The State of Our Health:

A Statewide Health Assessment of Pennsylvania

March 2022

pennsylvania
DEPARTMENT OF HEALTH

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I. Letter from the Secretary of Health

COMMONWEALTH OF PENNSYLVANIA
OFFICE OF THE SECRETARY OF HEALTH

March 10, 2022

I am pleased to introduce this updated 2022 Pennsylvania Health Assessment. Developed by the Healthy Pennsylvania Partnership, a collaboration of private and public partners dedicated to improving the health of Pennsylvanians, this assessment is a key resource for public health. The information found here points to specific health challenges in Pennsylvania and by doing so, indicates where the largest improvements can be made.

As a strategic review of the health challenges our people face, the updated 2022 Pennsylvania Health Assessment demonstrates the many ways that health has been impacted by social determinants such as income, education, and housing. You will find health disparities in rates of chronic disease, infant and maternal mortality, substance use, violence, sexually transmitted infections, and many others. The updated 2022 Pennsylvania Health Assessment is a critical step toward examining inequities by race and ethnicity, socio-economic status, gender, age, education, sexual orientation, geography, and disability, so that we can work together for change.

You will also find the assets of the state itemized. Our strengths can equip us to meet the challenges of today and tomorrow if we are willing to examine existing systems and consider where changes, even significant ones, are needed.

As this assessment was being prepared, Pennsylvania, our country, and the world faced three major challenges to our well-being: a global pandemic of historic scale; a significant economic recession; and the elevation of racially motivated violence and death to broader shared awareness. While the COVID-19 pandemic has brought health inequities into sharp focus, we know that these inequities long predated these current and ongoing crises.

We encourage you to reference and borrow from this assessment for your organization's work to improve health and advance health equity. The assessment may be particularly helpful to organizations preparing local community health assessments and it will be used to inform the next Healthy Pennsylvania Partnership State Health Improvement Plan.

On behalf of the department, I want to thank our public and private partners across the commonwealth for collaborating to create this assessment. I also wish to thank all department staff for their continued commitment to the people of the commonwealth and for working each day toward a healthy Pennsylvania for all.

Sincerely,

Keara Klinepeter

Keara Klinepeter
Acting Secretary of Health

Keara Klinepeter – SECRETARY OF HEALTH
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II. Stakeholder Thank You

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HEALTHY PENNSYLVANIA PARTNERSHIP

The Healthy Pennsylvania Partnership consists of a diverse group of stakeholders that include health care professionals, associations, health systems, health and human services organizations, community collaborations, local public health agencies, government agencies, and others. These partners have collaborated to identify health priorities, evaluate data, provide insight, and review methods and content of the report. We would like to acknowledge and thank the following individuals and organizations for their time and invaluable contributions to this project.

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Stakeholder Organizations

Adagio Health	Montgomery County Office of Drug and Alcohol
All Youth Access, LLC	Penn Medicine Lancaster General Health
Allegheny County Health Department	Penn State Extension
Allentown Health Bureau	Penn State Harrisburg
Alzheimer's Association	Penn State Health
American Lung Association	Penn State University Office of Medical Innovation
Asociación Puertorriqueños en Marcha	Pennsylvania Academy of Family Physicians
Bethlehem Health Bureau	Pennsylvania Academy of Nutrition and Dietetics
Black Women's Health Alliance	Pennsylvania Association of Community Health Centers
Community Data Roundtable	Pennsylvania Association of County Administrators of Mental Health and Developmental Services
Council on Chemical Abuse	Pennsylvania Chapter of the American Academy of Pediatrics
Dental Lifeline Network	Pennsylvania Coalition Against Domestic Violence
Devereux Children's Behavioral Health Center	Pennsylvania Coalition for Oral Health
Erie County Department of Health	Pennsylvania Coalition of Medical Assistance MCOs
Greene County Human Services	Pennsylvania Department of Conservation and Natural Resources
Harrisburg Area YMCA	Pennsylvania Department of Drug and Alcohol Programs
Harrisburg University of Science and Technology	Pennsylvania Department of Education
Hepatitis B Foundation	Pennsylvania Department of Environmental Protection
Lancaster Osteopathic Health Foundation	Pennsylvania Department of Health
Lankenau Institute for Medical Research	Pennsylvania Department of Human Services
Latino Connection	Pennsylvania Department of Transportation
Lehigh University	Pennsylvania eHealth Partnership Program
Milton S. Hershey Medical Center, Outpatient Psychiatry Clinic	Pennsylvania Housing Finance Agency
Montgomery County Department of Health and Human Services	Pennsylvania Integrated Pest Management System
Northcentral Pennsylvania Area Health Education Center	Pennsylvania Medical Society
Novo Nordisk, Inc.	Pennsylvania Nutrition Education Network
Obesity Medicine Association	Pennsylvania Office of Mental Health and Substance Abuse Services

Stakeholder Organizations, continued

Pennsylvania Office of Rural Health	Rehabilitation & Community Providers Association
Pennsylvania Peer Support Coalition	Schuylkill County's VISION
Pennsylvania Psychiatric Leadership Council	South Central Pennsylvania Sickle Cell Council
Pennsylvania Psychiatric Society	Springfield Psychological
Pennsylvania Recovery Organizations – Alliance (PRO-A)	St. Christopher Hospital for Children
Pennsylvania Society of Physician Assistants	Staunton Farm Foundation
Pennsylvania State Alliance of YMCAs	Temple University Health System
Pennsylvania State Nurse Association	The Center for Rural Pennsylvania
Perelman School of Medicine, University of Pennsylvania	The Health Care Improvement Foundation
Philadelphia School of Pharmacy, University of the Sciences	The Hospital and Healthsystem Association of Pennsylvania
Philadelphia Department of Behavioral Health and Intellectual disAbility Services	University of Pennsylvania Injury Science Center
Philadelphia Department of Public Health	University of Pittsburgh Medical Center
Philadelphia Mental Health Care Corporation, Inc.	University of Pittsburgh School od the Health Sciences
Pocono Mountains United Way	WellSpan Health

III. Executive Summary

This State Health Assessment is organized to provide information on health equity and health factors, and then focus specifically on eight health themes, as well as the populations impacted in each theme. Highlights from each of these are summarized below.

Demographics and Social Determinants

- Pennsylvania's population has become increasingly racially diverse. In 2020, the population by race was 75% White alone, 12% Black alone, 4% Asian alone, with the remaining being multiracial and other races including American Indian and Alaska Native alone, Native Hawaiian and Other Pacific Islander alone or other. It is also an aging population, with 19% of the population aged 65 and over.
- Educational achievement varied by race and ethnicity, with, in 2019, rural counties and Black and Hispanic populations less likely to have college degrees.
- Poverty impacts health opportunities and affected Pennsylvanians disparately, with higher rates in 2019 among Black and Hispanic populations as well as rural counties.
- In 2019, age-adjusted death rate was 751 per 100,000 with most of the deaths among those aged 65 and over. The five leading causes of death were heart diseases, cancer, accidents, cerebrovascular diseases, and chronic lower respiratory diseases.
- Adverse Childhood Experiences (ACEs) are associated with many health problems. In 2019, 50% of Pennsylvania adults reported to have experienced one or more adverse childhood experiences, with non-Hispanic Blacks and Hispanics being disproportionately affected.

Access to Care

- Among adults aged 18-64, in 2020, about 10% were uninsured, 15% did not have a personal health care provider, and 10% needed to see a doctor in the past year but were unable due to cost.
- In 2020, Non-Hispanic Black adults were less likely to have health care insurance and more unable to see a doctor due to cost than White adults. Hispanics were less likely to have insurance, more unable to see a doctor due to cost, and more likely to not have a personal health care provider than non-Hispanic White adults.
- In 2018, there were approximately 85 primary care physicians per 100,000 residents. Millions of Pennsylvanians lived in Health Professional Shortage Areas. There were lower rates per 100,000 residents of primary care doctors, dentists, mental health providers, and nurse practitioners in rural Pennsylvania compared to urban areas.
- Individuals with disabilities have additional challenges to access health care including transportation and communication. In 2019, About 25% of Pennsylvanians reported having one or more disabilities.

Substance Use

- Substance misuse is one of the biggest challenges in Pennsylvania, with the use of opioids a pronounced burden. Drug overdose deaths increased by 14% between 2020 and 2021.
- In 2020, of Pennsylvania adults, about 17% binge drank. In 2018, adults identifying as lesbian, gay, or bisexual were more likely to report binge drinking (31%) than heterosexual adults (16%).

- Among high school students in 2019, 27% used cigarettes, cigars, smokeless tobacco, or electronic vapor products. Non-Hispanic Whites were more likely than non-Hispanic Black or Hispanic students to use cigarettes, cigars, smokeless tobacco, or electronic vapor products.
- Access to substance-use treatment is another challenge, and during 2018-2019, 6% of individuals needed but did not receive treatment for substance use at a specialty facility.

Chronic Diseases

- Obesity is a known risk factor for many chronic diseases, and in 2020, it affected 31% of adults in Pennsylvania. Non-Hispanic Black adults had a higher prevalence of obesity of 39%.
- Physical activity and diet are major risk factors for chronic diseases. In 2019, 49% of adults did not participate in the recommended amount of physical exercise and 90% of adults did not consume five or more servings of fruits and vegetables daily.
- While tobacco use has declined, it remains a leading risk factor for chronic diseases. In 2020, the prevalence of smoking was higher among Non-Hispanic Black residents and those with lower household incomes.
- In 2020, older Pennsylvanians, which account for 19% of the population, have a high prevalence of diabetes, COPD, stroke, arthritis, heart disease, and Alzheimer's disease.
- Based on 2015-2017 data, nearly one in two Pennsylvania residents will at some point receive a cancer diagnosis, and approximately 20% will die of cancer. Black residents were less likely to be diagnosed early and more likely than Whites to die of cancer.

Mental Health

- In 2020, about 14% of adults in Pennsylvania experienced frequent mental distress, defined as having not good mental health in 14 or more days in the past month.
- The death rate of suicides increased over the past decade, and in 2019, there were 1,887 Pennsylvanians who lost their lives to suicide. By race, the highest rates were among Whites.
- Among high school students, in 2019, 35% felt sad or hopeless, and 8% reported to have attempted suicide. Hispanic youth (42%) and lesbian, gay, or bisexual youth (62%) were even more likely to have reported feeling sad or hopeless.

Maternal and Infant Health

- During 2015-2019, maternal mortality and infant deaths were higher among Blacks than their White counterparts.
- In 2018-2020, 10% of females smoked and 7% consumed alcohol during their last three months of pregnancy.
- Early and adequate prenatal care is important for the health of the pregnant person and to reduce newborn risks. Between 2018 and 2020, 77% of pregnant women received early and adequate prenatal care. Receipt of early and adequate prenatal care was higher among White pregnant women compared to Black pregnant women.
- There were 1,608 neonatal abstinence syndrome (NAS) related newborn hospital stays in 2018. NAS was highest among White babies, those from rural counties and from families with lower household incomes.

Injury and Violence Prevention

- In 2019, the rate of fatal accidents in Pennsylvania, at 82.3 per 100,000, was higher than the national rate of 71.1 per 100,000.
- Pennsylvania ranked 22nd of 50 states for its violent crime rate (306 per 100,000) in 2020.
- The homicide rate in 2019 was approximately ten times higher among Black residents (29 per 100,000) than White residents (2 per 100,000).
- Firearms were used in 78% of homicides, 37% of robberies, and 27% of aggravated assaults in 2020.
- In 2019, approximately 10% of high school students reported experiencing sexual violence. The prevalence was about two times higher among students identifying as gay, lesbian or bisexual (19%) than heterosexual students (9%), and four times higher among females (17%) than males (4%).

