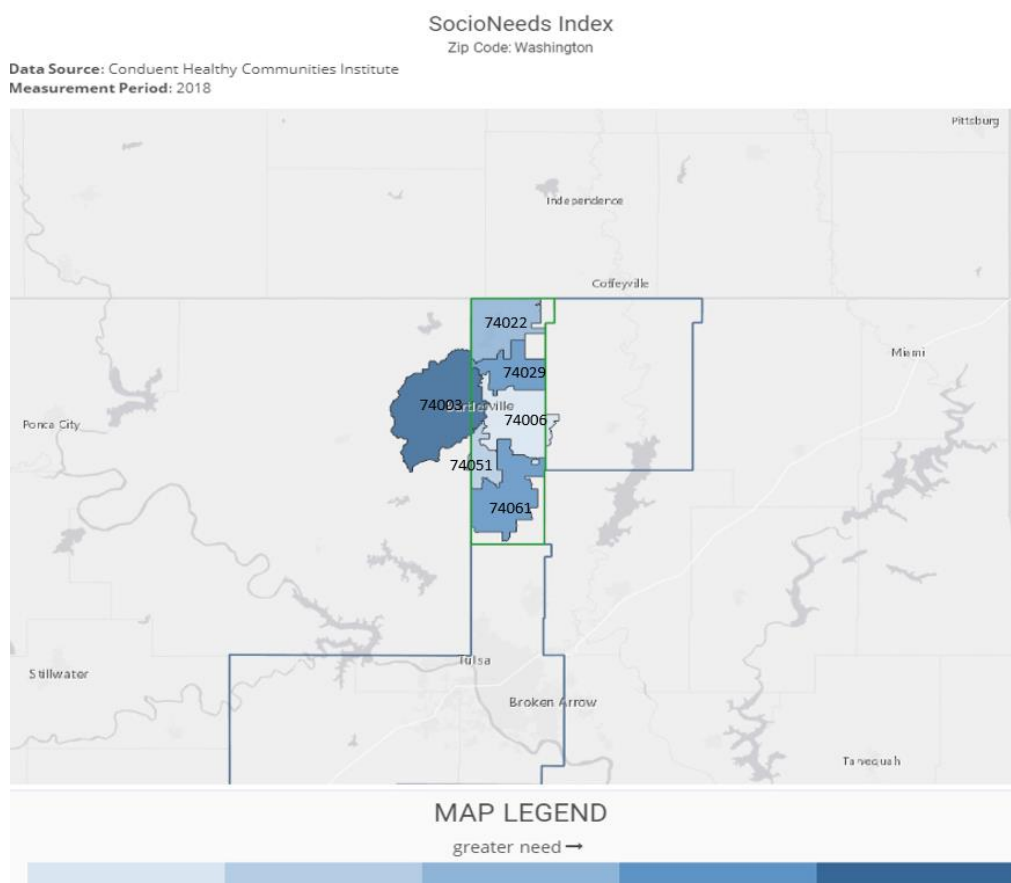
ZIP code	Index	Rank	Measurement period
74003	79.1	5	2018
74061	54.2	4	2018
74029	53.7	4	2018
74022	48	3	2018
74051	21.5	2	2018
74006	17.5	1	2018

Primary Data: Community Input

Community input provides information and insights about the health and well-being of the community that cannot be obtained through secondary data alone. Community stakeholders understand the "why" and "how" behind the numbers and can share details on barriers to health services that exist within the community. Sometimes the numbers are missing for certain issues, and experts or professionals who have special knowledge of community health needs can fill in information or "data gaps" not covered by the available secondary data. Community stakeholders also know where strengths and assets exist within the community, including resources and programs to address areas of concern. Given the vital importance of community input in understanding the health needs of a community, the Internal Revenue Service requires that community input be taken into consideration during the community health needs assessment (CHNA) process.

Community input is a primary focus of this assessment. Accordingly, input from community members, community leaders and representatives, and Ascension St. John's Community Engagement Committee was obtained to expand upon information gleaned from the secondary data review. A concerted effort was made to obtain input from people who represent broad interests of the communities served by the hospitals, including those with special knowledge and expertise of public health issues and populations deemed vulnerable. This assessment also took into account the importance of engaging communities on an ongoing basis and the promotion of a continual dialogue. This includes disseminating the results of the assessment within the community and engaging the community in mutually reinforcing and community-driven activities to improve the community's health and well-being.

Methodology

As aforementioned, community input is a form of primary data collection. Many methods can be used to gather community input, including key informant interviews, forums, focus groups, listening circles and surveys. St. John employed several methods of community input to yield the desired results, including the following:

- Six community health forums with around 120 community leaders and 13 health system leaders (one forum with 11 community leaders and three health system leaders in Washington County)
- Twenty-two focus groups with 233 community members (two focus groups with 19 community members in Washington County)
- Online survey of 801 community members (89 in Washington County)
- Input from the public health workforce and local coalitions/partnerships
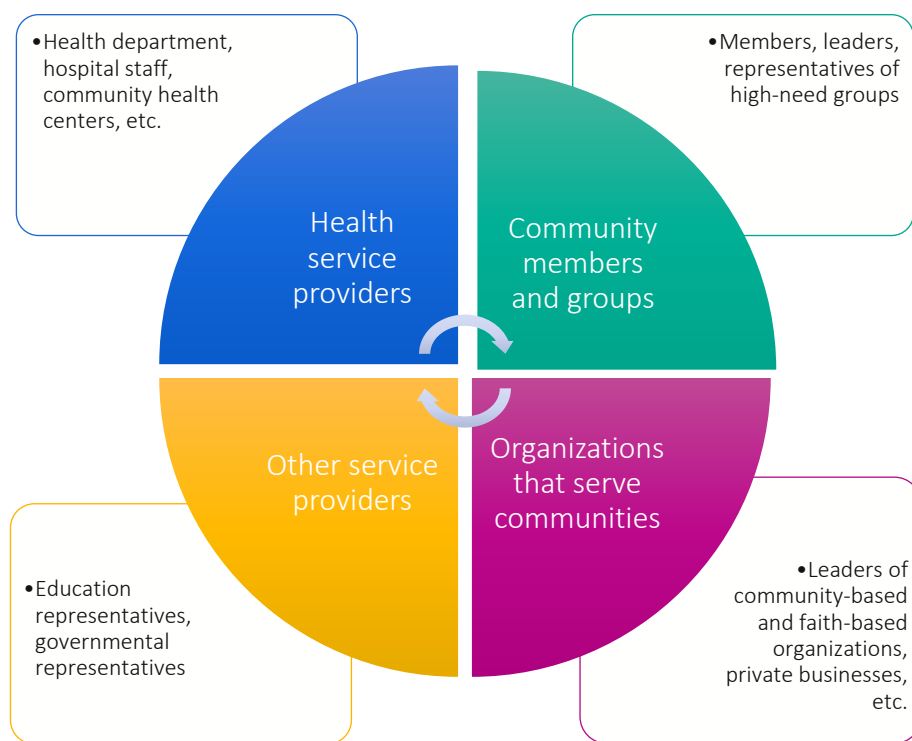- Input from the health system's Community Engagement Committee

Sources

Community input is best obtained from a diverse set of community stakeholders such as community members, community organizations and the public health workforce. A variety of sources ensures that as many different perspectives as possible are represented while satisfying the broad interests of the community. Sources of community input for this assessment were as follows:

- Community members who participated in the online survey and focus groups
- Community leaders and representatives
- Public health workforce and local coalitions/partnerships
- Members and representatives of medically underserved, low-income, minority, at-risk and otherwise vulnerable populations
- Health system and hospital leadership

Community stakeholders who provided input represented a variety of community sectors, including healthcare, education and academia, nonprofit, private business, community development, faith-based communities and

organizations, government, safety-net services, economic and workforce development, behavioral health, law enforcement and first responders, public health and other interest groups working with at-risk and vulnerable populations. This assessment especially focused on community input from those with special knowledge or expertise in public health, as well as members and representatives of medically underserved, low-income, minority, at-risk or otherwise vulnerable populations. Participants offered critical insights into the health needs and assets of the community. See Figure 13 for a visual representation of the constituents who contributed community input throughout the CHNA process.

Figure 13: community input sources

- Health department, hospital staff, community health centers, etc.

Health service providers

- Members, leaders, representatives of high-need groups

Community members and groups

Other service providers

- Education representatives, governmental representatives

Organizations that serve communities

- Leaders of community-based and faith-based organizations, private businesses, etc.

Source: Community Input Guide by Ascension

Community Health Forum

The community health forum at Jane Phillips Medical Center (JPMC) took place Aug. 9, 2018, and had 11 community leaders and three hospital leaders participate. The purpose of the forum was to solicit input from various representatives from the community on health needs of the community and to foster a dialogue on social determinants and other factors that may impact health and wellness. This forum was intended to obtain input specific to the hospital and surrounding region of Washington County. The following section summarizes the design of and findings from this qualitative source of primary data.

Design

Community leaders who represent the broad interests of the community were identified and invited to attend this forum by this assessment's authors. The forum took place over a 1.5-hour period and consisted of an overview of St. John's CHNA process and three main exercises:

- Hospital assessment exercise
- Priority health concerns exercise
- Community perception group exercise

Each participant was asked to give a brief introduction to the group at the beginning of the forum. With a PowerPoint presentation, the overview of the CHNA process was conducted at the beginning of the session to orient participants.

Then, the group was asked to engage in a hospital assessment exercise through discussion. Participants were asked two questions about their perceptions of JPMC: one about what JPMC is doing well to improve the health of the community, and one about what opportunities exist for JPMC to improve the health of the community. Flip charts were utilized to record input.

To identify and prioritize significant community health needs, participants were engaged in a nominal group exercise using wall charts and dot stickers to measure a specific need by cross-referencing the level of ability to change (high or low) with the level of health impact (high or low). Participants were asked to consider the following question for ability to change: To what degree is it feasible that the hospital and partners in our community have the control and influence to make the changes necessary to see improvement in this focus area? Participants were asked to consider the following question for health impact: If improved, to what degree would this focus area improve overall community health? The results for each of the 18 specified needs were reviewed afterward.

Finally, participants broke up into groups of three or four to engage in a community perception exercise. Participants were asked to identify and discuss the top three things they would change about the community to improve its health and the top three things about the community that they are proud of. Each group shared their answers with the room and recorded them on index cards.

Objectives

The main objectives of hosting a community health forum at the hospital were as follows:

- Solicit community input and facilitate dialogue
- Engage community stakeholders
- Initiate or strengthen partnerships and collaborations
- Identify community perceptions of JPMC in terms of health improvement strengths and opportunities
- Determine and prioritize top community health concerns
- Assess the availability and types of resources and assets within the community to address top community health needs

Participants

The participant constituency was diverse and included those with professional experience and/or the ability to represent populations that are medically underserved, low-income, minority and/or with chronic disease needs. Community representatives and leaders also included those with special knowledge of and/or expertise in public health. Participants represented areas of healthcare, safety-net services, law enforcement, education, government, economic and work force development, housing and homelessness, nonprofit and other groups that work with vulnerable populations.

Findings

Hospital assessment exercise

Among all of the responses (from all six health forums) for the first hospital assessment question — "What is [facility] doing well that improves the health of the community?" — "partnerships" and "community" were the most frequent responses, which would suggest that across all communities, St. John is generally proficient in facilitating partnerships and establishing a presence in the community. Among the responses for the second hospital assessment question — "What opportunities exist for [facility] to improve the health of the community?" — "communication" was the standout response, suggesting that better channels of communication could be established between the hospital

system and the communities for services and resources to be better known. Below is a compilation of answers from the JPMC session.

Question 1: What is JPMC doing well?

- Pharmacists, especially their work with cancer patients and helping uninsured and under-insured patients get medications through various programs; pharmacy customer care; compounding ability; medication lock boxes for safe storage
- Participation in and support of FLOWCo to improve overall well-being of the community
- Lunch and learns with a lot of variety, providing needed education for the community
- Great service at St. John Clinic Urgent Care
- Online patient portal with easy access to records
- Online scheduling with primary care physicians
- Example of great customer service: physician who personally called a patient after his kidney treatment to check on him
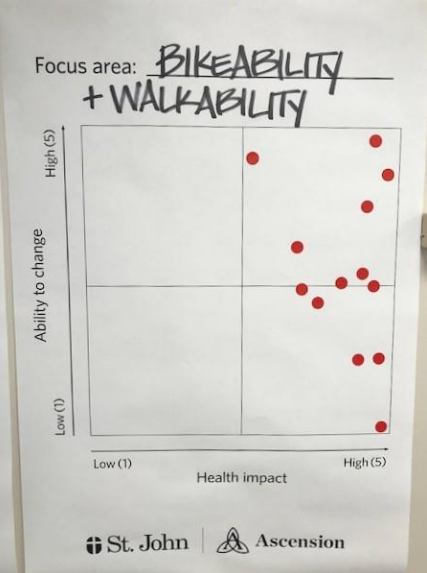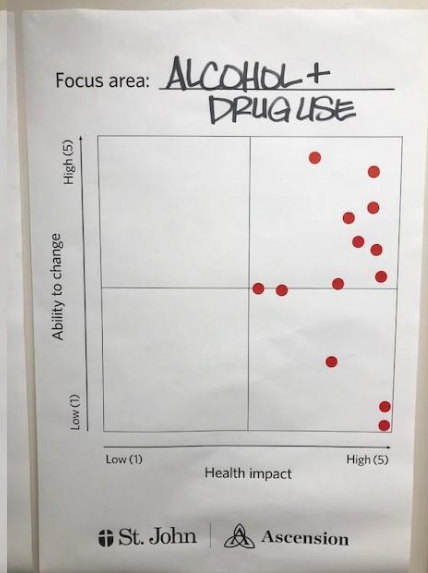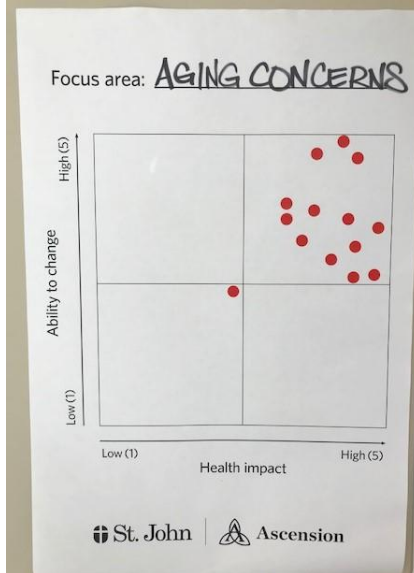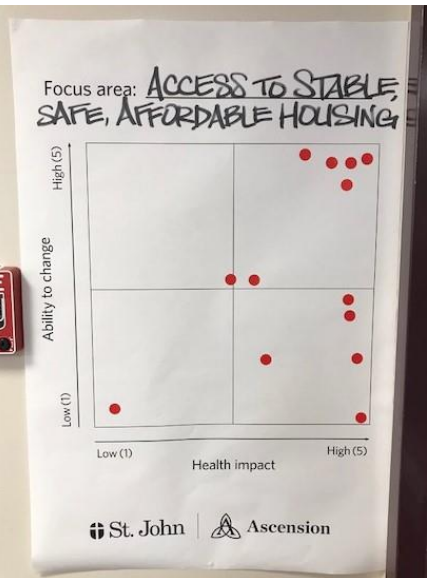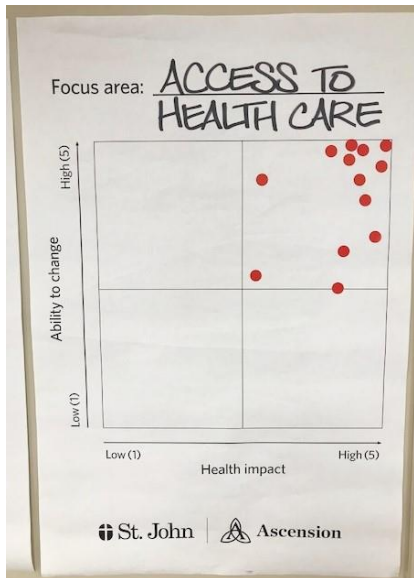
Question 2: What opportunities exist for JPMC?

- Providers who understand the needs of patients and are sensitive in dispensing medications (some treat patients as if they are selling drugs instead of with dignity and respect)
- Provider training/qualifications to perform behavioral health assessments, which helps patients avoid higher-cost providers, education for schools on behavioral health resources
- Pain management services, which is a major deficit in the area
- Partnership with the City of Bartlesville to develop a plan for public transit to assure patients' access to any medical care
- Collaboration with Family Healthcare Clinic, referrals to avoid unnecessary ED visits
- More education/outreach on why overdoses occur and how to avoid
- Education for staff on SANE exam resources, partnerships for education on domestic violence and sexual assault, better follow-up protocol and community collaboration for suicide attempts
- Partnerships with colleges/universities to utilize the power of learning and help students with placement opportunities
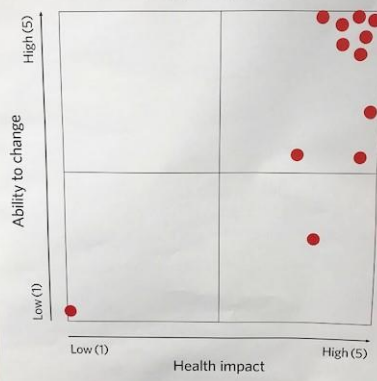
Priority health concerns exercise

System-wide, the health concerns ranked by participants as both high in ability to change and high in health impact included mental health, lack of education, access to healthcare, child abuse and neglect, and access to healthy foods/groceries. During the SJMC health forum, participants ranked the following health concerns highest:

- Access to healthcare
- Aging concerns
- Mental health
- Transportation
- Child abuse and neglect
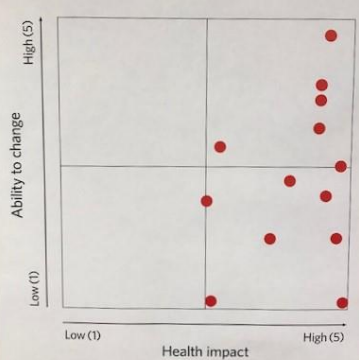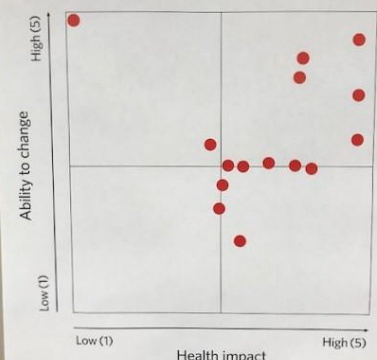
Focus area: ACCESS TO HEALTH CARE

Focus area: ACCESS TO HEALTHY FOODS/GROCERIES

Focus area: ACCESS TO STABLE, SAFE, AFFORDABLE HOUSING

Focus area: AGING CONCERNS

Focus area: ALCOHOL + DRUG USE

Focus area: BIKEABILITY + WALKABILITY

Focus area: CHILD ABUSE + NEGLECT

Ability to change (High (5) / Low (1)) vs Health impact (Low (1) / High (5))

Focus area: CHRONIC DISEASE

Ability to change (High (5) / Low (1)) vs Health impact (Low (1) / High (5))

Focus area: LACK OF EDUCATION

Ability to change (High (5) / Low (1)) vs Health impact (Low (1) / High (5))

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Focus area: MENTAL HEALTH

Ability to change (High (5) / Low (1)) vs Health impact (Low (1) / High (5))

Focus area: POOR DIET + INACTIVITY

Ability to change (High (5) / Low (1)) vs Health impact (Low (1) / High (5))

Focus area: POVERTY / ECONOMIC STABILITY

Ability to change (High (5) / Low (1)) vs Health impact (Low (1) / High (5))
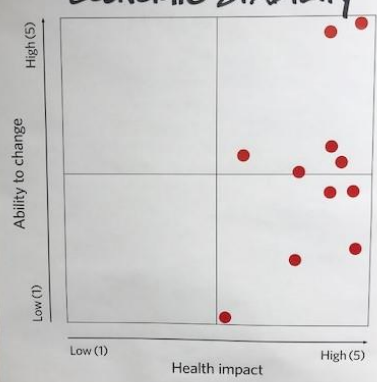
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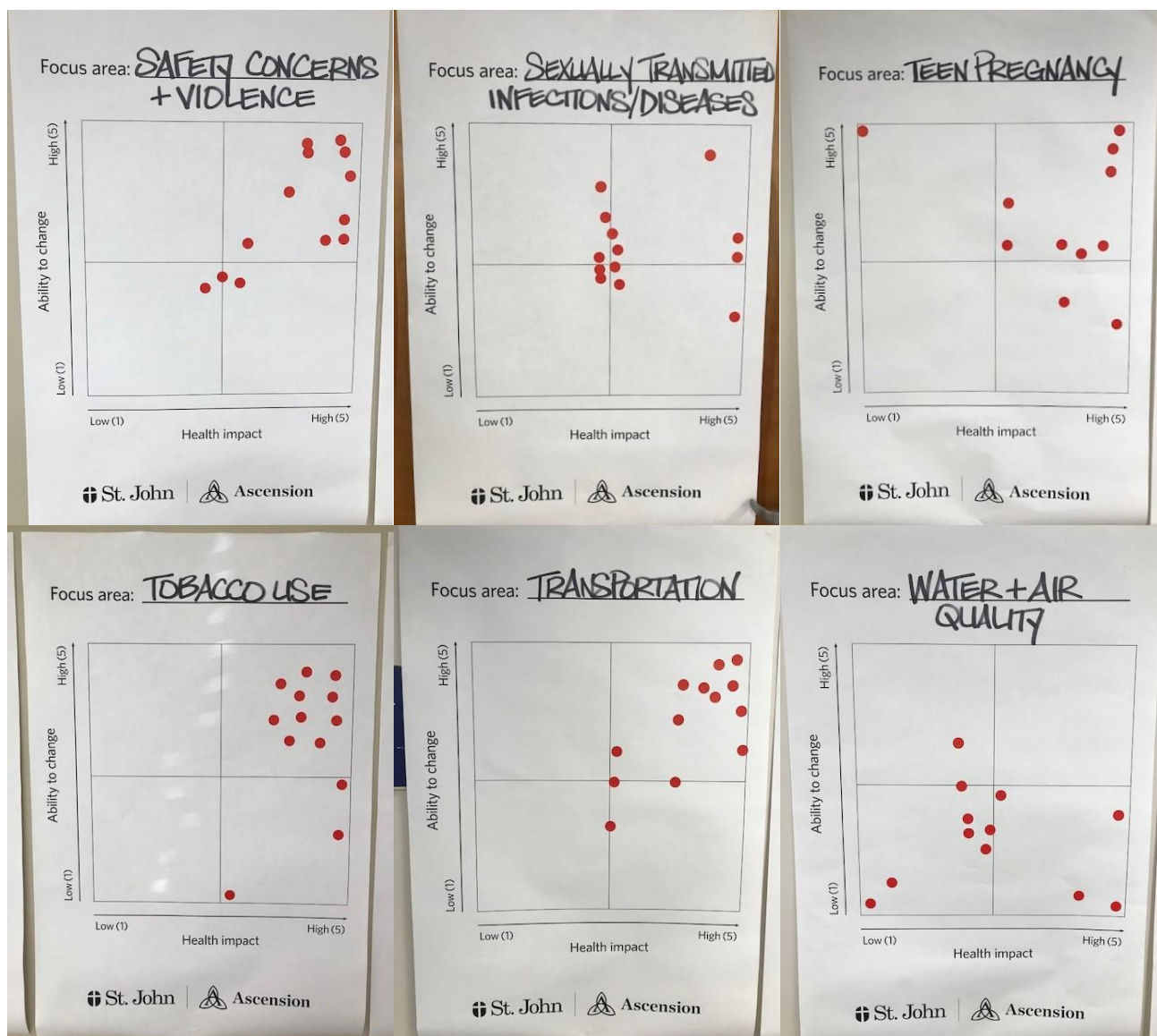
Community perception group exercise

Among all six community health forums, the most popular responses to the first question — "If you had the power, what are the top three things you would change about the community to improve its health?" — included "transportation," "access" and "health education." "Transportation" had nearly double the responses of "access" and "health education," suggesting that transportation is an area of considerable deficiency for the region. As for the second question — "What are the top three things about the community that you are proud of?" — "community," "education" and "services" were among the most popular responses. This suggested to St. John that involvement in each community through schools and expansion of diverse services may be the most effective way to engage with and benefit the communities we serve. Below is a compilation of answers from the JPMC session.

