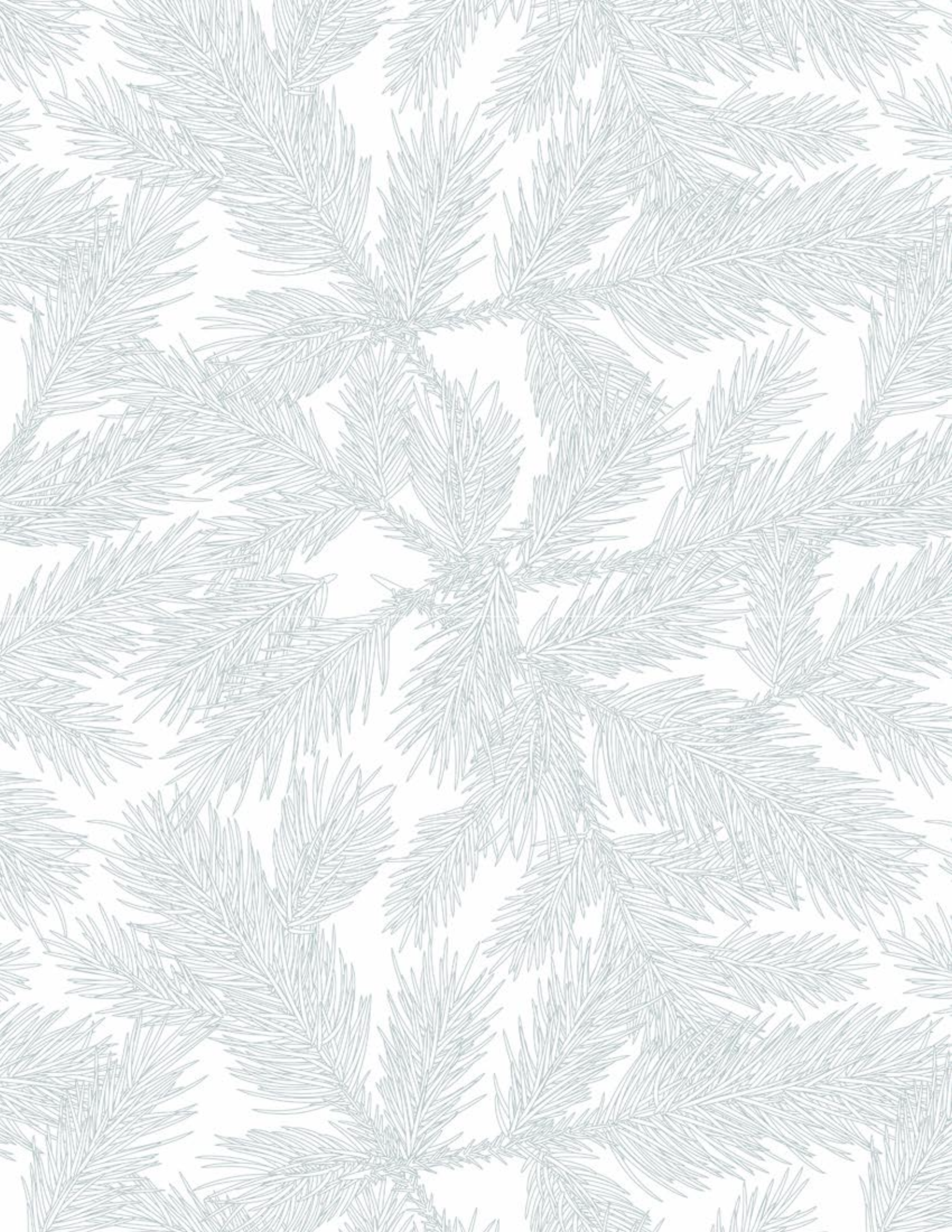
2019 Maine Shared
Community Health Needs Assessment

Piscataquis County

Northern Light Health℠



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Key companion documents available at www.mainechna.org:

- Piscataquis County Health Profile
- Penquis District Health Profile
- Maine State Health Profile
- Health Equity Data Summaries, including state level data by sex, race, Hispanic ethnicity, sexual orientation, educational attainment, and income

EXECUTIVE SUMMARY

PURPOSE

The Maine Shared Community Health Needs Assessment (Maine CHNA) is a collaborative effort amongst Central Maine Healthcare (CMHC), Northern Light Health (NLH), MaineGeneral Health (MGH), MaineHealth (MH), and the Maine Center for Disease Control and Prevention (Maine CDC). This unique public-private partnership is intended to assess the health needs of all who call Maine home.

- **Mission:** The Maine Shared CHNA is a dynamic public-private partnership that creates shared Community Health Needs Assessment reports, engages and activates communities, and supports data-driven health improvements for Maine people.
- **Vision:** The Maine Shared CHNA helps to turn data into action so that Maine will become the healthiest state in the US.

DEMOGRAPHICS

Piscataquis is one of two counties in the Penquis Public Health District. The population of Piscataquis County is 17,044 and 23.5% of the population is 65 years of age or older. The population is predominantly white (96.2%); 1.9% are two or more races and 1.2% are Hispanic. The median household income is $36,938. The high school graduation rate (83.3%) is lower than the state overall, as is the percent of the population with an associates' degree or higher (27.1%).

TOP HEALTH PRIORITIES

The forum held in Piscataquis County identified a list of health issues in that community through a voting methodology. See Appendix C for a description of how priorities were chosen.

Table 1: Piscataquis County Health Priorities

PRIORITY AREA	% OF VOTES
Mental Health*	21%
Social Determinants of Health*	19%
Access to Care*	17%
Substance Use*	14%
Older Adult Health/Healthy Aging*	12%

Also a statewide priority. For a complete list of statewide priorities, see state health profile on our website, **www.mainechna.org*

NEXT STEPS

This assessment report will be used to fulfill the Internal Revenue Service (IRS) requirements for non-profit hospitals as well as the Public Health Accreditation Board (PHAB) requirements for state and local public health departments. Required activities include:

- Obtaining input from the community, including providers and communities served, on leading health issues and unmet needs
- Evaluating previous actions taken to address needs identified in previous assessments
- Choosing (with justification) which health needs should be addressed
- For hospitals, creating an informed implementation strategy designed to address the identified needs
- For District Coordinating Councils, creating District Health Improvement Plans
- For the Maine CDC, creating an informed State Health Improvement Plan

In the coming months and years, policymakers, non-profits, businesses, academics, and other community partners may also use these reports for their own strategic planning purposes.

ACKNOWLEDGEMENTS

Funding for the Maine Shared CHNA is provided by Central Maine Healthcare, Northern Light Health, MaineGeneral Health, and MaineHealth, with generous in-kind support from the Maine Center for Disease Control and Prevention, an office of the Department of Health and Human Services and countless community partners and stakeholder groups. These stakeholder groups include the Metrics Committee, Data Analysis Workgroup, Community Engagement Committee, Local Planning Committees, and the Steering Committee. Special thanks to the Maine Health Data Organization for working with us to access their data. For a listing of committee members please visit **www.mainechna.org** and click on "About Maine CHNA."

Significant analysis was conducted by epidemiologists at the Maine CDC and the University of Southern Maine's Muskie School of Public Service. John Snow, Inc. provided analysis, methodology, and design support.

In addition, the Steering Committee gratefully acknowledges the countless community volunteers who gave their time and passionately committed to hosting, facilitating, attending, and engaging in this effort. From Aroostook to York, Oxford to Washington County, almost 2,000 Mainers gave their time and talent to this effort. Thank you.

HEALTH PRIORITIES

Health priorities for the county, public health district, and the state were developed through community participation and voting at community forums.

The forums were an opportunity for review of the County Health Profile, discussion of community needs, and prioritization in small break-out sessions followed by a forum session vote. Table 2 lists all eight priorities which arose from group break-out sessions at the community forum held in Piscataquis County. The priorities bolded are the five priorities which rose to the top.

