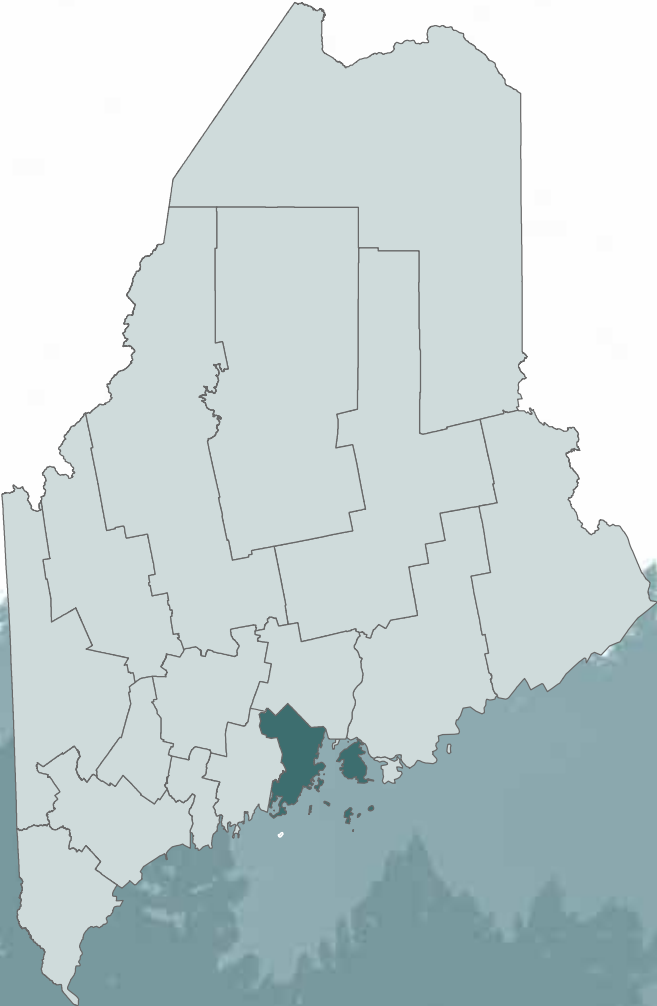
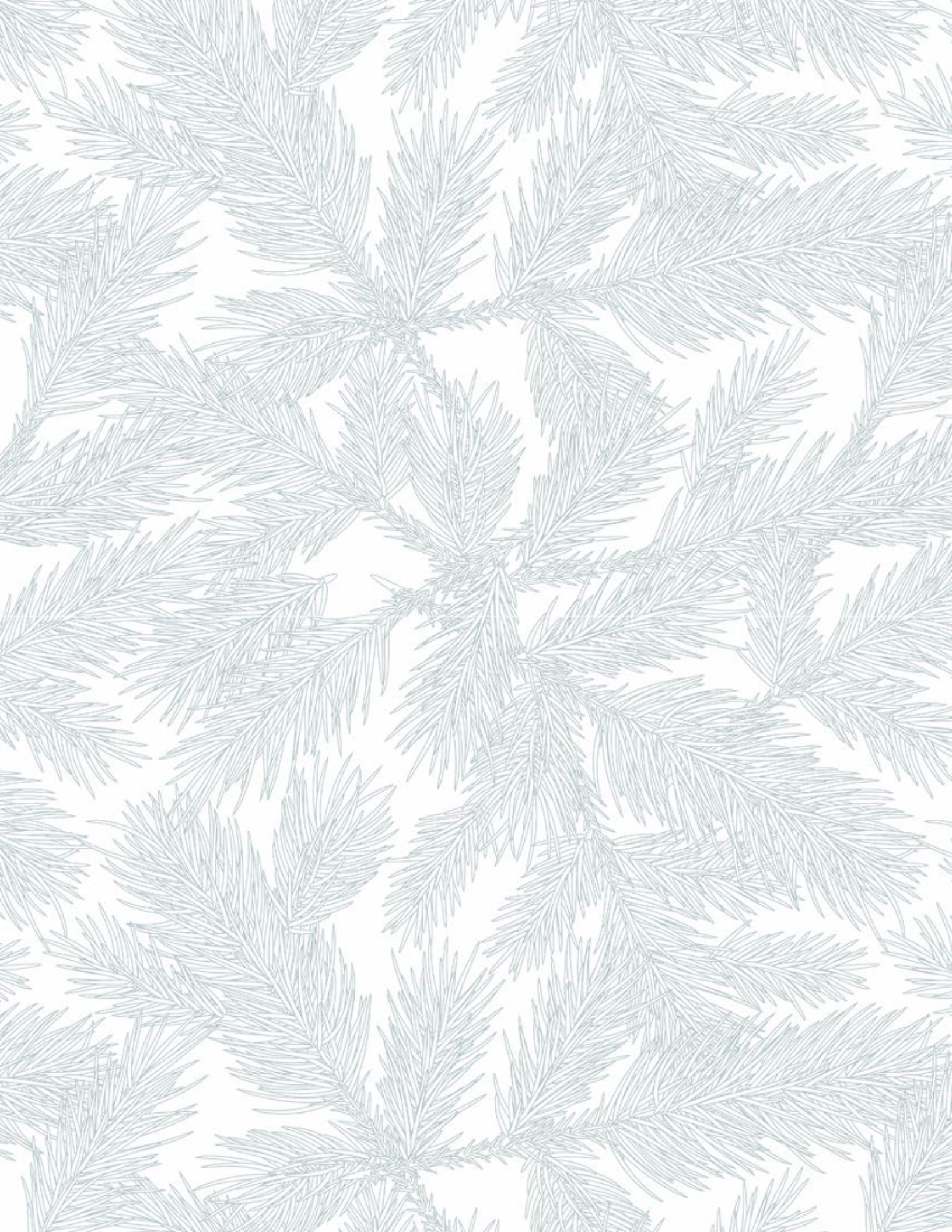


# KNOX COUNTY

2019 Maine Shared Community Health  
Needs Assessment Report









# TABLE OF CONTENTS

Executive Summary.....	2
Acknowledgements.....	3
Health Priorities .....	4
Mental Health .....	5
Substance Use.....	7
Access to Care.....	9
Social Determinants of Health .....	11
Older Adult Health/Healthy Aging .....	13
Chronic Disease .....	15
Community Characteristics .....	17
Key Indicators.....	20
Appendix A: References .....	23
Appendix B: History and Governance.....	24
Appendix C: Methodology .....	25

**Key companion documents available at [www.mainechna.org](http://www.mainechna.org):**

- Knox County Health Profile
- Midcoast District Health Profile
- Maine State Health Profiles
- Health Equity Data Summaries, including state level data by sex, age, race, Hispanic ethnicity, income, and education attainment

# EXECUTIVE SUMMARY

## PURPOSE

The Maine Shared Community Health Needs Assessment (Maine Shared CHNA) is a collaborative effort amongst Central Maine Healthcare (CMHC), MaineGeneral Health (MGH), MaineHealth (MH), Northern Light Health (NLH), 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

Knox is one of four counties that make up the Midcoast Public Health District. The population of Knox County is 39,717 and 22.1% of the population is over age 65. It is one of four counties where 21-23% of the population is over 65. The population is predominantly white (96.5%); 1.6% is two or more races, and 1.2% is Hispanic. The median household income is \$52,239. The high school graduation rate (91.8%) is higher than the state overall, as is the percentage of the population with an associates' degree or higher (38.7%).