Immunization and Infectious Diseases

- About 75% of children born between 2014 and 2017 received the combined seven vaccine series by the age of 24 months.
- Among adults aged 50 and above, 59% had a flu shot in 2020.
- Of youth aged 13 to 17, 62% of girls and 46% of boys had the recommended doses of HPV vaccine in 2019.
- Between 2003 and 2019, syphilis increased by close to 400%, chlamydia increased by 65% and gonorrhea increased by 36%. Black and Hispanic individuals were more likely to be diagnosed with syphilis, gonorrhea, and chlamydia.
- The annual number of diagnoses of HIV infection have continued to decrease since the mid-1990s. HIV has disproportionate impact among individuals aged 25 to 34 and the minority population, primarily blacks/African Americans, and Hispanics.
- Pennsylvania has the fourth highest number of people living with Hepatitis B in the U.S., with over 50,000 affected residents –mostly in communities of color.
- Pennsylvania continues to be among the top states for incidence of Lyme disease, with the number of cases more than doubling in the past 15 years. In 2019, 29% of Lyme disease cases in the U.S. were in Pennsylvania.

Environmental Health

- In 2020, Pennsylvania ranked 47th of 50 states for the percentage of housing stock at risk for lead exposure. About 4% of tested children had a blood-lead level greater than 5µg/dL, with Black and Hispanic children being at greater risk.
- In 2020, Pennsylvania ranked among the top states in the National Priorities List (Superfund sites), with 90 sites in danger of releasing hazardous substances.
- Air pollution is one of the greatest health challenges in Pennsylvania. In 2021, the state ranked 41st of 50 states for the general public's exposure to acceptable levels of particulate matter.
- Rising heat poses a threat for Pennsylvania and is caused in large part by greenhouse gases. In 2017, 29% of greenhouse gas emissions were from nonrenewable electricity generation, and 24% were from transportation.
- In 2020, about 61% of residents were served by optimally fluoridated community water systems and 26% of Pennsylvanians used a private well as their main source of drinking water.

IV. Introduction

What is health? Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.[1] Multiple factors play a role in an individual's health, including genetics, behaviors, social circumstances, environment, medical care, and stress.[2]

What is public health? Public health is the science of protecting and improving the health of people and their communities by promoting healthy lifestyles, researching disease and injury prevention, and detecting, preventing, and responding to infectious diseases.[3]

Three key roles of public health are[4]:

1. Assessment	Systematically collect, analyze and make available information on healthy communities
2. Policy Development	Promote the use of a scientific knowledge base in policy and decision making
3. Assurance	Ensure provision of services to those in need

To fulfill a key role of public health, the Healthy Pennsylvania Partnership (HPP) with the Pennsylvania Department of Health collaborated on the development of this 2020 Pennsylvania State Health Assessment (SHA). A health assessment collects and analyzes data to educate and mobilize communities to develop priorities, leverage resources, and plan actions to improve population health.

This SHA includes the state's population characteristics, social and economic factors, environmental factors, health care information, health risk behaviors, and health outcomes. Health disparities are indicated throughout the report to reflect where the needs are greatest. The process of developing the report included a systematic collection and analysis of qualitative and quantitative data from a wide range of sources with the active involvement of partners at each step. Qualitative data were collected from stakeholder meetings, focus groups, and a public poll in which open-ended questions were asked. Quantitative data were collected from local, state, and national sources.

The SHA assesses and presents the status of our population's health through a health equity lens, so that the goal of health equity can be achieved. The American Public Health Association defines health equity as everyone having the opportunity to attain their highest level of health. The Centers for Disease Control and Prevention says that health equity is achieved when every person can attain full health potential, and no one is disadvantaged from achieving this potential because of social position or other socially determined circumstances.

While the goal of this report is to be as inclusive as possible, the data available often describes gender of individuals as binary, either male or female. As a result, some people may not be well reflected in those statistics.

Additionally, citations are provided throughout to support additional investigation.

When statistics were referenced from a scientific sample survey with a known uncertainty, that level of uncertainty is presented with 95% confidence intervals (I). These confidence intervals represent the range in which the result will be found 95 times if 100 samples are taken of the same population group.

The maps present information that is available at the county level. If the data has small numbers, usually less than five, then data is withheld and indicated by being left white.

Data in this assessment were obtained from different sources. The most recent data available were used, resulting in different years being utilized.

Different data sources use different definition for race and ethnicity. Across this report, Hispanic refers to any race, unless it is specified. The definitions non-Hispanic Black and non-Hispanic White are used if the data source specifies these.

Issues and data discussed in the report were identified through a multi-step process that included input from stakeholders and Pennsylvania residents, and a review of current literature.

The HPP's next steps will be to select priority health issues and develop a State Health Improvement Plan to effect change in Pennsylvania. Please consider participating in the HPP to help impact the health issues identified here by contacting RA-ship@pa.gov.

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V. Vision, Mission, and Guiding Principles

The **Healthy Pennsylvania Partnership (HPP)** is a multi-sector collaboration that identifies key health challenges in Pennsylvania and works to solve them. Within the HPP there are three initiatives: the State Health Assessment (SHA), the State Health Improvement Plan (SHIP); and the Health Improvement Partnership Program.

- The **SHA** assesses and reports on the health status of Pennsylvanians. The assessment identifies priority health issues and the populations most impacted by those issues, and it considers factors that influence the populations being most impacted. It also describes the wide range of assets that can be leveraged to solve health problems.
- The partnership works on the **SHIP** to identify health improvement priorities to be addressed in this 5-year strategic plan. The SHIP identifies strategies and targets for addressing issues along with the parties responsible for implementing each strategy.
- The **HPP** provides a quarterly newsletter to health improvement partnerships in communities throughout the commonwealth. The newsletter highlights partner and Department of Health programs, statistics, conferences, grant opportunities, and workshops.

Below are the vision, mission, and guiding principles of the HPP, established during the SHA process.

Vision

Pennsylvania is a place where all people can achieve their full physical, mental, and social well-being in a safe environment, free of inequities.

Mission

To protect and improve the health of all Pennsylvanians by engaging stakeholders across multiple sectors to understand and respond to the health needs of Pennsylvanians through holistic, evidence-based, and data-informed intervention and prevention efforts

Guiding Principles

Leadership	We drive equitable health improvement strategies across the state using evidence, data, and intersectional expertise to inform our processes.
Collaboration	We respectfully partner with members of the community and diverse stakeholders to address the root causes of key public health issues and develop strategies for collective action.
Inclusion	We foster an environment where individuals share a sense of belonging and practice acceptance and active listening, so that we may engage diverse populations.
Accountability	We value and respect each other's time, honor individual commitments, maintain transparency, and recognize our responsibility to community and the mission, while being flexible to changing circumstances.
Accessibility	We cultivate an open dialogue between stakeholders and the public to share products, information, and data in an accessible and engaging way.
Equity	We aim to provide every person, regardless of location, religion, race, ethnicity, sexual orientation, or gender identity and expression, the same opportunities to live their healthiest life and reach their full potential.

VI. Our Process

This page summarizes the multi-part SHA process informed by diverse stakeholders and constituents from across the state. The SHA was completed between January and December 2020.

Phase 1 Determine themes and overarching framework by reviewing state and local health assessments and community health needs assessments. Identify diverse stakeholders who will participate.

Phase 2 Identify and describe key issues within themes through the stakeholder assessment, focus groups, and public poll.

Phase 3 Select core data points that represent health issues by researching and scoring approximately 350 indicators.

Phase 4 Integrate findings and develop SHA report in collaboration with stakeholders.

Phase 5 Share the SHA report with Pennsylvania residents and stakeholders and collect feedback.

Instruments

Learn more about our methods in the appendix.

Literature review: The internal team reviewed 14 state health assessments, local health assessments, and community health needs assessments to study common themes, sub-themes, and indicators.

Stakeholder assessment: Seventy-seven members of the HPP completed an assessment regarding the vision for the partnership, describing vulnerable populations, criteria for selecting data indicators, local and statewide assets, pressing health issues within eight themes (pictured on the next page), and social determinants of health.

Focus groups: Sixty-eight stakeholders across eight theme-based focus groups discussed priority health issues, vulnerable populations, assets, needs, and social determinants of health.

Public poll: Two thousand residents from across Pennsylvania were invited via a panel sample to answer an online poll about their health needs and community concerns.

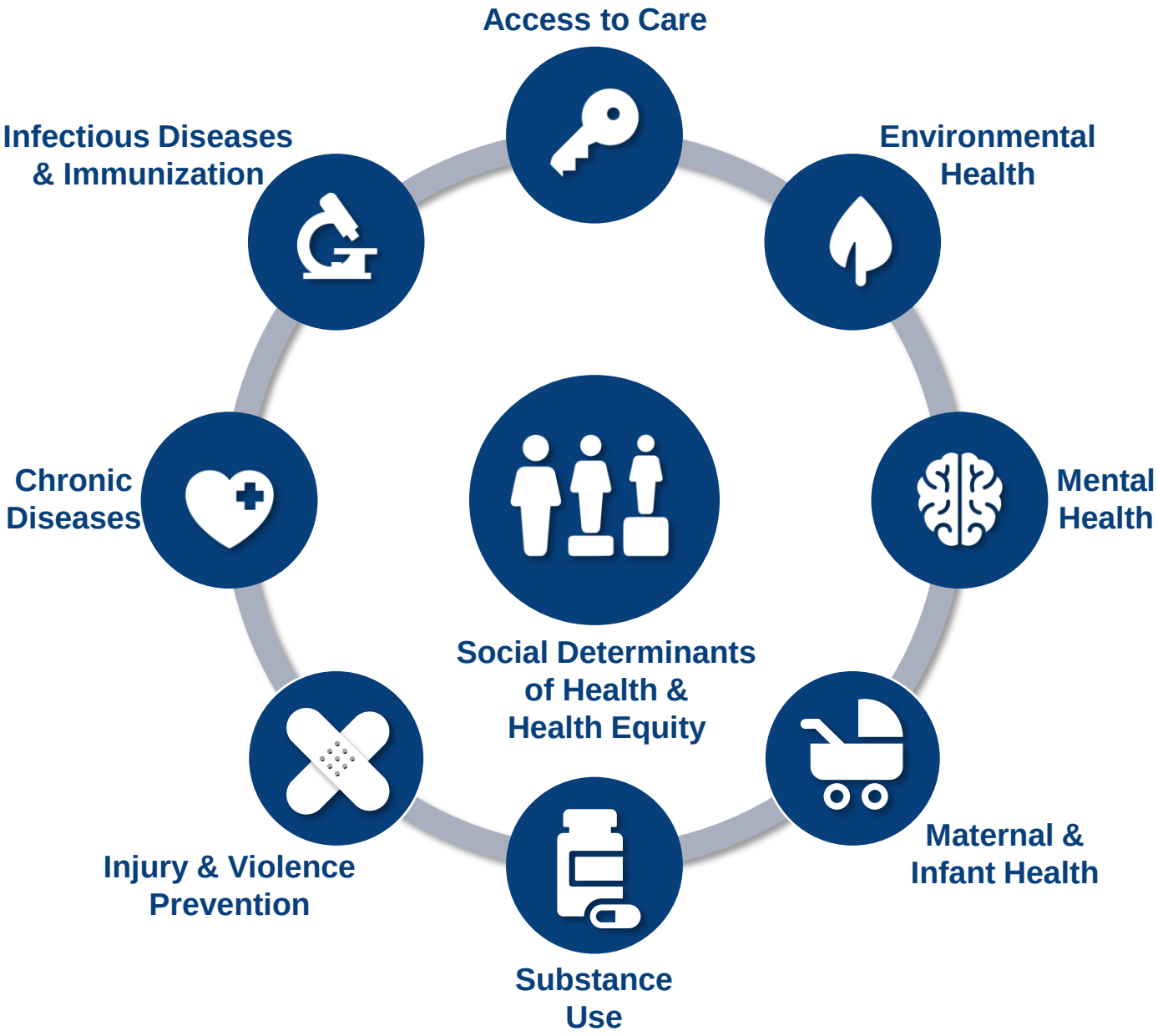
Indicator scoring: Indicators associated with priority health issues were researched and scored by two independent coders using a matrix of criteria.

