CHI Health
A member of CommonSpirit

Community Health Needs Assessment

CHI Health Nebraska Heart – Lincoln, NE
Approved April 2025

A Joint Assessment

Contents

EXECUTIVE SUMMARY

CHNA Purpose Statement

The purpose of this Community Health Needs Assessment (CHNA) is to identify and prioritize significant health needs of the community served by CHI Health Nebraska Heart Hospital (NHH). The priorities identified in this report help to guide the hospital's community health improvement programs and community benefit activities, as well as its collaborative efforts with other organizations that share a mission to improve health. This CHNA report meets requirements of the Patient Protection and Affordable Care Act that not-for-profit hospitals conduct a community health needs assessment at least once every three years.

CommonSpirit Health Commitment & Mission Statement

The hospital's commitment to engaging with the community, assessing priority needs, and helping to address them with community health program activities is in keeping with its mission. As CommonSpirit Health, we make the healing presence of God known in our world by improving the health of the people we serve, especially those who are vulnerable, while we advance social justice for all.

CHI Health Overview

CHI Health is a regional health network consisting of 28 hospitals and two stand-alone behavioral health facilities in Nebraska, North Dakota, Minnesota, and Western Iowa. Our mission calls us to create healthier communities, and we know that the health of a community is impacted beyond the services provided within our walls. This is why we are compelled, beyond providing excellent health care, to work with neighbors, leaders, and partner organizations to improve community health. The following CHNA was completed with our community partners and residents to ensure we identify the top health needs impacting our community, leverage resources to improve these health needs, and drive impactful work through evidence-informed strategies.

CommonSpirit Nebraska Heart Hospital Overview

CHI Health NHH is in Lincoln, Nebraska, home of Nebraska Heart Institute, and offers a variety of cardiac services with 63 licensed beds.

CHNA Collaborators

- CHI Health St. Elizabeth
- Nebraska Heart Hospital (NHH)
- Lincoln-Lancaster County Health Department (LLCHD)
- Bryan Medical Center

Community Definition

For the purposes of the NNH Community Health Needs Assessment, the primary service area was defined as Lancaster County, NE, based on patient data for CHI Health St. Elizabeth and NHH,

consideration of the county in which the hospitals are located, and partnering organization's service areas.

Zip Codes Corresponding to 80% of IP Admissions to St. Elizabeth's and Nebraska Heart Hospital:

68003, 68017, 68033, 68042, 68050, 68065, 68066, 68070, 68301, 68304, 68305, 68307, 68310, 68317, 68320, 68323, 68324, 68328, 68329, 68331, 68332, 68333, 68336, 68339, 68341, 68343, 68344, 68346, 68347, 68348, 68349, 68352, 68355, 68357, 68358, 68360, 68366, 68368, 68372, 68376, 68377, 68378, 68379, 68380, 68402, 68404, 68405, 68407, 68410, 68417, 68418, 68419, 68420, 68421, 68422, 68423, 68424, 68428, 68430, 68434, 68437, 68441, 68442, 68443, 68446, 68447, 68448, 68450, 68454, 68458, 68461, 68462, 68463, 68465, 68502, 68503, 68504, 68505, 68506, 68507, 68508, 68510, 68512, 68514, 68516, 68517, 68520, 68521, 68522, 68523, 68524, 68526, 68527, 68528, 68531, 68532, 68583

Assessment Process & Methods

In 2024, CHI Health St. Elizabeth and Nebraska Heart Hospital (NHH) conducted a joint Community Health Needs Assessment (CHNA) in collaboration with the Lincoln-Lancaster County Health Department (LLCHD) and Bryan Health. Since 2021, CHI Health St. Elizabeth and NHH have continued conducting joint CHNAs in partnership with LLCHD and Bryan Health. The 2024 CHNA analyzed via descriptive statistics and stratified analysis (mapping and other demographics) a range of measures from birth certificates, death certificates, hospital claims data, youth and adult health surveys, communicable disease, vaccination data and a range of other data sources. This process identified a series of high-priority issues, further validating and expanding upon the priorities outlined in the previous CHNAs for the City of Lincoln and Lancaster County. This report details the process specific to CHI Health Nebraska Heart Hospital, and in partnership with the community, CHI Health will work to clarify each partner's role in addressing these health needs while developing measurable, impactful strategies. A report outlining the CHI Health Implementation Strategy Plan (ISP) is expected to be released later in 2025.

Process & Criteria to Identify & Prioritize Significant Health Needs

The CHNA process included a review of primary data, such as the Community Health Assessment Survey and Community Conversations, along with secondary data, including vital statistics, hospitalizations, youth and adult risk behavior surveys and other available resources. These data sources were used to determine and validate the top needs of the community. General guidelines for identifying the top needs in Lancaster County included the severity of the health issue, the population impacted, and trends observed in the data. Below is the complete list.

- Magnitude: How significant the impact on individuals the measure is
- Trend: Whether the prevalence/incidence of the measure is going up or down
- Comparison: Where the community scores relative to the state and/or nation
- Inequity: Whether inequities were identified in the data analysis
- Socioeconomics: The economic and social impacts of the measure
- Changeability: Availability of evidence-based programs, policies & practices
- Capacity: The capacity of the public health system & stakeholders
- Readiness: Amount of political will and readiness to move forward

After scoring each of these 8 measures on a scale of 1-5, an index score was developed, and measures were ranked to identify the top 10. After a review of the top measures, it was decided to select more than 10 measures as key issue profiles.

- Access to Healthcare
- Bullying
- Depression
- Falls
- Heat-Related Illness
- Intentional Injury (Assault)
- Motor Vehicle Accidents
- Overweight and Obese BMI
- Physical Inactivity
- Suicide (Intentional Self-Harm)
- Vaping (Electronic Vapor Product Use)

These key issue profiles, listed above, were then presented at the Community Health Summit on September 5, 2024 at Nebraska Innovation Campus in Lincoln, NE to filter them down to three significant health needs that the Community Health Improvement Plan process led by LLCHD would implement. The following section highlights these significant health needs.

List of Prioritized Significant Health Needs

Generally, these top 3 were selected by participants of the Community Health Summit event held at Nebraska Innovation Campus after selecting the Issue Profiles for them to choose from. All those issues are important to the community, but below are the three selected via this process.

- Access to Healthcare
- Depression
- Suicide

Reason for High Priority

Access to Healthcare

In 2022, 7.0% of Lancaster County residents aged 18 to 64 reported lacking health care coverage. Additionally, 79.0% of respondents indicated they had a routine checkup in the past year. However, 10.2% of residents reported needing to see a doctor but were unable to do so due to cost. Furthermore, 16.7% of respondents indicated they did not have a personal doctor or healthcare provider. Community Conversations also revealed that access to healthcare, along with related issues, remains a top priority among racial and ethnic minority groups.

Depression

According to data from 2022, 17.8% of adults in Lancaster County reported ever being diagnosed with depression by a healthcare professional, with higher prevalence proportions observed among younger adults (ages 18 to 24) and females. Over the past decade, the percentage of adults ever diagnosed with depression in our community has remained relatively stable, ranging from 16.8% to 20.9%. Notably, the prevalence of depression in Lancaster

County is slightly higher than the state percentage for Nebraska, yet lower than the national percentage. Additionally, Community Conversations revealed that mental health and related issues, are top priorities among racial and ethnic minority groups.

Suicide

Over the past decade, data among high school students reveal a steady increase in suicidal ideation, rising from 12.4% in 2011 to 19.6% in 2023, and in suicide planning, which grew from 10.6% in 2011 to 15.0% in 2023. In contrast, the rate of suicide attempts among this demographic has decreased significantly, falling from 11.2% in 2011 to 5.9% in 2023. However, deaths due to suicide among all ages have been steadily increasing, from 13.2 deaths per 100,000 persons in 2018 to 14.2 deaths per 100,000 persons in 2023. Additionally, Community Conversations revealed that mental health and related issues, are top priorities among racial and ethnic minority groups.

For more detailed information on how these issues were prioritized, please refer to the appendix, which includes a profile for each specific issue.

Resources Potentially Available

A variety of key resources are available to address significant health needs in the community, particularly suicide, access to healthcare, and depression. To enhance access to care, important resources include the Health 360 Integrated Care Clinic, LLCHD, and Health Hub, which assists individuals in navigating the healthcare system. Additional support comes from organizations such as Clinic with a Heart, the Center for People in Need, and the Lincoln Community Health Endowment. Navigators from the Community Action Program and Enroll Nebraska also help residents connect with healthcare services.

A range of behavioral health services are available to address depression and prevent suicide. Bryan Health, Region V Systems, and The Bridge Behavioral Health provide comprehensive mental health care. Other critical resources include Bluestem Health, St. Monica's Behavioral Health Services for Women, and the Mental Health Association of Nebraska, which operates services like Keya House and Honu Home for individuals in crisis. The Lancaster County Mental Health Diversion program, in collaboration with Community Corrections, and the Lincoln Police Department also play pivotal roles in supporting mental health and suicide prevention efforts. These organizations work collaboratively to offer support, treatment, and crisis response for individuals facing mental health challenges.

Report Adoption, Availability & Comments

This CHNA report was adopted by the CHI Health Board of Directors in April 2025. The report is widely available to the public on the hospital's website, and a paper copy is available for inspection upon request at the Administration Office of CHI Health St. Elizabeth. Written comments on this report can be submitted via mail to CHI Health – The McAuley Fogelstrom Center (12809 W Dodge Rd, Omaha, NE 68154 attn. Healthy Communities); electronically at: https://forms.gle/KGRq62swNdQyAehX8 or by calling Ashley Carroll, Market Director, Community and Population Health, at: (420) 343-4548.

INTRODUCTION

Hospital Description

CHI Health NHH is in Lincoln, Nebraska. NHH has 200 employees, is focused on cardiac care, and operates 63 beds. NHH services are also listed below.

Nebraska Heart Services and Treatment Areas:

- 64-Slice CT Scanning
- Anticoagulation Clinic
- Atrial Fibrillation
- Cardiovascular Health & Lipid Clinic
- Carotid Intima-Media Thickness
- Chest Pain Center
- Coronary Artery Bypass
- Echocardiogram
- Electrophysiology/Arrhythmia
- General Cardiology
- Heart Failure
- Heart Valve Center
- Holter Monitoring
- Imaging
- MUGA Heart Scan
- Nuclear Stress Test
- Pacemaker/ICD
- Stents
- Structural Heart
- TAVR
- Trans-myocardial Revascularization
- Treadmill Stress Test
- Valvular Procedures
- Vascular Disease
- Vein Clinic
- Women's Heart Program

Purpose and Goals of CHNA

CHI Health and our local hospitals make significant investments each year in our local communities to ensure we meet our Mission of creating healthier communities. A Community Health Needs Assessment (CHNA) is a critical piece of this work to ensure we are appropriately and effectively working and partnering in our communities.

The goals of this CHNA are to:

1. Identify areas of high need that impact the health and quality of life of residents in the communities served by CHI Health.
2. Ensure that resources are leveraged to improve the health of the most vulnerable members of our community and to reduce existing health disparities.
3. Set priorities and goals to improve these high need areas using evidence as a guide for decision-making.
4. Ensure compliance with section 501(r) of the Internal Revenue Code for not-for-profit hospitals under the requirements of the Affordable Care Act. CHI Health St Elizabeth and NHH conducted this CHNA jointly. The following report outlines the community description, CHNA process, findings, and prioritized health needs for both CHI Health St. Elizabeth and Nebraska Heart Hospital. The evaluation of each hospital's work from the previous CHNA is reported separately in each hospital's report.

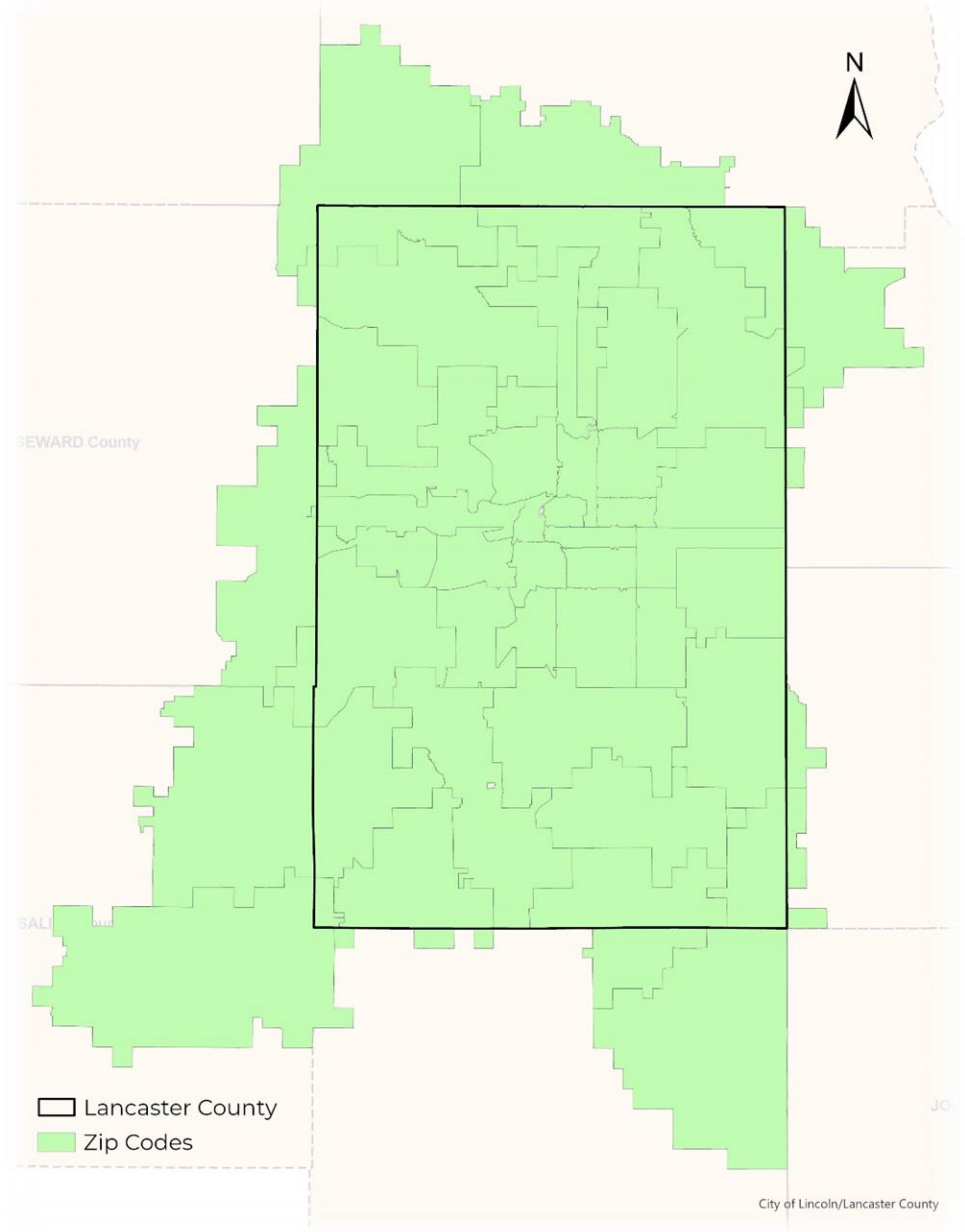
Community Definition

For the CHNA and future implementation strategy, CHI Health St. Elizabeth and NHH have the same service area and considers its primary community to be the City of Lincoln and the surrounding County (Lancaster). Hospital leadership considered the county in which the hospital is located and the zip codes that represent 80% of discharges, and determined the CHNA service area to be the county as many of the zip codes that fall outside of the county are served by other healthcare organizations who are better suited to support local health needs (Figure 1). NHH is a specialty hospital with a broader catchment area, as seen by the list of zip codes below. For the purposes of this CHNA, NHH used the same service area as CHI Health St. Elizabeth. Lancaster County also aligns with the defined service area for the local public health department, Lincoln Lancaster County Health Department (LLCHD). Additionally, surrounding counties served by CHI Health St. Elizabeth and NHH: Otoe, Johnson, Gage, Saline, Seward, York, Saunders, and Cass have licensed hospitals within the county boundaries. This was validated by an internal multi-disciplinary team representing CHI Health St. Elizabeth and NHH and aligns with a shared definition agreed upon with community partners, including other local health systems.

Zip Codes Corresponding to 80% of IP Admissions to St. Elizabeth's and Nebraska Heart Hospital:

68003, 68017, 68033, 68042, 68050, 68065, 68066, 68070, 68301, 68304, 68305, 68307, 68310, 68317, 68320, 68323, 68324, 68328, 68329, 68331, 68332, 68333, 68336, 68339, 68341, 68343, 68344, 68346, 68347, 68348, 68349, 68352, 68355, 68357, 68358, 68360, 68366, 68368, 68372, 68376, 68377, 68378, 68379, 68380, 68402, 68404, 68405, 68407, 68410, 68417, 68418, 68419, 68420, 68421, 68422, 68423, 68424, 68428, 68430, 68434, 68437, 68441, 68442, 68443, 68446, 68447, 68448, 68450, 68454, 68458, 68461, 68462, 68463, 68465, 68502, 68503, 68504, 68505, 68506, 68507, 68508, 68510, 68512, 68514, 68516, 68517, 68520, 68521, 68522, 68523, 68524, 68526, 68527, 68528, 68531, 68532, 68583

Figure 1: CHI Health Lincoln CHNA Service Area, Lancaster County, Nebraska



Community Description

Lancaster County includes residents living in the towns of Bennet, Davey, Denton, Firth, Hallam, Hickman, Lincoln, Malcolm, Panama, Raymond, Roca, Sprague, Waverly, and ten unincorporated villages. Lancaster County covers an area of 839 square miles in southeastern Nebraska, with Lincoln as the largest city and which serves as the Nebraska State Capitol.

Population

As shown in Table 1 from data from the U.S. Census Bureau, the 2022 population estimate for Lancaster County is 322,063. Of this population, 90.3% resides in urban areas, reflecting Lancaster County's largely urban demographic. The historical trend of increased racial and ethnic diversity continues in both Lincoln and Lancaster County.

Table 1: Community Demographics[1]

	Lincoln	Lancaster County	Nebraska	United States
Total Population	290,531	322,063	1,958,939	331,097,593
Population Density (people per square mile)	2,862.4	384.5	25.5	86.9
Total Land Area (sq. miles)	101.5	837.6	76,796.2	3,809,525
Age (Median)	33.9	34.1	36.9	39.0
% below 18 years of age	22.0%	22.5%	24.5%	22.1%
% 65 years of age and older	14.0%	14.6%	16.2%	16.5%
Gender				
% Female	49.6%	49.5%	49.7%	50.4%
Race				
% White Alone	82.0%	83.3%	81.8%	65.9%
% Black or African American Alone	4.1%	3.7%	4.8%	12.5%
% Asian Alone	4.5%	4.1%	2.5%	5.8%
% Native Hawaiian & Other Pacific Islander Alone	0.1%	0.1%	0.1%	0.2%
% Two or More Races	6.6%	6.2%	6.3%	8.8%
% Hispanic or Latino	8.3%	7.7%	11.8%	18.7%

Demographics

Lancaster County covers 839 square miles in southeastern Nebraska. The county's population is growing. The current population of 322,063 represents a 14.2% increase from 286,425 in 2012 (U.S. Census Bureau, n.d.). The city of Lincoln, the county seat, is also the capital city of Nebraska. Lincoln is the second largest city in Nebraska, behind Omaha.

With four post-secondary educational institutions, the community has a lower-than-average percentage of owner-occupied housing than the state and nation (59.3% Lancaster County, 66.5% Nebraska, 64.8% United States), but a higher educational attainment of a bachelor's degree or higher among the population 25 years and over (40.9%, 33.5%, 35.7%, respectively).

Lancaster County hosts over 40 active neighborhood associations and operates under a strong Mayor form of municipal governance with an active City Council. Since the 1980s, the community has welcomed refugees from around the world. Initially, immigrants primarily came from Vietnam, but in recent decades, refugees and immigrants have arrived from Africa, Europe, Russia, the

[1] U.S. Census Bureau, 2022 American Community Survey 5-Year Estimates Data Profiles 05 (DP05)

Middle East, and the Far East. Additionally, there has been a steady influx of Latinx residents over several decades. The community has developed numerous social support services and embraced its growing diversity. However, challenges remain in addressing the health needs of new Americans and minorities unfamiliar with the U.S. healthcare system.

Lancaster County's demographic changes since 2012 reflect the increased diversity as shown in the tables below. Over the decade from 2012 to 2022, Black (27.6%), American Indian and Alaska Native (106.4%), Asian (39.5%), multiracial (95.9%) and Hispanic or Latino (38.6%) residents have increased as a proportion of the total population faster than the White population.

Table 2: Racial and Ethnic Demographics for Lancaster County, Nebraska, 2012 to 2022

Year	White	Black	American Indian/Alaska Native	Asian	Native Hawaiian/Other Pacific Islander	Two or more races	Hispanic or Latino (may be any race)
2012	260,621	14,165	3,988	11,881	263	7,059	16,766
2022	287,317	18,703	5,724	17,728	861	20,058	24,790
Increase	26,696	4,538	1,736	5,847	598	12,999	8,024
% Increase	10.2%	32.0%	43.5%	49.2%	227.4%	184.1%	47.9%

The following table reflects the general population data by age and gender from the American Community Survey from 2012 to 2022. There was significant growth in all age groups except for those under the age of five, where we saw a decline in population. The growth as a percentage was most rapid among those 65 years and older.

Table 3: Age and Sex Demographics for Lancaster County, Nebraska, 2012 to 2022

Population/Age Group	2012	2022	Change (2012-2022)	% Change (2012-2022)
Total population	286,425	322,063	35,638	12.4%
Male	143,500	162,505	19,005	13.2%
Female	142,925	159,558	16,633	11.6%
Under 5 Years	20,209	19,070	-1,139	-5.6%
5 to 17 Years	45,764	53,443	7,679	16.8%
18 Years and Older	220,452	249,550	29,098	13.2%
Male	109,795	125,168	15,373	14.0%
Female	110,657	124,382	13,725	12.4%
65 Years and Older	31,265	46,984	15,719	50.3%
Male	13,426	21,112	7,686	57.2%
Female	17,839	25,872	8,033	45.0%

Socioeconomic Characteristics

This section will provide a summary of households and families, employment, income, and other areas of interest that we can draw an understanding of using the American Community Survey (ACS) from the U.S. Census Bureau.

Housing

In 2022, there were an estimated 136,167 total housing units in Lancaster County, which was an increase from the estimated 120,976 total housing units in 2012 (U.S. Census Bureau, n.d.). Of 129,869 occupied housing units in 2022, 59.3% (77,025) were owner-occupied and 40.7% (52,844) were renter-occupied. The average owner-occupied household size was 2.64 persons per household. 59,168 households were a married-couple family, 5,630 were a male householder (no spouse present, family household), 11,943 were a female householder (no spouse present, family household) and 53,128 were non-family households.

Housing Costs

The 2022 American Community Survey estimated median monthly housing costs for units with a mortgage was $1,624, for units without a mortgage was $661; and for renters it was $997. The cost of housing for units with a mortgage which accounted for 35% or more of household income, was observed in 14.3% of households, but 7.6% for housing units without a mortgage and 39.7% for renters. There are an estimated 4.6% of total housing units that are currently vacant in Lancaster County. In Lancaster County, among total housing units, 12.9% were built before 1939, another 12.9% were constructed between 1940 and 1959, 24.2% were built between 1960 and 1979, 38.1% were constructed between 1980 and 2009, 11.5% were built between 2010 and 2019, and 0.4% were built in 2020 or later. This is particularly significant when considering the need for overall infrastructure improvements, such as addressing household lead exposures affecting children.

Homelessness

The Lancaster County homeless population is best measured using the Point-in-Time Count conducted annually. The number of homeless persons counted has declined since 2012. In 2012, there were 981 individuals counted, but this number steadily decreased to 429 in 2023. In 2023, the count was conducted on January 24 and there were 429 persons from 329 households counted as homeless. Over the course of the year, it is estimated that approximately 1,338 people experienced sheltered (residing in a shelter) or unsheltered homelessness (Homeless Coalition, n.d.)

Employment

Of the population 16 and older, 70.3% were part of the civilian labor force, with 68.1% employed and 2.2% unemployed. Another 0.2% were employed by the Armed Forces and 29.4% were not in the labor force. The unemployment rate in the civilian labor force was 3.2% (U.S. Census Bureau, n.d.).

Income

The median household income in 2022 was $70,387 for households, $94,679 for families, $110,774 for married-couple families and $43,121 for non-family households (U.S. Census Bureau, n.d.). In 2022, the percentage of family households in poverty was 6.7%. For households with children

under 18 years the poverty rate was 11.0%. Households with female householders (and no spouse present and children under 18 years), had a poverty rate of 27.4%, while married-couple families had a poverty rate of 3.4%.

Nativity and Language

In 2022, 294,981 individuals were native-born and 27,082 were foreign-born. Of those who were foreign-born, 13,487 are naturalized citizens and 13,595 are not US citizens. Of the population five years and over, 88.1% spoke English only at home, while 11.9% spoke a language other than English and 4.9% spoke English less than "very well". For native-born individuals, 95.2% spoke English only, while 85.3% of foreign-born individuals spoke a language other than English (U.S. Census Bureau, n.d.).

Education

In 2022, the ACS estimates that 93.3% of people 25 years and older had at least graduated from high school or the equivalent and 40.9% had a bachelor's degree or higher (U.S. Census Bureau, n.d.). Approximately 6.7% were not enrolled in school and had not graduated from high school. Estimates show that the total school enrollment in Lancaster County was 95,782. Approximately 83.4% were enrolled in public school and 16.6% enrolled in private school. Undergraduate college enrollment was 30,589 and graduate or professional school enrollment was 7,482.

According to the Nebraska Department of Education, the largest school district in Lancaster County, Lincoln Public Schools, has 41,850 students and 3,045 teachers (Nebraska Department of Education, n.d.). About 7% of those are English learners (limited English proficiency) compared to 8% statewide. Also, 47% of students are on free/reduced lunch, compared to 50% statewide. The attendance rate is 92% (93% statewide) and the dropout rate is 3% (1% statewide). The graduation rate (82%) is lower than the state overall (87%), but the college-going rate is slightly higher (76%) compared to the state of Nebraska (73%).

Poverty

Among the population for whom poverty status is determined, there were 11.8% of people below the federal poverty level (U.S. Census Bureau, n.d.). The highest rate of poverty was found among adults 18 to 34 years (20.3%). Individuals who had less than a HS diploma (20.4%), who were unemployed (32.8%) or who worked part-time or part-year in the past 12 months (24.0%) had the highest poverty rates. Please see the income section above for more information about household poverty.

Table 4: Socioeconomic Factors for Lancaster County, Nebraska, United States

	Lancaster County	Nebraska	United States
Income Rates			
Median Household Income (2018 - 2022)	$70,387	$71,722	$75,149
Poverty Rates			
Persons in Poverty	11.8%	10.4%	12.5%

Children in Poverty	12.0%	12.0%	16.7%
Employment Rate			
Unemployment Rate	2.2%	2.1%	3.4%
Education/Graduation Rates			
High School Graduate	93.3%	91.9%	89.1%
% of Population Age 25+ with Bachelor's Degree or Higher	40.9%	33.5%	34.3%
Insurance Coverage			
% of Population Uninsured	6.6%	7.8%	8.7%
% of Uninsured Children (Under 19 Years)	4.0%	5.2%	5.3%
Language			
% (Age 5 Years and Over) Who Speak a Language Other than English	11.9%	11.8%	27.7%

Lancaster County is designated a Health Professional Shortage Area in the following areas, with scores ranging from 0 to 26, where the higher the score, the greater the priority (Health Resources & Services Administration).

1. **Primary Care**:
    - Bluestem Health Central Business Office (19)
    - Bluestem Health: Kreshel Clinic (19)
    - Bluestem Health: Main Clinic (19)
    - Bluestem Health: Thompson Clinic (19)
    - Health 360 (19)
    - Nebraska Urban Indian Health Medical Center, Inc. (17)
    - Lincoln Health & Wellness Center (17)

2. **Dental Health**:
    - Bluestem Health Central Business Office (23)
    - Bluestem Health: Kreshel Clinic (23)
    - Bluestem Health: Main Clinic (23)
    - Bluestem Health: Thompson Clinic (23)
    - Health 360 (23)
    - Nebraska Urban Indian Health Medical Center, Inc. (17)
    - Lincoln Health & Wellness Center (19)

3. **Mental Health**:
    - Bluestem Health Central Business Office (21)
    - Bluestem Health: Kreshel Clinic (21)
    - Bluestem Health: Main Clinic (21)
    - Bluestem Health: Thompson Clinic (21)
    - Health 360 (21)
    - Nebraska Urban Indian Health Medical Center, Inc. (13)

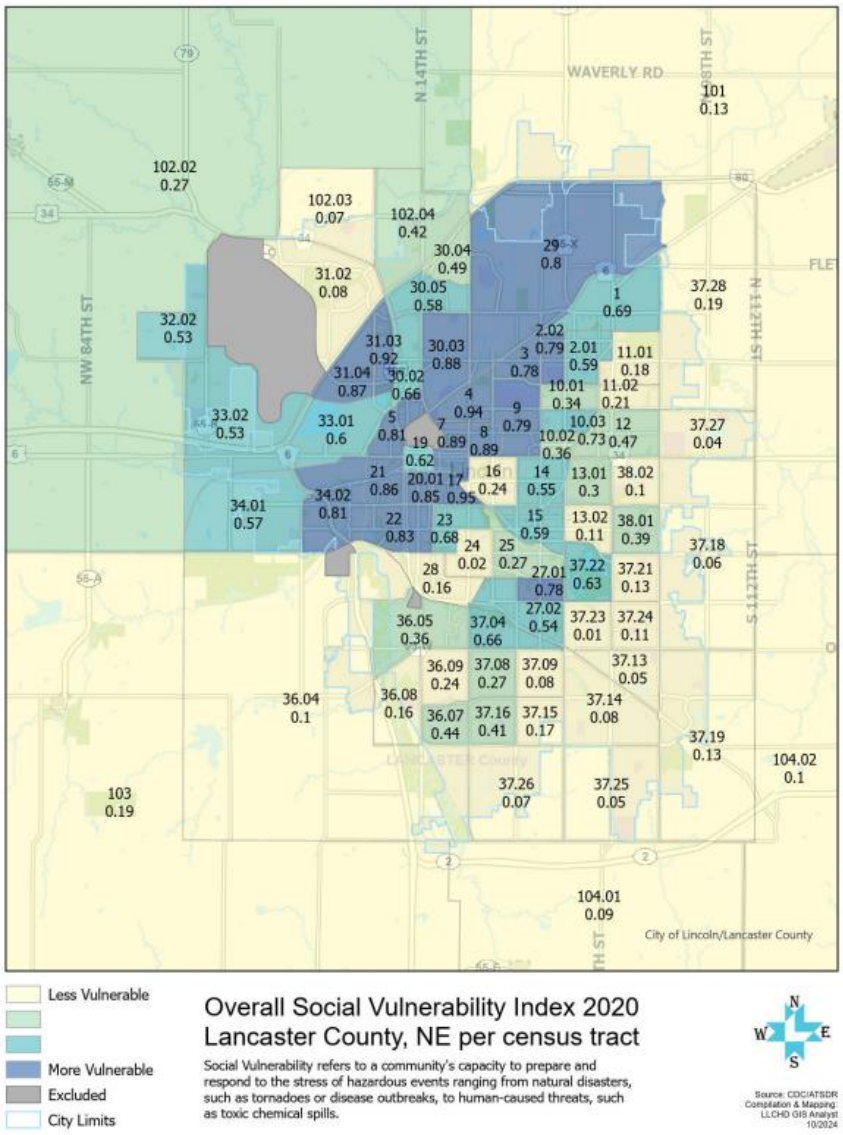
- Lincoln Health & Wellness Center (13)
- CF - NDCS Reception and Treatment Center (9)
- Statewide, covering Butler, Fillmore, Gage, Jefferson, Johnson, Lancaster, Nemaha, Otoe, Pawnee, Polk, Richardson, Saline, Saunders, Seward, Thayer, and York counties (8)

Lancaster County is considered a Medically Underserved Area (MUA) in Primary Care with an Index of Medical Unserved Score of 60.4 (to qualify for this designation, the score must be below or equal to 62.0 on a scale of 0 - 100 with 100 being the lowest need), (Health Resources & Services Administration).

Social Vulnerability Index

Many disparities in Lancaster County are rooted in social vulnerability. The Social Vulnerability Index (SVI), developed by the Centers for Disease Control and Prevention (CDC) and the Agency for Toxic Substances and Disease Registry (ATSDR), measures the potential negative effects on communities caused by external stresses on human health, such as natural or human-caused disasters and disease outbreaks. Reducing social vulnerability can help mitigate both human suffering and economic loss.

Figure 2: Overall Social Vulnerability Index – Lancaster County, Nebraska, 2020



The map on this page shows the SVI by census tract in Lancaster County, where 90.3% of the population resides in urban areas. The SVI uses 15 U.S. Census variables to help local officials identify communities that may need additional support before, during, or after disasters. These variables include factors such as poverty, lack of vehicle access, and crowded housing. The 2020 SVI incorporates four key themes: socioeconomic status (below poverty, unemployment, low income, no high school diploma), household composition and disability (aged 65 or older, children under 17, civilians with disabilities, single-parent households), minority status and language (minority populations and individuals aged 5 or older who speak English "less than well"), and housing type and transportation (multi-unit structures, mobile homes, crowding, lack of vehicle access, group quarters).

While many of these factors are more concentrated in Lancaster County's urban areas, the impact of social vulnerability also extends into its rural communities. This indicates a need for targeted interventions that address the unique challenges of both urban and rural populations in the county.

Unique Community Characteristics

The University of Nebraska's main campus is in Lincoln (UNL), and in 2015, UNL opened the Nebraska Innovation Campus (NIC) to the public. NIC is designed to facilitate new and in-depth partnerships between the University of Nebraska and private sector businesses, fostering innovation through collaborative efforts. Lincoln is also home to Nebraska Wesleyan University, Union College, Bryan College of Health Sciences, Doane University (additional campus), Southeast Community College, and several vocational and trade schools. Additionally, the city hosts a range of specialized institutions where students can pursue degrees and certifications.

Other Health Services

Lincoln offers a wide range of healthcare services, including medical, dental, and mental health care, serving not only the local population but also residents from southeast Nebraska, northern Kansas, and across the state. LLCHD and state agencies provide population health services, while Aging Partners, operated by the City of Lincoln, serves Lancaster County as the Area Agency on Aging. Below is a list of key health and human service providers in the Lincoln-Lancaster County area:

- Bryan Health East and West Campuses (Hospitals)
- Bluestem Health (formerly People's Health Center)
- CHI Health Clinics in Lancaster County
- Health 360 (Lutheran Family Services & Bluestem Health partnership)
- Madonna Rehabilitation Hospital
- Lincoln Surgical Hospital
- Lincoln Regional Center (psychiatric hospital)
- Lincoln-Lancaster County Health Department (LLCHD)
- Lincoln Medical Education Partnership
- Lincoln Veterans Administration Medical Center
- Clinic with a Heart
- People's City Mission
- University Health Center (University of Nebraska-Lincoln & Nebraska Medicine)
- MedExpress Urgent Care (formerly Linc-Care)
- Urgent Care Clinic of Lincoln
- Lancaster County Medical Society (LCMS)
- Center for People in Need (addresses social needs)
- Community Health Endowment of Lincoln
- Partnership for Healthy Lincoln

ASSESSMENT PROCESS & METHODS

Process Overview

The 2024 Community Health Needs Assessment (CHNA) for Lincoln and Lancaster County is based on the recent community health assessment survey, community conversations, and key assessments conducted in alignment with the updated MAPP 2.0 (Mobilizing for Action through Planning and Partnerships) framework. The CHNA is informed by the survey, conversations, and three primary assessments: the Community Partner Assessment, Community Status Assessment, and Community Context Assessment. This report includes the latest available data on demographics, health, and environmental health indicators, all aimed at identifying key issues to be prioritized in the upcoming Community Health Improvement Plan (CHIP).

The CHNA compiles findings from three key assessments within the MAPP 2.0 framework:

- Community Partner Assessment
- Community Status Assessment
- Community Context Assessment

These assessments in coordination with community partners lead to the setting of community health priorities for the CHIP. By conducting these three assessments, and obtaining community input on the data, we're able to generate the issue profiles for consideration by the community for a Community Health Improvement Plan or an Implementation Plan related to the CHNA. The following section provides a brief overview of the assessments.

Community Partner Assessment

The Community Partner Assessment (CPA) is an important update implemented in MAPP 2.0, focusing on understanding the collective capacity of the community to collaborate on health initiatives. Data for this assessment was gathered through a survey distributed to potential attendees of the Community Health Summit from May to June 2024. This survey served as the primary formal data source, providing insights into the perspectives and experiences of community partners. Additionally, the information collected will be analyzed to identify key themes and trends that reflect the community's collaborative efforts in addressing health issues. Beyond the survey, the rich network of partners working on health within the community plays a crucial role in enhancing our understanding of collective capacity and fostering effective collaboration. These results in this iteration focused on identifying partners in the community to engage for the Community Health Summit and Community Health Improvement Plan, but future iterations will be completed earlier to better inform engagement in the broader assessment process. Overall, there were 35 respondents to the Community Partner Assessment. For a more detailed report of these responses, please reach out to Lincoln-Lancaster County Health Department.

Community Status Assessment

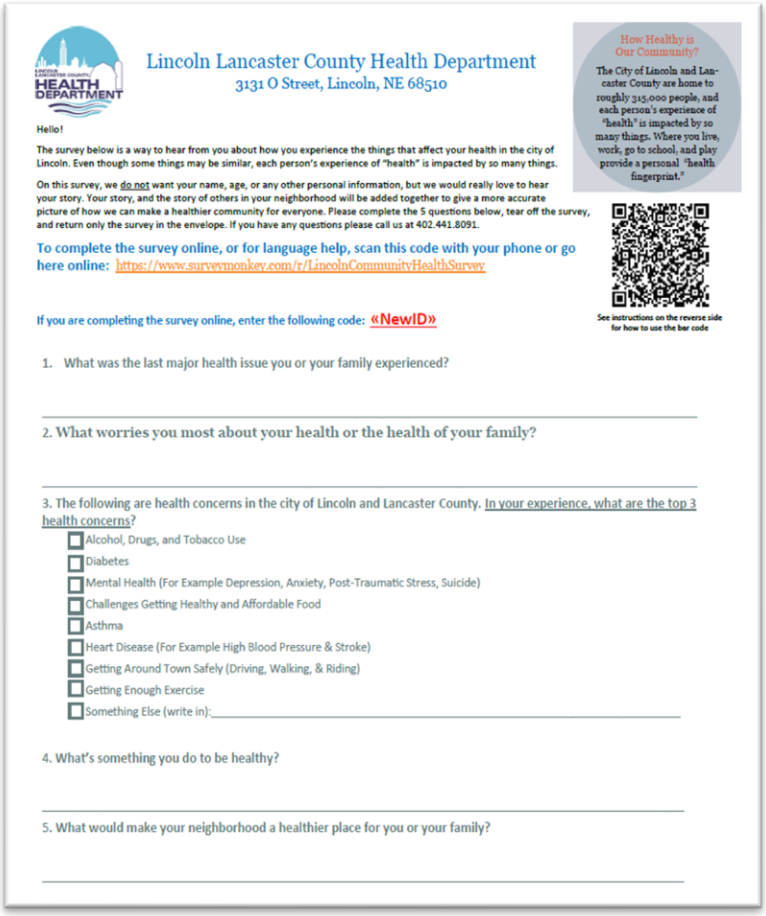
In 2020, as part of the Community Health Assessment process, LLCHD piloted and implemented a new, shortened version of a Community Status Assessment through a five-question geospatial community survey. For the 2024 Community Health Assessment, LLCHD utilized the same five-

question geospatial survey. To ensure equity is met in this project, LLCHD has conducted a series of surveys and focus groups (branded Community Conversations) in collaboration with the Cultural Centers of Lincoln (CCLs) and other partners throughout the community that serve specific populations, whether they are racial, ethnic, disabled or aging, to name a few. This survey and focus group approach serves as a primary data source, complementing a diverse array of indicators drawn from our secondary data sources. Secondary data sources include vital statistics such as birth and death certificate data, along with data from the Behavioral Risk Factor Surveillance System (BRFSS), the Youth Risk Behavior Survey (YRBS), and hospital claims data. Together, these resources contribute to a comprehensive understanding of health behaviors and outcomes in Lancaster County, enabling us to identify trends and inform public health strategies more effectively.

Community Health Assessment Survey

This Community Health Assessment Survey was first developed for the 2021 CHA and repeated in the 2024 CHA. To develop this survey, we collaborated with over 30 community partners to gather their insights on collecting input from the communities they serve and to develop potential survey questions. Final questions were:

1. What was the last major health issue you or your family experienced?
2. What worries you most about your or your family's health?
3. The following are health concerns in the city of Lincoln and Lancaster County. In your experience what are the top 3 health concerns? (nine are listed with a check box, with an "other" text box provided)
4. What's something you do to be healthy?
5. What would make your neighborhood a healthier place for you or your family?



Lincoln Lancaster County Health Department
3131 O Street, Lincoln, NE 68510

How Healthy is Our Community?
The City of Lincoln and Lancaster County are home to roughly 315,000 people, and each person's experience of "health" is impacted by so many things. Where you live, work, go to school, and play provide a personal "health fingerprint."

Hello!

The survey below is a way to hear from you about how you experience the things that affect your health in the city of Lincoln. Even though some things may be similar, each person's experience of "health" is impacted by so many things.

On this survey, we do not want your name, age, or any other personal information, but we would really love to hear your story. Your story, and the story of others in your neighborhood will be added together to give a more accurate picture of how we can make a healthier community for everyone. Please complete the 5 questions below, tear off the survey, and return only the survey in the envelope. If you have any questions please call us at 402.441.8091.

To complete the survey online, or for language help, scan this code with your phone or go here online: https://www.surveymonkey.com/r/LincolnCommunityHealthSurvey

See instructions on the reverse side for how to use the bar code

If you are completing the survey online, enter the following code: «NewID»

1. What was the last major health issue you or your family experienced?

2. What worries you most about your health or the health of your family?

3. The following are health concerns in the city of Lincoln and Lancaster County. In your experience, what are the top 3 health concerns?

- ☐ Alcohol, Drugs, and Tobacco Use
- ☐ Diabetes
- ☐ Mental Health (For Example Depression, Anxiety, Post-Traumatic Stress, Suicide)
- ☐ Challenges Getting Healthy and Affordable Food
- ☐ Asthma
- ☐ Heart Disease (For Example High Blood Pressure & Stroke)
- ☐ Getting Around Town Safely (Driving, Walking, & Riding)
- ☐ Getting Enough Exercise
- ☐ Something Else (write in):

4. What's something you do to be healthy?

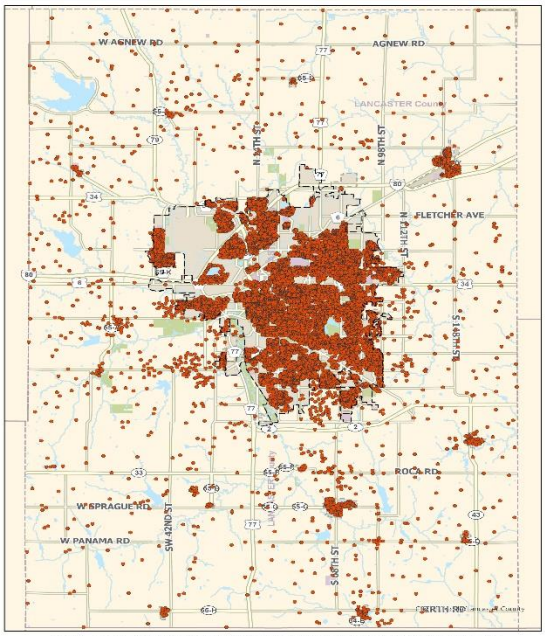
5. What would make your neighborhood a healthier place for you or your family?

With support from the language translation services at LLCHD, this survey was translated into ten languages in addition to English. The survey was initially distributed in November 2023 and continued through May 2024. To enhance the understanding of the

community's health status, the survey was disseminated across various geographic areas (Geospatial Community Survey) and among different equity groups (Equity Community Survey) in Lancaster County.

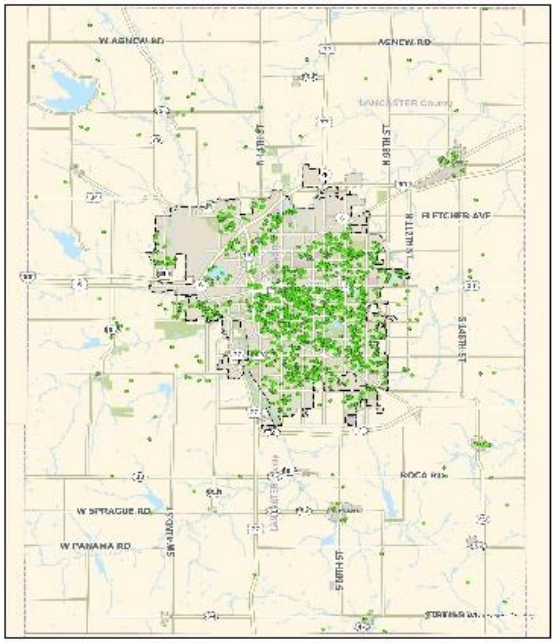
Geospatial Community Survey

The geospatial community survey provided census tract estimates for the self-reported health status of our community. An approach based on the CDC's CASPER (Community Assessment Public Health Emergency Response) model was implemented for this survey. The following text summarizes these efforts, including how the tool was developed, piloted, and formally implemented, and the results of this innovative approach. Below is a map that shows the sample sent and a map showing the responses returned. This graphic shows a copy of the survey that was distributed as well.



2024 Community Health Assessment Survey Sent (Total = 16,911)

For the geospatial methodology, Geographic Information System (GIS) software was used to identify 1 out of every 7 homes on every block of the city and county (upper-right map). Initially, 14,130 addresses were selected for the first round of surveying. All addresses selected for the 2020 CHA were carefully excluded from this sample. Surveys were mailed to these addresses twice, with a four-week gap between mailings. After collecting and entering the returned surveys into an electronic database, a preliminary analysis was conducted to assess the response rates by census tract. In tracts with a response rate of less than 5%, an additional sample of 2,781 households was identified for further surveying. The map to the bottom right shows the responses.



2024 Community Health Assessment Survey Received (Total = 1,302)

Equity Community Survey

Equity is central to all the work done at LLCHD. To ensure the survey upheld our equity standards, LLCHD partnered with various cultural centers in Lincoln, including El Centro, the Ponca Tribe, the Malone Center, the Asian community and cultural center, and Good Neighbors. LLCHD also collaborated with Lincoln Aging Partners,

OutNebraska, the National Federation of the Blind, and Afghan and Ukrainian refugee centers. Multiple meetings were held with these organizations to facilitate the distribution and collection of surveys, aiming to achieve better response rates from each group. Surveys were distributed to 16 equity groups which resulted in a total of 508 individual responses.

Community Conversations

In addition to the community health assessment surveys, LLCHD has been conducting strategic focus groups, known as "Community Conversations," to gather health information directly from community members. These conversations began in 2021 and continued through two phases from December 2023 to July 2024, engaging diverse community groups to better understand their health concerns. The focus groups utilized the Technology of Participation (ToP) methods, ensuring that discussions were inclusive and accessible. All materials were translated and interpreted into the preferred languages of each community group, facilitating effective communication. Initially, the conversations centered on broad health topics and prioritized engagement with racial and ethnic minority groups in partnership with the Cultural Centers of Lincoln (CCL). The data collected from these focus groups will undergo thorough qualitative analysis to identify key themes and insights, which will complement the findings from the health surveys and provide a comprehensive understanding of the community's health needs.

Secondary Data

A variety of secondary data sources was utilized to provide a clear picture of the community's health. Vital statistics, including birth and death certificate data, were examined to understand demographic trends and mortality rates. Self-reported health data from the Behavioral Risk Factor Surveillance System (BRFSS) and the Youth Risk Behavior Survey (YRBS) offered insights into health behaviors and risk factors among different populations. Hospital claims data were analyzed to uncover patterns in healthcare usage and the prevalence of various health issues. Additionally, data on reportable diseases revealed important trends in both communicable and chronic conditions within the area. Environmental health data provided context on how environmental factors influence public health.

Community Context Assessment

With the MAPP 2.0 updated released in late 2023 by the National Association of County and City Health Officials (NACCHO), the Community Context Assessment (CCA) was created. This assessment focuses on the qualitative data showing the strengths, assets, environment and forces of change gathered from the surveys and focus groups conducted during the assessment process. Some of this information was also gathered objectively as members of the public scored the measures based on a series of modules recorded and released by LLCHD. In future iterations, this will be a formal assessment phase, but in this iteration, the components of the Context Assessment were incorporated into the broader assessment process to provide background for the result of the results described in the Community Status Assessment. Forces of change was previously a standalone assessment in previous MAPP cycles.

Issue Profiles

Once the assessment work was completed, all the information acquired by analyzing standard data sources was released via pre-recorded modules for members of the public to review and provide their perspective on the subjective components of the rating scale for each measure (changeability, socioeconomic, readiness and capacity). Following the public scoring of all the measures, the epidemiology team at LLCHD reviewed the measures and assigned scores based on the objective criteria (severity, relative to state/nation, trend, inequity). The highest scoring measures were then selected as the issue profiles below.

- Access to Healthcare
- Bullying
- Depression
- Falls
- Heat-Related Illness
- Intentional Injury (Assault)
- Motor Vehicle Accidents
- Overweight and Obese BMI
- Physical Inactivity
- Suicide (Intentional Self-Harm)
- Vaping (Electronic Vapor Product Use)

Once the issue profiles were prepared, the top 3 were selected by attendants of the Community Health Summit ranking each of the issue profiles. The Community Health Summit included a wide array of members from the local healthcare system (CHI Health, Bryan Health, Bluestem Health, CenterPointe), city/county agencies, non-governmental organizations working in public health (i.e. Cultural Centers of Lincoln, Community Health Endowment) and representatives from other organizations totaling over 150 attendees. In collaboration with these attendees, the top 3 issues selected for action via the LLCHD Community Health Improvement Plan were access to healthcare, depression and suicide.

Public Comment on previous Community Health Needs Assessment

CHI Health St. Elizabeth invited written comments on the most recent CHNA report and Implementation Strategy both in the documents and on the website where they are widely available to the public. No written comments have been received.

ASSESSMENT DATA & FINDINGS

Community Health Survey

Geospatial Sample

From the geospatial sample, we received approximately 1,340 responses, of which 1,302 were valid. The data collected (excluding Question 3) were first gathered and categorized by LLCHD's epidemiology team in collaboration with hospital partners. After categorization, the estimates were weighted and presented for each question. The categorized results for each question are detailed below.

For Question 1 (What was the last major health issue you or your family experienced?), the percentage of responses in each category is listed below. Infectious and parasitic diseases were identified as the leading cause (18.2%), followed by circulatory system issues (14.1%), and cancer (13.9%). Other significant responses, each representing at least 5% of our community, include musculoskeletal disorders, injuries, poisoning, and the consequences of external causes, as well as surgeries or other medical treatments/procedures.

Categorized Responses	Weighted Percent
Infectious & Parasitic Disease	18.2%
Circulatory System	14.1%
Cancer/Neoplasms	13.9%
Nothing	10.7%
Musculoskeletal System	7.7%
Injury, Poisoning & Certain Other Consequences of External Causes	6.6%
Surgery or Other Medical Treatment/Procedure without Specified Cause	6.2%
Other	4.6%
Mental, Behavioral and Neurodevelopmental Disorders	4.2%
General Health and Other or Unspecified Health Conditions	4.1%
Digestive System	3.5%
Endocrine System	3.1%
Aging	2.1%
Conditions of the Eye and Ear	2.1%
Respiratory System	2.0%
OB/GYN	1.8%
Urinary System	1.7%
Nervous System	1.2%
Healthcare Access	1.0%
Disability	0.3%

The second question (What worries you most about your or your family's health?) identified healthcare access as the leading cause (27.3%). The next leading group of responses identified general health & well-being (14.7%). Individuals reported nothing (12.9%) or aging (12.1%) more

frequently than others (8.1%), other (8.1%) and behavioral or mental health (6.9%) and infectious disease (5.0%).