Question 1: If you had the power, what are the top three things you would change about the community to improve its health?

- Free, high-quality healthcare for all
- Transportation

- Health education for low-income populations
- Central location for all resources (nonprofits, community action groups, education, etc.)
- Local specialist physicians (urologists, neurologists, chronic pain management doctors, etc.)
- More clinic locations, improvement in transportation
- Prevention of drug abuse, both legal and illegal
- Overcome barriers for people in getting basic needs, i.e. Food, shelter, income, transportation
- "The Haves vs. the Have-Nots," specifically in Bartlesville
- Transportation, volunteer fleet
- More volunteers in many local organizations
- Behavioral healthcare providers
- Publication and advertisement of resources for the public

Question 2: What are the top three things about the community that you are proud of?
- Improvements in virtual care
- Support of one another's missions
- Higher education facilities (Rogers State University, Oklahoma Wesleyan University)
- Philanthropy — the community generously giving of its dollars and time
- Education system and support
- Having a local hospital, cancer center and heart center
- All of the local nonprofits
- The Hope Clinic and other free clinics
- A lot to offer for the size of community, including a community center, parks and walking paths
- Areas that have the ability to offer free food to low-income groups
- JPMC education classes on babysitting, diabetes, child care, wellness, cardiac rehab/cardiology; lunch and learns
- Volunteer spirit

Additional comments from discussions included:
- The group may have been overly optimistic in assessing the "ability to change" certain health concerns. Identifying the true barriers would be a good first step, as well as the root causes of the issues. Forming partnerships with the right organizations/groups to address the issues would also be key.

Community Focus Groups

This section provides a review of some of the qualitative data derived from one of this assessment's primary data (community input) research methods, the 2019 Washington County CHNA focus groups. The focus groups were conducted in collaboration with The University of Oklahoma Anne and Henry Zarrow School of Social Work and Tulsa Health Department. The three main objectives of the focus groups were as follows:
- Determine top community health concerns
- Identify perceptions of barriers to addressing community health concerns
- Assess awareness of available community resources

Methodology

Sample approach and design

Twenty-two focus groups were conducted in the St. John service area between Jan. 5 and March 9, 2019. These groups garnered participation from 233 total residents. The sample was drawn from the non-institutionalized adult populations in Tulsa, Creek, Washington and Nowata counties. Participants for the groups were primarily recruited by a third-party, private market research firm, Consumer Logic, from its extensive database of participants. In regions where the database was lacking, recruitment efforts were supplemented with email campaigns purchased through Tea Leaves Health. In addition, St. John posted recruitment messaging to Facebook and Twitter for those regions.

Efforts were made to identify and invite individuals to participate in focus groups based on how representative they were of the community in which they lived. The CHNA focus group study incorporated a non-randomized design. The demographic variables are unlikely to perfectly match the demographic makeup of Washington County. To account for this gap, respondent requirements included a mix of gender, age, race/ethnicity, household income level and health insurance status. A specially designed database was utilized to obtain an even mix of respondents to appropriately represent the service area as a whole.

In addition to regional focus groups, two special groups were conducted with vulnerable populations: individuals experiencing homelessness and individuals from the LGBTQ+ community. Community partners in those areas of service recruited individuals representative of these populations.

Each focus group lasted around 90 minutes. A meal was provided to participants, as well as a $50 gift card. The groups were facilitated by a trained social worker using an open-ended discussion guide (see Appendix 4). The discussion guide was created with input from community partners and experts in the field. All sessions were audio recorded and transcribed for analysis purposes by social work graduate students specifically trained for this project. Thematic data analysis was conducted using NVivo.

Community defined

While focus groups were conducted in all St. John service areas, the report below specifically reflects results from the two groups done in Washington County. Only Washington County residents were able to participate.

Results

Washington County

Two community-based focus groups were held in Washington County with 19 total participants. Following is a summary of findings from those sessions.

Community problems

Crime, illegal drug activity, lack of entertainment and services for teenagers, and medical transportation were all cited as primary concerns for participants in Washington County.

Considerable conversation in one focus group revolved around criminal activity in the Washington County area. A public housing complex in the western part of Bartlesville was described as a hub for criminal activity, but a number of examples of crime occurring in other parts of the county were discussed as well. With regard to the public housing community, one participant explained, "It's a Housing and Urban Development complex, so they've got lower-income groups, and there's a lot of drug dealing and other crimes: shootings, stabbings, things like that have historically happened there. It was cleaned up for about 10 or 12 years and starting to slide back into the wild west." Another participant noted of the area, "Sometimes I'll be on the porch smoking a cigarette or whatever, and people will come walking by the house, like, slapping their arms, acting all weird and stuff. And I know they're on drugs."

Specific examples of criminal activity ranged from car thefts and vandalism to porch pirates to homicides and suicides. Much of the criminal activity was attributed to individuals being influenced by illegal drugs, bored teens or a combination of both. As one participant stated, "Probably 90 percent of your theft is connected to drug use." Others agreed with the participant's speculation.

In response to criminal activity or the fear of victimization, many participants indicated they were prepared to defend themselves with firearms. One participant explained, "We have our bored juveniles. … We had windows shot out. We've had chains stolen … and it tends to just be juveniles. There was some breaking into cars, and a man confronted him. They shot him and killed him just probably six or seven months ago, maybe." Another participant stated, "I mean, it's always in the back of my head. If I hear a noise, I'll panic. You know we have guns in the house. My husband, he carries, but I don't like guns."

Participants also provided an example of firearms not being properly stored out of reach of juveniles. As one participant said of a teen who shot his younger cousin, "And the kid that was with him was his cousin, who played with guns like they were toys. He carried a loaded gun constantly. He ran around with them — no adult supervision at all. … I was outside when the gun went off, and I heard the kid that did it screaming his head off. I didn't know what was going on; I didn't have a clue. I was far enough away. And then found out later on that that's what had happened. And that boy has not been the same since."

In addition to the accidental shooting described above, participants noted several teens and an adult in the community have recently committed suicide in unrelated events, suggesting a possible pattern of such behavior in the area.

Another problem noted in the community was the unavailability of transportation for medical care needed outside the immediate area. Participants explained that if care was needed in Tulsa or Owasso, those without transportation or relying on others for transportation may opt to forgo care because transportation options are not available.

One participant provided an example of the difficulty his/her family faced when a child was in need of non-emergency medical transportation to The Children's Hospital at OU Medicine recently. The participant explained, "Wednesday night, [my daughter] fell and hurt her hip. She has something … where there is a cartilage between the bones in the hip [that] went out — very painful. We went to the ER [in Bartlesville]. They gave her Motrin." The participant then explained the child needed to be taken from Bartlesville to the facility in the Oklahoma City area. The participant said, "We had to drive her [to Oklahoma City]. There is no transportation. We drove her there to Oklahoma City. They received her at 1:30 in the morning. … They put her on Morphine." In describing their transport, the participant said, "We leaned the backseat as far it goes. It was frustrating. She cried the entire way basically. It is really hard. She is just 9 years old."

Barriers to healthier lifestyles

Participants cited health insurance issues and personal characteristics as barriers to the adoption of healthier lifestyles. A number of participants indicated there are a very limited number of insurance options available for individuals in the community through the Health Insurance Marketplace. Participants further noted that none of the options available provided coverage for care through the local hospital, meaning people had to travel out of the community for hospital services.

Personal barriers included busy lifestyles and time constraints, fatigue, convenience and cost. As one participant noted, "When … you and your spouse are working full-time jobs, you don't have time. So, both of you are tired. You don't go to the gym. You want to lay back a little bit in your chair, to eat, and get ready for bed, because you need to get up and do it the next day." Another said, "My job [is] very mentally challenging, so I feel very tired when I am done."

In terms of cost, several thought healthy food is more expensive than unhealthy food. One participant explained, "If I could go feed my family at McDonald's for 10 bucks, I'm going to choose that if I'm short on cash, rather than going and buying fresh produce and fresh fruit. Some of these apples are $2.98 a pound, and that's two apples. And with kids it's always, 'Am I going to watch these bananas turn brown this week, or are we going to eat them this week?' And it just gets tiring buying some of that stuff, and so convenience is key sometimes, especially when we have multiple sports and activities going on, I don't meal prep. So, it's convenience and laziness." Another comment heard

during the focus group was, "You know, you can give your kid a $3 happy meal, which gives them a toy, or you're at the grocery store spending $20 on stuff for a meal for two or three people."

Others pointed out that unhealthy food tastes better than healthy food and that some had food additions that prevent them from being able to adopt healthier lifestyles.

Suggested services

A number of participants suggested additional services for older adults. Despite the presence of an area senior center that provided some social and health-related services, several participants did not feel the services provided there were appropriate for them. As one participant noted, "We have a different lifestyle than [the current senior center offers]."

Other suggested services included a desire for more physicians and a cultural acceptance of mental healthcare. However, the most commonly suggested services revolved around activities for teens in the community. As one participant noted, "There's not a whole lot of activities. What activities there are tend to cost a lot more, which puts it out of reach, I think, of most parents. So, if you're old enough to stay at home unsupervised, but the parents are both working or [it's] a single-parent situation, they don't have anywhere else to go. Younger and middle-aged adults, unless you like going to the bars, there's really nothing to do unless it's church, which may or may not be their thing." Participants acknowledged the creation of a new Boys and Girls Club in the community that provides services to children up to the age of 18 at a reasonable cost. However, the services provided by this organization were not thought to be attractive to teens. Participants felt that if better options were available to provide teens with constructive, healthy social and mental health options, problems related to crime and illegal drug use in the community would decline.

Vulnerable populations

While the two special focus groups focused on vulnerable populations were physically conducted within Tulsa County, the authors of this report feel it is important to note that the resulting qualitative data is representative of these populations in Creek, Washington and Nowata counties as well. To view those reports, please refer to one of the Tulsa County CHNAs (St. John Medical Center, St. John Owasso or St. John Broken Arrow).

Online Survey

This section of the assessment provides a review of the quantitative data derived from one of this assessment's primary data (community input) research methods, the 2019 online survey.

Methodology

Sample approach and design

This survey relied on a convenience sample of individuals primarily recruited through Facebook and other social media outlets. Announcements regarding the availability of the survey and invitations to participate were posted by St. John, the OU Anne and Henry Zarrow School of Social Work and the Tulsa Health Department. Other community partners helped spread the word about the survey as well. In addition, the Tulsa Health Department shared a link to the survey through the Nextdoor application, and St. John ordered email campaigns with Tea Leaves Health, targeting low-income households in a percentage of the query (no criteria other than geography for the remaining percentage) in an attempt to balance out the demographics.

Community defined

While the survey was open for completion by any adult, only responses from ZIP codes within the St. John service area (Tulsa, Creek, Washington and Nowata counties) were included in the analysis. This report summarizes the Washington County survey results. Other counties' results are summarized in their respective hospital CHNA.

Measurement instruments

The electronic survey was designed with input from a number of community partners, and many items from the previous survey were adapted for use in this survey. In addition, several standardized measurement instruments were used, including the Short Stress Overload Scale; Sampson, Raudenbush & Earls Neighborhood Social Cohesion Scale; Mujahid, Diez Roux, Morenoff & Raghunathan Neighborhood Safety Scale; Patient Health Questionnaire – 4; Patient-Reported Outcomes Measurement Information System Social Isolation Short Form; and Three Item Loneliness Scale. In addition, numerous questions were added to assess whether individuals had received recommended screenings and vaccinations with input from a variety of healthcare experts.

Limitations

Based on sample characteristics reported in the results, caution is recommended in the generalization of findings beyond those sampled. It is unlikely that individuals without access to Facebook were aware of the survey. Males, individuals in poverty, the uninsured and children were not considered in this research. Members of the LGBTQ+ community were underrepresented in the responses received for this survey as well. Caution is especially recommended in the generalization of inferential statistics considering subpopulations within the service region.

Sample characteristics

In Washington County, 89 individuals completed the survey, and in Nowata County, 17 individuals completed the survey. Given the small response rate from each county, their findings will be reported together based on a sample size of 106.

Sex

Almost 69% of the sample was female (n = 73), while 30 (28%) respondents were male and 3 (3%) did not identify a sex that was assigned to them at birth. None of the respondents identified as transgender, however 6 (6%) respondents did not answer the question asking if they considered themselves to be transgender.

Marital status

The majority of respondents were married (n = 81, 76%), while 12 (11%) stated they had never been married. Almost 6% (n = 6) indicated they were widowed and only 3 (3%) indicated they were divorced or separated. One respondents (1%) identified as a member of an unmarried couple and 3% (n = 3) did not report their marital status. None of the sample identified as a member of the LGBTQ+ community, however three (3%) participants did not respond to questions regarding sexual orientation.

Age

Respondents ranged in age from 21-87 years. The average age of respondents was 55 with a standard deviation of 17.55 meaning the majority of the sample was between the ages of 37 and 72. Three (3%) did not provide their age.

Household size

Half of the sample reported living with one other person (n = 54, 51%), 11% (n = 12) with two other people, 15% (n = 16) with three other people, 7% (n = 7) with four or more people and 14% (n = 15) reported living alone. Two (2%) individuals did not provide information regarding household size.
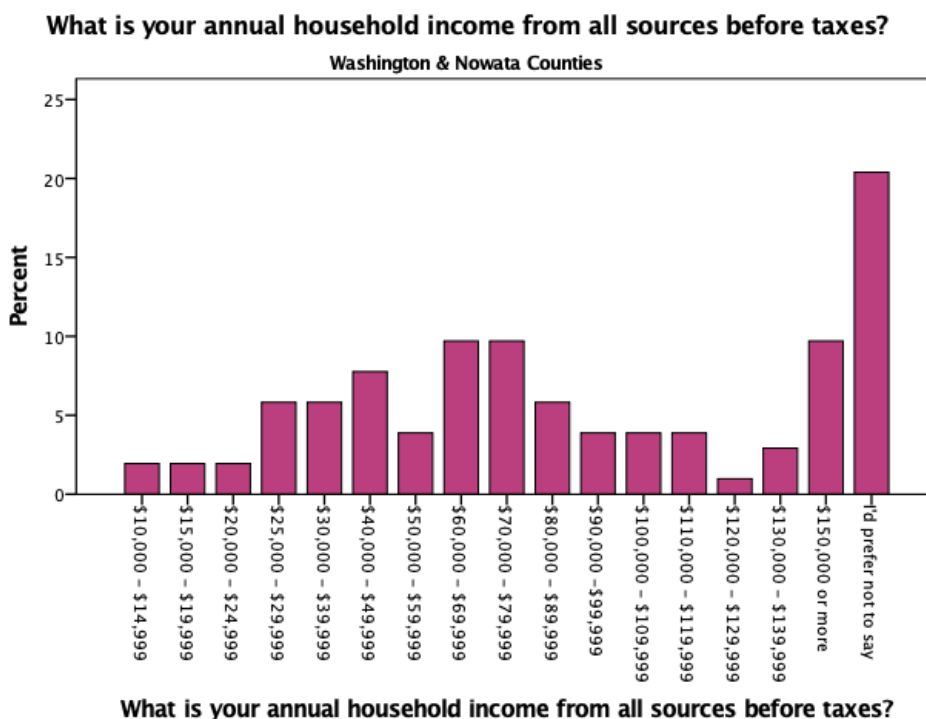
Households with children

Over half the sample reported no children under the age of 18 were in their household (n = 68, 64%). About 13% (n = 14) had one child in their household, 13% (n = 14) had two children in their household, 4% (n = 4) had three or more children in their house. Six (6%) respondents did not provide information regarding the number of children in their household.

Households with older adults

Over half the sample reported no individuals aged 65 or over in their household (n = 64, 60%), 16% reported one older adult in their household, 19% reported two older adults in their household , 1% (n = 1) reported 3 older adults in their household and 4% (n = 4) did not report the number of older adults in their household.

Household income

Almost 23% of respondents reported an annual household income ranging from $25,000-$59,999. About 6% (n = 6) reported household incomes of less than $24,999, however none reported an annual income of less than $10,000. Nineteen percent (n = 20) reported an income ranging from $60,000-$79,999, 9% (n = 10) reported incomes ranging from $80,000-$99,999, and 11% (n = 12) reported incomes ranging from $100,000-$149,000. Nine percent (n = 10) reported incomes of $150,000 or greater. Twenty four (23%) individuals did not report income.

What is your annual household income from all sources before taxes?

Washington & Nowata Counties

What is your annual household income from all sources before taxes?

Poverty was estimated based on reported income and household size. Only 1 (1%) individual appeared to be in poverty.

Education

All respondents provide information regarding education. Nine percent (n = 10) completed high school or obtained a GED. Almost a third of the sample (n = 34, 32%) had attended some college or technical school program. Just over a third possessed a bachelor's level education (n = 38, 36%) and the remainder (n = 24, 23%) completed a master's level education or higher.

Employment status

Over half the sample reported being employed (n = 63, 59%), while the remainder was not employed (n = 43, 41%). Of the 63 participants that were employed, six (6%) worked less than 30 hours a week. Six (6%) individuals worked 30-39 hours a week, 44 (42%) worked 40-49 hours a week, while seven (7%) worked 50 hours a week or more.

Military service

Sixteen (15%) respondents reported serving in the US Armed Forces, while 89 (84%) did not and 1 (1%) did not provide information about military service.

Health insurance

Only two (2%) respondents indicated they did not have health insurance. Over half of those surveyed indicated they were insured by a policy through an employer or an employer of a family member. Only one (1%) respondent indicated that he/she purchased health insurance through another mechanism. About 29% (n= 31) were Medicare recipients, seven (7%) received health insurance through Tribal Health Services and two (2%) received benefits from TRICARE, VA or the military. Five indicated they were insured by another source.

Of the 28 individuals who did not have insurance, 2 (7%) indicated their employer did not provide insurance, 19 (68%) indicated they could not afford to purchase insurance, 5 (18%) were unemployed, 2 (7%) said they did not need insurance or that they were healthy.

Race/ethnicity

The majority of respondents were Caucasian (n = 86, 86%), followed by Native American (n = 16, 15%), Hispanic (n = 2, 2%) and African Americans (n = 1, 1%). For analysis purposes categories were combined into a single variable indicating white or not white.

Results

Community health

Respondents were asked to rate the health of the community on a five point scale ranging from excellent to poor. Over one third of respondents rated the health of their community as good (n = 41, 39%). Over a quarter rated the health of their community as fair or poor (n = 28, 26%), while 24 (23%) rated the health of their community as excellent or very good. Thirteen (12%) individuals indicated they did not know the health of their community.

In your opinion, how would you rate the health of your community?

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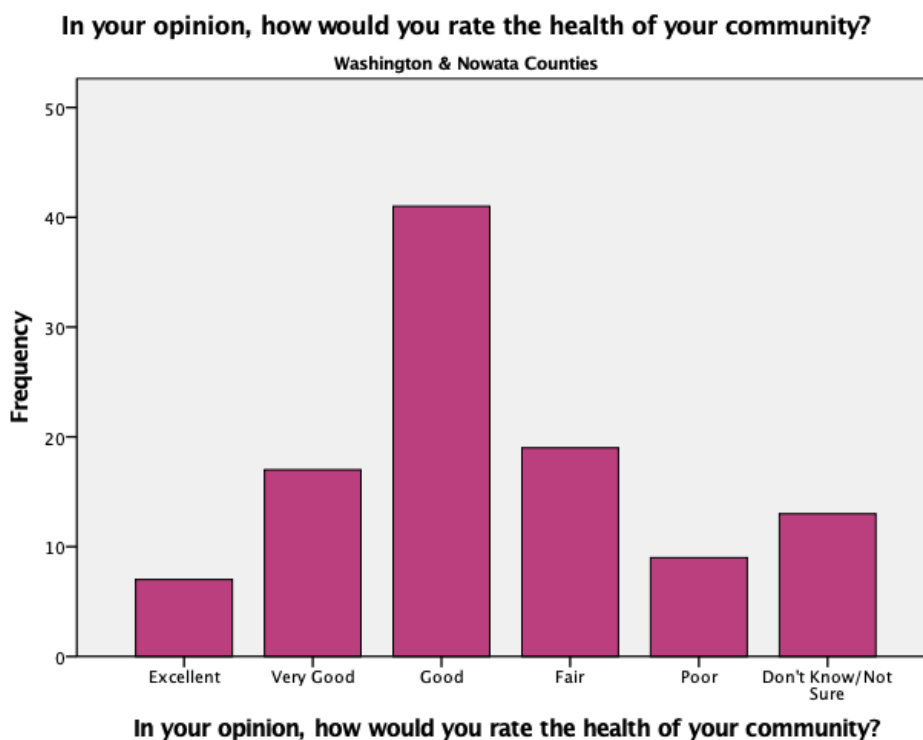
Neighborhood safety

Respondents were asked three commonly used questions to assess their perception of their neighborhoods safety: I feel safe walking in my neighborhood, day or night; Violence is not a problem in my neighborhood; and My neighborhood is safe from crime. Participant level of agreement with the statements is made on a three point scale. The average score for the three items becomes a neighborhood safety score. Scores can range from 1-3 with high scores indicating less safety.

The average neighborhood safety score was 1.53 with a standard deviation of 0.6. Scores were skewed indicating most individuals surveyed perceived their neighborhood to be safe.