Stakeholder meetings: Three stakeholder meetings were held to assist with the development of the SHA. Stakeholders provided input on visual elements of the SHA, methods of report dissemination, selection of indicators, and context surrounding the key health issues.

Report feedback survey: Both stakeholders and the public were invited to review the SHA and offer feedback. Their input was reviewed and integrated into this SHA.

VII. SHA Themes

The themes presented in this SHA were based on the review of other state and local health assessments and community health needs assessments. The literature review included cataloguing all themes, sub-issues, and indicators included in these reports and aligning them with Healthy People 2020 topics, objectives, and leading health indicators. The most common themes appearing in the literature review formed the core content of this SHA.

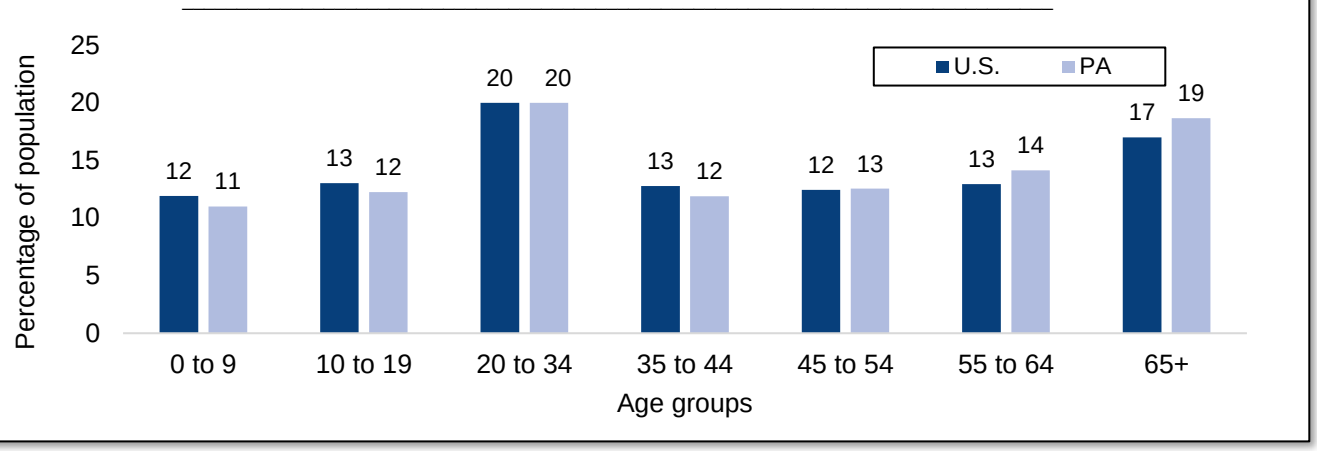


VIII. Who are Pennsylvanians?

This section describes the diversity of Pennsylvanians in terms of age, race, ethnicity, geography, gender, gender identity, education, housing, and life expectancy.

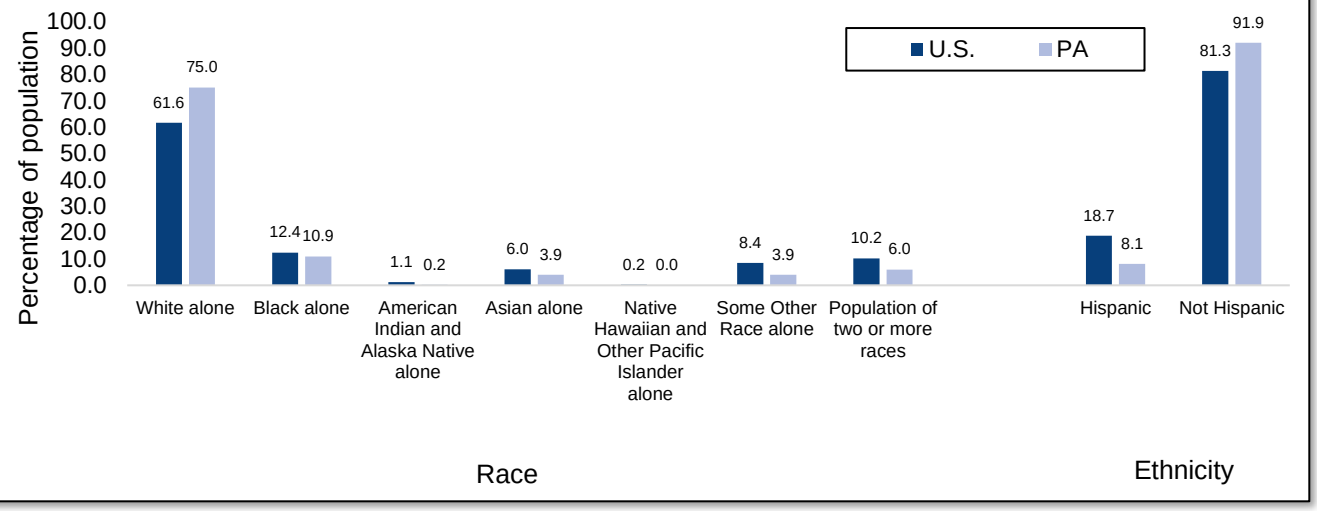
- As shown in figure VII.1, in 2019, about one-quarter of Pennsylvanians were under the age of 20 and one-third were 55 and older.
- In 2019, Pennsylvania had a larger proportion of its population aged 65 and older (18.7%) than the U.S. overall (16.5%).[1]
- Pennsylvania's older population grew between 2010 and 2019. The age groups 65 to 69 and 70 to 74 grew by 34% and 43% respectively.[1]

Figure VII.1. Pennsylvania and U.S. Populations by Age Group, 2019[1]



Pennsylvania has a racially and ethnically diverse population. One in four Pennsylvania residents, in 2020, identified as Black, Asian, multiracial, or other. Eight percent identified as Hispanic or Latinx.[2,3]

Figure VII.2. Pennsylvania and U.S. Populations by Race, 2020[1]



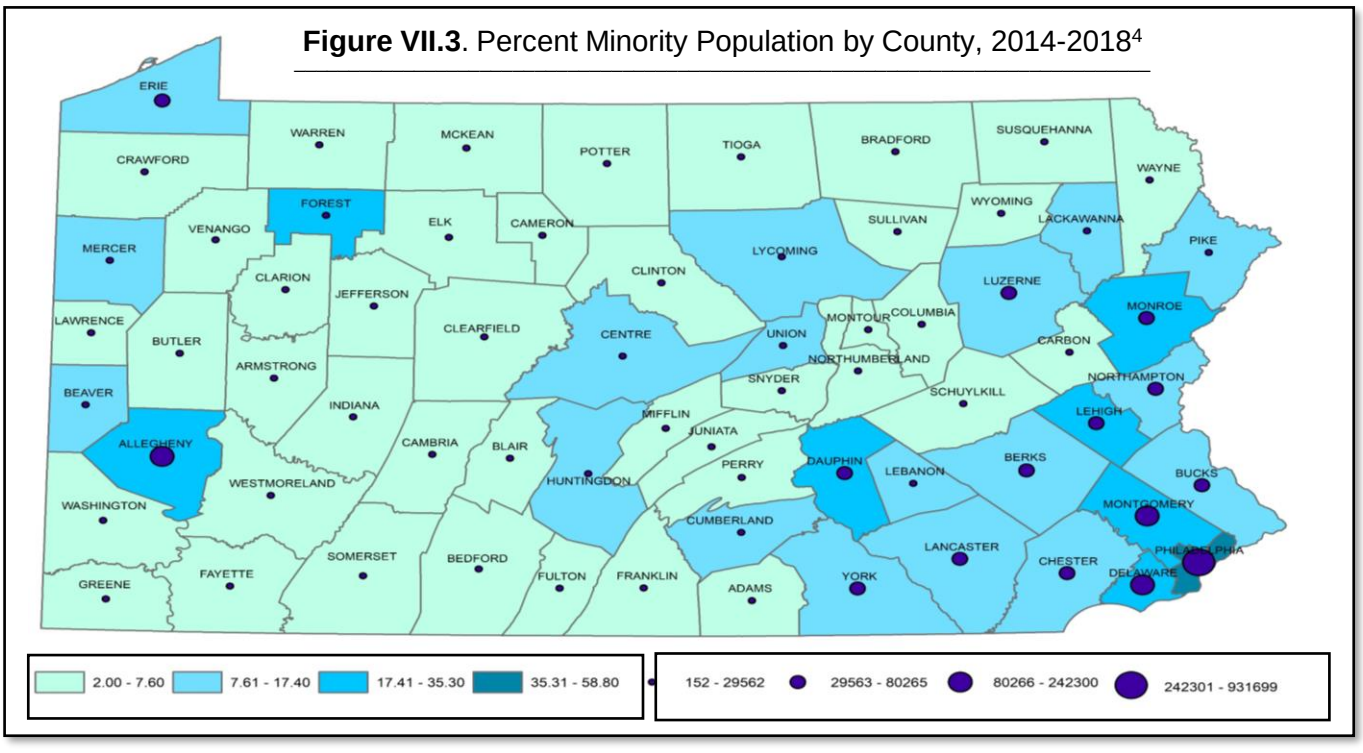
Overall, Pennsylvania's population grew by 2.4% between 2010 and 2020. The population of White alone residents decreased by 6.3%, while Black, Asian, Multiracial, American Indian and Alaska Native, Native Hawaiian and other Pacific Islander, other races alone and Hispanic populations increased. Multiracial population increased by 226% between 2010 and 2020.[2]

Table VII.1. Pennsylvania Population Change by Race and Ethnicity[2,3,]

	Categories	2010	2020	Percent Change
Race	White alone	10,406,288	9,750,687	-6.3%
	Black alone	1,377,689	1,423,169	3.3%
	American Indian and Alaska Native alone	26,843	31,052	15.7%
	Asian alone	349,088	510,501	46.2%
	Native Hawaiian and Other Pacific Islander alone	3,653	4,276	17.1
	Other races alone	300,983	508,531	69.0%
	Multiracial	237,835	774,484	225.6%
Ethnicity	Hispanic	719,660	1,049,615	45.8%
	Non-Hispanic	1,198,2719	1,195,3085	-0.2%
Total	Total	12,702,379	13,002,700	2.4%

Minority populations ranged from 2% in Elk County to 59% in Philadelphia County (Figure VII.3). Allegheny, Montgomery, Lehigh, Monroe, Dauphin, Delaware, Forest, and Philadelphia counties have the largest minority populations.[4]

Figure VII.3. Percent Minority Population by County, 2014-2018[4]



Limited English Proficiency. In 2019, about 12% (1.4 million) of Pennsylvania residents aged five years and over spoke a language other than English at home.[5] Of these, 38.2% (542,607) spoke English less than very well. Spanish was the most common language spoken at home after English, making up 46% of limited English proficient persons in Pennsylvania, followed by other Indo-European languages and Chinese.

Although Chinese speakers make up just under 10% of people with limited English proficiency, the number of people who speak Chinese in Pennsylvania increased by over 36% from 2010 to 2019 (compared to a 24% increase among Spanish speakers, and a 17% increase in the total number of people with limited English proficiency).[5]

In addition, there are those whose primary language is spoken English, but have difficulty with reading comprehension.