This section provides a synthesis of findings for each of the top priorities. The following discussion of each priority are from several sources including the data in the county health data profiles, the information gathered at the community forums, and key informant interviews. See Appendix C for the complete methodology for all of these activities.

Table 2: Piscataquis County Forum Voting Results

PRIORITY AREA	% OF VOTES
Mental Health*	**21%**
Social Determinants of Health*	**19%**
Access to Care*	**17%**
Substance Use*	**14%**
Older Adult Health/ Healthy Aging*	**12%**
Physical Activity, Nutrition, and Weight*	9%
Environmental Health	7%
Pregnancy and Birth Outcomes	1%

Also a statewide priority. For a complete list of statewide priorities, see state health profile on our website,* **www.mainechna.org

MENTAL HEALTH

Mental health affects all segments of the population, regardless of age, socioeconomic status, race/ethnicity, or gender. Poor mental health contributes to a number of issues that affect both individuals and communities. Mental health disorders, when left unmanaged, may affect an individual's ability to form and maintain relationships with others, cope with challenges, and lead a healthy and productive life. Individuals with serious mental illness (e.g., major depression or schizophrenia) are at a higher risk of developing other medical conditions, including cardiovascular disease, diabetes, stroke, and Alzheimer's disease. While the reason for this link is unclear, research suggests that those with mental illness may experience more barriers to medical care and prevention strategies and may find it harder to care for themselves.[1]

More than 25% of adults with a mental health disorder also have a substance use disorder; this comorbidity occurs more among adults with depression, anxiety disorders, schizophrenia, and personality disorders. While mental health conditions may lead to drug or alcohol use, the reverse can also be true—the use of certain substances may cause individuals to experience symptoms of a mental health disorder.[2]

QUALITATIVE EVIDENCE

Participants cited depression and suicidality as the most pressing mental health issues in Piscataquis County. The isolation of rural living, stress, and Adverse Childhood Experiences (ACEs) were identified as potential risk factors for these issues. While many said there was a need for behavioral health services in general, they identified counseling crisis treatment as specific gaps in the spectrum of care.

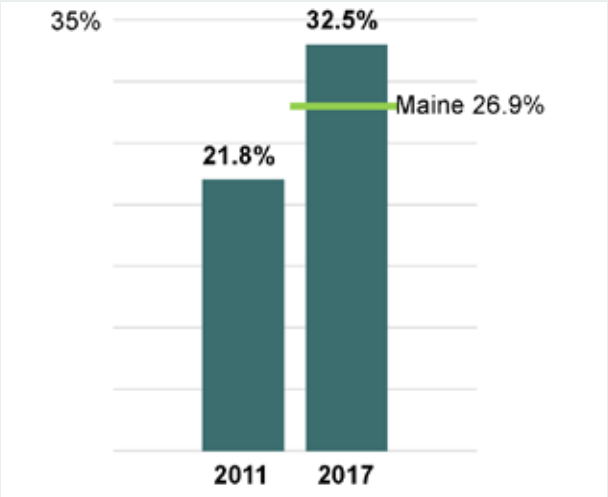
Though mental health issues affect all individuals, community forum participants identified youth, older adults, and the lesbian, gay, bisexual, transgender, and queer/questioning (LGBTQ) community as segments of the populations that were at risk for poor mental health. Forum participants discussed the need for increased education and counseling in schools. For the LGBTQ community, participants identified the need for culturally competent resources, especially for LGBTQ youth. Key informants working with the LGBTQ population explained that medical professionals are provided with little training and education about how to meet the needs of non-heterosexual individuals. While LGBTQ populations face the same mental health issues as the rest of the population, they are more than three times as likely to experience major depression and anxiety disorder.[3]

QUANTITATIVE EVIDENCE

In Piscataquis County:

- The percentage of adults with current symptoms of depression was higher than the state overall (11.8% vs. 8.8%) in 2014-2016.
- The percentage of high school students who reported that they had been sad/hopeless for more than two weeks in a row increased significantly between 2011 and 2017, from 21.8% to 32.5%. The percentage was significantly higher than the state overall (26.9%).

Figure 1: Sad/Hopeless for Two or More Weeks in a Row (High School)



- The percentage of high school students who reported having seriously considered suicide increased significantly between 2011 and 2017, from 9.6% to 17.4%.

See Key Indicators on page 18 as well as companion Health Profiles on our website **www.mainechna.org**. Those documents also include information on data sources and definitions.

COMMUNITY RESOURCES TO ADDRESS MENTAL HEALTH

The table below is a summary of the assets and needs identified through the community engagement process including review by local teams. It is important to note that this is not a complete list of available resources or existing needs in the community; other resources, like 211 Maine, and local/county resource guides should be referenced as a more comprehensive inventory.

Table 3: Assets and Gaps/Needs (Mental Health)

ASSETS	GAPS/NEEDS
• Community Health and Counseling Services • Mayo Regional Hospital Counseling Center • Partners for Peace • Charlotte White Center • Northern Light Acadia Hospital	• Lack of counseling access • Community care team • Social Workers • Teaching youth compassion, empathy, kindness • Substance use counselors • Psychiatric - Mental Health Nurse Practitioner (PMHNP)

SOCIAL DETERMINANTS OF HEALTH

The social determinants of health are the conditions in which people live, work, learn, and play that affect their health. Factors include socioeconomic status (e.g. education, income, poverty), housing, transportation, social norms and attitudes (e.g. racism and discrimination), crime and violence, literacy, and availability of resources (e.g. food, health care). These conditions influence an individuals' health and define quality of life for many segments of the population, but specifically those that are most vulnerable. According to the Kaiser Family Foundation, social factors like education, racism, and poverty accounted for over a third of total deaths in the United States.[4]

For example, lack of access to the use of a personal vehicle may be due to any number of factors including affording the vehicle itself, or the insurance, repairs, or even perhaps a license suspension or revocation. This is can be especially challenging in areas without reliable public transportation, like in rural Maine. This results in difficulty accessing health services, employment, and basic necessities (e.g., food, clothing, medication). This issue is further complicated for older adults with mobility impairments and individuals with disabilities who require specialized forms of transportation or extra assistance.

Food insecurity refers to a lack of resources to access enough nutritional food for a household. Food insecurity has both direct and indirect impacts on health for people of all ages, but is especially detrimental to children.[5] Chronic diseases and health conditions associated with food insecurity include asthma, low birthweight, diabetes, mental health issues, hypertension, and obesity. In Piscataquis County, 16.8% of households lack enough food to maintain healthy, active lifestyles for all household members (vs. 15.1% for the state overall).[6]

QUALITATIVE EVIDENCE

At the root of many of the health needs identified by forum participants in Piscataquis County is the intersection of poverty and rurality. The percentage of individuals and children living in poverty in Piscataquis County was higher than the state overall, and the median household income was nearly $15,000 lower than the state average; compounding this, 100% of the population in Piscataquis County lives in a rural area. Those that are rural and poor tend to have more uninsured residents, fewer options for transportation, and higher rates of unemployment – all of which holds true in Piscataquis County.