## TOP HEALTH PRIORITIES

Forums held in Knox 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: Knox County Health Priorities**

PRIORITY AREA	% OF VOTES
Mental Health*	26%
Substance Use*	26%
Access to Care*	25%
Social Determinants of Health*	25%
Older Adult Health/Healthy Aging*	19%
Chronic Disease	19%

*\*Also a statewide priority. For a complete list of statewide priorities, see state health profile on our website, [www.mainechna.org](http://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, MaineGeneral Health, MaineHealth, and Northern Light Health, 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](http://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, over 2,000 Mainers gave their time and talent to this effort. Thank you.



# HEALTH PRIORITIES

County health priorities 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 forums held in Knox County. The priorities shaded are the six priorities which rose to the top.

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

**Table 2: Knox County Forum Voting Results**

<b>PRIORITY AREA</b>	<b>% OF VOTES</b>
<b>Mental Health*</b>	<b>26%</b>
<b>Substance Use*</b>	<b>26%</b>
<b>Access to Care*</b>	<b>25%</b>
<b>Social Determinants of Health*</b>	<b>25%</b>
<b>Older Adult Health/ Healthy Aging*</b>	<b>19%</b>
<b>Chronic Disease</b>	<b>19%</b>
Oral Health	10%
Infectious Disease	3%

*\*Also a statewide priority. For a complete list of statewide priorities, see state health profile on our website, [www.mainechna.org](http://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 conditions, 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.<sup>1</sup>

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.<sup>2</sup>

## QUALITATIVE EVIDENCE

Community members cited depression, social isolation, suicidality as major mental health issues in Knox County. While many said there was a need for behavioral health services in general, they identified education, screening, and crisis services as specific gaps in the spectrum of care. Participants felt there are not a lot of health care providers in Knox County, but most especially in the realm of mental health.

The mental health needs of youth and adolescents were a dominant theme in the community forums. Participants identified a number of underlying issues that they felt contributed to the increase in depression amongst young people, including Adverse Childhood Experiences (ACEs) and bullying. Related to ACEs, the

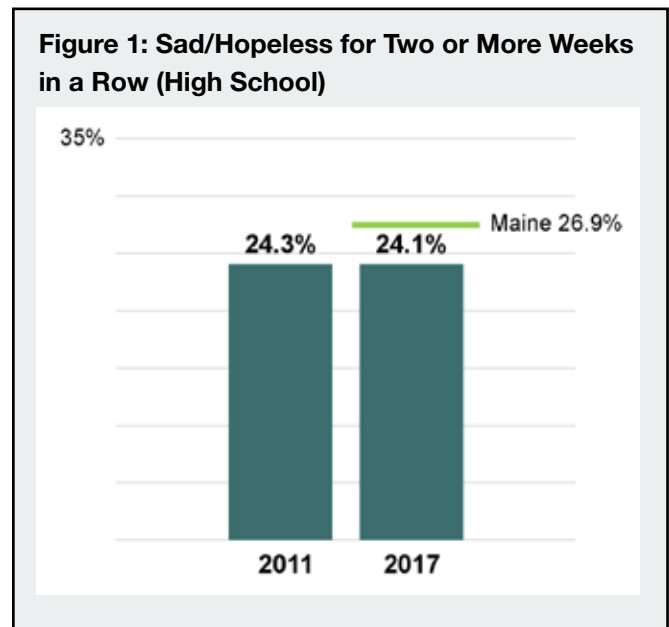
participants discussed need for early intervention and behavioral health screening during routine primary care visits.

For older adults, loneliness and social isolation are important health risk factors. Isolation may result from disability or reduced mobility; loss of a spouse or companions; a health problem; or reduced independence. To address, the forum participants discussed creating more opportunities for older adults to socialize and to access needed care.

## QUANTITATIVE EVIDENCE

### In Knox County:

- The rate of mental health emergency department visits per 10,000 population was higher than the state overall (295.2 vs. 165.9) in 2013-2014.
- The percentage of high school students who reported feeling sad or hopeless for more than two weeks in a row remained steady between 2011 and 2017 (24.3% and 24.1%).



See Key Indicators on page 20 as well as companion Health Profiles on our website [www.mainechna.org](http://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
<ul style="list-style-type: none"> <li>• Care collaborative</li> <li>• Case management/groups</li> <li>• Community Organizations from different sectors</li> <li>• Education about available services</li> <li>• Maine Behavioral Health (MBH) - Crisis Team</li> <li>• Maine Behavioral Health Embark program</li> <li>• Medication-Assisted Treatment (MAT) Access</li> <li>• Mid-Coast Recovery Coalition</li> <li>• Pen Bay Medical Center (PBMC)</li> <li>• Psychiatric and Addiction Recovery Center (PARC) at PBMC</li> <li>• Police Department Crisis Intervention Team (CIT)</li> <li>• Recover Together</li> </ul>	<ul style="list-style-type: none"> <li>• Access to care</li> <li>• Access to recovery locally</li> <li>• Cohesive community coalition</li> <li>• Community education</li> <li>• Education about programs</li> <li>• Mobile crisis teams</li> <li>• More funding</li> <li>• More MAT programs</li> <li>• More recovery coach programs</li> <li>• Primary Care interventions</li> <li>• Programs for youth</li> <li>• Universal Mental Health screening at all agencies</li> </ul>



# 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.<sup>3</sup> Tobacco, alcohol, marijuana, and nonmedical use of prescription pain relievers (e.g., OxyContin, Vicodin) are the leading causes of substance use disorders for adults.<sup>4</sup> 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.<sup>5</sup> 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.<sup>6</sup>

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.

Among youth, there is rising concern in tobacco use through e-cigarettes. While originally marketed as a healthier alternative to traditional cigarettes, e-cigarettes have been found to be unhealthy and addictive, and a recent study found that adolescents who vape are more likely to try other types of tobacco.<sup>7</sup>

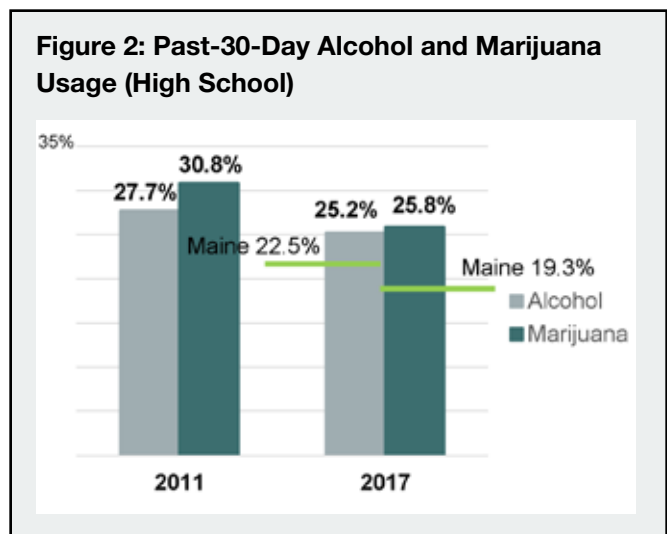
## QUALITATIVE EVIDENCE

Opioid use was the leading substance use disorder discussed in community forums. Participants discussed the need for more comprehensive and

accessible services to help those in need. The need for medication-assisted treatment (MAT) and local substance use treatment service were identified specifically. Participants were particularly concerned about the impact of substance use on young people and long-term effects of exposure to substances in utero. As seen by the quantitative data, substance exposed newborns or infants reports doubled between 2010 and 2017.