The top 10 commonly spoken languages at home other than English are: Spanish (5.2%), Chinese (including Mandarin and Cantonese) (0.8%), Yiddish, Pennsylvania Dutch, or other West Germanic languages (0.6%), German (0.3%), Russian (0.3%), Arabic (0.3%), Vietnamese (0.3%), French (including Cajun) (0.3%), Italian (0.3%) and Korean (0.2%).[5]

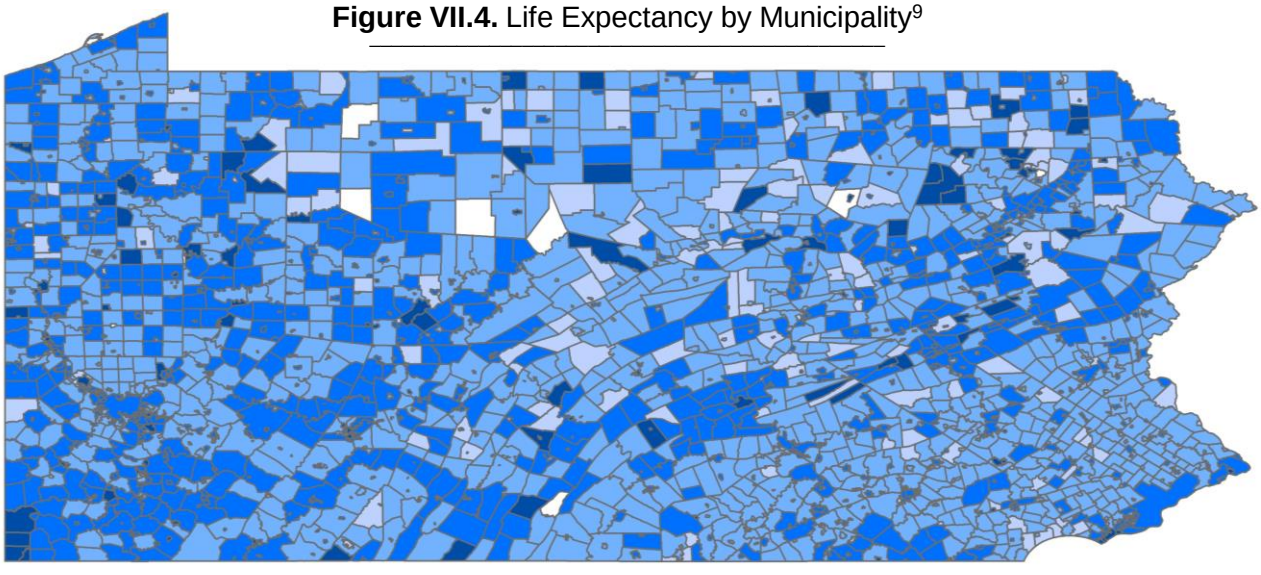
Gender. As of 2020, Pennsylvania had a total of 13,002,700 residents. Based on 2019 estimates, 49% of the population identified as males and 51% identified as females (note: no other options were available).[1,2]

Sexual Identity. In 2018, 5% of the adult population self identified as lesbian, gay, or bisexual, and under 1% identified as transgender.[6]

Population Density. Pennsylvania's area is 44,743 square miles, with a population density of approximately 284 persons per square mile. Based on the Center for Rural Pennsylvania's definition, a county is rural when the number of persons per square mile within the county is less than the state average (284). By this definition, of Pennsylvania's 67 counties, 48 are rural and 19 are urban. About one-third of residents live in rural counties.[7]

Life Expectancy. In 2019, Pennsylvanians' average life expectancy was 78.4, ranging from 74.9 to 83.0 across counties.[8] The map below shows significant differences in life expectancy by municipalities.

Figure VII.4. Life Expectancy by Municipality[9]



Death Rates

In Pennsylvania in 2019, there was a total of 133,392 deaths with 77% occurring among those age 65 and over. The age-adjusted death rate was 750.6 per 100,000 residents.[10]

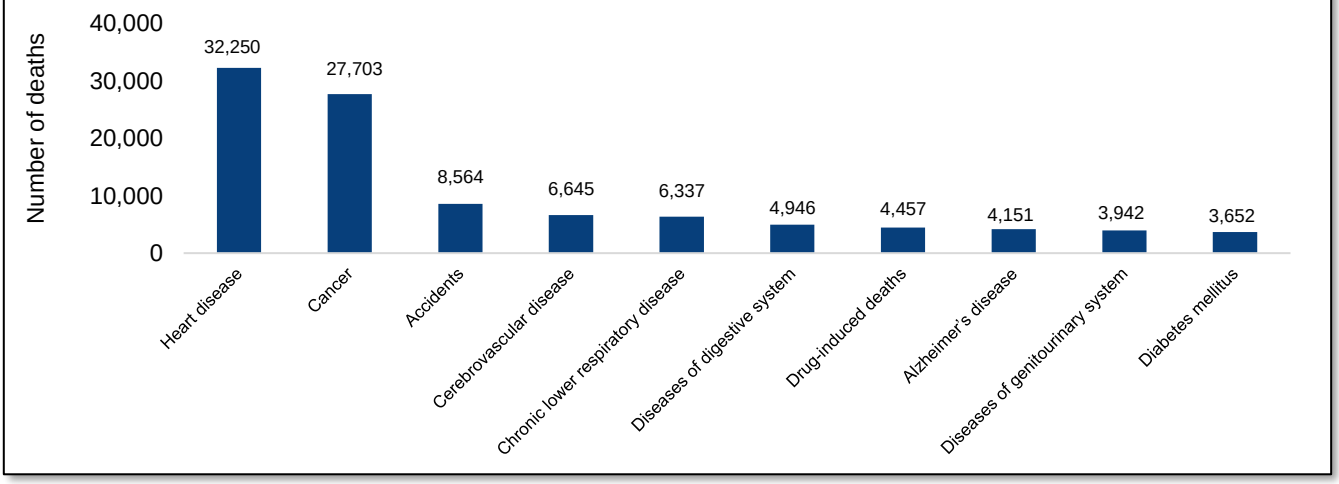
There were geographic, racial, and ethnic disparities in the overall age-adjusted death rates. In 2019, across the counties, the age-adjusted death rate per 100,000 ranged from 550.8 in Union County to 921.2 in Greene County. The age-adjusted death rate per 100,000 was also higher among Black residents (898.8) compared to Whites (730.8), Hispanics (541.2), and Asian/Pacific Islanders (344.5). Deaths were higher among males in all age groups except among the age group 80 years and over.[10]

In 2017, Pennsylvania's age-adjusted death rate was higher than the U.S. average for heart disease, cancer, accidents, kidney diseases, septicemia, and drug overdoses.[11]

Causes of Death (for leading causes by age group see Appendix A)

- In 2019, the top two causes of death were heart disease and cancer (Figure VII.8).
- Accidents, drug-induced deaths, suicide, and homicide were among the top leading causes of death for those age 20 to 44 in 2019 (see Appendix A). Cancer, heart disease, mental and behavioral disorders, cerebrovascular diseases and chronic lower respiratory diseases were the top five leading causes of death for those age 65 and over.[10]
- Premature deaths are measured by the number of years of potential life lost before age 75 per 100,000 population. Pennsylvania was ranked 32nd among states in 2020, in premature deaths.[12]

Figure VII.8. Ten Leading Causes of Death in Pennsylvania, 2019[10]



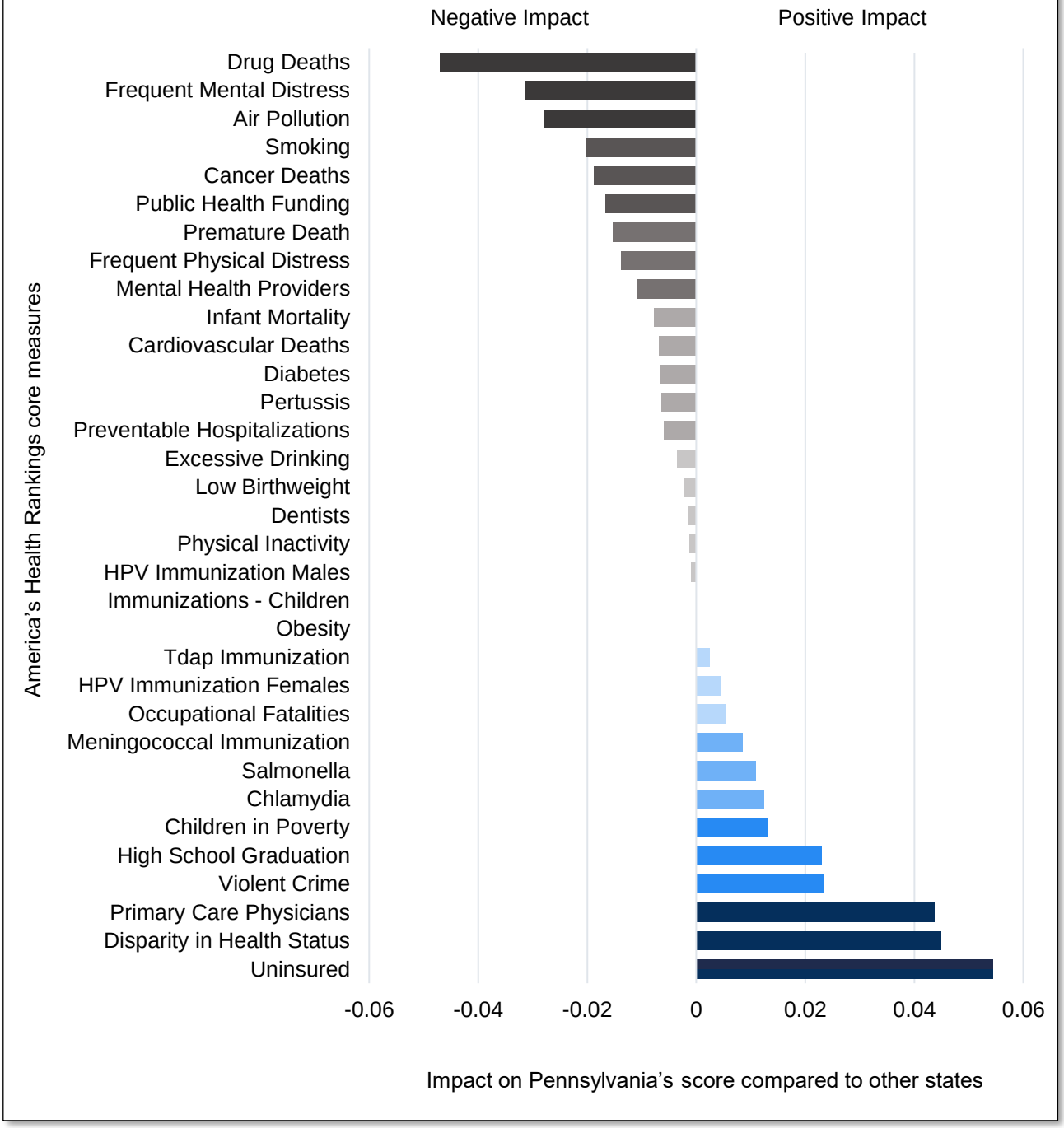
Overall Challenges and Strengths

Based on America's Health Rankings composite measure, Pennsylvania ranked 28th among all states in its overall health status.[12]

- Pennsylvania's top strengths included a low percentage of uninsured people, a high rate of primary care physicians, and high immunization coverage among adolescents.
- Top challenges included high levels of air pollution, high prevalence of frequent mental distress, and high drug-related death rates.[12]

The following chart compares Pennsylvania to other states using selected core measures. The 50 states are compared against each other on each of these metrics. Those that are in the top of the rankings are the negative impact measures, and those that fall in the lower half have positive impact on the overall ranking. Overall, Pennsylvania ranked 28th in 2019.