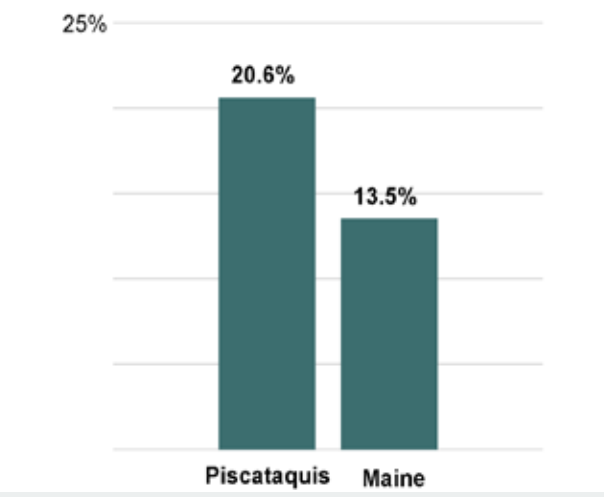
Beyond poverty and rurality, forum participants spoke about the tremendous impact that other underlying social determinants of health, particularly transportation, housing, and food insecurity have on residents in Piscataquis County. Access to affordable and reliable forms of transportation was problematic, not only because it affects one's ability to access health care, but other goods and services (e.g. employment, groceries, socializing, etc.). Homeless adults were identified as a population in need of support. Participants identified many community assets in the realm of nutrition and healthy foods, yet many still saw a gap in services and resources.

QUANTITATIVE EVIDENCE

In Piscataquis County:

- 100% of the population lives in a rural area (vs. 61.3% in the state overall).
- The unemployment rate was higher than the state overall (5.1% vs. 3.8%) in 2015–2017.

Figure 2: Individuals Living in Poverty



- The percentage of individuals living in poverty was higher than the state overall (20.6% vs. 13.5%) in 2012–2016.
- The percentage of children living in poverty was higher than the state overall (31.4% vs. 17.2%) in 2012–2016.
- The percentage of high school students who reported having experienced at least 3 adverse childhood experiences was significantly higher than the state overall (32.2% vs. 23.4%) in 2017.
- The median household income was over $10,000 less than the state overall– $36,938 vs. $50,826 in 2012-2016.
- The percentage of households that lack enough food to maintain healthy, active lifestyles for all household members was higher than the state overall (16.8% vs. 15.1%) in 2014-2015.

See Key Indicators on page 18 as well as companion Health Profiles on our website **www.mainechna.org**. Those documents also include information on data sources and definitions.

COMMUNITY RESOURCES TO ADDRESS SOCIAL DETERMINANTS OF HEALTH

The table below is a summary of the assets and needs identified through the community engagement process including review by local teams. It is important to note that this is not a complete list of available resources or existing needs in the community; other resources, like 211 Maine, and local/county resource guides should be referenced as a more comprehensive inventory.

Table 4: Assets and Gaps/Needs (Social Determinants of Health)

ASSETS	GAPS/NEEDS
• Access to healthy foods-food cupboards, food banks, community dinners, redistributing food from Good Shepherd to county pantries, food insecurity screening at Mayo Hospital, farmshare, home gardeners and growers, 4H classes about how to grow food, farmers that donate fresh food • Workforce-vocational rehab for people with disabilities, tele-educator programs • Helping Hands with Heart • Transportation through Penquis • ACEs training • Piscataquis Regional YMCA programs • School wellness programs • Meals on Wheels	• Patient financial assistance • Mayo Hospital Nursing Program • Living wage • Lack of employment assistance • Need mentoring across ages • Improving access to employment • Healthy food • Basic affordable care • Mental health services • Transportation • Department of Health and Human Services (DHHS) support • Universal basic income • Shrinking social supports • Utilize public landscaping for food

ACCESS TO CARE

Whether an individual has health insurance—and the extent to which it helps to pay for needed acute services and access to a full continuum of high-quality, timely and accessible preventive and disease management or follow-up services—is critical to overall health and well-being. Access to a usual source of primary care is particularly important, since it greatly affects the individual's ability to receive regular preventive, routine and urgent care and to manage chronic conditions.

Barriers to accessing care also include the availability and affordability of care. Low-income individuals, people of color, those with less than a high school diploma, and LGBTQ populations face even greater disparities in health insurance coverage compared to those who are straight, white, and well-educated. For example, in Maine, over 20% of American Indian/Alaska Natives and Black/African American adults report they are unable to receive or have delayed medical care due to cost, compared to 10% of white adults. Compared to heterosexual residents (11.6%), 19.3% of bisexual residents, and 22.5% of residents who identified as something other than heterosexual, gay or lesbian, or bisexual, were uninsured. More information on health disparities by race, ethnicity, education, sex, and sexual orientation can be found in the Health Equity Data Summaries, available at www.mainechna.org.

QUALITATIVE EVIDENCE

Forum participants felt that deductibles, co-pays, and prescription medications are unaffordable and prevent people from seeking health care – even those with insurance. Forum participants cited a need for access to clinics or health services where payments could be made on a sliding scale based on income. For those with MaineCare, access to behavioral health and dental health services were particularly limited.

Beyond the need for Medicaid expansion, which was signed into law on January 3, 2019, forum participants and key informants discussed the need for comprehensive and affordable health services, specifically dental care, substance use specialists, mental health counselors, home health services, walk-in clinics, and oncology.

Even for those with insurance, deductibles, co-pays, and prescription medications are unaffordable and prevent people from seeking care. Forum participants cited a need for access to clinics or health services where payments could be made on a sliding scale based on income. For those with MaineCare, access to behavioral health and dental health services were particularly limited.

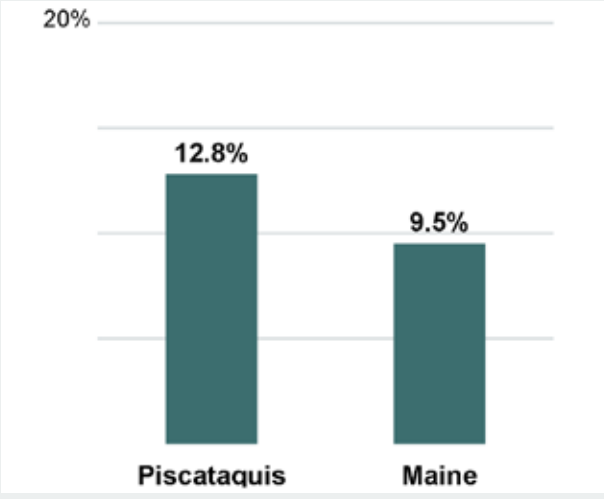
Many forum participants and key informants identified the social determinants of health—particularly inability to access reliable and affordable forms of transportation—as significant barriers to care. These are discussed in more details in the "Social Determinants of Health" section of this report above.

QUANTITATIVE EVIDENCE

In Piscataquis County:

- The percentage of the population that is uninsured was higher than the state overall (12.8% vs. 9.5%) in 2012-2016.

Figure 3: Population Uninsured (2012-2016)



- The percentage of the population with a usual primary care provider was lower than the state overall (85.4% vs. 87.6%) in 2014-2016.
- The ratio of primary care physicians to 100,000 was lower compared to the state overall (18.3 vs 67.3) in 2017.
- The percent of adults who visited a dentist in the past year was significantly lower than the state overall (55.5% vs. 63.3%) in 2016.

See Key Indicators on page 18 as well as companion Health Profiles on our website www.mainechna.org. Those documents also include information on data sources and definitions.

COMMUNITY RESOURCES TO ADDRESS ACCESS TO CARE

The table below is a summary of the assets and needs identified through the community engagement process including review by local teams. It is important to note that this is not a complete list of available resources or existing needs in the community; other resources, like 211 Maine, and local/county resource guides should be referenced as a more comprehensive inventory.