The increased availability and use of e-cigarettes, also referred to as “vaping” or “Juuling,” concerned forum participants. This was especially a concern for young people. Key informants identified a number of priority health issues for individuals with substance use disorders and those in treatment/recovery: education and outreach around how to access healthcare and treatment options; routine basic health care (primary care, dental care); and care that addresses co-occurring mental health and substance use issues. Informants also identified needs specific to youth, including information on where and how to access treatment and better access to confidential services. Another key theme was the need to provide better access to many of the resources that make up the social determinants of health: affordable, safe, and supportive housing; transportation; and nutritious foods.

## QUANTITATIVE EVIDENCE



**In Knox County:**

- Past-30-day cigarette smoking amongst high school students significantly declined between 2011 (24.1%) and 2017 (9.5%). The rate was similar to the state overall (9.5% vs. 8.8%) in 2017.
- Past-30-day cigarette smoking amongst middle school students was significantly higher than the state overall (3.3% vs. 1.9%) in 2017.
- Past-30-day alcohol use amongst high school students was significantly higher than the state overall (25.2% vs. 22.5%) in 2017.
- The rate of substance use hospitalizations per 10,000 population was higher than the state overall (35.6 vs. 18.1).
- Drug-affected infant reports per 1,000 births nearly doubled between 2010 and 2017, from 54.1 to 105.4.

See Key Indicators on page 20 as well as companion Health Profiles on our website [www.mainechna.org](http://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 4: Assets and Gaps/Needs (Substance Use)**

ASSETS	GAPS/NEEDS
<ul style="list-style-type: none"> <li>• Care collaborative</li> <li>• Case management/groups</li> <li>• Community Organizations from different sectors</li> <li>• Education about available services</li> <li>• Maine Behavioral Health (MBH) - Crisis Team</li> <li>• Maine Behavioral Health Embark program</li> <li>• Medication-Assisted Treatment (MAT) Access</li> <li>• Mid-Coast Recovery Coalition</li> <li>• Penobscot Bay Medical Center (PBMC)</li> <li>• Psychiatric and Addiction Recovery Center (PARC) at PBMC</li> <li>• Police Department Crisis Intervention Team (CIT)</li> <li>• Recover Together</li> </ul>	<ul style="list-style-type: none"> <li>• Access to care</li> <li>• Access to recovery locally</li> <li>• Cohesive community coalition</li> <li>• Community education</li> <li>• Education about programs</li> <li>• Mobile crisis teams</li> <li>• More funding</li> <li>• More Medication-Assisted Treatment programs</li> <li>• More recovery coach programs</li> <li>• Primary Care interventions</li> <li>• Programs for youth</li> <li>• Universal Mental Health (MH) screening at all agencies</li> </ul>

# 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. Though the percentage of uninsured individuals in Knox County has remained steady over time (from 11.6% in 2009–2011 to 12.4% in 2012–2016), lack of insurance and being under-insured remains a leading barrier to care. Medicaid expansion, which holds the promise of providing health insurance coverage for an additional 70,000 Mainers, was signed into law on January 3, 2019.

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 lesbian, gay, bisexual, transgender, questioning, and queer (LGBTQ) populations face even greater disparities in health insurance coverage compared to those who are heterosexual, 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. One can find more information on health disparities by race, ethnicity, education, sex, and sexual orientation in the Health Equity Data Sheets, available at [www.mainechna.org](http://www.mainechna.org).

## QUALITATIVE EVIDENCE

Many forum participants and key informants identified the social determinants of health—particularly access to reliable and affordable forms of transportation—as significant barriers to care. For more details, see the “Social Determinants of Health” section of this report.

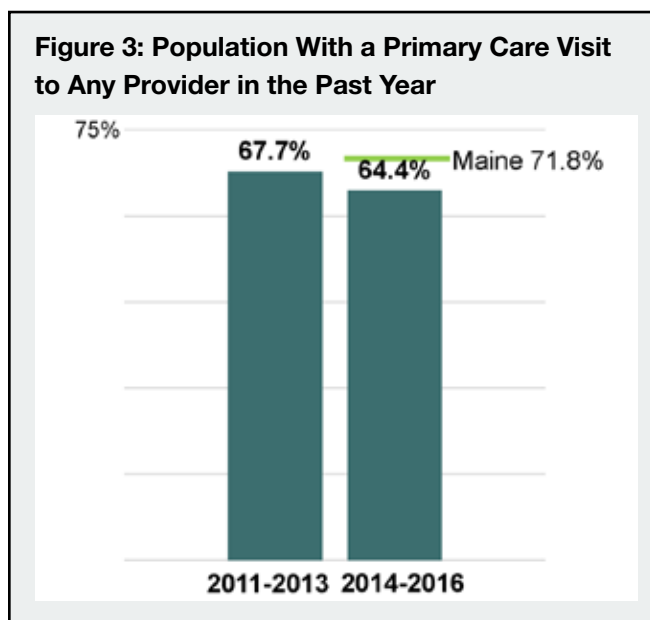
Participants discussed the need for more information on how to access existing community resources. While there were many successful community health and wellness programs and interventions, forum participants felt that efforts should be made to collaborate and share resources to maximize outreach.

Beyond the need for Medicaid expansion, participants discussed the need for comprehensive and affordable health services. This includes dental care, behavioral health care, home health, and support services (e.g., case management, navigators). Prenatal care, even for those with insurance, can be unaffordable due to deductibles, co-pays, and prescription medications. This can prevent people from seeking care. The out-of-pocket costs associated with some forms of care deter people from getting the services or medications that they need. Many also felt that there was a great need to recruit and retain qualified providers, including doctors, nurses, and specialists.

## QUANTITATIVE EVIDENCE

### In Knox County:

- The percentage of the population that is uninsured was higher than the state overall (12.4% vs. 9.5%) in 2012-2016.