Neighborhood Safety

Washington & Nowata Counties

Mean = 1.53
Std. Dev. = .597
N = 99
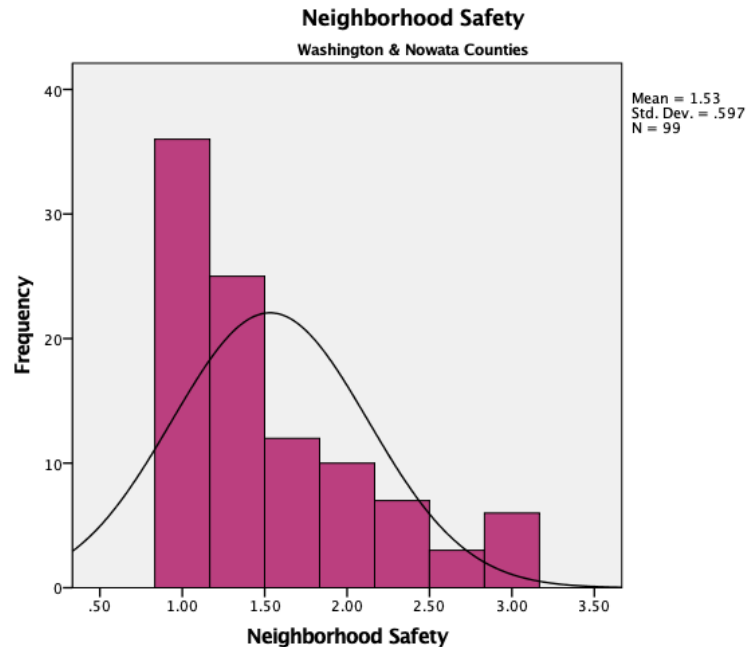
Social cohesion

Neighborhood social cohesion speaks to the safety of a community and its connectedness to one another. Social cohesion was measured with five commonly used questions: People are here are willing to help their neighbors; This is a close knit neighborhood; People in this neighborhood can be trusted; People in this neighborhood do not get along with one another; and People in this neighborhood do not share the same values. Respondents rate their level of agreement with each statement on a scale of 1-5. The fourth and fifth questions were reverse scored. An average social cohesion score was calculated for each participant. Scores range from 1-5 with lower scores indicating greater social cohesion.

Scored ranged from 1.8 to 3.8. The average social cohesion score was 2.29 with a standard deviation of 0.44. Scores were skewed indicating a somewhat high level of social cohesion. Interestingly, 32 respondents did not complete at least one item related to social cohesion eliminating their responses from consideration.

Social Cohesion
Washington & Nowata Counties

Mean = 2.29
Std. Dev. = .441
N = 74
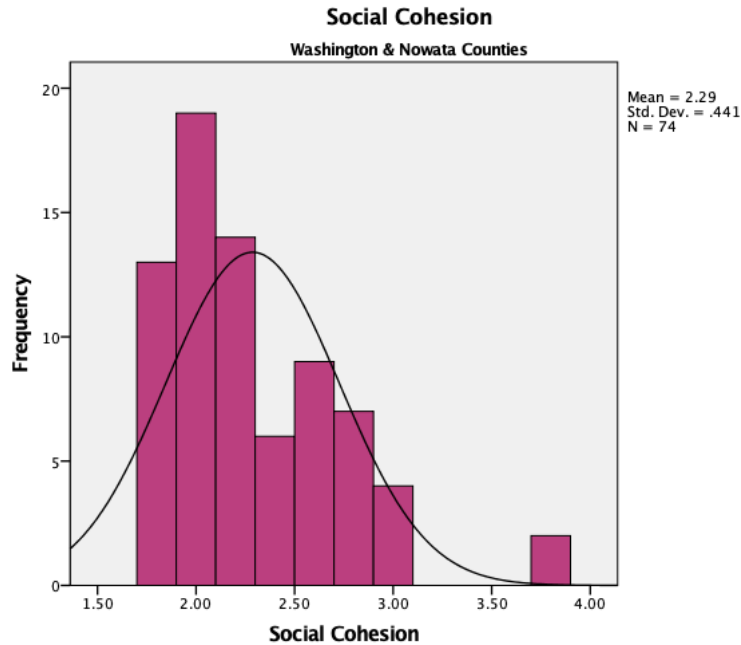
Personal health

To rate personal health, respondents were asked, "Would you say that in general your health is: excellent, very good, good, fair or poor?" Ten (9%) individuals rated their health as excellent, 43 (41%) very good, 35 (33%) good, 13 (12%) fair, 4 (4%) poor and 1 (1%) respondent did not rate personal health.

Would you say that in general your health is –
Washington & Nowata Counties
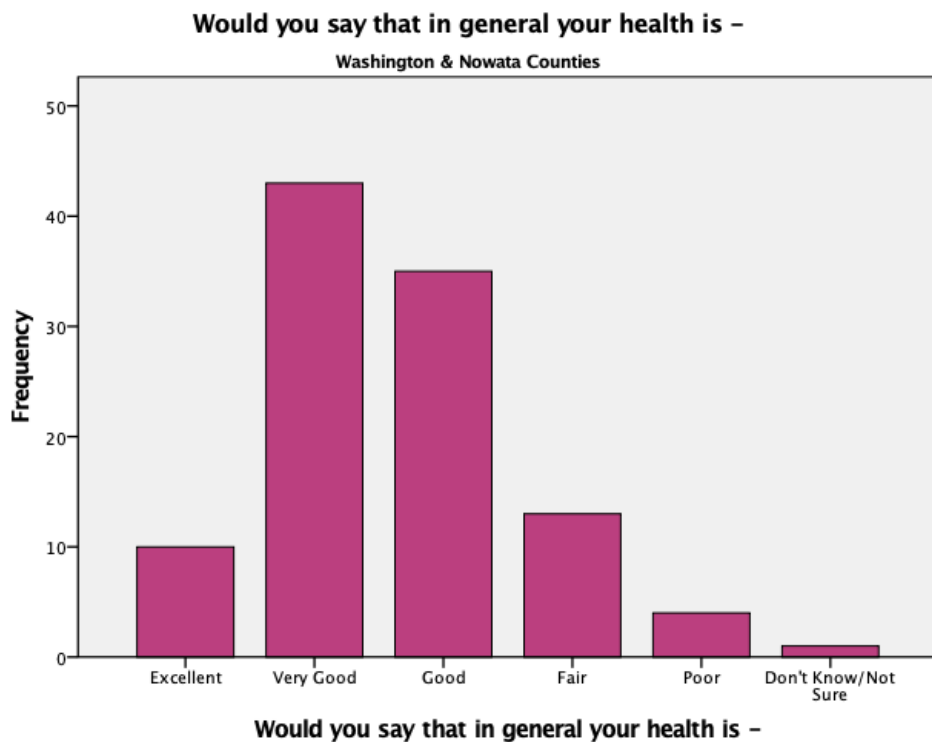
Smoking

To assess smoking pack years were calculated based on the number of years one had smoked and the number of cigarette packs typically smoked each day. A packs was calculated based on 20 cigarettes in a pack. Considering smokers and nonsmokers the average pack year of the sample was 5.34. Considering only individuals that had smoked during their lifetime, the mean pack year was 13.82. Pack years ranged from .30 - 45.

Pack Years, Smokers
Washington & Nowata Counties

Mean = 13.82
Std. Dev. = 13.941
N = 23
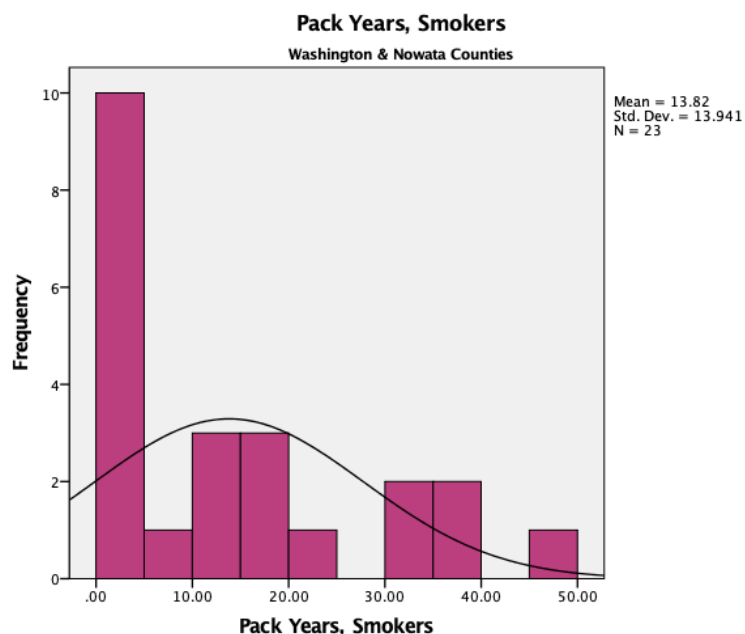
Diet

To assess diet, several questions were asked of respondents. To begin, participants were asked "generally speaking, do you think you eat a healthy diet?" Sixty-one percent (n = 64) of respondents indicated they ate a healthy diet, while 28% (n = 30) stated they did not eat a healthy diet and 11% (n = 12) were unsure or did not respond to the question.

Cross tabulations revealed a statistically significant relationship between one's rating of their personal health and their diet. Sixty-seven percent of those who said they ate a health diet rated their health as excellent or very good compared to only 17% who said they did not generally eat a healthy diet. Similarly, 27% of those who said they did not generally eat a healthy diet rated their health as fair or poor compared to 15% of those who said they ate a healthy diet (t^2 = 20.4, df = 2, p < .000).

Respondents were then asked how many portions of fruit and vegetables (excluding potatoes) they consumed each day. Only 6% (n = 6) indicated they ate the recommended daily amount of five or more servings of fruits and vegetables each day. Three percent (n = 3) stated they usually ate no fruits and vegetables, 27% (n = 29) ate one serving of fruits and vegetables, 28% (n = 30) ate two servings of fruits and vegetables, 28% (n = 30) ate three servings of fruits and vegetables and 15% (n = 4) at four servings of fruits and vegetables.

In general, how many portions of fruit and vegetables do you eat each day (excluding potatoes)? An example of a portion is one medium apple, half of a bell pepper or grapefruit, or three heaping tablespoons of peas or carrots.

Washington & Nowata Counties

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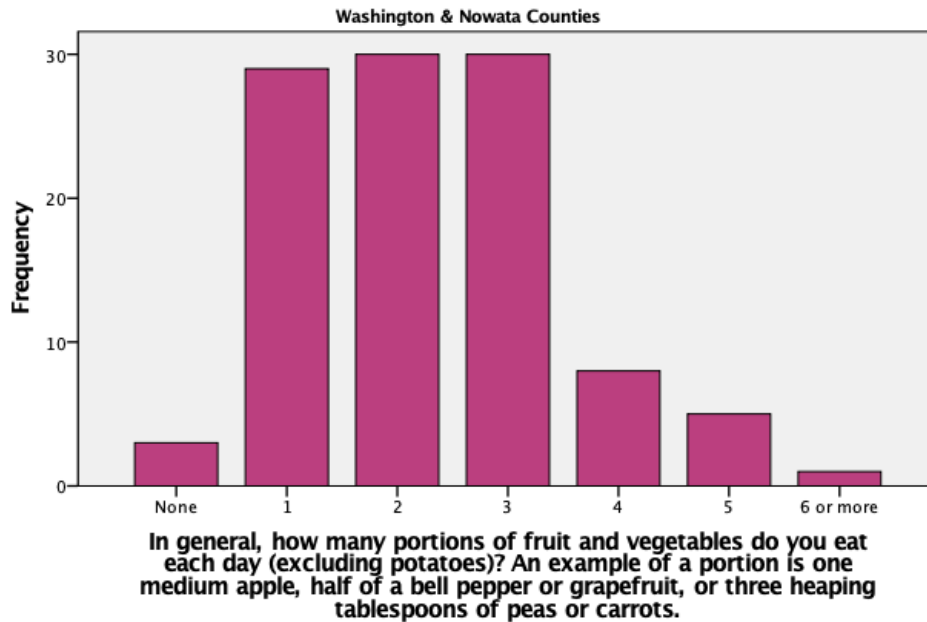
Respondents were asked, "How often do you drink beverages containing sugar?" Twenty-nine percent (n = 31) answered daily, 25% (n = 26) answered weekly, 22% (n = 23) answered monthly, 24% (n = 25) answered less than monthly and 1% (n = 1=) did not respond to the question.

How often do you drink beverages containing sugar?

Washington & Nowata Counties

How often do you drink beverages containing sugar?
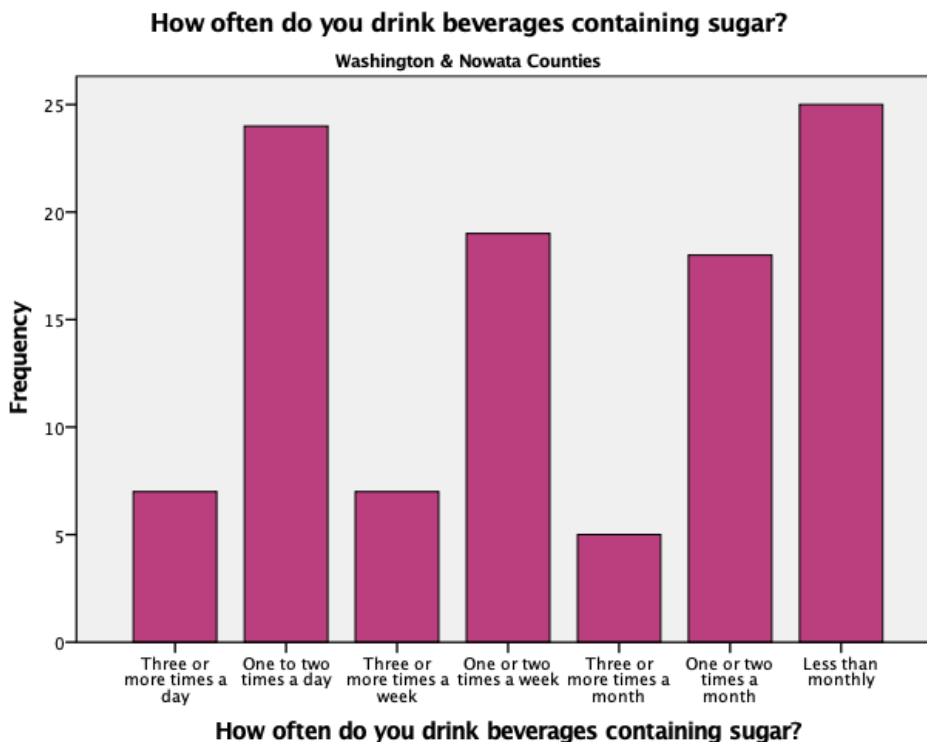
Respondents were asked, "How many times a week do you usually eat red meat or processed meats. Twelve percent (n = 13) reported five or more times a week, 37% (n = 39) three or four times a week, 34% (n = 36) one or two times a week, 15% (n = 16) less than once a week and 2% (n = 2) did not report their consumption.

How many times a week do you usually eat red meat (such as steak or hamburger) OR processed meats (such as hot dogs or deli meat or sausage)?

Washington & Nowata Counties
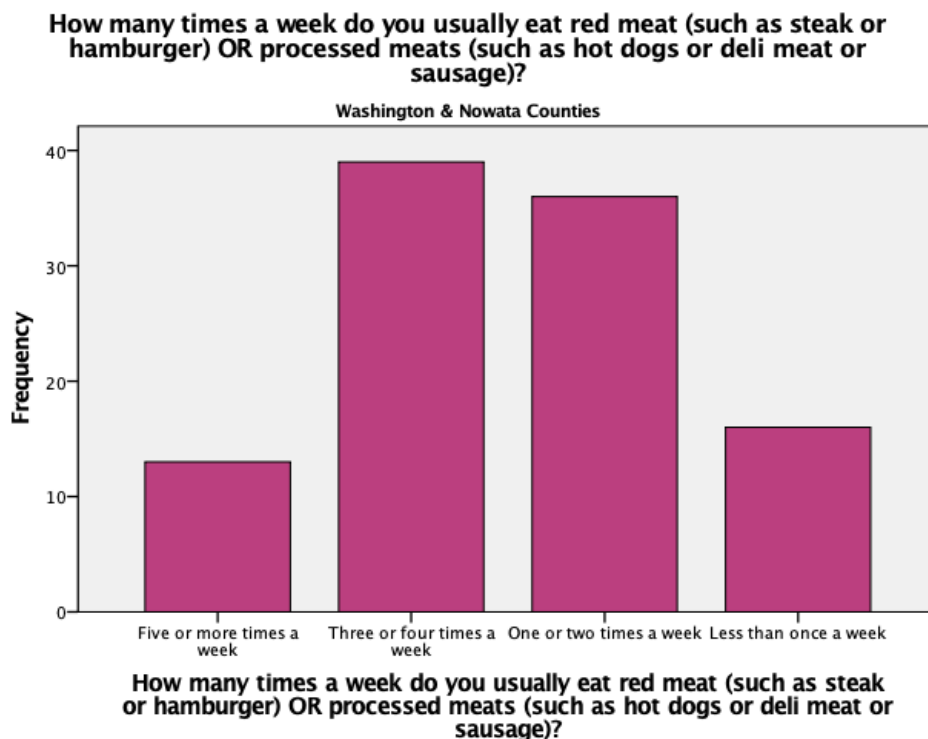
Exercise

Respondents were asked to report the frequency in which they engaged in vigorous, moderate and light exercise.

Only 5 (5%) participants said they never engaged in light exercise. About 37% (n = 39) participated in light exercise one to two times a week, 33% (n = 35) three to four times a week, 22% (n = 23) five or more times a week and 4% (n = 4) did not report their participation in light exercise.

In a usual week, how many times do you exercise? – Light Exercise (walking at an average pace, light housekeeping or gardening)

Washington & Nowata Counties

In a usual week, how many times do you exercise? – Light Exercise (walking at an average pace, light housekeeping or gardening)
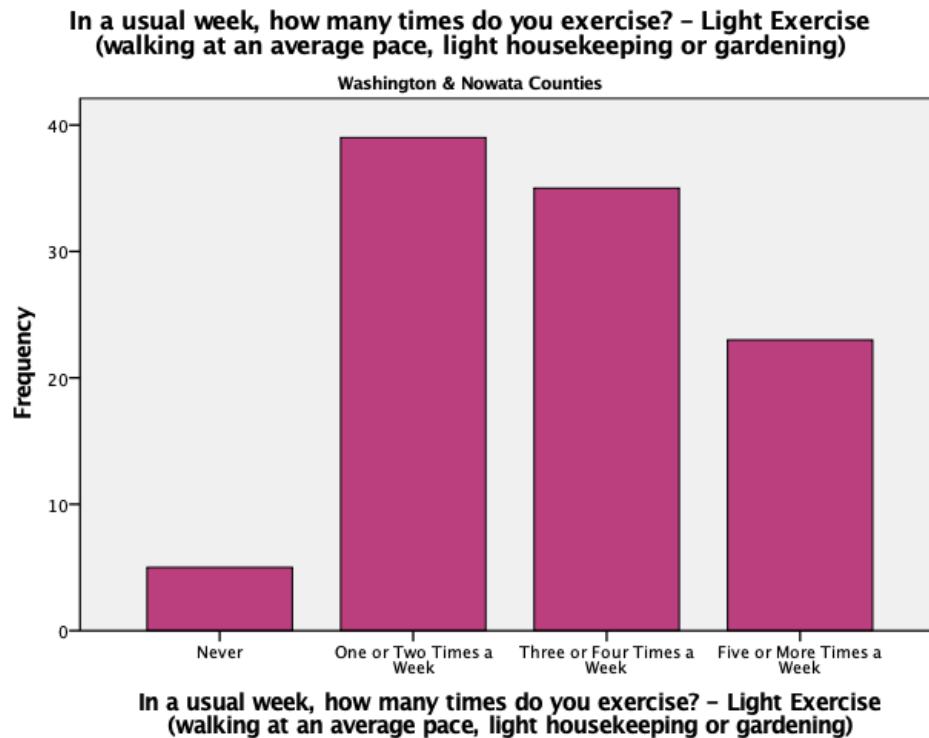
Almost 27% (n = 29) of participants said they never engaged in moderate exercise. About 37% (n = 35) participated in moderate exercise one to two times a week, 19% (n = 20) three to four times a week, 13% (n = 14) five or more times a week and 6% (n = 6) did not report their participation in moderate exercise.

In a usual week, how many times do you exercise? – Moderate Exercise (fast walking, dancing, gentle swimming, golf, heavy housework or gardening)

Washington & Nowata Counties

In a usual week, how many times do you exercise? – Moderate Exercise (fast walking, dancing, gentle swimming, golf, heavy housework or gardening)
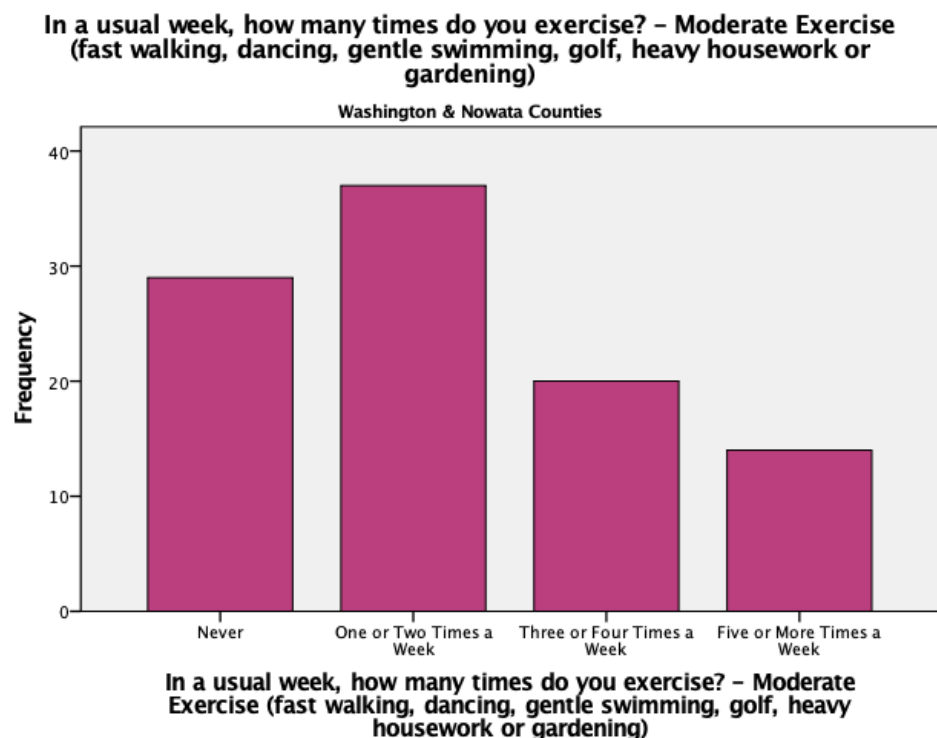
About 60% (n = 64) participants said they never engaged in vigorous exercise. About 15% (n = 16) participated in vigorous exercise one to two times a week, 13% (n = 14) three to four times a week, 7% (n = 7) five or more times a week and 5% (n = 5) did not report their participation in vigorous exercise.