Table 5: Assets and Gaps/Needs (Access to Care)

ASSETS	GAPS/NEEDS
• Mayo Regional Hospital and Primary Care Providers • Dental Clinics • Recovery clinics through hospitals • Helping Hands with Heart • Transportation - Lynx, area taxis • Northern Light CA Dean Hospital • Penquis	• Piscataquis DHHS Offices • Childbirth education • Universal parent education • Universal Health Care • Walk in Clinics • Planned Parenthood • Penquis transportation cancer care • Affordable deductibles • Revamp payer system • Insurance access donut hole

SUBSTANCE USE

The Substance Abuse and Mental Health Services Administration (SAMHSA) estimated that 8% of adults in the United States have had a substance use disorder in the past year.[7] Tobacco, alcohol, marijuana, and nonmedical use of prescription pain relievers (e.g. OxyContin, Vicodin) are the leading substance use health issues for adults.[8] Tobacco, alcohol, and marijuana are the most common substances misused by adolescents, followed by amphetamines (e.g. Adderall) and nonmedical use of prescription pain relievers.[9] Those with substance use disorders often face a number of barriers that limit access and hinder engagement in care; one study estimates that more than 50% of individuals with mental health and substance use issues are not engaged in needed services.[10]

Barriers to care include a lack of education, awareness, and understanding around the signs, symptoms, risk factors, and consequences associated with substance use, social stigma, and workforce shortages. Statewide, many forum participants and key informant interviewees identified gaps in access to substance use treatment and recovery services. Finally, those who are uninsured or underinsured are more likely to face barriers to care, and historically, coverage for substance use services has been less comprehensive than for physical health services. This is further complicated by the cost of co-pays, transportation, and medications, even for those who are eligible for free or discounted services, or for those with commercial insurance, as many private substance use treatment providers do not accept insurance and require cash payments.

QUALITATIVE EVIDENCE

Participants discussed the need for more comprehensive, accessible, and affordable services to help those with substance use issues. The need for counselors, recovery coaches, and support groups like Alcoholics Anonymous and Narcotics Anonymous were identified as specific gaps in the spectrum of care.

In terms of specific substances, forum participants felt that opioid use was the leading issue for individuals between the ages of 20 and 60. Participants suggested poverty as a risk factor for heroin use, as it is more accessible than prescription drugs.

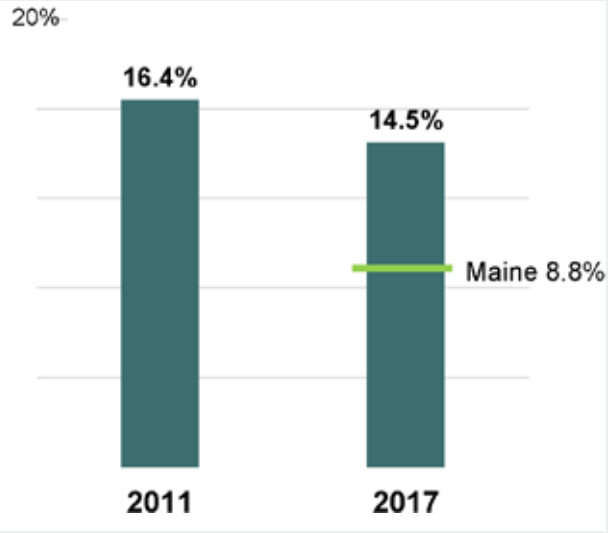
As evidenced in the quantitative data below, tobacco use is also an issue in the county. On a statewide level, the use of e-cigarettes, vaping, and marijuana are emerging issues, especially for younger populations.

QUANTITATIVE EVIDENCE

In Piscataquis County:

- Past-30-day cigarette smoking amongst high school students was significantly higher than the state overall (14.5% vs. 8.8%) in 2017.
- Environmental tobacco smoke exposure amongst high school students was significantly higher than the state overall (48.3% vs. 31.1%) in 2017.
- Environmental tobacco smoke exposure amongst middle school students (34.6%) were significantly higher compared to the state overall (34.6% vs. 22.8%) in 2017.

Figure 4: Past-30-Day Cigarette Smoking (High School)



- Past-30-day misuse of prescription drugs amongst middle school students was significantly higher than the state overall (3.6% vs. 1.5%) in 2017.

See Key Indicators on page 18 as well as companion Health Profiles on our website **www.mainechna.org**. Those documents also include information on data sources and definitions.

COMMUNITY RESOURCES TO ADDRESS SUBSTANCE USE

The table below is a summary of the assets and needs identified through the community engagement process including review by local teams. It is important to note that this is not a complete list of available resources or existing needs in the community; other resources, like 211 Maine, and local/county resource guides should be referenced as a more comprehensive inventory.

Table 6: Assets and Gaps/Needs (Substance Use)

ASSETS	GAPS/NEEDS
• Local hypnotist • National Alliance on Mental Illness (NAMI) Maine • Public health grants • Mayo Regional Hospital grant • Primary care • Schools • Community Health Counseling Services • Charlotte White Center	• Alcoholics Anonymous/Narcotics Anonymous • Substance use counseling • Recovery coaches

OLDER ADULT HEALTH/HEALTHY AGING

The World Health Organization's definition of active aging and support services are those that "optimize opportunities for health, participation and security in order to enhance quality of life as people age."[11] Maine's older population is growing in all parts of the state, and it remains the oldest state in the nation as defined by median population—44.7 in 2017 compared to the national median age of 38. Gains in human longevity create an opportunity for active lives well after age 65. As this population grows in size, there is growing interest in wellness in addition to the infrastructure of health services for an older population.[12]

QUALITATIVE EVIDENCE

Forum participants and key informants identified a need for education and services to address depression and isolation amongst older adults. Older adults experience loneliness for many reasons; it may come as a result of living alone, limited connections with family, friends, or communities, and impediments to living independently. Limited access to transportation was identified as a key barrier to accessing health care for older adults, but also hinders their ability to access other needed goods and services (groceries, prescriptions, e.g. physical activity). The large, rural geography of Piscataquis County compounds this issue, making it even more difficult for some older adults to access the services they want and need. While "aging in place" or aging in the home is a population concept, this may be impossible for some older residents, for financial, medical, or safety reasons. With aging in place as a preferred lifestyle, concerns around isolation become more significant.

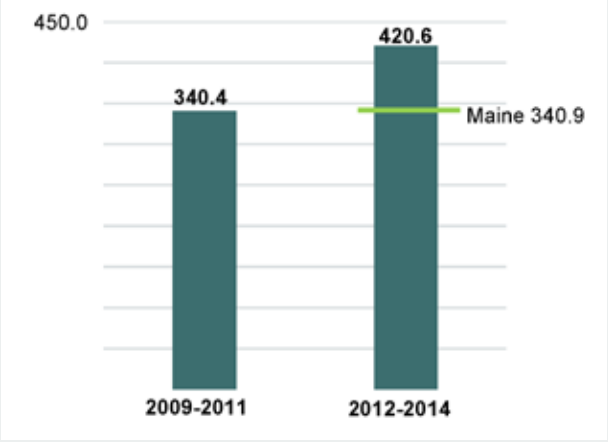
It is well known that rates of chronic and complex conditions, like cancer, heart disease, and cognitive decline (e.g. Alzheimer's, Parkinson's, dementia) are higher amongst older adults than the rest of the population. Forum participants identified a need for specific health care service and support types for older adults in Piscataquis County, including assisted living, providers that can meet people in their homes, and education/support around mobility and falls.

QUANTITATIVE EVIDENCE

In Piscataquis County:

- The percentage of adults (45+) reporting cognitive decline in the past 12 months was higher than the state overall (11.2% vs. 10.3%) in 2016.
- The fall-related injury (unintentional) emergency department rate per 10,000 significantly increased between 2009-2011 and 2012-2014 (340.4 to 420.6). The rate was significantly higher than the state overall (420.6 vs. 340.9) between 2012–2014.
- The traumatic brain injury emergency department rate per 10,000 population significantly increased between 2009-2011 and 2014-2017, from 67.9 to 87.1.

Figure 5: Fall Related Injury (Unintentional) ED Rate Per 10,000



See Key Indicators on page 18 as well as companion Health Profiles on our website www.mainechna.org. Those documents also include information on data sources and definitions.