Categorized Responses	Weighted Percent
Healthcare Access	27.3%
General Health & Well-being	14.7%
Nothing	12.9%
Aging	12.1%
Others	8.1%
Mental, Behavioral and Neurodevelopmental Disorders	6.9%
Cancer/Neoplasms	6.3%
Infectious Disease	5.0%
Circulatory System	4.5%
Environment	3.6%
Support	2.6%
Musculoskeletal System	0.9%
Condition or the Eye and Ear	0.7%
Disability	0.6%

The third question (In your experience, what are the top 3 health concerns?) gave options for individuals to select their top 3 health concerns. The table below shows what was selected most frequently. Mental Health (Depression, Anxiety, Post-Traumatic Stress Disorder, Suicide), Alcohol, Drugs, and Tobacco Use, and Heart Disease (High Blood Pressure, Stroke) were most commonly selected health concerns for Lancaster County.

Categorized Responses	Weighted Percent
Mental Health (Depression, Anxiety, Post-Traumatic Stress Disorder, Suicide)	64.2%
Alcohol, Drugs, and Tobacco Use	36.4%
Heart Disease (High Blood Pressure, Stroke)	32.9%
Challenges Getting Healthy and Affordable Food	28.0%
Cancer	27.8%
Getting around Town Safely (Driving, Walking, Riding)	27.4%
Getting Enough Exercise	23.1%
Other	22.9%
Diabetes	19.5%
Asthma	3.6%

The fourth question (What is something you do to be healthy?) was open-ended and allowed individuals to provide general information about healthy habits they have. The table below summarizes this. Exercise (72.5%) and healthy diet (38.3%) were most responses.

Categorized Responses	Weighted Percent

Exercise	72.5%
Healthy Diet	38.3%
Other	10.7%
Regular Preventative Care	4.6%
Reducing Exposure to Risk Factor	3.8%
None	3.3%

The fifth question (What would make your neighborhood a healthier place for you or your family?) inquired about interventions that could be undertaken to improve the health of their community. The table below summarizes the communities' responses to this question. The leading interventions were physical activity infrastructure (20.8%), traffic safety (12.1%), cleaner environment (10.1%), neighborhood safety (7.5%), access to healthy food (6.1%) and other (6.0%). For physical activity infrastructure, more focus on access to trails, parks, and gyms were the leading specific types. For environment, air quality and cleaner neighborhoods were among the top specific improvements desired. For traffic safety, less high-speed traffic and traffic volume were the leading preferences.

Categorized Responses	Weighted Percent
Nothing	31.6%
Physical Activity Infrastructure	20.8%
Traffic Safety	12.1%
Environment	10.1%
Neighborhood Safety	7.5%
Access to Healthy Food	6.1%
Other	6.0%
Access to Healthcare	4.3%
Neighborhood Connectedness	3.9%
Restricted Access to Drug & Alcohol	1.5%

Overall, these questions and their responses provide a robust understanding of what the community identifies as the biggest health issues and the best ways to potentially address these health issues.

Equity Sample

The analysis followed the same process used for the geospatial sample. Excluding responses to Question 3, the LLCHD epidemiology team, in collaboration with hospital partners, categorized the data. After categorization, the results were weighted and analyzed.

For each question, categorized results were reviewed alongside available community assets and resources addressing significant health needs. These included a range of organizations providing access to care and support services, such as:

- Health 360 Integrated Care Clinic (Lutheran Family Services)
- Lincoln-Lancaster County Health Department (CHIP convening stakeholders)
- Health Hub – supporting individuals in navigating the health system

- Clinic with a Heart
- Center for People in Need
- Lincoln Community Health Endowment
- Health LNK – Lincoln public access television
- Enroll Nebraska Navigators (Community Action Program for Lancaster and Saunders County)
- CHI Health
- NHH Behavioral Health
- Bryan Health
- Region V Systems
- The Bridge Behavioral Health
- Blue Valley Behavioral Health
- CEDARS Youth Services
- Lancaster County Human Services
- Lincoln Police Department
- Lincoln Treatment Center
- Mental Health Association of Nebraska
- Lancaster County Community Corrections (Mental Health Diversion)
- St. Monica's Behavioral Health Services for Women
- Bluestem Health (FQHC)
- Keya House
- Honu Home
- CenterPointe's Crisis Response Services

Categorized results for each survey question are presented in the following section.

For Question 1 (What was the last major health issue you or your family experienced?), the percentage of responses in each category is listed below. Like the geospatial sample, infectious and parasitic diseases were identified as the leading cause (16.3%), followed by circulatory system issues (15.2%).

Categorized Responses	Weighted Percent
Infectious & Parasitic Disease	16.3%
Circulatory System	15.2%
Nothing	14.6%
Endocrine System	9.1%
Mental, Behavioral and Neurodevelopmental Disorders	8.5%
General Health and Other or Unspecified Health	7.3%
Cancer/Neoplasms	6.7%
Musculoskeletal System	6.3%
Other	5.9%
Respiratory System	3.5%
Digestive System	3.3%

Aging	2.2%
Nervous System	2.2%
Surgery or Other Medical Treatment/Procedure without Specified Cause	1.8%
Injury, Poisoning & Certain Other Consequences of External Causes	1.8%
Conditions of the Eye and Ear	1.2%
OB/GYN	1.0%
Healthcare Access	1.0%
Disability	0.2%

The second question (What worries you most about your or your family's health?) identified healthcare access (20.7%) and general health & well-being (18.5%) as the two most common responses. These were also the top two responses in the geospatial sample.

Categorized Responses	Weighted Percent
Healthcare Access	20.7%
General Health & Well-being	18.5%
Nothing	17.1%
Mental, Behavioral and Neurodevelopmental Disorders	9.2%
Circulatory System	9.0%
Other	6.9%
Aging	5.3%
Cancer/Neoplasms	4.9%
Infectious Disease	3.9%
Environment	1.4%
Support	1.4%
Condition or the Eye and Ear	1.0%
Musculoskeletal System	0.8%
Disability	0.6%

The third question (In your experience, what are the top 3 health concerns?) gave options for individuals to select their top 3 health concerns. The table below shows what was selected most frequently. Mental Health (Depression, Anxiety, Post-Traumatic Stress Disorder, Suicide) was by far the most commonly selected issue in this sample, followed by Heart Disease (High Blood Pressure, Stroke), Diabetes, and Alcohol, Drugs, and Tobacco Use.

Categorized Responses	Weighted Percent
Mental Health (Depression, Anxiety, Post-Traumatic Stress Disorder, Suicide)	58.7%

Heart Disease (High Blood Pressure, Stroke)	39.7%
Diabetes	33.5%
Alcohol, Drugs, and Tobacco Use	30.9%
Challenges Getting Healthy and Affordable Food	24.8%
Cancer	23.4%
Getting around Town Safely (Driving, Walking, Riding)	22.0%
Getting Enough Exercise	19.9%
Other	15.7%
Asthma	7.3%

The fourth question (What is something you do to be healthy?) was open-ended and allowed individuals to provide general information about healthy habits they have. The table below summarizes this. Exercise (64.2%) and healthy diet 40.5%) were the most common responses.

Categorized Responses	Weighted Percent
Exercise	64.2%
Healthy Diet	40.5%
Other	11.6%
Regular Preventative Care	8.7%
None	5.3%
Reducing Exposure to Risk Factor	2.6%

The fifth question (What would make your neighborhood a healthier place for you or your family?) inquired about interventions that could be undertaken to improve the health of their community. The leading responses in this sample were Nothing (21.5%), Environment (17.7%), and Physical Activity Infrastructure (17.3%). For physical activity infrastructure, more focus on access to trails, parks, and gyms were the leading specific types. For environment, cleaner neighborhoods and more green spaces were some of the specific improvements desired.

Categorized Responses	Weighted Percent
Nothing	21.5%
Environment	17.7%
Physical Activity Infrastructure	17.3%
Neighborhood Connectedness	10.6%
Neighborhood Safety	10.6%
Access to Healthy Food	10.0%
Other	9.4%
Access to Healthcare	5.1%
Restricted Access to Drug & Alcohol	3.9%
Traffic Safety	3.1%

Community Conversations

The insights gathered from the Community Conversations and health surveys have revealed critical information regarding the health needs of the community. After initially focusing on broad health topics and engaging primarily with racial and ethnic minority groups in partnership with the Cultural Centers of Lincoln (CCL), partners identified access to healthcare and mental health as major priority areas.

Following a presentation of this information to community leadership at the Minority Health Summit in 2022, the CCLs sought to further engage their communities, this time concentrating exclusively on mental health needs. The methodology for the second round of conversations in 2023 utilized a modified 'SWOT' approach to facilitate two-hour discussions. Participants were specifically asked to identify the Strengths, Weaknesses (framed as challenges), Opportunities, and Threats regarding mental health and emotional well-being within their community. As time allowed, participants also voted on which identified opportunity should be prioritized in future efforts. The subsequent results will detail the key themes and specific needs identified through both the focus groups and survey data, providing a comprehensive overview of the community's health landscape.

Beginning in 2023, 12 Community Conversations focusing on mental health were conducted with racial and ethnic minority groups in Lincoln. This included conversations with groups who identify as Middle Eastern (3), Hispanic (2), Sudanese (2), Chinese, Vietnamese, American Indian, and African American. This ongoing engagement allowed for community members to think of public mental health and share their opinions in a safe space. There were many overlapping themes that came from different communities, results of the most common themes are shown in the table below.

Strengths	Challenges	Opportunities
❖ Community and Family Connections ❖ Faith and Spirituality ❖ Optimism and Positive Thinking	❖ War and Displacement ❖ Financial Strain and Job Insecurity ❖ Mental Health and Stress	❖ Community Support and Connections ❖ Education and Skill Development ❖ Accessible Healthcare and Wellness

Three new community groups were engaged in the past year including Afghan immigrants, the aging community (60 years old and older), and the LGBTQ+ community. Each group had two different meetings with different participants and were asked about their general health concerns. Afghan men and women each shared that language barriers were their primary health concern, along with troubles with accessing healthcare, transportation, and receiving dental care. Members of the LGBTQ+ shared key concerns including access to healthcare, social isolation due to a lack of community hubs, affirmation of identity, and experiencing hostility. Clients from Aging Partners represented the aging population in Lancaster County and took part in two conversations at Victory Park in Lincoln and the Hickman Community Center. Their major concerns included navigating the healthcare system, the high costs associated with being retired, maintaining mental wellness, and

protecting against scams and other crimes. The number of total conversations that have been held overall as of September 2024, along with the languages and topic of conversation, can be found in the table below.

Year	# of Conversations	# of Languages*	Conversation Topic
2021	11	6	11 General Health
2022	9	1	9 General Health
2023	14	8	2 General and 12 Mental Health
2024	5	2	5 General Health
Total	**39**	**10**	**27 General and 12 Mental Health**

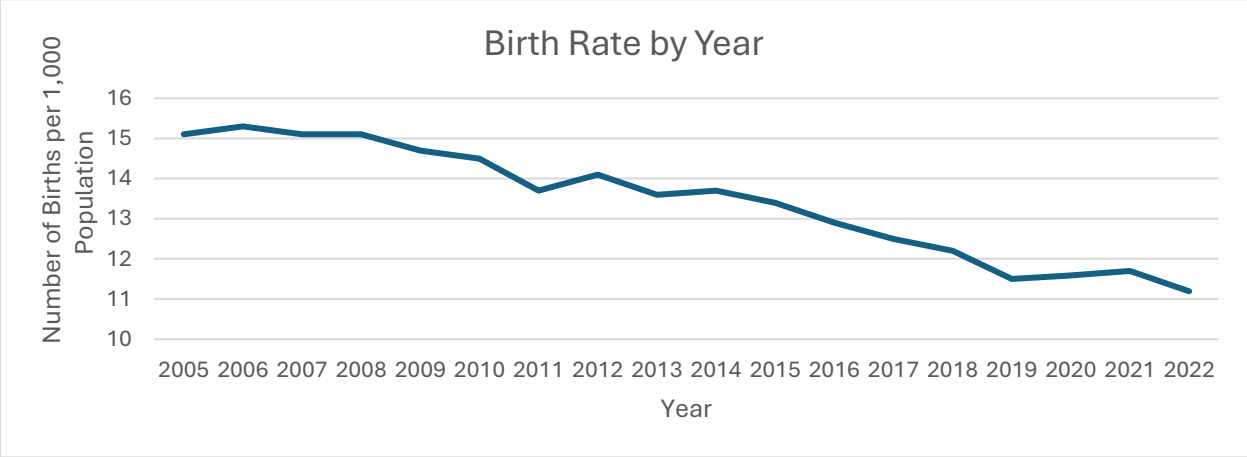
*Languages used for primary facilitation included Arabic, Burmese, Chinese, English, Karen, Pashto, Signed language, Spanish, Ukrainian, and Vietnamese.

Vital Statistics

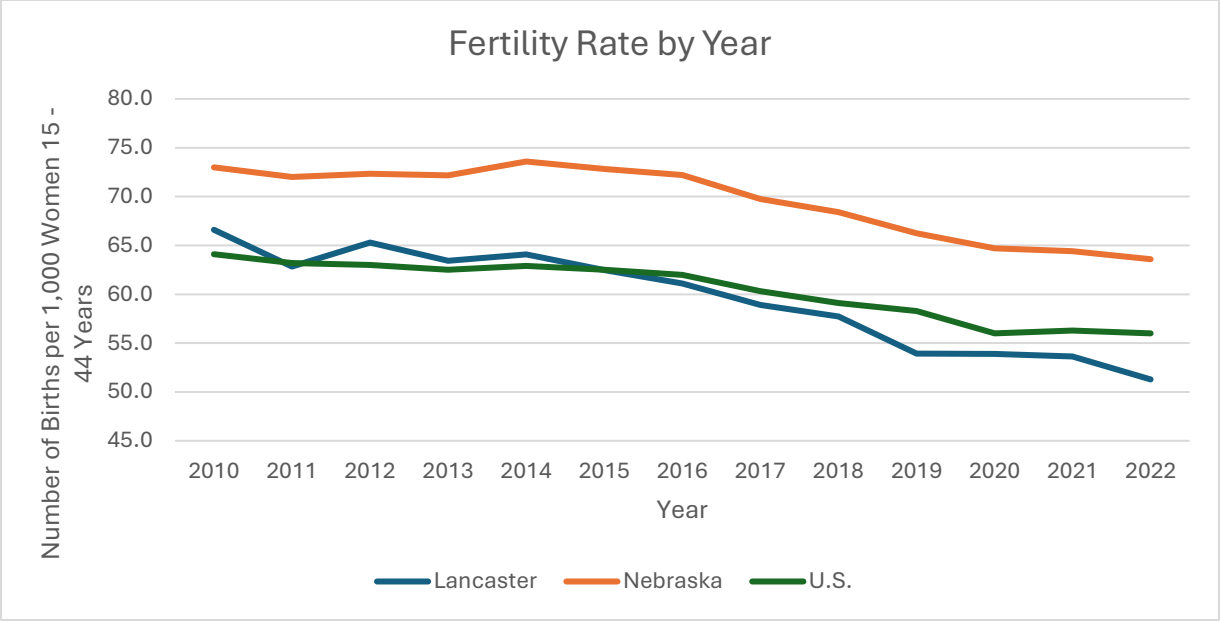
Birth Certificate Data

Nebraska adopted national standards for birth and death certificates in 2005, enhancing the accuracy of vital statistics. A notable change in birth certificates post-2005 is the method of recording when prenatal care begins, shifting from self-reporting by the mother to information extracted from medical records by healthcare providers.

Birth & Fertility Rates



The rate of births per 1,000 population has been declining since 2005 from 15.1 in 2005 to 11.2 in 2022. This decline has also been observed nationwide as more women are choosing to wait longer to have children and contraceptive interventions are becoming more widely adopted. For 2023 in Lancaster County, White mothers made up 79.2% of all births, while Hispanic mothers made up another 14.6%, followed by mothers reporting their race as 'Other' at 12.2% and Black mothers (5.5%) and Asian mothers (5.5%) making up the next largest percentages. Of all 3,501 births in 2023, 52.1% were male and 51.2% were female. By age, mothers who are under 20 years of age make up 2.6% of all births, 20-24 years are 12.6%, 25-29 years are 25.6% and 30+ years are 45.2%.

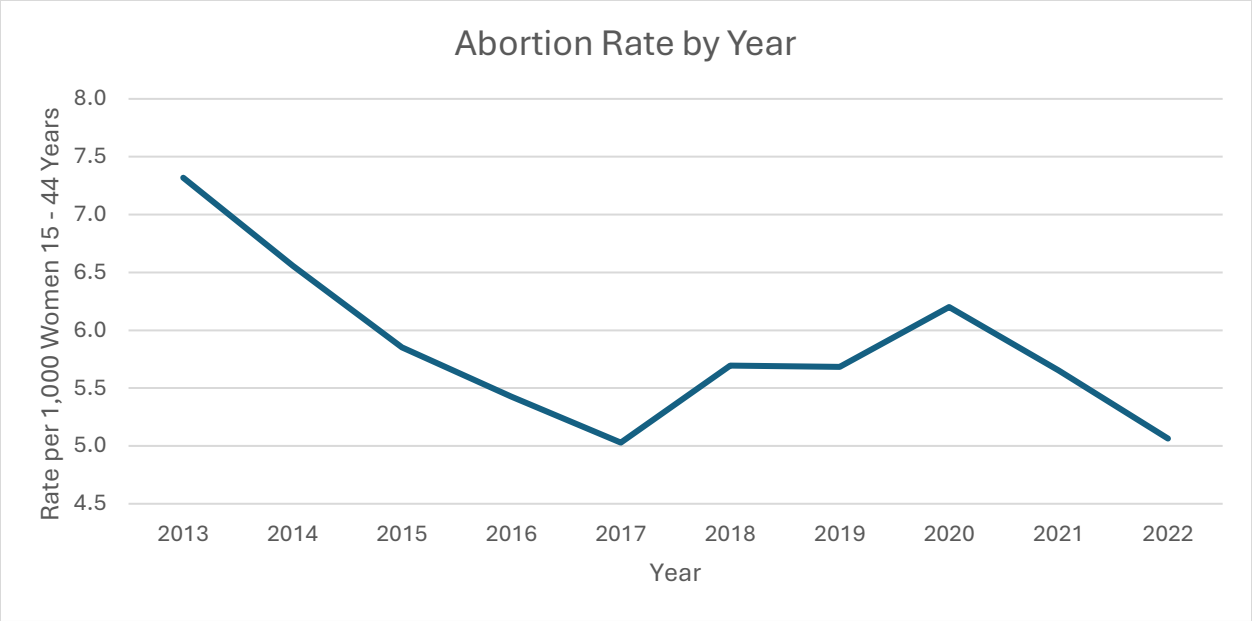


The general fertility rate (GFR) provides a more accurate measure for tracking birth rate patterns among women in Lancaster County compared to the crude birth rate. While both rates consider the total number of live births within the population, the crude birth rate is calculated using the entire population, including individuals of all ages and sexes. In contrast, the GFR is calculated using only females of reproductive age, defined as ages 15 through 44 years, residing in Lancaster County during a specified time. This results in a more precise indicator for studying population growth and change. Lancaster County's GFR has been declining since 2010 and hit an all-time low in 2022 at 51.3 live births per 1,000 women aged 15 through 44 years of age. Lancaster County, alongside the state and national rate, has steadily declined over the last ten years.

Family Planning

Approximately half of pregnancies in the United States occur unintentionally (CDC,2019). Unintended pregnancies have been associated with adverse outcomes such as preterm birth and postpartum depression. Implementing interventions to promote the utilization of birth control methods is vital in preventing unintended pregnancies. Additionally, access to birth control and family planning services can facilitate longer intervals between pregnancies, which can lead to improved health outcomes for both women and their infants. Information derived from the 2022 Behavioral Risk Factor Surveillance System (BRFSS) revealed that male sterilization, commonly known as vasectomy, was the most preferred birth control method, accounting for 19.2% of respondents, followed by intrauterine devices at 18.6%, and birth control pills, contraceptive rings, or contraceptive patches at 13.2%. Given the limited sample size in the 2022 BRFSS survey, it is advisable to interpret this data with caution.

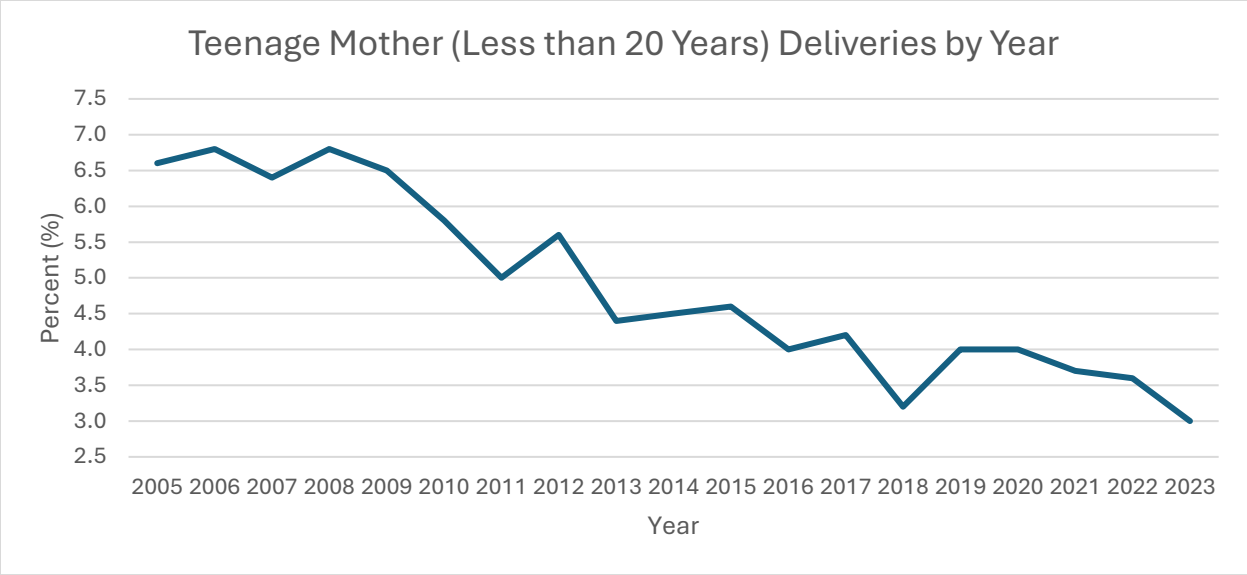
Abortion Rate



Monitoring abortion rates is essential to assess the effectiveness of access to contraception and healthcare services. By tracking trends in abortion rates, we can gauge whether individuals have adequate access to contraception methods and healthcare resources that support reproductive health and family planning. Additionally, monitoring geographical disparities in abortion rates can highlight areas where access to contraception and healthcare may be lacking. The abortion rate is calculated as the number of abortions obtained by Lancaster County residents per 1,000 women aged 15-44 years. Since 2013, there has been a steady decline in abortion rates among Lancaster County residents, reaching a near all-time low in 2022 at 5.1 abortions per 1,000 women aged 15-44 years.

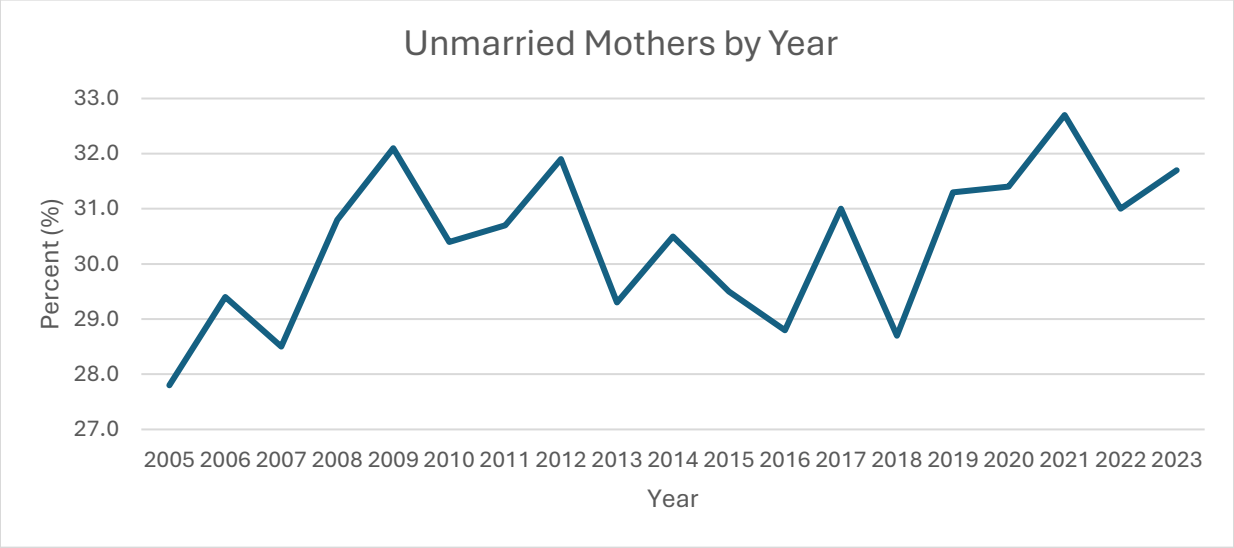
Births to Teenage Mothers

The number of births to mothers less than 20 years of age has been declining historically. Teenage pregnancies can be particularly challenging due to a higher probability of financial instability, unstable housing, high costs of childcare, incomplete education and other factors that make it more difficult to care for their children. Births to teenage mothers have been on the decline since 2005. Additionally, teenage mother deliveries were 3% of all births in 2023. As contraceptive interventions become more widely adopted and sexual behaviors for youth are improved with continuing education, it is expected that this metric will continue to improve.



Unmarried Mothers

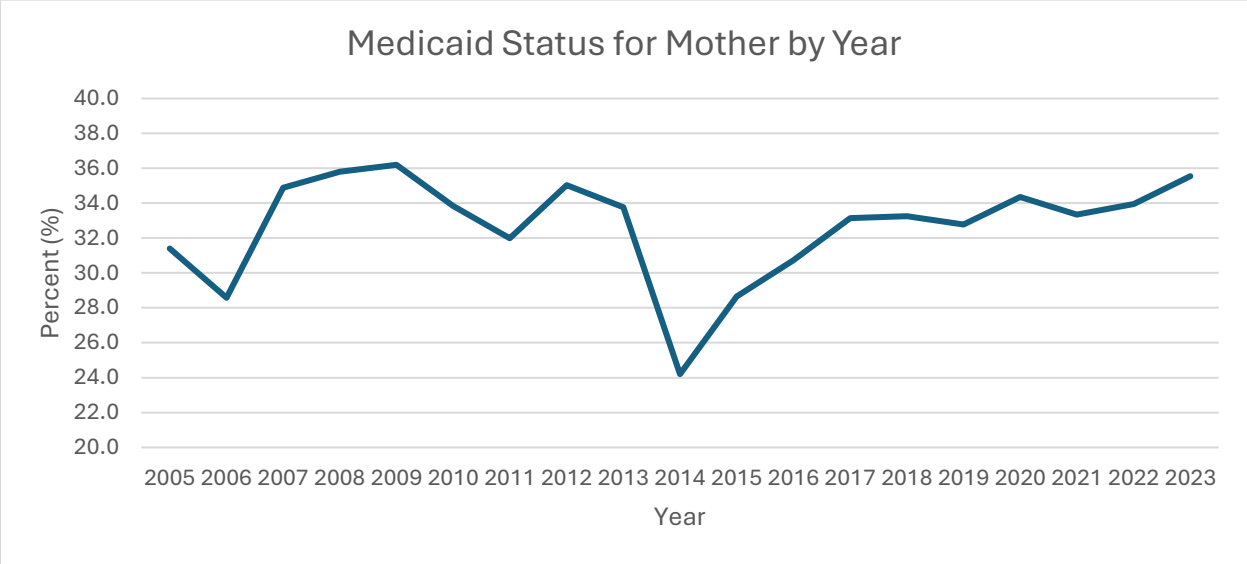
Mothers who are unmarried are statistically more likely to have negative health outcomes. There are a range of contributing factors that may help to explain this disparity in outcomes by marital status. Since 2005, the proportion of mothers who were unmarried has fluctuated stably but increasing between 27.8% to 32.7%. For 2023, 27.4% of White mothers were unmarried, while the rate for Black mothers (52.1%) and American Indian or Alaska Native mothers (72.7%) were higher. The probability of being unmarried also decreases by age group with mothers under 20 years (98.1%) with the highest percentage followed by mothers 20-24 years (70.6%). Mothers who had Medicaid were frequently unmarried (70.5% in 2023).



Medicaid Status

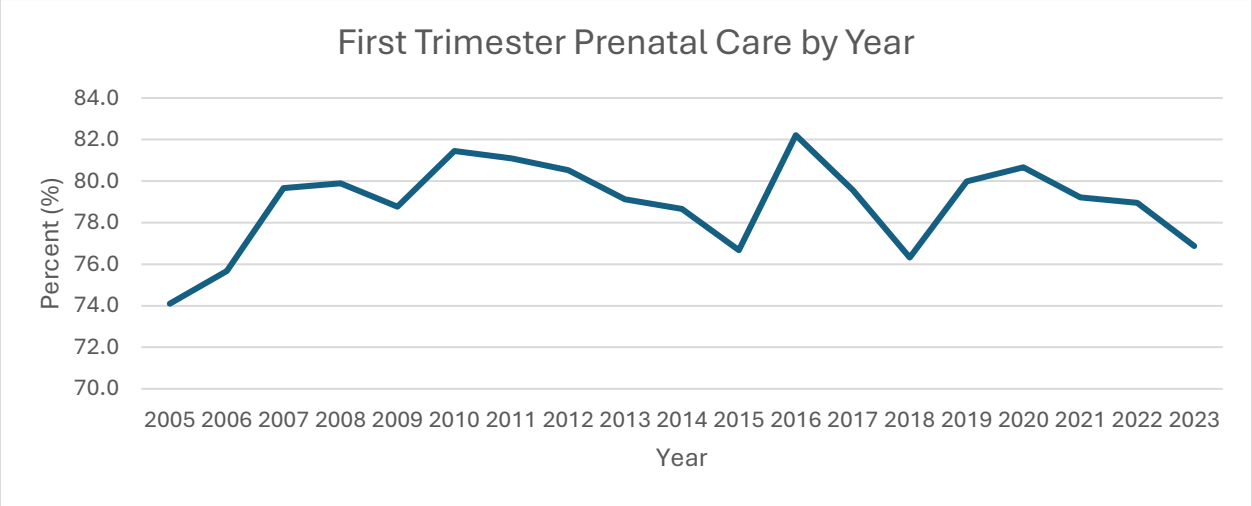
Medicaid and private insurance are typically the primary payors in Lancaster County. In 2023, 35.5% of pregnancies were paid for using Medicaid and 64.5% were paid for using private

insurance. In 2023, 70.5% of Medicaid payers were unmarried, compared to 27.0% of those using private insurance.



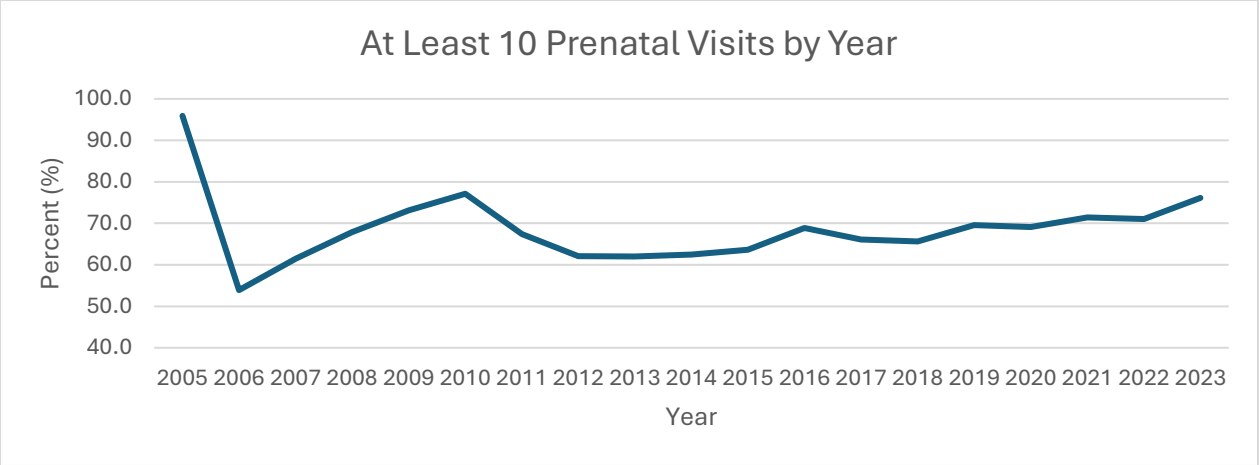
Prenatal Care

First Trimester Prenatal Care



Expectant mothers initiating prenatal care as soon as possible is a predictor of positive maternal and child health outcomes. In 2023, 76.9% of mothers were seen for prenatal care during their first trimester of pregnancy. Between 2005 and 2022, first trimester prenatal care estimates were between 74% to 82%. Prenatal care estimates have been stable but slightly improving over the years. Mothers who are under 20 years are the least likely to initiate their prenatal care in the 1st trimester (50.5%) compared to 20-24 years (70.1%), 25-29 years (78.7%) and 30+ years (79.3%) in 2023. The estimates in 2015 and 2018 showed one of the lower figures from this period; however, this trend of increasing maternal age being associated with increased likelihood of first trimester prenatal care is true for most other years as well.

At Least 10 Prenatal Care Visits

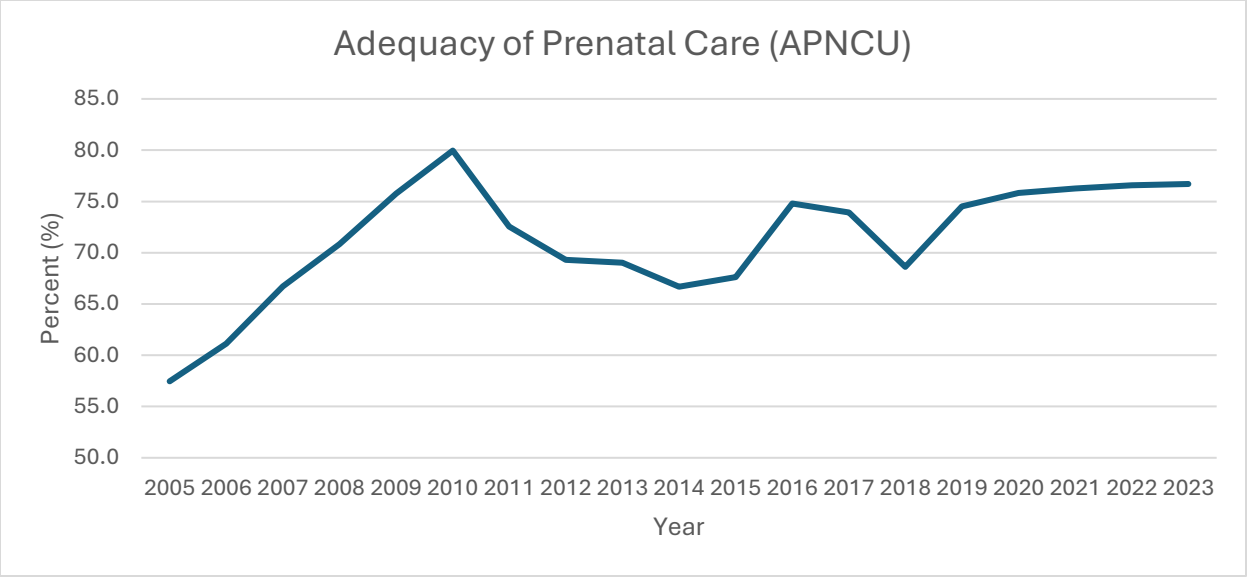


Adequate prenatal care is often measured using the number of prenatal care visits completed by the mother during her pregnancy. In 2023, 76.1% of mothers had at least 10 prenatal care visits. The percentage of mothers with at least 10 prenatal care visits has averaged around 69% in the last 19 years. Age is a predictor of 10+ prenatal care visits as it is with prenatal care. In 2023, mothers under 20 years has had the lowest percentage of completed 10+ prenatal care visits (61.3%), followed by 20-24 years (78.2%), 30+ years (78.4%) and 25-29 years (80.2%).

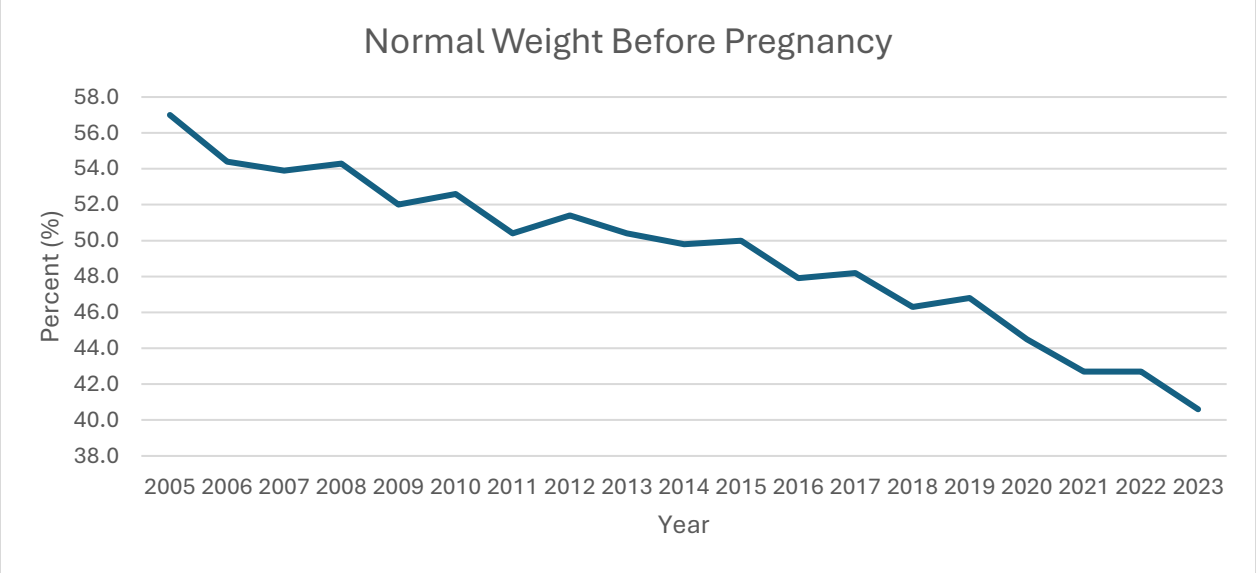
Adequacy of Prenatal Care

An important approach to reducing the risk of preterm birth is adequate prenatal care (Shin and Wong, 2019). To measure the adequacy of prenatal care, the Adequacy of Prenatal Care Utilization (APNCU) index considers the gestational age at which prenatal care began and the total number of prenatal care visits received throughout the pregnancy. Taking these factors into account, the APNCU index categorizes prenatal care utilization into one of four levels: inadequate, intermediate, adequate, or intensive.

In Lancaster County, the APNCU has overall remained stable at around 73%, placing it in the intermediate category, where care is initiated by month 4, with 50–79% of expected visits received. Stratifying by race, non-Hispanic Black mothers had the lowest percentage of adequate prenatal care (69.8%), followed by Hispanic mothers (70.8%), and non-Hispanic Asian mothers (72.3%) for 2023. When stratifying by age group, mothers under the age of 20 had the lowest percentage of adequate prenatal care (60.4%), followed by ages 20-24 (74.4%), and over 30 years of age (77.3%).



Maternal Weight Before Pregnancy



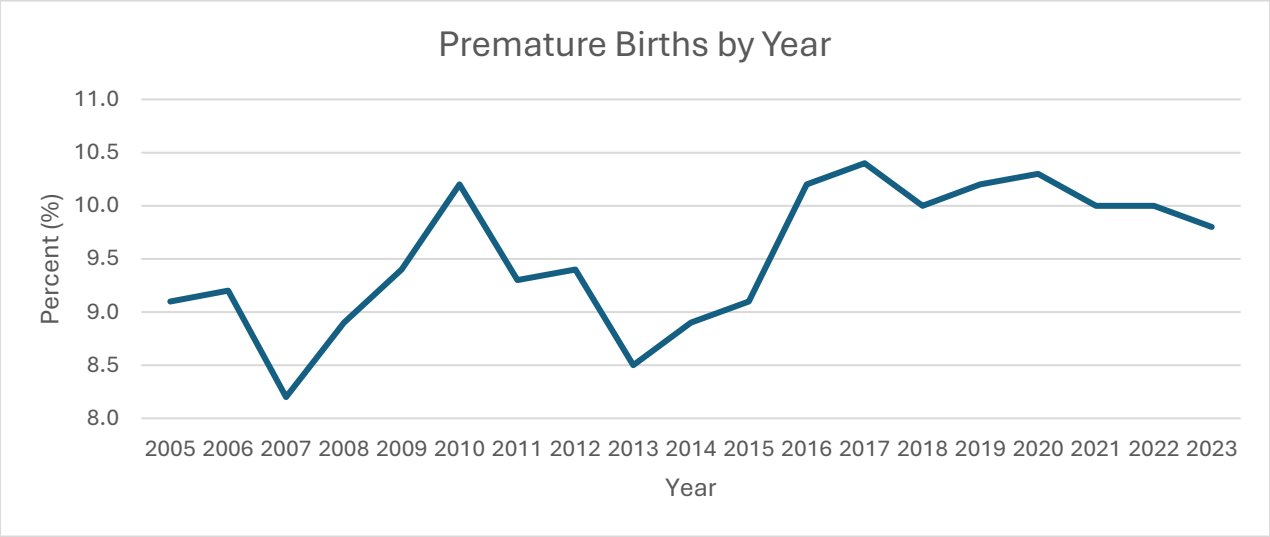
Maternal weight before pregnancy is crucial for both maternal health and the optimal development of the fetus. Maintaining a healthy weight reduces the risk of complications during pregnancy and delivery, such as gestational diabetes, high blood pressure, preeclampsia, and cesarean delivery. Additionally, it decreases the likelihood of the infant being born with a low birth weight, which is associated with increased risks of health problems later in life, such as obesity, cardiovascular disease, and diabetes. Maternal weight recommendations align with body mass index (BMI) categories, including underweight, normal weight, overweight, and obese. Mothers with a normal weight before pregnancy has been steadily decreasing over the last 20 years.

In 2023, in Lancaster County, 40.6% of mothers were within a normal weight range before pregnancy, while 26.4% were classified as overweight and 29.3% as obese. Racial disparities were evident, with only 26.6% of non-Hispanic Black mothers and 27.3% of non-Hispanic American Indian/Alaska Native mothers starting pregnancy at a healthy weight, compared to 42.1% of their

white counterparts. Notably, the percentage of mothers with a normal weight decreased with age, with those under 20 years old having the highest proportion (53.2%), followed by mothers aged 20-24 years (40.9%), 30 years or older (41.2%), and 25-29 years (38.2%).

Birth Outcomes

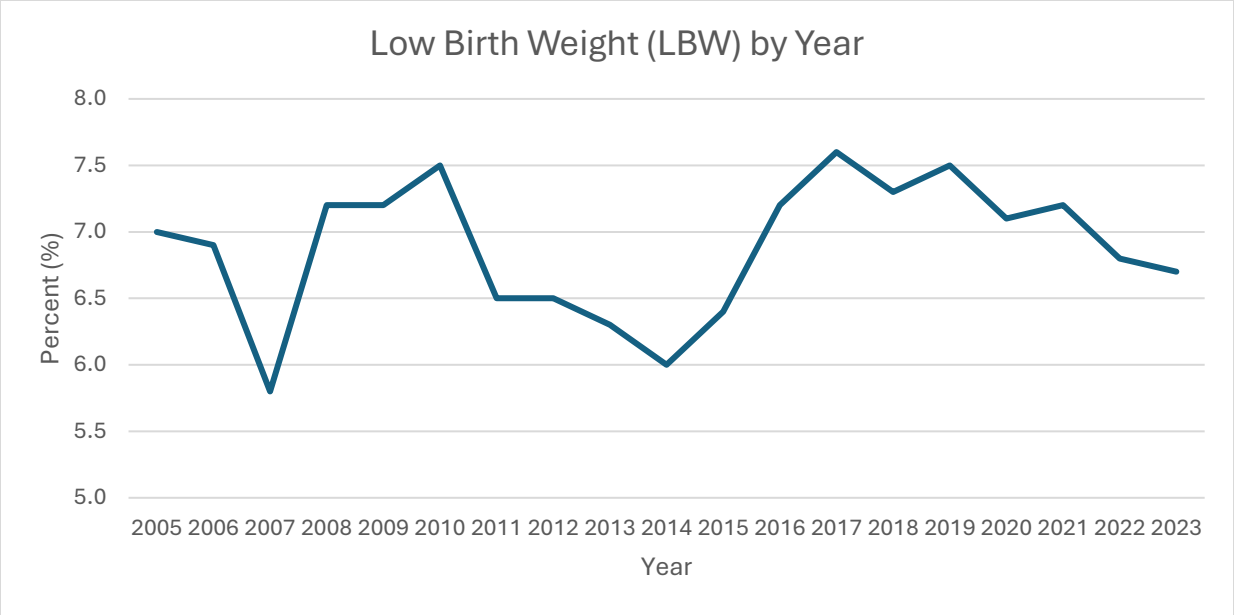
Premature Birth



A premature birth is defined as a delivery that occurs prior to 37 weeks of gestation. Premature births increase the risk for negative child health outcomes, although medical advances and excellent work done in the NICU's have helped to reduce the impact of premature births. In 2023, 9.8% of births in Lancaster County occurred prior to 37 weeks of gestation. By race, non-Hispanic American Indian and Alaska Native mothers had the highest percentage of premature birth (12.1%), followed by non-Hispanic Black mothers (10.4%), non-Hispanic Asian mothers (10.5%), and Hispanic mothers (9.6%). Mothers who had Medicaid (10.8%) also had a higher percentage of premature birth deliveries when compared to those with private insurance (8.6%).

Low Birth Weight

An infant's birth weight stands as the primary factor influencing its likelihood of survival and healthy growth and development. Since birth weight is influenced by the mother's health and nutritional condition, the prevalence of infants born with low birth weights (LBW) closely mirrors the health status of the communities they are born into. Low Birth Weight (LBW) is defined as babies weighing 2500 grams (5 pounds, 8 ounces) or less. Since 2005, the percentage of newborns that were LBW ranged from 5.8% to 7.6%. Birthweight by race and ethnicity is a notable area of disparity. Since 2005, non-Hispanic Black mothers have had LBW babies more frequently than the rest of the population ranging from 6.7% to 16.0% and averaging around 10.7% for the last 20 years. Non-Hispanic Asian mothers have the next highest percentage typically of LBW babies at 5.8%; however, that percentage is typically almost half of that for non-Hispanic Black mothers. The incidence of LBW births is higher for those with Medicaid when compared to those with private insurance.



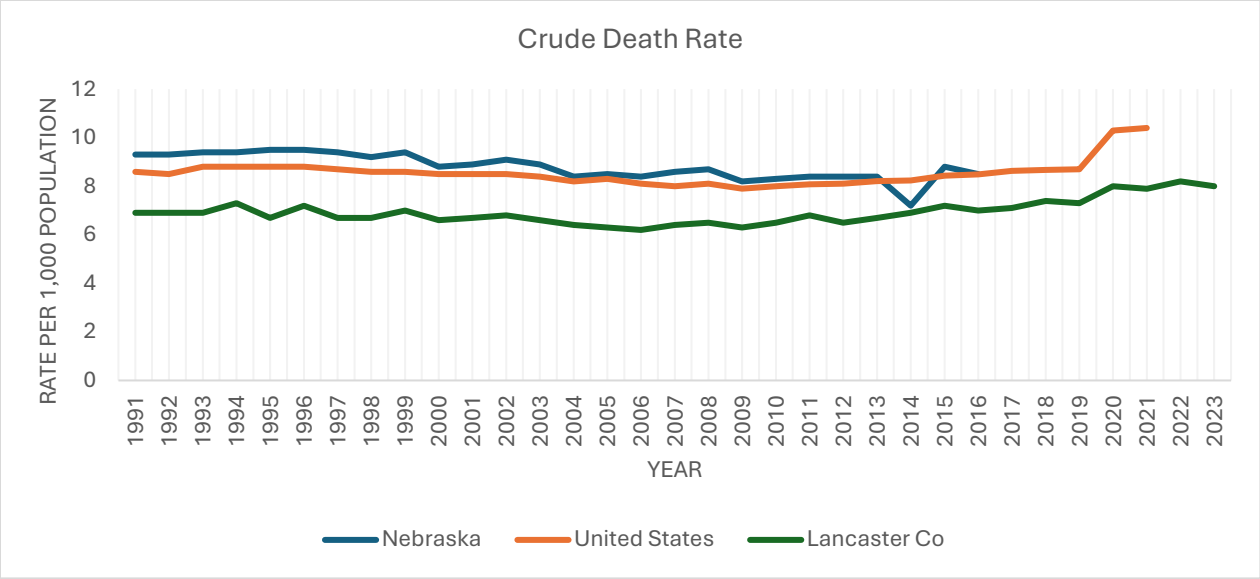
Very Low Birth Weight

Infants born at less than 1,500 grams (3 pounds, 4 ounces) can be categorized as Very Low Birth Weight (VLBW). The leading factors contributing to VLBW include premature birth (born before 37 weeks gestation, often less than 30 weeks) and intrauterine growth restriction (IUGR), typically resulting from issues with the placenta, maternal health, or birth defects. Often, VLBW infants with IUGR are not only born prematurely but also undersized and underdeveloped. Non-Hispanic Black mothers have almost twice as many VLBW babies compared to their white counterparts (2.1% and 1.1%, respectively).

Death Certificate Data

Leading Causes of Death

The crude death rate in Lancaster County has been increasing since 2006, as can be seen in the chart shown below. While the Lancaster County crude death rate is generally lower than that of the state of Nebraska, some of this variation may be explained due to the different age distribution of Lancaster County, where a younger and middle-aged population is typically larger.



The ten leading causes of death by gender are shown below. The Lincoln-Lancaster County Health Department has a dashboard with birth and death data, by year from 2005 to 2023. Except for unintentional injuries, the leading causes of death generally increase with age. The average age at death in Lancaster County was 71.8 years for males and 79 years for females. There were totals of 1,314 deaths for males and 1,240 for females.

2023 Leading Causes of Death (Male)

Cause	Frequency	Percent	Crude Rate per 100K Population
Heart Disease	295	22.5	181.5
Cancer	280	21.3	172.3
Accidental Deaths	70	5.3	43.1
Chronic Lung Disease	64	4.9	39.4
Cerebrovascular Diseases	45	3.4	27.7
Parkinsons Disease	36	2.7	22.2
Intentional Self Harm	35	2.7	21.5
Alzheimer's Disease	32	2.4	19.7
Diabetes Mellitus	32	2.4	19.7
Chronic Liver Disease and Cirrhosis	30	2.3	18.5
All Other Causes	395	30.0	243.1
Total	1314	100.0	808.6

2023 Leading Causes of Death (Female)

Cause	Frequency	Percent	Crude Rate per 100K Population
Heart Disease	282	22.7	176.7
Cancer	247	19.9	154.8
Alzheimer's Disease	69	5.6	43.2
Chronic Lung Disease	67	5.4	42.0
Cerebrovascular Diseases	58	4.7	36.4

Diabetes Mellitus	31	2.5	19.4
Nutritional Deficiencies	30	2.4	18.8
Septicemia	25	2.0	15.7
Accidental Deaths	24	1.9	15.0
All Other Causes	407	32.8	255.1
Total	1240	100.0	777.1

By age, the leading cause of death for 20-24 years are accidental deaths (40.7% of deaths in that age group). The leading causes of death for 25-34 years were accidental deaths (20.2%) and intentional self-harm/suicide (23.9%). The leading causes of death for 35-54 years were intentional self-harm/suicide (30.4%), accidental deaths (30.9%), cancer (19.4%), and heart disease (11.9%). The leading causes of death for 55-74 years were cancer (25.4%), heart disease (15.1%), accidental deaths (24.5%), chronic liver disease or cirrhosis (10.6%), and intentional self-harm/suicide (4.8%). As age increases beyond the 55 years group, the trends remain the same.