- The percentage of the population with a primary care visit to any provider in the past year was significantly lower than the state overall (64.4% vs. 71.8%) in 2014-2016

See Key Indicators on page 20 as well as companion Health Profiles on our website [www.mainechna.org](http://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
<ul style="list-style-type: none"> <li>• Affordable care</li> <li>• CarePartners</li> <li>• Caring providers</li> <li>• Community support</li> <li>• Local hospital partners</li> <li>• Medication-Assisted Treatment programs</li> <li>• Nazarene Compassionate Ministries (NCM)</li> <li>• Behavioral Health Integration (BHI) Clinicians</li> <li>• Pen Bay Medical Center’s Physician Finder Line</li> <li>• Police Crisis Intervention Team</li> <li>• Provider awareness on available services Telehealth</li> <li>• Transportation</li> <li>• MaineHealth Care Partners</li> </ul>	<ul style="list-style-type: none"> <li>• Care for undocumented folks</li> <li>• Dentists, nurses, home health</li> <li>• Education about programs</li> <li>• Good Morning Camden</li> <li>• Insurance coverage/affordability/affordable care</li> <li>• Mandated neighbor program</li> <li>• Mental health services</li> <li>• More facilities/providers</li> <li>• Peer recovery groups</li> <li>• Poverty</li> <li>• Primary prevention/care</li> <li>• Stigma</li> <li>• Transportation</li> </ul>



# 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 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, poverty, and racism accounted for over a third of total deaths in the United States.<sup>8</sup>

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 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.

With respect to housing, individuals without a safe and stable place to live are at a higher risk for many chronic diseases and injuries, including asthma, cardiovascular disease, and falls.<sup>9</sup>

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.<sup>10</sup> Chronic diseases and health conditions associated with food insecurity include asthma, low birthweight, diabetes, mental health issues, hypertension, and obesity.<sup>11</sup>

## QUALITATIVE EVIDENCE

A dominant theme from key informant interviews and community forums was the tremendous impact that the underlying social determinants, particularly housing,

and transportation, and socioeconomic status, have on residents in Knox County.

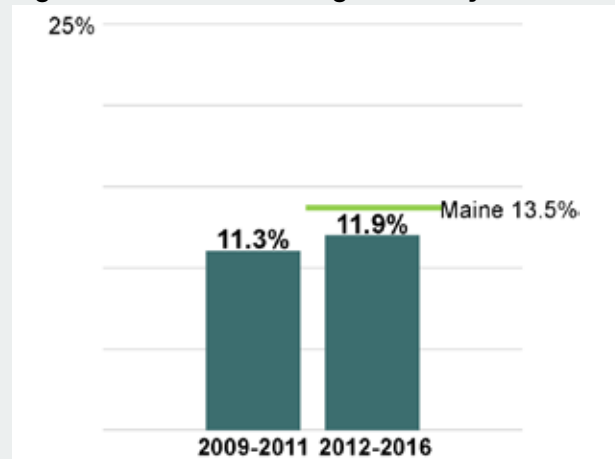
Poverty is often at the root of these issues; without stable employment and a livable wage, many people struggle to secure and maintain affordable and safe housing and transportation. Many participants identified a need for resources to combat the causes and effects of poverty, including better education, job training and improved community cohesion. Those without access to a personal vehicle have difficulty accessing health services and employment due to transportation issues. Forum participants also expressed the need for safe and affordable housing.

## QUANTITATIVE EVIDENCE

### In Knox County:

- The percentage of children in poverty increased between 2007-2011 and 2012-2016, from 14.9% to 15.5%.
- The percentage of individuals living in poverty in 2012-2016 was 11.9%, compared to 13.5% for the state overall.
- The percentage of households without a vehicle increased between 2007-2011 and 2012-2016, from 1.7% to 2.2%.
- Lead screening among children ages 12-23 months was 27.4% in Knox County was significantly lower compared to 53.0% in Maine in 2016.

**Figure 4: Individuals Living in Poverty**



- In Knox County, 13.4% of households lack enough food to maintain healthy, active lifestyles for all household members (vs. 15.1% for the state overall).

See Key Indicators on page 20 as well as companion Health Profiles on our website [www.mainechna.org](http://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 6: Assets and Gaps/Needs (Social Determinants of Health)**

ASSETS	GAPS/NEEDS
<ul style="list-style-type: none"> <li>• Caring community/community coalitions YMCA's/ youth and teen centers</li> <li>• Downtown Area Shuttle (DASH)</li> <li>• General Equivalency Degree (GED) courses/Public Health courses</li> <li>• New Hope for Women</li> <li>• Nutrition education</li> <li>• OUT Maine</li> <li>• Pen Bay Medical Center</li> <li>• School Support for kids, consent education</li> <li>• Successful downtowns</li> <li>• Transportation for MaineCare recipients</li> </ul>	<ul style="list-style-type: none"> <li>• Access to mental health treatment</li> <li>• ACEs</li> <li>• Affordable housing</li> <li>• Communities promoting helping neighbors</li> <li>• Economic mobility</li> <li>• Education</li> <li>• Healthy environments, social connections, community spaces</li> <li>• Senior Centers</li> <li>• Social supports for youth</li> <li>• Transportation</li> <li>• Wages above minimum</li> </ul>

# 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.” 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 the older population.

## QUALITATIVE EVIDENCE

Forum participants and key informants identified a need for many services and programs to improve quality of life for older adults, including opportunities for socialization and accessible transportation.

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. Forum participants identified depression and isolation as two critical issues for this population. 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. With aging in place as a preferred lifestyle, concerns around isolation become more significant.

Participants also felt there needed to be more support for caregivers. Caregiver burden, the stress felt by those who provide care to individuals with a variety of conditions, is a chronic stressor that places both the caregiver and the one who requires care at risk for negative health outcomes.<sup>12</sup>

Finally, community forum participants identified gaps in the health care service system specifically for older adults: specialty and support services for those with Alzheimer’s and dementia, hospice care, and home visiting programs.

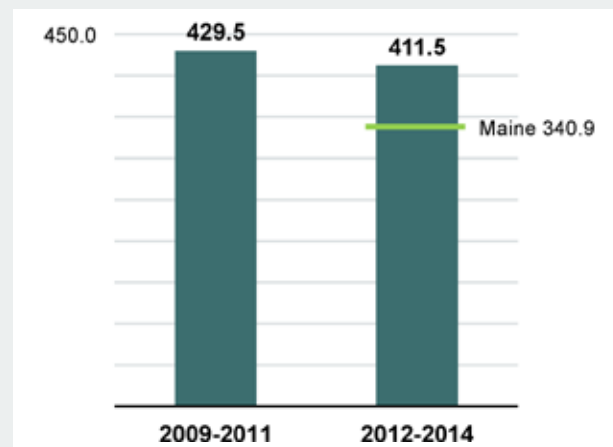
## QUANTITATIVE EVIDENCE

### In Knox County:

- The percentage of the population 65+ living alone was higher than the state overall (47.1% vs. 45.3%).
- The fall-related injury (unintentional) emergency department rate per 10,000 was significantly higher than the state overall (411.5 vs. 340.9) between 2012–2014.
- The percentage of adults who provided at least 20 hours of caregiving a week to a friend or family member with a health problem or disability was higher than the state overall (5.1%\* vs. 4.4%) in 2015.