COMMUNITY RESOURCES TO ADDRESS OLDER ADULT HEALTH/HEALTHY AGING

The community forum process in Piscataquis County did not collect assets and gaps for the priority area of Older Adult Health/Healthy Aging.

COMMUNITY CHARACTERISTICS

AGE DISTRIBUTION

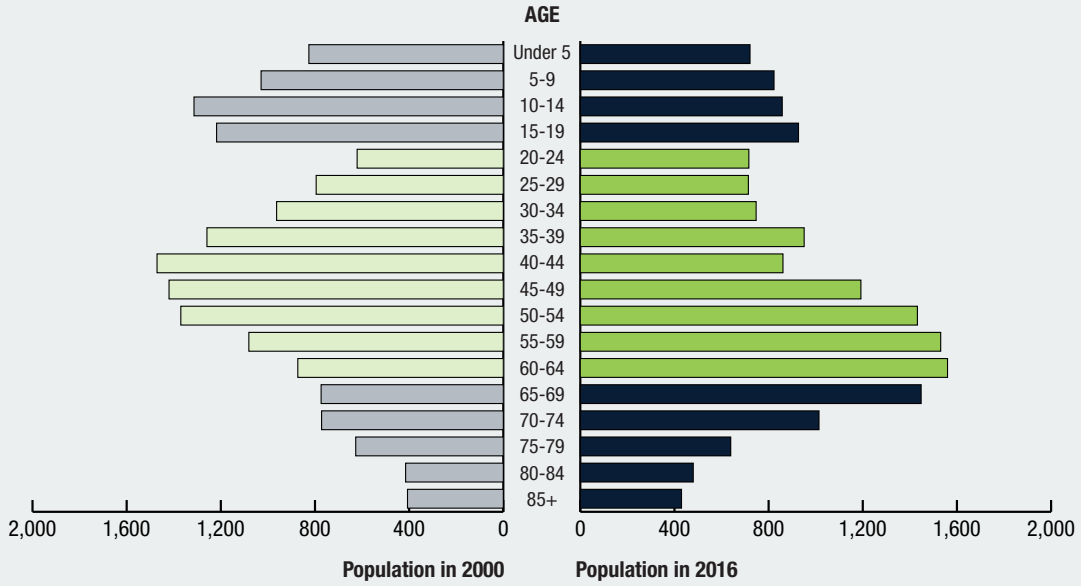
Age is a fundamental factor to consider when assessing individual and community health status. In particular, older adults with chronic conditions typically have more physical and mental health vulnerabilities, and are more likely to rely on immediate community resources for support compared to young people.[13] An aging population leads to increased pressure on the healthcare system and shortages in the healthcare workforce, especially geriatricians, nurses, social workers, and direct care workers like home health aides and certified nursing assistants, to meet the needs of older adults.[14]

The following is a summary of findings related to community characteristics for Piscataquis County. Conclusions were drawn from quantitative data and qualitative information collected through the community forum and key informant interviews.

For key companion documents visit **www.mainechna.org** and click on "Health Profiles."

- In Piscataquis County, 23.5% of the population is 65 years of age or older.

Figure 6: Age Histogram of Piscataquis County



RACE/ETHNICITY

An extensive body of research illustrates the health disparities that exist for racial/ethnic minorities, non-English speakers, and foreign-born populations. According to the US CDC, non-Hispanic Blacks have higher rates of premature death, infant mortality, and preventable hospitalization than non-Hispanic Whites.[15] Individuals with limited English proficiency (LEP), defined as the ability to read, speak, write, or understand English "less than very well," have lower levels of health literacy or comprehension of medical information. This leads to higher rates of medical issues and complications, such as adverse reactions to medication.[16,17] Cultural differences such as, but not limited to, the expectations of who is involved in medical decisions can also impact access to health care and to health information. These disparities show the disproportionate and often avoidable inequities that exist within communities and reinforce the importance of understanding the demographic makeup of a community to identify populations more likely to experience adverse health outcomes.

In Piscataquis County:

- The population is predominantly White (96.2%); 1.9% of the population is two or more races, and 1.2% of the population is Hispanic.

Table 7: Race/Ethnicity in Piscataquis County 2012-2016

	PERCENT/NUMBER
American Indian/Alaskan Native	0.6% / 94
Asian	0.4% / 64
Black/African American	0.5% / 88
Hispanic	1.2% / 210
Some other race	0.4% / 69
Two or more races	1.9% / 328
White	96.2% / 16,401

SOCIOECONOMIC STATUS

Socioeconomic status (SES) is measured by such things as income, poverty, employment, education, and neighborhood characteristics. Individuals with low SES are more likely to have chronic health issues, die prematurely, and have overall poor health. Low income status is highly correlated to a lower than average life expectancy. Lack of gainful employment is linked to several barriers to care, such as lack of health insurance, inability to pay for health care services, and inability to pay for transportation to receive services. Higher education is associated with improved health outcomes and social development at individual and community levels. The health benefits of higher education typically include better access to resources, safer and more stable housing, and better engagement with providers. Factors associated with low education impact an individual's ability to navigate the healthcare system, disparities in personal health behaviors, and exposure to chronic stress. It is important to note that, while education affects health, poor health status may also be a barrier to education. Table 10, below, includes a number of data points comparing Piscataquis County to the state overall.

Additionally, in Piscataquis County:

- The estimated high school graduation rate was lower than the state overall (83.3% vs. 86.9%) in 2017.
- The percent of the population over 25 with an associate's degree or higher was lower than the state overall (27.1% vs. 37.3%) in 2012-2016.

Table 8: Socioeconomic Status in Piscataquis County, 2012–2016

	PISCATAQUIS/MAINE
Median household income	$36,938 / $50,826
Unemployment rate	5.1% / 3.8%
Individuals living in poverty	20.6% / 13.5%
Children living in poverty	31.4% / 17.2%
65+ living alone	- / 45.3%

SPECIAL POPULATIONS

Through community engagement activities, several populations in Piscataquis County were identified as being particularly vulnerable or at-risk for poor health or health inequities.

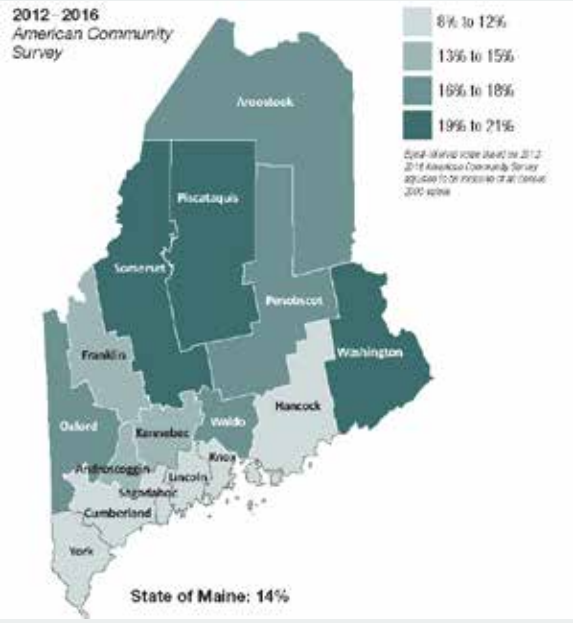
Older Adults

Maine is the oldest state in the nation by median age. Older adults are more likely to develop chronic illnesses and related disabilities, such as heart disease, hypertension, diabetes, depression, anxiety, Alzheimer's disease, Parkinson's disease, and dementia. They also lose the ability to live independently at home. According to qualitative information gathered through interviews and the Piscataquis County Community Forum, issues around healthy aging and the health of older adults were priorities in Piscataquis County—specifically barriers to access to care for older adults (e.g. transportation, limited financial resources) and depression/isolation.