Cancer (Malignant Neoplasms)

New cases of cancer (incidence) and cancer mortality (deaths) are reported to the Nebraska Cancer Registry each year. Cancer registry data includes information on children and adults. This section summarizes the incidence of cancer with data available for residents of Lancaster County and the state of Nebraska. Also, notable differences in cancer rates by age, as well as race and ethnicity are included in the 'Health Disparities' section later in this document as well.

The following table shows the latest 5-year average (2017- 2021) for annual cancer incidence in Lancaster County and the state of Nebraska for all cancers, as well as ten selected cancer sites (National Cancer Institute, 2024). All frequencies are average annual counts, and all rates are age-adjusted. The estimates include all stages of cancer for both men and women unless noted otherwise.

Cancer Site	Frequency (Lancaster)	Rate per 100K (Lancaster)	Frequency (Nebraska)	Rate per 100K (Nebraska)
All Sites	1,426	420.7	10,448	456.2
Lung & Bronchus	172	49.7	1,251	52.2
Breast (Female)	204	120.4	1,479	130.7
Colon & Rectum	114	34.9	880	39.2
Prostate (Male)	198	113.4	1,456	122.6
Bladder	65	19.1	454	19.1
Non-Hodgkin Lymphoma	60	18.3	441	19.3
Leukemia	46	14.0	308	13.8
Kidney & Renal Pelvis	56	16.5	422	18.7
Melanoma	70	21.9	622	28.7
Childhood (Age < 15)	9	14.9	70	17.5

As is evident in the table above, the most diagnosed cancers are breast (female), prostate (male), lung and bronchus, and colorectal cancers. The overall rates of cancer incidence is lower for

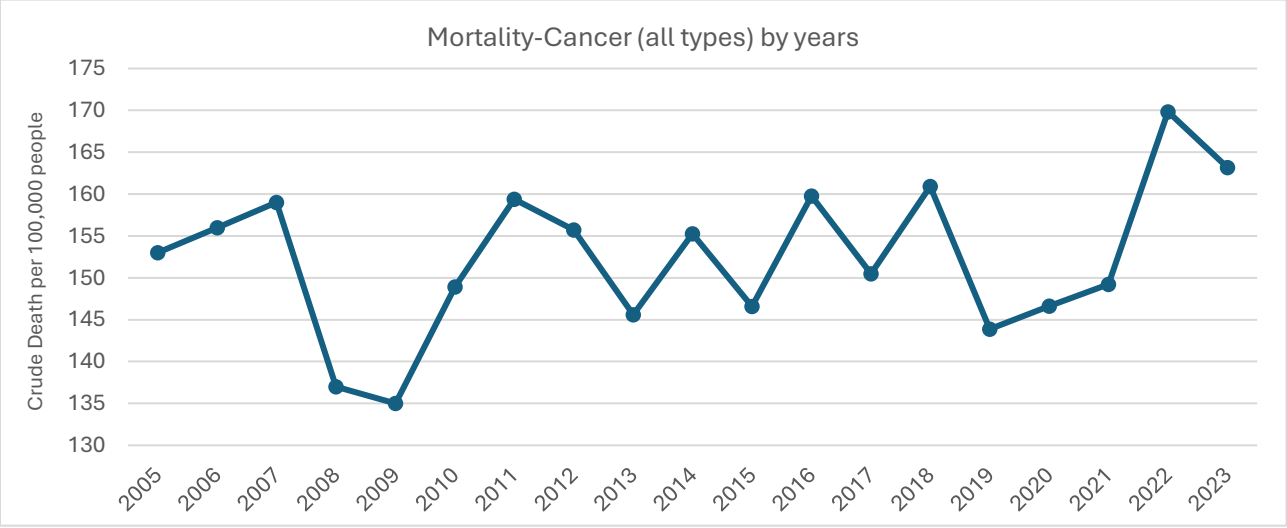
residents of Lancaster County compared to residents of the whole state of Nebraska or the United States.

Cancer mortality over the most recent five-year period for all cancer sites as well as ten selected cancer sites are shown below. The yearly frequencies and the age-adjusted mortality rate from the National Cancer Institute's State Cancer Profiles are annual average estimates reported by state cancer registry programs. The most recent estimates shown are from 2018-2022. This table shows that cancer rates in Lancaster County are generally lower than cancer rates in Nebraska overall and that lung and bronchus cancers are the leading sites involving cancer mortality, followed by cancers of the colon and rectum, breast (women), and prostate (men).

Cancer Site	Frequency (Lancaster)	Rate per 100K (Lancaster)	Frequency (Nebraska)	Rate per 100K (Nebraska)
All Sites	490	141.8	3,521	147.6
Lung & Bronchus	104	29.7	773	31.7
Breast (Female)	37	20.5	243	19.5
Colon & Rectum	41	11.9	348	14.7
Prostate (Male)	28	19.9	194	19.3
Bladder	15	4.7	98	4.1
Non-Hodgkin Lymphoma	19	5.4	120	5.0
Leukemia	22	6.5	146	6.2
Kidney & Renal Pelvis	10	3.1	93	3.9
Melanoma	9	2.7	59	2.5
Childhood (Age < 15)	*	*	9	2.3

*Data has been suppressed due to low numbers to ensure confidentiality and stability of rates estimates.

Annual Summary of Cancer Mortality

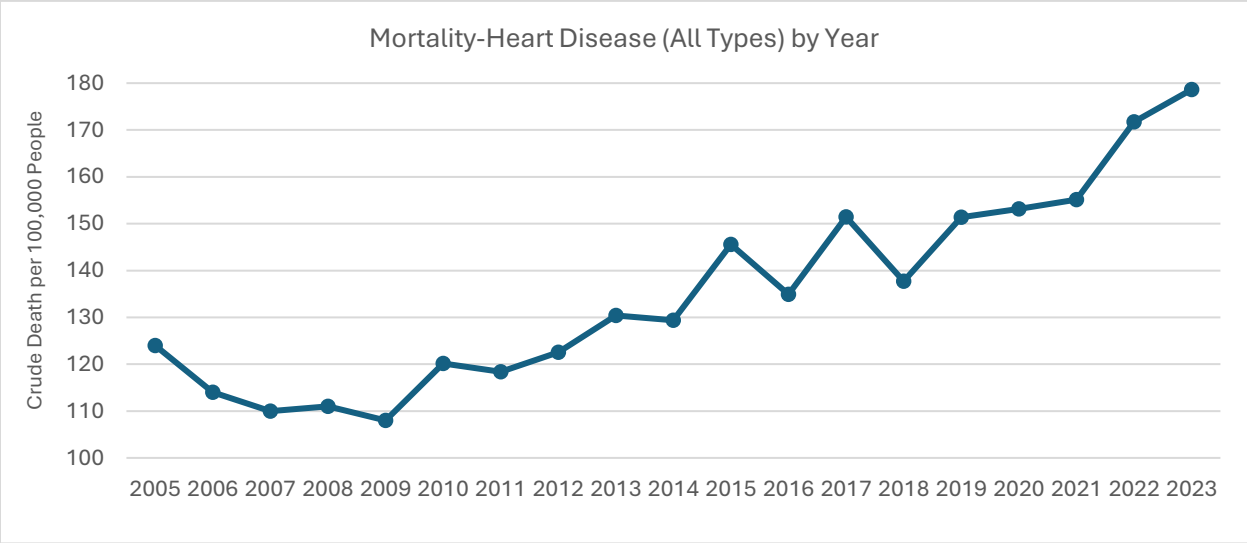


Cancer has been the leading cause of death in Lancaster County since 1999. In 2023, cancers were the cause of death for 527 persons, and over the five-year period, 2019-2023, there were 2,484

deaths due to cancer. Earlier in this report, the incidence of cancer was discussed and there are usually about 1,429 new cases of cancer of all types each year. The 5-year average from 2016-2020, Lancaster County had 475 deaths from cancer and age adjusted incidence rate was 428.8 (C.I. 418.7; 439.2). For similar time interval, the average annual count for Nebraska was 10,374 with age adjusted incidence rate 459.1 (C.I. 455.1; 463.2).
In 2023, the top 7 causes of death by cancer for Lancaster County were cancers of the lung (22.6%), Colon (7.8%), pancreas (7.4%), breast (7.0%), prostate (6.5%), leukemia (3.9%), esophagus (3.6%) and other (36.8%). By age, the rate of death due to cancer per 100,000 residents increases significantly starting in the 35-44 years group (21.95) to 45-54 years (87.81), 55-64 years (238.9), 65-74 years (598.9), 75-84 years (1222.8) and 85+ years (1,732.7).

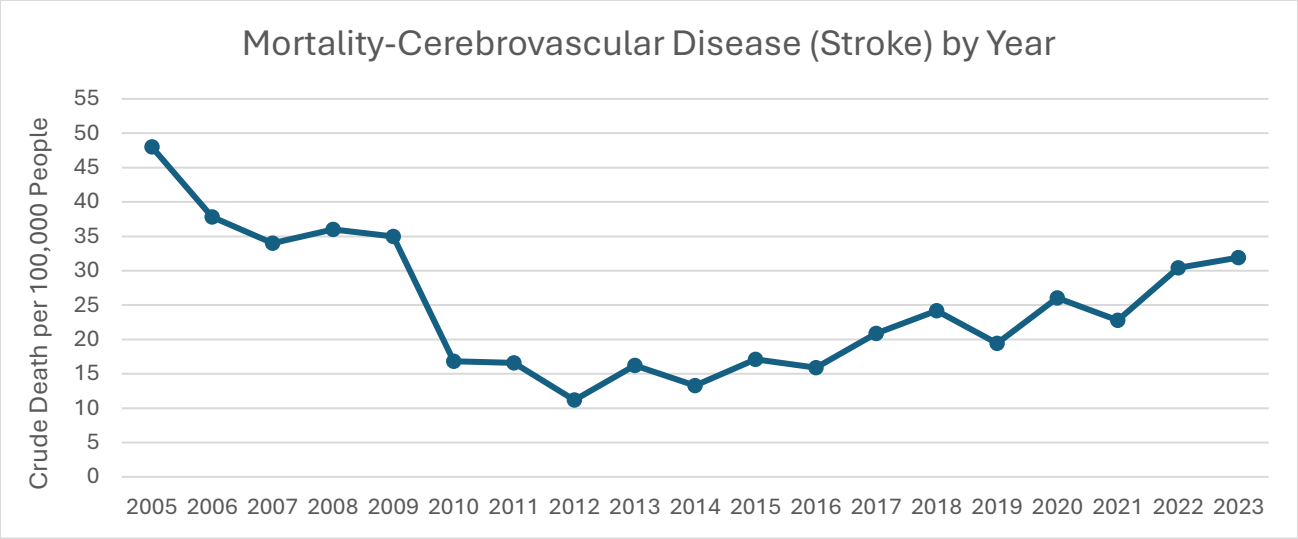
Heart Disease

Locally, heart disease is a top two cause of death for both men and women. Nationwide, heart disease is the leading cause of death. In 2023, the crude rate of heart disease death s was 178.6 per 100,000 population. The most recent data from Nebraska's Vital Statistics reports show the Lancaster County age-adjusted death rate due to heart disease to be 126.6 in 2016 or 122.4 in 2012-2016, compared to 140.2 in 2016 or 143.0 in 2012-2016. Since 2005, heart disease has been gradually increasing.



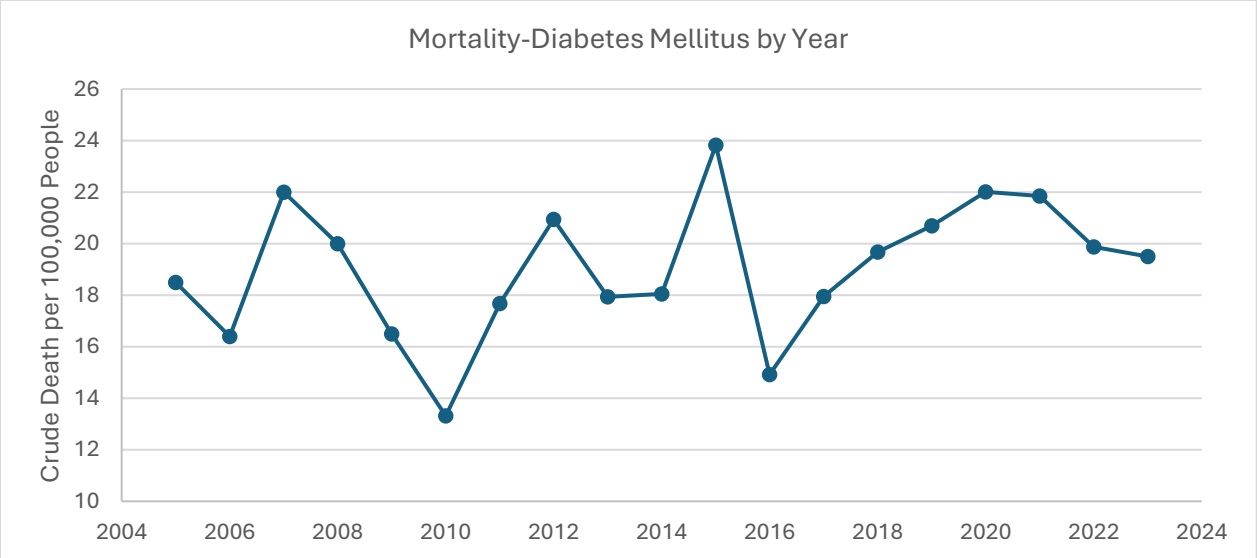
Stroke (Cerebrovascular Disease)

Cerebrovascular disease (stroke) is one of the leading causes of death in Lancaster County. In 2023, the crude rate of stroke deaths was 31.8 per 100,000 population. This shows a slight increase since 2022 when death per 100,000 population was 30.4 in Lancaster County. Females (36.4) have a higher risk of death due to stroke than males (27.7). The risk increases significantly from 55-74 years (40.6) to 75-84 years (268.2) and 85+ years (663.6).

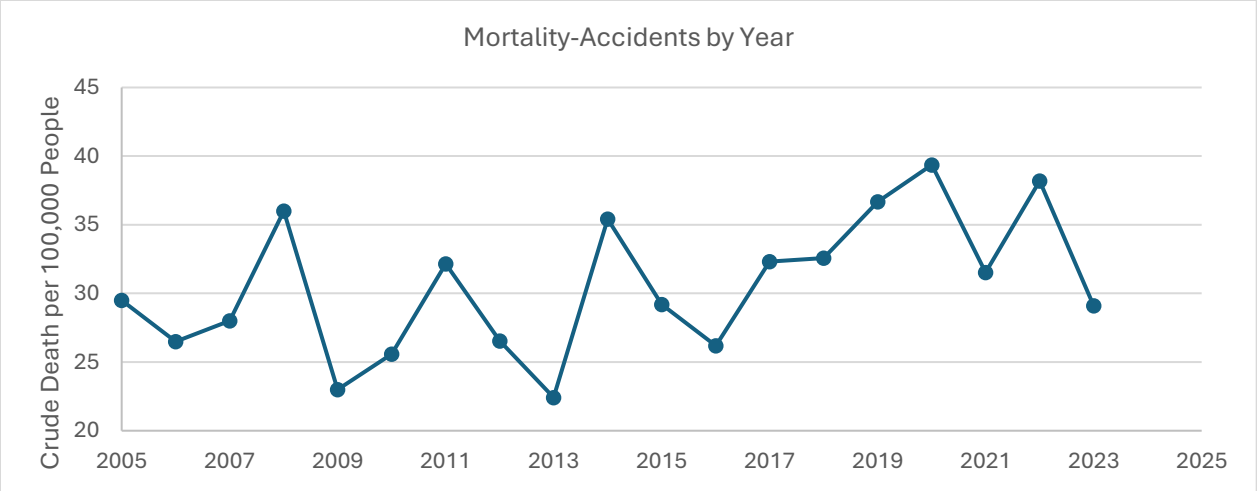


Diabetes

Diabetes mellitus was the 7th leading cause of death in 2023 for the crude rate per 100,000 population, with 19.5 deaths per 100,000 population. Since 2005, the crude diabetes death rate per 100,000 population in Lancaster County has remained between approximately 15-25 deaths per 100,000 population, which represents approximately 45-75 deaths per year. This does not include deaths due to cancers associated with diabetes and other conditions that may be linked to diabetes. The crude death rate due to diabetes for males (19.7) is like that for females (19.4). The risk of death due to diabetes increases from 31.3 for 55-64 years and continues to increase significantly in each age group from 65-74 (51.9), 75-84 (102.6) to 85+ years (405.5). From 2012-2016, the age-adjusted rate for Nebraska was 21.6 compared to 18.5 for Lancaster County.



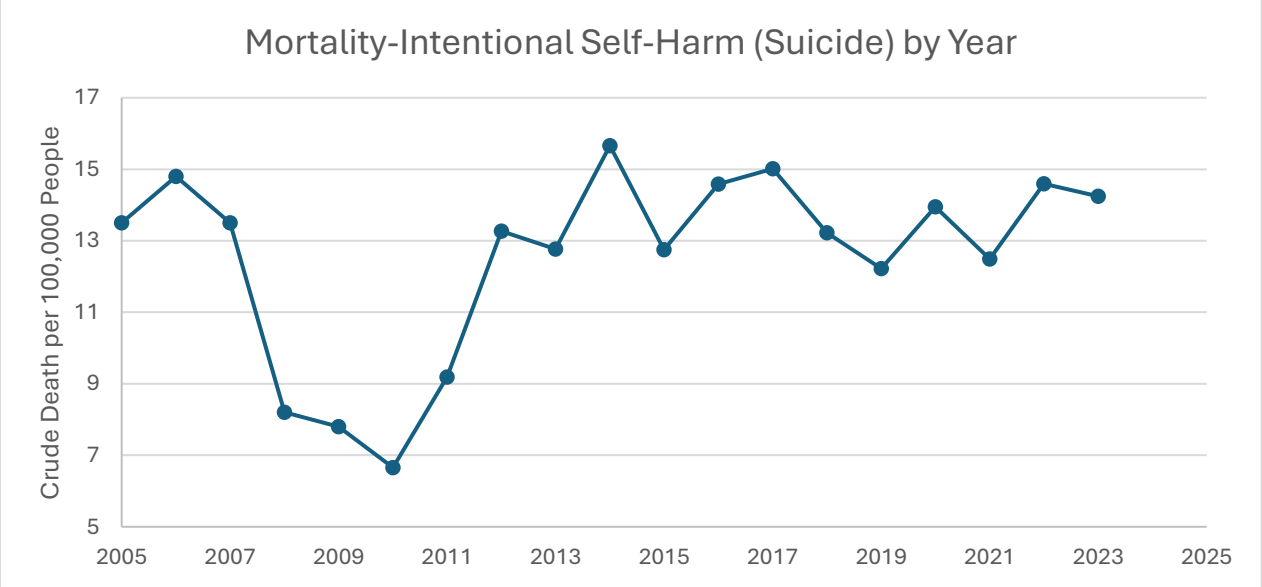
Accidental (Unintentional Injuries)



Accidental deaths, or unintentional injury deaths, were the 6th leading cause of death in Lancaster County in 2023, with a crude accidental death rate of 29.1 deaths per 100,000 population. These represent the largest fraction of injury-related deaths in Lancaster County. In Nebraska, the 2012-2016 age-adjusted rate of unintentional injury deaths was 37.2, compared to 27.0 for Lancaster County.

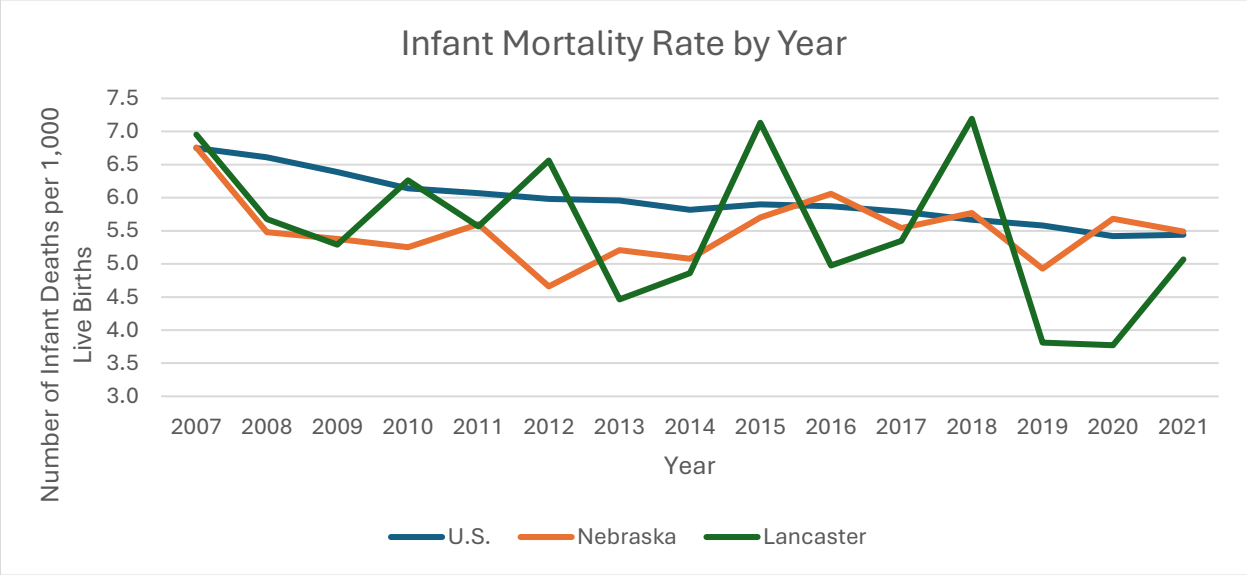
Intentional Self-Harm (Suicide)

In 2023, there were 11 homicides, 46 suicides and 94 accidental deaths. Males represented 9 of the homicides, 35 of the suicides and 70 of the accidental deaths. Regarding suicides, Nebraska's 2012-16 age-adjusted rate of suicides was 12.3 compared to 12.9 for Lancaster County. The state of Nebraska does not appear to publish statewide estimates for homicide deaths for county comparisons. Overall, accidental deaths are mostly injury-related deaths, followed by suicide and then homicide.



Infant Mortality

Infant mortality, or the death of an infant before their first birthday, is tracked using birth data from vital statistics. The infant mortality rate (IMR) is expressed as the number of deaths per 1,000 live births. Data from 2019-2023 on births to Lancaster County residents, 88 per 1,000 infants died within 365 days after birth. Due to Lancaster County's relatively low numbers, rates are highly variable and should be interpreted with caution.



Maternal Mortality

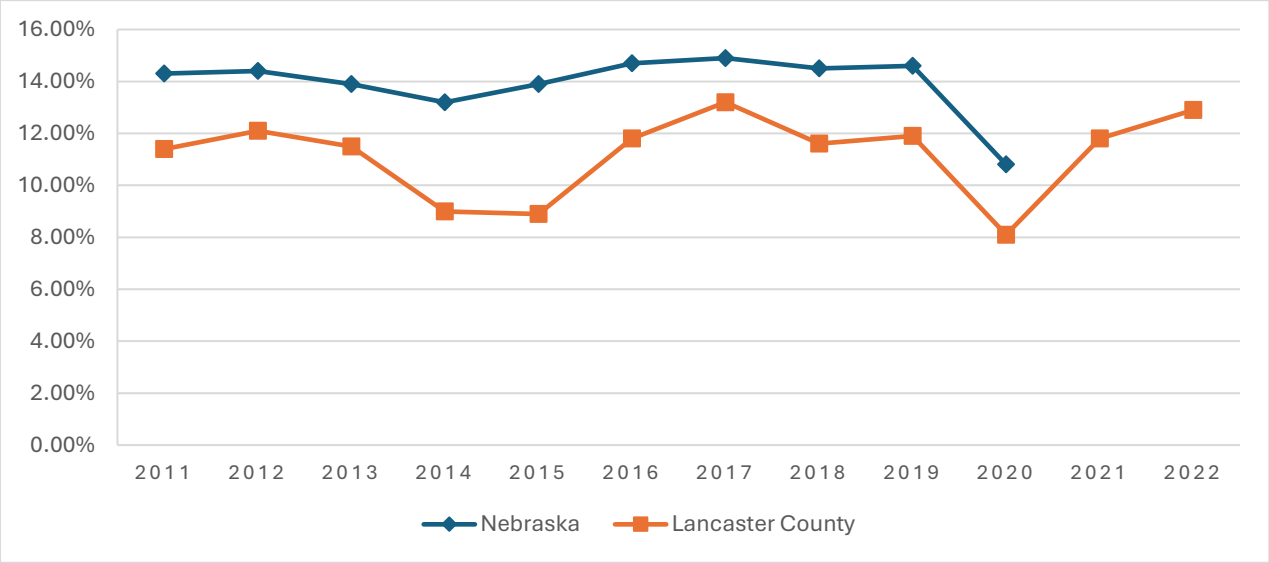
A maternal death is defined as a death while pregnant or within 42 days of the end of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes. Pregnancy-associated deaths include deaths from any cause during pregnancy or within one year from the end. From 2014 – 2018, a total of 12 pregnancy-associated deaths were identified in Lancaster County for a pregnancy-associated mortality rate (PAMR) of 59.94 deaths per 100,000 live births during the 5 year period. Of the 12 pregnancy-associated deaths, six were identified as maternal deaths. In the same period, Nebraska's PAMR was 37.29 per 100,000 live births. Maternal mortality rates vary annually due to the limited number of these occurrences and potential discrepancies in reporting maternal deaths on death certificates. Given Lancaster County's small population and the relatively low number of maternal deaths each year, analyzing five years of maternal mortality data poses significant analytical challenges. Computing rates and ratios using small counts can result in highly variable and unreliable conclusions and should be interpreted with caution.

Adult Risk Behaviors

The information below is drawn from the Behavioral Risk Factor Surveillance System (BRFSS), which is a survey of adults, 18 years and older. Data from the most recent BRFSS surveys for Lancaster County and Nebraska are available for this report. Data provided includes data by race and ethnicity where available; however, due to wide confidence intervals, these estimates should be interpreted with caution. In many cases, the relative standard error exceeds 35%, which is a common threshold for indicating unreliable estimates or limited sample sizes.

Self-Reported Health Status

An individual's health status can usually be determined by how a survey respondent rates his/her own health. The BRFSS survey annually asks the question: "Would you say in general your health is Excellent, Very Good, Good, Fair or Poor?" The respondents who answer "Excellent", "Very Good" or "Good" generally have their responses added together; and replies of "Fair" or "Poor" are also added together.



In 2022, 12.9% of Lancaster County adults indicated that their health was only either fair or poor, State of Nebraska data is not available past 2020 on BRFSS for comparison. Females (14.3%) were more likely to report fair or poor health compared to males (11.6%). Individuals who were 45-64 years (17.6%) or 65+ years (17.2%) were significantly more likely to report fair or poor health compared to 18-44 years (8.8%). Small sample size prevents Lancaster County from reporting race-specific data; however, it is possible to report that 12.1% of non-Hispanic White respondents and 23% of Hispanic respondents reported fair or poor health. The strongest indicators of fair or poor health are income and education. Income less than $25,000 was associated with a 30.5% fair or poor health percentage. As income increases the risk of fair or poor health decreases ($25K-$49.99K: 17.5%, $50K-$100K: 10%, $100K+: 3.7%). As education increases the risk of fair or poor health decreases (Some post-HS education 9.1%, College graduate 2.5%). See state and national BRFSS data at http://www.cdc.gov/brfss/brfssprevalence/index.html. State BRFSS data can also be reviewed through Nebraska DHHS's Behavioral Risk Factor Surveillance System Dashboard at https://atlas-dhhs.ne.gov/Atlas/BRFSS.

Diagnosed Health Conditions

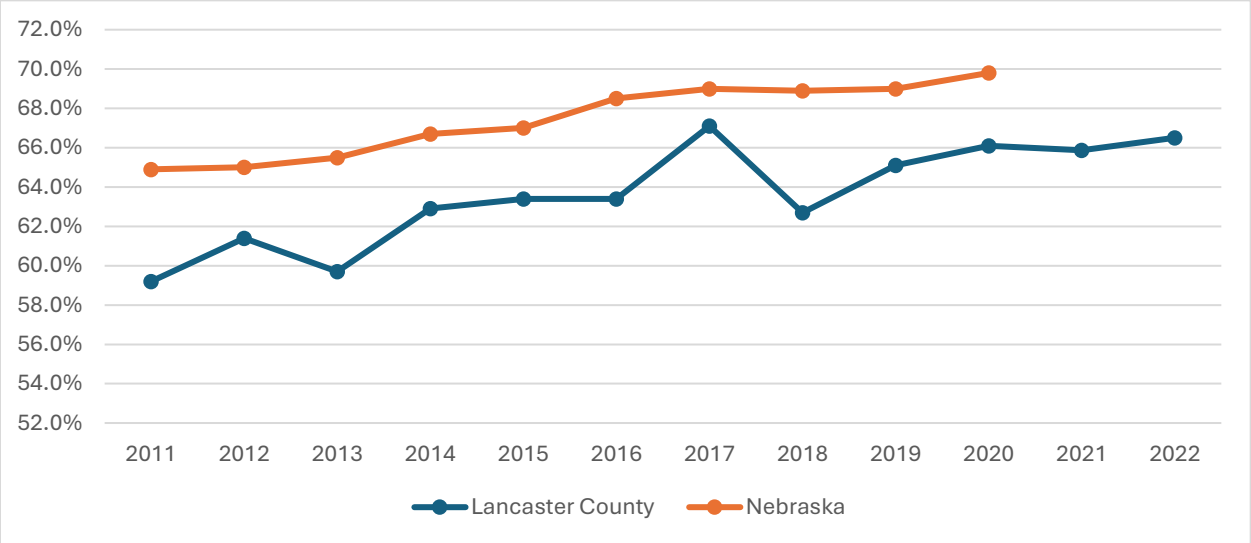
In addition to self-reported health status information, the BRFSS survey asks adult respondents about whether they have been diagnosed with or have experienced certain health conditions. The following tables reflect the latest available data at the time of this report being developed. There are no statistically significant differences.

Disease/Condition	Lancaster County (2022)	Nebraska (2020)

Asthma (current)	9.1% (6.6%-11.6%)	7.8% (7.1%-8.5%)
Asthma (lifetime)	13.1% (1.01%-16.1%)	10.7% (10.0%-11.5%)
Arthritis	22.5% (19.2%-25.7%)	22.8% (21.9%-23.7%)
Heart attack or CHD	4.5% (3.2%-5.9%)	5.3% (4.9%-5.7%)
Stroke	1.9% (0.9%-2.8%)	2.4% (2.1%-2.7%)
Diabetes (excludes pregnancy)	9.1% (6.7%-11.2%)	9.9% (9.3%-10.5%)
High Cholesterol	31.9% (29.6%, 34.7%)	31.1% (30.0%-31.9%)
Depression	17.8% (14.3%-21.2%)	16.8% (15.8%-17.7%)
COPD	4.9% (3.4%-6.3%)	5.2% (4.7%-5.7%)
Kidney disease	2.8% (1.5%-4.0%)	2.6% (2.3%-3.0%)

The available evidence suggests that lifestyle factors (e.g., smoking, physical inactivity, alcohol use, diet, BMI) influence the incidence of many of the chronic health conditions (e.g., diabetes, heart disease, cancer) discussed in the health status section. Positive factors such as regular screening (i.e., mammograms, colonoscopies, Pap tests) for cancers (i.e., breast, colorectal, and cervical cancers) that can be found and prevented at an early stage are another factor as is access to necessary primary care. Of course, access to care is influenced by having an adequate level of providers and health insurance.

Overweight and Obesity

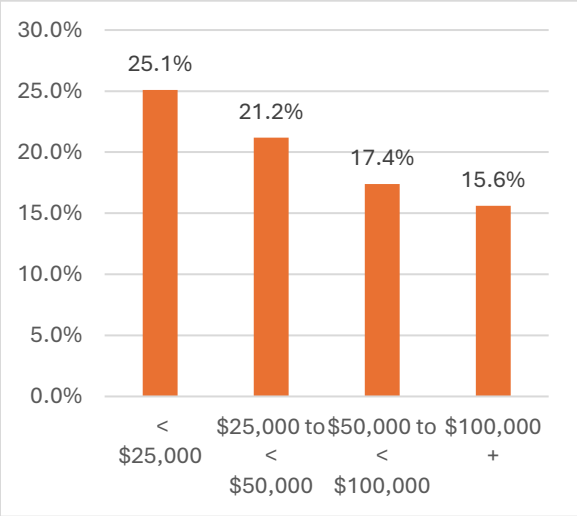


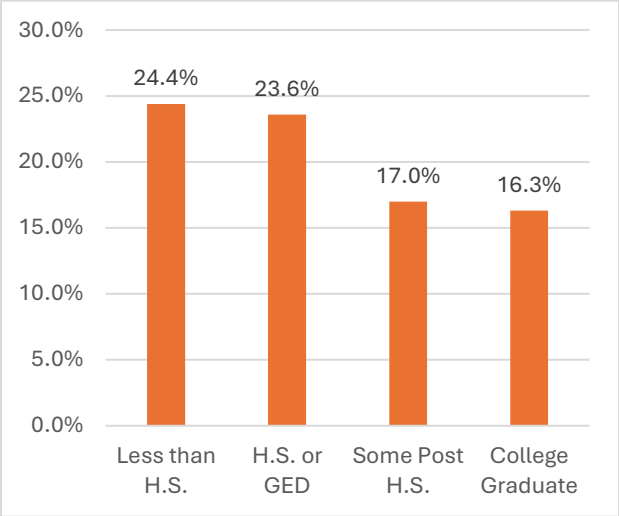
The BRFSS relies on self-reported heights and weights rather than actual measurement, such as the practice conducted by the National Health and Nutrition Examination Survey (NHANES). NHANES data is unfortunately not available at the granularity of a county level due to the limited population sampling and the intent of NHANES to draw inferences at a higher level. Lancaster County BRFSS data showed the local percentage of overweight or obese respondents (66.5%, 95% CI 62.0%-70.9%). Males (72.2%) were more likely to report being overweight or obese than females (60.5%). Non-Hispanic White respondents (67.6%) and Hispanic respondents (76.6%) were more

likely to report being overweight or obese than the general population (66.1%). (Small sample size prevents Lancaster County from reporting race-specific data on Black, Asian, American Indian).

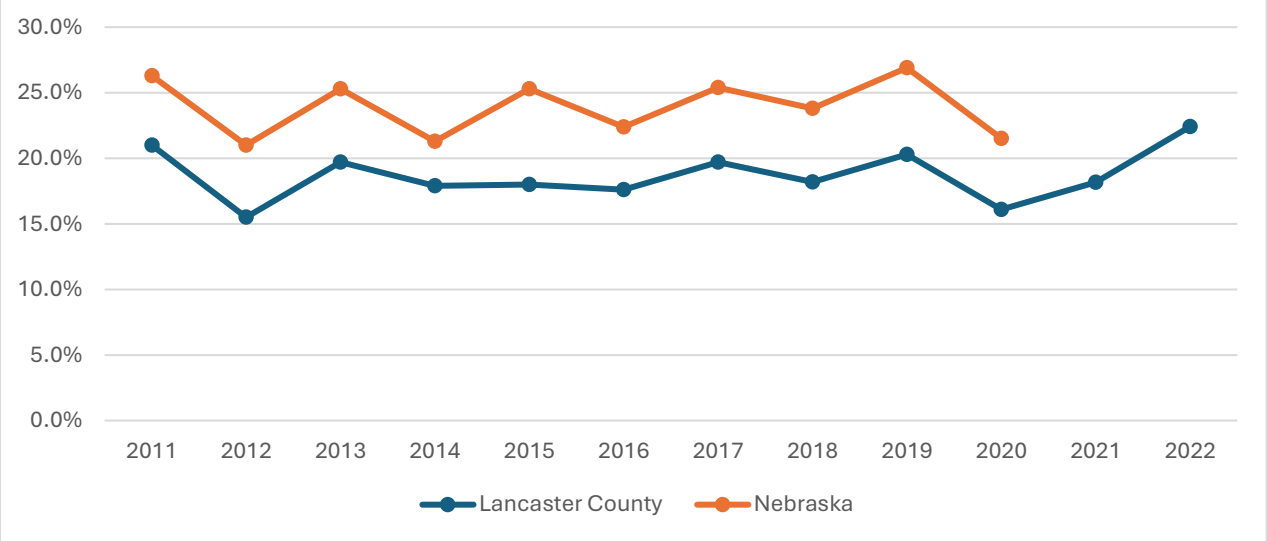
Fruit & Vegetable Consumption

In 2021, 39.8% of Lancaster County adults consumed fruit less than 1 time per day, State of Nebraska data is not available for 2021 for comparison. In 2021, 18.7% of Lancaster County adults reported consuming less than 1 vegetable per day. Females (33.2% fruits, 16.6% vegetables) are less likely than males (46.3% fruits, 20.8% vegetables). Non-Hispanic White respondents (40.1% fruits, 16.6% vegetables) were less likely than non-Hispanic Black respondents (33.4% fruits, 37.2% vegetables) and Hispanic respondents (24.8% fruits, 30.2% vegetables) to report consuming less than 1 serving of fruits or vegetables per day. Income and education showed the strongest associations in Lancaster County to this outcome as shown in the chart below for consuming vegetables less than 1 time per day.

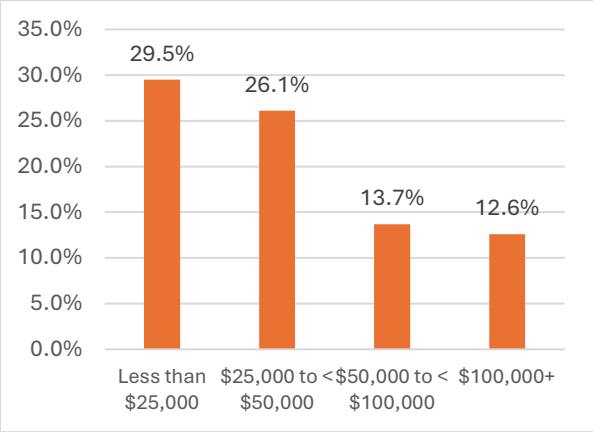


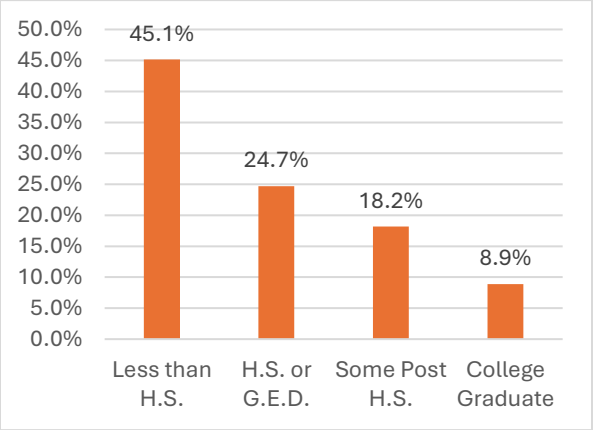


Leisure-Time Physical Activity

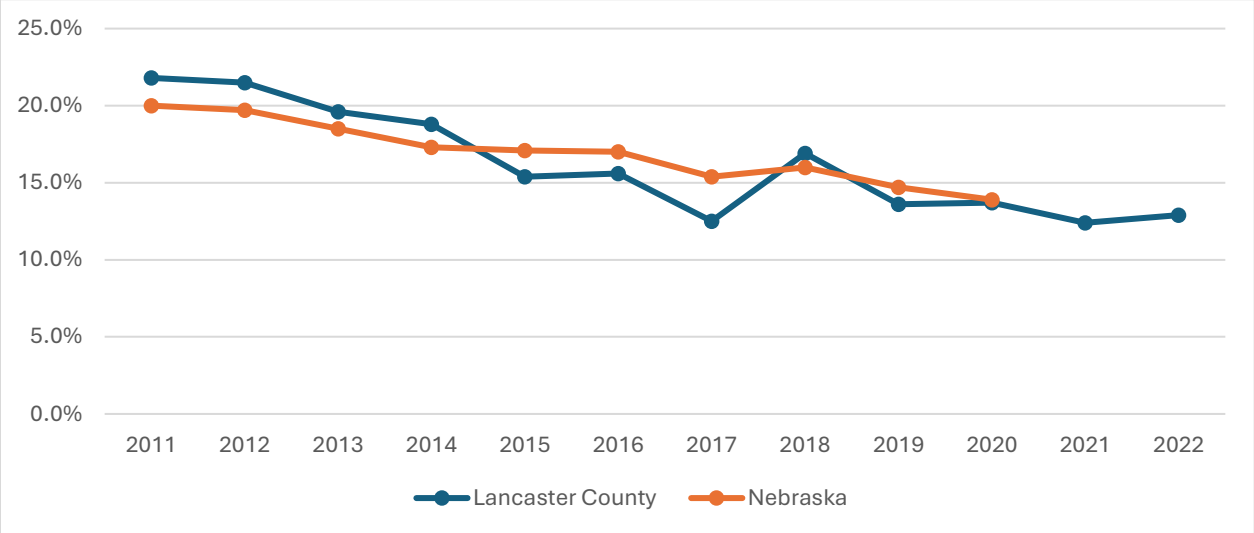


In 2022, 22.4% (95% CI 18.6%-26.3%) of Lancaster County adults had no leisure time physical activity, State of Nebraska data is not available past 2020 on BRFSS for comparison. Males were less likely (17.1%) to have no leisure time physical activity than females (27.7%). Non-Hispanic White respondents (22.4%) reported no leisure time physical activity less often than Hispanic (26.1%) respondents. Small sample size prevents Lancaster County from reporting race-specific data on Black, Asian, and American Indian respondents. Lower income and education were strongly associated with an increased risk of no leisure time physical activity as in the charts below. As income or education increase, the risk of not having any leisure time physical activity decreases.





Current Tobacco Use (Smoking)

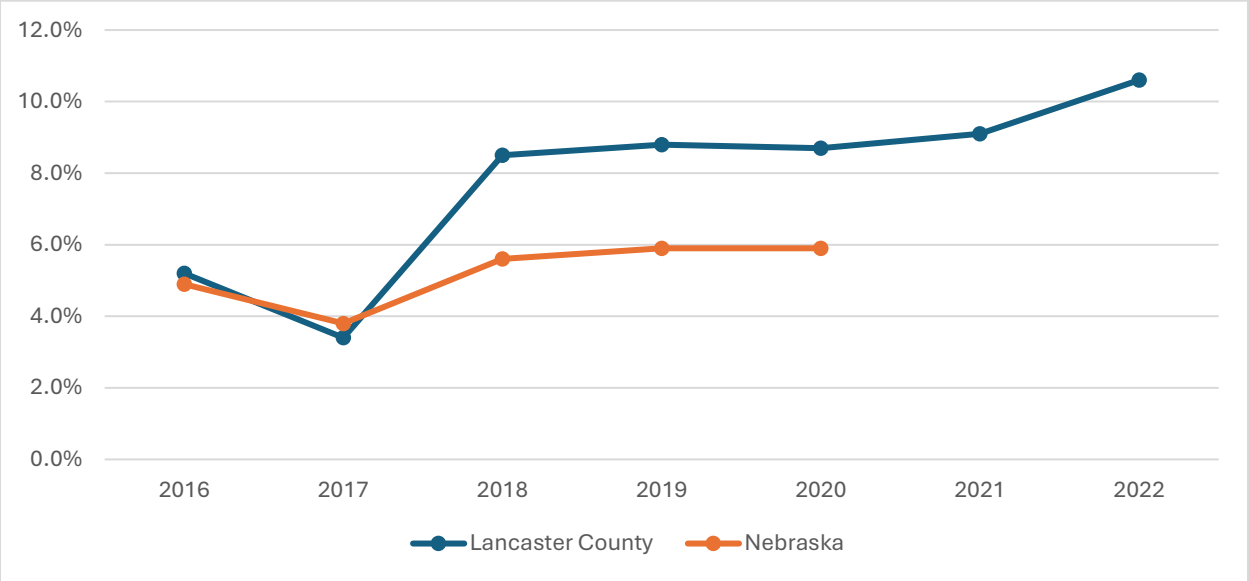


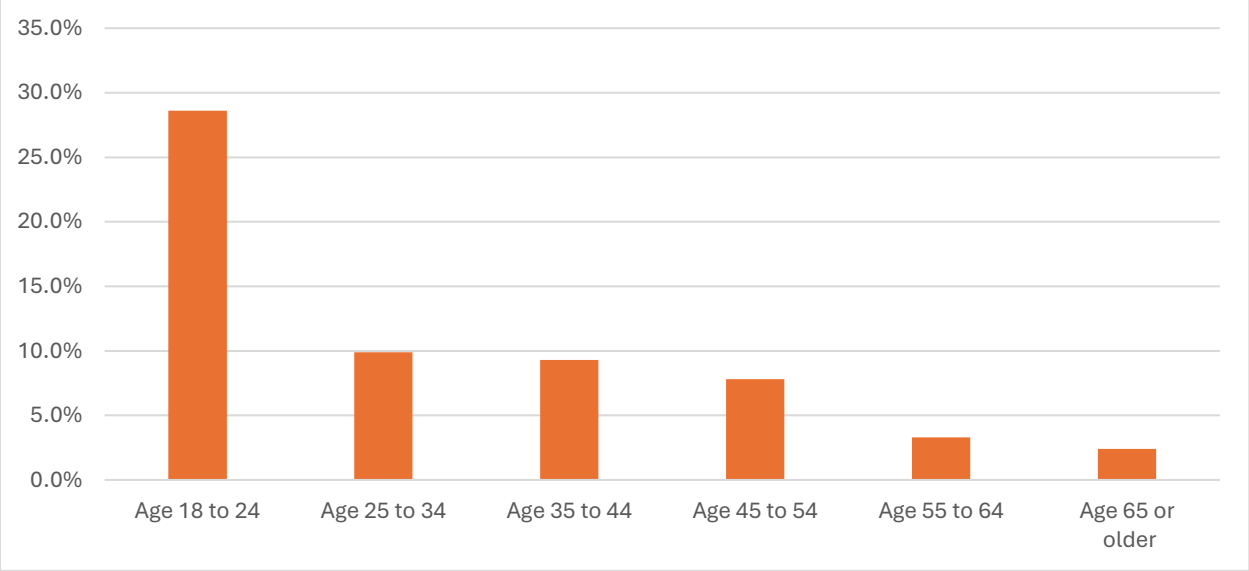
BRFSS results indicate Lancaster County's adult current smoking rate (12.9%, 95% CI 9.8%-16.0%) has decreased since 2011 (21.8%, 95% CI 19.8%-23.9%). This is a statistically significant steady decrease we've seen until 2017, when the decrease appears to have slowed. For the year 2020, the State of Nebraska (13.9%, 95% CI 13.1%-14.8%) showed the same steady decrease but is currently non-significantly higher than Lancaster County. Males (13.9%, 95% CI 9.6%-18.1%) have higher reported rates of current smoking than females (11.9%, 95% CI 7.4%-16.4%). Non-Hispanic White (13.2%, 95% CI 9.7%-16.7%) respondents had a non-statistically significant higher percentage of

current smokers than Hispanic (8.4%, 95% CI 0.2%-16.5%) While there are no statistically significant differences, the absolute differences between these percentages indicates there may be opportunities for focused interventions on reducing smoking rates by demographics.

Current E-Cigarette Use

The commercial increase in the availability of electronic cigarettes is a public health issue that emerged since our last Community Health Assessment. The percentage of adults reporting current e-cigarette use is increasing in Lancaster County (10.6%, 95% CI 7.5%-13.6%). This represents a significant increase since the data collection on this metric was initiated in 2016. Age is a major predictor of current e-cigarette use as well. Please see the chart to the left for more details on this. Individuals who are in the 18-24 age range make up the highest risk group with a decreasing risk with age. More information about youth e-cigarette use will be provided in a later section about the Youth Risk Behavior Survey (YRBS).

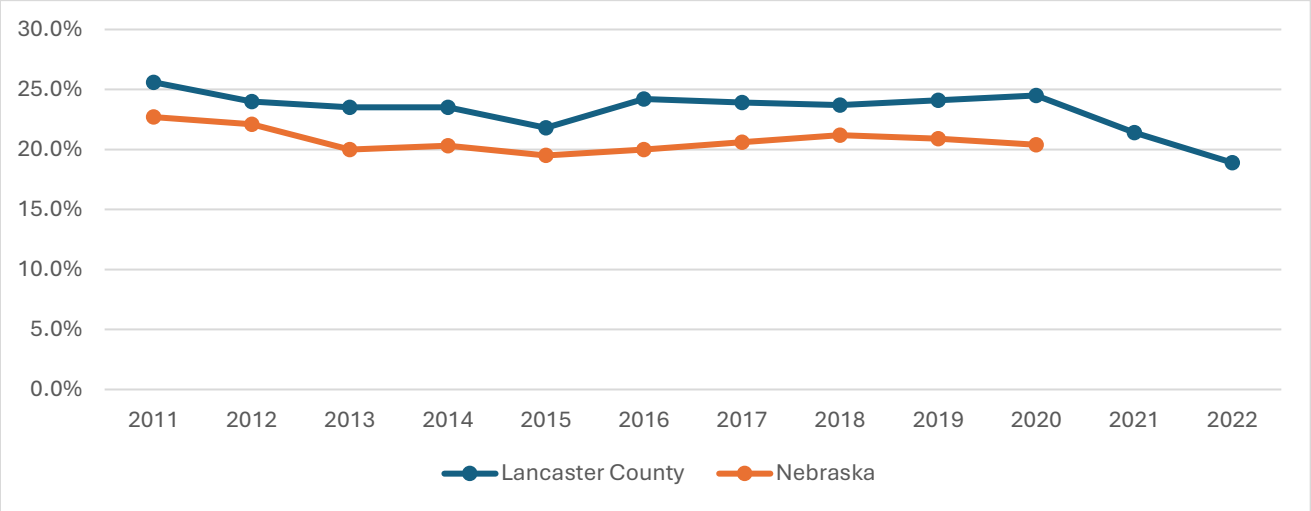




Alcohol – Binge Drinking

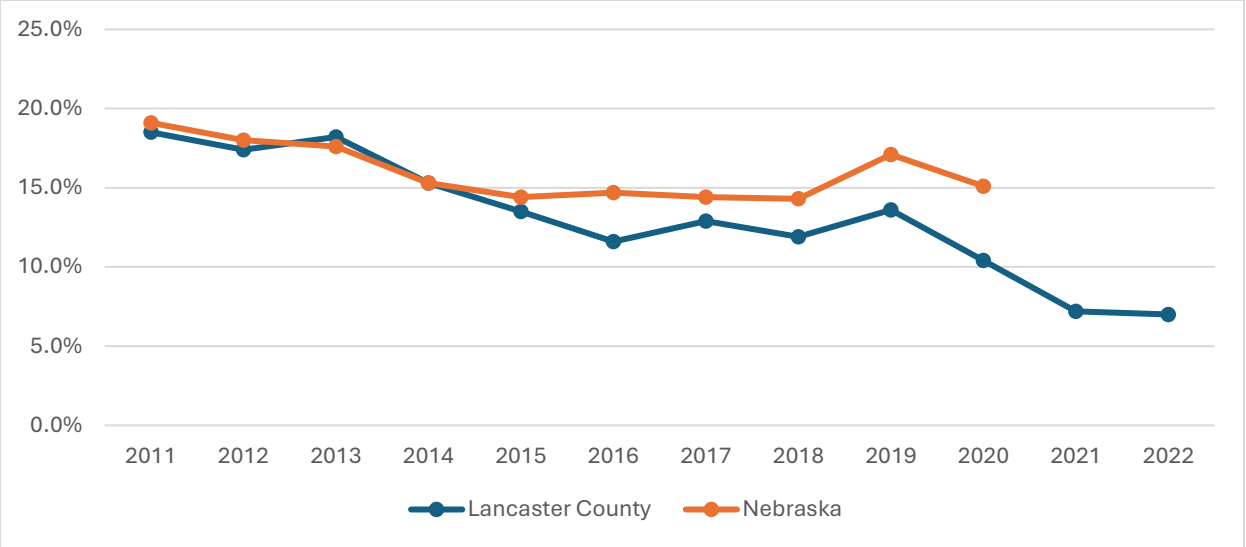
The proportion of adults reporting binge drinking in the past 30 days for Lancaster County was (18.9%, 95% CI 15.1%-22.7%). It has slowly decrease over the years.