In a usual week, how many times do you exercise? – Vigorous Exercise (running, jogging, swimming lengths, aerobic, fast cycling, football)

Washington & Nowata Counties
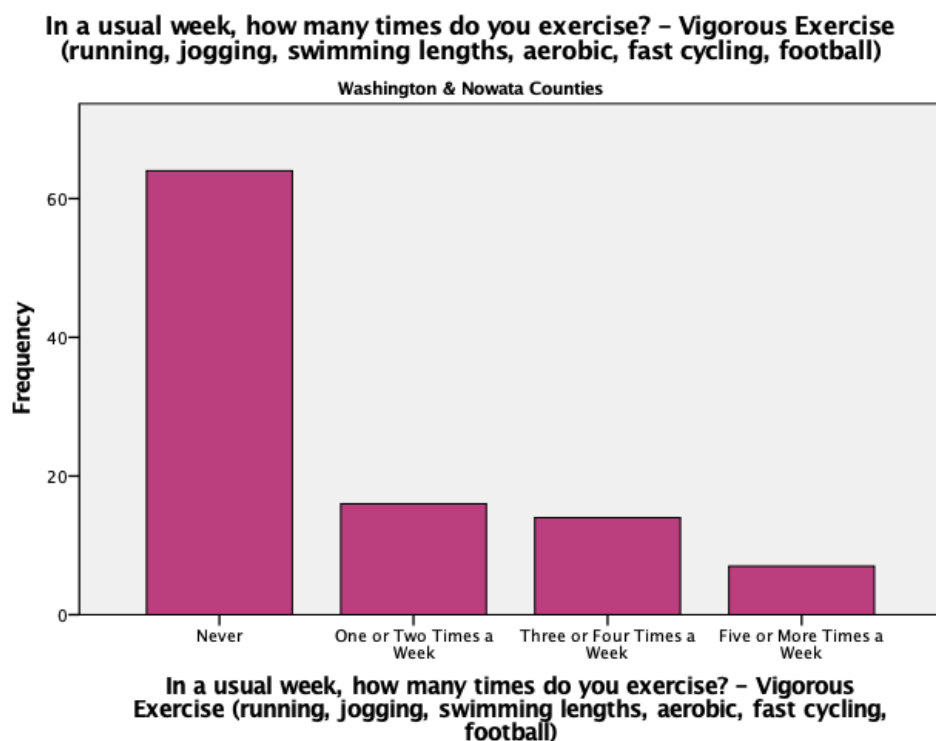
Self-care

Participants were asked to report the frequency in which they engaged in self-care activities other than watching television. Almost 2% (n = 2) indicated always, 28% (n = 26) regularly, 22% (n = 21) often, 36% (n = 34) often, 13% (n = 14) rarely and 4% (n = 4) indicated never.

Generally speaking, how often do you make time to relax or engage in self-care activities (such as participating in activities you enjoy or engaging in stress reducing activities other than TV)

Washington & Nowata Counties

Generally speaking, how often do you make time to relax or engage in self-care activities (such as participating in activities you enjoy or engaging in stress reducing activities other than TV)
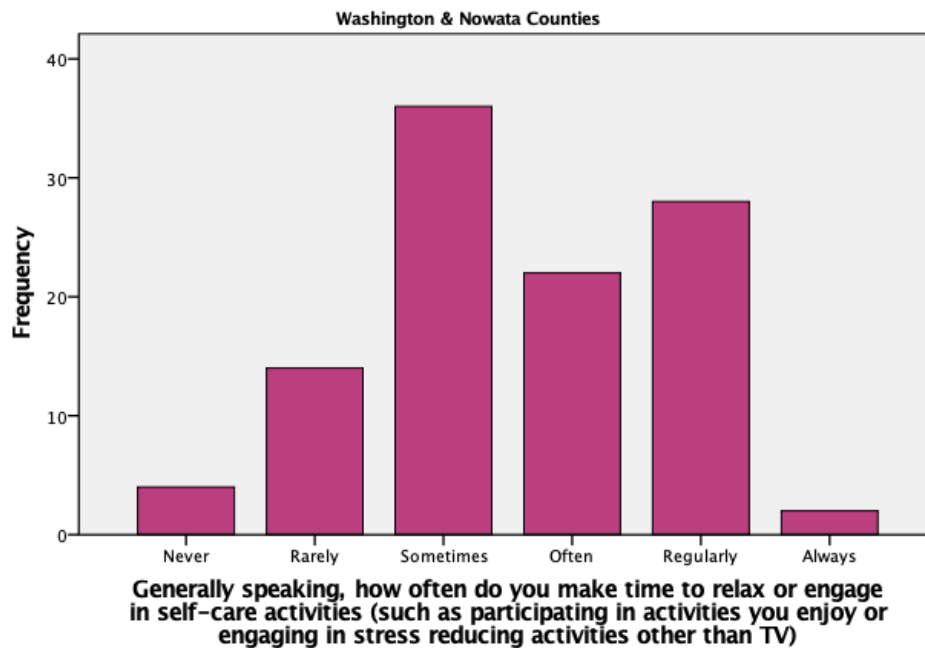
Sleep

Participants were asked to report how many hours of sleep they generally get each night. About 2% (n = 2) said less than five hours a night, 36% (n = 38) five to six hours a night, 61% (n = 65) seven to nine hours a night and 1% (n = 1) ten or more hours a night. For further analysis those reporting six or less hours slept each night were separated into a group identified as sleep less.

On average, how many hours of sleep do you get in a 24-hour period?

Washington & Nowata Counties

On average, how many hours of sleep do you get in a 24-hour period?
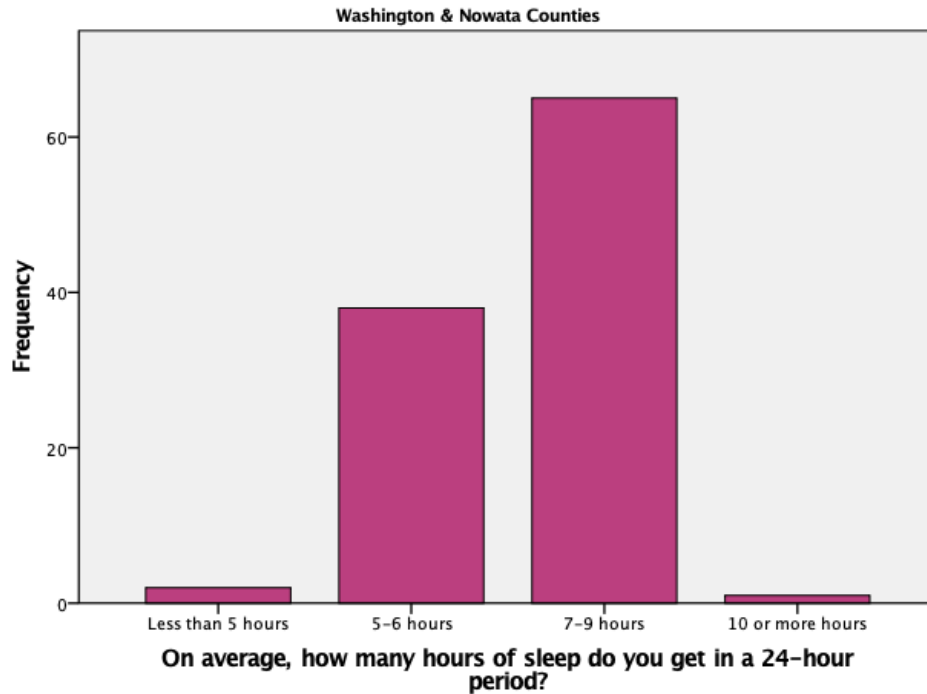
BMI

Respondents were asked to report their height in feet and inches and their weight in pounds. Following guidelines issued by the Centers for Disease Control, BMI was calculated by dividing weight in pounds by height in inches squared and multiplying by 703. BMI ranged from 17.75 to 53.36. The mean BMI was 30.17 with a standard deviation of 7.27. Using guidelines from the Centers for Disease Control, participants were sorted into one of four categories based on their BMI. Almost 2% (n = 2) participants were underweight, 21% (n = 22) were a normal weight, 31% (n = 33) were overweight, 40% (n = 42) were obese, and 7% (n = 7) did not provide sufficient information to calculate BMI.

BMI by Category

Washington & Nowata Counties

BMI by Category
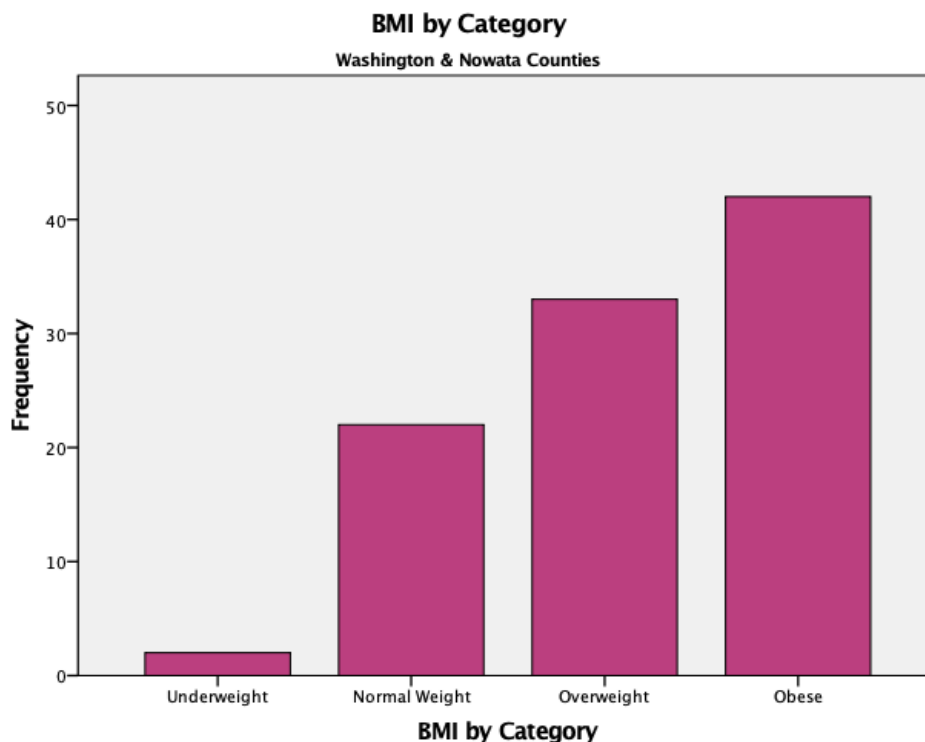
Depression and anxiety

Anxiety and depression were measured using the PHQ4, a 4-item screening instrument commonly used in health care settings. The PHQ4 can be used to determine the presence of anxiety and/or depression. It can also be used to produce a sum indicating the presence of anxiety and depression on a scale from 0-12 with higher scores indicating greater levels of depression and anxiety. Cut scores have also been developed to rank the presence of depression and anxiety as normal, moderate and severe.

All PHQ4 screening items were completed by In Tulsa County, 99 individuals completed all PHQ4 screening items. The presence of anxiety was noted in 13 cases (13%). Depression was noted in 7 cases (7%). Scores were relatively low with a mean of 2.22. When categorized, the preponderance of respondents rated as normal (n = 67, 63%), while 23 individuals (22%) rated with moderate depression/anxiety and 6 (6%) were noted to have severe depression/anxiety.
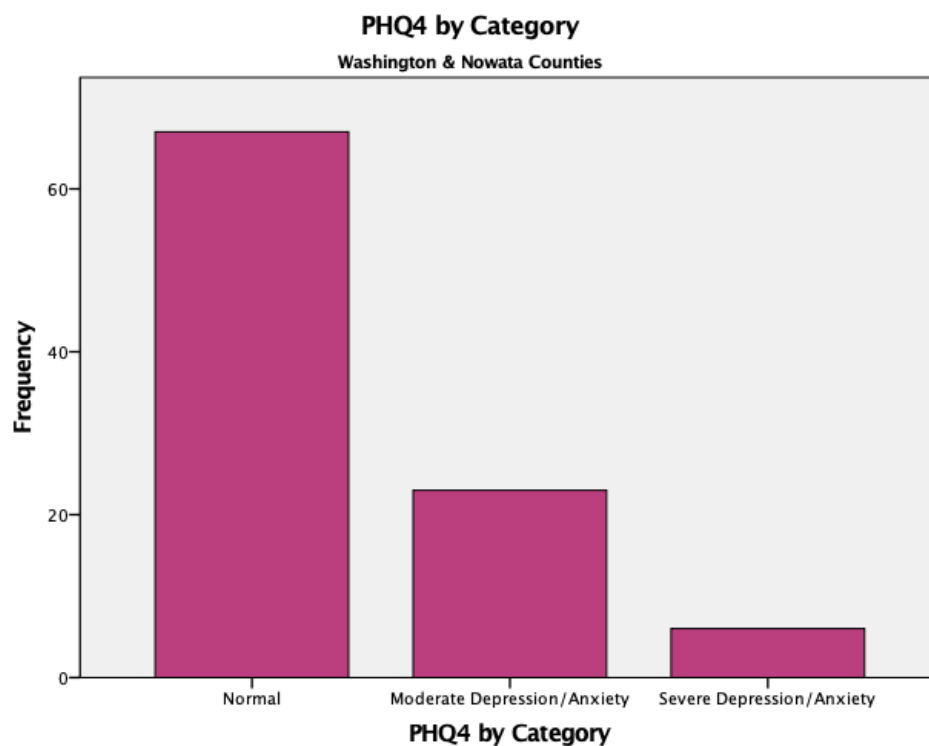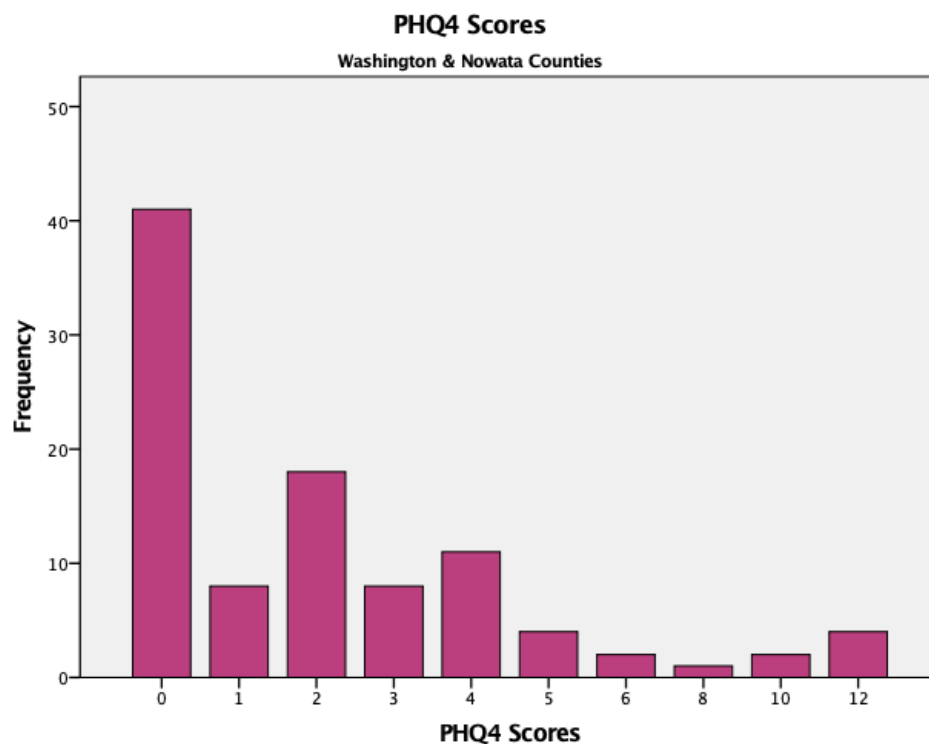
PHQ4 Scores

Washington & Nowata Counties

PHQ4 by Category

Washington & Nowata Counties

Cross tabulations revealed a statistically significant relationship between one's rating of their personal health and anxiety. More specifically, 57% of those without anxiety rated their health as excellent or very good compared to only

8% of those with anxiety. Similarly, only 15% of those without anxiety rated their health as fair or poor compared to 40% of those with anxiety ($t^2 = 9.96$, *df* = 2, *p* = .007).

A regression model considered the relationship between PHQ4 scores and sex, age, race, marital status, personal health, BMI, social isolation, loneliness, stress, pack years and exercise. No relationships were noted for sex, age, race, social isolation, loneliness, pack years or BMI. Those who were married, those (t = 2.67, p = .01) with greater levels of stress (t = 7.55, p <.000) and those that reported fair or poor health (t = 2.67, p = .01) experienced higher PHQ4 scores indicating greater levels of depression/anxiety.

Stress

Stress was measured using the SOS-S screening instrument. Scores range from 10-50 with higher scores indicating greater levels of stress. Scores tended to be relatively low overall with a mean score of 18.69 and a standard deviation of 9.55. Scores were further categorized based on the SOS-S guidelines. Categorization is based on individual personal vulnerability and environmental factors. Those with low risk for stress (low personal vulnerability and low environmental factors) represented 55% (n = 58) of the sample. Those at high risk (high personal vulnerability and high environmental factors) made up 18% (n = 19) of the sample. Those with high personal vulnerability, but low environmental factors were labeled fragile (9%, n = 9). Finally, those with low personal vulnerability, but high environmental factors were labeled challenged (11%, n = 12).
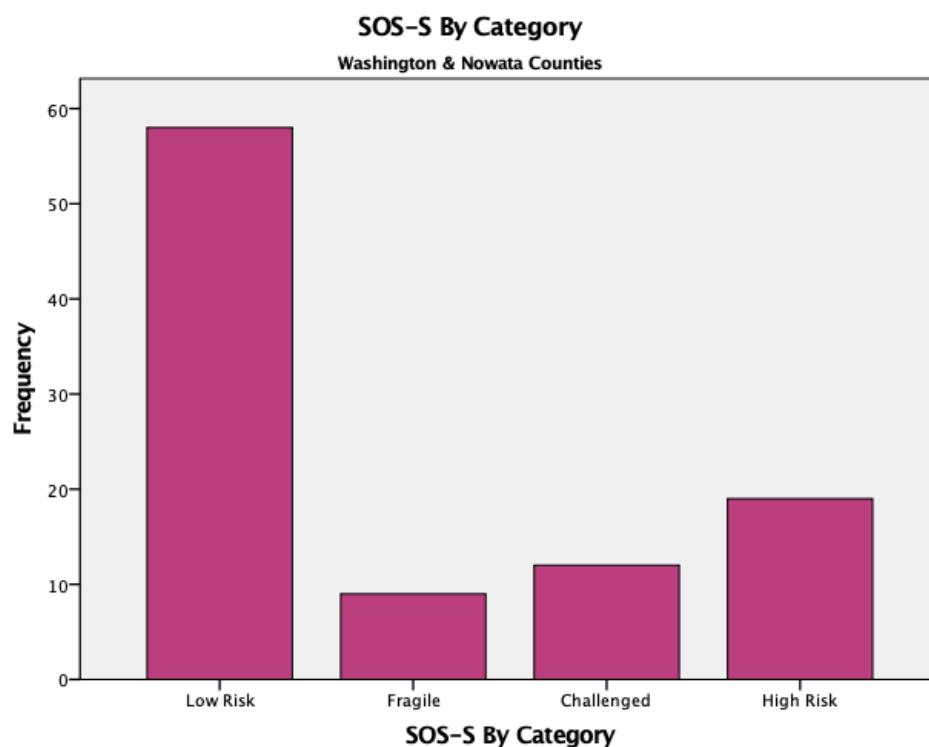
SOS–S By Category
Washington & Nowata Counties

Cross tabulations revealed a statistically significant relationship between one's rating of their personal health and stress. Sixty-four percent of those rated with low risk stress reported excellent or very good health compared to only 6% of those with high risk stress. Similarly, only 9% of those with low risk stress levels reported fair or poor health compared to 33% of those with high risk stress levels ($t^2 = 25.67$, *df* = 6, *p* < .000).

Social isolation

The mean social isolation score was 8.08 with a standard deviation of 3.9. Social isolation scores tended to be relatively low.

Social Isolation Scores

Washington & Nowata Counties

Mean = 8.08
Std. Dev. = 3.90
N = 103
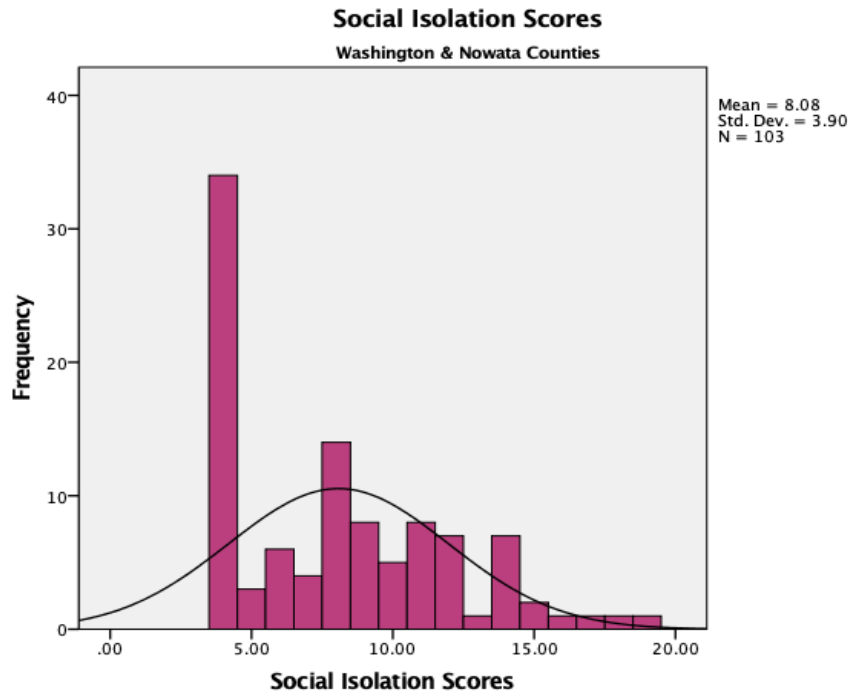
Loneliness

Loneliness scored tended to be relatively low. The mean score was 4.34 with a standard deviation of 1.89.