Low-Income/Rural

Piscataquis County is the only county in Maine where 100% of the population lives in a rural area. Nationally, an ever-evolving economic structure has placed extra strain on individuals and families living in large rural areas with low population density; some of the most well-known causes and conditions of hardship include a lack of and outsourcing of jobs, limited long-term employment opportunities, barriers to accessing health care services, and the need for a personal vehicle. Generational poverty—when a family has lived in poverty for at least two generations—differs from situational poverty in that it typically includes the constant presence of hopelessness. This lack of hope and near-constant state of perpetual crisis creates a cycle of poverty that persists from one generation to the next. Forum participants in Piscataquis County identified low-income individuals, families, and older adult populations that were particularly vulnerable to poor health.

Figure 7: Poverty in the State of Maine



In addition to the data collected and analyzed for the County Health Profiles, the Maine CDC created Health Equity Data Summaries (available at **www.mainechna.org** which provides selected data analyzed by sex, race, Hispanic ethnicity, sexual orientation, educational attainment, and income. These data are at the state level, because too much county level data is suppressed due to small numbers and privacy concerns. Moreover, previous analyses have shown that health disparities found at the state level are generally similar in individual counties.

KEY INDICATORS

The Key Indicators provide an overview of the health of each county. They are a broad sampling of health topics, including health behaviors, outcomes, living conditions, and health care quality and access. See the Piscataquis County Health Profile for a full set of data. The table uses symbols to show whether there are important changes in each indicator over time, and to show if local data is notably better or worse than the state or the nation. See the box below for a key to the symbols:

CHANGE shows **statistically significant changes** in the indicator over time, based on 95% confidence interval (see description above).

★	means the health issue or problem is **getting better** over time.
!	means the health issue or problem is **getting worse** over time.
○	means the change was not statistically significant.
N/A	means there is not enough data to make a comparison.

BENCHMARK compares Piscataquis County data to state and national data, based on 95% confidence interval (see description above).

★	means Piscataquis County is doing **significantly better** than the state or national average.
!	means Piscataquis County is doing **significantly worse** than the state or national average.
○	means there is no statistically significant difference between the data points.
N/A	means there is not enough data to make a comparison.

ADDITIONAL SYMBOLS

*	means results may be statistically unreliable due to small numbers, use caution when interpreting.
—	means data is unavailable because of lack of data or suppressed data due to a small number of respondents.

	PISCATAQUIS COUNTY DATA			BENCHMARKS			
KEY INDICATOR	**POINT 1**	**POINT 2**	**CHANGE**	**MAINE**	**+/–**	**U.S.**	**+/–**
SOCIAL, COMMUNITY & PHYSICAL ENVIRONMENT							
Children living in poverty	–	2012-2016 **31.4%**	N/A	2012-2016 **17.2%**	N/A	2016 **21.1%**	N/A
Median household income	2007-2011 **$35,123**	2012-2016 **$36,938**	N/A	2012-2016 **$50,826**	N/A	2016 **$57,617**	N/A
Estimated high school student graduation rate	2014 **83.3%**	2017 **83.3%**	N/A	2017 **86.9%**	N/A	–	N/A
Food insecurity	2012-2013 **17.0%**	2014-2015 **16.8%**	N/A	2014-2015 **15.1%**	N/A	2015 **13.4%**	N/A
HEALTH OUTCOMES							
14 or more days lost due to poor physical health	2011-2013 **20.5%**	2014-2016 **29.7%**	○	2014-2016 **19.6%**	!	2016 **11.4%**	N/A
14 or more days lost due to poor mental health	2011-2013 **21.9*%**	2014-2016 **24.2%**	○	2014-2016 **16.7%**	○	2016 **11.2%**	N/A
Years of potential life lost per 100,000 population	2010-2012 **8,911.0**	2014-2016 **8,138.9**	○	2014-2016 **6,529.2**	○	2014-2016 **6,658.0**	N/A
All cancer deaths per 100,000 population	2007-2011 **208.7**	2012-2016 **206.6**	○	2012-2016 **173.8**	!	2011-2015 **163.5**	!
Cardiovascular disease deaths per 100,000 population	2007-2011 **254.2**	2012-2016 **238.2**	○	2012-2016 **195.8**	!	2016 **218.2**	○
Diabetes	2011-2013 **12.1%**	2014-2016 **9.8%**	○	2014-2016 **10.0%**	○	2016 **10.5%**	○
Chronic obstructive pulmonary disease (COPD)	2011-2013 **9.1%**	2014-2016 **10.5%**	○	2014-2016 **7.8%**	○	2016 **6.3%**	!
Obesity (adults)	2011 **32.0%**	2016 **35.1%**	○	2016 **29.6%**	○	2016 **29.9%**	○
Obesity (high school students)	2011 **18.9%**	2017 **23.0%**	○	2017 **15.0%**	!	–	N/A
Obesity (middle school students)	2015 **19.7%**	2017 **18.0%**	○	2017 **15.3%**	○	–	N/A
Infant deaths per 1,000 live births	2007-2011 **9.3***	2012-2016 **8.3***	N/A	2012-2016 **6.5**	N/A	2012-2016 **5.9**	N/A
Cognitive decline	–	2016 **11.2*%**	N/A	2016 **10.3%**	○	2016 **10.6%**	○
Lyme disease new cases per 100,000 population	2008-2012 **13.8**	2013-2017 **15.3**	N/A	2013-2017 **96.5**	N/A	2016 **11.3**	N/A
Chlamydia new cases per 100,000 population	2008-2012 **149.1**	2013-2017 **173.6**	N/A	2013-2017 **293.4**	N/A	2016 **494.7**	N/A
Fall-related injury (unintentional) emergency department rate per 10,000 population	2009-2011 **340.4**	2012-2014 **420.6**	!	2012-2014 **340.9**	!	–	N/A
Suicide deaths per 100,000 population	2007-2011 **26.5%**	2012-2016 **16.3*%**	○	2012-2016 **15.9**	○	2016 **13.5%**	○
Overdose deaths per 100,000 population	2007-2011 **18.9**	2012-2016 **17.7**	○	2012-2016 **18.1**	○	2016 **19.8**	○

	PISCATAQUIS COUNTY DATA			BENCHMARKS			
KEY INDICATOR	**POINT 1**	**POINT 2**	**CHANGE**	**MAINE**	**+/–**	**U.S.**	**+/–**
HEALTH CARE ACCESS AND QUALITY							
Uninsured	–	2012-2016 **12.8%**	N/A	2012-2016 **9.5%**	N/A	2016 **8.6%**	N/A
Ratio of primary care physicians to 100,000 population	–	2017 **18.3**	N/A	2017 **67.3**	N/A	–	N/A
Ratio of psychiatrists to 100,000 population	–	2017 **5.7**	N/A	2017 **8.4**	N/A	–	N/A
Ratio of practicing dentists to 100,000 population	–	2017 **14.8**	N/A	2017 **32.1**	N/A	–	N/A
Ambulatory care-sensitive condition hospitalizations per 10,000 population	–	2016 **99.3**	N/A	2016 **74.6**	N/A	–	N/A
Two-year-olds up-to-date with recommended immunizations	2014 **63.1%**	2017 **62.5%**	N/A	2017 **73.7%**	N/A	–	N/A
HEALTH BEHAVIORS							
Sedentary lifestyle – no leisure-time physical activity in past month (adults)	2011 **31.1%**	2016 **23.5%**	○	2016 **20.6%**	○	2016 **23.2%**	N/A
Chronic heavy drinking (adults)	2011-2013 **5.8*%**	2014-2016 **5.6%**	○	2014-2016 **7.6%**	○	2016 **5.9%**	N/A
Past-30-day alcohol use (high school students)	2011 **27.9%**	2017 **21.4%**	○	2017 **22.5%**	○	–	N/A
Past-30-day alcohol use (middle school students)	2011 **4.9%**	2017 **2.5%**	○	2017 **3.7%**	○	–	N/A
Past-30-day marijuana use (high school students)	2011 **20.0%**	2017 **19.4%**	○	2017 **19.3%**	○	–	N/A
Past-30-day marijuana use (middle school students)	2011 **4.1%**	2017 **3.6%**	○	2017 **3.6%**	○	–	N/A
Past-30-day misuse of prescription drugs (high school students)	2011 **10.3%**	2017 **3.6%**	★	2017 **5.9%**	★	–	N/A
Past-30-day misuse of prescription drugs (middle school students)	2011 **3.6%**	2017 **3.6%**	○	2017 **1.5%**	!	–	N/A
Current (every day or some days) smoking (adults)	2011-2012 **21.7*%**	2016 **20.8%**	○	2016 **19.8%**	○	2016 **17.0%**	N/A
Past-30-day cigarette smoking (high school students)	2011 **16.4%**	2017 **14.5%**	○	2017 **8.8%**	!	–	N/A
Past-30-day cigarette smoking (middle school students)	2011 **4.9%**	–	N/A	2017 **1.9%**	N/A	–	N/A

Leading Causes of Death

The following chart compares the leading causes of death for the state of Maine and Piscataquis County.