Males (22.3%, 95% CI 16.8%- 27.7%) are more likely than females (15.4%, 95% CI 10.0%-20.7%) to report binge drinking. The highest risk group for binge drinking are young adults 18-24 years (29.9%, 95% CI 18.7%-41.1%), adults 25-34 years (26.2%, 95% CI 14.5%-37.8%), non-Hispanic White respondents (19.9%, 95% CI 15.7%-24.3%) and Hispanic respondents (20.6%, 95% CI 6.7%-34.4%).



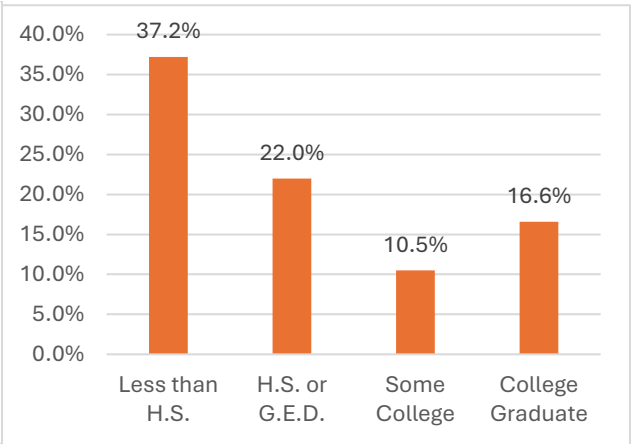
Health Care Coverage

In 2022, 7.0% of Lancaster County respondents aged 18 to 64 indicated they did not have health care coverage (7.0%, 95% CI 4.1%-9.8%). Respondents reporting no health care coverage was most common among Hispanic respondents (35.6%, 95% CI 17.9%-53.3%), households making between $25,000 -$49,999 per year (16.4%, 95% CI 6.1%-34.1%), and education with Less than High School diploma (37.7%, 95% CI 12.8%-62.4%). Race specific data or data for education was suppressed due to a smaller sample size but increasing education was associated with a lower proportion of individuals reporting no health care coverage.



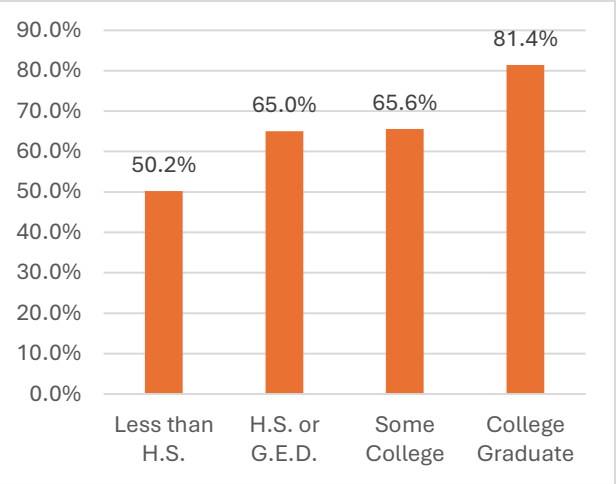
Routine Checkup & Medical Home

In 2022, 79% of Lancaster County residents had a routine checkup in the past year (79.0%, 95% CI 75.0%-82.9). The proportion of respondents reporting they needed to see a doctor but could not due to cost in the past year was (10.2%, 95% CI 7.3%-13.0%). The proportion of residents reporting they had no personal doctor or health care provider in Lancaster County was (16.7%, 95% CI 13.2%-20.2%). Males were more likely than females to report not having a personal doctor or healthcare provider (20.3% males, 13.2% females). Non-Hispanic White respondents were less likely to not have a personal doctor or health care provider (13.5%, 95% CI 9.9%-17.2%) than Hispanic respondents (52.8%, 95% CI 36.7%-68.8%). Income and education were also strongly associated with having a personal doctor or health care provider as shown in the charts below.



Oral Health Care

In 2022, Lancaster County respondents (70.5%, 95% CI 66.3%-74.7%) have had their teeth cleaned by a dentist/hygienist in the past year. Females (70.3%, 95% CI 64.1%-76.5%) and males (70.7%, 95% CI 65.2%-76.3%) had similar proportions to complete this dental care. Increasing income and education were associated with a decreased risk of obtaining this routine dental care as shown in the charts below.



Cancer Screening – Colorectal

Colorectal cancer screening indicator definition got changed again for BRFSS 2022 after 2020 (new definition: Percentage of adults 45-75 years old who report having had a blood stool test during the past year, a blood stool test during the past 10 years, or a stool DNA test during the past three years, or a sigmoidoscopy during the past five years, or a sigmoidoscopy during the past 10 years and a blood stool test during the past year, or a virtual colonoscopy during the past five years, or a colonoscopy during the past 10 years). Sixty eight percent of Lancaster County residents aged 45-75 years old have had sigmoidoscopy or colonoscopy (67.8%, 95% CI 62.8%- 72.9%). Females (70.9%, 95% CI 63.9%-77.9%) were slightly more likely to be up to date on their colorectal cancer screening than males (64.9%, 95% CI 57.6%-72.2%). Unfortunately, only 68.6% (95% CI 58.4%-78.7%) of adults 55-64 years were up to date compared to 87.2% (95% CI 82.6%-91.8%) of adults 65-75 years. Earlier screening and detection of colorectal cancer helps promote improved colorectal cancer outcomes. Data by race is unavailable due to sample size limitations. Increased income and education were both associated with a higher likelihood of being up to date with their colorectal cancer screening.

Cancer Screening – Breast

Breast cancer screenings were up to date for females 50-74 years old in Lancaster County (78.5%, 95% CI 70.8%-86.2). Unlike colorectal cancer screening rates, screening rates are similar for 55-64 years (81.6%, 95% CI 68.1%-95.1%) than 65-74 years (80.3%, 95% CI 70.6%-90.1%). Data by race is unavailable due to sample size limitations. Like colorectal cancer screening, increased income and education were also both associated with a higher likelihood of being up to date with their breast cancer screening.

Cancer Screening – Cervical

Cervical cancer screenings were up to date for females 21-65 years old in Lancaster County (93.6%, 95% CI 89.6%-97.7%). Across all age groups and income levels the PAP test for cervical cancer screening was).

Other

For more information about the BRFSS, please contact the authors of this article or visit the following websites:

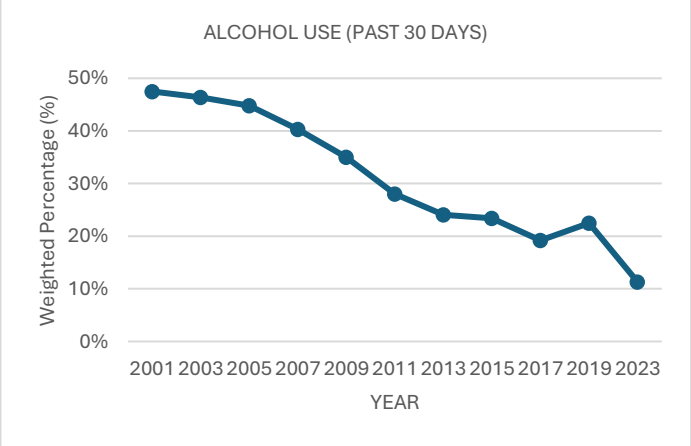
- Nebraska Public Health Atlas – BRFSS: https://dhhs.ne.gov/Pages/Nebraska-Public-Health-Atlas.aspx
- CDC BRFSS: https://www.cdc.gov/brfss/index.html

Youth Risk Behaviors

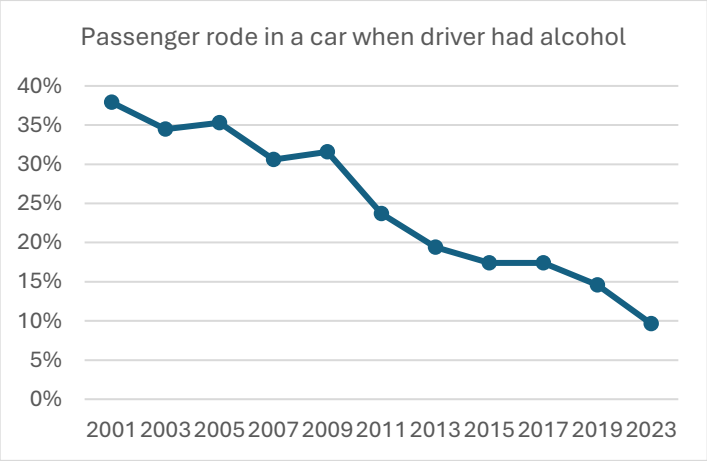
LLCHD has administered the Youth Risk Behavior Survey (YRBS) every odd year since 1991. Typically conducted during the spring of odd years, the YRBS is a paper-based survey. However, in 2011, 2013, and 2015, local YRBS data was collected in the fall of the preceding year (2010, 2012, and 2014) to reduce the administrative burden on schools. This change was approved by the CDC. In 2017, due to sampling concerns, some estimates were withheld because of reliability and validity issues.

Alcohol Use

The percentage of Lancaster County youth that currently use alcohol decreased from 47.5% in 2001 to 11.3% in 2023. This is lower than the national (22.7%) prevalence, and the state (18.9%) prevalence. This has been a steady decline that appears to be slowing since 2013. The prevalence of current alcohol use increases from 9th grade (8.7%), 10th grade (10.8%), 11th grade (13.5%), and 12th grade (11.1%). The proportion of males reporting current alcohol use (10.2%) is very similar to the proportion of females (12.5%) reporting current alcohol use.



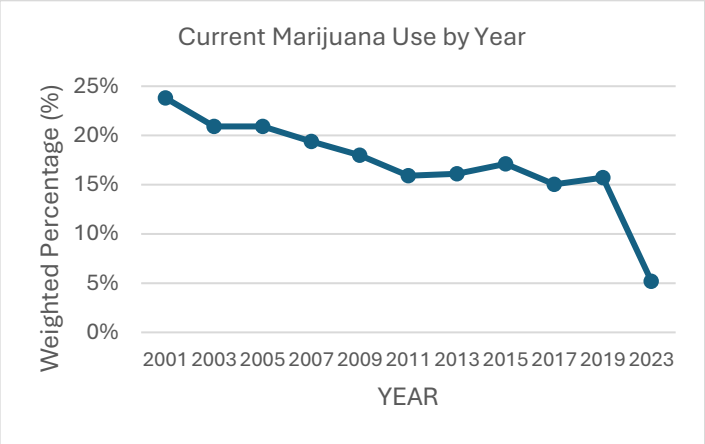
Alcohol & Motor Vehicle Transportation



The proportion of Lancaster County youth that report being a passenger in a motor vehicle after having alcohol has decreased from 37.9% in 2001 to 9.6% in 2023. Recent data is not available for state and national but this was significantly lower than national estimates (14.1%, and state estimates (14.8%) for 2021. Female (11.9%) reported being a passenger in a motor vehicle operated by someone who had consumed alcohol more frequently than

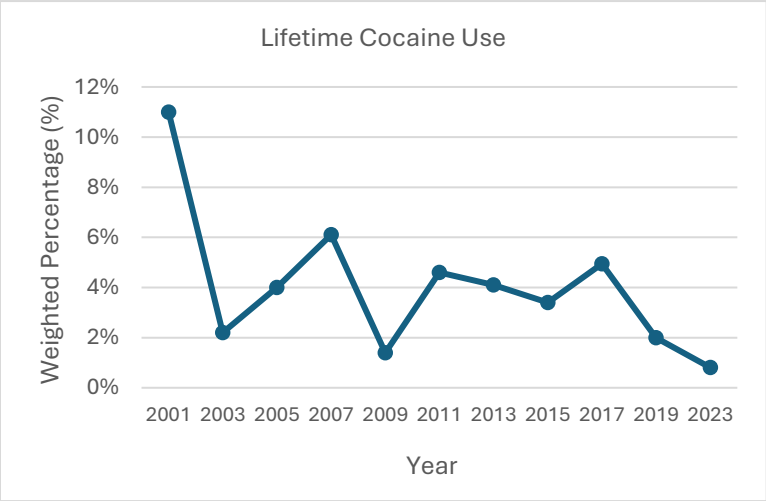
males (7.6%). There was no notable difference between grades (9th 10.3%, 10th 10.3%, 11th 7.2%, 12th 13.8%) except for a slight decrease in this being reported among 11th graders.

Marijuana Use



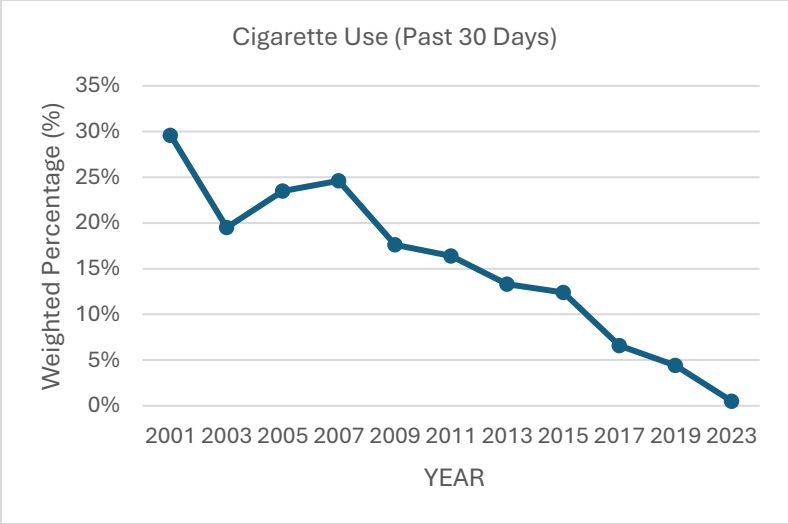
Marijuana use within the past 30 days decreased from 23.8% in 2001 to 5.2% in 2023. The current national and state data we have is for 2021 and 2021 national estimates (15.8%), and state estimates (11.0%). Males (3.9%) and females (6.6%) reported similar rates of currently using marijuana. There is a significant increase in currently using marijuana between 11th grade (7.1%) and 12th grade (14.4%).

Cocaine Use



Data on cocaine use is volatile; however, recent years have shown it to have stabilized under 5%. In 2023, less than 1% (0.8%) Lancaster County youth reported ever using cocaine compared to 11% in 2001 and 6.1% in 2007. The most recent national data for 2021 is (2.5%) and no Nebraska data is available. Males (1.6%) were more likely to report cocaine use compared to females (0.0%). There was also a significant increase between 10th grade (1.0%) and 11th grade (2.8%) that remained at 2.5% into 12th grade. This suggests, as previous indicators have, that interventions prior to 11th grade may help to reduce the prevalence of lifetime cocaine use in Lancaster County.

Tobacco Use

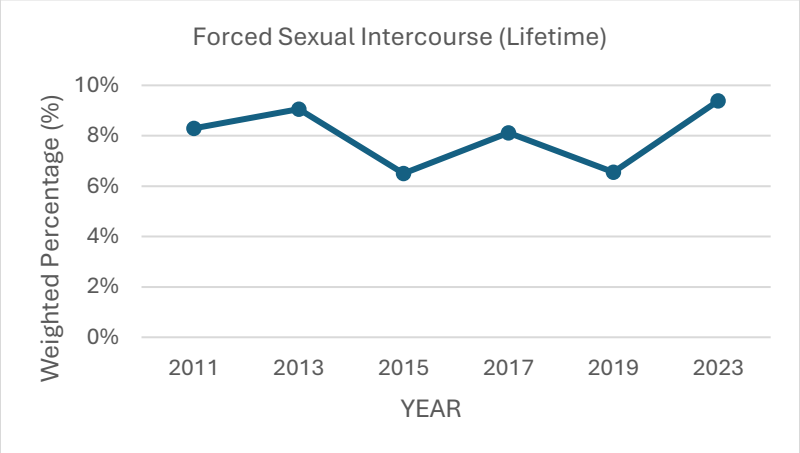


The proportion of 9th to 12th grade youth who self-report smoking tobacco in the past 30 days has decreased to 0.5% in 2023 from 29.6% in 2001. This is lower than the US (3.8%), and Nebraska (3.6%). Males (0.9%) reported slightly higher smoking tobacco than females (0.3%) in the past 30 days. There is also an increase between 11th grade (0.7%) and 12th grade (2.7%) in the percentage of youth who report smoking tobacco in the past 30 days. This increase between 11th grade and 12th grade has been present since 2007. The next section on e-cigarette use is a related area where we will expand on the importance of preventing tobacco use, including electronic cigarettes among youth in 9th through 12th grade.

Electronic Vapor Product Use

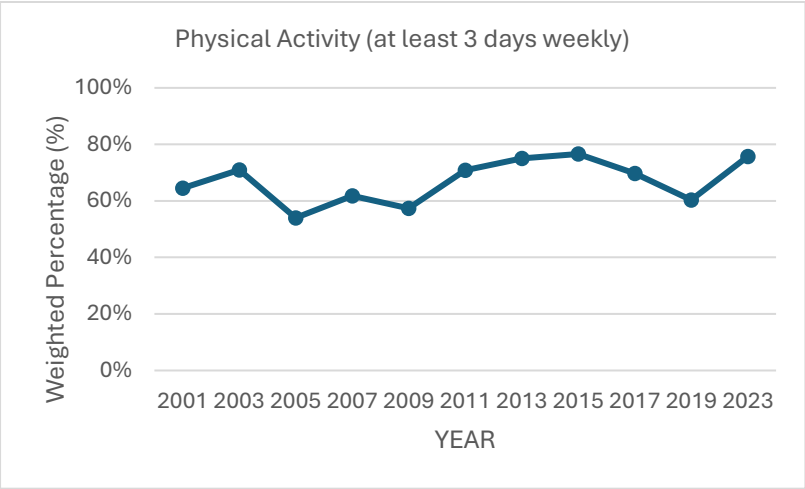
Data collection via YRBS was initiated in 2015 for electronic vapor product use in the past 30 days. In 2015, the rate was 23.8%, but by 2023 that rate had decreased to 6.6%. These proportions start at 6.3% in 9th grade and gradually increase to 33% in 12th grade. Females (20.4%) reported more than male (15.5%) for current vaping. These rates of electronic vapor product use are higher than tobacco smoking estimates, which took more than 20 years to get to a rate of less than 1% in youth and had led to tobacco use and long-term negative impacts for adults for decades after.

Forced Sexual Intercourse (Lifetime)



In 2023, the percent of high school youth who indicated they had forced sexual intercourse was 9.4%, which was relatively stable since 2011 at 8.3%. This was similar to US (8.5%) and Nebraska (9.7%) estimates. Females (14.3%) reported higher forced intercourse than males (4.8). There is a notable increase between 10th grade (10.9%) and 11th grade (11.4%) into 12th grade (15.0%).

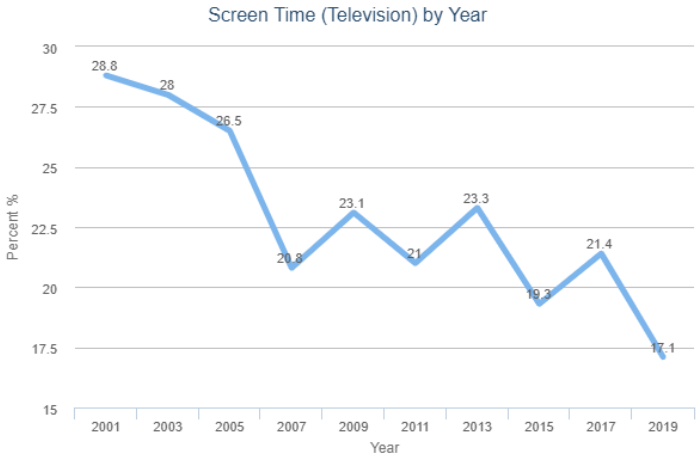
Physical Activity

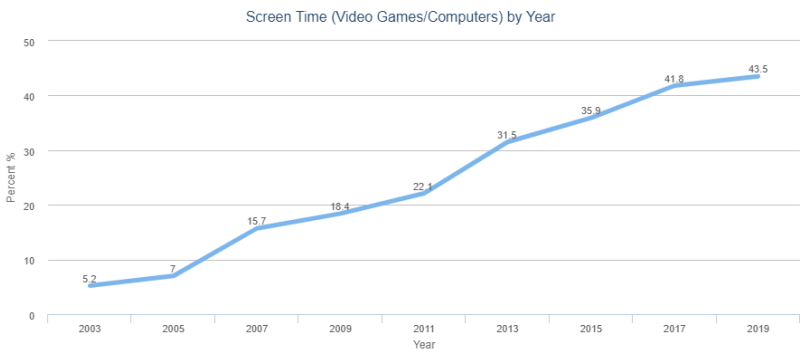


In Lancaster County, the percent of 9th through 12th grade youth who self-report engaging in vigorous physical activity at least 3 of the past 7 days was 75.8%; however, this metric is very volatile and ranges from 54.0% in 2005 to 76.6% in 2015. The prevalence of physical activity among males (76.3%) was similar to females (75.2%). There is a steady decline in physical activity from 9th grade (78.2%) through 12th grade (63.7%). A related metric of youth sports participation shows that around 40% of youth participate on a sports team in the past 12 months (35.5% in 2015), but this shows the same decline from 9th grade (61.5%) through 12th grade (50.5%) as well as the difference between males (41.9%) and females (37.6%).

Video Games & Television

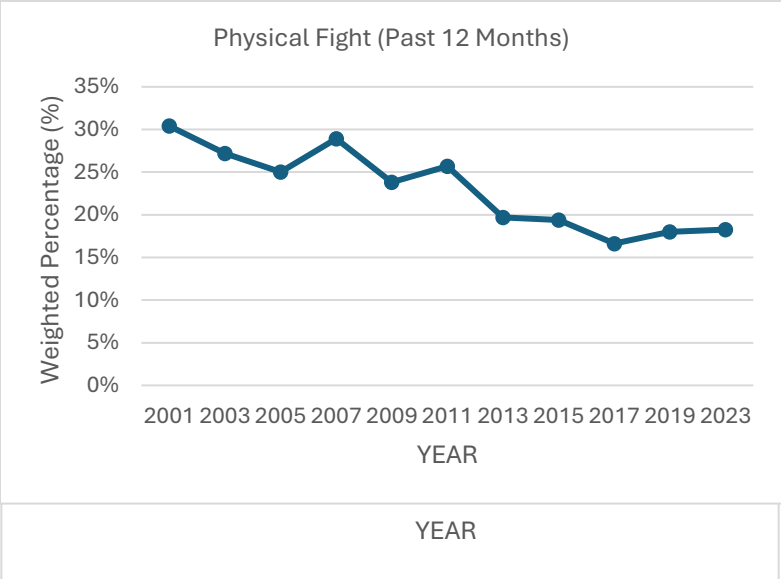
In 2019, 17.1% of 8th to 12th grade youth self-reported watching television 3 or more hours per day. This was a steady decline from 2001 when 28.8% reported 3 or more hours of television per day. This was higher than the 19.8% reported nationwide and the 16.0% reported in Nebraska. This steady decline has impacted females (18.3%) more than males (43.5%). Males reported this rate approximately 2 times as high as females. A review of grade estimates shows that there is no notable difference between 9th grade (18.8%) and 12th grade (18.7%); however, there is a slight dip to 15.9% for 10th grade and 14.9% for 11th grade. It should be noted that this variation is inconsistent and varies from year to year.





While there has been a steady decrease in the proportion of youth who report watching television 3 or more hours per day, the opposite has occurred for youth who self-reported playing video games or using a computer for at least 3 hours per day. In 2019, Lancaster

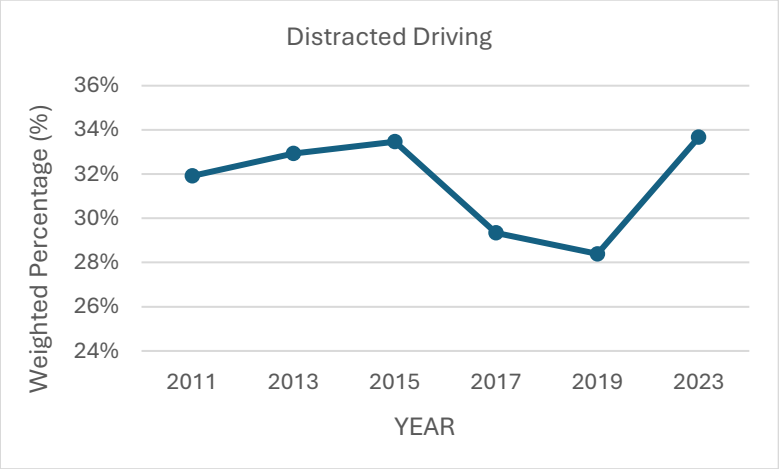
County youth (43.5%) reported their highest percent and show a steady increase since 2003 (5.2%). This was slightly lower than the US (46.1%) and higher than Nebraska (39.0%). There is no significant difference between males (43.2%) and females (43.8%). There is no notable trend by grade



Seatbelt Use

The percent of 9th to 12th graders who self-report never or rarely wearing a safety belt while riding in a car driven by someone else was 2.7%, which was the lowest estimate since 2001 (16.0). The proportion of males (6.4%) and females (6.5%) was very similar. There was an increase from 9th grade (1.9%) to 11th grade (2.8%) then dropped again in 12th grade (1.6%) who never or rarely wore a seat belt.

Texting While Driving

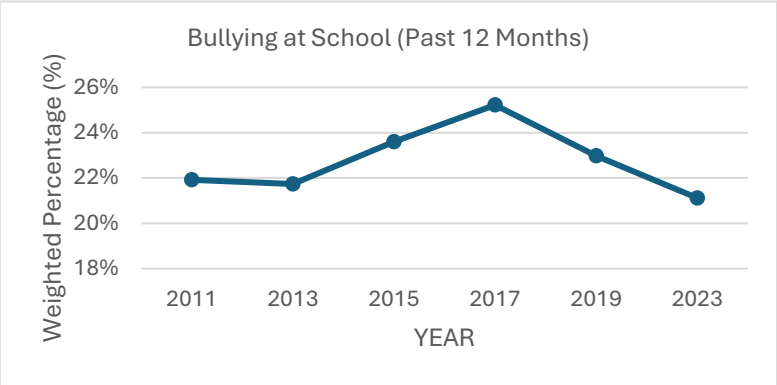


The percent of 9th to 12th grade youth who self-report texting or emailing while driving is relatively stable since 2011 and is around 30%. Females (42.6%) reported higher distracted driving than males (25.4%). There was a clear increase in the proportion of texting or emailing while driving by grade from 9th grade (4.5%) to 10th grade (26.6%) and a very large jump to 11th grade (55.0%) and a then a drop to 12th grade (37.9%). The US (39.9%) and Nebraska (54.6%) reported higher rates than Lancaster County of texting or emailing and driving among the youth in 2021.

Physical Violence

In 2019, the percent of 9th to 12th grade youth who self-report being involved in a physical fight in the past 12 months had decreased to 18.2% in 2023 from a high of 30.4% in 2001. This steady decline is accompanied by a significant difference between males (27.2%) and females (8.6%). There was no significant trend identified from 9th to 11th grade (around 19%) but a drop in 12th (13.2%). The US (18.3%) and Nebraska (19.9%) were both comparable to the Lancaster County estimates. The trend in physical violence is seen at the national and state level.

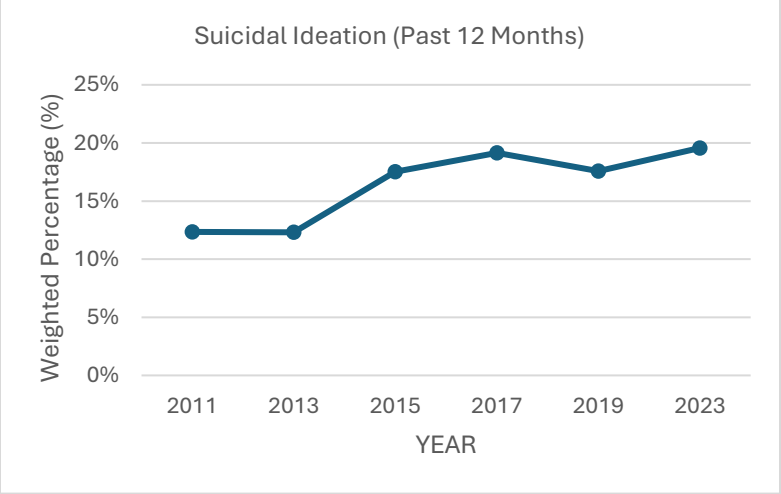
Bullying



The percent of 9th to 12th grade youth in Lancaster County who self-report being bullied while on school property in the past year was 21.1% in 2023, which was no significant change from 2009 (23.3%). Males (17.3%) were slightly less likely to report bullying than females (25.2%). There was increase from 9th grade (15.3%) to 11th grade (25.5%) and a drop in 12th grade (9.5%). Statewide (20.3%) and nationwide (15%) estimates are similar to these estimates of bullying on school property. This equates to nearly 1 in every 4 children who are attending 9th through 12th grade are reporting being bullied while at school.

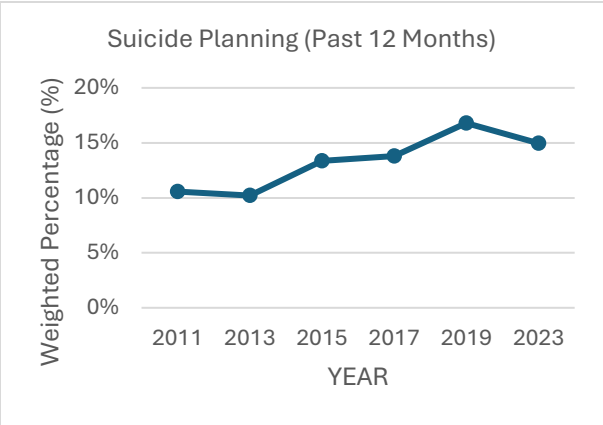
Electronic bullying, defined as self-reporting being bullied via electronic devices in the past 12 months, is reported by 12.4% of 9th to 12th grade youth. This was reported similar among females (11.6%) and males (13.3%). There is an increase from 9th grade (5.6%) to 11th grade (13.7%) and 12th grade (14.5%). Nationwide (15.9%) and statewide (17.1%) estimates are similar to Lancaster County.

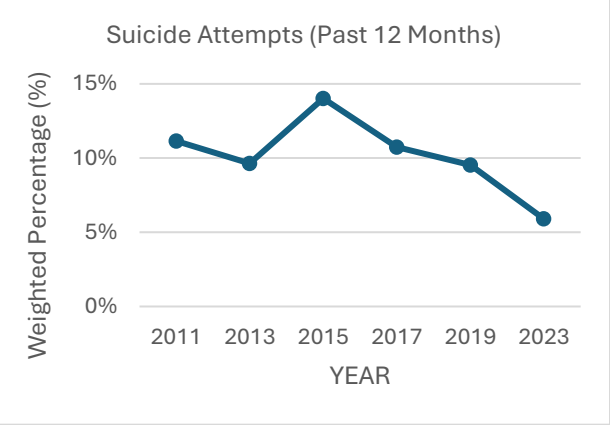
Suicide



In 2023, the percent of 9th to 12th grade Lancaster County youth who self-reported seriously considering attempting suicide in the past 12 months was 19.6%. This is nearly one in five youth reporting thinking about suicide in the last 12 months. Nearly 1 in 4 females (27.7%) reported suicidal ideation while 1 in 10 males (12.2%) reported suicidal ideation. There is no notable trend by grade. Nationwide (22.2%) and statewide (19.2%) estimates are comparable. This is a serious concern that can be better understood with the following information about planning to commit suicide and suicide attempts.

In 2023, the percent of 9th to 12th grade Lancaster County youth who self-reported planning to commit suicide in the past 12 months was 15%. This is only slightly lower than the percent of youth who reported that they were thinking about or seriously considering suicide in the past 12 months. Females are slightly more likely (18.8%) than males (11.3%). There is no notable trend by grade.





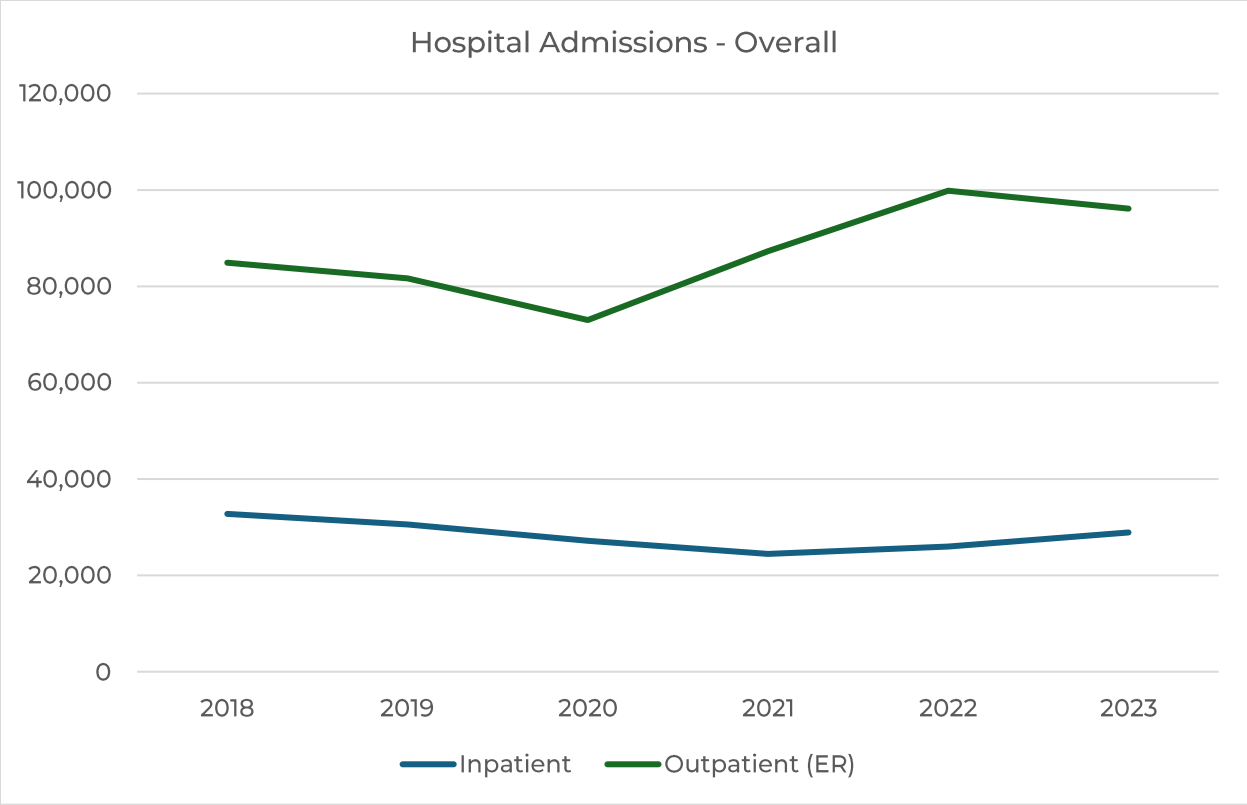
In 2023, there were 5.9% of 9th to 12th grade youth who self-report attempting suicide in the past 12 months. This is nearly 1 in 20 of every 9th to 12th grader that is struggling with suicide and attempting suicide in the past 12 months. Females (7.4%) were more likely than males (4.5%) to attempt suicide. The highest risk grade was 11th grade (13.2%) although the other grades were 1.1% (9th), 1.1% (10th) and 4.1% (12th), which is still a major public health issue.

Hospitalizations

The presence of hospitals in the community and those healthcare systems related to the hospitals is a critical component of our community's healthcare system. In Lancaster County, claims data related to hospitalizations is obtained annually from the Nebraska Hospital Association (NHA), and a review of those data is generated for assessment, monitoring & evaluation. The following section highlights this aspect of healthcare seeking behavior and what it says about our community's overall health and wellbeing. These data are reflected since 2018.

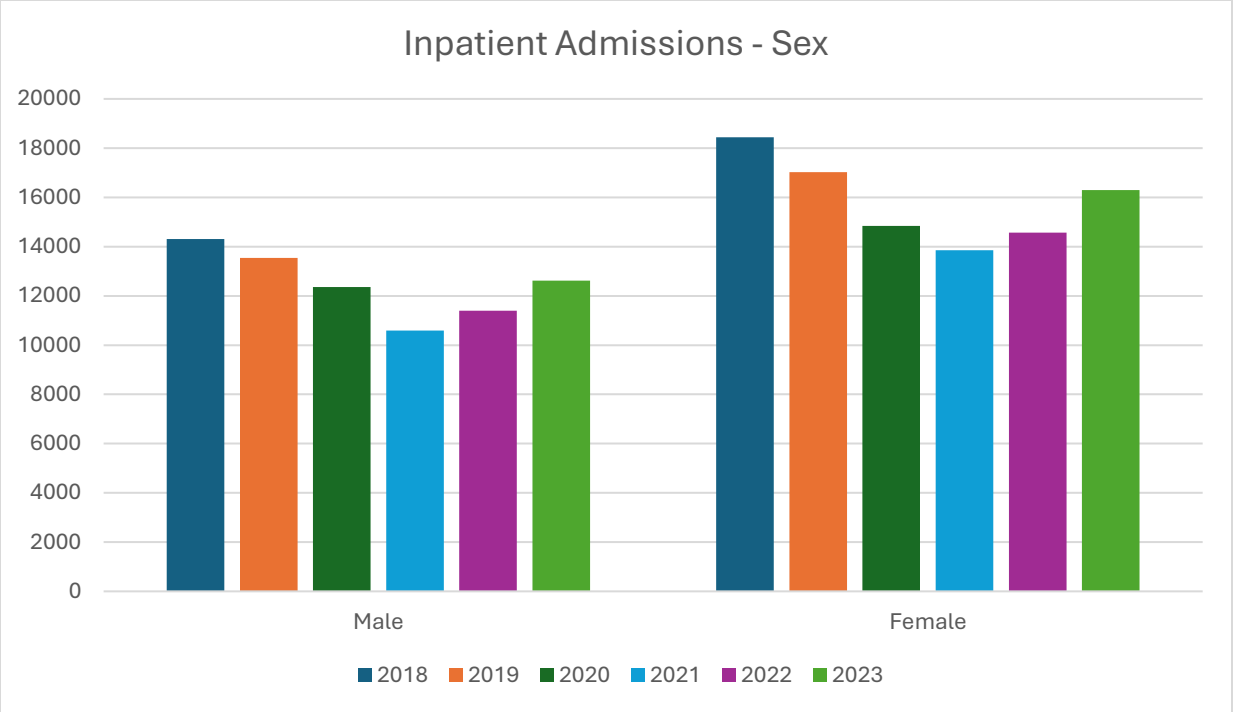
Hospital Encounter Overview

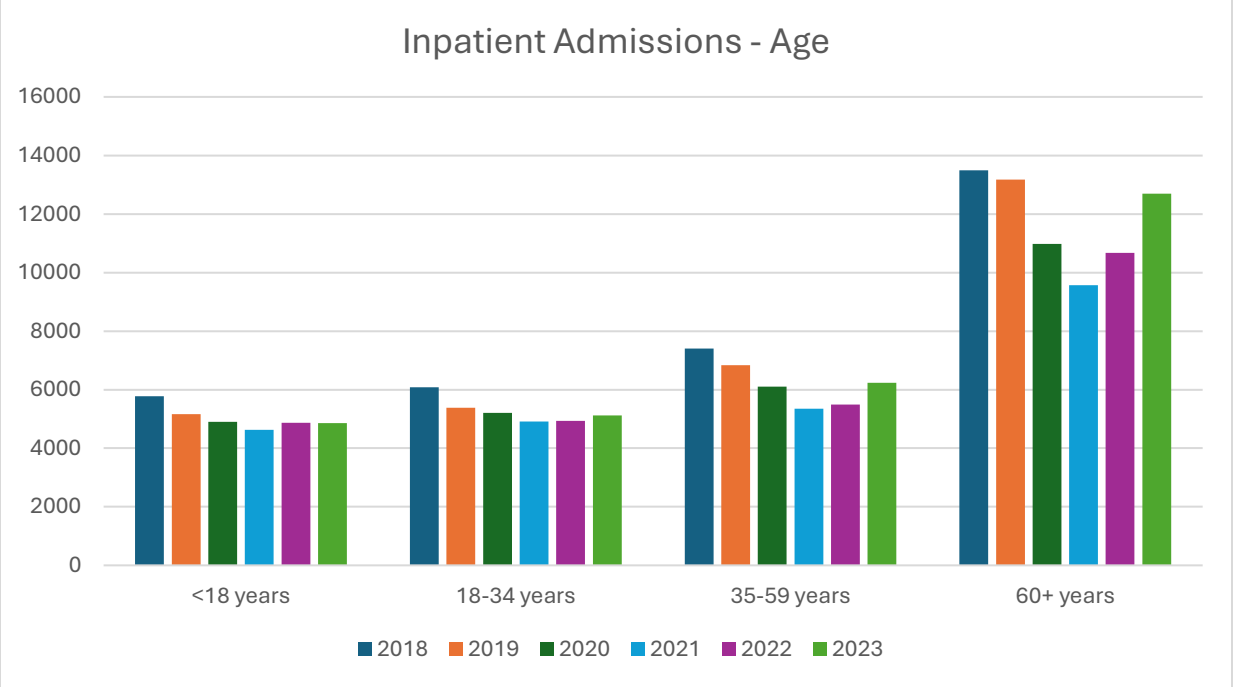
The section below highlights the overall admission statistics, both inpatient and outpatient. Generally, inpatient admissions have remained around 25,000-30,000 admissions per year, while outpatient emergency room encounters increased slightly to about 80,000 per year from 2018-2020 to about 95,000 per year from 2021-2023. This represents a potential burden on our local healthcare systems' emergency departments.

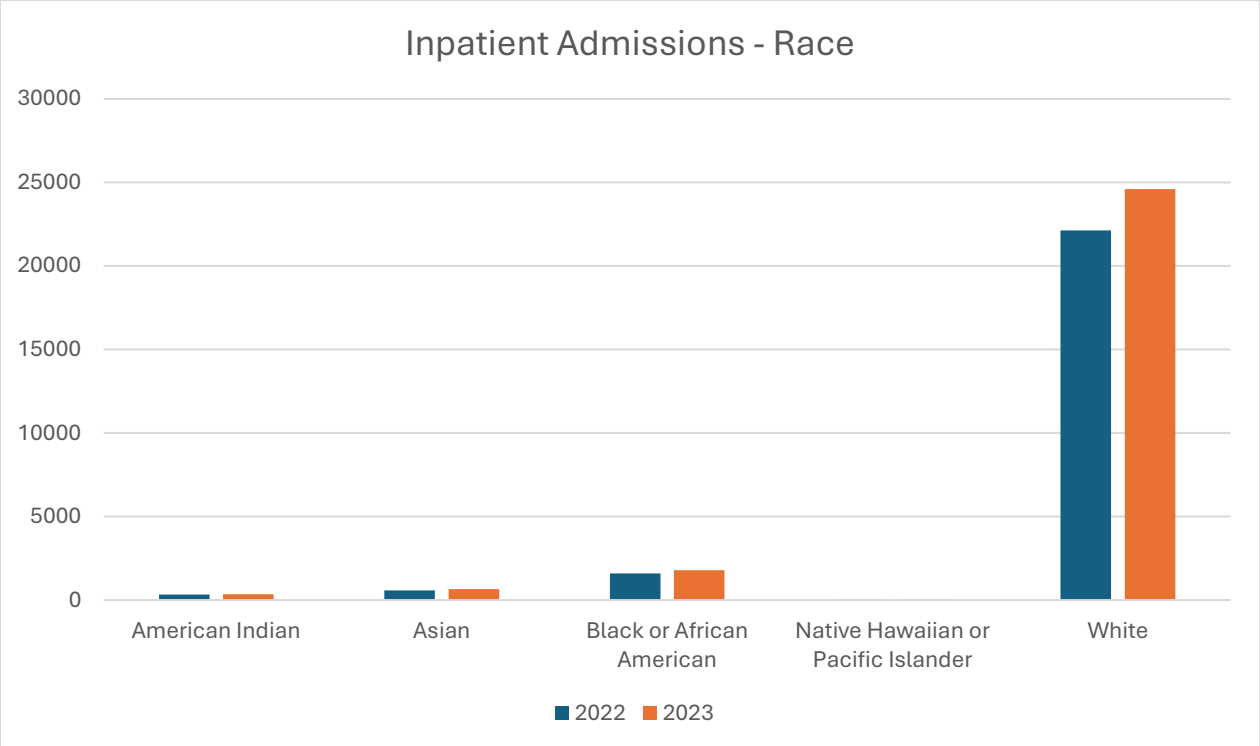


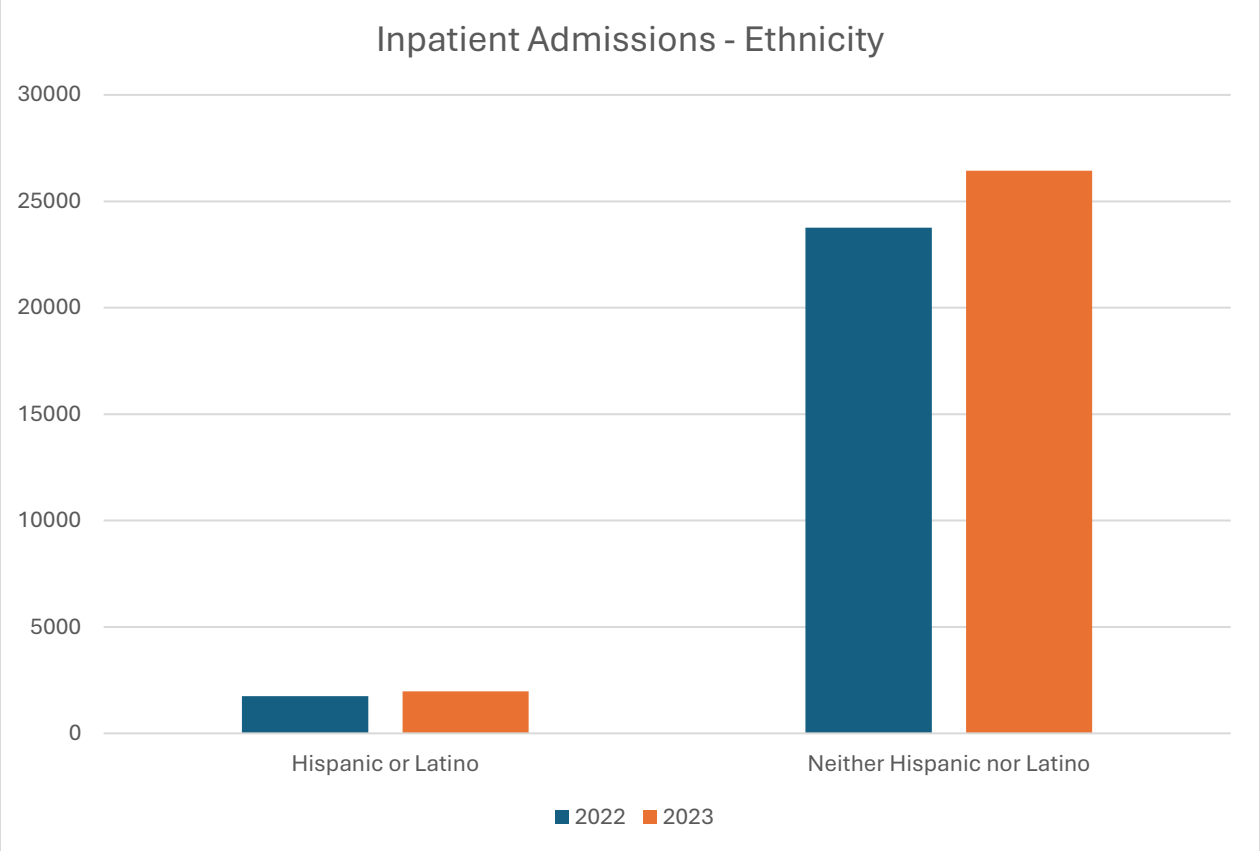
Inpatient Admissions

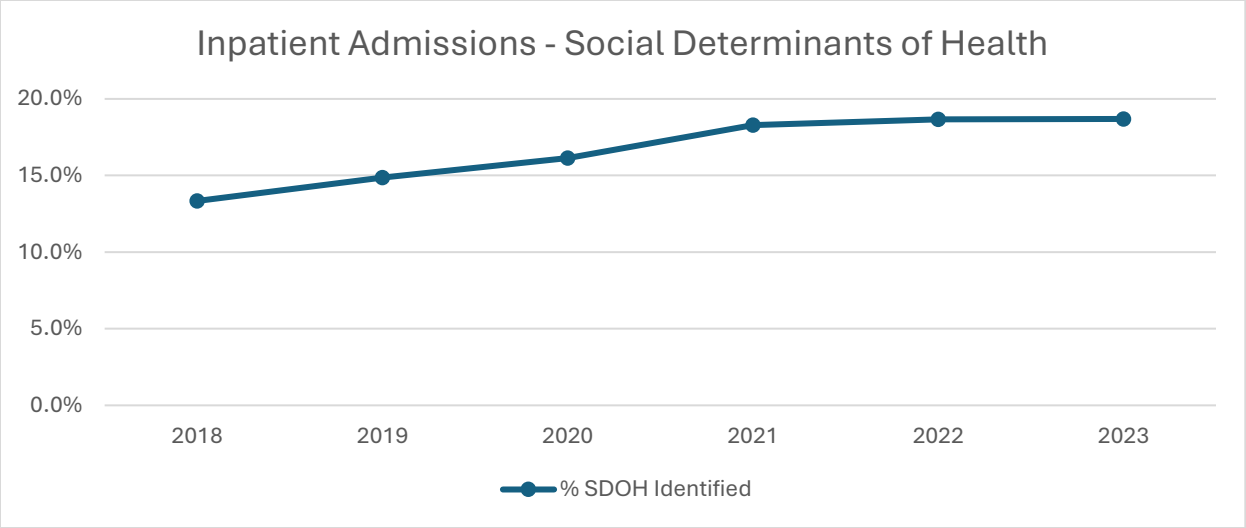
Inpatient admissions in Lancaster County remained consistent at about 25,000 to 30,000 annual admissions. Females were admitted as inpatients more frequently than males and those 60+ years were hospitalized more frequently than individuals under 60 years.