*\*Due to small numbers, interpret with caution.*

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



See Key Indicators on page 20 as well as companion Health Profiles on our website [www.mainechna.org](http://www.mainechna.org). Those documents also include information on data sources and definitions.

## COMMUNITY RESOURCES TO ADDRESS OLDER ADULTS/HEALTHY AGING

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 7: Assets and Gaps/Needs (Older Adults/Healthy Aging)**

ASSETS	GAPS/NEEDS
<ul style="list-style-type: none"> <li>• Engagement of local nonprofits that serve seniors (like the YMCA)</li> <li>• Hospice</li> <li>• Aging in place</li> </ul>	<ul style="list-style-type: none"> <li>• Older Adult care</li> <li>• Long-term housing</li> <li>• Hospice in the home</li> <li>• Caregiver support</li> <li>• Safe housing at home</li> <li>• Home visiting programs</li> <li>• Increasing access for seniors to get to social activities to combat isolation</li> <li>• Transportation access</li> <li>• Social support</li> </ul>



# CHRONIC DISEASE

One or more of the following chronic and complex conditions cause more than two thirds of all deaths in the United States: heart disease, cancer, stroke, chronic obstructive pulmonary disease (COPD), and diabetes.<sup>13</sup> Half of all American adults (ages 18 and over) have at least one chronic condition, and nearly 1 in 3 have multiple chronic conditions. According to the Centers for Disease Control and Prevention, treatment of chronic disease costs the health care system \$190 billion a year and another \$126 billion in lost productivity.

Perhaps most significantly, chronic diseases are largely preventable, despite their high prevalence and dramatic impact. Risk factors for chronic and complex conditions include tobacco use, excessive alcohol use, sedentary lifestyle, poor nutrition, and secondhand smoke.

## QUALITATIVE EVIDENCE

Type 2 diabetes, when the body does not produce enough (or resists) insulin, is often preventable. Risk factors for the condition include family history, age, or ethnicity, but also lifestyle risk factors, such as obesity, sedentary lifestyle, high cholesterol, and poor nutrition. Forum participants in Knox County identified diabetes, and its risk factors, as priority issues. Addressing these risk factors would also have positive affects for the development of other chronic and complex conditions.

Alzheimer’s and other dementias were also identified as a priority health issue, particularly for older adults. Alzheimer’s, a progress neurodegenerative disorder, is the most common form of dementia. Participants identified a need for better access to specialists and resources.

Finally, Lyme disease, a bacterial infection spread through the bite of an infected tick, can become chronic. The Centers for Disease Control and Prevention defines chronic disease broadly “as

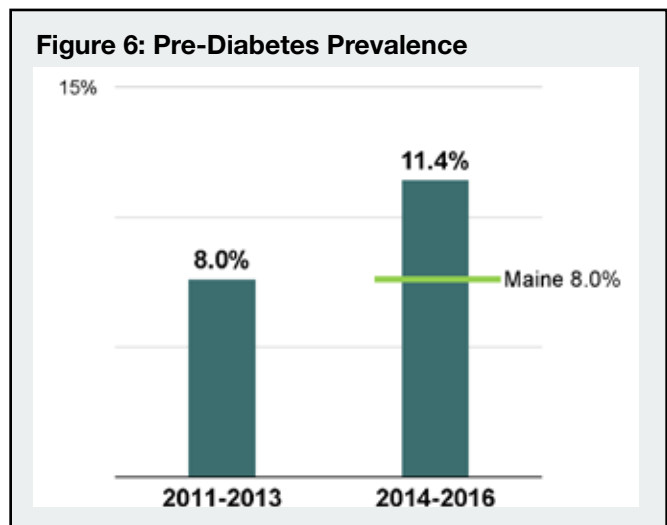
conditions that last 1 year or more and require ongoing medical attention or limit activities of daily living or both.”<sup>14</sup> Approximately 20% of those who are treated with the recommended course of antibiotics for Lyme disease will have persisting symptoms, including fatigue, cognitive dysfunction, and fatigue.

## QUANTITATIVE EVIDENCE

### In Knox County:

- The percentage of the population with pre-diabetes was significantly high compared to the state overall (11.4% vs. 8.0%) in 2014-2016.
- 6.4%\* of adults aged 45 and over experienced confusion or memory loss that happened more often or got worse within the past 12 months.
- The rate of new Lyme disease cases per 100,000 population increased between 2008-2012 and 2013-2017, from 61.7 to 233.6. The statewide rate was 96.5 per 100,000.

*\*Due to small numbers, interpret with caution.*



See Key Indicators on page 20 as well as companion Health Profiles on our website [www.mainechna.org](http://www.mainechna.org). Those documents also include information on data sources and definitions.

## COMMUNITY RESOURCES TO ADDRESS CHRONIC DISEASE

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 8: Assets and Gaps/Needs (Chronic Disease)**

ASSETS	GAPS/NEEDS
<ul style="list-style-type: none"> <li>• Access of education and quality food resources</li> <li>• Advance care planning</li> <li>• Case Management</li> <li>• Education about available services and support</li> <li>• In-home family members</li> <li>• Let's Go!</li> <li>• Palliative care</li> <li>• Spectrum Generations</li> <li>• YMCA</li> </ul>	<ul style="list-style-type: none"> <li>• Access to specialists</li> <li>• Affordable care/living options for adults</li> <li>• Cooking education/healthy food access</li> <li>• Lyme disease prevention and treatment</li> <li>• Ongoing obesity support</li> <li>• Support for aging communities</li> </ul>