Loneliness Scores

Washington & Nowata Counties

Mean = 4.34
Std. Dev. = 1.887
N = 103
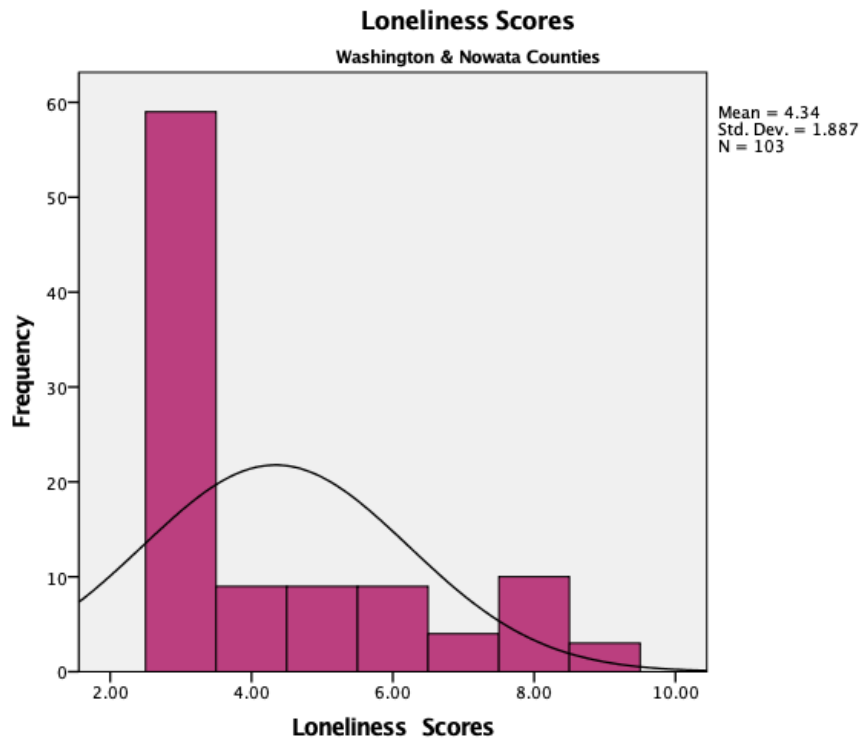
Inferential statistics

The relationship between those reporting fair to poor health and the following variables was considered with logit regression: PHQ4 scores reporting depression/anxiety, social isolation, loneliness, pack years, BMI, community health ratings, marital status, race, consumption of a healthy diet, the presence of poverty and moderate exercise frequency. The covariance matrix could not be computed for this model in Washington and Nowata counties.

The relationship between pack years and the following variables were considered using regression analysis: sex, age, BMI, stress, social cohesion, consumption of a healthy diet, moderate exercise frequency, race, personal health rating, marital status, anxiety/depression, social isolation and poverty. Increased pack years was associated with men ($t = -2.45$, $p = .019$, greater social cohesion ($t = 2.12$, $p = .041$), and those in fair to poor health ($t = 3.83$, $p = .001$).

The relationship between social isolation and the following variables were considered using regression analysis: sex, age, race, health, BMI, stress, marital status, depression/anxiety and social cohesion. Those reporting greater levels of loneliness also experienced higher levels of social isolation ($t = 6.1$, $p < .001$).

The relationship between stress and the following variables were considered using regression analysis: depression/anxiety, number of hours worked each week, sex, age, pack years, race, exercise, sleeping less than seven hours a night, social isolation and the consumption of a healthy diet. Those with more depression/anxiety ($t = 6.98$, $p < .001$), those working more hours ($t = 3.04$, $p = .004$) and those with higher levels of social isolation ($t = 2.63$, $p = .013$) were linked with higher levels of stress.

Prioritization of Community Health Needs

Thirteen members of Ascension St. John's Community Engagement Committee (CEC) came together to participate in an individual assessment exercise and group discussion to help prioritize the most significant community health needs identified through community health needs assessment (CHNA) secondary and primary (community input) data analysis and synthesis.

Participants

Members of the CEC were invited to participate in the prioritization exercise because the committee includes top health system and hospital leaders, who have a high-level scope of clinical and community knowledge, manage services for the underserved and vulnerable, and are familiar with the significance of the CHNA process. The following CEC members participated:

- Ann Paul, DrPH, MPH, chief strategy officer for Ascension St. John
- Lucky Lamons, MCJ, MPA, MHR, foundation president and chief state advocacy officer for Ascension St. John
- Monica Barczak, PhD, director of indigent healthcare funding for Ascension St. John
- Annie Smith, LMSW, MPH, director of community engagement for Ascension St. John
- Stacy Brklacich, JD, senior attorney for Ascension St. John
- Kimberly Will, community engagement coordinator for Ascension St. John
- Jeff Nowlin, FACHE, president and chief operating officer of St. John Medical Center
- Ron Hoffman, vice president of clinical services for St. John Medical Center
- David Phillips, president and chief operating officer of St. John Owasso and St. John Broken Arrow
- Mike Christian, president of St. John Sapulpa
- Mike Moore, president and chief operating officer of Jane Phillips Medical Center and Jane Phillips Nowata Health Center
- Jason McCauley, regional administrator of Jane Phillips Nowata Health Center
- Wilford "Wick" Watson, RN, nursing manager at Jane Phillips Nowata Health Center

Process

On March 25, 2019, the individuals listed above convened on the St. John Medical Center campus to participate in a community health needs prioritization exercise. First, participants reviewed the results of secondary and primary data analysis on the following synthesis charts. Each chart visually displays the most significant health needs that arose from each CHNA activity by hospital and respective county. Also included for consideration were the final social determinants of health scores by county, provided by data consultant Conduent Healthy Communities Corp.

St. John Medical Center
Tulsa County

Secondary data

Community input

DATA FROM TULSA HEALTH DEPARTMENT AND CONDUENT HEALTHY COMMUNITIES CORP.

Chronic disease (esp. cancer)
Immunizations and infectious diseases
Exercise/nutrition/weight
Food access/security
Access to care
Behavioral health
Substance abuse
Aging concerns
Safe environment
Maternal/fetal/infant health
Socioeconomic status
Adverse childhood experiences (ACEs)

Chronic disease (esp. cancer)
Exercise/nutrition/weight
Behavioral health

Access to care
Behavioral health
Substance abuse
Food access/security
Safe environment

Behavioral health

ONLINE SURVEY

Social isolation
Chronic disease (esp. cancer)
Exercise/nutrition/weight
Behavioral health
Self-care/prevention

Behavioral health

HEALTH FORUMS AND FOCUS GROUPS

Access to care
Behavioral health
Substance abuse
Food access/security
Lack of health education
Safe environment

St. John Owasso
Tulsa County

DATA FROM TULSA HEALTH DEPARTMENT AND CONDUENT HEALTHY COMMUNITIES CORP.

Chronic disease (esp. cancer)
Immunizations and infectious diseases
Exercise/nutrition/weight
Food access/security
Access to care
Behavioral health
Substance abuse
Aging concerns
Safe environment
Maternal/fetal/infant health
Socioeconomic status
Adverse childhood experiences (ACEs)

Chronic disease (esp. cancer)
Exercise/nutrition/weight
Behavioral health

Access to care
Exercise/nutrition/weight
Behavioral health
Sexually transmitted infections/diseases

Exercise/nutrition/weight
Behavioral health

ONLINE SURVEY

Social isolation
Chronic disease (esp. cancer)
Exercise/nutrition/weight
Behavioral health
Prevention/health behaviors

Exercise/nutrition/weight
Behavioral health

HEALTH FORUMS AND FOCUS GROUPS

Access to care
Exercise/nutrition/weight
Behavioral health
Sexually transmitted infections/diseases
Lack of health education

St. John Broken Arrow
Tulsa County

DATA FROM TULSA HEALTH DEPARTMENT AND CONDUENT HEALTHY COMMUNITIES CORP.

Chronic disease (esp. cancer)
Immunizations and infectious diseases
Exercise/nutrition/weight
Food access/security
Access to care
Behavioral health
Substance abuse
Aging concerns
Safe environment
Maternal/fetal/infant health
Socioeconomic status
Adverse childhood experiences (ACEs)

ONLINE SURVEY

Chronic disease (esp. cancer)
Exercise/nutrition/weight
Behavioral health

Substance abuse
Behavioral health
Food access/security
Adverse childhood experiences (ACEs)
Safe environment
Access to care

HEALTH FORUMS AND FOCUS GROUPS

Behavioral health

Social isolation
Chronic disease (esp. cancer)
Exercise/nutrition/weight
Behavioral health
Prevention/health behaviors

Behavioral health

Lack of health education
Substance abuse
Behavioral health
Food access/security
Adverse childhood experiences (ACEs)
Safe environment
Built environment
Access to care

St. John Sapulpa
Creek County

DATA FROM TULSA HEALTH DEPARTMENT AND CONDUENT HEALTHY COMMUNITIES CORP.

Chronic disease (esp. cancer)
Access to care
Respiratory diseases
Substance abuse
Exercise/nutrition/weight
Food access/security
Behavioral health
Safe environment
Socioeconomic status
Maternal/fetal/infant health
Adverse childhood experiences (ACEs)
Water and air quality

ONLINE SURVEY

Exercise/nutrition/weight
Behavioral health

Access to care
Food access/security
Adverse childhood experiences (ACEs)
Safe environment
Behavioral health

HEALTH FORUMS AND FOCUS GROUPS

Behavioral health

Social isolation
Exercise/nutrition/weight
Behavioral health
Self-care/prevention

Behavioral health

Access to care
Built environment
Lack of health education
Food access/security
Adverse childhood experiences (ACEs)
Safe environment
Behavioral health

Jane Phillips Medical Center
Washington County

DATA FROM TULSA HEALTH DEPARTMENT AND CONDUENT HEALTHY COMMUNITIES CORP.

Chronic disease (esp. cancer)
Exercise/nutrition/weight
Behavioral health
Food access/security
Safe environment
Adverse childhood experiences (ACEs)
Substance abuse
Access to care

ONLINE SURVEY

Chronic disease (esp. cancer)
Exercise/nutrition/weight
Behavioral health

Access to care
Behavioral health
Adverse childhood experiences (ACEs)

Behavioral health

HEALTH FORUMS AND FOCUS GROUPS

Exercise/nutrition/weight
Chronic disease (esp. cancer)
Immunizations and infectious diseases
Social isolation
Behavioral health
Prevention/health behaviors

Behavioral health

Access to care
Aging concerns
Behavioral health
Adverse childhood experiences (ACEs)

Jane Phillips Nowata Health Center
Nowata County

DATA FROM TULSA HEALTH DEPARTMENT AND CONDUENT HEALTHY COMMUNITIES CORP.

Chronic disease (esp. cancer, heart disease and stroke)
Maternal/fetal/infant health
Access to care
Food access/security
Behavioral health
Exercise/nutrition/weight
Prevention/health behaviors
Safe environment
Respiratory diseases
Water and air quality
Socioeconomic status
Immunizations and infectious diseases
Adverse childhood experiences (ACEs)

ONLINE SURVEY

Chronic disease (esp. cancer)
Exercise/nutrition/weight
Immunizations and infectious diseases
Behavioral health
Prevention/health behaviors

Behavioral health
Prevention/health behaviors
Socioeconomic status
Access to care

Behavioral health
Prevention/health behaviors

HEALTH FORUMS AND FOCUS GROUPS

Exercise/nutrition/weight
Chronic disease (esp. cancer)
Immunizations and infectious diseases
Social isolation
Behavioral health
Prevention/health behaviors

Behavioral health
Prevention/health behaviors

Behavioral health
Aging concerns
Prevention/health behaviors (esp. tobacco use)
Socioeconomic status
Lack of health education
Access to care

From there, participants utilized a prioritization toolkit (Appendix 5) to examine how well each of the preliminary health needs aligned with criteria specific to the health system, hospital, community and level of impact. The participants scored each health need based on five criteria on a scale from 1-3, with 1 meaning it does not meet the criterion, 2 meaning it somewhat meets the criterion, and 3 meaning it meets the criterion. The criteria for prioritization were as follows:

- Alignment with St. John's mission, vision and values (weighted x2)
- Alignment with community priorities (weighted x3)
- Existing programs and resources at the health system as well as any respective hospital
- Opportunities for partnership (weighted x2)
- Solution could impact multiple problems

Completion of this exercise allowed participants to arrive at a total score for each health need that correlated with how well it met the criteria for prioritization. Participants then ranked the health needs according to those scores, with the highest-scoring health need receiving the highest ranking. They were encouraged to use their own judgment in the event of a tied score. Afterward, participants shared answers and engaged in a group discussion on reasoning behind scoring and ranking. This exercise was modeled after a similar exercise previously performed by Conduent.

The rankings were later submitted into an online polling platform, Survey Monkey, that collated the responses, resulting in an aggregate ranking of the health needs (see Figure 14). The top health needs, which would be considered for fiscal year 2020-2022 health system priorities and subsequent implementation strategy planning, were:

- Behavioral health
- Access to care
- Prevention / health behaviors
- Exercise, nutrition and weight
- Chronic disease (esp. cancer)
- Substance abuse

Figure 14: prioritization exercise results

Health needs prioritization

Answered: 12   Skipped: 0
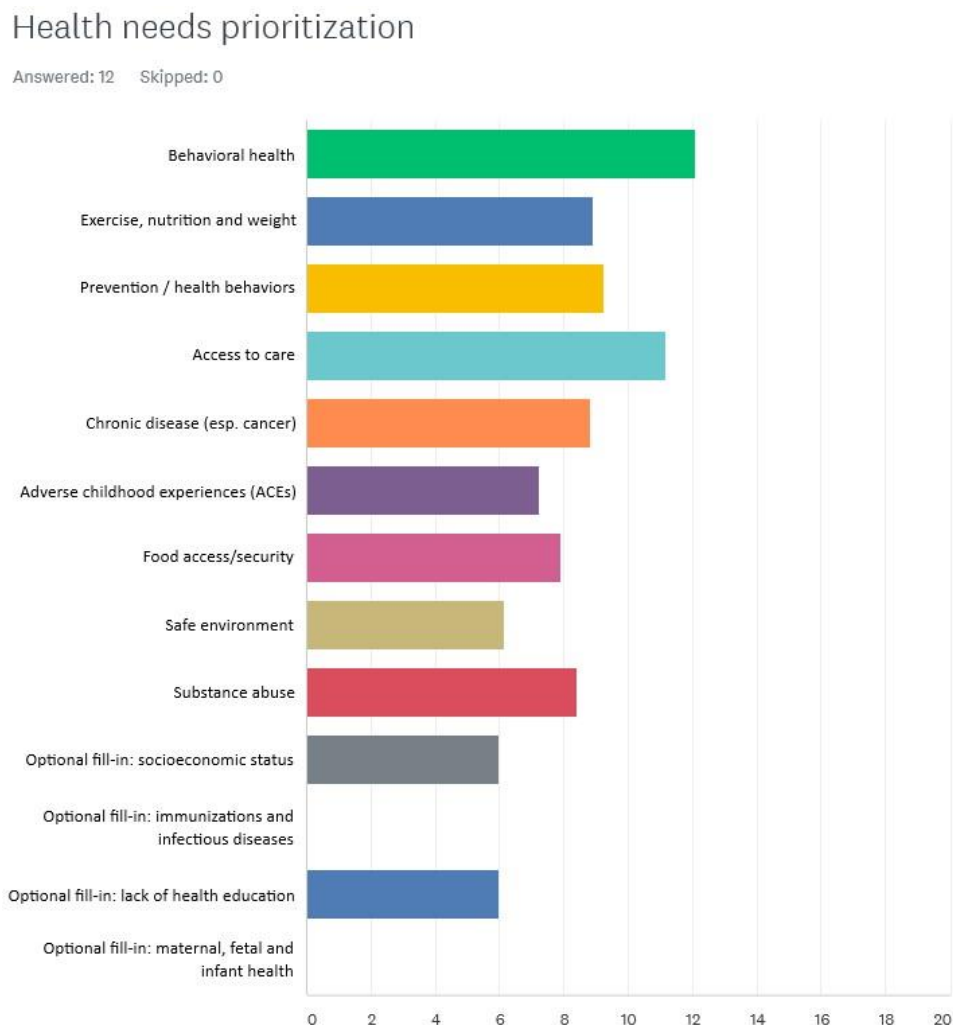
Prioritized needs

A final, deeper analysis of these rankings and the CHNAs as a whole determined that St. John would focus on the following health needs:

- Behavioral health
- Access to care
- Healthy lifestyles
- Adverse childhood experiences (ACEs)

It was decided that substance abuse will be a component of the behavioral health category. The areas of prevention / health behaviors and exercise, nutrition and weight were combined to become "healthy lifestyles," with chronic disease as a component of this category. Finally, adverse childhood experiences (ACEs) was moved into the fourth priority spot.

In addition, social determinants of health was deemed an underlying current of all priorities. It was discussed at length that the remaining health topics, not chosen as priorities, can be interrelated to the four chosen priorities. It

was also important that the four chosen priorities correlated strongly with the St. John mission to serve all people, with special attention to those who are poor and vulnerable, as well as the organization's internal Catholic Identity Matrix, which in part evaluates work related to "solidarity with those who live in poverty."

Preceding CHNA Efforts and Evaluation of Impact

The community health needs assessment (CHNA) is a cyclical process based on a three-year cycle (see Figure 15). The periodic process of updating assessments and implementation strategies reflects changes in the health of the communities we serve over time. In addition, this process helps to ensure ongoing improvement efforts are based on the needs of these communities. An important piece of the cycle is revisiting the progress made on priority health needs set forth in the preceding CHNA. By reviewing the actions taken to address a priority health issue and evaluating the impact those actions have made in the community, it is possible to better target our resources and efforts during the next round of the CHNA cycle.

Figure 15: CHNA three-year cycle
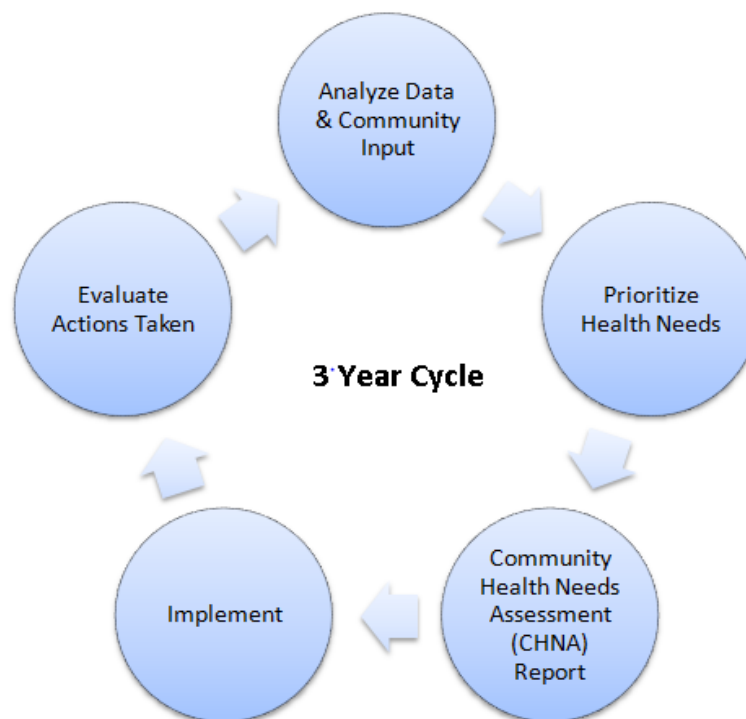
Source: Adapted Courtesy of Xerox Community Health Solutions. (2016).
Healthy Communities Institute: 3-Year CHNA Cycle. Retrieved from:
http://ascension.thehcn.net.

Priority health needs in preceding CHNA

As aforementioned, Jane Phillips Medical Center (JPMC) conducted a CHNA of Washington County during the 2016 fiscal year. The hospital also developed an implementation strategy in response to the priority needs identified in that CHNA to be addressed during FY 2017-2019. Over the past three years, Ascension St. John and JPMC have worked to address the priority needs based on actions outlined in the FY 2017-2019 implementation strategy. St. John's priority health needs for FY 2017-2019 were as follows:

- Access to care

- Behavioral health
- Wellness and chronic disease prevention
- Health literacy

Click here then go to the "Oklahoma" dropdown for a detailed review of JPMC's FY 2017-2019 implementation strategy.

Evaluation of impact

An evaluation of impact of actions taken to address priority health needs identified in the hospital's preceding CHNA and implementation strategy was conducted as part of the FY 2019 assessment cycle. All actions taken during FY 2017-2019 to address FY 2016 priority health needs were evaluated. A detailed table describing the strategies or action steps and indicators of improvement for each of the priority health needs can be found in Appendix 6.

Community Feedback

Jane Phillips Medical Center's community health needs assessment (CHNA) and implementation strategy are made available to the public via the Ascension website at https://healthcare.ascension.org/CHNA. To collect community feedback on the preceding CHNA and implementation strategy, a contact form was embedded on the CHNA Web page. No comments were received.

Conclusion

This report describes the findings of a comprehensive health needs assessment for the residents of Washington County, Okla. The prioritization of the identified significant health needs will guide the community health improvement efforts of Jane Phillips Medical Center and Ascension St. John as a whole. From this process, St. John will outline how it plans to address the top four prioritized health needs in the fiscal year 2020-2022 implementation strategy.

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Appendix 1: Executive Summary

Jane Phillips Medical Center (JPMC), part of Ascension St. John, is pleased to present its fiscal year 2019 community health needs assessment (CHNA). As federally required by the Affordable Care Act, this report provides an overview of the methods and process used to identify and prioritize significant health needs in the community served by JPMC. For the purposes of this assessment, JPMC's primary service area, or community, is defined as Washington County, Okla. JPMC consulted with Conduent Healthy Communities Corp., the Tulsa Health Department and The University of Oklahoma Anne and Henry Zarrow School of Social Work to conduct the CHNA.

The goal of this report is to offer a meaningful understanding of the most pressing health needs across the Washington County community, as well as to guide planning efforts to address those needs. Special attention has been given to the needs of vulnerable populations, unmet health needs or gaps in services, and input from the community.

Findings from this report will be used to identify, develop and target health system, hospital and community initiatives and programming to better serve the health and wellness needs of our community.

Community Served
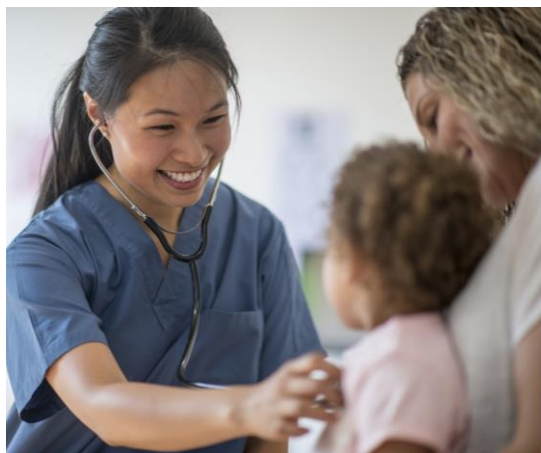
The community served by JPMC is defined as the geographical boundary of Washington County, Okla. Washington County, located in northeastern Oklahoma, is the smallest county by square miles in the state. Counties adjacent to Washington County include Montgomery and Chautauqua counties in Kansas and Nowata, Rogers, Tulsa and Osage counties in Oklahoma. The cities and towns officially recognized in Washington County are Bartlesville, Copan, Dewey, Ochelata, Ramona and Vera. Before statehood, the area was part of lands owned by the Osage Nation and later the Cherokee Nation in Indian Territory. Several oil companies set up headquarters in the county over the years, most notably Phillips Petroleum Co. (now ConocoPhillips) in Bartlesville.

JPMC is based out of the city of Bartlesville, and the bulk of the community's population is concentrated in and around the city. Accordingly, Bartlesville serves as the primary area of focus within the Washington County community. JPMC's community health improvement efforts that result from this CHNA will primarily center on Bartlesville. However, an effort was made to focus on the health needs and assets of Washington County as a whole, and our efforts will also extend to other cities and towns within Washington County based on lessons learned through our work with the Bartlesville community.