Inpatient Admissions - Sex
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
Male
Female
2018
2019
2020
2021
2022
2023

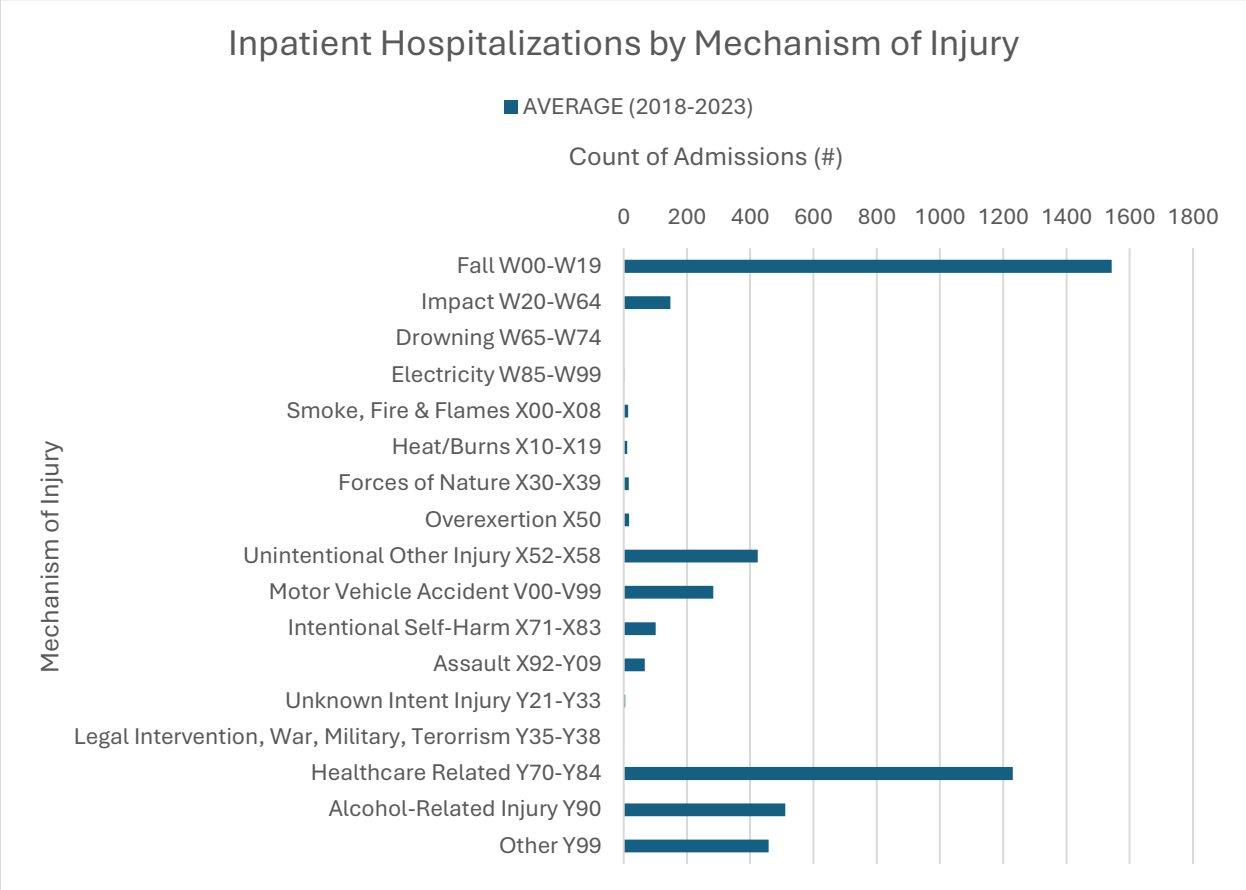

Inpatient Admissions - Age
16000
14000
12000
10000
8000
6000
4000
2000
0
<18 years
18-34 years
35-59 years
60+ years
2018
2019
2020
2021
2022
2023


Inpatient Admissions - Race
30000
25000
20000
15000
10000
5000
0
American Indian
Asian
Black or African American
Native Hawaiian or Pacific Islander
White
2022
2023


Inpatient Admissions - Ethnicity
30000
25000
20000
15000
10000
5000
0
Hispanic or Latino
Neither Hispanic nor Latino
2022
2023

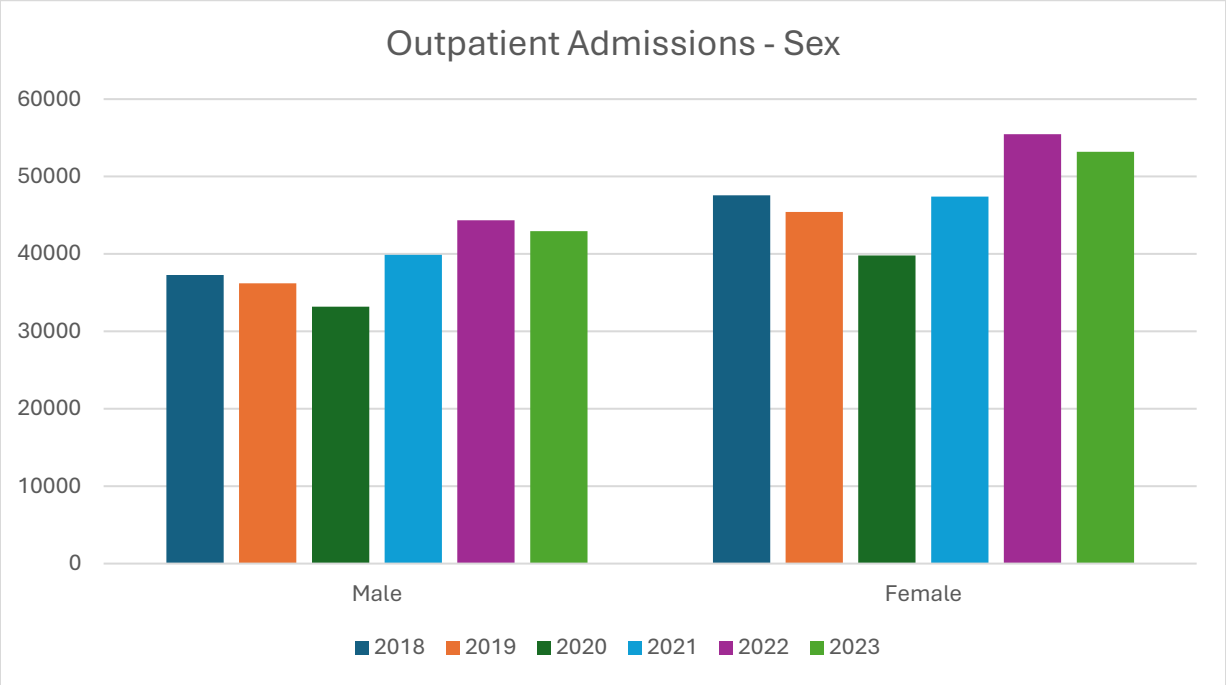


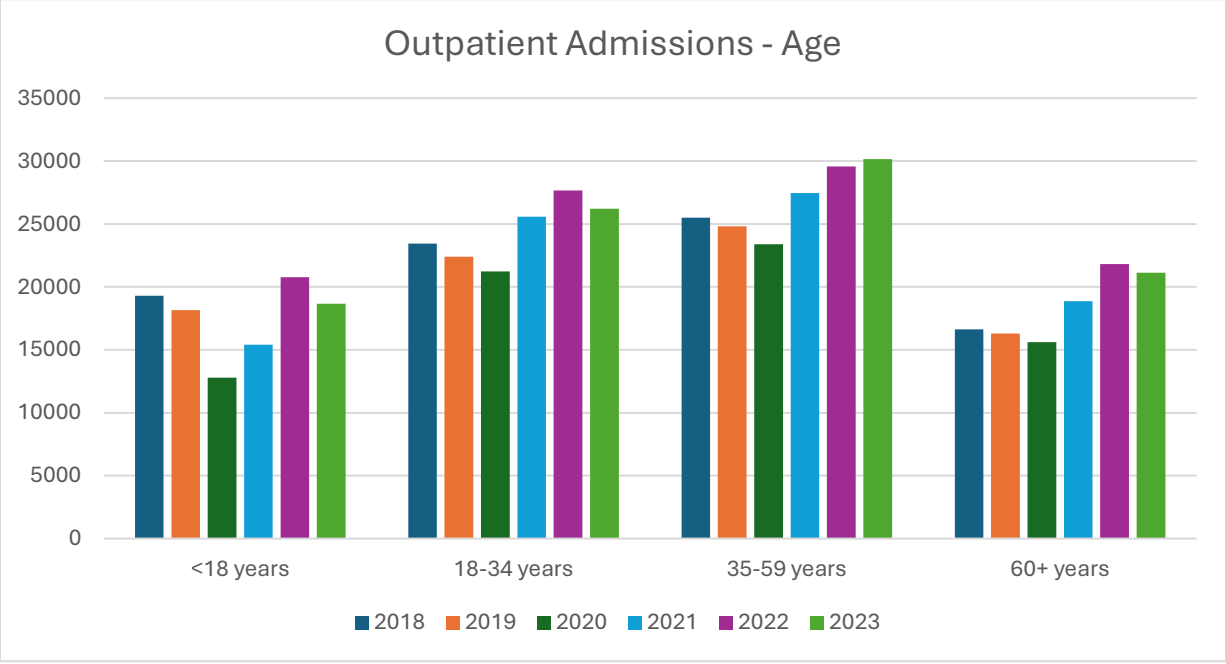
The leading cause of inpatient hospitalizations is primarily falls, followed by alcohol, motor vehicle accidents, struck by/against, intentional self-harm and assault, where the mechanism of injury is neither healthcare related nor unspecified by the e-code.

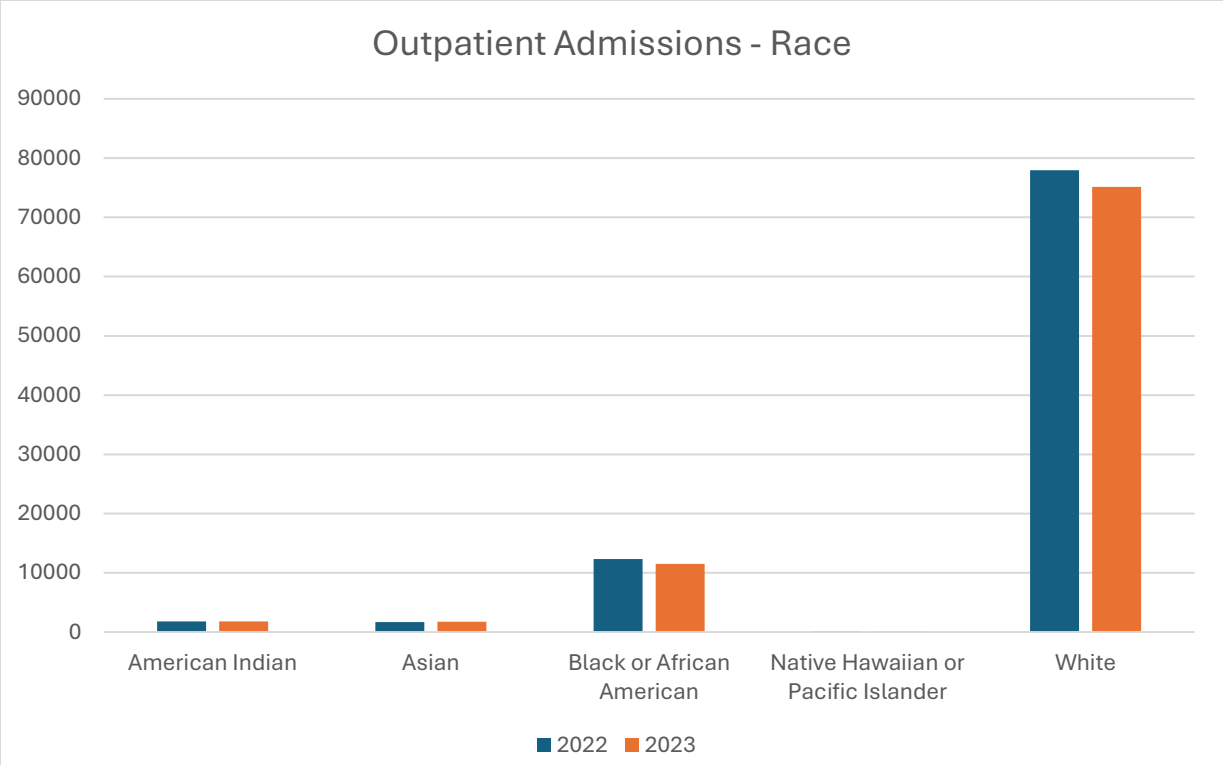


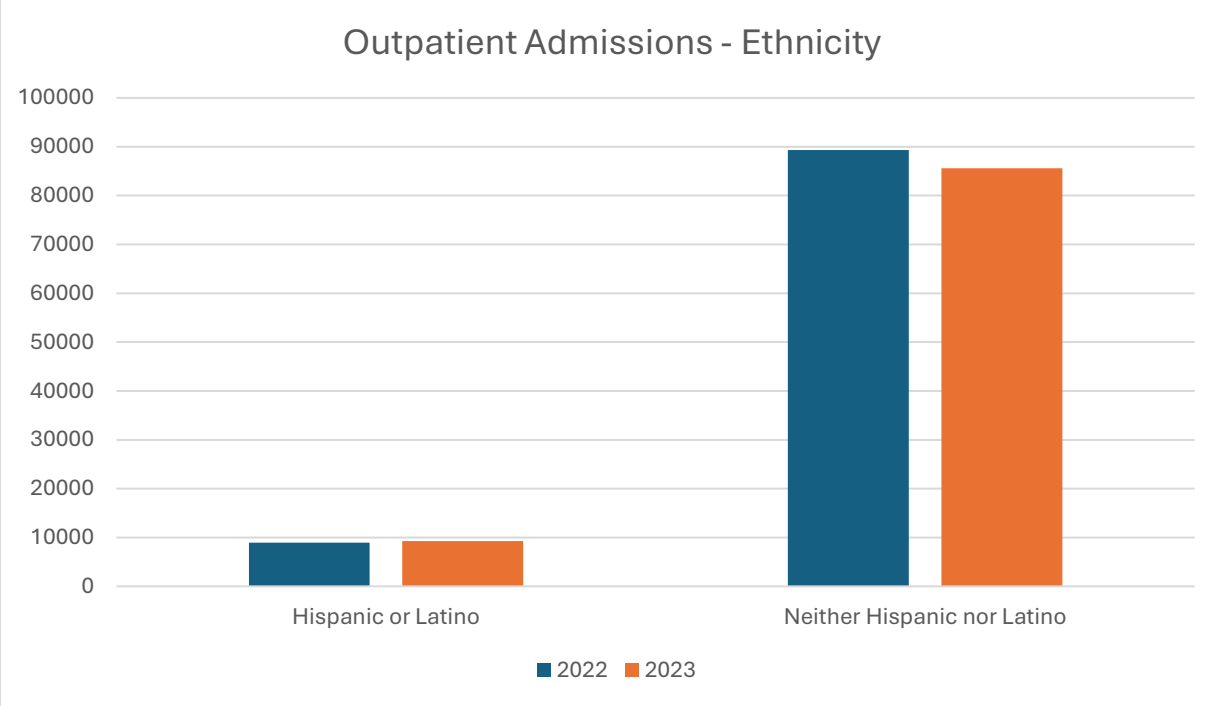
Emergency Department Visits

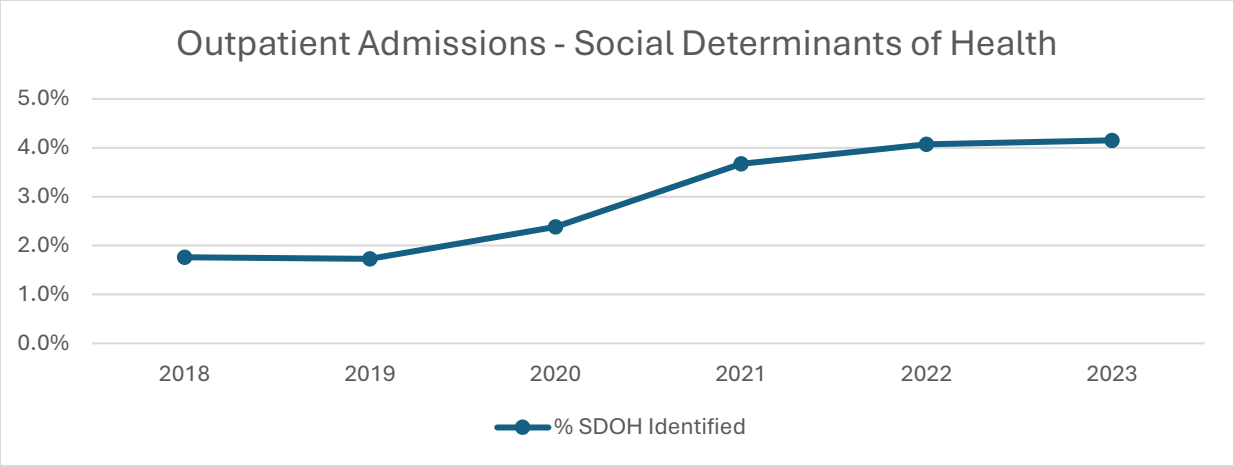
Emergency Department visits are quantified by total visits and categorized by the reason for that visit. Females had more outpatient hospitalizations than males. The 35-59 years group represented the highest, with 18-34 years following closely each year for emergency department visits.



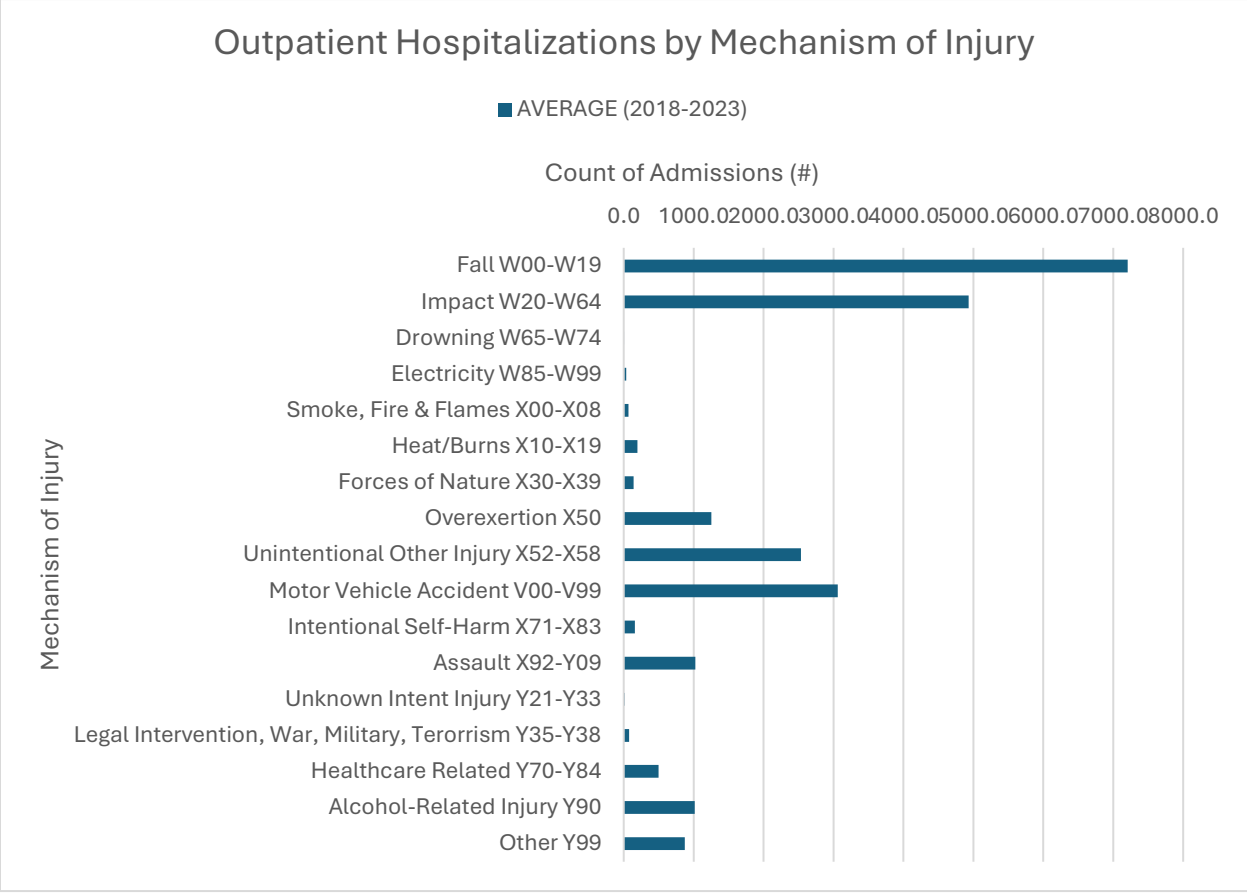



Outpatient Admissions - Race
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
American Indian
Asian
Black or African American
Native Hawaiian or Pacific Islander
White
2022
2023


Outpatient Admissions - Ethnicity
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
Hispanic or Latino
Neither Hispanic nor Latino
2022
2023



The leading cause of outpatient hospitalizations is also falls, similarly to inpatient hospitalizations. A higher proportion of hospitalizations here is also due to being struck by/against objects, motor vehicle accidents, overexertion, assault and alcohol, where it is neither healthcare related nor an unspecified accidental injury.



Unintentional Injuries

Unintentional injuries, especially falls, are a significant source of morbidity in the county and they are the sixth leading cause of death overall. Unintentional injuries are the leading cause of death for individuals ages 1 to 44. Injuries may result in either short- or long-term disabilities. All injuries are classified by e-code and Nebraska hospitals are required to submit the data to the Nebraska Department of Health and Human Services (DHHS). NHA collects the injury data from hospitals and then transfers the information to the DHHS. Since injury data are mandated, these data are likely to be more complete. In 2023 alone, there were 28,913 inpatient admissions and 396,455 emergency room outpatient hospital visits. This analysis excludes non-emergency room outpatient encounters.

The following narrative will describe in more detail the leading causes of hospitalizations, including falls, motor vehicle accidents, assault, overdoses, intentional self-harm and alcohol-related injuries.

Hospitalizations Due to Falls

The following table shows the distribution of hospital visits, whether hospital outpatient (ER) visits or inpatient admissions, by age. It should be noted that the range for the age groups differ with five-year spreads for children and young adults (20-24), but ten-year spreads for persons 25 and older.

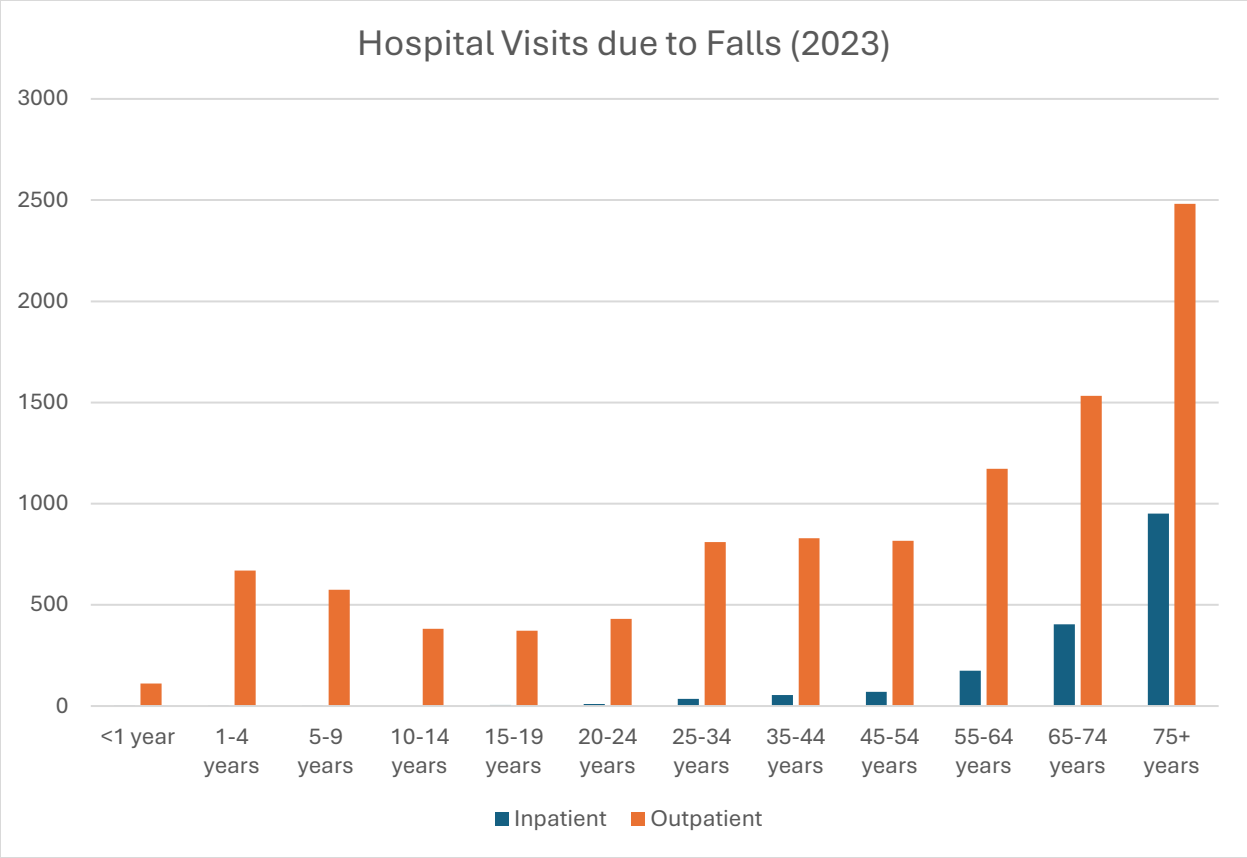
2023 Inpatient (IP) & Outpatient (OP) Hospitalizations by Age

	<1	1-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65-74	75+
IP	3736	251	170	313	680	1201	3626	2727	2183	3071	4545	6410
OP	5055	11493	9646	9144	14702	21960	44827	48916	47970	54942	70295	57505

2023 Inpatient (IP) & Outpatient (OP) Hospitalizations by Age (Unintentional)

	<1	1-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65-74	75+
IP	12	17	9	19	61	63	106	171	194	325	605	1183
OP	260	1673	1582	1644	2312	2232	3728	4006	3260	3584	3819	4319

As shown in the graphs below, falls are the reason for most outpatient and inpatient visits by a wide margin. While “Non-Fall” is the second leading reasons for outpatient visits, for a specific cause the next leading reason for outpatient visits in 2023, are motor vehicle accidents, followed by poisoning, natural/environmental, fire/burn, with “Struck by, against” being the 6th most likely reason for outpatient visits. Information on the mortality caused by injuries is included in the next section on causes of mortality. Falls are the leading cause of hospitalizations by a significant number. Below is a chart showing the distribution of hospitalizations due to falls by age.



The tables above provide a general understanding of what the primary mechanism of injury is responsible for unintentional injuries in Lancaster County. This clearly identifies falls as the leading cause; however, other causes of unintentional injury may impact different age groups more significantly.

Communicable Diseases

This section presents a summary of selected communicable diseases. The diseases that are included in the following table are vaccine-preventable diseases, sexually transmitted diseases, enteric (foodborne and waterborne) diseases, vector-borne (from an animal or insect) diseases, as well as tuberculosis (TB) and other diseases that can have a significant effect on health status.

Lancaster County Selected Reportable Diseases

Annual Summary: 2014 to 2023

Reportable Disease by Category	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Vaccine Preventable Diseases										
Hepatitis A	0	1	0	1	2	0	1	2	1	1
Hepatitis B (acute/chronic)	25	20	6	11	24	19	20	24	24	43
Covid-19*	6743	33803	25121	22773	NA	NA	NA	NA	NA	NA
Influenza	789	2915	403	297	150	223	141	31	14	37
Mumps *	1	1	0	0	11	2	1	6	1	0
Pertussis *	7	13	2	17	50	37	21	67	298	173
Varicella (chickenpox) *	5	0	0	1	5	3	5	4	2	1
Sexually Transmitted Diseases										
HIV/AIDS	23	16	25	9	11	17	19	10	23	17
Chlamydia	1630	1759	1866	1868	1807	1732	1809	1710	1589	1490
Gonorrhea	375	518	691	814	585	649	565	403	353	299
Syphilis* (primary/secondary)	50	39	23	10	20	28	9	10	6	7
Syphilis (other)	1	2	0	27	20	25	6	5	9	17
Enterics										
Campylobacter *	63	45	24	32	60	38	49	53	69	68
Cryptosporidiosis *	4	9	3	6	8	7	10	12	13	8
E-coli (shigatoxin-producing) *	19	32	6	19	22	19	13	13	10	8
Giardiasis *	13	9	6	12	8	13	17	16	41	48
Listeriosis	0	1	0	0	0	0	1	1	0	1
Salmonella *	57	53	16	28	44	47	47	44	36	44
Shigellosis *	7	9	4	2	8	6	1	5	9	18
Other Reportable Diseases										
Dengue Fever *	1	1	0	1	2	0	0	2	0	0
Haemophilus influenza, invasive *	11	8	0	5	9	4	6	7	5	4
Hepatitis C (acute/chronic)	93	89	62	75	137	85	103	103	153	186
Histoplasmosis	5	7	2	5	1	1	5	1	3	5
Kawasaki	0	0	0	0	2	0	3	0	0	0
Legionellosis	6	3	4	3	7	1	1	0	3	4
Lyme Disease *	0	3	1	2	0	6	1	1	2	2
Malaria	3	2	2	0	3	1	1	2	1	2
Meningitis (aseptic)	9	24	5	6	25	27	43	12	5	8
Meningitis (bacterial)	1	0	0	0	3	4	0	1	2	1
Neisseria meningitidis, invasive	0	0	0	0	0	1	0	1	0	0
Rabies in Animals	7	4	11	4	5	12	4	2	3	6
Rocky Mountain Spotted Fever *	1	2	0	4	5	10	5	1	3	2
Streptococcal disease (invasive)	92	93	32	56	62	66	49	71	38	45
Tuberculosis	5	4	2	9	5	4	4	6	3	5
Tularemia *	2	0	0	1	3	1	1	1	3	0
Typhoid Fever (Salmonella typhi)	0	0	0	0	0	1	0	0	0	0
West Nile Virus- non-neuro-invasive*	13	1	0	2	1	12	5	4	6	4
West Nile Virus -nuero-invasive	10	4	4	3	0	6	0	5	4	3
Yersiniosis (not Plague)*	8	3	9	3	6	0	1	4	1	1

* Includes both confirmed and probable cases. ** Not reportable NA Not applicable

Communicable Disease Program, Public Health Informatics and Planning Division, Lincon-Lancaster County Health Department

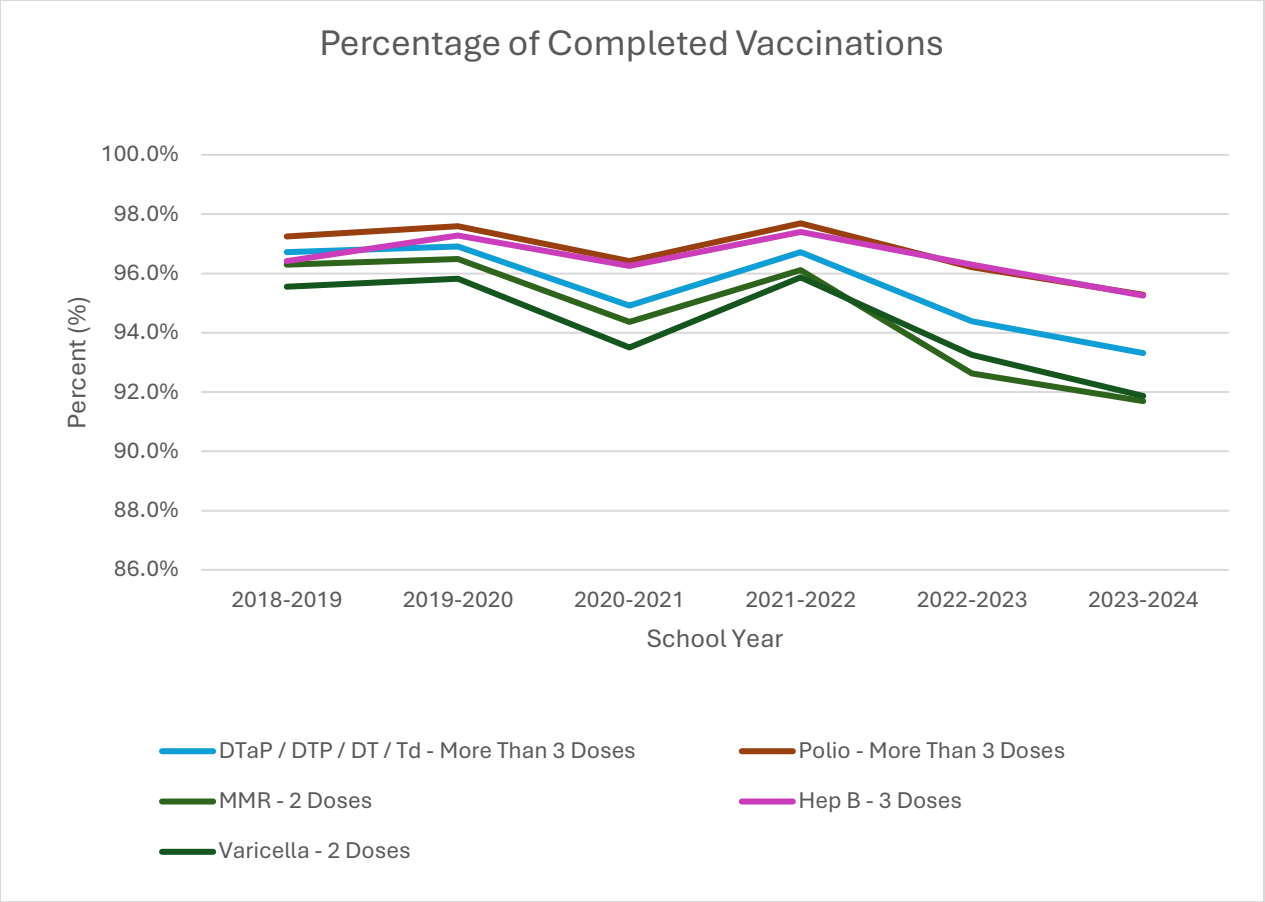
Vaccine Preventable Diseases

The table above shows the Lancaster County Selected Reportable Diseases. You can see that the case numbers for these diseases are not very large overall. Please note, in the case of influenza, the numbers are for laboratory confirmed cases and do not reflect the true dimensions for regular seasonal flu as providers usually don't report clinically diagnosed cases (i.e., "influenza-like illness"). Also, notably absent from the list are measles (rubeola virus) and rubella (German measles) since there have been no local cases in recent years. Any cases of measles locally would be a sentinel event as measles has been declared eliminated from the U.S. in 2020 due to vaccination (CDC, 2020). Outbreaks in the U.S. are rare but have been increasing over the years due to decline in vaccination rates, particularly during COVID-19 (Minta et al., 2023). Most children receive a series of MMR (measles, mumps, and rubella) shots that provide immunity to 90 percent of those vaccinated. Of the diseases listed, increases in influenza in 2022 was the most notable fluctuation. This fluctuation is explained by an atypically high influenza season for the 2022-2023. The 2022-2023 was a moderately severe flu season with hospitalizations and deaths similar to pre-pandemic seasons (CDC, 2023).

Vaccines for Hepatitis A and B are now common for younger populations, but older adults are more susceptible to these diseases. Hepatitis A affects the liver and is spread via the fecal-oral route. Hepatitis A is generally a self-limiting disease with few long-term repercussions, but it can result in epidemics if food is contaminated by a food handler with the disease or if a food product such as lettuce is contaminated from the water supply or some other source. Hepatitis B is known to have infected one third of the world's population, but it is not as common (endemic) in North America (Obeagu, 2023). Unlike hepatitis A, hepatitis B is not spread by touch or contact, but is generally transmitted by the exchange of blood or other bodily fluids. Infants can contract hepatitis B from their mothers during childbirth and they need to receive the vaccine within the first 12 hours after birth and undergo a series of vaccinations. Acute cases of hepatitis B are self-limited, but persons with a chronic case of hepatitis B have a high risk of developing cirrhosis or liver cancer. Both hepatitis A and hepatitis B have remained relatively stable in Lancaster County, with rates ranging from 0.0 to 0.7 and 1.9 to 14.6 cases per 100,000 persons, respectively.

Vaccinations for School Entry

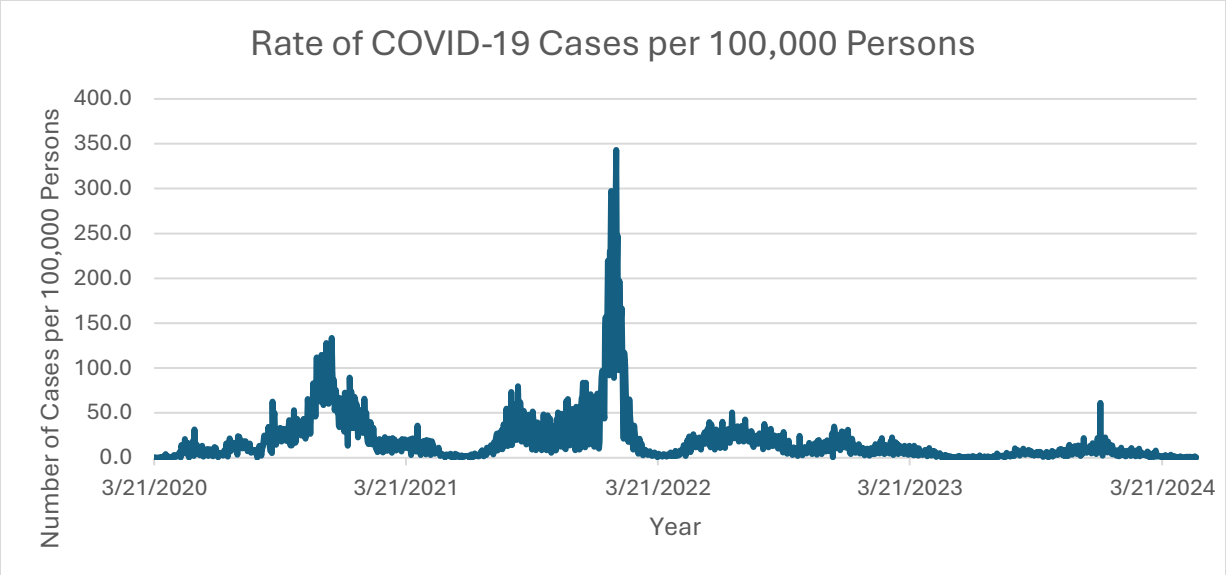
U.S. states and local jurisdictions establish vaccination requirements for school attendance, as well as conditions and procedures for exemptions from these requirements. These vaccination mandates help protect students, schools, and communities from vaccine preventable diseases. After a decade of nearly 95% nationwide vaccination coverage for the measles, mumps, and rubella vaccine (MMR); diphtheria, tetanus, and acellular pertussis vaccine (DTaP); poliovirus vaccine (polio); and varicella vaccine (VAR), coverage declined by about one percentage point during the 2020–21 school year and fell an additional percentage point during the 2022–23 school year.



COVID-19

The data presented in this report provide information about the health in Lancaster County toward the end of the COVID-19 pandemic and during its transition to the endemic phase. As of March 11th, 2024, Lancaster County has reported a total of 92,378 cases of COVID-19 and 504 deaths attributed to COVID-19. These figures underscore the significant impact of COVID-19 on the community's health over the course of the pandemic. However, as vaccination efforts continue, there has been progress in mitigating the spread of the virus and reducing severe outcomes. Also as of March 11th, 2024, Lancaster County has administered a total of 742,042 doses of COVID-19 vaccine. Utilizing the CDC's new definition of up-to-date vaccination, which recommends that everyone aged 6 months or older receive one dose of the 2023-2024 updated COVID-19 vaccine, approximately 13.4% of the county's population is considered up-to-date vaccinated. This updated vaccine formulation specifically targets the XBB lineage of the Omicron variant, enhancing protection against severe COVID-19 that may have waned over time (CDC, 2024a).

Positive laboratory test results, including at-home tests, are currently quite low. Additionally, wastewater surveillance is a valuable tool for monitoring infectious diseases within the community. By analyzing wastewater samples, we can detect pathogens like viruses and bacteria shed by infected individuals, providing early warnings of outbreaks and tracking trends in disease prevalence. Current wastewater data indicates a low level of COVID-19 viral particles, with expectations for seasonal fluctuations in these levels.



The chart above shows the rate of COVID-19 cases per 100,000 persons. At the time of this report, cases have significantly decreased, and the predominant variant is XBB.

Long COVID

Post-COVID-19 health conditions, also known as Long COVID, encompass a range of health issues that emerge, persist, or recur following acute COVID-19 illness, including fatigue, respiratory symptoms, and neurologic symptoms. Data from the 2022 Behavioral Risk Factor Surveillance System (BRFSS) found that of those reporting testing positive for COVID-19, approximately one fifth (20.2%) experienced symptoms consistent with Long COVID. To have a better understanding of Long COVID, forthcoming studies are needed to review risk factors associated with patient demographics, pre-existing comorbidities, the severity of COVID-19 (asymptomatic to severe), and the duration of individual symptoms. This data can help develop preventative measures, rehabilitation techniques, and clinical care management strategies designed to address Long COVID-19 care in patients.

Future COVID-19 Considerations

As Lancaster County navigates the transition from an epidemic to an endemic phase, ongoing vaccination efforts, surveillance, and public health interventions will remain critical to safeguarding the community's health and well-being. For more information, please visit covid19.lincoln.ne.gov, where you can access the COVID-19 dashboard either there or by clicking here.

Reportable Disease	2023	2022	2021	2020	2019	2018	2017
Hepatitis A	0.0	0.3	0.0	0.3	0.6	0.0	0.3
Hepatitis B (acute/chronic)	7.7	6.2	1.9	3.5	7.7	6.1	6.5
COVID-19	2076.3	10495.8	7842.9	7207.2	N/A	N/A	N/A
Influenza	243.0	905.1	125.8	94.0	47.9	71.9	46.0
Mumps	0.3	0.3	0.0	0.0	3.5	0.6	0.3
Pertussis	2.2	4.0	0.6	5.4	16.0	11.9	6.9
Varicella (chickenpox)	1.5	0.0	0.0	0.3	1.6	1.0	1.6

Sexually Transmitted Diseases (STDs)

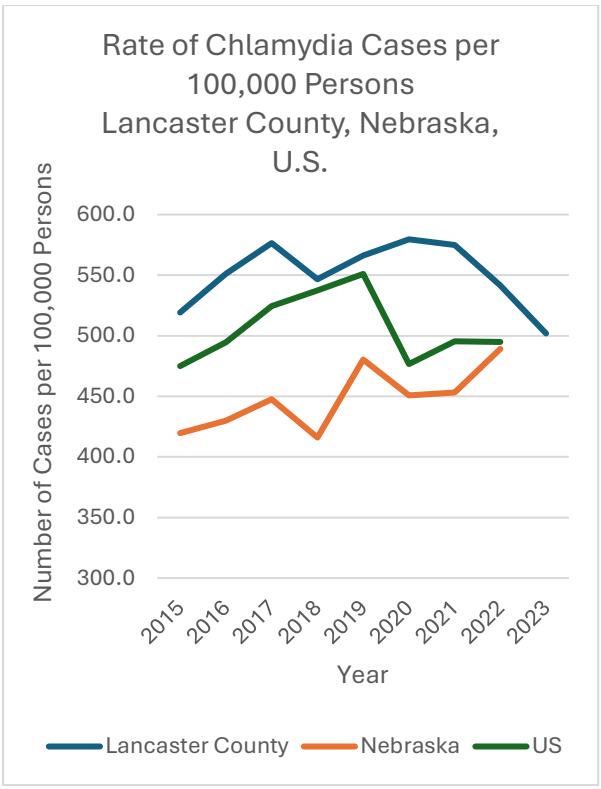
Sexually transmitted diseases (STDs) are a subset of communicable diseases that spread from person to person through sexual contact. Untreated STDs can cause infertility, pregnancy complications, and some cancers. The data reported on sexually transmitted infections as shown in the table at the beginning of this section identifies chlamydia and gonorrhea as the most common STDs in Lancaster County.

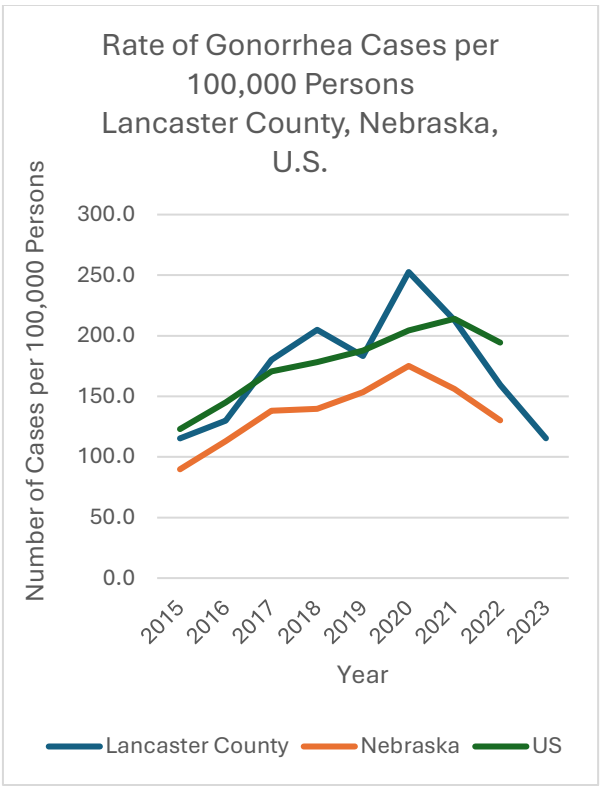
Chlamydia & Gonorrhea

Chlamydia affects both men and women and occurs in all age groups but is most prevalent in young women. Many people with chlamydia do not show any symptoms, but once chlamydia is detected it is easily treated. If left untreated, chlamydia can lead to more serious health problems. In Lancaster County, chlamydia cases have trended upward, been stable with approximately 1500-1900 cases per year and the rate ranging from 501.9 to 579.6 cases per 100,000 persons for the past 5 years. More than one third of chlamydia cases occur in the 20 – 24 age group, mirroring Lincoln's youthful population, influenced by the presence of several major colleges and universities in Lancaster County.

Gonorrhea is the second most common sexually transmitted disease in the county. As is the case with chlamydia, both men and women may not experience any symptoms; or, if they experience symptoms, they may be mild. When present, symptoms include a painful or burning sensation during urination and both men and women may detect a discharge. In women, symptoms may be mild, and the cases may not be quickly diagnosed as symptoms are like other conditions such as bladder infections. Women may pass the disease to babies during childbirth. Gonorrhea is treatable with antibiotics, but if untreated can lead to infertility in both men and women.

Decreases in rates of reported chlamydia and gonorrhea after 2020 are unlikely due to a reduction in new infections. As chlamydial and gonorrhea infections are usually asymptomatic, case rates are heavily influenced by screening coverage. During the COVID-19 pandemic, many health care clinics limited in-person visits to patients with symptoms or closed entirely, and it is likely that preventive health care visits where STD screening usually happens, such as annual reproductive health visits for young women, decreased.





HIV Infection

The three stages of HIV infection are (1) acute HIV infection, (2) chronic HIV infection, and (3) acquired immunodeficiency syndrome (AIDS). Without treatment, HIV infection advances in stages, getting worse over time and is ultimately life-threatening. Acute HIV infection is the earliest stage of HIV infection, usually developed within 2 to 4 weeks after infection. Infection with HIV occurs by the transfer of bodily fluids. The four major routes of transmission are unsafe sex, contaminated needles, breast milk and transmission from an infected mother to her baby at birth. There is no cure for HIV, but it can be treated with antiretroviral therapy to help slow or prevent HIV from advancing from one stage to the next.

Most untreated people infected with HIV eventually develop AIDS. AIDS is the final, most severe stage, and those individuals mostly die from opportunistic infections or malignances associated with the progressive failure of the immune system. HIV progresses to AIDS at a variable rate affected by viral, host, and environmental factors; most will progress to AIDS within ten years of HIV infection. Without treatment, people with AIDS typically survive about 3 years.

In the last several years, the number of new HIV cases has generally been less than 20 cases a year. The most recent peak was in 2010, when there were 33 cases, but the ten-year range has been nine to 25 cases. Most cases are associated with men having sex with men, although an equal number of cases have not shown an identifiable link. Heterosexual transmission cases are increasing, and cases linked to the use of injectable drug use are still found.

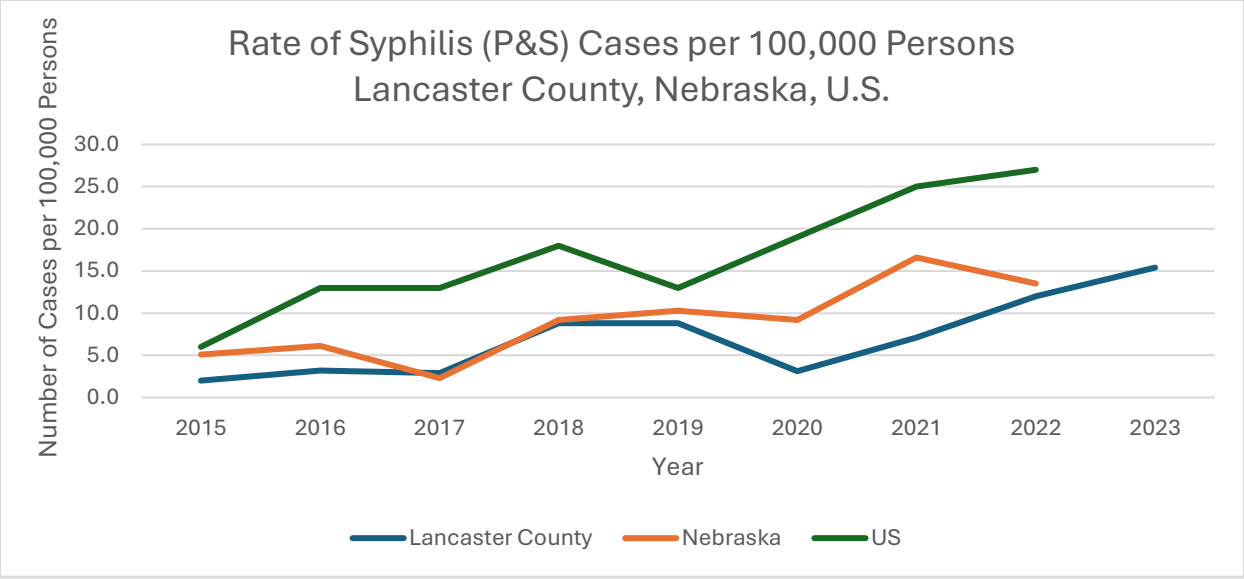
Syphilis (Primary/Secondary)

Syphilis is a STD caused by the bacterium *Treponema pallidum*. Primary and secondary (P&S) syphilis, the most infectious stages, commonly present with signs and symptoms. In its primary

stage, syphilis typically presents as a painless sore or ulcer (known as a chancre) at the site of infection, usually the genitals, anus, or mouth. If left untreated, the infection progresses to the secondary stage, characterized by a rash, flu-like symptoms, and mucous membrane lesions.

After a period of latency (during which time there are no visible signs or symptoms), often decades later, it may progress because of a lack of diagnosis, treatment, and/or timely care to tertiary syphilis, the most advanced stage of the disease. Tertiary syphilis, while uncommon, can impact various organ systems, encompassing the brain, nerves, eyes, heart, blood vessels, liver, bones, and joints. However, ocular and neurologic syphilis can manifest at any stage of the disease progression.

Cases of P&S syphilis have been increasing significantly in Lancaster County, as well as state and nationwide. In Lancaster County, cases have increased from nine cases in 2017 to 50 cases in 2023, which reflects a 456% increase. Cases in nearly every demographic group have seen an increase, although the majority of cases were among those aged 20 to 39 years old. Addressing the resurgence of syphilis necessitates a focused approach that emphasizes the importance of early detection with screening and treatment with antibiotics, which are essential for effectively managing the infection and averting potential long-term complications.



Congenital Syphilis

Congenital syphilis arises when an expectant mother infected with syphilis passes on the infection to her unborn child. The initial step in preventing congenital syphilis involves pre-conception care and support for planned pregnancies. In primary care settings, individuals of childbearing age should receive counseling on STI prevention and the advantages of planned pregnancies, along with syphilis testing if deemed at risk. During prenatal care, expectant mothers should undergo syphilis testing at their first prenatal appointment and, if considered at high risk for acquiring syphilis during pregnancy, again at 28 weeks and upon delivery. Immediate treatment is essential for pregnant women testing positive for syphilis to safeguard the fetus, with their sexual partners also requiring treatment. Untreated syphilis during pregnancy can lead to adverse outcomes such as miscarriage, stillbirth, and preterm birth. Surviving infants may suffer from conditions like meningitis, anemia, bone abnormalities, and various physical and neurological impairments.

Cases of congenital syphilis have been very low in Lancaster County but increasing in recent years. For the 2019 - 2023 period, the rate of congenital syphilis was 65.8 cases per 100,000 live births. Nebraska has seen a similar increase in recent years, with a case rate of 8.2 cases per 100,000 live births in 2020 and most recently, 44.7 cases per 100,000 live births in 2022. As cases of P&S continue to rise in women of child-bearing age, the risk of congenital syphilis will also increase.

Impact of COVID-19 on STDs

The COVID-19 pandemic led to disruptions in STD-related prevention and care activities, including reduced STD screening and redirection of STD program resources to COVID-19 activities. Because STDs often do not show symptoms, and screening is necessary for timely diagnosis and treatment, changes in access to sexual health care, as well as disruptions in public health services, can affect the number of infections diagnosed and reported. Consequently, trends for STD surveillance data collected during the pandemic that are presented in this report should be interpreted cautiously.

Reportable Disease	2023	2022	2021	2020	2019	2018	2017
HIV	7.1	5.0	7.8	2.8	3.5	5.5	6.2

Chlamydia	501.9	546.2	582.6	591.2	577.0	558.5	590.5
Gonorrhea	115.5	160.8	215.7	257.6	186.8	209.3	184.4
Syphilis (Primary/Secondary)	15.4	12.1	7.2	3.2	6.4	9.0	2.9

Enteric and Other Communicable Diseases

The section below summarizes enteric diseases, such as those spread through foodborne outbreaks, and other communicable diseases shown in the table at the beginning of this section.