RANK	STATE OF MAINE	PISCATAQUIS COUNTY
1	Cancer	Cancer (tie for 1)
2	Heart disease	Heart disease (tie for 1)
3	Chronic lower respiratory diseases	Unintentional injuries
4	Unintentional injuries	Chronic lower respiratory diseases
5	Stroke	Stroke

APPENDIX A: REFERENCES

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APPENDIX B: HISTORY AND GOVERNANCE

Maine is one of the few states in the nation that conducts a shared public-private statewide community health needs assessment—the Maine Shared CHNA—which was born out of a unique public-private partnership. The partnership began as the OneMaine Health Collaborative in 2007, involving Northern Light Health (formerly Eastern Maine Healthcare Systems), MaineGeneral Health, and MaineHealth. After conversations with the Statewide Coordinating Council for Public Health, the Maine Center for Disease Control and Prevention, an office of the Department of Health and Human Services joined in 2012. In 2013, Central Maine Healthcare (CMHC) joined the group and in 2014, leadership from the signatory partners signed a formal Memorandum of Understanding outlining mutual goals and expectations. A charter was drafted by all five partners to guide a statewide assessment process.

The Maine Shared CHNA is intended to coordinate state and county needs assessments to meet the needs of hospitals, to support state and local public health accreditation efforts, and to provide valuable population health assessment data for a wide variety of organizations across Maine. Our vision is to turn data into action so that Maine will become the healthiest state in the nation.

The Metrics Committee drafted the list of data indicators, and the Community Engagement Committee drafted a method to ensure a robust community engagement process – both of which were approved by the Steering Committee. Each committee was led by the Program Manager, who was the primary point of contact for all entities and partners and was responsible for drafting and implementing the work plans which drove this process. A more detailed outline of these efforts follows. For more information about the committee structure and our partners, please visit the, "About Us," page on our website **www.mainechna.org**.

The Metrics Committee is charged with updating the common set of health indicators; developing the preliminary data analysis plan reviewing that indicators on emerging health issues; making recommendations for annual data-related activities; and estimating projected costs associated with these recommendations. Members of the Metrics Committee create processes and deliverables for the Steering Committee to review and approve. Members of the Metrics Committee include representatives of the Steering Committee, public health system partners, Federally Qualified Health Centers, academia, non-profits, and others with experience in epidemiology.

Figure 6: Maine Shared CHNA Governance Structure, 2018–2019

The Community Engagement Committee is charged with making recommendations for approval by the Steering Committee outlining a consistent and robust community engagement process. This process should identify priorities among significant health issues and identify local, regional, or statewide assets and resources that may potentially address the significant health needs identified. Members of the Community Engagement Committee share their expertise create processes and deliverables for the Steering Committee to review and approve. Members of the Community Engagement committee include representatives of the Steering Committee, public health system partners, Federally Qualified Health Centers, academia, and Maine non-profits such as United Ways, Community Action Programs, and others with an interest in broad community representation and input.

APPENDIX C: METHODOLOGY

Per the Maine Shared CHNA charter, the effort was conducted by the Steering Committee, Metrics Committee, and Community Engagement Committee. The Community Engagement Committee was led by the program manager who was the point of contact for all entities and partners and was responsible for meeting planning and facilitation. These committees worked in partnership with Maine CDC and the contracted vendor, JSI. Maine CDC and its epidemiology contractor, University of Southern Maine, provided a significant amount of data analyses, technical support, and website development. JSI was contracted to support forum facilitation, a subset of data analysis, profile development, and report writing.

The Maine Shared CHNA process was rolled out in three stages:

Data Analysis

- **County Health Profiles** were released in September 2018. Two hundred indicators were selected to describe health outcomes, health behaviors, healthcare access and quality, and the social, community, and physical environments that affect health and wellness. See Piscataquis County Health Profile at www.mainechna.org.
- **District Health Profiles** were released in November 2018.
- **City Health Profiles** for Lewiston/Auburn, Bangor, and Portland were released in January 2019.

Outreach and Engagement

- **Community Outreach** was conducted between September 2018 and January 2019. Community forums with residents and service providers were held in all 16 counties. All forms of engagement included forums and key informant interviews. Some local planning teams also conducted additional targeted outreach, focus groups, and surveys. The purpose of this outreach was to gather feedback on data and to identify health priorities, community assets, and gaps in resources to be used in health improvement planning.

Final Reports

- **Final CHNA reports** for the state, each county, and districts were released in April 2019. These reports included information from the health data profiles, summaries of qualitative information gathered from engagement activities, and a presentation of community health priorities.

DATA ANALYSIS

The Metrics committee identified the approximately 198 health indicators from 29 sources to be used for the Maine Shared CHNA. The initial list was based on the indicators from the 2016 effort. This list was first scored against the following set of criteria:

- Was it already analyzed for a MeCDC program?
- Is the data from this indicator collected within the last few years?
- Does it “round out” the description of population health?
- Does it address one or more social determinants of health?
- Describe an emerging health issue?
- Does it measure something “actionable” or “impactful”?
- Does the indicator measure an issue that is known to have high health and social costs?

Further refinement included ensuring a mix of Outcomes, Behaviors, Healthcare Access and Quality, as well as Social, Community, and Physical Environment Measures. The final list was then arranged under the current 24 health topics as outlined in the Data Health Profiles.

The Metrics Committee, led by Maine CDC staff, then drafted a data analysis plan that included which indicator was to be analyzed by which demographic characteristics (i.e. gender, race/ethnicity, sexual orientation, income, educational attainment, and insurance status), and geographic stratification (state, public health district, county, and city). This analysis plan was then approved by the Steering Committee.

The Data Analysis Workgroup used the set of indicators and the data analysis plan, as laid out by the Metrics Committee, and collected and analyzed the data. Members of the Data Analysis Workgroup shared their years of epidemiological and data analysis experience and knowledge of best practices to inform all aspects of the final health profiles at the county, public health district, city, and state level. This included not only the data analysis, but recommendations on best practices for data presentation and visualization.

The **Data Analysis Workgroup** met weekly from March through August 2018 to discuss and coordinate an approach for analysis and data sharing between the University of Southern Maine (USM), Maine CDC, and John Snow, Inc. (JSI). The group developed rules regarding time frame (e.g.,, comparisons across time were to be of periods of equal duration; the most recent data used was from 2010 to present), handling complexity (e.g., how to combine years of data when an indicator's data definition changed over time, such as ICD9/ICD10 coding or BRFSS question changes), benchmarking, map and graph formats, and iconography to be used in profile tables. Some of the methodology is documented in the Data Definitions section of each health profile. More is provided in the "2018 Maine Shared CHNA Data Analysis Technical Definitions" posted on the Maine Shared CHNA website.