Demographics

Washington County has a population of approximately 51,892. Older age groups have captured a greater relative share of the population over the past several decades, while the share represented by children has declined. The racial makeup of Washington County is somewhat homogeneous, with 78.2% of the population identifying as White. American Indians/Alaskan Natives are the second highest of all races in Washington County at 10% of the population. Washington County has a small population of those that identify as Hispanic living in the community (5.7%). Regarding economic stability, families living in the Bartlesville ZIP code, 74003, have the highest rates of poverty. Overall, Washington County has lower rates of poverty than other counties in Ascension St. John's service area and in Oklahoma.

Methods for Identifying Community Health Needs

Secondary data

Ascension St. John consulted with the Tulsa Health Department to collect and analyze the secondary data used in the assessment's community overview. A review of publicly available secondary data was conducted. Some data comparisons were made at the ZIP code, region, county, state and national levels. Other data considerations included trends over time, county and state level rankings, benchmark comparisons at the state and national levels, disparities by age, gender, race/ethnicity, income level and educational attainment.

St. John also consulted with Conduent Healthy Communities Corp. for support with secondary data analysis. The analysis included a comprehensive set of more than 100 community health and quality-of-life indicators covering more than 20 topic areas. Indicator values for Washington County were compared with other counties in Oklahoma and nationwide to compare social, economic and health topics. Other considerations for areas of health need included trends over time; Healthy People 2020 targets; Oklahoma targets; and disparities by age, gender and race/ethnicity. The value for each of these indicators was compared with other communities, nationally or locally set targets and previous time periods. A data scoring tool was used to systematically summarize multiple comparisons of the data to rank indicators based on highest need.

In addition, St. John consulted with Conduent Healthy Communities Corp. for support with identifying geographic areas of greatest need in Washington County. To do so, Conduent developed the SocioNeeds Index® to easily compare multiple socioeconomic factors across geographies. This tool incorporates estimates for six different social and economic determinants of health — income, poverty, unemployment, occupation, educational attainment and linguistic barriers — that are associated with poor health outcomes, including preventable hospitalizations and premature death.

Primary data (community input)

Community input is a principal focus of this assessment and is a form of primary data. St. John employed several methods of community input to yield the desired results, including the following:

- Six **community health forums** with around 120 community leaders and 13 health system leaders (one forum with 11 community leaders and three health system leaders in Washington County)
- Twenty-two **focus groups** with 233 community members (two focus groups with 19 community members in Washington County)
- **Online survey** of 801 community members (89 in Washington County)
- Input from the **public health workforce** and **local coalitions/partnerships**
- Input from the health system's **Community Engagement Committee**

The focus groups and online survey were conducted in collaboration with The University of Oklahoma Anne and Henry Zarrow School of Social Work and Tulsa Health Department.

Community input is best obtained from a diverse set of community stakeholders such as community members, community organizations and the public health workforce. A variety of sources ensures that as many different perspectives as possible are represented while satisfying the broad interests of the community. Sources of community input for this assessment were as follows:

- Community members who participated in the online survey and focus groups
- Community leaders and representatives

- Public health workforce and local coalitions/partnerships
- Members and representatives of medically underserved, low-income, minority, at-risk and otherwise vulnerable populations
- Health system and hospital leadership

Community stakeholders who provided input represented a variety of community sectors, including healthcare, education and academia, nonprofit, private business, community development, faith-based communities and organizations, government, safety-net services, economic and workforce development, behavioral health, law enforcement and first responders, public health and other interest groups working with at-risk and vulnerable populations. This assessment especially focused on community input from those with special knowledge or expertise in public health, as well as members and representatives of medically underserved, low-income, minority, at-risk or otherwise vulnerable populations.

How Are We Doing?

County health rankings

Published online at countyhealthrankings.org, the Rankings help counties understand what influences how healthy residents are and how long they will live. The Rankings are unique in their ability to measure the current overall health of nearly every county in all 50 states. They also look at a variety of measures that affect the future health of communities, such as high school graduation rates, access to healthy foods, rates of smoking, obesity, and teen births. The data indicators included in our assessment follow the county health rankings model. Below is a summary; see the JPMC CHNA for a full listing of data indicators.

Health outcomes ranking

This indicator demonstrates overall rankings in health outcomes for counties throughout the state. The healthiest county in the state is ranked #1. The ranks are based on two types of measures: how long people live (length of life) and how healthy people feel while alive (quality of life). The distribution of health outcomes is based on an equal weighting of length and quality of life. This information is based on the County Health Rankings & Roadmaps courtesy of the University of Wisconsin Population Health Institute.

The overall rankings in health outcomes represent how healthy counties are within the state. In 2019, Washington County ranked 11th out of 77 counties in Oklahoma in health outcomes. This was an improvement from 18th out of 77 in 2018, 16th out of 77 in 2017, and 17th out of 77 in 2016.

Health factors ranking

This indicator demonstrates the overall rankings in health factors for counties throughout the state. The ranks are based on weighted scores four types of measures: health behaviors, clinical care, social and economic, and physical environment factors. The healthiest county in the state is ranked #1. This information is based on the County Health Rankings & Roadmaps courtesy of the University of Wisconsin Population Health Institute.

The overall rankings in health factors represent what influences the health of a county. They are an estimate of the future health of counties as compared to other counties within a state. In 2019, Washington County ranked 26th out of 77 counties in Oklahoma in health factors. This ranking worsened, as it was 18th out of 77 in 2018, 19th out of 77 in 2017, and eighth out of 77 in 2016.

Summary of Findings

The CHNA findings are drawn from an analysis of an extensive set of secondary data and in-depth primary data from community leaders, non-health professionals, and organizations that serve the community at large, vulnerable

populations, and/or populations with unmet health needs. The results of secondary and primary data analysis were visually displayed in synthesis charts. Below is the JPMC chart, with the most significant health needs that arose from each CHNA activity for JPMC and Washington County.

Jane Phillips Medical Center
Washington County
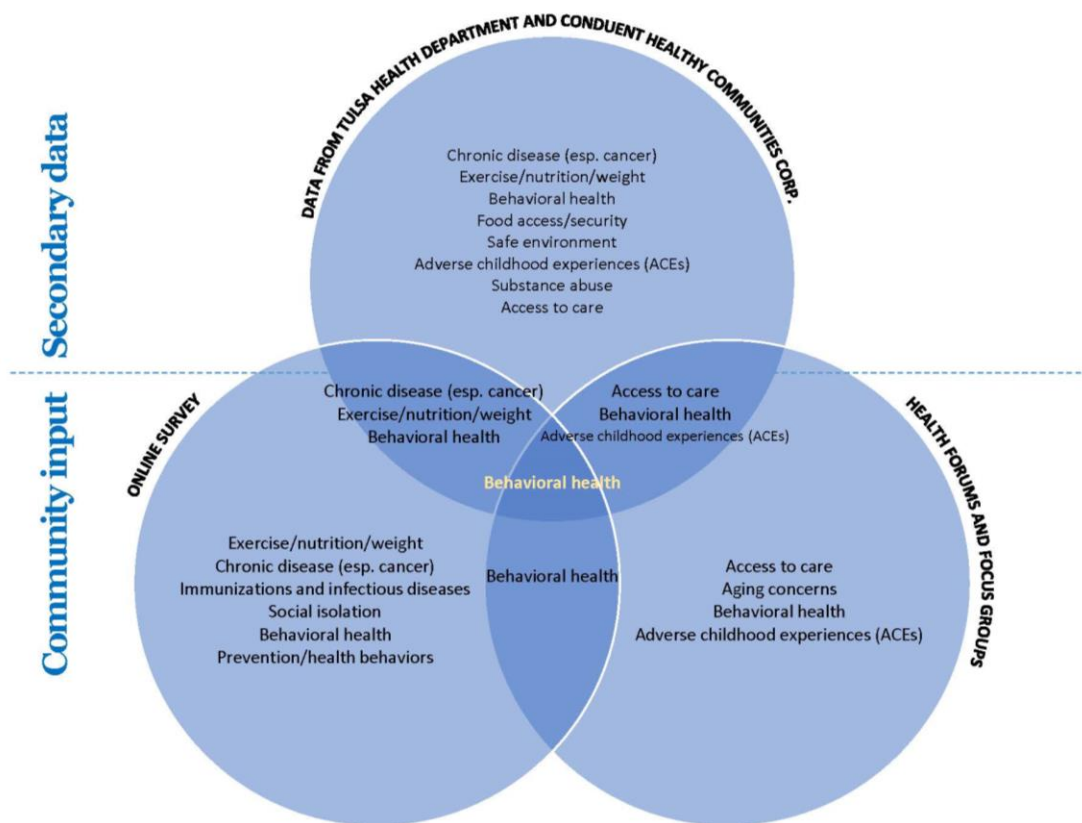
Through these syntheses, the following top health needs were determined:

- Behavioral health
- Exercise/nutrition/weight
- Prevention/health behaviors (e.g., smoking, missing doctor's visits, etc.)
- Access to care
- Chronic disease (esp. cancer)
- Adverse childhood experiences (ACEs)
- Food access/security
- Safe environment
- Substance abuse
- Socioeconomic status
- Immunizations and infectious diseases
- Lack of health education
- Maternal/fetal/infant health

The identification of disparities along race/ethnicity, gender, age, and geographic lines is important for informing and focusing strategies that will address the prioritized health needs. Primary and secondary data revealed community health disparities along racial lines, with American Indian/Alaskan Native populations more negatively impacted in Washington County. In many ways, women and children face a variety of challenges in Washington County. Many families struggle to be self-sufficient, even while holding down jobs. Medically underserved, low-income, minority, at-risk or otherwise vulnerable populations such as LGBTQ+ and individuals experiencing homelessness face discrimination and a myriad of barriers to healthy lifestyles and accessing healthcare and other resources, negatively impacting health outcomes. Further, the data shows that older adults face increased health issues, while populations in certain geographic areas, were identified as having higher socioeconomic need and potentially poorer health outcomes. The Bartlesville ZIP code 74003 has the highest socioeconomic need identified for the county. Women and minority populations experience the highest socioeconomic need in the county.

Prioritized Areas

On March 25, 2019, 13 members of Ascension St. John's Community Engagement Committee (CEC) came together to participate in an individual assessment exercise and group discussion to help prioritize the most significant community health needs identified through community health needs assessment (CHNA) secondary and primary (community input) data analysis and synthesis.

While considering several criteria for prioritization, the following four health needs were identified as priorities to address:

Behavioral health

Access to care

Healthy lifestyles

Adverse childhood experiences (ACEs)

It was decided that substance abuse will be a component of the behavioral health category. The areas of prevention / health behaviors and exercise, nutrition and weight were combined to become "healthy lifestyles," with chronic disease as a component of this category.

In addition, social determinants of health was deemed an underlying current of all priorities. It was discussed at length that the remaining health topics, not chosen as priorities, can be interrelated to the four chosen priorities. It was also important that the four chosen priorities correlated strongly with the St. John mission to serve all people, with special attention to those who are poor and vulnerable, as well as the organization's internal Catholic Identity Matrix, which in part evaluates work related to "solidarity with those who live in poverty."

Conclusion

This report describes the findings of a comprehensive health needs assessment for the residents of Washington County, Okla. The prioritization of the identified significant health needs will guide the community health improvement efforts of Jane Phillips Medical Center and Ascension St. John as a whole. From this process, St. John will outline how it plans to address the top four prioritized health needs in the fiscal year 2020-2022 implementation strategy.

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Appendix 2: Secondary Data Analysis and Scoring Sources

Key	Source
1	American Community Survey
2	Annie E. Casey Foundation
3	Centers for Disease Control and Prevention
4	Centers for Medicare & Medicaid Services
5	County Health Rankings
6	Feeding America
7	Institute for Health Metrics and Evaluation
8	National Cancer Institute
9	National Center for Education Statistics
10	Oklahoma State Bureau of Investigation
11	Oklahoma State Department of Health
12	Small Area Health Insurance Estimates
13	The Dartmouth Atlas of Health Care
14	U.S. Bureau of Labor Statistics
15	U.S. Department of Agriculture - Food Environment Atlas
16	U.S. Environmental Protection Agency

Appendix 3: Washington County Secondary Data Scores

Source numbers correspond to the list of secondary data scores in Appendix 2.

Indicator scores by topic area (Washington County, Okla.)

SCORE	ACCESS TO HEALTH SERVICES	UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
1.78	Primary Care Provider Rate	providers/ 100,000 population	51.9		63	75.5	2015		5
1.64	Adults with Health Insurance: 18-64	percent	81.5	100	80.5		2016		12
1.47	Persons with Health Insurance	percent	84.8	100	84		2016		12
1.39	Dentist Rate	dentists/ 100,000 population	53.8		58.7	67.4	2016		5
1.28	Mental Health Provider Rate	providers/ 100,000 population	278.4		378.8	214.3	2017		5
1.25	Clinical Care Ranking	ranking	9				2018		5
1.14	Children with Health Insurance	percent	92.5	100	92.3		2016		12
0.83	Non-Physician Primary Care Provider Rate	providers/ 100,000 population	80.6		76.6	81.2	2017		5
0.83	Preventable Hospital Stays: Medicare Population	discharges/ 1,000 Medicare enrollees	34.6		59.9	49.4	2015		13

SCORE	CANCER	UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
2.56	Age-Adjusted Death Rate due to Breast Cancer	deaths/ 100,000 females	27.6	20.7	23	20.9	2011-2015		8
2.17	Breast Cancer Incidence Rate	cases/ 100,000 females	130.5		118.4	124.7	2011-2015		8
1.89	Age-Adjusted Death Rate due to Lung Cancer	deaths/ 100,000 population	57.4	45.5	55.7	43.4	2011-2015		8
1.72	Age-Adjusted Death Rate due to Cancer	deaths/ 100,000 population	184.7	161.4	186	163.5	2011-2015		8
1.67	Lung and Bronchus Cancer Incidence Rate	cases/ 100,000 population	73.6		70.5	60.2	2011-2015		8
1.44	Mammography Screening: Medicare Population	percent	59.6		55.8	63.2	2015		13

SCORE		UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
1.39	Age-Adjusted Death Rate due to Colorectal Cancer	deaths/ 100,000 population	15.9	14.5	17.2	14.5	2011-2015		8
1.22	Oral Cavity and Pharynx Cancer Incidence Rate	cases/ 100,000 population	12.3		12.8	11.6	2011-2015		8
1.06	All Cancer Incidence Rate	cases/ 100,000 population	433.2		442.6	441.2	2011-2015		8
1.06	Cancer: Medicare Population	percent	6.7		6.9	7.8	2015		4
0.58	Age-Adjusted Death Rate due to Prostate Cancer	deaths/ 100,000 males	17.8	21.8	20.5	19.5	2011-2015		8
0.28	Colorectal Cancer Incidence Rate	cases/ 100,000 population	36.9	39.9	42	39.2	2011-2015		8
0.17	Prostate Cancer Incidence Rate	cases/ 100,000 males	69		101.1	109	2011-2015		8

SCORE	CHILDREN'S HEALTH	UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
1.83	Children with Low Access to a Grocery Store	percent	8.1				2015		15
1.72	Food Insecure Children Likely Ineligible for Assistance	percent	33		34	20	2016		6
1.33	Child Food Insecurity Rate	percent	22.2		22.7	17.9	2016		6
1.14	Children with Health Insurance	percent	92.5	100	92.3		2016		12

SCORE	COUNTY HEALTH RANKINGS	UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
1.42	Health Behaviors Ranking	ranking	23				2018		5
1.42	Physical Environment Ranking	ranking	35				2018		5
1.42	Social and Economic Factors Ranking	ranking	30				2018		5
1.25	Clinical Care Ranking	ranking	9				2018		5
1.25	Morbidity Ranking	ranking	19				2018		5
1.25	Mortality Ranking	ranking	20				2018		5

SCORE	DIABETES	UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
1.78	Diabetic Monitoring: Medicare Population	percent	80.5		79.5	85.7	2015		13

SCORE		UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD		Source
1.50	Age-Adjusted Death Rate due to Diabetes	deaths/ 100,000 population	23.7		30.7	*21.1*	2014-2016		3
1.33	Diabetes: Medicare Population	percent	25.4		26.9	*26.5*	2015		4

SCORE	**ECONOMY**	UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	*U.S.*	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
2.11	Income Inequality		0.5		0.5	0.5	2012-2016		1
1.94	SNAP Certified Stores	stores/ 1,000 population	0.7				2016		15
1.83	Low-Income and Low Access to a Grocery Store	percent	13.4				2015		15
1.72	Food Insecure Children Likely Ineligible for Assistance	percent	33		34	*20*	2016		6
1.56	Food Insecurity Rate	percent	14.8		16.2	*12.9*	2016		6
1.50	Unemployed Workers in Civilian Labor Force	percent	3.9		3.5	*3.9*	August 2018		14
1.50	Young Children Living Below Poverty Level	percent	26.6		26.4	*23.6*	2012-2016		1
1.42	Social and Economic Factors Ranking	ranking	30				2018		5
1.33	Child Food Insecurity Rate	percent	22.2		22.7	17.9	2016		6
1.28	People Living 200% Above Poverty Level	percent	64.4		62.1	*66.4*	2012-2016		1
1.22	Children Living Below Poverty Level	percent	21.4		23.1	*21.2*	2012-2016	Black or African American	1
1.17	Homeownership	percent	61.7		56.5	*55.9*	2012-2016		1
1.06	Renters Spending 30% or More of Household Income on Rent	percent	39.3		45.3	*47.3*	2012-2016		1
1.00	Median Household Income	dollars	50038		48038	*55322*	2012-2016	Black or African American, Hispanic or Latino, Other	1
0.89	People Living Below Poverty Level	percent	14.4		16.5	15.1	2012-2016	Black or African American, Hispanic or Latino	1

SCORE		UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
0.78	People 65+ Living Below Poverty Level	percent	7.9		8.9	9.3	2012-2016		1
0.72	Students Eligible for the Free Lunch Program	percent	39.8		53.2	42.6	2015-2016		9
0.67	Families Living Below Poverty Level	percent	10.8		12.2	11	2012-2016	Black or African American, Hispanic or Latino	1
0.67	Severe Housing Problems	percent	11.1		14.5	18.8	2010-2014		5
0.56	Households with Cash Public Assistance Income	percent	1.9		3.1	2.7	2012-2016		1
0.50	Per Capita Income	dollars	28528		25628	29829	2012-2016	American Indian or Alaska Native, Black or African American, Hispanic or Latino, Other, Two or More Races	1

SCORE	EDUCATION	UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
2.28	Student-to-Teacher Ratio	students/ teacher	18		16.5	17.7	2015-2016		9
1.50	High School Drop Outs	percent	7.7		7.8		2015		2
1.06	People 25+ with a Bachelor's Degree or Higher	percent	26.3		24.5	30.3	2012-2016	American Indian or Alaska Native, Black or African American, Hispanic or Latino, Other	1
0.50	People 25+ with a High School Degree or Higher	percent	90.8		87.3	87	2012-2016	Hispanic or Latino, Other	1

SCORE	ENVIRONMENT	UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source

SCORE		UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
2.11	Fast Food Restaurant Density	restaurants/ 1,000 population	0.8				2014		15
2.00	Access to Exercise Opportunities	percent	64.7		73.8	83.1	2018		5
1.94	Grocery Store Density	stores/ 1,000 population	0.1				2014		15
1.94	SNAP Certified Stores	stores/ 1,000 population	0.7				2016		15
1.83	Children with Low Access to a Grocery Store	percent	8.1				2015		15
1.83	Low-Income and Low Access to a Grocery Store	percent	13.4				2015		15
1.83	People 65+ with Low Access to a Grocery Store	percent	5				2015		15
1.61	Recognized Carcinogens Released into Air	pounds	10				2017		16
1.56	Food Environment Index		6.9		5.9	7.7	2018		5
1.56	Houses Built Prior to 1950	percent	16.5		13.8	18.2	2012-2016		1
1.50	Farmers Market Density	markets/ 1,000 population	0				2016		15
1.42	Physical Environment Ranking	ranking	35				2018		5
1.39	PBT Released	pounds	0.5				2014		16
1.17	Recreation and Fitness Facilities	facilities/ 1,000 population	0.1				2014		15
1.00	Households with No Car and Low Access to a Grocery Store	percent	1.4				2015		15
0.67	Severe Housing Problems	percent	11.1		14.5	18.8	2010-2014		5

SCORE	ENVIRONMENTAL & OCCUPATIONAL HEALTH	UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
1.42	Physical Environment Ranking	ranking	35				2018		5
1.11	Adults with Current Asthma	percent	8.3		9.6		2017		11
0.94	Asthma: Medicare Population	percent	7.5		9.4	8.2	2015		4

SCORE	EXERCISE, NUTRITION, & WEIGHT	UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source

SCORE		UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
2.11	Fast Food Restaurant Density	restaurants/ 1,000 population	0.8				2014		15
2.00	Access to Exercise Opportunities	percent	64.7		73.8	83.1	2018		5
1.94	Grocery Store Density	stores/ 1,000 population	0.1				2014		15
1.94	SNAP Certified Stores	stores/ 1,000 population	0.7				2016		15
1.83	Children with Low Access to a Grocery Store	percent	8.1				2015		15
1.83	Low-Income and Low Access to a Grocery Store	percent	13.4				2015		15
1.83	People 65+ with Low Access to a Grocery Store	percent	5				2015		15
1.78	Adults who are Overweight or Obese	percent	40.1		36.5		2017		11
1.72	Food Insecure Children Likely Ineligible for Assistance	percent	33		34	20	2016		6
1.56	Food Environment Index		6.9		5.9	7.7	2018		5
1.56	Food Insecurity Rate	percent	14.8		16.2	12.9	2016		6
1.50	Farmers Market Density	markets/ 1,000 population	0				2016		15
1.42	Health Behaviors Ranking	ranking	23				2018		5
1.39	Workers who Walk to Work	percent	2.5	3.1	1.8	2.8	2012-2016		1
1.33	Child Food Insecurity Rate	percent	22.2		22.7	17.9	2016		6
1.17	Recreation and Fitness Facilities	facilities/ 1,000 population	0.1				2014		15
1.00	Households with No Car and Low Access to a Grocery Store	percent	1.4				2015		15

SCORE	HEART DISEASE & STROKE	UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
2.50	Atrial Fibrillation: Medicare Population	percent	8.5		7.3	8.1	2015		4
2.28	Age-Adjusted Death Rate due to Cerebrovascular Disease (Stroke)	deaths/ 100,000 population	44.8	34.8	42.6	37.2	2014-2016		3
2.06	Hyperlipidemia: Medicare Population	percent	44.9		40.3	44.6	2015		4