# COMMUNITY CHARACTERISTICS

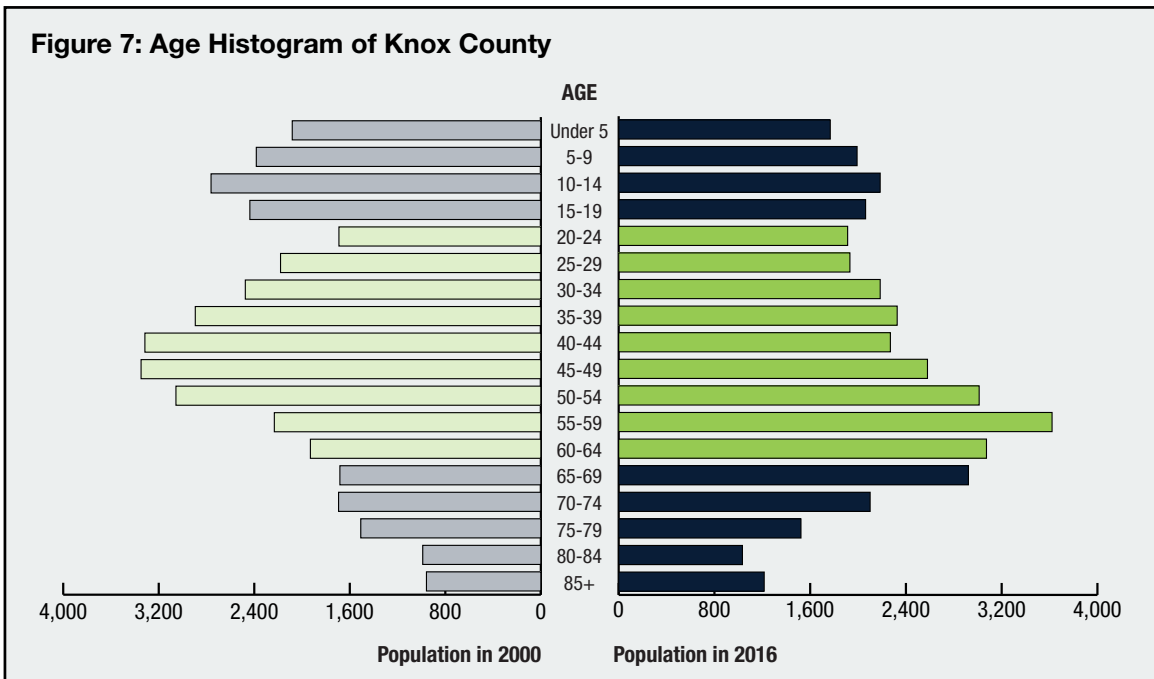
## AGE DISTRIBUTION

Age is a fundamental factor to consider when assessing individual and community health status. In particular, older individuals typically have more physical and mental health vulnerabilities, and are more likely to rely on immediate community resources for support compared to young people.<sup>15</sup> 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.

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

For key companion documents visit [www.mainechna.org](http://www.mainechna.org) and click on “Health Profiles.”

- The Knox County population over the age of 65 is 22.1%. Knox County is one of four counties in which 21-23% of the population is over the age of 65.



## 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 Centers for Disease Control, non-Hispanic Blacks have higher rates of premature death, infant mortality, and preventable hospitalization than non-Hispanic Whites.<sup>16</sup> 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.<sup>17,18</sup> 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 Knox County:**

- The population is predominantly White (96.5%); 1.6% of the population is two or more races, and 1.2% are Hispanic.

**Table 9: Race/Ethnicity in Knox County 2012-2016**

	PERCENT/NUMBER
American Indian/Alaskan Native	0.5% / 195
Asian	0.7% / 259
Black/African American	0.6% / 247
Hispanic	1.2% / 493
Some other race	0.1% / 41
Two or more races	1.6% / 635
White	96.5% / 38,340

**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.<sup>19</sup> 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.<sup>20</sup> 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 Knox County to the state overall.

**Additionally, in Knox County:**

- The estimated high school graduation rate was higher than the state overall (91.8% vs. 86.9%) in 2017.
- The percent of the population over 25 with an associate’s degree or higher was higher than the state overall in 2017 (38.7% vs. 37.3%) in 2012-2016.

**Table 10: Socioeconomic Status in Knox County, 2012-2016**

	KNOX/MAINE
Median household income	\$52,239 / \$50,826
Unemployment rate	3.6% / 3.8%
Individuals living in poverty	11.9% / 13.5%
Children living in poverty	15.5% / 17.2%
65+ living alone	47.1% / 45.3%

**SPECIAL POPULATIONS**

Community engagement activities identified several populations in Knox County as 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 forums, issues around older adult health and healthy aging were priorities in Knox County—specifically barriers to access to care for older adults, including lack of transportation, depression/isolation, cognitive decline, and access to specialty services.

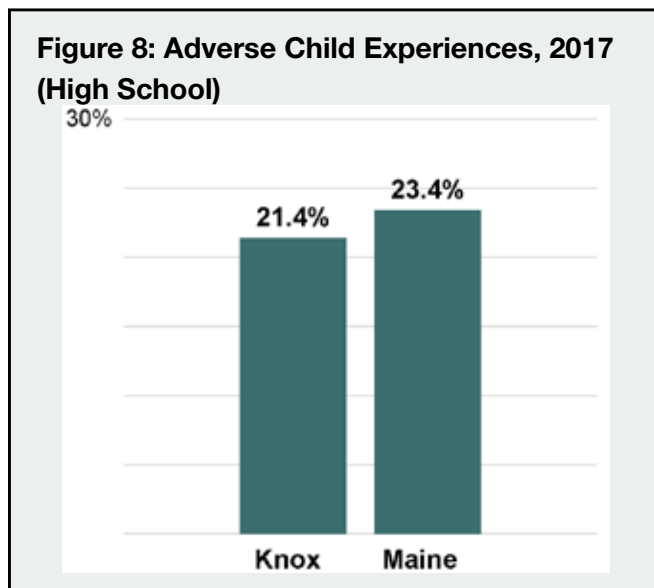


## Youth

Community forums identified youth as a priority population. Specific issues of concern were youth mental health issues (specifically depression and stress), substance use issues, oral health access, food insecurity, and lack of education and promotion around nutrition and physical activity. The community discussed the impact of ACES on youth health, and the need to focus on mental health to support at risk youth. One key informant who works with youth identified a need for them to be able to access low-cost and anonymous health services, specifically reproductive and substance use disorder services, without parent permission. LGBTQ youth specifically were also identified as an at-risk population. Many of their concerns mirror those of their straight or cisgender peers, but LGBTQ youth face consistently worse health outcomes including mental health, suicidal ideation, and substance use disorder, often as a result of bullying or discrimination.

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](http://www.mainechna.org)) which provides selected data analyzed by sex, race, ethnicity, sexual orientation, education, and income. These data are at the state level, as much of the county level data would be suppressed due to small numbers and privacy concerns, and the previous analyses have shown that health disparities found at the state level are generally similar in individual counties.

It should also be noted that during the summer months, Maine's population increases due to temporary and part-time residents with those who seek the beauty of the rocky coast, mountains, lakes, camps, and islands. For many communities, this poses unique opportunities – and challenges.



# 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 Knox 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 Knox County data to state and national data, based on 95% confidence interval (see description above).

- ★ means Knox County is doing **significantly better** than the state or national average.
- ! means Knox 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.