Enteric Diseases

As a group the enteric diseases listed below are generally contracted through food or water, improper cooking or by poor practices by food preparers or servers. Some enteric diseases can also be acquired through animal contact or even person to person. There is more discussion of these diseases in the Environmental Health section. Since most people suffer only short-term discomfort and may not seek medical treatment, it is likely that many cases of enteric disease are not reported, but the CDC estimates that 1 in 6 people experience a foodborne disease during the year (CDC, 2018a). These diseases generally spread through the fecal-oral route, by ingesting contaminated food or drinking contaminated water, contact with animals or their environment, or contact with feces of a person infected with the organism. Eliminating cross-contamination of food during preparation, proper hand washing and cooking or storing food at the proper temperature goes a long way in preventing many enteric diseases. Healthy individuals generally recover on their own from these diseases quickly. However, persons with compromised immune systems, such as the elderly or AIDS patients, may experience severe illness or possibly death.

Impact of COVID-19 on Enteric Diseases

Following the 2020 declaration of the COVID-19 pandemic emergency, state and local authorities enacted various measures, including stay-at-home directives, restaurant closures, and the shutdown of schools and childcare facilities, among others, aimed at mitigating the spread of SARS-CoV-2. At the same time, federal mandates were enacted to limit travel, likely resulting in reduced exposures. These extensive interventions, alongside shifts in daily routines and hygiene practices such as increased handwashing, are likely to have influenced exposure patterns to enteric pathogens (Ray et al., 2021). Additionally, alterations in healthcare delivery, patterns of seeking medical assistance, and laboratory testing protocols may have contributed to reduced rates of enteric diseases following the pandemic in years 2020 and 2021.

Reportable Disease	2023	2022	2021	2020	2019	2018	2017
Campylobacteriosis	19.4	14.0	7.5	10.1	19.2	12.3	16.0
Cryptosporidiosis	1.2	2.8	0.9	1.9	2.6	2.3	3.3
E. coli (Shiga toxin)	5.9	9.9	1.9	6.0	7.0	6.1	4.2
Giardiasis	4.0	2.8	1.9	3.8	2.6	4.2	5.5
Listeriosis	0.0	0.3	0.0	0.0	0.0	0.0	0.3
Salmonella	17.6	16.5	5.0	8.9	14.1	15.2	15.3
Shigellosis	2.2	2.8	1.2	0.6	2.6	1.9	0.3

Campylobacteriosis is an infectious disease caused by a bacterium (genus *Campylobacter*). *Campylobacter* is one of the most common causes of diarrheal illness in the U.S. While outbreaks

are possible, most cases are typically single or isolated incidents. Eating raw or undercooked chicken or cross-contamination of chicken juices and produce are the usual source of the disease. Post-pandemic, campylobacteriosis cases have returned to pre-pandemic levels and have remained sporadic but stable ranging from 7.5 to 23.1 cases per 100,000 persons in the 10-year period.

Cryptosporidiosis and Giardiasis are parasitic diseases caused by protozoan parasites that are most spread through drinking and recreational water. The human case numbers for cryptosporidiosis and giardiasis are relatively few, ranging from 0.9 to 3.3 and 1.9 to 5.5 cases per 100,000 persons, respectively since 2017.

Salmonellosis (nontyphoidal) is an infection with *Salmonella* bacteria, excluding *Salmonella* Typhi and Paratyphi. There are different serotypes of *Salmonella*, and the most common sources are chicken products, eggs and egg products, live poultry (chickens, ducks, or other fowl), reptiles (turtles, snakes, and lizards), pet rodents or contaminated fruits, vegetables, and leafy greens. Post-pandemic, salmonellosis cases have returned to pre-pandemic levels and have remained stable around 50 cases per year with cases ranging from 5.0 to 17.6 per 100,000 persons in the 10-year period.

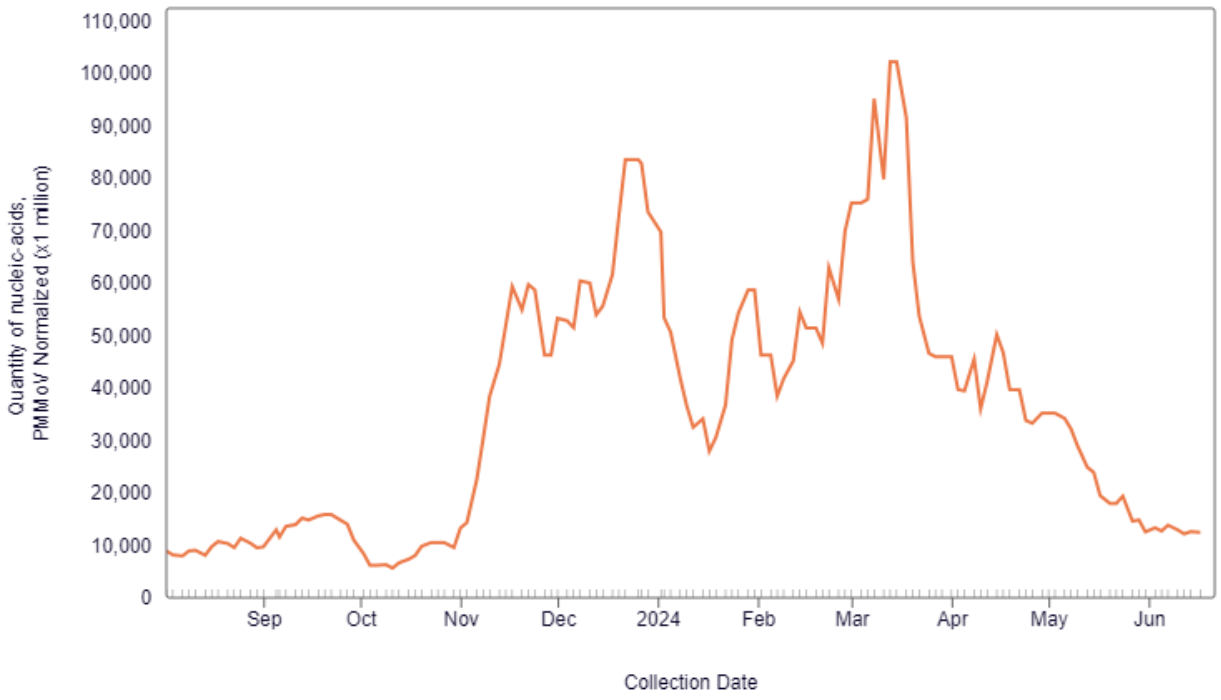
In recent years, as shown in the table, the number of local cases of shigellosis have been few with case rates below 3.0 per 100,000 persons, excluding an outbreak of cases in 2014 causing the annual total to be 18 cases, which is the highest number of cases in the ten-year period. Shigellosis is an infection caused by the bacteria *Shigella*. The usual mode of transmission is the fecal-oral route through person-to-person transmission, particularly in the setting of poor hygiene among children. *Shigella* can be transmitted through an infected food handler via ready-to-eat (RTE) foods, including salads, raw vegetables, milk and dairy products, and meat. The two most common causes of contamination are water contaminated with fecal material and unsanitary practices by infected food handlers. Infants, the elderly, and those in poor health are susceptible to experiencing the most severe symptoms of disease, but all humans are susceptible.

The above table shows that the number of people to have contracted Shiga Toxin-Producing *E. coli* (STEC) has ranged from 1.9 to 9.9 cases per 100,000 persons in the 10-year period. *E. coli* O157:H7 is the most common type of STEC, but many other types exist. STEC cases are more often sporadic occurrences, as indicated in the table, with no significant outbreaks recorded. Preventive measures against STEC include ensuring meat is cooked to the appropriate temperature and practicing proper hand hygiene. Additionally, it's important to note that STEC can also contaminate produce, often stemming from contaminated fields or water supplies, and can be transmitted via ruminant animals, such as a petting zoo or 4-H exhibit.

In reviewing the data for enteric diseases, please note that one of the common diseases known for outbreaks, norovirus, is not included. Norovirus is a highly contagious virus that causes gastroenteritis, leading to symptoms such as vomiting, diarrhea, and stomach cramps. Individual cases of norovirus are not required to be reported. People may not seek healthcare for norovirus, and most hospitals and doctor’s offices do not routinely test for norovirus. Outbreaks of acute gastroenteritis are required to be reported, and outbreaks are investigated by LLCHD to determine the cause, identify risk factors, and provide control measures. Norovirus, although not a reportable disease, poses a public health concern due to being highly contagious and its ability to cause

outbreaks. Despite individual cases not being reported and in addition to outbreak investigations, the virus can be monitored through wastewater surveillance. The chart below (Figure 1) shows the parts per million of norovirus particles in Lancaster County since August of 2023 from the Theresa Street Wastewater Treatment Facility. An increase in viral particles beginning in November of 2023 can be observed through April of 2024. This is the typical season where outbreaks of norovirus occur more frequently.

Quantity of Norovirus Particles per Million - Theresa Street Wastewater Treatment Facility



Other Communicable Diseases

As for other diseases that we see in Lancaster County, hepatitis C is an infectious disease of the liver caused by the hepatitis C virus (HCV). It is spread by blood-to-blood contact. There is no vaccine for hepatitis C. Hepatitis C can progress from an acute infection to become a chronic infection (i.e., a condition lasting longer than six months). Persons with chronic hepatitis C may experience scarring of the liver or liver cancer. Cases of hepatitis C in Lancaster County have remained relatively stable the last 10 years, ranging from a low of 62 cases during the pandemic to 186 in 2014. However, hepatitis C is steadily increasing in the U.S., likely due to increased screening and detection (CDC, 2023b). Additionally, in 2020, the CDC made additions to existing hepatitis C screening recommendations, which recommend hepatitis C testing for everyone over the age of 18 be screened at least once in their lifetime and all pregnant women screened during pregnancy (Schillie et al., 2020). The new testing strategy helps to identify those without risk factors who may be infected with hepatitis C and provide them with timely diagnosis, care, and treatment.

Naturally acquired disease caused by *Haemophilus influenzae* seems to occur only in humans. In infants and young children, *H. influenzae* type b (Hib) causes bacteremia, pneumonia, and acute bacterial meningitis. Due to the routine use of the Hib conjugate vaccine in the U.S. since 1990, the incidence of invasive Hib disease has decreased to 0.02 cases per 100,000 population in 2018

(CDC, 2021). Locally, due to incomplete vaccination of the population, there have been a few cases confirmed each year, with the highest number of cases (11) in 2023.

Invasive streptococcal disease can be severe and sometimes results in life-threatening illness. Streptococcal disease (invasive) encompasses a range of infections caused by bacteria belonging to the Streptococcus genus, including *Streptococcus pyogenes* (group A strep), *Streptococcus agalactiae* (group B strep), and *Streptococcus pneumoniae*. These bacteria can cause invasive diseases such as streptococcal pharyngitis (strep throat), skin infections, pneumonia, and invasive diseases like sepsis and meningitis. Group A strep is commonly associated with throat and skin infections, while group B strep is a leading cause of neonatal sepsis and meningitis. Streptococcus pneumoniae, on the other hand, is a major cause of pneumonia, meningitis, and bloodstream infections in both children and adults. There has been an observed increase in the number of invasive streptococcal diseases in 2022 and 2023 compared to pre-pandemic levels. The reasons behind the surge in cases remain unclear, though potential explanations include a resurgence in social mixing in the absence of social distancing measures, shifts in *Streptococcus* strains towards more virulent strains, and seasonal fluctuations in GAS activity intensified by the increased spread of viral coinfections such as influenza and RSV, which may elevate the risk of infection (Abo et al., 2023). Further data and research are needed to interpret the underlying factors driving this increase.

Tuberculosis (TB) is a common, and in some cases, a lethal infectious disease caused by *Mycobacterium tuberculosis*. Tuberculosis usually attacks the lungs but can also affect other parts of the body. It is spread through the air when people who have an active infection cough, sneeze, or otherwise transmit their saliva through the air. Most TB infections in humans display as asymptomatic, latent infections, with approximately one in ten progressing to active disease (World Health Organization, 2023). Left untreated, this active form can be fatal for roughly half of those affected (Global tuberculosis report, 2022). The table shows the active cases of TB confirmed in Lancaster County, where three to nine cases have been diagnosed and treated annually over the past several years. Persons with TB are often immigrants to the U.S., whose TB was latent when they migrated. Family members are the most at risk of contracting the disease so increases in cases are often due to transmission within a household. Treatment regimens generally last for six to nine months and persons with TB are generally monitored to make sure they are taking their medications to prevent the TB from becoming resistant to TB drugs.

West Nile virus, a mosquito-borne illness, was first identified in the U.S. in 1999 and has since become the predominant mosquito-borne illness in the country (EPA, 2023). While a significant portion of those infected remain asymptomatic, others may develop symptoms including headache, body aches, joint pains, vomiting, diarrhea, and rash. In more severe cases, the virus can cause extensive damage to the central nervous system, leading to conditions such as encephalitis, meningitis, and, in rare instances, death (CDC, 2023). Fortunately, most local cases have been West Nile fever rather than the more serious cases of West Nile Encephalitis or West Nile Meningitis. Climate change is expected to affect patterns of vector-borne diseases due to the warmer temperatures associated which can accelerate mosquito development, biting rates, and the time it takes for the disease to develop within the mosquito (EPA, 2023). This trend was particularly evident in 2023 when there were 23 cases reported, the highest number of West Nile

virus cases locally in the past decade, likely attributed to above-average temperatures and increased summer rainfall.

Reportable Disease	2023	2022	2021	2020	2019	2018	2017
Hepatitis C (Acute/Chronic)	28.6	27.6	19.4	23.7	43.7	27.4	33.6
H. influenzae (invasive)	3.4	2.5	0.0	1.6	2.9	1.3	2.0
Meningitis (aseptic)	2.8	7.5	1.6	1.9	8.0	8.7	14.0
Rabies (animal)	2.2	1.2	3.4	1.3	1.6	3.9	1.3
Streptococcal disease (invasive)	28.3	28.9	10.0	17.7	19.8	21.3	16.0
Tuberculosis	1.5	1.2	0.6	2.8	1.6	1.3	1.3
West Nile Virus (non-neuroinvasive)	4.0	0.3	0.0	0.6	0.3	3.9	1.6
West Nile Virus (neuroinvasive)	3.1	1.2	1.2	0.9	0.0	1.9	0.0

Environmental Health

Our environment impacts our health through the air we breathe, the water we drink, the food we consume, and other environmental exposures, such as toxic materials. In addition, land use planning decisions can impact our health by affecting how much pollution is emitted through transportation choices or how close residential housing, schools or older adult living facilities are allowed to locate near environmental hazards, such as railroads, industrial zoning, and hazardous materials pipelines. The Lincoln-Lancaster County Environmental Health Division exists to protect people the health effects from environmental exposures and prevent illness and disease.

Air Quality

It is generally recognized that air pollution can cause breathing difficulties for people with asthma and Chronic Obstructive Pulmonary Disease (COPD). However, there is also strong evidence that short term exposures to higher levels of air pollution can increase the risk of heart attack, stroke, arrhythmias, and heart failure in people with pre-existing cardiovascular disease. Furthermore, current science suggests that longer term exposure to air pollution facilitates atherosclerosis and may play a role in high blood pressure, heart failure and diabetes (Brauer et al., 2021).

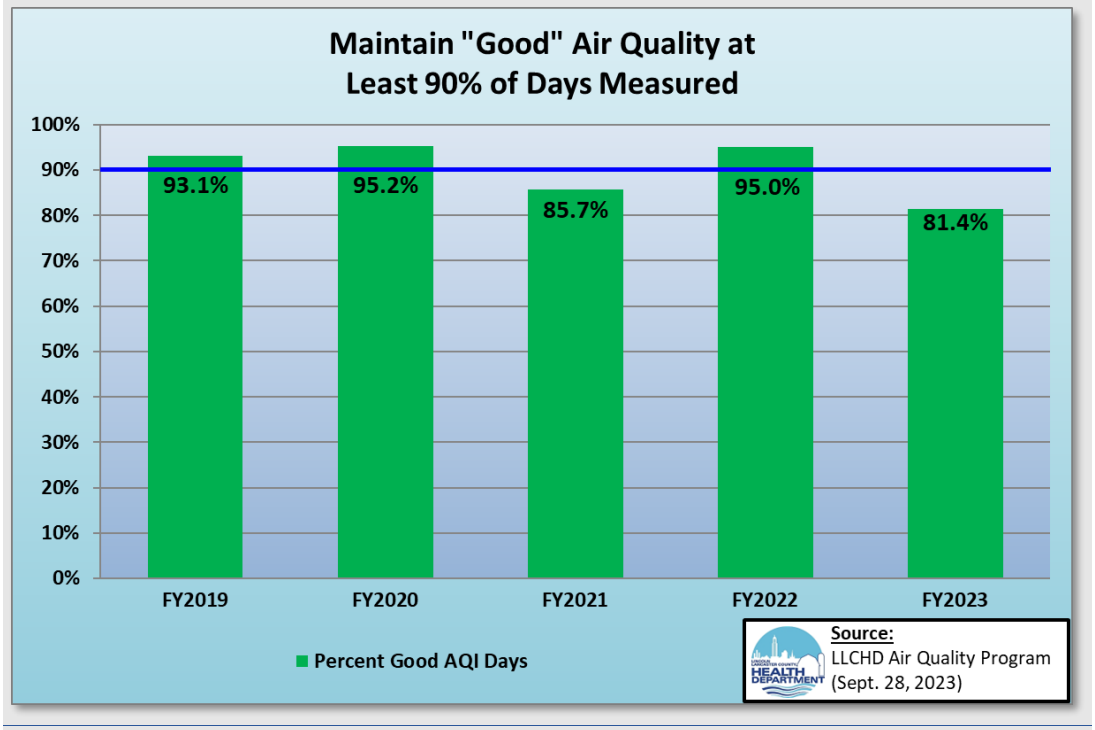
When the AQI is in this range:	*..air quality conditions are:*
0-50	Good
51-100	Moderate
101-150	Unhealthy for Sensitive Groups
151 to 200	Unhealthy
201 to 300	Very Unhealthy
301 to 500	Hazardous

The Clean Air Act is the comprehensive federal law that regulates air emissions from stationary and

mobile sources and requires the U.S. Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) to protect public health and public welfare and to regulate emissions of hazardous air pollutants. The NAAQS are reviewed every five years to assure they are protective of people's health. EPA establishes air pollution emission requirements for cars and trucks, off road vehicles, equipment, and stationary sources of air pollution. EPA and the State of Nebraska have delegated the responsibilities of monitoring air quality, writing permits for new and existing sources of air pollution, providing compliance assistance, inspecting businesses and industry, inventorying air pollution emissions, and enforcing regulations to the Lincoln-Lancaster County Health Department. All such activities are intended to protect people from air pollution, thereby improving community health status.

The United States Environmental Protection Agency's (US EPA) Air Quality Index (AQI) establishes color-coded characterizations of air quality based on the National Ambient Air Quality Standards (NAAQS). The Lancaster County area's AQI is determined based on monitoring conducted for Ozone and $PM_{2.5}$. LLCHD's goal is to maintain "Good" air quality at least 90% of the time.

The graph below compares the percentage of 'Good' days (shown in green) for the past 5 years, compared to the current indicator of 90% 'Good' days. In FY2023, 81.4% of days measured were in the 'Good' category for air quality based on monitoring data for both Ozone and PM2.5. Most days that were not in the 'Good' category of air quality were 'Moderate' (yellow), though there were 2 days in 2023 where the 24-hour AQI was in 'Unhealthy for Sensitive Groups' (orange) category. Still, air quality in Lancaster County continues to meet EPA air quality standards and does not pose significant health risks to the public.

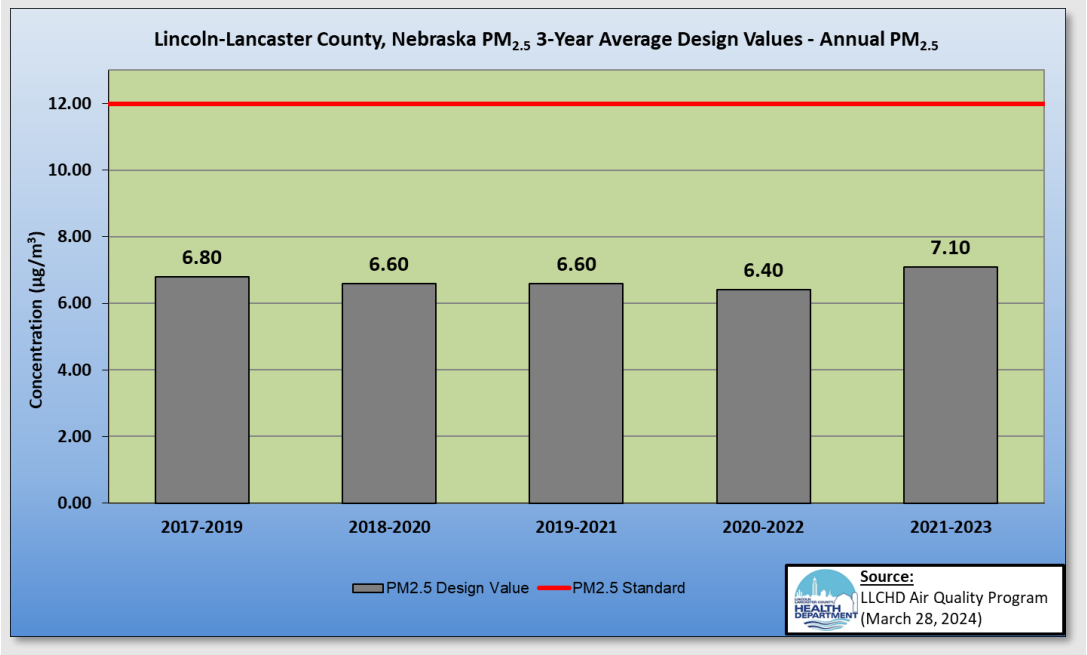


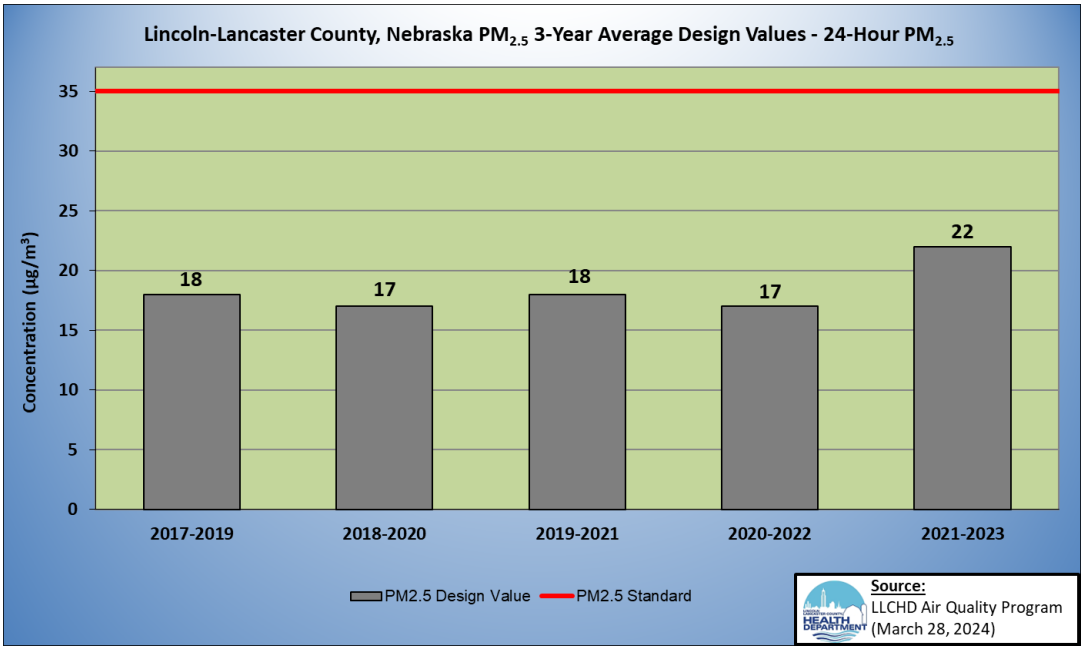
Fine Particulate Matter Monitoring

Lancaster County's air quality is continuously monitored for fine particulate matter, called PM2.5. Higher levels of PM2.5 can trigger heart attacks, asthma attacks and breathing problems for people with COPD. In Lancaster County, elevated levels of PM2.5 are the primary reason for poorer air quality days. There are two Federal standards (NAAQS) for PM2.5, listed as follows:

- Annual Average: 12 micrograms per cubic meter ($\mu g/m^3$)
- 24-Hour Average: 35 micrograms per cubic meter ($\mu g/m^3$)

Compliance with the annual standard is based on the average concentration over three consecutive years. Compliance with the 24-hour standard is based on the 98th percentile of the maximum daily average concentrations, averaged over 3 consecutive years. Annual PM2.5 monitoring data shows a downward trend in our community that has stabilized in recent years. Likewise, 24-hour PM2.5 monitoring data has also remained relatively stable. The 3-year averages for the past 5 years are provided in the graphs below, with each year representing the last year in the associated 3-year averaging period. As shown below, Lancaster County PM2.5 levels are well below both Federal standards. The increased concentrations (annual and 24-hour) in 2023 were due to the impacts of very large, months-long wildfires in western Canada. Atmospheric conditions carried the smoke from those fires into the Lancaster County area on several occasions, resulting in worse overall air quality in 2023.





In February 2024, the U.S. Environmental Protection Agency (EPA) promulgated a revised annual primary standard for PM2.5. The first year that state and local agencies are expected to demonstrate compliance with this standard is 2032. This revised standard, reduced from 12 µg/m^3 to 9.0 µg/m^3, is anticipated to provide significant public health benefits. The EPA estimates that the net public health benefits could be as high as $46 billion in 2032, while the cost of emission controls and measures necessary to meet the revised standard is estimated to be about $590 million that same year. Meeting the revised standard could result in as many as 4,500 avoided premature deaths and 290,000 avoided lost workdays in 2032. The EPA projects that over 99 percent of U.S. counties should meet the revised standard by the time it takes effect. However, 52 counties, primarily in California and northwestern states, are not expected to meet the revised standard.

As shown in the graph on the previous page, Lancaster County's design value is already below the new standard, and it is expected that Lancaster County will continue to comply when the new standard becomes effective.

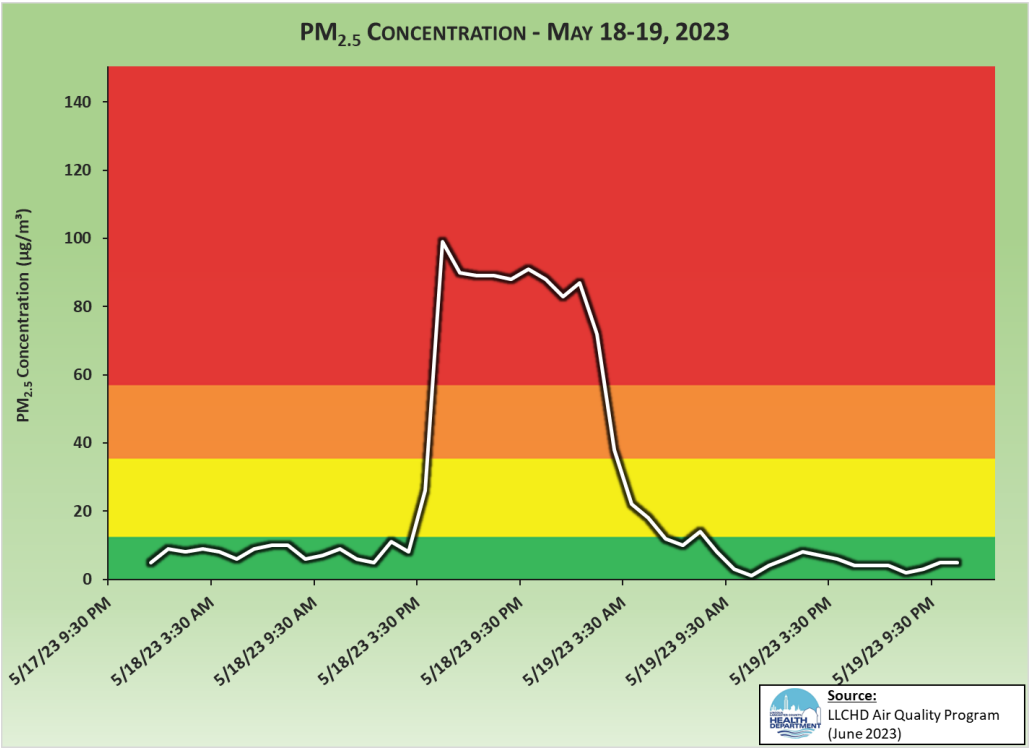
Controlled Burning and Wildfires

Open burning controlled and prescribed burning, and wildfires all produce smoke containing harmful pollutants, including PM2.5 and nitrogen oxides (NOX). PM2.5 can embed deep in the lungs and even enter the bloodstream. Higher levels of PM2.5 can trigger heart attacks, asthma attacks, and breathing problems for people with COPD. Increased emissions of NOX can lead to elevated levels of ozone, causing aggravation of COPD, asthma, and lung irritation.

Prescribed agricultural and conservation burning in Lancaster County and other nearby Nebraska counties has steadily increased over the past several years, contributing to PM2.5 levels in Lancaster County. However, this burning pales in comparison to the burning of tallgrass prairie in the Flint Hills area of Kansas and Oklahoma. Smoke from these fires often travels to Lincoln via southerly springtime winds, sometimes raising PM2.5 concentrations to unhealthy levels for

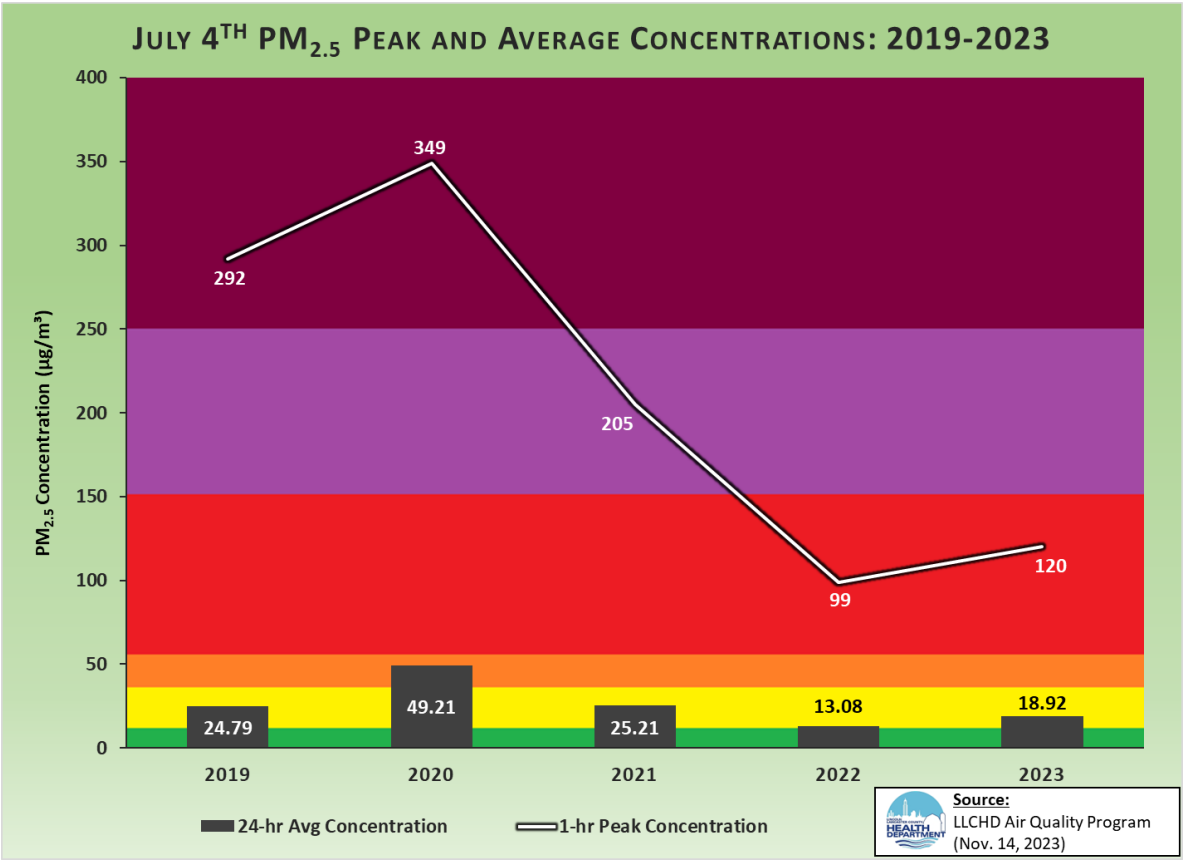
everyone, regardless of health status. The NOX generated by this burning has also led to higher ozone levels in Lincoln.

A growing concern in recent years has been the smoke impact from wildfires. The Lancaster County area has been affected by smoke from wildfires across the western United States. In 2023, large wildfires in the western provinces of Canada impacted air quality in Lancaster County on several occasions. One of the worst impacts occurred on May 18-19, 2023. As shown in the graph below, PM2.5 monitors in Lincoln measured nearly 12 continuous hours of PM2.5 values in the 'unhealthy' (red) category.



Independence Day Fireworks

In addition to impacts from controlled burning and wildfires, fireworks in the City of Lincoln on July 3rd and 4th often result in very high levels of PM2.5. As the following graph shows, peak concentrations of PM2.5 on the evenings of July 4, 2022, and July 4, 2023, were much lower than in previous years. The peak-hour concentrations in 2022 and 2023 were in the 'unhealthy' range, largely due to favorable weather conditions that helped move firework smoke out of the Lincoln area quickly. The 24-hour AQI for those days was in the 'moderate' range, indicating that the air quality over that 24-hour period complied with the NAAQS.



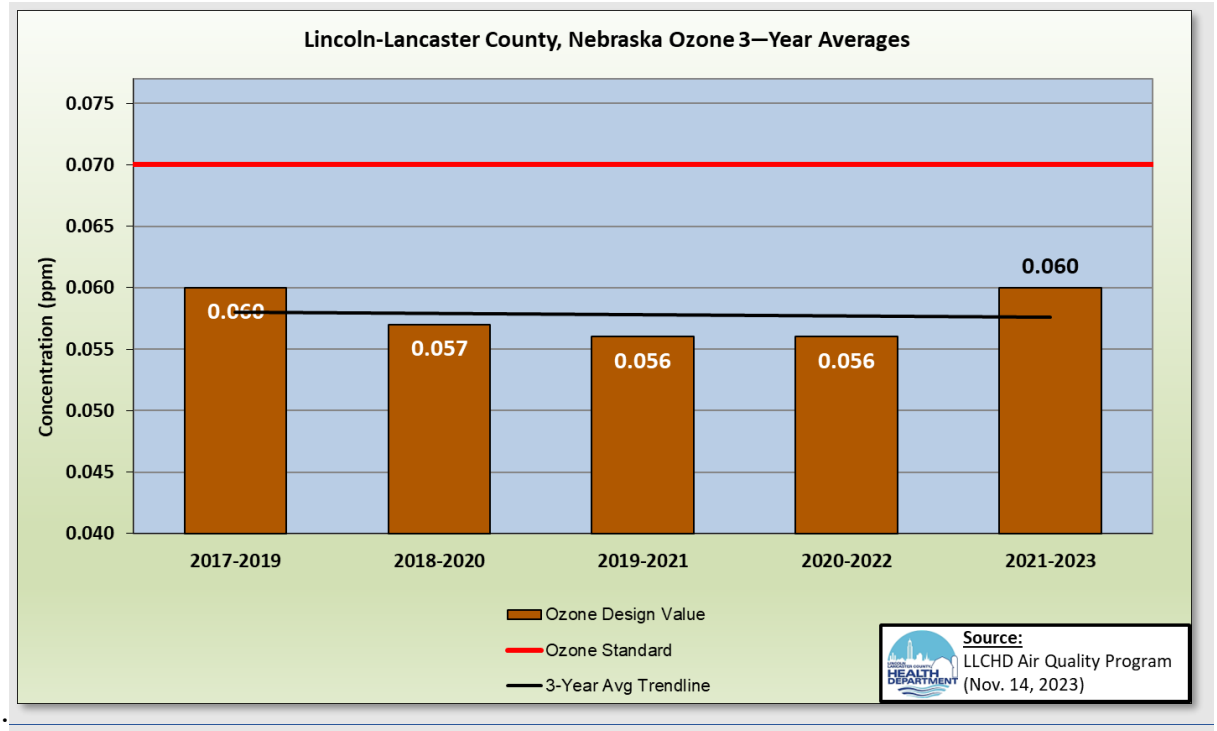
Ozone Monitoring

Ground-level ozone (also referred to as 'smog') is associated with the aggravation of COPD, asthma, and lung irritation. Ozone forms when sunlight interacts with hydrocarbons (VOCs) and nitrogen oxides (NOX). Ozone formation increases with warmer temperatures, so it is not monitored during winter months. Ozone is transported by prevailing winds, which tend to come from the south and southeast during warmer months. Therefore, the LLCHD's monitor is located in Davey, NE (about 12 miles north of central Lincoln). The NAAQS for ground-level ozone is 0.070 parts per million (ppm).

Over the past 15 years, there has been a consistent trend of decreased NOX and VOC emissions from the industrial sector in Lancaster County, primarily due to an approximately 70% reduction of NOX emissions from Nebraska Public Power District's Sheldon Station near Hallam. NOX is also emitted from various other industrial, commercial, and residential fuel combustion sources; however, motor vehicles are now the largest source of NOX emissions.

Many growing communities see increasing levels of ozone primarily due to more vehicles and urban sprawl, which increases fuel consumption due to vehicle miles driven, thus increasing air pollution. Newer, more efficient vehicles with stringent pollution controls and better fuel economy, along with efforts to promote commuting by bicycle, bus, and walking, will help ensure ongoing compliance with the NAAQS.

Lancaster County have maintained Federal "attainment" status for air quality for over a decade, and ozone levels are still significantly lower than the NAAQS standard. As shown in the graph below, ozone concentrations in Lancaster County have remained stable for the past several years, though they increased slightly in 2023. The increase in 2023 was primarily due to the summer-long wildfires in western Canada, which released additional pollutants that contributed to increased ozone formation in the atmosphere. Compliance with the ozone NAAQS is based on a 3-year average of the 4th highest daily maximum 8-hour concentration. The 3-year averages for the past 5 years are provided in the graphs below, with each year representing the last year in the associated 3-year averaging period.



Water Quality

Much like air, water is essential for human life. Safe, uncontaminated water is crucial for the health of every person. Numerous disease-causing organisms and chemical contaminants can be transmitted via water, potentially causing serious health effects. These contaminants may enter the water at the source, during transmission in pipes, or at the point of use.

The Federal Safe Drinking Water Act (SDWA) requires the U.S. EPA to establish regulations to protect public health. This includes setting maximum contaminant levels (MCLs) for drinking water for microorganisms and chemicals known or suspected to cause acute or chronic human health impacts. Public water supply systems are required to test the water they provide to their community. If violations are identified, the water system must notify the public of the violation and provide guidance on actions to take, such as boiling their water. Additionally, all regulated community water systems must provide their customers with an annual "consumer confidence report," detailing any contaminants found in their water and their potential health effects.

More than 90% of Lancaster County residents drink water regulated by the Nebraska Department of Health and Human Services under the SDWA. This includes all residents of Lincoln, Hickman, Waverly, and all villages. The SDWA also applies to Lancaster County Rural Water District (RWD) No. 1, Cass County RWD No. 2, and other "community" systems that serve larger populations.

The City of Lincoln Water System provides drinking water to all city residents. The Lincoln Water System has maintained compliance with all SDWA requirements for many years. Lincoln's water source is high-quality groundwater from wells along the Platte River near Ashland. Approximately half of the supply is groundwater, and the other half is groundwater under the direct influence of surface water. In 2023, more than 14.4 billion gallons of water were pumped from these wells to serve 295,000 people, who used an average of about 34.9 million gallons of water each day.

However, several SDWA violations have occurred in other community systems in Lancaster County, ranging from inadequate sampling to microbial contamination requiring boil orders. There has not been a confirmed outbreak of illness associated with a community water supply in Lancaster County for over 20 years.

Lincoln Water System 2023 Annual Drinking Water Quality Report can be found here:

https://www.lincoln.ne.gov/files/sharedassets/public/v/7/ltu/utilities/water-system/water-quality-report.pdf#:~:text=While%20Lincoln's%20drinking%20water%20meets,to%20research%20the%20health%20effects.

Lincoln's drinking water does not contain detectable levels of lead and copper in its source water or after treatment. However, the presence of lead and copper used in plumbing systems can introduce detectable levels of these contaminants into the drinking water at individual homes or businesses. Water testing conducted by Lincoln Water System has found detectable levels of lead and copper in homes built before 1988. These homes are more likely to have pipes, fixtures, and solder that contain lead. In Nebraska, plumbing materials containing high concentrations of lead were banned in 1987. Homes built before 1950 may have a portion of the water service line constructed using lead pipes, and these homes may have higher levels of lead in their drinking water. Safe drinking water properties vary across the country depending on the water source. Lincoln's drinking water chemistry does not promote excessive lead and copper leaching from plumbing systems. As a result, Lincoln Water System remains in compliance with USEPA requirements for lead and copper.

In January 2021, the U.S. Environmental Protection Agency (EPA) published a revised Lead and Copper Rule that public water systems must comply with starting in 2024. The rule will help water systems better identify high levels of lead, expand consumer awareness, and improve risk communication. The revised rule also includes lead testing in schools and childcare facilities, requires water systems to identify the locations of lead service lines, and establishes a new trigger level that may require systems to perform lead service line replacements. Because lead service lines found in older homes and buildings can contribute significant amounts of lead to water, the revised rule re-focuses on sampling water from these locations.

Lincoln Water System 2023 Test Results

INORGANIC & ORGANIC CHEMICALS - Tested at Water Treatment Plants

	Highest Test Result	Range of Test Results	Sample Date	EPA's MCL (Highest Level Allowed)	EPA's MCLG (Goal)	Standard Met?	Source
Arsenic	7.0 ppb	5.8 - 7.0 ppb	2023	10 ppb	0 ppb	☑	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium	0.133 ppm	0.099-0.133 ppm	2022	2 ppm	2 ppm	☑	Discharge from drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride	0.901 ppm	0.899-0.901 ppm	2022	4 ppm	4 ppm	☑	Erosion of natural deposits; water additive which promotes strong teeth; fertilizer discharge
Nitrate + Nitrite	1.14 ppm	0.20 - 1.14 ppm	2023	10 ppm	10 ppm	☑	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium	5.75 ppb	ND - 5.75 ppb	2022	50 ppb	50 ppb	☑	Erosion of natural deposits; discharge from petroleum and metal refineries; discharge from mines
Atrazine	0.08 ppb	ND - 0.08 ppb	2023	3 ppb	3 ppb	☑	Runoff from herbicides used on row crops

Fluoride is added in treatment to bring the natural fluoride level of about 0.4 ppm to the State recommended level of 0.8 - 1.5 ppm. LWS continuously monitors the fluoride level in the water.

RADIOACTIVE CONTAMINANTS - Tested at Water Treatment Plants

	Highest Test Result	Range of Test Results	Sample Date	EPA's MCL (Highest Level Allowed)	EPA's MCLG (Goal)	Standard Met?	Source
Gross Alpha Emitters	14.7 pCi/L	7.91 - 14.7 pCi/L	2020 - 2021*	15 pCi/L	0 pCi/L	☑	Erosion of natural deposits

Gross Alpha Emitters includes Radon and Uranium.

*Gross Alpha Emitters are required to be tested every six years.

TURBIDITY - Tested at Water Treatment Plants

	Percent of Samples at or below 0.3 NTU	Highest Result	Sample Date	Treatment Technique Requirement	Highest Result Allowed	Standard Met?	Source
Turbidity	100%	0.24 NTU	2023	95% or more of samples must be at or below 0.3 NTU	1 NTU	☑	Soil runoff

Turbidity is a measure of the cloudiness of water and is an indication of the effectiveness of our filtration system.

DISINFECTION BY-PRODUCTS						
	Highest Locational Running Annual Average (LRAA)	System Wide Range of Results	Sample Date	EPA's MCL (Highest Level Allowed) One Year Average	Standard Met?	Source
Total Trihalomethanes (TTHM)	27.3 ppb	12.8 - 38.3 ppb	2023	80 ppb	☑	By-product of drinking water chlorination
Haloacetic Acids (HAA5)	17.8 ppb	4.1 - 27.8 ppb	2023	60 ppb	☑	By-product of drinking water chlorination
Monitoring for TTHMS and HAA5 is conducted at 6 locations in the City of Lincoln.						

	Highest Running Annual Average (RAA)	System Wide Range of Results	Sample Date	EPA's MCL (Highest Level Allowed) One Year Average	EPA's MCLG (Goal)	Standard Met?	Source
Bromate	3.02 ppb	ND - 6.3 ppb	2023	10 ppb	0 ppb	☑	By-product of drinking water ozonation
Monitoring for Bromate is conducted at Water Treatment Plant.							

TOTAL CHLORINE RESIDUAL - Tested throughout the Distribution System Over 150 samples collected throughout the City each month							
	Highest Running Annual Average	Range of Test Results	EPA's MRDL (Highest Chlorine Level Allowed)	EPA's MRDLG (Highest Chlorine Level Goal)	Sample Date	Standard Met?	Source
Chloramine (as Chlorine)	2.36 ppm	ND - 3.56 ppm	4 ppm	4 ppm	2023	☑	Water additive to control microbes

For those relying on private wells for their drinking water, contamination with bacteria and nitrates is a primary concern. Local inspections have found some wells contaminated with coliform bacteria, including E. coli, as well as elevated nitrate levels above the EPA MCL for public water supplies. Over the past decade, several investigations of gastrointestinal illnesses in families have been linked to private wells contaminated with E. coli bacteria. Additionally, private wells are not fluoridated, increasing the risk of dental caries in young children.

Food Safety

Key factors in the food system pose a significant risk of foodborne illness to everyone. These factors include a highly diverse industry, the importation of 60% of our produce and 80% of our seafood, the emergence of new pathogens, and a growing dependence on food prepared by others. As with many environmental risks, certain groups are more vulnerable to foodborne illness, including young children, pregnant women, and our increasing population of older adults. The CDC estimates that each year roughly 48 million people (1 in 6) get sick from a foodborne illness, with 128,000 requiring hospitalization and 3,000 deaths. According to CDC estimates, the most common foodborne illnesses are caused by Norovirus, *Salmonella*, *Clostridium perfringens*, *Campylobacter*, and *Staphylococcus aureus*. The USDA estimates that foodborne illness costs around $17.6 billion each year. (USDA ERS - Chart Detail) Consequently, foodborne illness represents a significant

burden of illness and economic cost both nationally and for Lincoln and Lancaster County. Applying CDC estimates to our community, each year approximately 54,000 people contract foodborne illness, 120 are hospitalized and 3 die. This in turn, results in significant medical costs and loss of productivity (lost work and school days).

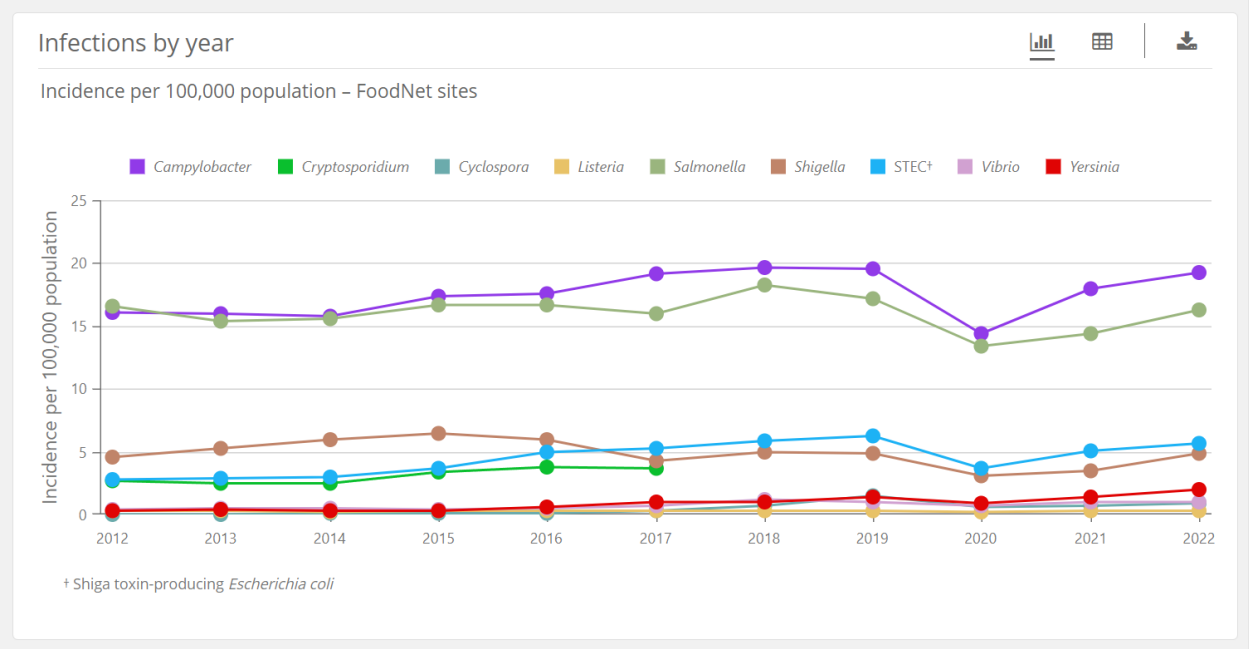
While more than 250 different foodborne diseases have been described, eight known pathogens account for most illnesses, hospitalizations, and deaths.

The top five pathogens associated with hospitalizations include: *Salmonella*, Norovirus, *Campylobacter*, Toxoplasma, and *E.coli* 0157:H7. The top five pathogens causing death are: *Salmonella*, Toxoplasma, *Listeria*, Norovirus and *Campylobacter* CDC, 2018b). Apart from microbes, foodborne illnesses can stem from toxic substances or chemicals like botulinum toxin or pesticides that have contaminated the food.

Tremendous effort has been made both nationally and locally to reduce this disease burden. The FDA Food Safety Modernization Act (FSMA) of 2011 was the most sweeping reform of food safety laws in more than 70 years. FSMA is transforming the nation's food safety system by shifting the focus from responding to foodborne illness to preventing it. FDA finalized seven major rules to implement FSMA, recognizing that ensuring the safety of the food supply is a shared responsibility among many different points in the global supply chain for both human and animal food. The FSMA rules are designed to make clear specific actions that must be taken at each of these points to prevent contamination. It aims to ensure the U.S. food supply is safe by shifting the focus from responding to contamination to preventing it. Key aspects of the FSMA include:

- Comprehensive, prevention-based controls across the food supply.
- Science-based standards for the safe production and harvesting of fruits and vegetables.
- Risk-based inspection strategies.
- Significant enhancements on imported food oversight.
- Mandatory recall authority for all food products.
- Strengthening existing collaboration among all food safety agencies – Federal, state, local, territorial, tribal, and foreign – to achieve our public health goals.

Despite these robust initiatives, the overall incidence of foodborne illnesses has not seen a significant decline. Additional measures and ongoing vigilance are necessary to further strengthen our food safety protocols and reduce the prevalence of foodborne diseases.