SCORE		UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
1.72	Hypertension: Medicare Population	percent	59.7		57.6	*55*	2015		4
1.39	Age-Adjusted Death Rate due to Coronary Heart Disease	deaths/ 100,000 population	121.5	103.4	139.7	*96.8*	2014-2016		3
0.78	Stroke: Medicare Population	percent	3.3		3.8	*4*	2015		4
0.72	Heart Failure: Medicare Population	percent	12.4		15.9	*13.5*	2015		4
0.50	Ischemic Heart Disease: Medicare Population	percent	23.9		30.6	*26.5*	2015		4

SCORE	IMMUNIZATIONS & INFECTIOUS DISEASES	UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
2.19	Age-Adjusted Death Rate due to Influenza and Pneumonia	deaths/ 100,000 population	17.9		15.2	*14.6*	2014-2016		3
1.36	Gonorrhea Incidence Rate	cases/ 100,000 population	119.2		167.3	*123.9*	2015		11
0.86	Chlamydia Incidence Rate	cases/ 100,000 population	274.9		537.5	*478.8*	2015		11

SCORE	MATERNAL, FETAL & INFANT HEALTH	UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
1.89	Mothers who Smoked During Pregnancy	percent	15.7	1.4	11.2		2017		11
1.78	Babies with Very Low Birth Weight	percent	1.6	1.4	1.5		2017		11
1.33	Mothers who Received Early Prenatal Care	percent	74.2	77.9	69.5		2017		11
1.22	Teen Birth Rate: 15-19	live births/ 1,000 females aged 15-19	27.7		29.6		2017		11
0.97	Babies with Low Birth Weight	percent	6.7	7.8			2017		11
0.97	Infant Mortality Rate	deaths/ 1,000 live births	5.2	6			2015-2017		11

SCORE	MEN'S HEALTH	UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
1.28	Life Expectancy for Males	years	75.7		73.7	*76.7*	2014		7
0.58	Age-Adjusted Death Rate due to Prostate Cancer	deaths/ 100,000 males	17.8	21.8	20.5	*19.5*	2011-2015		8
0.17	Prostate Cancer Incidence Rate	cases/ 100,000 males	69		101.1	*109*	2011-2015		8

SCORE	MENTAL HEALTH & MENTAL DISORDERS	UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
2.25	Age-Adjusted Death Rate due to Suicide	deaths/ 100,000 population	20.7	10.2	20.1	13.2	2014-2016		3
2.17	Poor Mental Health: Average Number of Days	days	4.6		4.5	3.8	2016		5
2.11	Alzheimer's Disease or Dementia: Medicare Population	percent	10.4		9.8	9.9	2015		4
1.94	Depression: Medicare Population	percent	18.5		19.3	16.7	2015		4
1.67	Age-Adjusted Death Rate due to Alzheimer's Disease	deaths/ 100,000 population	30.4		33.3	28.4	2014-2016		3
1.50	Frequent Mental Distress	percent	13.6		14.7	15	2016		5
1.28	Mental Health Provider Rate	providers/ 100,000 population	278.4		378.8	214.3	2017		5

SCORE	OLDER ADULTS & AGING	UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
2.50	Atrial Fibrillation: Medicare Population	percent	8.5		7.3	8.1	2015		4
2.39	People 65+ Living Alone	percent	30.6		27.5	26.4	2012-2016		1
2.11	Alzheimer's Disease or Dementia: Medicare Population	percent	10.4		9.8	9.9	2015		4
2.06	Hyperlipidemia: Medicare Population	percent	44.9		40.3	44.6	2015		4
2.06	Rheumatoid Arthritis or Osteoarthritis: Medicare Population	percent	34		33.6	30	2015		4
1.94	Depression: Medicare Population	percent	18.5		19.3	16.7	2015		4
1.86	Age-Adjusted Death Rate due to Falls	deaths/ 100,000 population	10.4	7.2	12.1	8.3	2011-2013		3
1.83	People 65+ with Low Access to a Grocery Store	percent	5				2015		15
1.78	Diabetic Monitoring: Medicare Population	percent	80.5		79.5	85.7	2015		13
1.72	Hypertension: Medicare Population	percent	59.7		57.6	55	2015		4
1.67	Age-Adjusted Death Rate due to Alzheimer's Disease	deaths/ 100,000 population	30.4		33.3	28.4	2014-2016		3

SCORE		UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
1.44	Mammography Screening: Medicare Population	percent	59.6		55.8	*63.2*	2015		13
1.33	Diabetes: Medicare Population	percent	25.4		26.9	*26.5*	2015		4
1.06	Cancer: Medicare Population	percent	6.7		6.9	7.8	2015		4
1.00	Osteoporosis: Medicare Population	percent	5.1		5.2	*6*	2015		4
0.94	Asthma: Medicare Population	percent	7.5		9.4	*8.2*	2015		4
0.83	Chronic Kidney Disease: Medicare Population	percent	14.8		17.8	*18.1*	2015		4
0.78	People 65+ Living Below Poverty Level	percent	7.9		8.9	*9.3*	2012-2016		1
0.78	Stroke: Medicare Population	percent	3.3		3.8	*4*	2015		4
0.72	Heart Failure: Medicare Population	percent	12.4		15.9	*13.5*	2015		4
0.50	Ischemic Heart Disease: Medicare Population	percent	23.9		30.6	*26.5*	2015		4
0.39	COPD: Medicare Population	percent	8.8		14	*11.2*	2015		4

SCORE	OTHER CHRONIC DISEASES	UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	*U.S.*	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
2.06	Rheumatoid Arthritis or Osteoarthritis: Medicare Population	percent	34		33.6	30	2015		4
1.69	Age-Adjusted Death Rate due to Kidney Disease	deaths/ 100,000 population	14.6		13.7	*13.3*	2014-2016		3
1.00	Osteoporosis: Medicare Population	percent	5.1		5.2	*6*	2015		4
0.83	Chronic Kidney Disease: Medicare Population	percent	14.8		17.8	*18.1*	2015		4

SCORE	PREVENTION & SAFETY	UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
1.86	Age-Adjusted Death Rate due to Falls	deaths/ 100,000 population	10.4	7.2	12.1	*8.3*	2011-2013		3
0.83	Age-Adjusted Death Rate due to Unintentional Injuries	deaths/ 100,000 population	44.3	36.4	60.6	*43.2*	2014-2016		3
0.67	Severe Housing Problems	percent	11.1		14.5	*18.8*	2010-2014		5
0.56	Death Rate due to Drug Poisoning	deaths/ 100,000 population	14.7		19.8	*16.9*	2014-2016		5

SCORE	PUBLIC SAFETY	UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
1.14	Age-Adjusted Death Rate due to Motor Vehicle Traffic Collisions	deaths/ 100,000 population	12.9	12.4	18.2	10.7	2011-2013		3
0.81	Violent Crime Rate	crimes/ 100,000 population	191.6		420.9	373.7	2015		10
0.39	Alcohol-Impaired Driving Deaths	percent	20		28.3	29.3	2012-2016		5

SCORE	RESPIRATORY DISEASES	UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
2.19	Age-Adjusted Death Rate due to Influenza and Pneumonia	deaths/ 100,000 population	17.9		15.2	14.6	2014-2016		3
1.89	Age-Adjusted Death Rate due to Lung Cancer	deaths/ 100,000 population	57.4	45.5	55.7	43.4	2011-2015		8
1.67	Lung and Bronchus Cancer Incidence Rate	cases/ 100,000 population	73.6		70.5	60.2	2011-2015		8
1.50	Age-Adjusted Death Rate due to Chronic Lower Respiratory Diseases	deaths/ 100,000 population	47.5		63.5	40.9	2014-2016		3
1.11	Adults with Current Asthma	percent	8.3		9.6		2017		11
0.94	Asthma: Medicare Population	percent	7.5		9.4	8.2	2015		4
0.39	COPD: Medicare Population	percent	8.8		14	11.2	2015		4

SCORE	SOCIAL ENVIRONMENT	UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
2.39	People 65+ Living Alone	percent	30.6		27.5	26.4	2012-2016		1
1.50	Young Children Living Below Poverty Level	percent	26.6		26.4	23.6	2012-2016		1
1.47	Persons with Health Insurance	percent	84.8	100	84		2016		12
1.44	Single-Parent Households	percent	32.2		34.2	33.6	2012-2016		1
1.42	Social and Economic Factors Ranking	ranking	30				2018		5
1.22	Children Living Below Poverty Level	percent	21.4		23.1	21.2	2012-2016	Black or African American	1
1.17	Homeownership	percent	61.7		56.5	55.9	2012-2016		1

SCORE		UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
1.06	People 25+ with a Bachelor's Degree or Higher	percent	26.3		24.5	30.3	2012-2016	American Indian or Alaska Native, Black or African American, Hispanic or Latino, Other	1
1.00	Median Household Income	dollars	50038		48038	55322	2012-2016	Black or African American, Hispanic or Latino, Other	1
0.89	People Living Below Poverty Level	percent	14.4		16.5	15.1	2012-2016	Black or African American, Hispanic or Latino	1
0.50	People 25+ with a High School Degree or Higher	percent	90.8		87.3	87	2012-2016	Hispanic or Latino, Other	1
0.50	Per Capita Income	dollars	28528		25628	29829	2012-2016	American Indian or Alaska Native, Black or African American, Hispanic or Latino, Other, Two or More Races	1
0.39	Mean Travel Time to Work	minutes	17.4		21.4	26.1	2012-2016		1

SCORE	SUBSTANCE ABUSE	UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
1.89	Mothers who Smoked During Pregnancy	percent	15.7	1.4	11.2		2017		11
1.42	Health Behaviors Ranking	ranking	23				2018		5
1.33	Adults who Smoke	percent	17.2	12	19.6	17	2016		5
0.67	Adults who Drink Excessively	percent	12.2	25.4	12.8	18	2016		5
0.56	Death Rate due to Drug Poisoning	deaths/ 100,000 population	14.7		19.8	16.9	2014-2016		5
0.39	Alcohol-Impaired Driving Deaths	percent	20		28.3	29.3	2012-2016		5

SCORE	TRANSPORTATION	UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
2.28	Workers Commuting by Public Transportation	percent	0.2	5.5	0.5	5.1	2012-2016		1
1.61	Workers who Drive Alone to Work	percent	82		82.6	76.4	2012-2016		1
1.39	Workers who Walk to Work	percent	2.5	3.1	1.8	2.8	2012-2016		1
1.28	Households without a Vehicle	percent	5.7		5.7	9	2012-2016		1
1.14	Age-Adjusted Death Rate due to Motor Vehicle Traffic Collisions	deaths/ 100,000 population	12.9	12.4	18.2	10.7	2011-2013		3
1.00	Households with No Car and Low Access to a Grocery Store	percent	1.4				2015		15
0.50	Solo Drivers with a Long Commute	percent	17		25.7	34.7	2012-2016		5
0.39	Mean Travel Time to Work	minutes	17.4		21.4	26.1	2012-2016		1

SCORE	WELLNESS & LIFESTYLE	UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
1.50	Poor Physical Health: Average Number of Days	days	4.2		4.5	3.7	2016		5
1.33	Life Expectancy for Females	years	79.8		78.5	81.5	2014		7
1.28	Life Expectancy for Males	years	75.7		73.7	76.7	2014		7
1.25	Morbidity Ranking	ranking	19				2018		5
1.00	Frequent Physical Distress	percent	12.6		14.4	15	2016		5
1.00	Insufficient Sleep	percent	32.8		34.9	38	2016		5
0.83	Self-Reported General Health Assessment: Poor or Fair	percent	15.7		19.6	16	2016		5

SCORE	WOMEN'S HEALTH	UNITS	WASHINGTON COUNTY	HP2020	Oklahoma	U.S.	MEASUREMENT PERIOD	HIGH RACE DISPARITY*	Source
2.56	Age-Adjusted Death Rate due to Breast Cancer	deaths/ 100,000 females	27.6	20.7	23	20.9	2011-2015		8
2.17	Breast Cancer Incidence Rate	cases/ 100,000 females	130.5		118.4	124.7	2011-2015		8
1.44	Mammography Screening: Medicare Population	percent	59.6		55.8	63.2	2015		13

1.33	Life Expectancy for Females	years	79.8		78.5	81.5	2014	7

Appendix 4: Focus Group Discussion Guide

Introduction

- Welcome everyone and introduce facilitators and recorders.
- Review name tents. Participants may use whatever name, number, symbol, etc. they wish to be recognized as by the facilitator or other participants.
- Review location of restrooms, refreshments and exits.
- Review purpose of group, group similarities (residential area or specific population), expected length of session, confidentiality on researchers' part and audio recording.
- Review and collect signed informed consents.
- Review guidelines.
    - Only one person talking at a time
    - Provide your honest and candid thoughts.
    - There are no wrong answers.
    - Give everyone a chance to speak.
    - Request participant confidentiality.
    - Be respectful of others.
    - Paper has been provided. When a question is asked, take a moment to write down the first thing that comes to your mind. We will collect these sheets at the end of the meeting. If there was a thought you didn't get a chance to share or didn't want to share with the group, circle those thoughts for us.

Discussion questions

- When I say the word "health," what do you think of? How would you define health?
- Describe your community — where you live, work, play and shop.
    - What would you say are the biggest overall problems in your community?
    - How do these problems affect your community's health?
    - What could your community do to make you feel better about these problems?
- Do you feel you have the power to change your personal health and/or your family's health? Show of hands if you think you have the power to change your health. (Record count.)
    - For those of you who feel you have the power to change your health, provide some examples of how you can change your health.
    - Have you done any of these things? What was the outcome?
    - For those of you who do not feel you have the power to change your health, what is holding you back? What needs to change?
- If you were looking for resources to improve health, how/where would you find them?
    - What are some of the resources in your community that can improve health?
    - Show of hands if you have ever used any of these resources? (Record count.)
    - For those of you who have used community resources for health:
        - How many times in the past year have you or your family used these resources?
        - What was your impression of the services provided by these resources? If negative, what could they do to improve?

- For those of you who have not used community resources for health, why not? What is keeping you from using them?
- What other services do you think are needed in your community?
- What do you think is important for healthcare professionals to know about your community?
- Imagine I gave you a magic wand. You can wave this magic wand and do anything you want to improve the health of your community. What would you do?
- Fill in the blank. The benefits of a healthy community are _____.
- Anything else you would like to add?

Conclusion

- Thank participants.
- Distribute gift cards.
- Point out business cards for questions about study or results.
- Collect demographics form and written comments from participants.

Appendix 5: Prioritization Toolkit

Prioritization Matrix

The purpose of this exercise is to individually assess then collectively discuss each of the pressing health concerns identified by the St. John Community Engagement team's analysis of data collected through the community health needs assessment (CHNA) process. CHNA data collection strategies included:

- Secondary data from Conduent Healthy Communities Corp.
- Secondary data from the Tulsa Health Department
- An online public survey conducted in collaboration with The University of Oklahoma Anne and Henry Zarrow School of Social Work
- Community focus groups conducted in collaboration with OU Anne and Henry Zarrow School of Social Work
- Community health forums hosted by each hospital facility

Please see the included synthesis charts for overviews of results by hospital. In your assessment of these identified health concerns, you will score and rank them based on the criteria set forth by the Community Engagement team for prioritizing health concerns for St. John Health System. After you have completed the charts below, the group's answers will be discussed and collected.

Instructions

1. In the first chart below, score each identified health concern for how well it meets each criterion (1 = does not meet criterion; 2 = somewhat meets criterion; and 3 = meets criterion). Note that some criteria are weighted, so look for directions to multiply certain scores in the column headers.
2. Add together the scores for each health concern and write the total in the last column.
3. Based on your total scores in the first chart, assign a ranking to each health concern in the second chart below, with the highest score receiving a ranking of 1. If you have tied scores, break the tie by personally assigning rank as you see best fit.

Health need	Alignment w/ St. John mission (weighted x2)	Alignment w/ community priorities (weighted x3)	Existing programs, resources at SJHS, hospital	Opportunities for partnership (weighted x2)	Solution could impact multiple problems	TOTAL
Behavioral health						
Exercise/nutrition/weight						
Prevention/health behaviors						
Access to care						
Chronic disease (esp. cancer)						
Adverse childhood experiences (ACEs)						
Food access/security						
Safe environment						
Substance abuse						
Optional fill-in (circle one): - Socioeconomic status - Immunizations and infectious diseases - Lack of health education - Maternal/fetal/infant health						

Health topics (listed in order of data frequency)	Rank (1-9 or 1-10)
Behavioral health	
Exercise/nutrition/weight	
Prevention/health behaviors	
Access to care	
Chronic disease (esp. cancer)	
Adverse childhood experiences (ACEs)	
Food access/security	
Safe environment	
Substance abuse	
Optional fill-in (circle one): - Socioeconomic status - Immunizations and infectious diseases - Lack of health education - Maternal/fetal/infant health	

Please note that "social determinants of health" may be an underlying current for any health concern selected to be a health system priority.

Appendix 6: FY 2017-2019 Impact Report

Evaluation of actions taken to address health needs identified in FY 2016 CHNA

Author note: References to actions taken by "St. John Health System" indicate the actions were taken by all six hospitals during FY 2017-2019: St. John Medical Center, St. John Owasso, St. John Broken Arrow, St. John Sapulpa, Jane Phillips Medical Center and Jane Phillips Nowata Health Center.

SIGNIFICANT HEALTH NEED identified in prior CHNA and addressed in implementation strategy	ACCESS TO CARE	
ACTIONS PROPOSED to address significant health need	**STATUS OF ACTIONS**	**RESULTS**
Transitional Care Clinics (TCCs): Improve follow-up care and ensure a safe transition home for patients discharging from St. John Medical Center and Jane Phillips Medical Center who do not have a primary care provider through services provided by the facilities' Transitional Care clinics.	Completed; ongoing	**St. John Medical Center Transitional Care Clinic:** • Opened 4/7/2017; 5 staff employed • 1,081 patients seen FY17-18 • Motivational interviewing utilized with patients needed (300 document instances in FY18) • 100% of patients seen were scheduled an appointment with a primary care physician or were referred to one of the local free clinics for follow-up • 31 patients seen in FY17-18 after discharging from skilled nursing facilities (after hospital discharge) • The readmission rate for patients that were seen in the TCC during FY17 was 3.93% and patients not seen no shows, cancellation, refused appointment, etc.) was 14.18%. In FY 18 the rate was 5.59% for patients seen and 9.49% for patients not seen. In July-January of FY19, the rate was 6.8% for patients seen and 12.1% for patients not seen. These rates demonstrate a reduction in readmissions for those seen in the clinic. **Jane Phillips Medical Center Transitional Care Clinic:** • 828 patients seen FY17-18 • 100% of patients seen were scheduled an appointment with a primary care physician or were referred to one of the local free clinics for follow-up
Access to care for those experiencing homelessness: Increase the number of individuals experiencing homelessness who have access to primary care at the Tulsa Day Center for Homeless Clinic. • Indicator: Number of hours available for primary care access at Tulsa Day Center for the Homeless. • Baseline: 20 hours per week • Target: 10% (+2 hours per week) = 22 hours per week • Maximum Target: 15% (+3 hours per week) = 23 hours per week • Data for this analysis was collected through the quarterly Tulsa Day Center for the Homeless Clinic	Completed	**St. John Health System** • Based on the number of hours scheduled and worked by primary care provider at the Tulsa Day Center for the Homeless Clinic, clients had access to primary care coverage in excess of 24 hours per week. • This was a 4 hour (20%) increase from year to date FY 16 baseline of 20 hours per week to year to date FY 17.

activity reports comparing FY 17 with FY 16 available hours per week.		
Access to care for those living in poverty/vulnerable populations: Increase access to an ongoing source of primary care and preventive services for persons who are uninsured, underinsured, and/or living in poverty through services offered at the St. John Medical Access Clinic (MAC).	*Discontinued as Medical Access Clinic goal due to clinic closure. The goal has been continued with St. John Family Medical Care Clinic.* Completed; ongoing	**St. John Health System:** • In FY18-19, St. John provided primary health care, specialty health care and medications for participants in Women in Recovery (WIR), an intensive outpatient alternative for eligible women facing long prison sentences for non-violent, drug-related offenses and for Domestic Violence Intervention Services (DVIS) shelter guests at no cost to them or the organizations. o 100% of WIR participants and DVIS shelter guests are offered care at time of intake for services.
Mentoring healthy parents program- Broken Arrow Public Schools: Nurse and physician volunteers from St. John provide maternal and child health education at Broken Arrow Public Schools to parenting teens on a variety of topics, such as what to expect during pregnancy, childbirth, infant safety, proper use of a car seat, and the developmental stages of toddlers.	Completed; ongoing *New goal added after Implementation Plan developed in FY17*	**St. John Medical Center/St. John Broken Arrow:** • In FY 18-19, St. John Medical Center Nursing staff 1 physician volunteer taught 1 class every 2 weeks teen parents in program at Broken Arrow Public Schools.
Transportation assistance: Reduction in barriers to accessing to healthcare services by providing transportation assistance to community-dwelling persons served by St. John and the hospital who are living in poverty and/or are otherwise deemed vulnerable. Through an agreement with Morton Comprehensive Community Health Center (FQHC) for their bus services and agreement with Lyft, St. John provides transportation to those in need in the community who meet specific criteria.	Completed; ongoing	**St. John Medical Center:** • In FY 18, 2,102 rides were provided and over $165,000 was provided in funding for the Morton Transportation Program. • An agreement with Lyft was also secured to begin providing additional transportation assistance to patients in need. In fy18, 2,006 rides were provided and over $31,000 was provided in funding for Lyft assistance. • In FY17 1,635 rides were provided and over $155,000 was provided in funding for the Morton Transportation Program.
Prescription assistance: Support of efforts to increase the proportion of persons who can obtain or not delay in obtaining necessary prescription medicines through the Dispensary of Hope (DOH) program. The DOH connects surplus medications from manufacturers, distributors, and providers to clinics and pharmacies serving the poor and uninsured. Pharmacy and clinic partners provide DOH medications to patients free of charge, track and segregate DOH inventory, and qualify patients (less	Completed; ongoing	**St. John Health System:** • The program serves safety net clinics in the greater Tulsa area including the Good Samaritan mobile health clinics. • In FY17 the DOH program was expanded to include qualifying patients in three departments within the St. John System: The Transitional Care Clinic, The Heart Failure Clinic, and the Diabetes Education Center. • In FY17, the DOH program was also expanded within the community to an additional Good Samaritan Mobile Clinic site in Creek County and the Tulsa Day Center for Homeless medical clinic. • In FY18, 19,000 thirty-day prescriptions ($223,000 worth) were filled for free clinic partners.

than or equal to 200% of the federal poverty level).		• The DOH has demonstrated to be a positive factor in improving outcomes of uninsured patients with chronic conditions and has been shown to decrease preventable hospital encounters. • In addition, St. John continues to look for new ways to procure medication discounts for all patients whether they are being discharged from one of our hospitals or are getting outpatient treatment in one of our clinics.
Health insurance coverage: Promote access to affordable health insurance coverage through state legislative advocacy.	In progress	**St. John Health System:** • A cigarette tax passed the Oklahoma legislature in 2018. Funds from this tax for the first year went to education. Funds for the second year, 2019 went to healthcare. • Ascension's St. John Health System continues to be a strong proponent for the expansion of Medicaid in Oklahoma.