Figure VII.9. America's Health Rankings Core Measures Impact in Pennsylvania, 2019[12]



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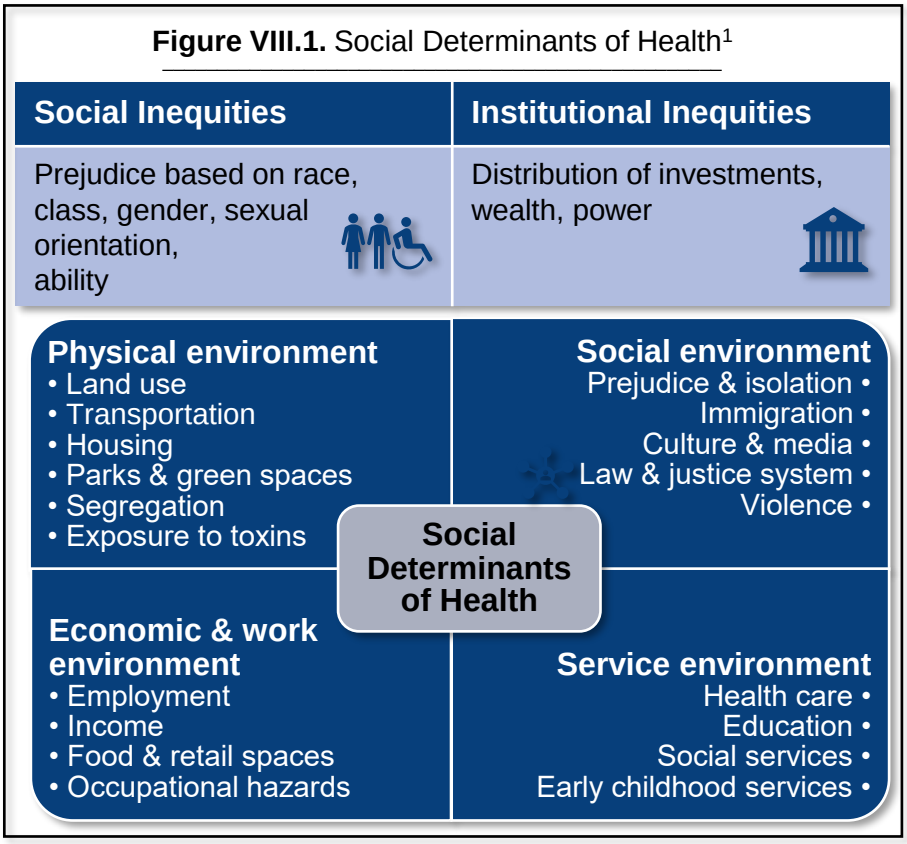
IX. Social Determinants of Health and Health Equity

Health disparities persist throughout Pennsylvania and the nation, and COVID-19 has underscored and magnified this reality. Residents across the state die prematurely and live with a poor quality of life due to social, economic, service environment, and physical environment factors, which are the social determinants of health. Figure VIII.1 outlines examples of the social determinants that cause these harms. Some of these inequities are demonstrated in this section.

Figure VIII.1. Social Determinants of Health[1]



> *A growing body of research highlights the importance of upstream factors that influence health and the need for policy interventions to address those factors—in addition to clinical approaches and interventions aimed at modifying behavior..”*
>
> – The Centers for Disease Control and Prevention[2]

Key Terms[2]

Health disparities:
These occur when individuals in some communities have better health outcomes than others. They are preventable differences in overall outcomes.

Social Determinants of Health:
These are impacted by where people live, learn, work, and play. Examples include housing, prejudice, education, and income. They are largely dictated by what resources are available financially and physically, as well as what is marketed.

Health equity:
Equity, specifically in relation to health, is a step beyond equality. It ensures all have the opportunity to live their healthiest life, regardless of other factors. Equity reflects meeting people where they are, without assuming all need the same supports to achieve their full health potential.

Approximately 40% of modifiable determinants of health are due to social and economic factors, 30% due to health behaviors, 20% due to clinical care, and 10% due to physical environment.[3] Social determinants of health, including education, socioeconomic status, social supports, access to services, systemic racism and oppression, racial segregation, housing, and the built environment have contributed to different health outcomes for Pennsylvanians. Below are a small number of selected examples of disparities found throughout this report.

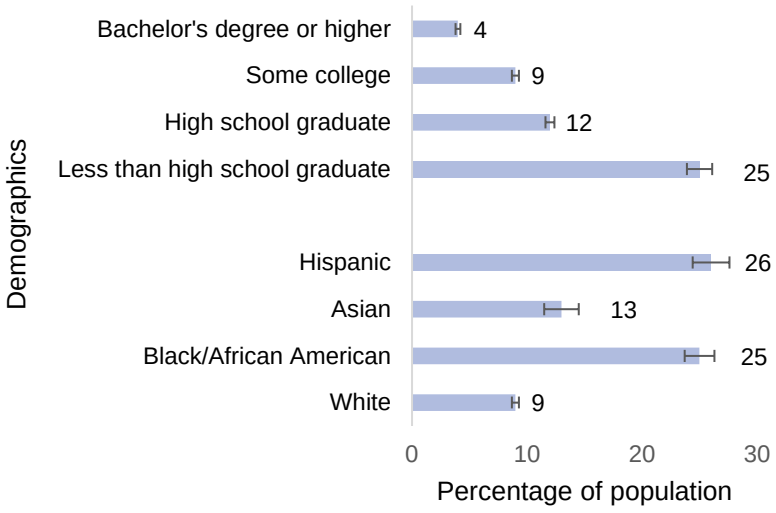
- Black Pennsylvanians were more likely to have financial difficulty paying their mortgage, rent, or utility bills, buying food, eating a balanced diet, seeing a doctor due to cost, and being uninsured.[4]
- Gay, lesbian, and bisexual high school students were at higher risk of being bullied in school, being the victims of sexual violence, feeling sad or hopeless, attempting suicide, experimenting with marijuana, not using protection during sexual intercourse, being physically inactive, and being obese.[5]
- Compared to White residents, Black Pennsylvanians had higher rates of infant mortality, maternal mortality, low birth weight babies, teen births, and having no prenatal care.[6]
- Compared to non-Hispanic Whites, Hispanic residents were more likely to be uninsured, not have a health care provider, be unable to see a doctor due to cost, and to have greater health literacy challenges.[4]
- Rural counties in Pennsylvania had lower rates per 100,000 residents of physicians and dentists compared to urban counties. On the contrary, rural counties had lower percentages of babies born with low birth weight and lower overdose deaths compared to urban counties.[7]
- Those with lower educational levels were more likely to have financial difficulty paying mortgage, rent, or utility bills, eating a balanced diet, having a personal health care provider, visiting a dentist, and receiving care due to cost.[4]

> *"It is undeniable that racism impedes our vision of a healthy Pennsylvania for all."*
>
> - Former Secretary of Health Rachel L Levine

The Healthy People 2030 (HP2030) grouped social determinants of health into five domains, namely economic stability, educational access and quality, health care access and quality, neighborhood and build environment, and social and community context.[8] In this section, we will cover economic stability and education. The other components of social determinants of health are covered in the other sections such as environmental health, injury and violence and access to care sections.

Economic stability is key to overall wellbeing of a community and Pennsylvania faces disparities in measures of economic stability.

Figure VIII.2. People Living Below Poverty Level by Race, Ethnicity and Education in Pennsylvania, 2019[9]



- As illustrated in figure VIII.2, poverty disproportionately impacts minorities and those with lower levels of education.
- Overall, 12% of Pennsylvanians lived below poverty in 2019.[9]
- Black and Hispanic Pennsylvania households were about three times as likely to live in poverty compared to White households.[7]
- Lack of educational attainment is a driving force of poverty and unemployment.
- Individuals and families may be above the poverty threshold and still struggle financially.

Based on the American Community Survey 2015–2019 estimates, the median household income in Pennsylvania was $61,744, which is 1.7% lower than that of the U.S. ($62,843). The median household income was lower for Black ($38,560) and American Indian and Alaska Native ($40,622)[10] households.

As shown in figure VIII.3, in 2018, the percent of people living below poverty ranged from 6% in Bucks County to 24% in Philadelphia County.[11]

Figure VII.3. Percent Below Poverty by County, 2018[11]

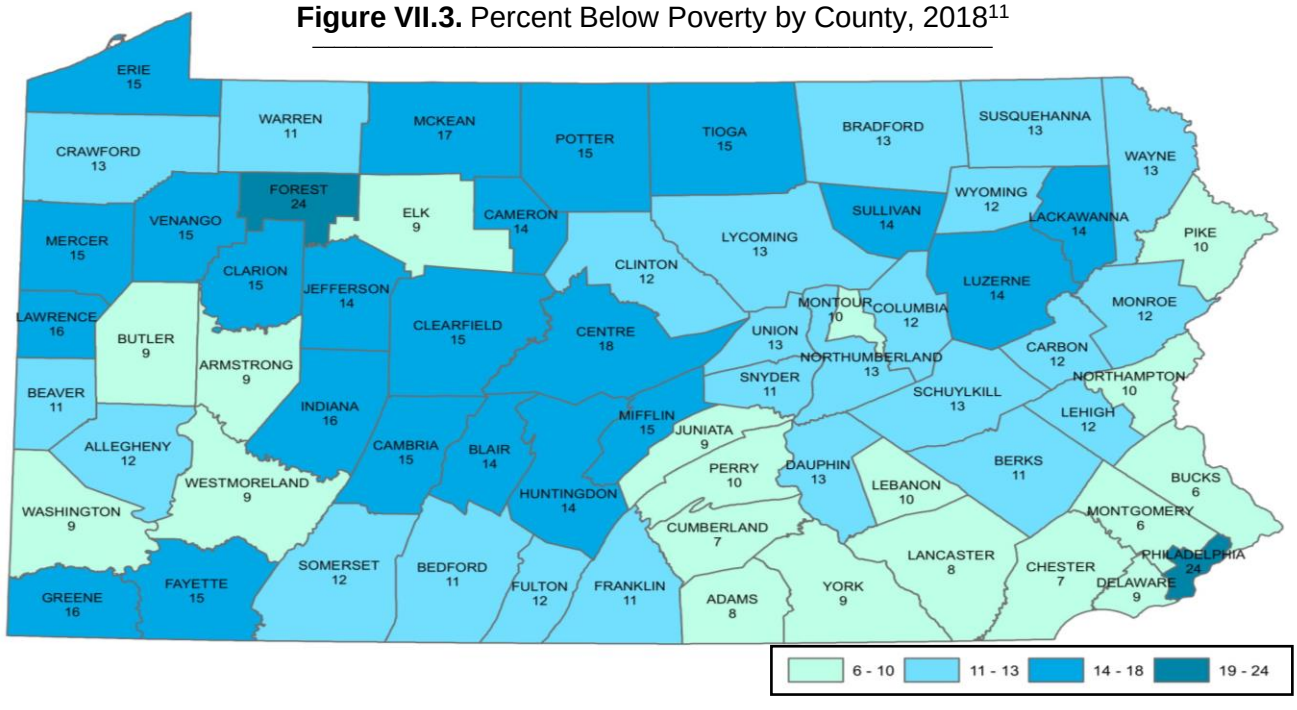
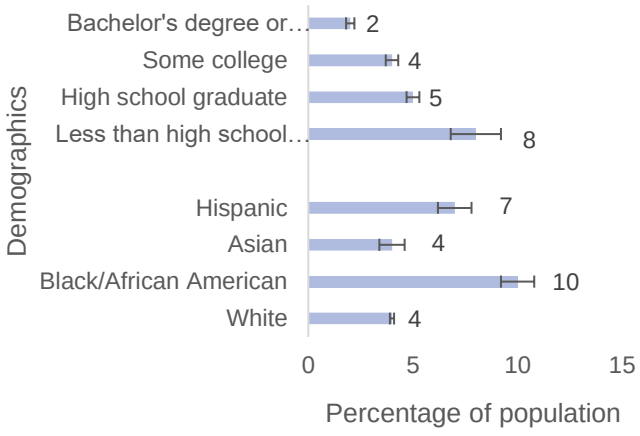
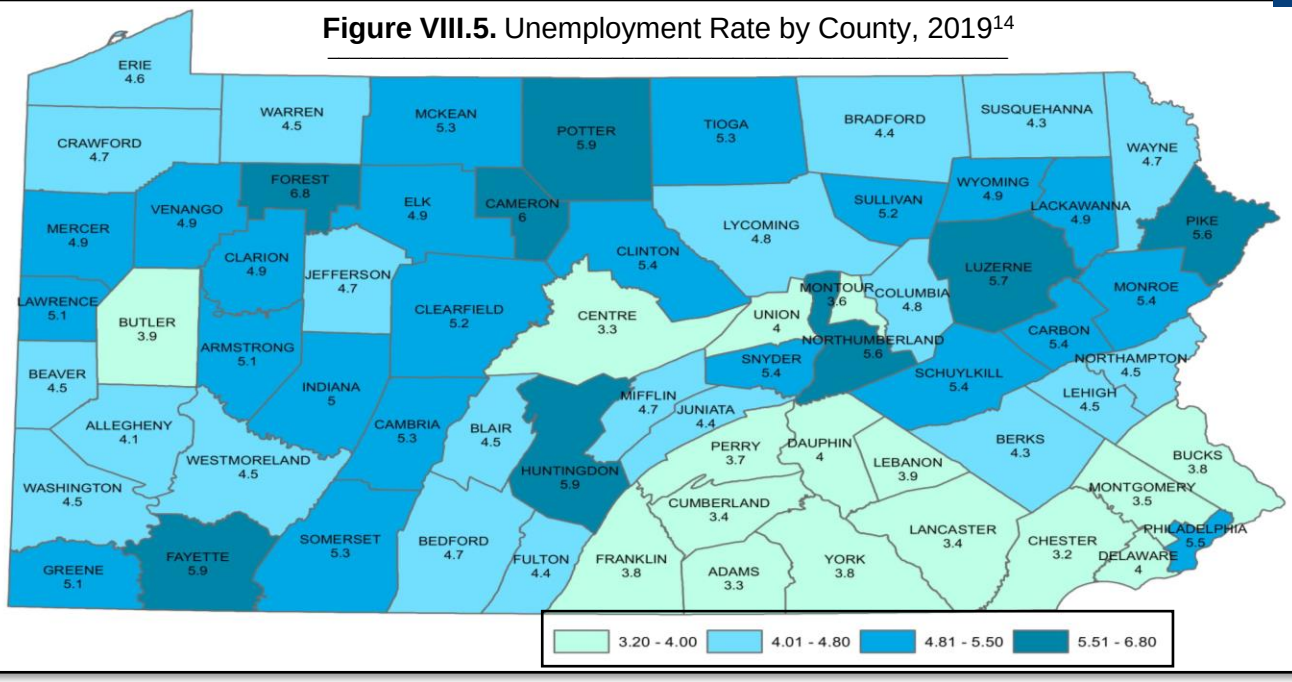