	KNOX COUNTY DATA			BENCHMARKS			
KEY INDICATOR	POINT 1	POINT 2	CHANGE	MAINE	+/-	U.S.	+/-
<b>SOCIAL, COMMUNITY &amp; PHYSICAL ENVIRONMENT</b>							
Children living in poverty	2007-2011 14.9%	2012-2016 15.5%	N/A	2012-2016 17.2%	N/A	2016 21.1%	N/A
Median household income	2007-2011 \$46,845	2012-2016 \$52,239	N/A	2012-2016 \$50,826	N/A	2016 \$57,617	N/A
Estimated high school student graduation rate	2014 86.2%	2017 91.8%	N/A	2017 86.9%	N/A	—	N/A
Food insecurity	2012-2013 13.6%	2014-2015 13.4%	N/A	2014-2015 15.1%	N/A	2015 13.4%	N/A
<b>HEALTH OUTCOMES</b>							
14 or more days lost due to poor physical health	2011-2013 20.5%	2014-2016 15.5%	○	2014-2016 19.6%	○	2016 11.4%	N/A
14 or more days lost due to poor mental health	2011-2013 16.2%	2014-2016 10.1%	○	2014-2016 16.7%	★	2016 11.2%	N/A
Years of potential life lost per 100,000 population	2010-2012 6,407.5	2014-2016 6,260.2	○	2014-2016 6,529.2	○	2014-2016 6,658.0	N/A
All cancer deaths per 100,000 population	2007-2011 173.1	2012-2016 166.7	○	2012-2016 173.8	○	2011-2015 163.5	○
Cardiovascular disease deaths per 100,000 population	2007-2011 184.0	2012-2016 177.8	○	2012-2016 195.8	★	2016 218.2	★
Diabetes	2011-2013 8.0%	2014-2016 7.9%	○	2014-2016 10.0%	○	2016 10.5%	○
Chronic obstructive pulmonary disease (COPD)	2011-2013 6.4%	2014-2016 6.0%	○	2014-2016 7.8%	○	2016 6.3%	○
Obesity (adults)	2011 23.5%	2016 28.8%	○	2016 29.9%	○	2016 29.6%	○
Obesity (high school students)	2011 20.1%	2017 14.0%	○	2017 15.0%	○	—	N/A
Obesity (middle school students)	—	2017 11.4%	N/A	2017 15.3%	○	—	N/A
Infant deaths per 1,000 live births	2007-2011 7.4	2012-2016 5.2*	○	2012-2016 6.5	○	2012-2016 5.9	○
Cognitive decline	2012 10.7*%	2016 6.4*%	○	2016 10.3%	○	2016 10.6%	○
Lyme disease new cases per 100,000 population	2008-2012 61.7	2013-2017 233.6	N/A	2013-2017 96.5	N/A	2016 11.3	N/A
Chlamydia new cases per 100,000 population	2008-2012 182.7	2013-2017 226.1	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 429.5	2012-2014 411.5	○	2012-2014 340.9	!	—	N/A
Suicide deaths per 100,000 population	2007-2011 17.8	2012-2016 15.1	○	2012-2016 15.9	○	2016 13.5	○
Overdose deaths per 100,000 population	2007-2011 14.3	2012-2016 15.8	○	2012-2016 18.1	○	2016 19.8	○

KEY INDICATOR	KNOX COUNTY DATA			BENCHMARKS			
	POINT 1	POINT 2	CHANGE	MAINE	+/-	U.S.	+/-
<b>HEALTH CARE ACCESS AND QUALITY</b>							
Uninsured	2009-2011 11.6%	2012-2016 12.4%	N/A	2012-2016 9.5%	N/A	2016 8.6%	N/A
Ratio of primary care physicians to 100,000 population	—	2017 62.5	N/A	2017 67.3	N/A	—	N/A
Ratio of psychiatrists to 100,000 population	—	2017 16.3	N/A	2017 8.4	N/A	—	N/A
Ratio of practicing dentists to 100,000 population	—	2017 39.8	N/A	2017 32.1	N/A	—	N/A
Ambulatory care-sensitive condition hospitalizations per 10,000 population	—	2016 59.7	N/A	2016 74.6	N/A	—	N/A
Two-year-olds up-to-date with recommended immunizations	2014 73.7%	2017 73.1%	N/A	2017 73.7%	N/A	—	N/A
<b>HEALTH BEHAVIORS</b>							
Sedentary lifestyle – no leisure-time physical activity in past month (adults)	2011 21.0%	2016 17.4%	○	2016 20.6%	○	2016 23.2%	N/A
Chronic heavy drinking (adults)	2011-2013 7.9%	2014-2016 8.9%	○	2014-2016 7.6%	○	2016 5.9%	N/A
Past-30-day alcohol use (high school students)	2011 27.7%	2017 25.2%	○	2017 22.5%	!	—	N/A
Past-30-day alcohol use (middle school students)	2011 8.1%	2017 5.9%	○	2017 3.7%	○	—	N/A
Past-30-day marijuana use (high school students)	2011 30.8%	2017 25.8%	○	2017 19.3%	○	—	N/A
Past-30-day marijuana use (middle school students)	2011 6.8%	2017 5.6%	○	2017 3.6%	○	—	N/A
Past-30-day misuse of prescription drugs (high school students)	2011 12.4%	2017 4.7%	★	2017 5.9%	★	—	N/A
Past-30-day misuse of prescription drugs (middle school students)	2011 3.2%	2017 1.5%	★	2017 1.5%	○	—	N/A
Current (every day or some days) smoking (adults)	2011-2012 15.0%	2016 14.2%	○	2016 19.8%	○	2016 17.0%	N/A
Past-30-day cigarette smoking (high school students)	2011 24.1%	2017 9.5%	★	2017 8.8%	○	—	N/A
Past-30-day cigarette smoking (middle school students)	2011 4.9%	2017 3.3%	○	2017 1.9%	!	—	N/A

### Leading Causes of Death

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

RANK	STATE OF MAINE	KNOX COUNTY
1	Cancer	Heart disease
2	Heart disease	Cancer
3	Chronic lower respiratory diseases	Unintentional injuries
4	Unintentional injuries	Chronic lower respiratory diseases
5	Stroke	Stroke