Data Health Profiles include:

- 1 State Health Profile
- 16 County Health Profiles
- 5 Public Health District Profiles (One for each of the geographically-based multi-county district. A Tribal District Profile was not possible at this time.)
- 3 City Health Profiles (Bangor, Lewiston/ Auburn, and Portland)
- 6 Health Equity Data Sheets, one for each of the following demographic characteristics:
  - Sex
  - Race
  - Hispanic ethnicity
  - Sexual orientation
  - Educational attainment
  - Income

*These reports, along with an interactive data form, can be found under the Health Profiles tab at **www.mainechna.org**.*

OUTREACH AND ENGAGEMENT

Community outreach and engagement for the Maine Shared CHNA included coordination at the statewide, public health district, and county level.

The statewide Community Engagement Committee met monthly from March 2018 through January 2019 to review and provide input on every aspect of engagement process.

In addition to the state-level Community Engagement Committee, a **Local Community Engagement Planning Committee** in each of Maine's 16 counties planned and implemented the logistics of community forums and events within each district. These committees were comprised of hospitals, public health district liaisons, and a variety of additional partners.

The 2018 Community Engagement Toolkit was designed to assist the Local Community Engagement Planning Committees in this effort.

Criteria for visualizing data included areas identified as a health priority in the last CHNA, significant changes in the data over time, or where a county's data was notably better or worse than the state or the nation. Forum agenda items included remarks from health leaders; a review of previous health improvement efforts; a review of county level data, discussion, and prioritization in small groups; and an overall forum-wide voting process. The Community Engagement and Steering Committees created and approved a rubric to guide the selection criteria for the subset of data to be presented in each forum's PowerPoint presentations.

Small groups had 35-45 minutes to discuss the data in the presentation and the full county profile, and to share their own experiences in order to identify their top county health priorities. Table facilitators guided

these discussions using key questions and worksheets for reporting purposes. Health priorities identified during these small groups were collated and presented to the larger plenary session, where each attendee voted for their top four priorities. Votes were tallied and a hierarchy emerged.

The summary votes for each forum were used to develop the county level priorities. If multiple forums were held in a county, the forum results for forums held with the general community were included in the total votes for the county. In cases where a forum was held with a specific population, for example LGBTQ youth or older adults, then the results of their voting and discussion were included in the section describing the needs of that particular population.

To arrive at the top countywide community health issues, votes from the broad community forums were combined for each of the priority areas to identify priority areas which fell within 70% of the combined voting total. Priorities that fell within the 70% combined voting total received an in-depth analysis within the Maine Shared CHNA county report.

The community forum participants also shared knowledge on gaps and assets available in their communities to address each of the top four priorities identified. The information gathered in this report is a start for further asset and gap mapping for each priority selected by the county.

Piscataquis County Forum

One community forum was held in Piscataquis County.

Table 9: Community engagement activites in Piscataquis County, 2018

TYPE OF ENGAGEMENT	LOCATION & DATE	FACILITATOR	ATTENDEES
Community Forum	Dover-Foxcroft September 18, 2018	JSI	61

COMMUNITY ENGAGEMENT

Persons representing broad interests of the community who were consulted during the engagement process:

- Bangor Public Health and Community Services
- Bangor Public Health Department
- Charlotte White Center
- Division for the Blind and Visually Impaired
- Eastern Area Agency on Aging
- Helping Hands with Heart
- Maine CDC
- Maine Family Planning
- Maine Highlands Senior Center
- Maine Resilience Building Network
- Mayo Regional Hospital
- Mayo Regional Hospital Community Outreach
- Northern Light Acadia Healthcare
- Northern Light Acadia Hospital
- Northern Light CA Dean Hospital
- Northern Light CA Dean Hospital Foundation
- Northern Light Health
- Northern Light Health Foundation
- Northern Light Home Care & Hospice
- Partners for Peace
- Penquis
- Penquis Public Health District
- Pine Tree Hospice
- Piscataquis County Economic Development Council
- Piscataquis Democratic Committee
- Piscataquis Regional Food Center
- Regional School Unit 68
- Retired individual
- The Commons at Central Hall
- United Way of Eastern Maine
- University of Maine Cooperative Extension
- U.S. Senator Angus King's Office

Key informant interviews

The Steering Committee identified ten categories of medically underserved and vulnerable populations to ensure their input was heard and captured. A list of 80 potential interview subjects was created with statewide input. Selected key informants either had lived experience in, or worked for, an organization that focused on providing services or advocacy for the identified population. The ten medically underserved populations identified by the Steering Committee included:

- Veterans
- Tribal communities
- Adults ages 65 and older who are isolated or have multiple chronic conditions
- Non-English speakers, undocumented individuals, immigrants, and refugees
- Deaf individuals and those with other physical disabilities
- Adolescents/youth
- LGBTQ
- People with mental health conditions and developmental disabilities
- Rural individuals
- Individuals in substance use disorder recovery/substance use disorder prevention and treatment professionals

The following is a list of organizations who participated in Key Informant Interviews conducted both by JSI and local planning committee members. No Tribal representatives were able to be interviewed. In the future we hope to include this important group of in the CHNA process.

- Alpha One
- Androscoggin Home Healthcare + Hospice
- Bingham Foundation
- Cary Medical Center
- Catholic Charities of Maine
- Community Concepts
- Community Caring Collaborative
- Edmund Ervin Pediatric Center, MaineGeneral Health
- EqualityMaine
- Family Medicine Institute
- Frannie Peabody Center
- Greater Portland Council of Governments
- Healthy Acadia
- Healthy Androscoggin
- Healthy Communities of the Capitol Area
- Kennebec Valley Council of Governments
- Long Creek Youth Development Center
- Maine Access Immigrant Network
- Maine Alliance for Addiction and Recovery
- Maine Alliance to Prevent Substance Abuse
- Maine Chapter Multiple Sclerosis Society
- Maine Council on Aging
- Maine Migrant Health
- Maine Seacoast Mission
- Millinocket Chamber of Commerce
- National Alliance on Mental Illness
- Nautilus Public Health
- Northern Light Maine Coast Hospital
- Office of Aging and Disability Services
- Penquis
- Portland Public Health
- Seniors Plus
- Sunrise Opportunities
- Tri-County Mental Health Services
- United Ambulance Service
- Veterans Administration Maine Healthcare System
- York County Community Action Corporation

The key informant interview guide was developed with input from the Community Engagement and Steering Committee members and consisted of the following five questions.

- We are interested in learning more about the priority health needs for this population (reference population(s) of expertise of interviewee). How would you characterize the health needs for this population? How are they different than for the general population?
- From where you sit and the work you do, what do you feel are the most important health needs to address? Why?
- What do you see as the major resource gaps with respect to health and wellness for this population?
- Are you currently working on anything that contributes to community health and wellness for this population? Are there any areas of health you would like to work on in partnership with others?
- Are there any particular assets or resources to address the needs of this population that can be leveraged?

Thirty-one interviews were conducted by JSI and 11 by members of Local Community Engagement Planning Committees. Information gathered from the key informant interviews is included in discussions where applicable in the county level report within each of the county priorities. For example, when discussing substance use, a discussion of the needs of vulnerable populations within this priority was also included. The state level report provides a summary of key findings from these interviews for each of the ten vulnerable populations.

All outcomes from these efforts were collected via the Community Outreach Reporting Tool or the Key Informant Reporting tool. Both of these collection tools were online surveys within Survey Monkey.

Other data collection tools included Table Facilitators notes, forum registrations, and sign-ins.

FINAL REPORTS

Integrated analysis of all quantitative and qualitative activities and findings was conducted between December 2018 and January 2019. These were used to develop a full description of the risk factors underlying the health priorities for each county.

For more information, contact: **Info@mainechna.org**.

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