Figure VIII.4. Unemployment Rate by Education and Race and Ethnicity, 2019[12]



- Employment does not equate to stability. Stakeholders discussed concerns about the "working poor."[13]
- In 2019, Black and Hispanic Pennsylvanians were more likely to be unemployed than Whites (see Figure VIII.4).[12]
- As shown in figure VIII.5, the unemployment rate in 2019 ranged from 3.2% in Chester County to 6.8% in Forest County. [14]
- The COVID-19 pandemic has exacerbated unemployment, as it jumped from 5% in January to 16.2% in April 2020. Unemployment decreased slowly and in June 2021 it was 6.9%.[14]

Figure VIII.5. Unemployment Rate by County, 2019[14]



Philadelphia

Philadelphia accounts for 20% of Pennsylvania's population, and about a quarter of the population there lived below poverty.[15]

Making Ends Meet

Among public poll respondents, about one-half said they either had just enough to make ends meet or not enough, when asked if there was enough money at the end of a month.[13]

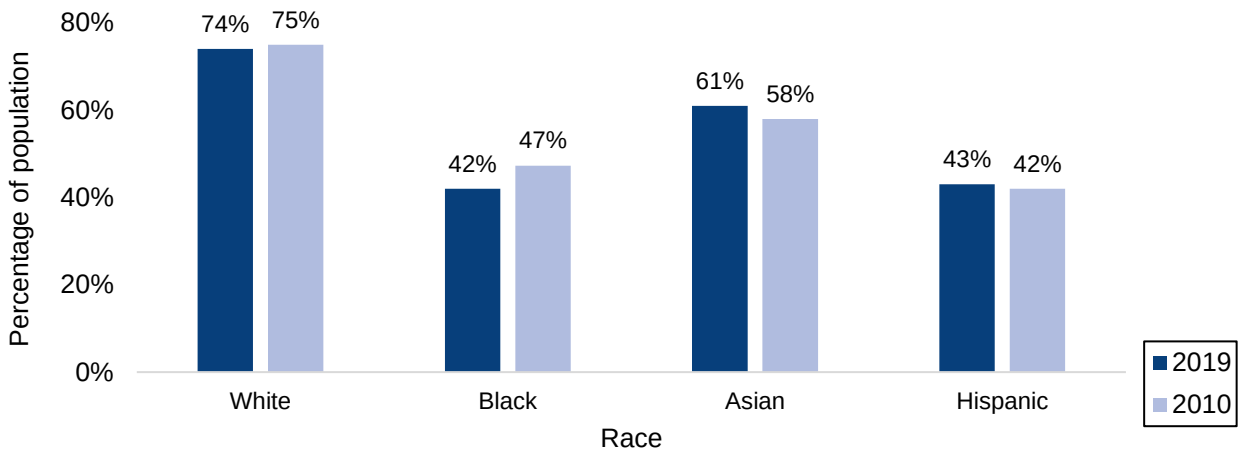
Public Assistance

Across Pennsylvania, 26% of households with children received Supplemental Security Income (SSI), public assistance, or Supplemental Nutrition Assistance Program (SNAP).[16]

As of 2020, there were about 5.7 million housing units in Pennsylvania, with 3.2% growth between 2010 and 2020.[17] Home ownership was lower among minority residents compared to their White counterparts. The percentage of Black Pennsylvanians who owned homes decreased between 2010 and 2019.[18]

In 2019, median gross rent was $951, while nationwide it was $1,097. Median gross rent increased by 29% between 2010 and 2019 in Pennsylvania.[19] Urban areas have more renting, older houses, median gross rent, and housing cost burden, whereas rural areas have more vacant houses.[20]

Figure VII.7. Home Ownership by Race in Pennsylvania, 2010 and 2019[18]



Housing, Employment, and Income

2019
69% of housing units were owner occupied[21]

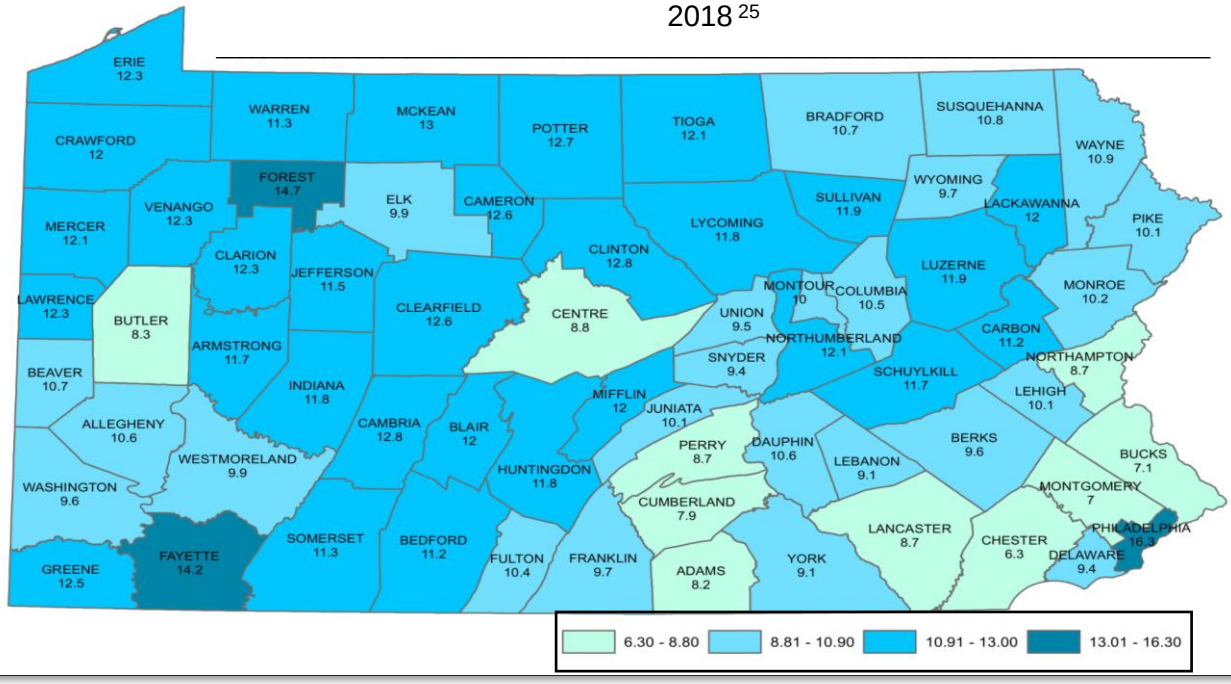
2019
4% of adults were unemployed[22]

2019
28% of households earned less than $35,000[23]

2019
16% of families with children lived below poverty[24]

In Pennsylvania in 2018, disparities in social determinants of health varied by geography. Food insecurity, defined as the household economic and social condition of limited or uncertain access to adequate food, is an important determinant of health that looks differently across the state. Rates of food insecurity ranged from 6% to 16% across the counties (Figure VIII.6).

Figure VIII.6. Overall Food Insecurity Rate Among Counties in Pennsylvania, 2018 [25]



Before the COVID-19 pandemic, more than 1.53 million Pennsylvanians experienced chronic hunger every day, including 478,500 older Pennsylvanians and about 437,000 children. This was aggravated in 2020.[26] According to Feeding America 2018, Chester, Bucks, and Adams counties were the most food secure, while Philadelphia, Fayette, and Forest counties were the most food insecure.[25] Difficulty finding resource information, job loss, socioeconomic status, transportation, and isolation, could be some of the reasons for the increased food insecurity in Pennyslvania.[26]

Affordable Housing

One in three Pennsylvania renters put 30% or more of their household income towards housing.

About 13% spent 50% or more of their household income on housing.[27]

Homelessness

In 2019, 13,199 people experienced homelessness on any given day (10.3 of every 10,000 people).

About 52% of these individuals were Black.[28,29]

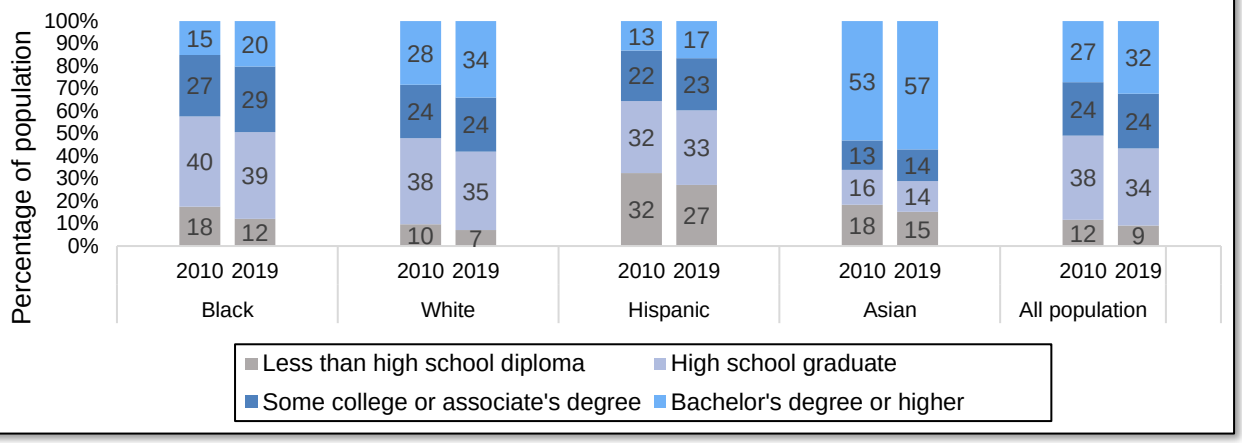
Health Literacy

About 6% of Pennsylvanians reported having difficulty understanding information from health professionals.