# APPENDIX A: REFERENCES

- 1 National Institute of Mental Health. (n.d.).Chronic illness & mental health. Retrieved from <https://www.nimh.nih.gov/health/publications/chronic-illness-mental-health/index.shtml>
- 2 National Institute of Mental Health. (2017). Mental health and substance use disorders. Retrieved from <https://www.mentalhealth.gov/what-to-look-for/mental-health-substance-use-disorders>
- 3 Substance Abuse and Mental Health Services Administration. (2016). Mental health and substance use disorders. Retrieved from <https://www.samhsa.gov/disorders>.
- 4 Lipari, R.N. & Van Horn, S.L. (2017). Trends in substance use disorders among adults aged 18 or older. Retrieved from [https://www.samhsa.gov/data/sites/default/files/report\\_2790/ShortReport-2790.html](https://www.samhsa.gov/data/sites/default/files/report_2790/ShortReport-2790.html)
- 5 National Institute on Drug Abuse. (2014). Principles of adolescent substance use disorder treatment: A research based guide. What drugs are most frequently used by adolescents? Retrieved from <https://www.drugabuse.gov/publications/principles-adolescent-substance-use-disorder-treatment-research-based-guide/frequently-asked-questions/what-drugs-are-most-frequently-used-by-adolescents>
- 6 Mental Health America. (2017). Access to care. Retrieved from <http://www.mentalhealthamerica.net/issues/mental-health-america-access-care-data>
- 7 Bold K, Kong G, et al.(2018) Trajectories of e-cigarette and conventional cigarette use among youth. *Pediatrics*, 141(1), e20171832.
- 8 Bernazzani, S. (2016). The importance of considering the social determinants of health. Retrieved from <https://www.ajmc.com/contributor/sophia-bernazzani/2016/05/the-importance-of-considering-the-social-determinants-of-health>
- 9 Braceman, P., Dekker M., Egerter, S., Sadegh-Nobari, T., & Pollack, C. (2011, May 1). Housing and health: An examination of the many ways in which housing can influence health and strategies to improve health through emphasis on healthier homes. Retrieved from <https://www.rwjf.org/en/library/research/2011/05/housing-and-health.html>
- 10 Food Research and Action Center. (2017). Hunger and health: The impact of poverty, food insecurity, and poor nutrition on health and well-being. Retrieved from <http://frac.org/wp-content/uploads/hunger-health-impact-poverty-food-insecurity-health-well-being.pdf>
- 11 Food Research and Action Center, Hunger and Health
- 12 Slaboda, J., Fail, R., Norman, G., & Meier, D.E. A study of family caregiver burden and the imperative of practice change to address family caregivers' unmet needs. (2018, January 11). Retrieved from <https://www.healthaffairs.org/doi/10.1377/hblog20180105.914873/full/>
- 13 National Association of Chronic Disease Directors. (n.d.) Why we need public health to improve healthcare. Retrieved from <https://www.chronicdisease.org/page/whyweneedph2imphc>
- 14 About Chronic Diseases. National Center for Chronic Disease Prevention and Health Promotion. Retrieved from <https://www.cdc.gov/chronicdisease/about/index.htm>, November 19, 2018
- 15 Lyons, L. (2013, March 11). Age, religiosity, and rural America. Retrieved from <http://www.gallup.com/poll/7960/age-religiosity-rural-america.aspx>
- 16 Centers for Disease Control and Prevention. (2015, September 10). CDC Health Disparities and Inequalities Report (CHDIR). Retrieved from <https://www.cdc.gov/minorityhealth/chdireport.html>, September 10, 2015
- 17 Wilson, E., Chen, A.H., Grumbach, K., Wang, F., & Fernandez, A. (2005). Effects of limited English proficiency and physician language on health care comprehension. *Journal of General Internal Medicine*, 20(9), 800-806.
- 18 Coren, J.S., Filipetto, F.A., & Weiss, L.B. (2009). Eliminating barriers for patients with limited English proficiency. *Journal of the American Osteopathic Association*, 109(12), 634-640.
- 19 Zimmerman, B., Woolf, S.H., & Haley, A. (2015). Population health: Behavioral and social science insights – Understanding the relationship between education and health. Retrieved from <https://www.ahrq.gov/professionals/education/curriculum-tools/population-health/zimmerman.html>, September 2015
- 20 Zimmerman, Population Health

# APPENDIX B: HISTORY AND GOVERNANCE

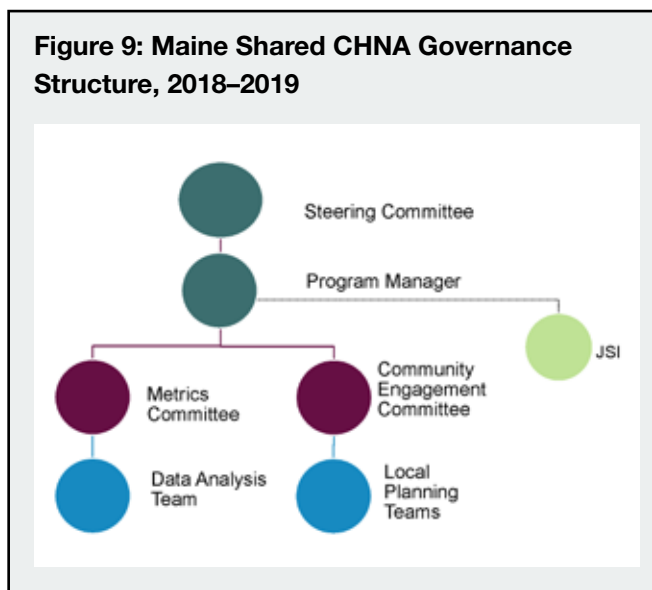
Maine is one of the few states in the nation that conducts a shared public-private statewide community health needs assessment—the Maine Shared CHNA—which was born out of a unique public-private partnership. The partnership began as the OneMaine Health Collaborative in 2007, involving Northern Light 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](http://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.



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 the 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 Knox County Health Profile at [www.mainechna.org](http://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 the spring of 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 200 health indicators from over 30 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?
- Does it 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 methodologies are 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.

## **OUTREACH AND ENGAGEMENT**

Community outreach and engagement for the Maine Shared CHNA included coordination at both 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

### **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.)
- 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
  - Insurance status

*These reports, along with an interactive data form, can be found under the Health Profiles tab at [www.mainechna.org](http://www.mainechna.org).*

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.

### **Forums and Health Priorities**

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.

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.

### **Knox County Forums**

**Two community engagement activities** were held in Knox County.

**Table 11: Community engagement activities in Knox County, 2018**

<b>TYPE OF ENGAGEMENT</b>	<b>LOCATION &amp; DATE</b>	<b>FACILITATOR</b>	<b>ATTENDEES</b>
Community Forum	Tenants Harbor 10/15/2018	Local Planning Committee	5
Community Forum	Rockland 10/24/2018	JSI	39

# COMMUNITY ENGAGEMENT

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

- Acadia Healthcare
- Bridges Adult Daycare, Community Support Services
- Broadreach Family and Community Services
- Coastal Health Alliance Board Member
- City of Belfast
- Coastal Recovery Community Center
- Community member
- County of Waldo
- Knox County Community Health Coalition
- Knox Clinic
- Knox County Health Clinic
- Maine Alzheimer's Association
- Maine Behavioral Healthcare
- Maine CDC Downeast District
- Maine Farmland Trust
- Maine Harvest Bucks
- Maine Health Access Foundation
- MaineHealth
- MaineHeath Care Partners
- Maine State Legislature
- Making Community Happen, Inc.
- Midcoast Maine Community Action
- Midcoast Music Therapy
- Midcoast Public Health District
- PAC (Political Action Committee)
- Pen Bay Medical Center
- Penobscot Bay YMCA
- Rockland Farmers Market
- Rockland Police Department
- RSU 71 - R.N.
- Sexual Assault Support Services of Midcoast Maine
- Spectrum Generations
- St. George Community Development Corp
- Starfish, LLC

- Town of Warren Health Officer
- Town of St. Georges
- Town of Stockton Springs
- Waldo Community Action Partners
- Waldo County General Hospital
- Waldo County Sheriff's Office
- Waldo County Technical Center - C.N.A. Instructor
- Wayfinder Schools, Passages
- YMCA

## Key informant interviews

The Steering Committee identified several 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 had either lived experience in or worked for an organization that focused on provided services or advocacy for the identified population. The populations identified included:

- Veterans
- 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:

- 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 Community Action Agency
- 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.

## **Data collection**

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**

Final CHNA reports for the state, each county, and districts were released in the spring of 2019. These were used to develop health improvement plans to address the identified health priorities and evaluate previous actions taken. In the upcoming years policy makers, non-profits, businesses, academics, and other community partners may also use these reports to inform their strategic planning, policy making, or grant writing purposes.

For more information, contact: [info@mainechna.org](mailto:info@mainechna.org)