Care coordination-addressing social determinants of health: Collaborate with community partners to address social determinants of health among community served.	In progress
	
	New goal added after Implementation Plan developed in FY17
		St. John Medical Center:
		• St. John completed a Memorandum of Understanding ("MOU") on FY17 between the City of Tulsa, on behalf of itself and the Tulsa Fire Department (collectively "COT").
		   o The Tulsa Fire Department sponsors and administers two Mobile Integrated Healthcare (MIH) programs: (i) the Community Access, Education, and Referral Services (CARES) program; and (ii) the Community Response Team (CRT) program (collectively "MIH Programs").
		   o The MIH Programs are designed to address the complex physical, behavioral, and social needs of individuals who are high need, inefficient utilizers of public safety, criminal justice systems, and healthcare resources
		   o St. John piloted programming with the CARES Program at St. John Medical Center in FY18-FY19 to collaborate on targeted case management activities and coordination of care to address the needs of existing, or potential, CARES program participants.
		
		St. John Health System:
		• In April 2017, the federal government selected the Route 66 Coalition to receive a $4.5M grant to create an Accountable Health Community (AHC) where social needs, are addressed to improve health. St. John collaborated with the coalition on grant writing and completed a MOU to participate in the grant opportunity.
		   o In Oklahoma, this program will screen more than 75,000 Oklahomans each year for social needs in five key areas: housing insecurity, food insecurity, utility assistance, interpersonal violence, and transportation. If they qualify, they will be connected to community social service agencies through designed navigation services.
		   o In FY18-FY19, St. John participated in the first year of planning and implementation of the grant opportunity
		   o In FY19- St. John is targeting 1 hospital Emergency Department for pilot of program.

Support of medical education- Invest in medical education to support the expansion of physicians, nurses and allied health professionals.	Completed; ongoing	**St. John Health System:** • FY17-19 St. John continues to invest in medical education to support the expansion of physicians, nurses and allied health professionals that will serve the current and future generations of patients in the service area.

		• St. John engages in a coordinated effort to assess community need collaboratively with other interested parties in the community and to allocate capital and human resources to address the needs of the entire service area.

Human trafficking education and response program- train associates to identify and respond to the needs of human trafficking victims and survivors in a trauma-informed manner, including assistance with referrals to resources as needed.	Completed; ongoing
	
	New goal added after Implementation Plan developed in FY17
		St. John Health System:
		
		• In 2016, St. John embarked on efforts to develop program and internal protocol as well as worked to build partnerships in the community with law enforcement, social service agencies, and other organizations in our community.
		• Since program roll-out, 15 suspected victims have been identified and offered support by St. John associates (as of April 2019).
		• In FY17-19, St. John applied for and was generously awarded funding to support implementation of program.
		• 2018 was a monumental year in history for St. John Health System's efforts to combat human trafficking. Our 2018 accomplishments included, but were not limited to, the following:
		  o Formalization and successful pilot of the St. John Human Trafficking Education and Response Program
		  o Recruitment and hiring of a St. John Human Trafficking Program Manager to support our local efforts
		  o Increased support of victims and survivors presenting for care in our clinics and hospitals
		  o Continued engagement and collaboration with law enforcement, social service agencies, and other organizations in our community
		  o Expansion of our presence in the community through awareness and education efforts

SIGNIFICANT HEALTH NEED identified in prior CHNA and addressed in implementation strategy	**BEHAVIORAL HEALTH**	
ACTIONS PROPOSED to address significant health need	**STATUS OF ACTIONS**	**RESULTS**
Early identification and intervention via an integrated model of behavioral health in primary care.	Completed-ongoing	**St. John Health System:** • In FY17-19, St. John accomplished the following: o The implementation of clinic-wide PHQ9 depression screenings and full suicide risk assessments for high/positive scores on PHQ9 depression screenings • Expansion of the number of behavioral health therapists embedded in clinics from 5 to 9 therapists in 2018.
Promotion of access to behavioral health services through state legislative advocacy.	Completed	**St. John Health System:** • Through legislative advocacy, the Mark Costello Act was passed in 2017. This legislation is aimed at helping families get assisted outpatient treatment for adult relatives experiencing mental illness before a situation reaches a crisis. • A cigarette tax passed the Oklahoma legislature in 2018. Funds from this tax for the first year went to education. Funds for the second year, 2019 went to healthcare.

		• St. John is participating as a community partner in the Tulsa Regional Mental Health Plan (rolled out in FY18):
Increase access to behavioral health services for community-dwelling persons in need of outpatient psychiatry services in Washington County.	Completed	**Jane Phillips Medical Center:** In FY17- 1 APRN was recruited and hired to support staffing at outpatient psychiatric clinic at Jane Phillips Memorial Medical Center.

Improve capacity for humanized behavioral health crisis and acute care through increased access to behavioral health professionals and services as well as increased assessment and recognition of suicide risks at the community level.	Completed-ongoing	**St. John Medical Center:**
		
		• St. John completed a Memorandum of Understanding ("MOU") on FY17 between the City of Tulsa, on behalf of itself and the Tulsa Fire Department (collectively "COT").
		   ○ The Tulsa Fire Department sponsors and administers two Mobile Integrated Healthcare (MIH) programs: (i) the Community Access, Education, and Referral Services (CARES) program; and (ii) the Community Response Team (CRT) program (collectively "MIH Programs").
		   ○ St. John collaborates with the City of Tulsa, the Tulsa Fire Department, the Mental Health Association of Oklahoma, Family & Children's Services and other community partners on the MIH program known as Community Response Team (CRT). This is a multidisciplinary emergency response team that provides a more efficient and effective response to individuals in emergent mental health crisis by providing safety and stabilization as well as diversion from costly stays in jail, hospital emergency departments, and inpatient behavioral health hospital stays when appropriate.
		• St. John Sapulpa hosted and participated in a Question Persuade and Respond (QPR) suicide prevention training by community partners in Creek County in FY17. The training focused on teaching associates and community members how to respond to someone who is at risk for suicide.
		• In FY17, 65% of St. John associates completed a suicide precautions training module to increase awareness of suicide prevalence and risk factors as well as how to work with patients and community members to reduce the risk of suicide.
		• All open positions on Behavioral Health Assessment Team (BAT) were filled as of FY19. This has increased the number of patients the team is able to see. The team is averaging 40-45 placements in psych facilities per month. This is a slight increase, but still limited by bed availability in and around the community.
		• By FY19- the proportion of Emergency Department and hospital patients referred to crisis intervention behavioral health services was increased by at least 10 % as measured by Behavioral Health Admin. reports.

SIGNIFICANT HEALTH NEED identified in prior CHNA and addressed in implementation strategy	WELLNESS AND CHRONIC DISEASE PREVENTION	
ACTIONS PROPOSED to address significant health need	**STATUS OF ACTIONS**	**RESULTS**
Promote equitable and patient-centered pre-diabetic and diabetic care in solidarity with those living in poverty and/or who may be otherwise deemed vulnerable.	Completed-ongoing	**St. John Medical Center:** • In FY17, St. John Medical Center implemented an initiative to support patients diagnosed with diabetes or pre-diabetes discharging from the hospital who lack primary care follow-up through patient-centered transition of care, education, and disease management support services through collaboration among the diabetes educators, transitional care clinic, and the Medical Access Program. o In FY 17, a total of 142 patients diagnosed with diabetes and pre-diabetes who lacked primary care follow-up were served by this initiative.
Diabetes awareness and prevention: In FY18, St. John Medical Center and Jane Phillips Medical Center addressed 2 goals related to diabetes awareness and prevention: 1) to improve awareness of the risks of Type 2 diabetes in the community and 2) to increase participant participation and retention in the Diabetes Prevention Program (DPP) through partnerships in the community.	Completed	**St. John Health System:** • Both goals were met successfully for FY18 with all outputs either achieved as outlined or exceeding expectations. **Tulsa County Hospitals (St. John Medical Center- SJMC, St. John Broken Arrow-SJBA, and St. John Owasso- SJO):** • A total of five awareness events were held in collaboration with the two community partners identified at the beginning of FY18 which exceeded St. John's output goal by two events. Diabetes risk assessments, presentations, and awareness education were offered at these events. The diabetes team also attended seven additional community events. Diabetes risk assessments, condensed presentations, and awareness education were offered at the additional events. **Jane Phillips Medical Center:** • The DPP was highly successful at engaging community partners to participate in the program. Program retention rate= 85% for those attending at least 4 of the 16-week core sessions in the first 6 months. Weight loss=4.16% for those attending at least 4 of the 16-week core sessions in the first 6 months. An output goal was also made for this program to provide at 250 diabetes risk assessments to community members. This goal was exceeded as 1,750 risk assessments were provided to community members. Additional awareness activities were completed in the hospital as well as at various community events.

Heart Failure Initiative aimed to improve health outcomes and reduce preventable Congestive Heart Failure (CHF) readmissions among diverse populations diagnosed with CHF: Congestive Heart Failure (CHF) patients from diverse populations including racial and ethnic minorities and those living in socioeconomically		**St. John Medical Center:**
		
		• The initiative worked to increase engagement and reduce barriers to care through the provision of:
		    o Educational classes (average 25 patients per class per week with an additional 5-10 patient's education done at bedside per week).
		    o Support groups 1x/week (average 15-18 patients per session).

disadvantaged conditions often face a myriad of barriers to care. The initiative aims to manage all patients diagnosed with congestive heart failure (CHF) across the continuum of care through structured transition and an expanded follow-up approach as facilitated by the St. John Medical Center Heart Failure Initiative regardless of ability to pay.		o Referrals to the Heart Failure Clinic (increase of >100% in new patient volume since December 2016) and Cardiac/Heart Failure rehab (total of 129 patients enrolled in FY17 and 122 patients in FY18). o Root cause analysis case staffings o Loaned blood pressure cuffs (107 BP cuffs) and weight scales (318 scales) at no cost to the patient in FY17. o Medication assistance for those without a payer source through the Dispensary of Hope Program and transportation assistance through the Morton Transportation Assistance Program.
Promote healthy diet, physical activity, and prevention-oriented wellness through 1. Health system support of community-based initiatives in partnership with local health departments, coalitions, community-based organizations, and schools 2. Participation in local activities, education classes, events, and health fairs 3. Chronic disease management support	Completed; ongoing	**St. John Health System:** • St. John sponsored and participated over 200 community events and wellness activities throughout the FY17-18. Hospital associates promoted health and wellness through health screenings and public education at these events. The health system and hospital also hosted a multitude of public health education seminars, classes, lunch and learns, and symposiums on a variety of wellness topics including, but not limited to: diabetes, heart health, stroke, safety and prevention, trauma, maternal and child health, joint care, cancer care, healthy diet and nutrition, and the promotion of physical activity. St. John annually hosts on-site blood drives in support of the American Red Cross at each hospital. • In FY17-18, St. John partnered with more than 100 local organizations through sponsorships and donations. The St. John Community Benefit and Engagement team is continually looking for opportunities to connect with local organizations and individuals to better serve the health and wellness needs of the community. **Jane Phillips Medical Center (JPMC):** • **Washington County Wellness Initiative:** JPMC actively participated in the community-wide coalition, the Washington County Wellness Initiative (WCWI) from Fy17-19. The organization is dedicated to supporting the numerous organizations, coalitions, initiatives, and projects providing services to the residents of Washington County with the goal of improving the health of the community. • **Flow-Co:** In FY17-19, JPMC supported the Washington County organization named FLOWCO – Fitness Lovers of Washington County, which encourages residents to get healthier together with a free fitness program. The training program is a free walk/run group fitness program open to anyone 12 years and older. • **Community Care Transitions Team:** In FY17-19, JPMC partnered with the community care transitions team. This is a non-profit team of healthcare providers who work together to improve the patient's transition between the hospital and the next level of care. The hospital and several associates participate in the annual Transitions of Care health fair hosted by the community care transitions team. • **Project Fit America**: In FY17-19, JPMC supported Project Fit America through the sponsorship of the installation of Project Fit America equipment area schools (installation/support at 3 schools in FY17-18). Project fit America is a national nonprofit

organization that creates and administers fitness education programming in elementary and middle schools. The charity works with sponsors to bring in donations to build fitness equipment at schools and emphasizes techniques to participate in and appreciate fitness-related skills that are necessary to maintain lifelong fitness.

Jane Phillips Nowata Health Center (JPNHC):
- **Participation in community coalition to promote health and wellness:** In FY17-19, JPNHC actively participated in the community-wide coalition, the Nowata Community Advancement Network (Nowata CAN). Nowata CAN is a coalition of individuals and groups dedicated to improving the overall health of the citizens of Nowata County. Nowata CAN and partners work to supporting our community by providing education the prevention of disease and drug abuse and improving the health and well-being of residents through healthy lifestyle choices. JPNHC sponsors Nowata CAN's "double bucks" and "veggie vouchers" programs in conjunction with the Nowata area farmers market each spring.

St. John Sapulpa (SJS):

- **Participation in community efforts to promote health and wellness:** In FY17-19, SJS actively participated in the community-wide coalition, the Creek County Community partnership (CCCP). Currently there are over 30 agencies represented in the partnership. The partnership serves as a community support hub for several creek county grants. The CCCP serves as a valued resource for community partners and families where agencies and organizations share information and programming. Through various work groups and committees, the CCCP has addressed child abuse prevention, healthy lifestyle initiatives, and drug abuse and tobacco use prevention. The hospital regularly provides meeting space for the monthly CCCP meetings. SJS is also an active partner with another community coalition focused on health and wellness promotion, the Creek County Healthy Living Program.
- SJS offers classroom space for local community partners to health and wellness focused education classes, events, and trainings such as CPR, diabetic education classes, and healthy eating/shopping. SJS also partners with the Creek County Health Department to offer "tai chi – moving for better balance" on-site to improve community wellness through group exercise and to promote fall risk and injury prevention.

Tulsa County Hospitals (St. John Medical Center- SJMC, St. John Broken Arrow-SJBA, and St. John Owasso- SJO):

- **Pathways to Health:** In FY17-19- SJMC, SJBA, and SJO actively participated in the community-wide coalition, Pathways to Health (P2H), which supports the Tulsa Health Department and a multitude of community partners. P2H was formed by the Tulsa Health Department in 2008 in response to a challenge to decrease the overlap of health services and identify gaps where leaders are missing vulnerable populations. Today, P2H is an incorporated non-profit entity with the goal to connect community health resources to those who need it most. P2H leverages community-wide partnerships with more than 90 local

	agencies, organizations, corporations and health systems to improve the health and wellness of residents of Tulsa County.
	• **Tour de Tulsa sponsorship and participation:** St. John was the presenting sponsor for the 30th-32nd annual Tour de Tulsa charity bikes rides during FY17-19. The event is coordinated by the Tulsa Bike Club and Tulsa Health Department with proceeds benefiting Pathways to Health (P2H), the non-profit arm of the Tulsa Health Department. Each year the sponsorship funds are used to give back to the community and help fund community partner's projects that have the gravest need, reach the most people, use best practices, and can be sustained overtime.
	• **St. John Family Den at the Tulsa Zoo:** In FY17, St. John provided funding to co-design quiet space for nursing mothers and families at the St. John Family Den at the Tulsa Zoo. The den provides a dedicated space for nursing mothers, a quiet room for families affected by autism or sensory processing disorders, a family restroom, and a restroom with an adult changing table.

SIGNIFICANT HEALTH NEED identified in prior CHNA and addressed in implementation strategy	**HEALTH LITERACY**	
ACTIONS PROPOSED to address significant health need	**STATUS OF ACTIONS**	**RESULTS**

Help persons of diverse backgrounds navigate health services and gain empowerment in taking charge of their own health improvement:
 	
• Assess health literacy needs among patients of diverse backgrounds to work towards assisting patients in understanding how to navigate health services and gain empowerment in taking charge of their own health improvement with the St. John Medical Center Transitional Care Clinic as the pilot site for this effort.
	Completed; ongoing	**St. John Medical Center:**
		
		• The St. John Medical Center successfully piloted and fully implemented a Pfizer health literacy screening tool to assess health literacy needs among clinic patients in FY17-19.
		  ○ 2 staff members in clinic trained on use of Pfizer health literacy tool.
		  ○ 119 patients were screened using this tool in FY17.
		  ○ 813 patients were screened using this tool during FY18.
		  ○ When a patient is identified as having low health literacy and are diabetic, the clinic will let the diabetic educator know the health literacy score.
		  ○ The clinic uses the teach back method to ensure patients understand the information they have been taught when they are identified as low health literacy.

Early literacy promotion: Through a partnership with Reach Out and Read, St. John pediatricians provide new books and literacy resources to families at well-child visits to discuss the importance of early literacy and developmental milestones with families. Providers are able see whether children interact with the book on a developmentally appropriate level and discuss with families the importance of interacting and reading with children to increase language skills, emotional resilience, and early	Completed; ongoing *New goal added after Implementation Plan developed in FY17*	**St. John Health System:** • In FY17-FY18, 4 St. John Clinics participated in the Reach out and Read Program (St. John Clinics: Family Medical Care, Pediatric and Adolescent Medicine, Claremore-*now closed*, and Owasso-*now closed*). • In FY19, 2 additional clinics began participation in the program (Family Medical Care Maternal and Health Clinic on South Peoria and Bartlesville). • Following the receipt of FY18 financial support from St. John, St. John medical providers report having given out 2,801 books to children ages five and under (does not include St. John Clinic-Owasso, so the 2,801 is lower than actual).

literacy. Reach Out and Read is a national network, with 28 regional affiliates supporting over 29,000 medical providers at 5,800 sites in all 50 states of the U.S. The program currently serves over 4.7 million children each year, including a quarter of children from low-income families		• 62 medical providers and staff within the St. John System have received our Continuing Medical Education-accredited comprehensive training since July 2017.

Appendix 7: Board Resolutions

**RESOLUTIONS OF THE BOARD OF DIRECTORS
OF JANE PHILLIPS MEMORIAL MEDICAL CENTER, INC.**

The Board of Directors of Jane Phillips Memorial Medical Center, Inc. ("Corporation" or "Hospital") adopts the following resolutions at a meeting duly held on April 25, 2019 at which a quorum of Directors was present.

RECITALS

A. Section 501(r) of the Internal Revenue Code and the regulations promulgated hereunder (collectively, "501(r)") imposes certain requirements on 501(c)(3) "hospital organizations" and "hospital facilities" (as those terms are defined in 501(r)). Each hospital facility is required, among other things, to conduct a community health needs assessment ("CHNA") and adopt an implementation strategy ("IS") to meet the identified health needs at least once every three (3) tax years.

B. Pursuant to 501(r), Hospital conducted a CHNA for the community the Hospital serves. The CHNA is attached as **Exhibit A**.

C. The Hospital completed the following steps in conducting its CHNA in compliance with 501(r): (1) defining the "community" served; (2) assessing the health needs of that community; (3) soliciting and taking into account input received from persons who represent the broad interests of the community, including those with special knowledge of or expertise in public health; and (4) documenting the CHNA in a written report.

D. Pursuant to 501(r), a Hospital needs to prepare an IS to meet the community health needs identified through the CHNA (each a "health need") that, with respect to each significant health need, either (1) describes how the Hospital plans to address the health need, or (2) identifies the health need as one the Hospital does not intend to address and explains the reason(s) for that determination.

E. 501(r) requires that the Corporation's Board of Directors adopts the CHNA, attached as **Exhibit A**.

NOW, THEREFORE, in consideration of the foregoing:

BE IT RESOLVED that the Board of Directors hereby approves and adopts the CHNA attached as **Exhibit A**.

BE IT FURTHER RESOLVED that the officers and management of Corporation be, and they hereby are authorized and directed to make the CHNA widely available to the public in compliance with 501(r).

BE IT FINALLY RESOLVED that the officers and management of Corporation be, and they hereby are authorized and directed to take such other actions as are necessary to prepare the IS and, thereafter, seek approval and adoption of the IS by the Corporation's Board of Directors.

The above resolutions are adopted this 25th day of April, 2019 and made effective as of the same day.

Mike Moore
Secretary of the Board

Mike Moore
President and Chief Operating Officer
Jane Phillips Medical Center

RESOLUTIONS OF THE BOARD OF DIRECTORS
OF ST. JOHN HEALTH SYSTEM, INC.

The Board of Directors of St. John Health System, Inc. ("Corporation") adopts the following resolutions at a meeting duly held on May 15, 2019 at which a quorum of Directors was present.

RECITALS

A. Section 501(r) of the Internal Revenue Code and the regulations promulgated hereunder (collectively, "501(r)") imposes certain requirements on 501(c)(3) "hospital organizations" and "hospital facilities" (as those terms are defined in 501(r)). Each hospital facility is required, among other things, to conduct a community health needs assessment ("CHNA") and adopt an implementation strategy ("IS") to meet the identified health needs at least once every three (3) tax years.

B. Pursuant to 501(r), each Hospital listed below conducted a CHNA for the community the Hospital serves.

C. The Hospitals completed the following steps in conducting its CHNA in compliance with 501(r): (1) defining the "community" served; (2) assessing the health needs of that community; (3) soliciting and taking into account input received from persons who represent the broad interests of the community, including those with special knowledge of or expertise in public health; and (4) documenting the CHNA in a written report.

D. Pursuant to 501(r), a Hospital needs to prepare an IS to meet the community health needs identified through the CHNA (each a "health need") that, with respect to each significant health need, either (1) describes how the Hospital plans to address the health need, or (2) identifies the health need as one the Hospital does not intend to address and explains the reason(s) for that determination.

E. 501(r) requires that the each Hospital's Board of Directors adopts the applicable CHNA, and each has in turn recommended approval to the Corporation as the member of each Hospital.

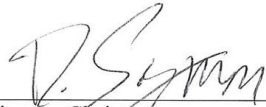**NOW, THEREFORE**, in consideration of the foregoing:

BE IT RESOLVED that the Board of Directors of Corporation, acting as such and as the member of each of the following named legal entities, hereby: (i) approves of each such entity to adopt the applicable CHNA for its Hospital, and (ii) authorizes management to take such other actions as reasonable and necessary to effectuate such adoption of the CHNA.

Entity Name
St. John Health System, Inc.
St. John Medical Center, Inc.
St. John Broken Arrow, Inc.
St. John Sapulpa, Inc.
Owasso Medical Facility, Inc. d/b/a St. John Owasso
Jane Phillips Memorial Medical Center, Inc.
Jane Phillips Nowata Hospital, Inc.

BE IT FURTHER RESOLVED that the officers and management of Corporation be, and they hereby are authorized and directed to make the CHNA widely available to the public in compliance with 501(r).

BE IT FINALLY RESOLVED that the officers and management of Corporation and each Hospital be, and they hereby are authorized and directed to take such other actions as are necessary to prepare the IS and, thereafter, seek approval and adoption of the IS by each Hospital's Board of Directors.

The above resolutions are adopted this 15th day of May, 2019 and made effective as of the same day.

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David Sigmon, Chair
St. John Health System Board of Directors