Challenges with health literacy were more common among those with household incomes below $15,000 (10%), and those with less than a high school education (13%) but did not vary significantly with age.[30]

As of 2019, nearly 30% of Pennsylvania residents had a bachelor's degree or higher, yet 10% had not completed high school. The percentage of people having a bachelor's degree or higher increased between 2010 and 2019, while the percentage of people who are high school graduates or the equivalent decreased in all race and ethnic groups.

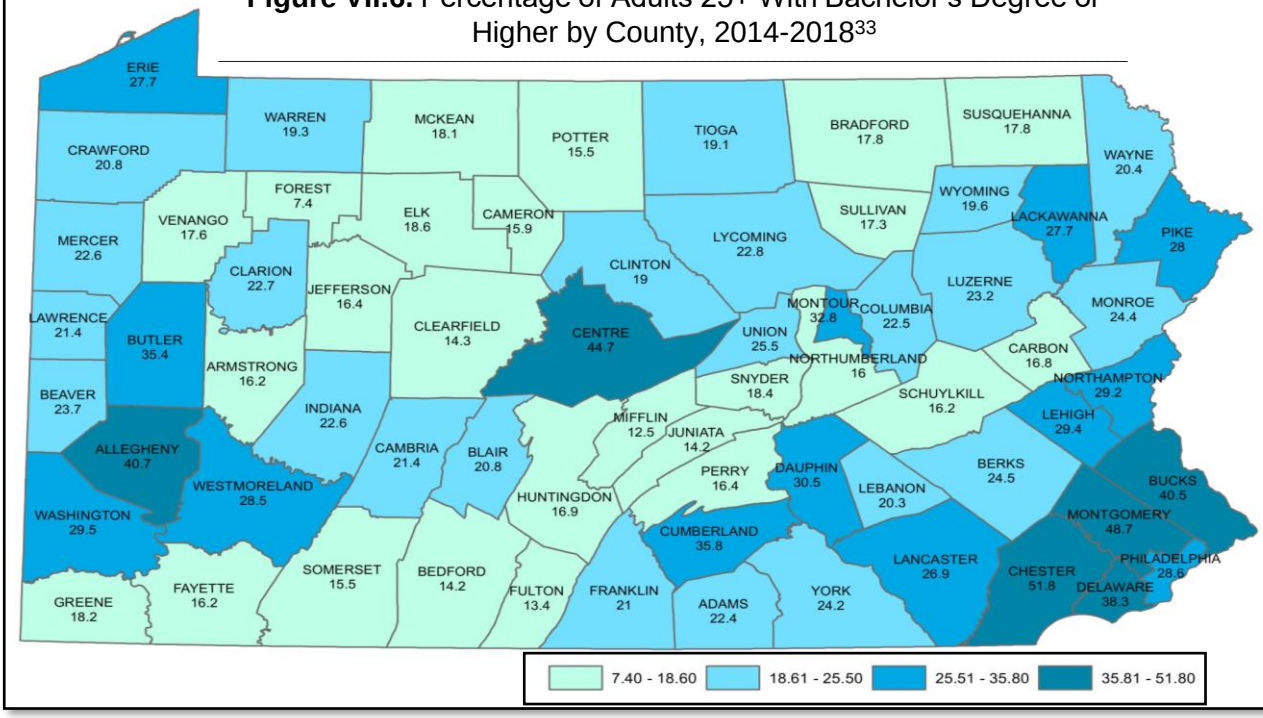
Figure VII.5. Educational Attainment for Population 25 Years and Over by Race and Ethnicity, 2019[31]



As shown in figure VII.6, in recent years the percentage of adults aged 25 and older with a bachelor's degree or higher varied greatly by county. Chester, Montgomery, Centre, Allegheny, and Bucks counties had the highest percentages of adults aged 25 and older with a bachelor's degree or higher.

Moreover, smaller percentage of Black (74%) and Hispanic (72%) students graduated with a regular diploma within four years of starting ninth grade compared to White students (91%).[32]

Figure VII.6. Percentage of Adults 25+ With Bachelor's Degree or Higher by County, 2014-2018[33]



Additional social determinants include childhood experiences. Adverse Childhood Experiences (ACEs) include emotional abuse, physical abuse, sexual abuse, intimate partner violence, household substance misuse, household mental illness, parental separation or divorce, and incarcerated household member.[34]

These ACEs have been associated with health problems that can include obesity, diabetes, depression, suicide attempts, sexually transmitted diseases, heart disease, cancer, stroke, chronic obstructive pulmonary diseases, and broken bones. ACEs have been shown to affect health behaviors including tobacco use, alcohol use, and drug use, and ACEs can impact life potential through reduced education achievement and lost time from work.[35]

In Pennsylvania, individuals with higher ACE scores were more likely to indicate they have fair or poor general health and higher prevalence of cardiovascular problems. [34]

- In a 2019 survey, an estimated 50% of Pennsylvania adults reported having experienced one or more adverse childhood experiences.[34]
- In Pennsylvania, an ACE of concern is paternal incarceration. Black, non-Hispanic adults and Hispanic adults were three times more likely during childhood to have lived with someone who served time or was sentenced to serve time in a prison, jail, or other correctional facility than White, non-Hispanic adults.[34]
- Black non-Hispanic adults and Hispanic adults were about two times more likely to have had the childhood experience of parents who were divorced or separated.

> *"We have been talking about the social determinants of health for a decade. We need to take action to chip away at all of these aspects that contribute to it—racism, poverty—they are all intertwined."*
>
> - Focus group participant

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X. Implications of Coronavirus (COVID-19)

The 2019 novel coronavirus (COVID-19) causes respiratory illness and can spread from person to person. This virus was first identified during an investigation into an outbreak in Wuhan, China.[1] The COVID-19 pandemic is an event unparalleled in modern times, impacting every part of the world. Pennsylvania has seen an unprecedented burden of COVID-19 and has taken extraordinary measures to save lives and reduce morbidity of the COVID-19 virus.

Because the immediate COVID-19 response overlapped with SHA planning and report development, brief background information is included here for context. COVID-19 response and mitigation continue in Pennsylvania, the nation, and the world at the time of this SHA's publication.

Initial Response

January 2020 – The first confirmed case of COVID-19 in the U.S. was reported in Washington state on January 21, 2020. The Pennsylvania Department of Health (DOH) initiated daily leadership meetings on January 26 to carefully track the disease, prepare a response, and coordinate with federal, local and hospital partners. By January 30, the World Health Organization had declared the virus a global health emergency.

February – The Pennsylvania Emergency Management Agency (PEMA), staffed by Pennsylvania DOH epidemiologists, public health nurses, physicians, logistical, planning and communication supports, Pennsylvania Department of Human Services representatives, and PEMA staff, expanded service hours to closely monitor the spread of the disease and begin containment strategies in furtherance of the state's preparedness plans.

March – Due to the continued spread of the virus throughout the country, PEMA partially activated its Commonwealth Response Coordination Center (CRCC) to provide planning and logistical support for Pennsylvania DOH and to coordinate situational awareness across state agencies and all 67 counties within the commonwealth. On March 6, Pennsylvania recorded its first two cases of COVID-19, and Governor Tom Wolf signed a disaster declaration to ensure the state had the resources and authority to plan the process of containment and mitigation in Pennsylvania.

By mid-March, under guidance from Secretary of Health Rachel L. Levine, Governor Wolf began to temporarily close schools and adult day centers, requesting that non-essential businesses close and county residents limit travel. Bars and restaurants were ordered to cease dine-in operations. He also imposed limited visitation in nursing homes and correctional facilities. Across the commonwealth, non-urgent surgeries and outpatient procedures were suspended. Public health and personal health programming and services adapted and expanded to include virtual opportunities. These and other mitigations would prove to be vital.

Preparedness, Testing, Contact Tracing, and Vaccination

From the beginning of the pandemic, the administration undertook a measured and regional strategy for mitigation and containment, assuring Pennsylvanians they could receive testing and treatment for COVID-19 without any financial burden. Decisions and actions were taken on state, county, and regional bases in coordination with local elected officials, public health experts, and other stakeholders. Throughout the pandemic, the commonwealth closely monitored hospital system capacity through

> *"COVID-19 has been a great reveal of differences."* - Focus group participant

the creation of a public dashboard and built and distributed millions of goods and materials to help health care systems manage the influx of patients.

The commonwealth responded aggressively to the spread of COVID-19, first by working to contain the virus through contact tracing and quarantines for those who were in contact with infected individuals. When sustained community spread was established early in the response, the commonwealth moved to mitigation efforts by issuing stay-at-home orders, closure of non-life-sustaining businesses, and restriction on large gatherings. This decision to first respond aggressively and then reopen with a risk-adverse approach has proven to be an essential and effective measure to reduce the spread of COVID-19, and ultimately has and will save an unrealized number of Pennsylvanians' lives.

Increased testing capacity has been critical to successfully reopening Pennsylvania, especially as certain regions moved from aggressive mitigation to containment strategies. In April 2020, the Wolf Administration developed an enhanced testing strategy with a focus on three pillars: ensuring testing is accessible for all Pennsylvanians with symptoms of COVID-19; increasing supply and building community capacity; and adapting to the evolving landscape of the virus in data-informed ways.

Contact tracing has been a key to preventing the further spread of COVID-19. Identifying and quarantining close contacts of those infected limits their ability to spread disease should they become infectious and helps to limit community spread. With funding made available through the federal government, the Pennsylvania DOH hired over 1,000 additional contact tracing staff to bolster and diversify the public health workforce, all while keeping Pennsylvanians safe.[2] To prevent further spread of disease, COVID-19 contacts were encouraged to stay home and maintain social distance (at least six feet) from others until 14 days after their last exposure to a person with COVID-19.[2]

The department recognizes that the COVID-19 pandemic will continue to evolve rapidly as tools, research, and data are improved to protect public health. The Wolf Administration is committed to a data-driven, community-based approach to address COVID-19. As more information becomes available, the administration will continue to refine approaches based on scientific evidence and input from communities.

The department listened to community partners, county and municipal health departments, and local health care leaders to guide a localized strategy. The number of cases in communities was closely monitored to ensure that testing sites were situated appropriately in areas with the greatest need. In Pennsylvania, all major health insurance providers, including medical assistance contractors, have covered medically appropriate laboratory testing for COVID-19. Additionally, the Pennsylvania DOH has performed testing free of charge. The Department of Community and Economic Development worked proactively to seek out FDA-approved testing resources while working closely with Pennsylvania-based private sector partners to develop new testing technology, and PEMA assisted with getting tests distributed to communities.

The state took a phased approach to reopening. This approach assigned counties to the yellow and green phases of reopening.[3] The state also took similar approaches to ease other restrictions including stay-at-home orders, statewide travel restrictions, schools reopening, and statewide mask requirements. These restrictions were continuously evaluated throughout the different waves of the COVID-19 pandemic.