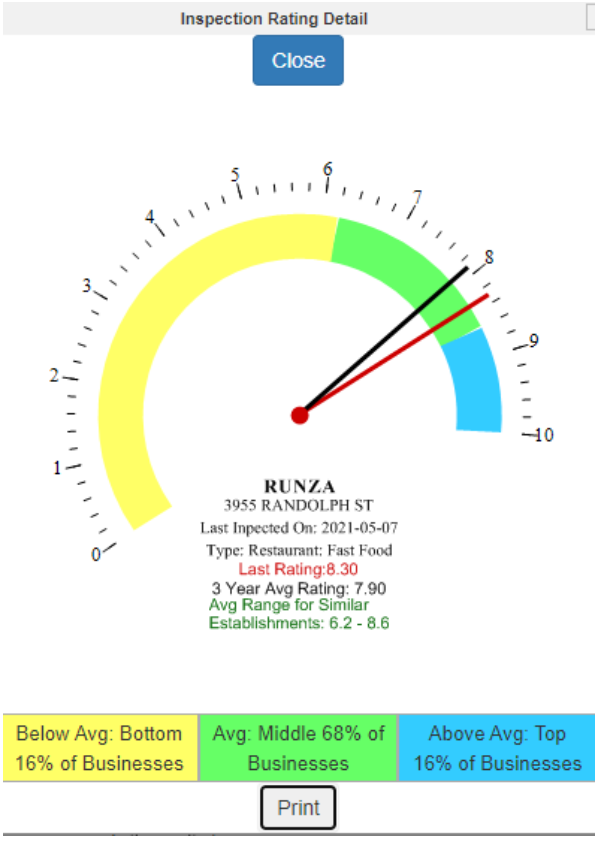


Source: https://wwwn.cdc.gov/foodnetfast/

The ability to accurately measure the incidence of foodborne illnesses over time locally is hampered by the fact that most foodborne illnesses go unreported to health officials, human testing is typically not performed, and most foodborne illnesses are self-limiting, with symptoms subsiding in a few days. However, one to four outbreaks per year are identified through public reports of possible illnesses due to food. As with the CDC data, most local outbreaks are caused by norovirus. When outbreaks are identified, our multi-faceted Epi Team quickly investigates and implements control measures to stop further spread of disease. LLCHD collaborates with State and Federal officials in multi-jurisdictional outbreaks. Employing new technology, such as Polymerase Chain Reaction (PCR) testing for microbes, and electronic surveys of affected individuals, has sped up investigations, led to rapid identification of the causes of outbreaks, and reduced secondary transmission of illnesses.

Local Food Safety Program

To meet the goal of protecting human health by reducing the risk of foodborne illness, the Food Safety Program issues permits, conducts inspections, educates food handlers, works with the Food Advisory Committee, and takes enforcement actions when necessary. In FY23, the Food Safety Program permitted 1,324 food establishments in Lancaster County, including restaurants, grocery stores, temporary booths, events, and farmers' markets.



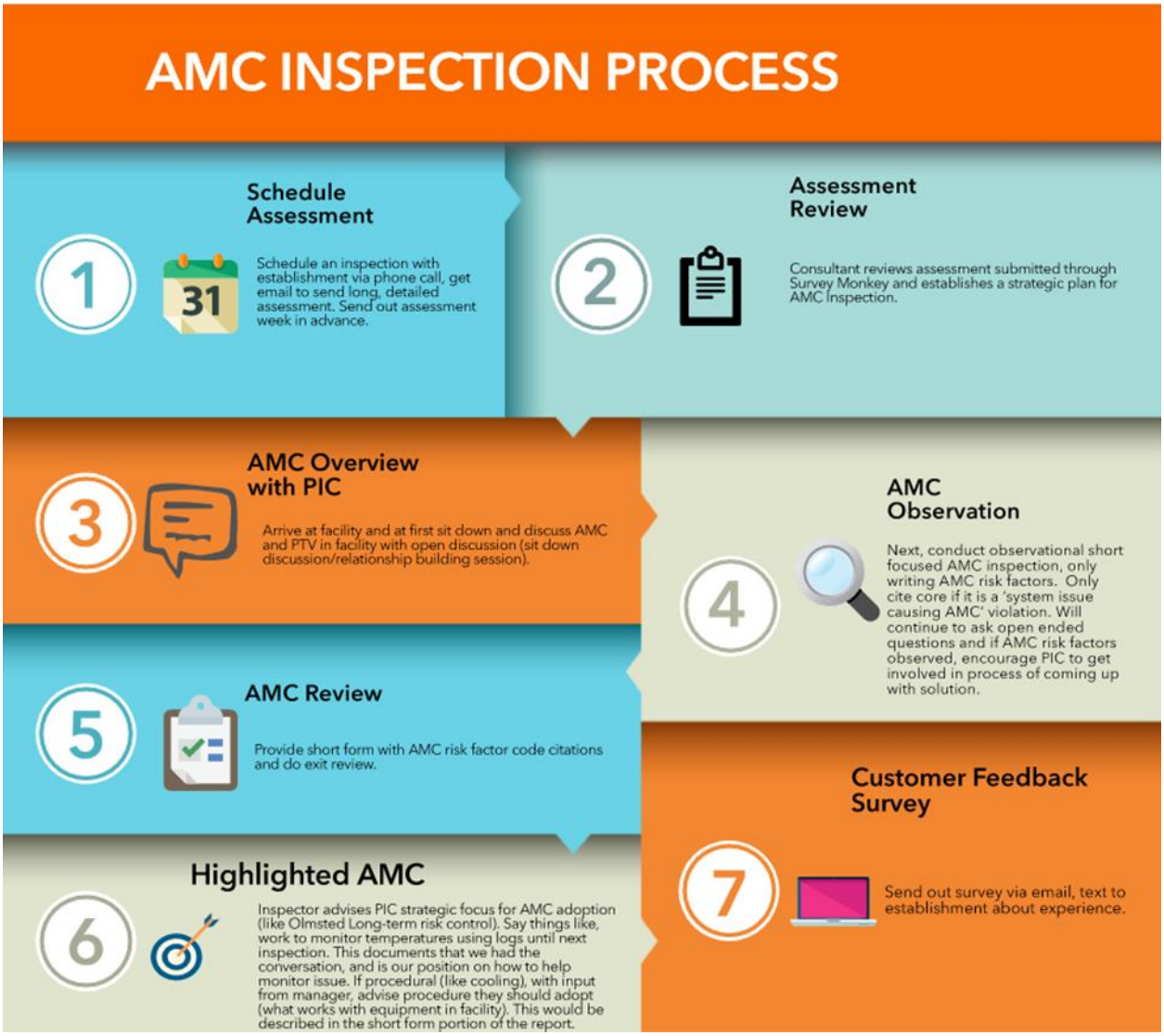
Inspection intervals are risk based and range from one to three times per year. In FY23, staff performed 2,880 total inspections. About 12.7% of inspections (366) resulted in Notices of Violation being issued, with the majority for lack of compliance with Food Handler Permits. Stronger enforcement action, the Food Enforcement Notice (FEN) is taken when violations pose an imminent risk to the public's health. About 4% of inspections (114) resulted in a FEN, which were issued for serious or repeat higher risk food code violations, and there were 4 Immediate Suspensions.

The inspection results for all food establishments are publicly accessible on the Internet. A rating system is used to display the most recent rating along with a three-year average. The Food Safety hybrid consultation-enforcement process at LLCHD concentrates on establishments with a three-year average rating categorized as 'Below Average'. Establishments falling into this category demonstrate persistent challenges in adhering to regulatory standards.

When an establishment falls into the 'Below Average' category and exhibits priority violations related to Active Managerial Control (AMC) associated with the 5 Key Risk Factors for Foodborne Illness, they are mandated to engage in the hybrid consultation-enforcement process.

A modified inspection approach is currently under pilot testing, augmenting the emphasis on AMCs in facilities through a consultation process led by inspectors. This pilot initiative, while maintaining compliance with the Nebraska Food Code, prioritizes practices and procedures posing the highest risk of foodborne illness, along with a focus on providing consultation.

This strategic approach aims to enhance food safety measures by targeting critical risk areas and fostering continuous improvement in food establishments.



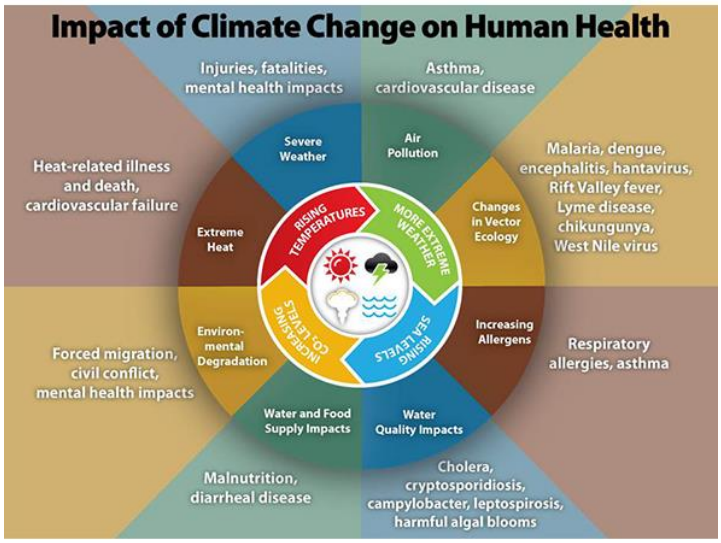
Food Handler and Food Manager Permits

All food establishment employees must have food handler permits and each establishment must have a Food Manager in charge of the operation. Training food managers and food handlers in safe food handling practices, hygiene, and sanitization is critical to preventing foodborne illnesses in our community. 14,965 Food Handler and Food Manager Permits were issued in FY2023. Food Managers received continuing education through our Food Manager classes taught by LLCHD staff. Food handler training and permits are available in English and Spanish on-line through an interactive training program developed with University of Nebraska-Lincoln. In-person English and Spanish language classes are also offered.

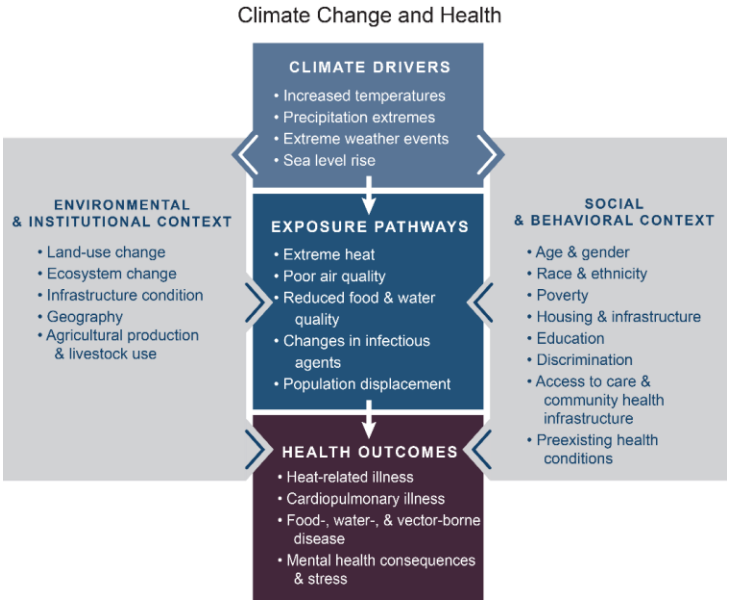
LLCHD's Food Safety Program's primary goal is to prevent foodborne illness. Communication and collaboration with the food industry and consumers greatly enhances food safety for our community. The regulatory foundation is the FDA Food Code. The structural framework for quality assurance is FDA's Retail Program Standards. LLCHD is the only jurisdiction in Nebraska requiring

food handler training and food manager certification. LLCHD's Food Safety Team conducts inspections using HACCP principles, focusing on risk factors known to be most associated with foodborne illness. Consultative assistance is offered to assist food establishments in adopting Active Managerial Controls focused on preventing violations known to pose highest risk of foodborne illness. When enforcement is needed, LLCHD uses a progressive approach, issuing enforcement notices in the field, and taking administrative action as necessary to achieve compliance. These efforts are usually successful in preventing foodborne illness outbreaks.

Climate Change and Health



The health and well-being of the residents of Lancaster County are already affected by climate change, with the adverse health consequences projected to worsen with additional climate change. Climate change affects human health by altering exposures to heat waves, floods, droughts, and other extreme events; vector-, food- and waterborne infectious diseases; changes in the quality and safety of air, food, and water; and stresses to mental health and well-being. The health effects of these exposures include increased respiratory and cardiovascular disease, injuries an premature deaths related to extreme weather events, changes in the prevalence of infectious diseases, and threats to mental health.



Not everyone is equally at risk. Climate change disproportionately impacts residents living in areas with high Social Vulnerability Indexes and who have health disparities. By understanding the connection between demographics, accessibility and affordability of housing, food security, mobility, employment, health status, and healthcare, Lincoln and Lancaster County can develop adaptations for climate-related risks faced by its most vulnerable people, helping achieve the goal of health equity.

The Lincoln Climate Action Plan (2021) identified climate hazards that pose significant health risks to residents, including:

- **Extreme Heat** - In 2050, Lincoln is projected to have 44 days with a heat index over 100°F (a 340% increase) and an average temperature 5°F warmer than in 1990.
- **Extreme Storms – Flooding** - By 2050, Lincoln is expected to see a 15 to 30% increase in heavy precipitation events.
- **Poor Air Quality** - Degradation of air quality (increased $PM_{2.5}$ levels) caused by climate change will compound the health hazards posed by drought, extreme heat, and warmer temperatures. (Source: climatetoolbox.org)

Lincoln has several current planning initiatives related to climate and health. The *Lincoln Climate Action Plan* (LCAP) was the culmination of a three-year community stakeholder process led by the Mayor's Office. LCAP was approved by the City Council on March 22, 2021. LCAP includes this goal "*Assess health equity impacts of climate change in Lincoln. Utilize Center for Disease Control and Prevention's Building Resistance Against Climate Effects model to develop strategies to reduce impacts on human health.*" LCAP addresses health equity, vulnerable groups, extreme heat and weather, floods, drought, and food security to increase local resilience and reduce health risks from climate change. In November 2021, The Lincoln-Lancaster County Planning Department adopted PlanForward 2050 which is an updated 30-Year Comprehensive Plan. This community-based planning process establishes priorities and strategies for growth and land use and incorporates the LCAP. LLCHD is actively involved in this process, ensuring health impacts are addressed. The Lincoln-Lancaster County Health Department is actively developing a Public Health Heat Response Plan aimed at furnishing city and county officials as well as community partners with a structured set of terms, thresholds, and strategies for communication and response. This initiative aims to bolster readiness for heat events that endanger public health.

Salt Creek Floodplain Resiliency Study 2020

Lincoln and the Lower Platte South Natural Resources District (LPSNRD) conducted a comprehensive study of Salt Creek, the primary stream bisecting Lincoln. Best management practices, climate change impacts, and ways to increase floodplain resiliency and reduce flooding impacts were assessed and analyzed. A diverse stakeholder group reviewed the study's conclusions and recommended actions. These community planning processes will inform the Community Health Assessment (CHA) and Improvement Plan (CHIP).

Lincoln Mayor Leirion Gaylor Baird has made Climate Change a top priority. In February of 2021, she released two documents: Lincoln's Vision for a Climate Smart Future (a comprehensive analysis of future climate changes, projected impacts, vulnerabilities, and risks) and the Lincoln Climate Action Plan (LCAP), which has 118 Key Initiatives, many of which are adaptation strategies addressing climate and health. These were developed over three years of stakeholder engagement involving over 200 people representing diverse constituencies, including racial and ethnic minorities and vulnerable populations. LLCHD participated in the entire process.

> "*While it has not arrived as a distinct event like the pandemic, our planet's accelerated rate of climate change also poses a global threat and one of the greatest challenges humanity has ever faced. We know now that flooding, drought, extreme heat, and public health problems are some of the most significant climate-related risks Lincoln faces…*" Lincoln Mayor Leirion Gaylor Baird, March 2021

Broad community support for the LCAP was demonstrated by City Council approval on March 22, 2021. Following that,

Mayor Gaylor Baird appointed an eight-member Climate Action Team led by the Mayor's Senior Policy Advisor and Managers from six city departments: Information Systems, Law, LLCHD, Parks & Recreation, Planning, Transportation & Utilities, Urban Development. The Team is charged with championing LCAP initiatives.

Cross-jurisdictional collaboration needs to occur to integrate climate and health into the Lancaster County Local Emergency Operations Plan (LEOP) All-Hazards Preparedness Plan (2017), the local Hazard Mitigation Plan (HMP), and LEOPs in Nebraska.

Stakeholder Relationships

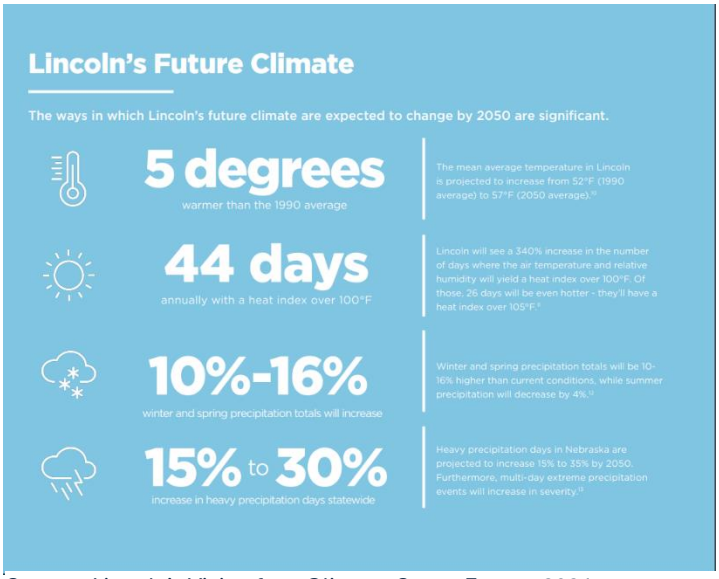
To better protect the health of vulnerable populations, key stakeholders and representatives of disproportionately impacted populations will need to participate in planning and developing effective adaptation actions, communications, and evaluation. One of the most important stakeholders will be the Cultural Centers of Lincoln (CCL), which includes the Asian Community and Cultural Center, El Centro De Las Americas, Good Neighbor Community Center, Indian Center, Malone Center, and Ponca Tribe of Nebraska. Each center represents a distinct constituency, but share many characteristics, values, and goals. CCL serves as a model of multicultural collaboration, encouraging dialogue to increase understanding of health, behavioral health, social, economic, and educational needs. The COVID-19 pandemic strengthened relationships and trust between CCL, their constituencies, and LLCHD. CCL has been an extremely valuable partner in outreach and education on preventing COVID-19 and supporting vaccination clinics held at cultural centers, churches, and points of service in target areas.

Data Needs: Create a Climate Impact Compendium

LLCHD will create a digitally based Climate Impact Compendium. CalBRACE's Adaptation Toolkit will be used as a framework for building data sets for the Climate Impact Compendium and choosing indicators on environmental exposures, population sensitivity, and adaptive capacity. CDC's Climate & Health Program and EPH Tracking will be looked to for guidance. The Compendium will include the following (data source partners are in parenthesis): 1) Local climate forecasting/projections (HPRCC, NOAA); 2) Current and potential climate-related health impacts, including health disparities (CDC's *Projecting Climate Related Disease Burden*, CDC's EPH Tracking, CDC's Climate & Health Program, CalBRACE tools, NDHHS); 3) Affected systems and social determinants of health conferring health disparities (US Census, CDC Social Vulnerability Index, Climate and Health Work Group, LLCHD Community Health Assessment, Lincoln Public Schools); and, 4) Adaptive capacity as they relate to climate hazards of interest for stakeholders (CDC, CalBRACE, CCl, CHWG, Aging Partners, child care providers.)

Specific Climate-Related Threats to Health to be Addressed

Lincoln's Vision for a Climate Smart Future included an analysis of climate impacts and socio-economic characteristics. Stakeholders developed and prioritized 11 specific climate-related risks. Public Health Risks ranked #4 and included extreme heat, extreme storms, floods, and air pollution. Disproportionate Impacts on Vulnerable Populations ranked #5. Top issues locally include extreme heat, flooding, and air pollution, and achieving health equity.



Source: Lincoln's Vision for a Climate-Smart Future, 2021

Health effects from exposure to excessive heat/heat events

Lancaster County was ranked high for increasing numbers of heat wave days between 1979-2016 and averages over 70 days above 90 F (CDC Climate & Health Program). In the year 2050, Lincoln is projected to have 44 days with a heat index over 100°F (340% increase) and have a mean average temperature 5°F warmer than in 1990 (LCAP) (Source: climatetoolbox.org).

Heat Risk Assessment

The HeatRisk tool, a collaboration between National Oceanic and Atmospheric Administration (NOAA)'s National Weather Service and the Centers for Disease Control and Prevention (CDC), offers health-based heat forecasts as a supplement to NWS products. It uses health and temperature data to predict hot weather for the next 7 days, rating heat risk on a 5-level scale with color codes (NOAA, 2024).

NWS Color-Numeric-Based Index to Identify Potential Heat Risk

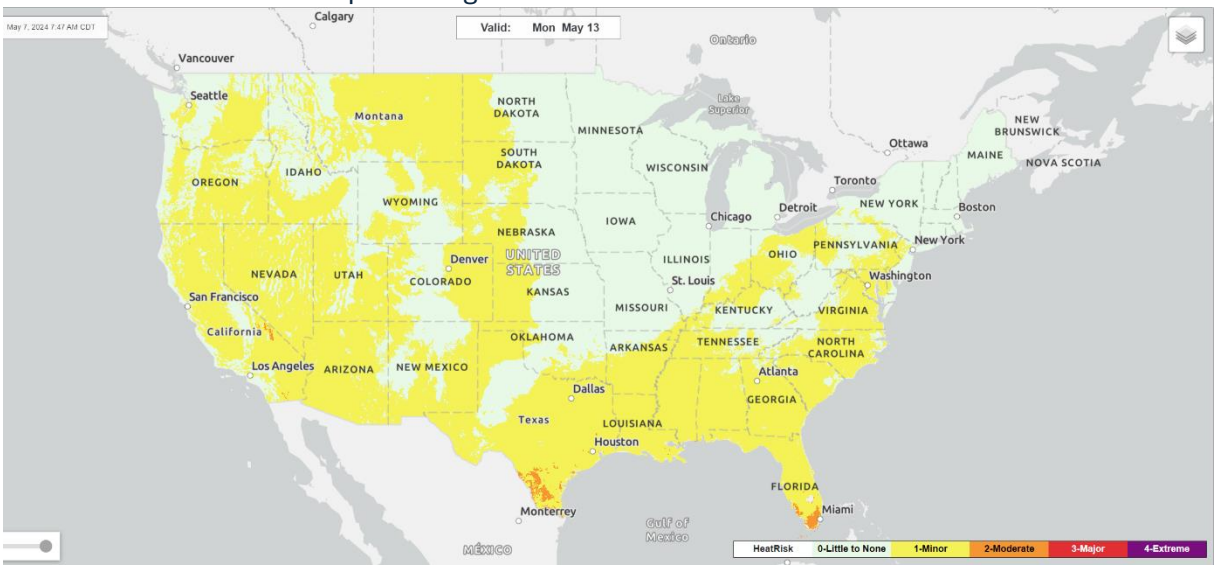
Category	Risk of Heat-Related Impacts
Green 0	Little to no risk from expected heat.
Yellow 1	Minor - This level of heat affects primarily those individuals extremely sensitive to heat, especially when outdoors without effective cooling and/or adequate hydration.
Orange 2	Moderate - This level of heat affects most individuals sensitive to heat, especially those without effective cooling and/or adequate hydration. Impacts possible in some health systems and in heat-sensitive industries.
Red 3	Major - This level of heat affects anyone without effective cooling and/or adequate hydration. Impacts likely in some health systems, heat-sensitive industries and infrastructure.
Magenta 4	Extreme - This level of rare and/or long-duration extreme heat with little to no overnight relief affects anyone without effective cooling and/or adequate hydration. Impacts likely in most health systems, heat-sensitive industries and infrastructure.

Source: NWS, NOAA

The tool tailors forecasts to local conditions, including humidity effects, and provides county-level information on heat risk and related alerts, accounting for factors like seasonal variations and social vulnerability, extreme temperatures, and the elevated risk of heat-related impacts based on CDC data. Moreover, CDC's National Environmental Public Health Tracking Network (NEPHTN) is used for extreme heat and heat-related illness by providing data and tools to track and analyze heat-related health outcomes as well as forecast extreme heat days in the coming years. This helps identify vulnerable populations, assess

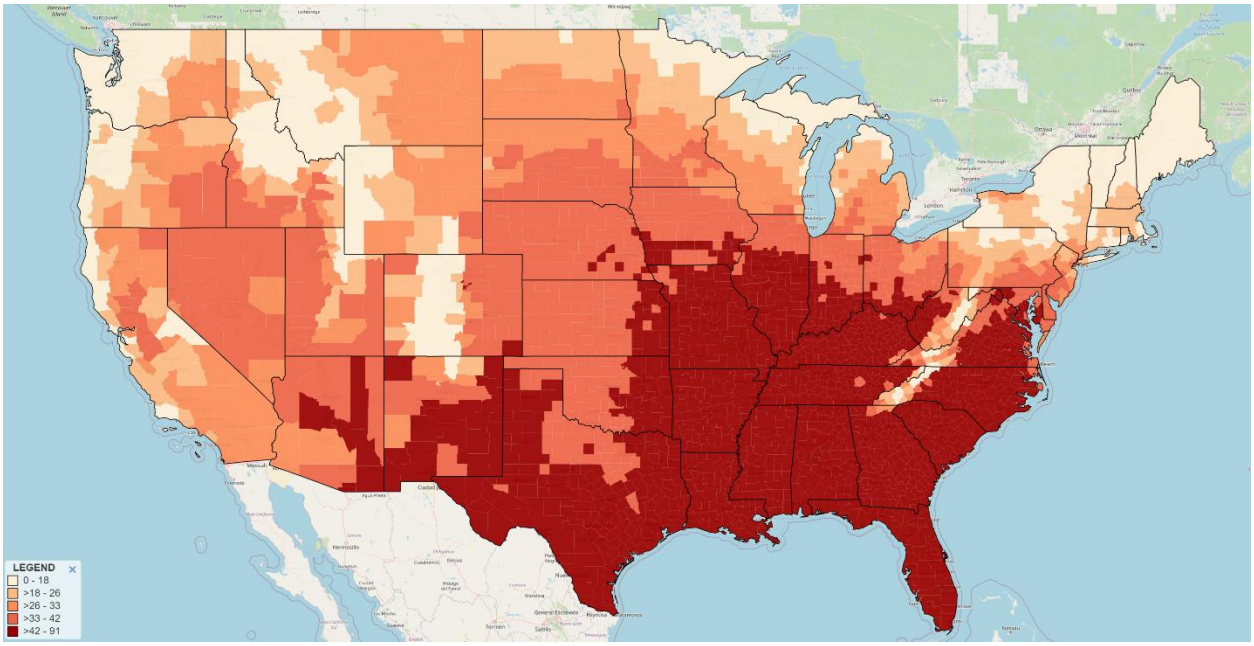
trends in weather for early warnings, develop targeted interventions, and evaluate the effectiveness of heat mitigation strategies (Vaidyanathan et al., 2019).

NWS HeatRisk Forecast Map Showing Risk Level after One Week



Source: NWS, 2024
Accessed from: https://www.wpc.ncep.noaa.gov/heatrisk/

Projected Difference in Extreme Heat Days for 2070-2099 Compared to the Historical Period 1976-2005



Accessed From: https://ephtracking.cdc.gov/DataExplorer. Accessed on 05/07/2024

Another tool, the CDC Heat & Health Tracker provides local heat and health information so communities can better prepare for and respond to extreme heat events. The tool provides county profile with specific information on its vulnerable populations, changes in extreme heat events within a community, and critical resources for use during an extreme heat event. Data for the

Lancaster County profile can be accessed through the link https://ephtracking.cdc.gov/Applications/heatTracker/?fips=31109&page=detail

Heat Related Illness

Reporting cases of heat-related illnesses is crucial for public health monitoring and intervention. It helps assess prevalence, severity, and trends, identifying vulnerable populations. This data aids in resource allocation, ensuring timely care during heatwaves and enabling measures to manage patient surges.

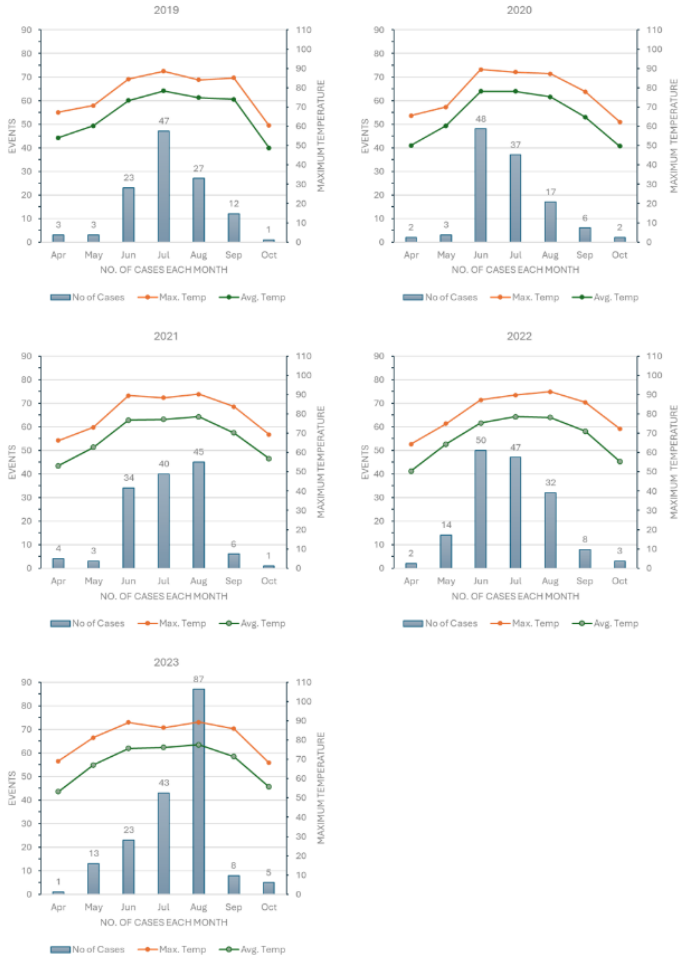
Heat-related illnesses (HRI), predominantly avoidable, manifest in periods of high temperatures or extreme heat occurrences when the body struggles to regulate its temperature naturally. Factors such as elevated humidity, prolonged exposure to direct sunlight, and dehydration from significant fluid or salt loss due to sweating contribute to these conditions. Additionally, situations demanding vigorous physical activity, like outdoor sports and labor-intensive tasks, can further intensify these risks.

Electronic Surveillance System for the Early Notification of Community based Epidemics (ESSENCE) is a secure web-based application that involves monitoring real-time health data to detect and respond to public health threats, such as disease outbreaks or environmental health hazards like heat-related illnesses (Burkom et al., 2021).

For Lancaster County, ESSENCE is used for historic and real-time analysis between maximum and average temperature, and HRI cases to determine thresholds for heat-related health risks and predicting when these threats are likely to occur. Moreover, Nebraska Hospital Claims data, shared by Nebraska DHHS, was used to identify the actual number of Heat Related Illness Cases in Lancaster County during the year. The charts here summarize the impacts of extreme heat on health with regards to exposure to high temperatures.

ESSENCE data was used to display monthly maximum and average temperatures, number of hospital visits for HRI cases, and longest duration in a month when maximum temperature was above 95 ^{0}F for Lancaster County for years 2019 to 2023. Compared to previous years,

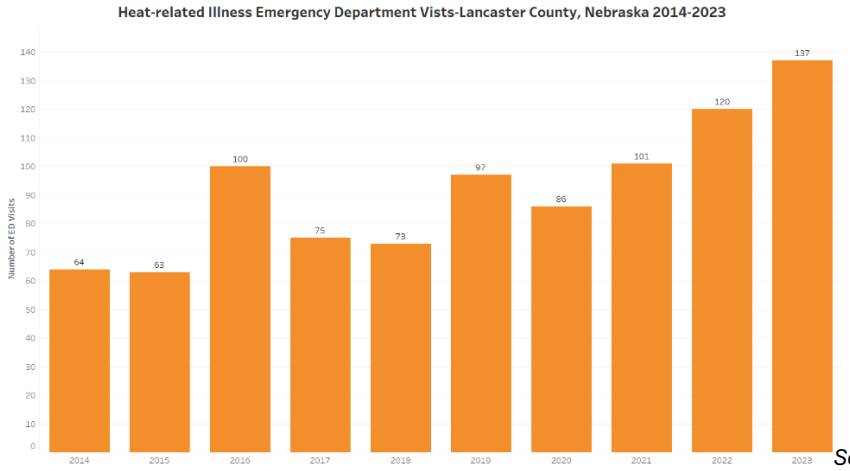
HRI Cases and maximum and average temperature during the month for Lancaster County from April to October 2019 to 2023



Source: Guardian ESSENCE, 2019-2023

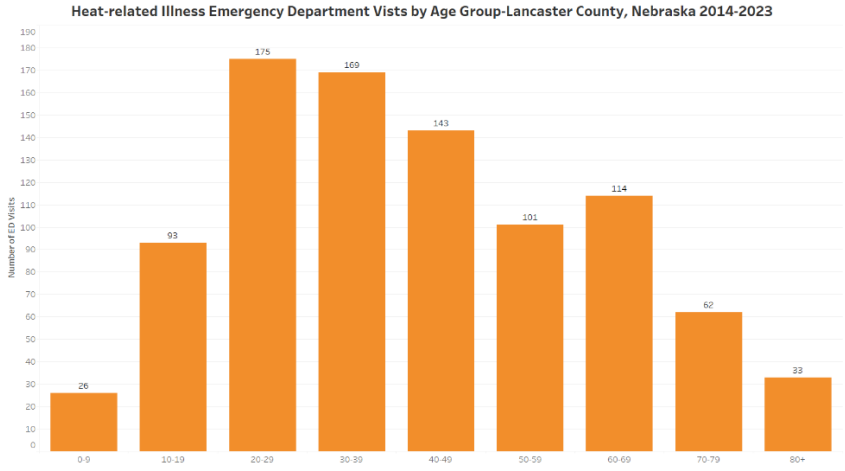
2023 had the highest number of HRI cases with longest duration of extreme heat days which lasted for seven days in the month of August.

Data on emergency department visits related to HRI cases in Lancaster County shows an increase in number of HRI cases over the years with highest number of cases in the year 2023.



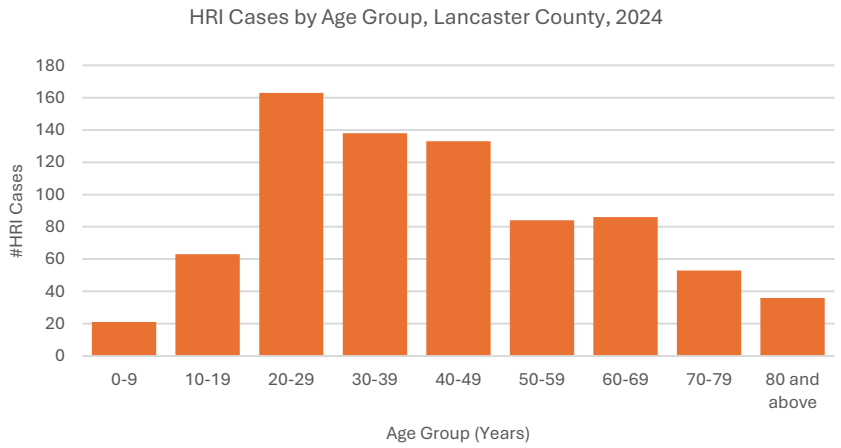
Source: Nebraska

The age-group wise distribution on emergency department visits for HRI cases in Lancaster County shows younger population and population aged 60 and above has higher number of HRI cases.

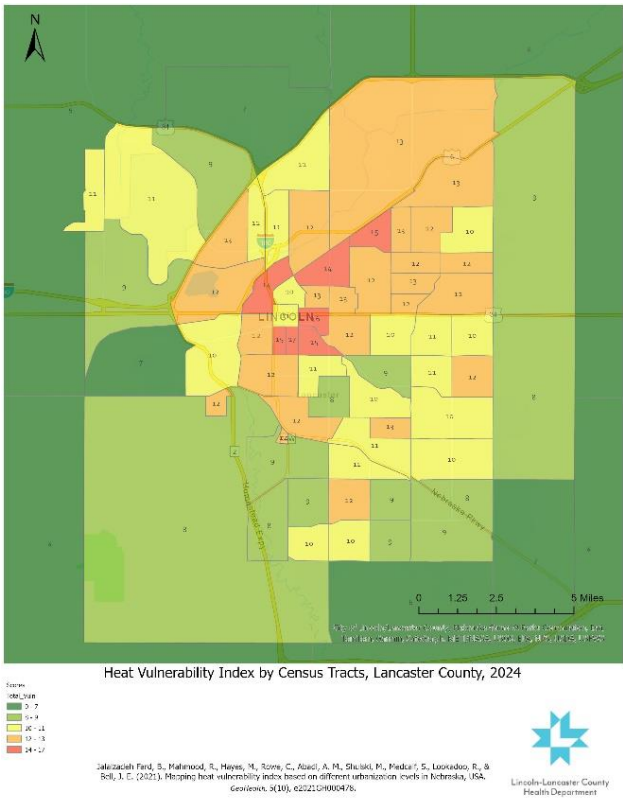


Source: Nebraska DHHS

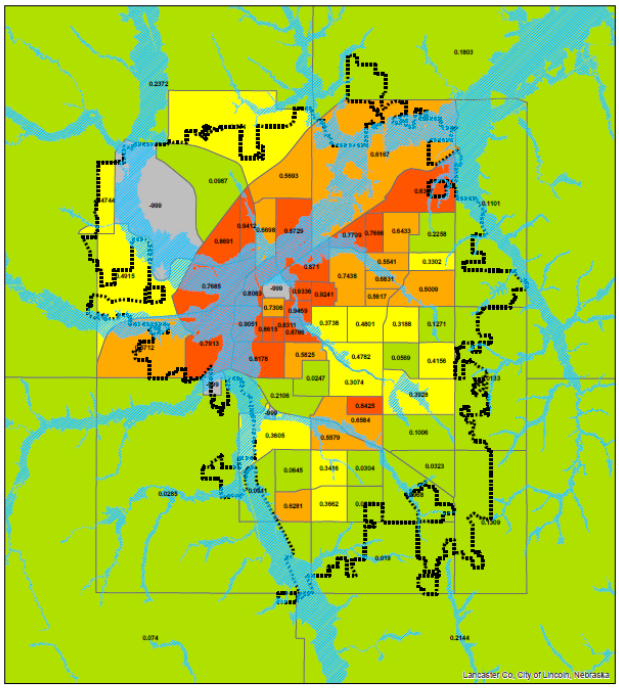
The trend obtained from ESSENCE shows similar pattern in HRI cases as hospital claims data shared by Nebraska DHHS.



Heat Vulnerability Index



Heat Vulnerability Index by Census Tracts, Lancaster County, 2024



Additional locally specific data on population exposure and vulnerability is further incorporated to create a heat vulnerability index (HVI) for Lancaster County. The census tracts were categorized into different urbanization levels and land type combinations and captured different patterns of socioeconomic vulnerabilities for the resultant Heat Vulnerability Index (Babak et al., 2021). Through this heterogeneous study of

socioeconomic variables, land cover type, and urbanization levels will further help to focus on customized solutions based on vulnerability scores. The HVI will also aid in directing interventions and distributing resources effectively, leading to a decrease in heat-related illnesses and fatalities amidst extreme heat events

Health effects from extreme storms and events, specifically flooding

Lincoln was built at the confluence of multiple streams, thus flooding events are common. Since 1900, the largest stream Salt Creek, which bisects Lincoln, flooded 100 times - 17 were major floods. More than 75,000 people (23%) in Lancaster County live in a floodplain. If the levees along Salt Creek were breached, it would cause dangerous flooding in nearby neighborhoods, most of which rank high on CDC's SVI.

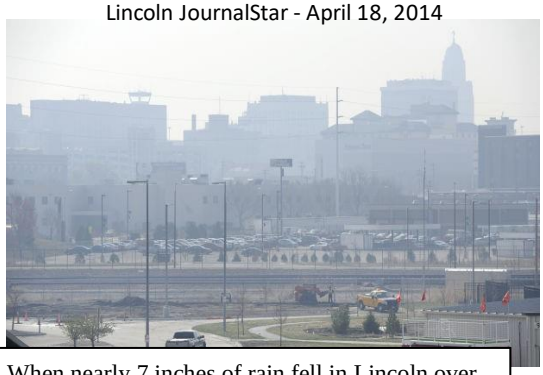
Flooding can cause injuries and death, expose people to contaminated water, cause sewage backups

contaminate wells, and expose people to conditions conducive to the growth of mold in homes. Major flooding events damage housing, schools and businesses, cause displacement and impacts behavioral health.

Health Effects from Fine Particulate Air Pollution ($PM_{2.5}$)

Climate change will degrade air quality and will compound health hazards posed by drought and extreme heat. LLCHD's Air Quality Program monitors $PM_{2.5}$, known to cause cardiovascular disease and exacerbate respiratory disease in children and older adults. Around 13% of Lincoln's population suffers from asthma (LLCHD Behavioral Risk Factor Survey, 2022), which is higher than the national average of 7.7% (CDC, 2023d). Pregnant women, young children, older adults, people with underlying health conditions, and communities with high SVI are more at risk from health impacts of poor air quality.

Air quality health advisory issued because of smoke – Lincoln JournalStar - April 18, 2014



When nearly 7 inches of rain fell in Lincoln over a 24-hour period May 6-7, 2015, the city saw severe flash flooding, leading to evacuations in parts of the city. Salt Creek rose rapidly.... Lincoln Journal Star March 25, 2019

Each spring, over two million acres of grassland and trees are intentionally burned in the Flint Hills of Kansas, resulting in high levels of $PM_{2.5}$ in Nebraska. Additionally, the promotion of prescribed burning in Nebraska to control invasive eastern red cedar and the increased incidence of wildfires across the US and Canada have contributed to higher PM2.5 levels for Lancaster residents. To address this, continued air monitoring, expansion of the air quality sensor network, increased public notice, and ongoing analysis of air quality data and health impacts are essential.

Lead Poisoning Prevention

Protecting children from lead exposure is crucial for lifelong good health, as no safe blood lead level has been identified for children. Even low levels of lead in the blood can affect learning, attention, and academic achievement. While some of the effects of lead poisoning may be permanent, early detection allows for actions to prevent further exposure and reduce health

impacts. The most important step for parents, caregivers, healthcare providers, and public health professionals is to prevent lead exposure before it occurs. The CDC supports both primary and secondary lead poisoning prevention efforts.

- **Primary prevention** is the removal of lead hazards from the environment, especially the home, before a child is exposed to lead. It is the most effective way to ensure that children do not experience harmful long-term effects of lead exposure.

- **Secondary prevention** includes blood lead testing and follow-up care and referral. It remains an essential safety net for children who may already be exposed to lead.

Preventing Lead Poisoning in Children

A blood test is the easiest way to determine if your child has been exposed to lead. The amount of lead in blood is referred to as a blood lead level, which is measured in micrograms of lead per deciliter of blood (µg/dL). Most children with lead in their blood have no obvious symptoms.

Preventing childhood lead exposure is cost-effective. An analysis from the 2017 PEW Charitable Trusts and Robert Wood Johnson Foundation Health Impact Project found that eliminating lead hazards from the places where children live, learn, and play could generate approximately $84 billion in long-term benefits per birth cohort. Additionally, permanently removing lead hazards from the environment would benefit future birth cohorts, and savings would continue to grow over time.[2]

Sources of Lead Exposure

Lead can be found throughout a child's environment.

- Homes built before 1978 (when lead-based paints were banned) may contain lead-based paint. When the paint peels and cracks, it makes lead dust. Children can be poisoned when they swallow or breathe in lead dust.
- Certain water pipes and fixtures may contain lead.
- Lead can be found in some products such as toys and jewelry.
- Lead is sometimes in candies imported from other countries or traditional home remedies.
- Certain jobs and hobbies involve working with lead-based materials, like stain glass work, and may cause parents to bring lead into the home.
- Children who live near airports may be exposed to lead in air and soil from aviation gas.

Lead in Paint

Lead-based paint and lead-contaminated dust are the most widespread and hazardous sources of lead exposure for young children in the United States.

Lead-based paints were banned for residential use in 1978. Homes built in the U.S. before 1978 are likely to have some lead-based paint. When the paint peels and cracks, it makes lead paint chips and dust. Any surface covered with lead-based paint where the paint may wear by rubbing or friction is likely to cause lead dust including windows, doors, floors, porches, stairways, and cabinets.

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[2] https://www.pewtrusts.org/en/projects/health-impact-project/health-impact-assessment

Children can be poisoned if they chew on surfaces coated with lead-based paint, such as windowsills and door edges. They can also be poisoned if they eat flaking paint chips or eat or breathe in lead dust.

Approximately 29 million housing units in the U.S. have significant lead-based paint hazards including deteriorated paint and lead-contaminated house dust. About 2.6 million of these are home to young children.[3]

Populations at Higher Risk

Across the United States, there are a variety of childhood lead exposure sources and risk factors.

Children from low-income households and those who live in housing built before 1978 are at the greatest risk of lead exposure. Houses built before 1978, the time before the use of lead in paint was banned, and houses in low-income areas, many of which have homes built before 1978, are more likely to contain lead-based paint and have pipes, faucets, and plumbing fixtures containing lead. Also, some African American persons are at a higher risk of lead exposure due to poor housing stock.

Children less than six years old are at a higher risk of lead exposure. This is because their bodies are rapidly developing and more susceptible to taking in lead if exposed. Young children also tend to put their hands or other objects into their mouths. Therefore, the most common source of lead exposure in young children is lead dust that they swallow after placing their lead-contaminated hands or other objects in their mouths.

Immigrant and refugee children from less developed countries are at higher risk of being exposed to lead due to less strict rules protecting children from lead exposure, in their country of origin. Because of this, children who are immigrants, refugees, or recently adopted from less developed countries are also at risk for lead exposure.

Pregnant women should know the risk of lead exposure because lead can pass to their baby during pregnancy. Breastfeeding can also be a source of lead exposure to babies, as mothers who are, or have been, exposed to lead can also pass lead to their babies when breastfeeding. Formula prepared using water contaminated with lead from leaded pipes and plumbing parts can also result in a baby being exposed to lead.

Some adults work in industries or have hobbies that expose them to lead. These adults may bring lead home with them and expose their families to lead without knowing. For example, a parent who works in battery manufacturing or renovation of older homes could bring home lead dust on their clothes, shoes, skin, hair, and hands. This dust can be tracked onto carpets, floors, furniture, and other surfaces that a child may touch. Adults who are exposed to lead in their workplace or from hobbies should take steps to keep them and their families safe from lead.

[3] https://www.cdc.gov/nceh/lead/prevention/sources/paint.htm

Blood Lead Levels in Children

CDC recommends testing blood for lead exposure. There are often no apparent symptoms when a child is exposed to lead. Because of this, a blood test is the easiest way to determine if a child has been exposed to lead.

During a blood lead test, a small amount of blood is taken from the finger, heel, or arm and tested for lead. Two Types of blood tests may be used.

- A finger-prick or heel-prick (capillary) test is usually the first step to determine if a child has lead in their blood. While finger-prick tests can provide fast results, they also can produce higher results if lead on the skin is captured in the sample. For this reason, a finger-prick test that shows a blood lead level at or above the CDC's blood lead reference value is usually followed by a second test to confirm.

- A venous blood draw takes blood from the child's vein. This type of test can take a few days to receive results and is often used to confirm blood lead levels seen in the first capillary test.

Treating Children with Elevated Blood Lead Levels

If a child has lead in their blood above the CDC blood lead reference value, their doctor may recommend follow-up services. These include finding and removing lead from the child's environment, feeding the child a diet high in iron and calcium, connecting the child to early educational services, and scheduling follow-up blood testing. Early identification of lead in the blood is key to reducing the long-term effects of lead exposure. Blood lead levels are reported to the Nebraska Department of Health and Human Services and LLCHD. LLCHD offers case management and environmental assessment.

If a child has very high levels of lead in their blood, health care providers may recommend other types of testing and treatment to remove some of the lead from the blood. This may include getting an x-ray to determine if they have high levels of lead in their blood. If a child does have high levels of lead in their blood, they may receive chelation therapy, which is a medical treatment used to remove lead from the body.

Blood Lead Reference Value (BLRV)

The amount of lead in blood is referred to as the blood lead level, which is measured in micrograms of lead per deciliter of blood (µg/dL). In 2021, CDC updated their blood lead reference value from 5 ug/dL to 3.5 ug/dL to identify children with blood lead levels that are higher than most children's levels. This level is based on the on the 97.5th percentile of the blood lead values among U.S. of children ages 1-5 years from the 2015-2016 and 2017-2018 National Health and Nutrition Examination Survey (NHANES) cycles. Children with blood lead levels at or above the BLRV are among the top 2.5% of U.S. children with the highest blood lead levels.

Health Effects of Lead Exposure

Lead exposure occurs when a child comes in contact with lead by touching, swallowing, or breathing in lead or lead dust. Exposure to lead can seriously harm a child's health and cause well-documented adverse effects such as:

- Damage to the brain and nervous system
- Slowed growth and development
- Learning and behavior problems
- Hearing and speech problems

This can cause:

- Lower IQ
- Decreased ability to pay attention
- Underperformance in school

There is also evidence that childhood exposure to lead can cause long-term harm. The health effects of exposure are more harmful to children less than six years of age because their bodies are still developing and growing rapidly. Young children also tend to put their hands or other objects, which may be contaminated with lead dust, into their mouths, so they are more likely to be exposed to lead than older children.

Lead in the Blood and Body

Lead quickly enters the blood and can harm a child's health. Once a child swallows lead, their blood lead level rises. Once a child's exposure to lead stops, the amount of lead in the blood decreases gradually. The child's body releases some of the lead through urine, sweat, and feces. Lead is also stored in bones. It can take decades for lead stored in the bones to decrease.

Many things affect how a child's body handles exposure to lead, including the following:

- Child's age
- Nutritional status
- Source of lead exposure
- Length of time the child was exposed
- Presence of other underlying health conditions.

Although lead in blood represents only a portion of the total amount of lead present in the body, a blood lead test is the easiest way to assess a person's exposure to lead.

Lead in Lincoln

From 2019 through 2023, LLCHD has conducted 22,777 lab tests and received a total of 1,172 laboratory results of an Elevated Blood Lead Level (EBLL) above 3.5 µg/dL reported in children six (6) years of age and younger. Of these EBLLs, 514 laboratory results were between 3.5 and 5 µg/dL and 658 laboratory results were 5 µg/dL or greater.

Much of the lead exposure is concentrated in the core of the city corresponding with the oldest home built in Lincoln. LLCHD identified eleven (11) priority census tracts where 546 of the cases have been identified. These census tracts are the densest and most racially and ethnically diverse areas of Lincoln with the highest density of homes built before 1978. Lead based paints are common in these older homes and present a primary health risk for lead exposure.

Table 1: Number of Children Ages <72 Months Tested for Blood Lead Levels - 2019-2023

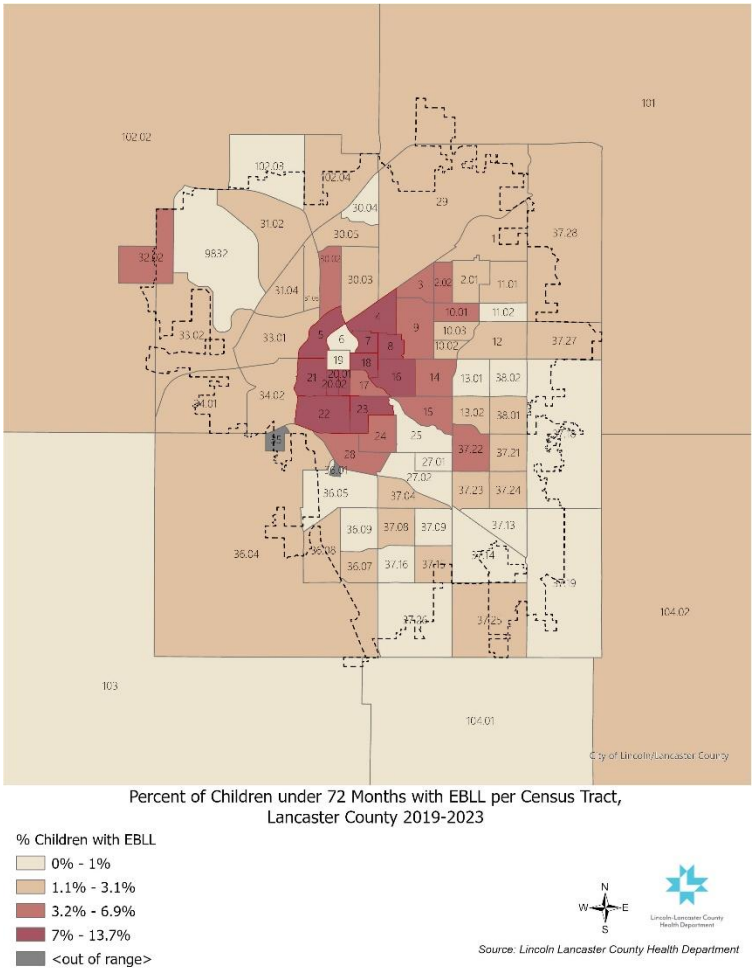
Year	Children Age	Children Tested	Children Tested >=3.5ug/dL

	<72 Months	Frequency	Percentage	Frequency	Percentage
2019	24,027	4,045	16.8%	121	0.50%
2020	23,884	3,861	16.2%	140	0.59%
2021	23,675	4,282	18.1%	128	0.54%
2022	23,106	4,623	20.0%	143	0.62%
2023	22,824	4,519	19.8%	176	0.77%

Source: American Community Survey, NE DHHS (2019-2023)

Interventions in Lincoln

LLCHD works in partnership with the City of Lincoln Urban Development Department on the HUD Lead Hazard Control Grant. This grant provides resources in targeted Census Tracts to mitigate the risk of lead from lead-based paint that is a primary source of lead exposure in young children.



These Census Tracts are in the core of the city and have a high percentage of pre-1978 housing, lower income populations, and a high number of children identified with elevated blood lead levels. Within these identified 11 census tracts there are 15,397 housing units built before 1978 (ACS, 2022). The median poverty rate of the area is approximately 26.6%, or 14% greater than the city average. The median household income for the target area is $57,553, whereas it is $67,846 for the city. The median race and ethnic minority rate of the area is approximately 40% which is 24% greater than the city average. Lastly, the median foreign-born population is approximately 12%, or 3% greater than the city average. (ACS, 2022). The target area has 3,175 children under age six years and between 2015-2020, 210 children under age six years with a confirmed EBLL compared to 274 children with confirmed EBLL outside the target area.

In June of 2022, Mayor Leirion Gaylor Baird launched "Lead Safe Lincoln", a multi-faceted approach to reducing lead exposures in young children.

A key aspect of Lead Safe Lincoln in the City's HUD Grant funded Lead Hazard Control Program, which has the following goals:

1. Protect children under six years of age from lead poisoning by providing assistance for lead-based paint hazard control to eligible households in conjunction with increasing health screening and public education.

2. Increase the number of lead-safe and healthy housing units resulting in preservation of Lincoln's affordable housing stock.

3. Promote training and employment for area residents to meet the need for contractors and to hire their employees.

The Lead Hazard Control Program is seeking to address an estimated 165 units to receive lead hazard control intervention. The interventions will be primarily interim controls with component replacement where most effective. The LLCHD's Environmental Public Health conducts lead inspections and risk assessments on eligible households and apartment buildings. The Health Department and Urban Development collaborate to increase the number of lead-safe and healthy, affordable housing units.

The Healthy Homes component is led by LLCHD in collaboration with the City Urban Development Department (UDD) in homes where lead hazard control work is being conducted. LLCHD Environmental Health Specialists work closely with families and property owners where children have been identified with EBLLs and address other residential hazards including mold clean up, insect infestation, smoke and carbon monoxide detector checks and installations, lead-containing fixture and/or private water service replacement and address other unsafe and unhealthy conditions within the home.

The LLCHD Community Health Services Division has a small grant from the Nebraska Department of Health and Human Services (NDHHS) to conduct case management and follow-up for children with EBLLs. The role of the Public Health Nurse (PHN) in the childhood lead prevention program includes monitoring BLLs within the National Electronic Disease Surveillance System (NEDSS), initiating investigations, and providing case management for children with EBLLs. LLCHD receives data on all children that test positive for lead. This will allow LLCHD to identify families for referrals to the Lead Hazard Control Program. In addition to case management activities, the PHN also promotes public awareness and prevention of childhood lead poisoning in the community through education and outreach.

When a child is identified as having an EBLL, the LLCHD Community Health Services staff contacts the parent or legal guardian by phone or letter to provide lead prevention education, recommendations for follow-up testing, and, if needed, community referrals. The PHN also contacts the child's health care provider to provide medical management, confirmation testing,

and repeat venous testing recommendations. If a child's venous BLL is ≥ 10 µg/dL, the PHN administers a lead exposure history interview, refers the case for environmental lead inspection by LLCHD Environmental Health Specialists, and attends the environmental lead inspection home visit to provide additional education and support. The child's follow-up testing for BLLs is monitored within NEDSS to ensure repeat testing is performed and to monitor if the BLLs are changing. Case management continues until the child's BLL falls below 5 µg/dL or the child moves out of jurisdiction.

The LLCHD has also received a grant from the Nebraska Department of Environment and Energy (NDEE), in cooperation with the Nebraska Department of Health and Human Services (DHHS) to test drinking water in

child care centers, preschools and schools for lead. This funding came from US EPA's Water Infrastructure Improvements for the Nation (WIIN) Act grant and will be used by DHHS to provide sample kits and laboratory analysis of drinking water samples from child care centers and preschools. Guidance will be provided to owners and operators to address fixtures or plumbing issues that may be contributing to lead in the water.

The Lincoln Transportation and Utilities Department's Lincoln Water System (LTU/LWS) provides water to almost all residents living in the City of Lincoln. Lincoln's drinking water does not contain detectable levels of lead and copper in its source water or after treatment. However, the presence of lead and copper used in plumbing systems can introduce detectable levels of these contaminants into the drinking water at individual homes or businesses. Water testing conducted by Lincoln Water System has found detectable levels of lead and copper in homes built before 1988. These homes are more likely to have pipes, fixtures, and solder that contain lead. In Nebraska, plumbing materials containing high concentrations of lead were banned in 1987. Homes built before 1950 may have a portion of the water service line constructed using lead pipes, and these homes may have higher levels of lead in their drinking water.

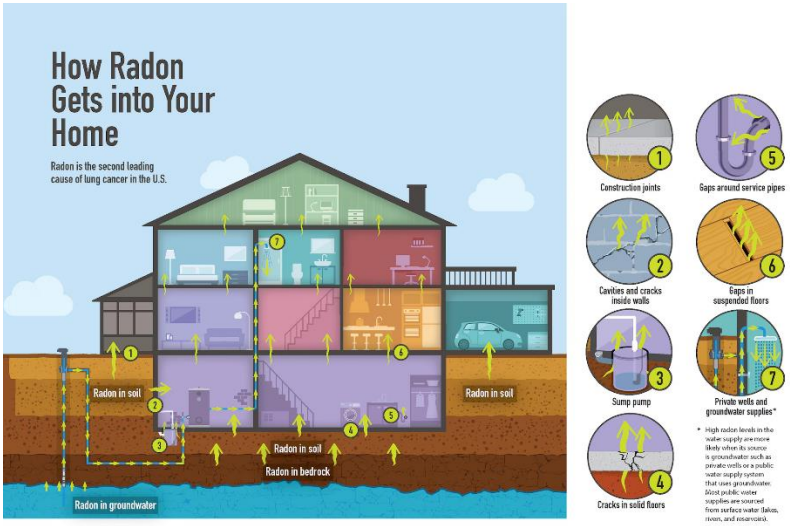
Safe drinking water properties vary across the country depending on the water source. Lincoln's drinking water chemistry does not promote excessive lead and copper leaching from plumbing systems. As a result, Lincoln Water System remains in compliance with USEPA requirements for lead and copper (LTU/LWS, 2024).

In February 2024, Lead Safe Lincoln expanded to include a multi-year lead service line replacement program. LTU has been replacing lead and lead-contaminated galvanized service lines and pipes owned by homeowners as they are discovered during the city's old water main infrastructure replacement projects. With funding from the Biden Infrastructure Law, administered through the Nebraska Drinking water State Revolving Fund, the city expects to replace up to 2,000 services lines by 2029, with a goal of replacing all lines by 2035.

Radon Health Risks & Prevention

Radon is a naturally occurring radioactive gas that forms from the decay of uranium in soil, rock, and water. It is colorless, odorless, and tasteless, making it undetectable to human senses. Radon can enter buildings through cracks in foundations, gaps in floors, and spaces around pipes, ultimately accumulating indoors (CDC, 2024b). Prolonged exposure to elevated levels of radon gas poses significant health risks. Radon is the second leading cause of lung cancer after smoking and

the number one cause of lung cancer among non-smokers (EPA, 2024). It is responsible for thousands of lung cancer deaths each year worldwide. According to estimates from the Environmental Protection Agency (EPA), radon is responsible for approximately 21,000 lung cancer deaths annually in the United States as well as resulting in approximately 1 out of 15 homes having high radon levels in the United States (CDC, 2024b).



Source: CDC

Radon Exposure and Associated Health Risks

Radon can seep into surface soils, blending into the "soil gas" mixture, and eventually penetrate indoor environments. Various geological factors influence the quantity of uranium and the likelihood of radon entering soil gas. Radon can enter buildings through construction joints, cracks, sump pumps, and other openings. Once inside, occupants may inhale radon directly or through its decay products attached to dust or suspended in the air. Radon's decay products emit alpha particles, which can cause mutations in lung tissue and increase the risk of lung cancer. The higher the radon concentration in indoor air, the greater the risk of lung cancer for occupants. prevalent component found in soil and rock is the unstable natural element uranium, which undergoes decay into other elements, subsequently leading to the formation of radon, a gas that lacks color and odor. Under specific natural circumstances, radon gas can infiltrate surface soils, integrating into the "soil gas" milieu, which can then permeate into the air, including the indoor atmosphere of buildings. Although the quantity of uranium and the probability of radon becoming part of soil gas, instead of being retained on soil particles, vary depending on geological factors, no region is exempt from its presence. This gas can get into the building through construction joints, cavities and cracks inside the walls, the sump pump, crack in solid floors, gaps around service pipes, gaps in suspended floors, and in private wells and ground water supply (CDC, 2024b). When soil gas containing radon infiltrates a building, occupants may directly inhale radon and its decay products or encounter them attached to dust on surfaces and suspended in the air, subsequently inhaling them. These decay products further undergo decay, emitting subatomic alpha particles. The exposure to alpha particle radiation can instigate mutations in lung tissue, potentially leading to lung cancer. The risk of developing lung cancer from radon exposure escalates with an increase in radon concentration in the air breathed by individuals inhabiting buildings.

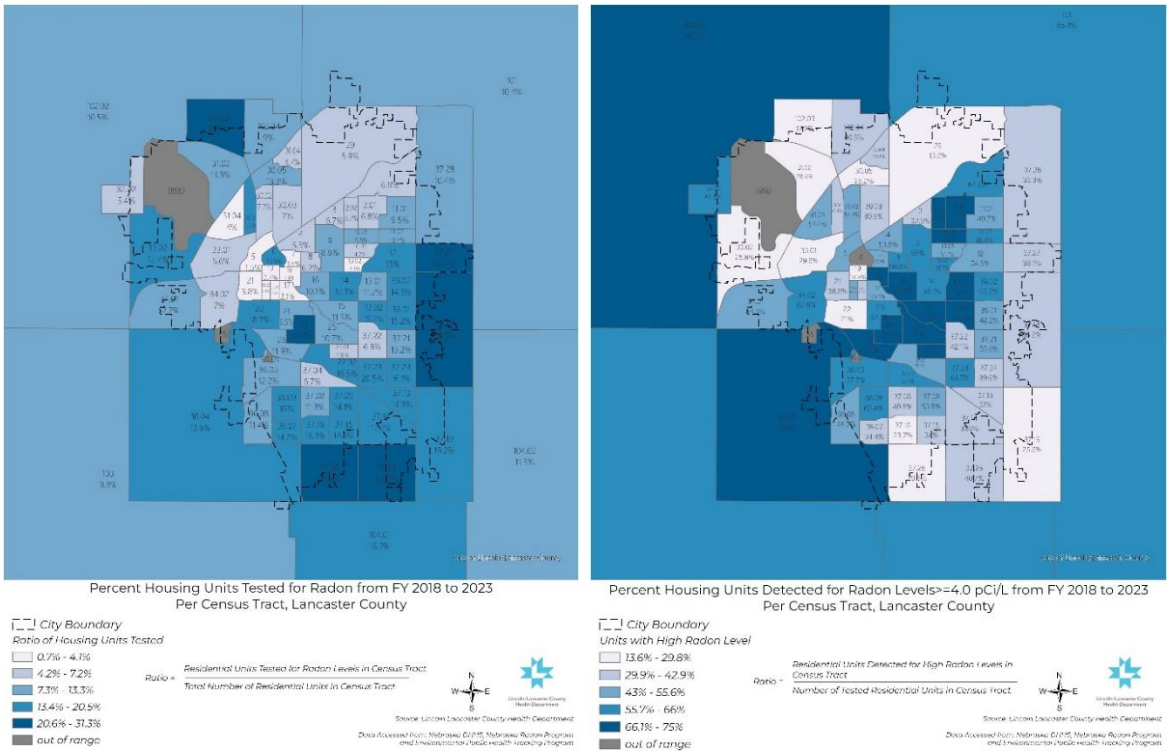
Radon Testing and Mitigation

To assess radon levels in a building, radon testing is conducted. Radon levels are typically measured in picocuries per liter (pCi/L) of air. The EPA recommends taking action to mitigate radon exposure if levels exceed 4 pCi/L, as this poses an increased risk of lung cancer. According to EPA,

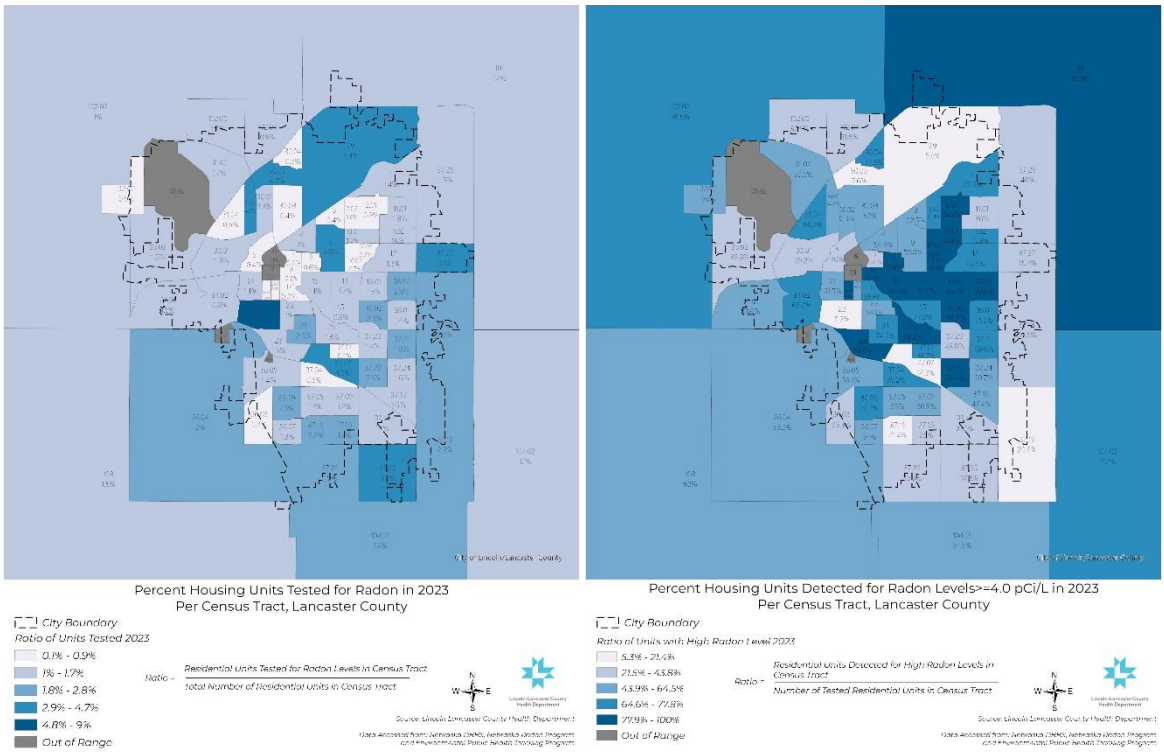
testing methods include short-term tests, which usually last from 2 to 7 days, and long-term tests, which can extend to 90 days or more. Long-term tests provide a more accurate picture of average radon levels.

The EPA recommends taking action to mitigate radon exposure if levels exceed 4 picocuries per liter (pCi/L) of air which indicates a higher risk of lung cancer and suggests the need for remediation measures to reduce radon concentrations indoors. The EPA emphasizes that no level of radon exposure is considered completely safe, but steps can be taken to reduce exposure to levels as low as reasonably achievable. Hence, EPA also recommends taking action to reduce radon if your radon level is from 2 pCi/L through 4 pCi/L. Mitigation actions include sealing cracks in floors and walls, increasing ventilation in lower levels of the home, and sub-slab depressurization to vent potential decay products out of the home. In Lancaster County, currently the purpose of tracking pre-mitigated radon testing is to identify areas with more households being tested for radon levels as well as areas with more housing having elevated radon levels. Pre-mitigation radon levels in Lancaster County were studied using radon testing data from January 1, 2018, to December 29, 2023. The assessment covered a six-year period from 2018 to 2023, with a specific focus on the year 2023.

The ratio of housing units tested for radon levels in each census tract is determined by comparing the number of residential units tested for radon to the total number of residential units within that census tract. The ratio of housing units with radon levels above 4pCi/L was identified by determining the number of residential units with elevated radon levels in each census tract out of the number of residential units tested for radon levels in each census tract. The resultant maps for the six year period from 2018 to 2023 indicate a higher rate of radon testing in areas with newer homes or homes on the market. The maps for the year 2023 displays the recent scenario on the ratio of testing in each census tract providing an insight on recent trend. The ratio of housing units with elevated radon levels is notably higher in the central city census tracts. This data is instrumental in identifying target areas for future radon mitigation efforts.



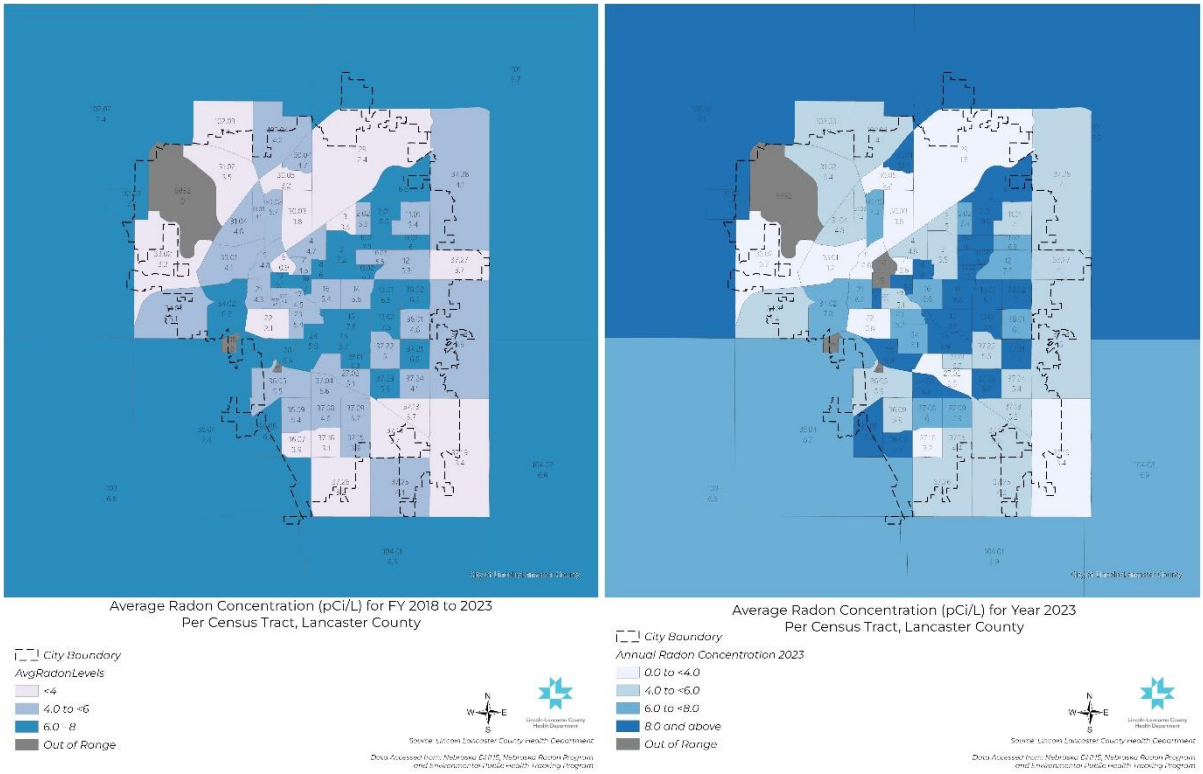
Source: Nebraska DHHS, Nebraska Radon Program and Environmental Public Health Tracking Program



Source: Nebraska DHHS, Nebraska Radon Program and Environmental Public Health Tracking

The following maps depicting average radon concentrations emphasize the census tracts with elevated radon levels compared to others. This visualization aids in pinpointing regions where

radon issues are more pronounced, which helps in targeting mitigation efforts and enhancing public health interventions.



Source: Nebraska DHHS, Nebraska Radon Program and Environmental Public Health Tracking Program

Besides pre-mitigation testing, post- mitigation tests are also conducted to identify the radon levels after mitigation and a ratio of housing units tested have the radon levels greater than or equal to 4 pCi/L. The results show a certain percent of units with post mitigation radon testing has high radon levels. This assessment might help with future steps for strengthening the testing and mitigation measures for safer housing.

Year	Number of Housing Units Tested Annually for Radon						
	Pre-Mitigation			Post-Mitigation			Total Units Tested
	Units Tested	Radon Level >=4pCi/L	%	Units Tested	Radon Level >=4pCi/L	%	
2018	2,707	1,652	61.0%	1,168	157	13.4%	3,875
2019	3,178	1,607	50.6%	972	92	9.5%	4,150
2020	2,691	1,504	55.9%	962	68	7.1%	3,653
2021	2,000	1,014	50.7%	757	64	8.5%	2,757
2022	1,960	965	49.2%	987	102	10.3%	2,947
2023	2,205	1,115	50.6%	1,013	91	9.0%	3,218

Source: Nebraska DHHS, Nebraska Radon Program and Environmental Public Health Tracking Program

PRIORITIZED DESCRIPTION OF SIGNIFICANT COMMUNITY HEALTH NEEDS

Prioritization Process

As part of the prioritization process for the CHNA, a comprehensive approach was taken to gather input from both community stakeholders and objective health data. To facilitate this, four survey modules were developed using REDCap, a secure web-based platform for building and managing online surveys and databases. Each module covered different topics, presenting health data from vital statistics (birth and death data), self-reported health data (BRFSS & YRBS), hospitalization data, communicable disease data, and environmental health information. These modules were delivered as PowerPoint presentations that participants watched, followed by a scoring process where they rated various measures using a 5-point Likert scale. The scoring criteria included economic and social impact, changeability, local public health capacity, and political will and readiness. The modules were distributed via email to various stakeholders and made publicly available on the LLCHD website on July 10, 2024, and closed on August 2, 2024.

In addition to these modules, qualitative insights from Community Conversations and quantitative data from the Community Health Assessment Surveys (Geospatial and Equity) were also factored into the prioritization process. These community-driven perspectives provided valuable context on the top priority issues, such as mental health and access to healthcare, ensuring the perspectives of diverse populations were incorporated in the scoring of the measures.

Prioritization Matrix & Scoring

The LLCHD epidemiological team evaluated each measure for its magnitude (percentage of the population affected), trend (improving or regressing), comparison to state and national data, and any notable disparities. Stakeholder and epidemiological scores were averaged to produce a total index score for each measure. A total of 70 measures were ranked highest to lowest by priority based on the index scores (ranging from 16.65 to 32.23).

The measures were reviewed and grouped into issue categories, with categories such as mental health and access to care receiving an additional 2.0 points to account for insights from the Community Health Assessment Surveys and Community Conversations. The index scores for each grouped measure were summed and averaged, resulting in a final list of the top 11 issues. These issues were then presented at the 2024 Community Health Summit, where stakeholders from across the community reviewed detailed profiles of all 11 issues and voted on the top three priorities for focused action.

Based on data collected by LLCHD for the CHNA, the following significant health needs have been identified within the community. Several key criteria were considered during this process, including:

- Severity of the health issue
- Trends observed in the data, including comparisons to state and national statistics
- Magnitude of the issue, indicating how much of the population is affected
- Population impacted, with special attention to disparities and vulnerable groups

- Existing partnerships and resources
- The hospital's level of expertise
- Current initiatives or gaps in services
- Potential for impact
- Community interest in the hospital's engagement in addressing these health areas

Table 5: Summary of Eleven Measures and Six Issue Categories

RANK	ISSUE CATEGORY	ISSUE CLUSTER	MEASURE	INDEX SCORE
1	Mental Health	Suicide/Self-Inflicted Injury	Suicide	32.23
2	Mental Health	Suicide/Self-Inflicted Injury	Intentional Injury (self-inflicted)	30.10
3	Physical Health	Obesity	Overweight & Obesity	28.93
4	Injury Prevention	Accidents or Unintentional Injuries	Motor Vehicle Injuries	28.05
5	Physical Health	Physical Activity	Physical Inactivity	27.63
6	Access to Healthcare	Access to Healthcare	No Healthcare Coverage	27.27
7	Injury Prevention	Assault	Intentional Injury (not self-inflicted, i.e. assault)	27.10
8	Injury Prevention	Assault	Bullying	27.07
9	Environmental Health	Climate Change	Heat-Related Illness	26.70
10	Injury Prevention	Accidents or Unintentional Injuries	Falls	26.65
11	Substance Abuse	Vaping	Electronic vapor product use	26.50

Table 6: Summary of Top Three Issues Voted on at the 2024 Community Health Summit

RANK	ISSUE
1	Access to Healthcare
2	Suicide
3	Depression

Prioritized Significant Health Needs for the Lincoln-Lancaster County Health Department Community Health Improvement Plan (CHIP) are, in ranked order:

- Access to Healthcare
- Suicide
- Depression

Reason for High Priority

1. Access to Healthcare: In 2022, 7.0% of Lancaster County residents aged 18 to 64 reported lacking health care coverage. Additionally, 79.0% of respondents indicated they had a routine checkup in the past year. However, 10.2% of residents reported needing to see a doctor but were unable to do so due to cost. Furthermore, 16.7% of respondents indicated they did not have a personal doctor or healthcare provider. Community Conversations also revealed that access to healthcare, along with related issues, remains a top priority among racial and ethnic minority groups.
2. Suicide: Over the past decade, data among high school students reveal a steady increase in suicidal ideation, rising from 12.4% in 2011 to 19.6% in 2023, and in suicide planning, which grew from 10.6% in 2011 to 15.0% in 2023. In contrast, the rate of suicide attempts among this demographic has decreased significantly, falling from 11.2% in 2011 to 5.9% in 2023. However, deaths due to suicide among all ages have been steadily increasing, from 13.2 deaths per 100,000 persons in 2018 to 14.2 deaths per 100,000 persons in 2023. Additionally, Community Conversations revealed that mental health and related issues, are top priorities among racial and ethnic minority groups.
3. Depression: According to data from 2022, 17.8% of adults in Lancaster County reported ever being diagnosed with depression by a healthcare professional, with higher prevalence proportions observed among younger adults (ages 18 to 24) and females. Over the past decade, the percentage of adults ever diagnosed with depression in our community has remained relatively stable, ranging from 16.8% to 20.9%. Notably, the prevalence of depression in Lancaster County is slightly higher than the state percentage for Nebraska, yet lower than the national percentage. Additionally, Community Conversations revealed that mental health and related issues, are top priorities among racial and ethnic minority groups.

For more detailed information on how these issues were prioritized, please refer to the appendix, which includes a profile for each specific issue, as well as the CHA Summit breakout group issue presentation.

RESOURCES POTENTIALLY AVAILABLE TO ADDRESS NEEDS

Table 7 represents a list of resources in Lancaster County for each health need identified above.

Table 7: Lancaster County Resource Inventory Significant Health Need Assets/Resources

Significant Health Need	Assets/Resources
Access to Care	Health 360 Integrated Care Clinic (Lutheran Family Services) LLHD - (CHIP convening stakeholders) Health Hub - to assist people navigating through the health system Clinic with a Heart Center for People in Need Lincoln Community Health Endowment Health LNK – Lincoln public access television Enroll Nebraska Navigators - from Community Action Program for Lancaster and Saunders County CHI Health NHH
Behavioral Health	Bryan Health Region V System The Bridge Behavioral Health Blue Valley Behavioral Health CEDARS Youth Services Lancaster County Human Services Health HUB Lincoln Police Department Lincoln Treatment Center Mental Health Association of Nebraska Mental Health Diversion is offered by Lancaster County Community Corrections Health 360 St. Monica's Behavioral Health Services for Women Bluestem Health (Federally Qualified Health Center (FQHC) Keya House Honu Home CenterPointe' s Crisis Response Services

IMPACT OF ACTIONS TAKEN SINCE PRECEDING CHNA

The previous CHNA for CHI Health St. Elizabeth and NHH was conducted in 2022. Table 8 illustrates the progress and impact made around CHI Health St. Elizabeth and NHH's previous implementation strategy to address community health needs.

Strategies and Program Activities by Health Need

Table 8: Evaluation of CHI Health NHH and St Elizabeth Implementation Plan

Health Need #1: Access to Care	
Goal & Anticipated Impact	Goal: Ensure equitable access to high-quality health care and coordination of health care and community-based health services across the community Anticipated Impact: ● Reduced need for non-emergent ED visits by increasing availability of relevant care access points and encouraging patient connection with a primary care provider (medical home) ● Lower readmissions and improved use of preventive care due to improved collaboration across healthcare providers and community-based support services
Community Indicators	CHNA 2016 ● 84.8% of Lancaster County adults have health insurance (ages 18-64) ● 75.7% of Lancaster County adults have a medical home (primary care provider) CHNA 2019

	● 88.5% Lancaster County Adults with health insurance (ages 18-64) ● 82.3% of Lancaster County adults have a medical home (primary care provider) ● 10.2% of Lancaster County adults in 2016 report no doctor visit due to cost in past year ● 17.7% of Lancaster County adults report having no personal doctor (down from 24% in 2014) CHNA 2022 ● 86.4% Lancaster County Adults with health insurance (ages 18-64) ● 12.7% of Lancaster County adults report no doctor visit due to cost in past year ● 19.8% of residents reported that they did not have a personal doctor or health care provider ● 71.8% of adults had a routine check up in the past year ● Respondents reporting no health care coverage was most common among non-Hispanic Black respondents (30.5%), Hispanic respondents (46.0%) and households making less than $25,000 per year (44.7%).
Strategy	**Key Activities**
1.1 Engage with community partners and key service providers in existing efforts to improve access points and coordination of health care services across the City of Lincoln and	1.1.1 Support and participate in the LLCHD CHIP Access to Care work group and other community-based organizations to support work around maternal child health, preventative care, and barriers to care. (St. Elizabeth & NHH) FY23 Key Activities

Lancaster County.	Participated in LLCHD CHIP Access to Care workgroup which set the following priorities: Maternal Child Health *Working Goal: Reduce racial, ethnic, economic, and geographic disparities in maternal and child health outcomes, and promote health equity for maternal and child health populations.* The top three themes were: Education, information, & literacy programs Availability of services Community connectedness & support groups Preventative Care Working Goal: Reduce the proportion of persons who are unable to obtain and/or unaware of needed preventative medical care meeting CLAS standards. The top three themes were: Education, information, & literacy programs Health promotion, prevention, and screening Culturally and linguistically appropriate services (CLAS) Barriers to Care Working Goal: *Reduce barriers to care (cost, availability, transportation, literacy, and language).* The top three themes were: Healthcare system difficulty

	Culturally and linguistically appropriate services (CLAS) Affordability & cost, Availability of services Provided financial support to Clinic with a Heart to ensure greater healthcare access in the community. Supported Madonna Medical Transport Program through partnership and a financial contribution to ensure community members could continue to access needed health care. Provided $5,000 to BraveBe Child Advocacy Center. FY23 was an impactful time for their medical program as they increased the number of victims served and enhanced programming to begin offering foster care entry examinations. In FY23 they also: Implemented a new acute sexual assault protocol that was created in conjunction with CHI Hospitals, Bryan Hospital, the Lincoln Police Department, and the Attorney General's Office to create mutual understanding of the role and responsibility of each partner on emergency cases. Partnered with the Nebraska Attorney General's Office to ensure all sexual assault kits were uploaded to the Sex Assault Tracking System. Their Director of Medical Programming presented at the Annual Nebraska Emergency Nurse Conference in October 2022. Their medical team provided a BraveBe overview training to St. Elizabeth's/CHI Hospital on our medical program and the services we provide. Their Director of Medical Programming participated in a Protection of Children panel. They expanded medical services by opening a clinic in York to ensure children in rural communities have equal access to specialized care. Improve care and partnerships with community organizations supporting maternal and child health Malone Center Began partnering with Malone Center to ensure equitable care for women and children, through training and increased communication.

	Books for Babies Program launched in June 2022 and is being sustained through a partnership with Lincoln City Libraries, Bryan Health, and Community Health Endowment. Purchased books in English, Spanish, Karen, Arabic, and Vietnamese. Newly added strategy around food security; considering adding social determinants of health strategy to Implementation Strategy based on requests made by community partners. Housing and food continue to be significant needs after the pandemic. Supported statewide Double Up Food Bucks efforts. FY23 Measures At least four CHI Health St. Elizabeth staff participated in Access to Care CHIP workgroup. Books for Babies funds provided: $5,000 Books ordered for program: 7,433 Books distributed to St. Elizabeth: 2,717 Books distributed to Bryan Health: 4,716 Madonna Medical Transport: Funds provided: $10,000 Metrics to be reported on FY24 narrative. BraveBe funds provided: $5,000

	Clinic with a Heart funds provided: $10,000 Statewide Double Up Foods Bucks: Funds provided: $50,000 SNAP sales: $2,208,408 DUFB sales: $111,525 # of unique customers: On average, sites see about 87 unique customers each month. # of participating retailers: 26 # of expansion sites: 11 FY24 Key Activities ● Participated in the LLCHD CHIP Access to Care workgroup which set the following priorities. ● Provided financial support to Clinic with a Heart to ensure greater healthcare access in the community. ● Supported Madonna Medical Transport Program through partnership and a financial contribution of $10,000 to ensure community members could continue to access needed health care. ● Supported BraveBe Child Advocacy Center. ● Newly added strategy around food security, based on requests made by community partners. FY24 Measures

	● Books for Babies: ○ Funds provided: $5,000 ● Madonna Medical Transport: ○ Funds provided: $10,000 ○ During the last fiscal year, CMT provided 4,574 non-emergency medical trips. Of those trips, 611 were to St. Elizabeth properties, 1454 were to b=Bryan Health properties, 618 were to dialysis centers and the other trips were to medical offices, surgical centers and diagnostic centers. ● BraveBe: ○ Submitted a $599,996 Mission and Ministry Fund application to support their work. The application was funded, with the project commencing in FY25. ● Clinic with a Heart: No measures to report ● Statewide Double Up Foods Bucks: ○ Funds provided: $12,500 FY25 Results Pending
	1.1.2 Identify and implement solutions to reduce preventable readmissions and optimize transitions of care. (St. Elizabeth & NHH) FY23 Key Activities Held utilization meetings regularly to strategize around readmissions, facilitated by the Director of Care Management. Continued to engage care management in conversations as transitional care continues to be a

	barrier in the community. Met with CHI Home Health to discuss readmissions and strategize on reducing them. Met with Sepsis team to strategize around readmissions. Met with cancer partners to build continuity of care for patients. Continue to hold monthly heart failure committee meetings to identify areas of opportunities for readmissions. Developed new workflow to make it easier to arrange PCP appointments prior to discharge as having quicker access to care should impact unnecessary hospitalizations. Printed and distributed sepsis magnets for patients and families to discuss warning signs and symptoms and when to see your provider vs. come back to the emergency department FY23 Measures Utilization meetings: 12 FY24 Key Activities ● Formed a readmissions committee and worked to improve documentation in Epic for more accurate analysis of root causes of readmissions. Health equity committee prioritized closing the gender disparity gap in hospital readmissions as the FY25 clinical quality goal, therefore actions and measures will be reported in subsequent reporting cycles. FY24 Measures ● No measures to report

	FY25 Results Pending
	1.1.3 Partner with Aging Partners (Area Agency on Aging) to identify gaps in care specific to the aging and disabled populations and identify relevant actions and measures of success for identified work. (St. Elizabeth & NHH) FY23 Key Activities Continued partnership with Aging Partners to determine health needs of the older population. Continued to explore alignment as the organization moved into a building across the street from St. Elizabeth. Began pursuing an Age Friendly Health System designation at St. Elizabeth. FY23 Measures ● No measures to report. FY24 Key Activities ● Continued partnership with Aging Partners to determine health needs of the aging population. Continued to explore alignment as the organization moved into a building across the street from St. Elizabeth. ● Began pursuing an Age Friendly Health System designation at St. Elizabeth. ● New location ribbon cutting April 27, 2023

	FY24 Measures ● Obtained Level 1 Age Friendly Health System designation. FY25 Results Pending
	1.1.4 Explore and identify ways to promote improved alignment between primary and cardiovascular specialty care in the Lincoln community and identify relevant actions and measures of success for identified work. (NHH) FY23 Key Activities: No report FY23 Measures: No report FY24 Key Activities The annual Fall Cardiology Conference was held October 21, 2023; Four hours of CME was provided; post conference surveys indicated the topics of desire for future conferences; members of specialty areas including cardiology and vascular and cardiac surgery were available and visited with primary care colleagues in the primary and secondary service areas. FY24 Measures ● Obtained Level 1 Age Friendly Health System designation.

	FY25 Result Pending
	1.1.5 Support the on-going or increased availability of evidence-based chronic disease management programming that leverages primary and specialty care access points (i.e. tobacco cessation classes, diabetes self- management, heart failure, etc.) to encourage referral and feedback loop processes. (St. Elizabeth & NHH) FY23 Key Activities There is not currently a Heart Failure Academy offered and the team is continuing to explore whether or not it will be in the future. There is not currently a diabetes educator at the hospital so existing staff provide education and referrals to PCP and endocrinologist. Tobacco Cessation continued in FY23; current staff member will depart in FY24. FY23 Measures Referrals: 35 1:1 appts: 15 # quitting tobacco use: 1 FY24 Key Activities

	The 2023 Fall Cardiology Conference was held October 21; topics included: imaging modalities for vascular and cardiac disease; therapies for structural heart disease including TAVR and traditional open-heart therapies; discussion of prevention of stroke for patients with AFib; discussion of therapy for sleep apnea which may contribute to coronary artery disease, pulmonary dysfunction and heart failure; panel discussions along with lecture presentations and case presentation was utilized. FY24 Measures: ● Tobacco Cessation: No measures to report ● LMEP Family Medicine Residents: eight residents spend four weeks individually with Nebraska Heart physicians ● Wounds Center visits are made to St. Elizabeth Hospital, St. Mary's Hospital and the hospital in Falls City; the average monthly patients seen in these three clinics are 112 patients FY25 Results Pending 1.1.6 Maternal and Child Health work- Home visitation: FY24 Key Activities: ● Maternal and Child Health Home visitation provided by home visitation team, and have participated in Lincoln-Lancaster Home Visitation Community Advisory Board Meeting. ● Daily reports pulled Monday through Friday from 9/1/2023 through 6/31/2024 of patients for the Family Connects (Home Visitation Team) to connect with. Forty- four weeks-5 times per week-15 minutes per pull=55 hours of staff time. FY24 Measures: ● Population reached (period: November 2023- June 2024) (measured in scheduled visits):

	527 ● Hours of Advisory Board Meetings: 6 1.1.7 Birth Equity: FY24 Key Activities Addressing maternal disparities and promoting birth equity FY24 Measures: ● # of hours of meeting: Approximately 66 hrs ● Total # of nurses (3 hours per month X 1 person): Approximately 22 nurses 1.1.8 Workforce Development initiatives FY24 Key Activities CHI St. Elizabeth operated a Grow Your Own CNA program. FY24 Measures: ● 5 CNAs trained in 2 CNA courses = $2500 ● scholarship; 8 RNs on scholarship = $80,000 1.1.9 Unite Us referral Pathways:

	FY24 Key Activities Tracking referral activities that are impacting clients FY24 Measures: ● # if referrals: 1* (*Note: Counts may be skewed. Referral tracking was broken out by hospital beginning in May 2024. Previously, all tracking was centralized under one hospital/clinic reporting organization.)
Related Activities	In addition to the specific strategies and key activities outlined above to address Access to Care (to be reported annually on Schedule H tax narrative), CHI Health also supports the following bodies of work related to this health need area: ● MD Save offers low-cost, pre-paid care bundles for select services and procedures. ● NHH and St. Elizabeth host family medicine residencies to shadow providers, in partnership with Lincoln Medical Education Partnership, throughout a three-year residency program with financial support provided by the hospital. ● St. Elizabeth and NHH contribute an annual sponsorship to Madonna Rehabilitation's Community Medical Transportation Program to offer free transportation to those who need support to access needed medical services. ● St. Elizabeth a high school career mentoring program, led by nurses and physicians to expose youth to healthcare careers. ● A family health center clinic located in Lincoln is being developed, with integrated behavioral health and a variety of services.
Planned Resources	The hospital will provide staff time, philanthropic cash grants, outreach communications, and program management support for these initiatives.
Planned Collaborators	● Nebraska Cancer Coalition ● City of Lincoln ● The Bridge Behavioral Health ● CHI Health Clinics

	• Lincoln Lancaster County Health Department • Cultural Centers of Lincoln • Rural primary care providers • Aging Partners

	**Health Need #2: Behavioral Health (mental health, substance use, and violence)**
Goal & Anticipated Impact	Goal: Provide relevant and timely connections to care for those in need of mental health care or substance abuse recovery, and promote social and emotional wellness to reduce violence in the community. Anticipated Impact: • Increase number of individuals receiving behavioral health services in Lancaster County • Increase the capacity of health care workers and community organizations who are able to identify behavioral health needs and connect people with services
Community Indicators	**CHNA 2016** • The suicide death rate was 15.4 per 100,000 population (age adjusted) • Frequent mental distress in the past 30 days 10.5% for adults 18 and older **CHNA 2019** • 9.8% of Lancaster county respondents report 14 or more ‘poor’ mental health days in last 30 (2016)

	● Rate jumps to 21% among non-white and Hispanic ● Rate is at 31% for those living on $15,000 or less, and at 15% for those living on between $15,000-$25,000/year ● Smokers report higher rate of 'poor' mental health days ● 25% of adults report binge or heavy drinking compared to 21% across NE and 13% among high performers ● 19% of high school students in 2017 report seriously considering attempting suicide during past 12 months (17.5% in 2015) Of 44 suicides documented in 2016 in Lancaster County, 2 were youth between ages of 15- 19, 17 were adults ages 25-34, 7 were adults age 35-44, 6 were adults 55-64 **CHNA 2022** ● Mental health was the leading health concern in the community health survey, followed by alcohol, drug, and tobacco use ● 3.6 was the average number of mentally unhealthy days reported in the past 30 days ● 23% of youth reported being bullied on school property in the past year ● 17% of Lancaster County youth = reported making a plan to commit suicide in the past 12 months
Strategy	**Key Activities**
2.1 Provide entry points for behavioral health care and engage in the behavioral health continuum to ensure proper referral of those needing care	2.1.1 Assess the barriers and need for integration of behavioral health services into primary care, including increased need for care coordination in the health care setting, and identify strategies for addressing known barriers. (St. Elizabeth) FY23 Key Activities Continued to integrate behavioral health in the primary care setting. The full time Behavioral Health Specialist moved to the new Yankee Hill Family Health Center, reaching more patients with behavioral health services. A psychiatric nurse practitioner has been added to the team, and they began recruiting for a full time therapist. There is also a fulltime PA on staff to support medical and behavioral health needs of patients, and the new clinic is accepting referrals from all Lincoln based CHI Health clinics. Behavioral health staffing will continue to be a priority as Family Health Centers

	are developed throughout the system. Working to update and improve our survivorship materials and implement the recommendations of our assessment with NC2. Began implementation of GW Cancer Centers survivorship and navigation evidence-based resources tool by NC2 evaluate and help us prioritize the things we need to update, expand upon and change to improve our programs. Hired health navigator to work with the clinics on coordination of care. FY23 Measures 417 billable office visits (2 months of provider being out) 8 non billable consults with patients Staff hired: 1 FY24 Key Activities ● Continued to integrate behavioral health in the primary care setting. The full time Behavioral Health Specialist moved to the new Yankee Hill Family Health Center, reaching more patients with behavioral health services. A psychiatric nurse practitioner has been added to the team, and they began recruiting for a full time therapist. There is also a fulltime PA on staff to support medical and behavioral health needs of patients, and the new clinic is accepting referrals from all Lincoln based CHI Health clinics. Behavioral health staffing will continue to be a priority as Family Health Centers are developed throughout the system. ● Provided access opportunities with APRN working on Sunday a month. Due to growth we

	posted a full time therapist position which has been filled with a start date of early next month. FY24 Measures ● 482 billable office visits (LIMPH was off significant portion of FY24) ● 8 .8% now show rate ● Staff hired: 1 (start December 2024) FY25 Results Pending
	2.1.2 Explore partnership with and support of community-based organizations providing behavioral health services, such as The Bridge. (St. Elizabeth) FY23 Key Activities Provided $15,000 to El Centro De Las Americas to provide affordable, culturally, and linguistically appropriate behavioral health services. The project addresses mental health equity through a holistic approach and by considering social determinants of health. Vida Sana focuses on interventions to alleviate and eliminate disparities by addressing behavioral & mental health & wellness and educational inequities in the Latino community. FY23 Measures

	# of sessions completed: 199 20 patients (16.5%) have had concerns related to Post Traumatic Stress Disorder 22 patients (18.2%) have had concerns related to Intimate Partner Violence 26 patients (21.5%) have had concerns related to Depression 18 patients (14.9%) have had concerns related to Anxiety FY24 Key Activities No available at the time of reporting FY24 Measures Not available at the time of reporting FY25 Results Pending
	2.1.3 Support provider and staff resiliency through Grand Rounds presentations and explore other internal and community behavioral health needs through the alignment of the psychiatry department and mission integration. (St. Elizabeth & NHH)

	FY23 Key Activities From January-June 2023, an employed psychiatrist participated on the LLCHD CHIP Committee regarding behavioral health offering professional insight into their operation. However, the hospital transitioned to virtual psychiatric care for its medical patients in July 2023, rendering the employment of this doctor no longer necessary. She continues to offer the same insight for the LLCHD CHIP committee, but does not do so as a representative of CHI Health. CHI Health St. Elizabeth will continue to explore capacity to participate in the workgroup. FY23 Measures No measures to report. FY24 Key Activities No updates to report FY24 Measures No measures to report. FY25 Results Pending

	2.1.4 Partner with the LLCHD behavioral health CHIP workgroup to support youth mental health, access to behavioral health care, and suicide, as well as other need areas identified by the workgroup. (St. Elizabeth & NHH) FY23 Key Activities Actions and Impact: Participated in LLCHD CHIP Behavioral Health work group. They identified the following priority areas: Youth Health Working Goal: *Increase availability and accessibility of mental health services in youth populations.* The top three themes were: Health promotion, prevention, and screening Education, information, & literacy programs Community connectedness & support groups Access to Behavioral Health Care Working Goal: *Improve access to the continuum of mental health care among adults and children.* The top three themes were: Availability of services Culturally and linguistically appropriate services (CLAS)

	Healthcare system difficulty Suicide Working Goal: *Reduce suicide in adults and children.* The top three themes were: Education, information, & literacy programs Societal-level factors Community connectedness & support groups; Availability of services (tied) FY23 Measures At least 3 CHI Health St. Elizabeth staff members participated. FY24 Key Activities No updates to report FY24 Measures No measures to report FY25 Results Pending

	2.1.5 Prevent violence and build capacity of the health care workforce to appropriately intervene when it is suspected. (St. Elizabeth) FY23 Key Activities Encouraged staff participation in mandatory educational modules as well as recruited task force members. Increase staff capacity for care management of survivors of human trafficking and sexual abuse. Updated human trafficking binder and distributed safety cards in English and Spanish titled: *Is Your Relationship Affecting Your Health?* Internal Human Trafficking Task Force Learning Series has led to implementation of series across lower midwest division. Implemented learning series into our community with onsite presentations and tours of our community partner programs. FY23 Measures Frequency of task force meetings: Monthly FY24 Key Activities ● Encouraged staff participation in mandatory educational modules as well as recruited task force members. ● Increase staff capacity for care management of survivors of human trafficking and sexual abuse.

	● Registered online classes: The online number includes the number of sign ons but does not account for the number of attendees that may have been watching together online. ● Hosted a human trafficking awareness conference. Many attendees made comments that they learned more about how human trafficking is present in our community and furthermore what to do to help contribute to reducing the issues human trafficking causes in our area. FY24 Measures # in person attendees: 135 # registered to attend online: 125 FY25 Results Pending
Related Activities	In addition to the specific strategies and key activities outlined above to address Behavioral Health (to be reported annually on Schedule H tax narrative), CHI Health also supports the following bodies of work related to this health need area: ● Support system advocacy efforts to increase behavioral health access and services in Nebraska. ● A family health center clinic located in Lincoln is being developed, with integrated behavioral health and a variety of services.
Planned Resources	The hospital will provide staff time, philanthropic cash grants, outreach communications, and program management support for these initiatives.

Planned Collaborators	● Nebraska Cancer Coalition ● The Bridge Behavioral Health ● CHI Health Clinics ● Lincoln Lancaster County Health Department ● Cultural Centers of Lincoln ● Rural primary care providers

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APPENDIX

A: Community Health Survey (2024 Version)

The Community Health Survey distributed in 2024 is included as an appendices. CHI worked with LLCHD and community partners to develop and implement a community health survey. This survey provided census tract estimates for the self-reported health status of the community.

B. Community Health Summit Presentation (2024)

The Community Health Summit was completed in September 2024 culminating the CHA cycle. At this presentation, we reviewed the process of the Community Health Assessment, including the survey and community conversations, that led to the selection of Community Health priorities.

A: COMMUNITY HEALTH SURVEY (2024 VERSION)

Lincoln Lancaster County Health Department
3131 O Street, Lincoln, NE 68510

Hello!

The survey below is a way to hear from you about how you experience the things that affect your health in the city of Lincoln. Even though some things may be similar, each person's experience of "health" is impacted by so many things.

On this survey, we do not want your name, age, or any other personal information, but we would really love to hear your story. Your story, and the story of others will be added together to give a more accurate picture of how we can make a healthier community for everyone. Please complete the 5 questions below, and return the survey to the community partner who is helping you. If you have any questions please call us at 402.441.8094.

To complete the survey online, or for language help, scan this QR code with your phone or go here online: https://redcap01.lincoln.ne.gov/redcap/surveys/?s=E94YTCYHHN&code=EGUH

See instructions on the reverse side for how to use the bar code

1. **What was the last major health issue you or your family experienced?**

2. **What worries you most about your health or the health of your family?**

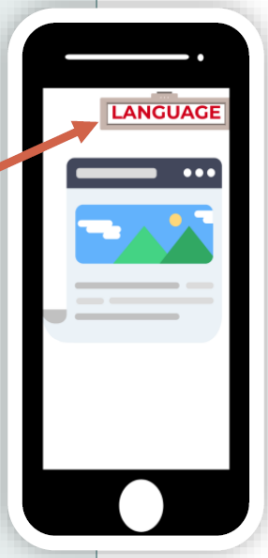
3. **The following are health concerns in the city of Lincoln and Lancaster County. In your experience, what are the top 3 health concerns?**

- ☐ Alcohol, Drugs, and Tobacco Use
- ☐ Diabetes
- ☐ Mental Health (For Example Depression, Anxiety, Post-Traumatic Stress, Suicide)
- ☐ Challenges Getting Healthy and Affordable Food
- ☐ Asthma
- ☐ Heart Disease (For example High Blood Pressure & Stroke)
- ☐ Getting Around Town Safely (Driving, Walking, & Riding
- ☐ Getting Enough Exercise
- ☐ Cancer
- ☐ Something Else (write in): _____

4. **What's something you do to be healthy?**

5. **What would make your neighborhood a healthier place for you or your family?**

For Language Help:



Para la encuesta en español

للمسح باللغة العربية

بۆ پرسیار بە کوردی

به زبان دری

به زبان فارسی

په پښتو

Для запитань українською мовою

中文问题

Đối với câu hỏi bằng tiếng Việt

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https://redcap01.lincoln.ne.gov/redcap/surveys/?s=E94YTCYHHN&code=EGUH

Phone:402.441.8094

HealthSurvey@lincoln.ne.gov