The Department of Health laid out phases for COVID-19 vaccine distribution plan based on vulnerability of populations to COVID-19.[4] According to the plan, in phase 1A, the vaccine was available to critical populations, including long-term care facility residents, healthcare workers, persons ages 65 and older, and persons ages 16-64 with high-risk conditions. In phase 1B, the vaccine was available to people in congregate settings not otherwise specified as long term care facility and persons

receiving home and community-based services, first responders, correctional officers, food and agricultural workers, U.S. Postal Service workers, manufacturing workers, grocery store workers, education workers, clergy and other essential support for houses of worship, public transit workers, and individuals caring for children or adults in early childhood and adult day programs. In phase 1C, the vaccine was available to essential workers in different sectors including transportation, water and wastewater, food service, housing construction, finance, including bank tellers, information technology, communications, energy, legal services, government workers, media, public safety, and public health workers. In phase two the vaccine was available to all individuals not previously covered who are 5 and older and do not have a contraindication to the vaccine.

By December 2020, Pennsylvania started to give COVID-19 vaccines to the populations identified for phase 1A vaccine distribution. In April 2021, the other phases of vaccine distribution were implemented step by step.

On June 28, 2021, the statewide mask requirement for vaccinated and unvaccinated individuals was lifted.

A Story of People: Those Most at Risk

Every geographic area has a different racial and ethnic composition. Demographic data reported to states to form complete case records revealed an opportunity for improvement. Both nationally and in Pennsylvania, case data has been incomplete in identification of race and ethnicity, limiting abilities to identify populations at greatest risk.[5] However, sex and age data is largely complete. For Pennsylvania death reporting, 100% of deaths data included these important demographic details, captured by the electronic death reporting system.[6]

Among adults, the risk for severe illness from COVID-19 increases with age, with older adults at highest risk. Severe illness means the person with COVID-19 may require hospitalization, intensive care, or a ventilator to help them breathe, or they may even die.[7] Partially as a result of this increased risk, residents of long-term living facilities have been more impacted by severe COVID-19 than other populations.

The Centers for Disease Control and Prevention (CDC) has also reported individuals with asthma, hypertension, obesity, diabetes, chronic kidney disease, or any combination of these comorbidities are 1.5 to five times more at risk for hospitalization than people without these conditions. Data has shown racial and ethnic minority groups with these conditions are at an even higher risk for severe COVID-19 illness. Social determinants, like racism, socioeconomic factors, and access to health care continue to impact health.[8]

Governor Wolf was among the first governors in the nation to identify the issue of health disparities as they relate to marginalized populations who have been hit hardest by the COVID-19 pandemic. In April, Governor Wolf formed a task force and assigned it with identifying obstacles that cause those disparities and bringing those issues to his attention. The task force was chaired by Lieutenant Governor John Fetterman. The task force has engaged leaders, teachers, medical professionals, and other stakeholders from communities across our commonwealth, and it released a policy recommendations report titled, "Pennsylvania COVID-19 Response Task Force: Health Disparity."[9]

The Pennsylvania DOH implemented a health-equity response team led by the department's Office of Health Equity. The response aligned with Governor Wolf's taskforce and sought to lessen the burden of COVID-19 on vulnerable populations. The team included more than 100 government and community members to assess the state response through a health equity lens and recommended and implemented

activities for improvement. Pennsylvania DOH understood that long-standing health disparities were now exacerbated by COVID-19 and that community partners bringing forth methods to address these disparities would prove to be invaluable. Addressing COVID-19 and health disparities through a community partnership and from a health equity standpoint strongly aligned with two of the department's core strategies: to maintain and enhance emergency services and public health preparedness; and to promote public health with awareness, prevention, and improvement of outcomes where the need is greatest. The response team developed a recommendations report constituting an aggressive plan to mitigate the negative impacts of COVID-19 among vulnerable populations and to reduce the possibility of unintentional harm, loss of life, suffering, and long-term multi-generational impact.[10]

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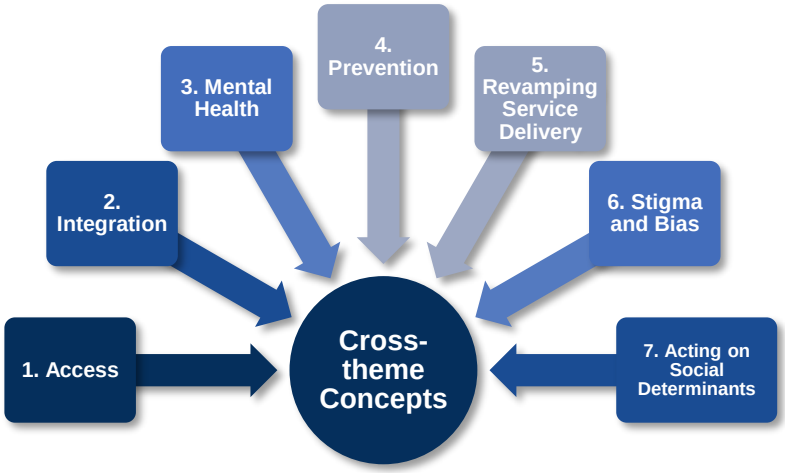
XI. Connections Across SHA Themes

In the pages that follow, the core themes of the SHA are explored in depth. During the SHA development, stakeholders of diverse experiences and expertise aligned on several cross-theme concepts that emerged. These connections are in addition to social determinants of health, equity, and COVID-19 implications, all discussed on previous pages.



1. Access

Access impacts all themes and relates not only to accessing health providers, health centers, and information, but also to accessing essentials, such as jobs, food, transportation.

2. Integration

Advancing whole-person care, breaking down silos between systems, coordinating efforts, and integrating mental and physical health are top priorities.

3. Mental Health

Mental health issues cut across all themes, ranging from access to care, to isolation and desperation exacerbated by COVID-19, to trauma, to the need for more minority providers.

4. Prevention

There is a strong need to apply a prevention framework to mental health, substance use, and violence in the same way it is applied to physical health. Involving families and building on social-emotional learning are important parts of this preventative work.

5. Revamping Service Delivery

Service delivery can be improved in several ways, including through telehealth, community health workers, schools as community hubs, and increased data tracking and sharing.

6. Stigma and Bias

Stigma prevents many people from getting the care they need, and provider biases need to be addressed as well to improve health care.

7. Acting on Social Determinants

It is essential to address the root causes of social determinants of health, specifically racism and structural inequities.

Access to Care

Access to care is a cross-cutting topic, affecting all other themes related to the health of Pennsylvanians. This section addresses barriers to accessing care, such as insurance status and the number of adults without a personal health care provider. It examines challenges in accessing dental care, recognizing the importance of oral health care. There is a focus on geographic implications for residents, including shortages of providers, transportation barriers, and access to care in rural communities. This section then looks at health literacy and provider cultural humility as issues impacting access. Disabled individuals and additional challenges regarding access is further analyzed.

This section includes the following:

- Associated issues
- Data to illustrate key points
- Factors contributing to health challenges
- Highlights on especially vulnerable populations
- Hyperlinks for further exploration
- Data sources

Data shared in this section is primarily from 2017 to 2021; data represents Pennsylvania unless otherwise noted.

Pennsylvanians experience barriers in accessing care due to cost and insurance issues.

2020

10%

of Pennsylvanians aged 18-64 were uninsured.[1]

2019

10%

of adults needed to see a doctor in the past year but were unable due to cost.[1]

2020

15%

of adults did not have a personal health care provider.[1]

Lack of health insurance is a major barrier to accessing care and is linked to worse health outcomes and higher costs of care.[2] Overall in 2020, 10% of Pennsylvania's population aged 18-64 was uninsured with higher rates being among Hispanics and those with less than high school education.[1]

Having health insurance does not necessarily mean that people can access care. Insurance policy limitations regarding provider networks and covered services, provider availability, and provider acceptance of various insurance plans vary tremendously across the state.

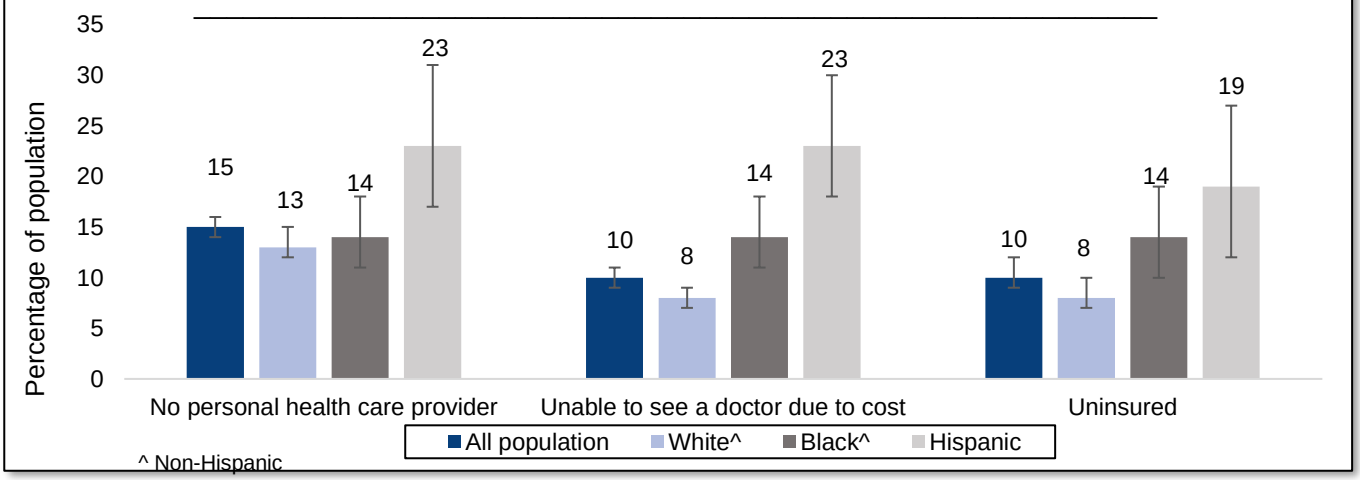
Some residents are underinsured, meaning they have deductibles, co-pays, and other health care costs that are too high relative to their income. This financial burden can prevent people from accessing the care they need.

In 2021, six counties had only one insurer participating in the Affordable Care Act marketplace (McKean, Venango, Mercer, Lawrence, Indiana, Bedford), 28 counties had two insurers, and 33 counties were served by three or more insurers.[3]

Lower levels of education were associated with lower prevalence of seeking a doctor's care. In 2019,13% of those with less than a high school degree versus 6% of those with a college degree did not see a doctor even though care was needed. Moreover, uninsured and those with lower education and lower income were more likely not to see a doctor due to cost.[1]

There were also racial and ethnic disparities for access. Compared to non-Hispanic White and non-Hispanic Black residents, Hispanic residents were more likely to be uninsured, not have a health care provider, and be unable to see a doctor due to cost. Access disparities are shown below in figure AC.1..

Figure AC.1. Access to Care Indicators by Race and Ethnicity, 2019, 2020[1]



Stakeholders highlighted the need for enough providers to support the population, with dentists especially needed among Medicaid recipients.

- In 2020, 68% of all adults had visited a dentist in the past year.[2] Only 46% of those with household incomes less than $15,000 visited a dentist, while 79% of those with household incomes $75,000 or greater had a dentist visit. Similarly, only 47% of those with less-than-high-school education visited a dentist, while 79% of those with a college degree had a dentist visit.[4]
- In 2019, there were 4,992 dentists practicing direct patient care who responded to the Pennsylvania re-licensure survey. Only 23% of these dentists reported that they accepted patients with Medicaid. This ranged from 7% to 66% across counties.[5] Possible reasons for the low acceptance of Medicaid by dentists include a low reimbursement schedule and minimum coverage for procedures. Some counties have a high number of patients with Medicaid but the rate of dentists who accept Medicaid is relatively low as seen in figure AC.2.

2020

91

primary care physicians in direct practice per 100,000 residents[6]

2014-2018

1,162

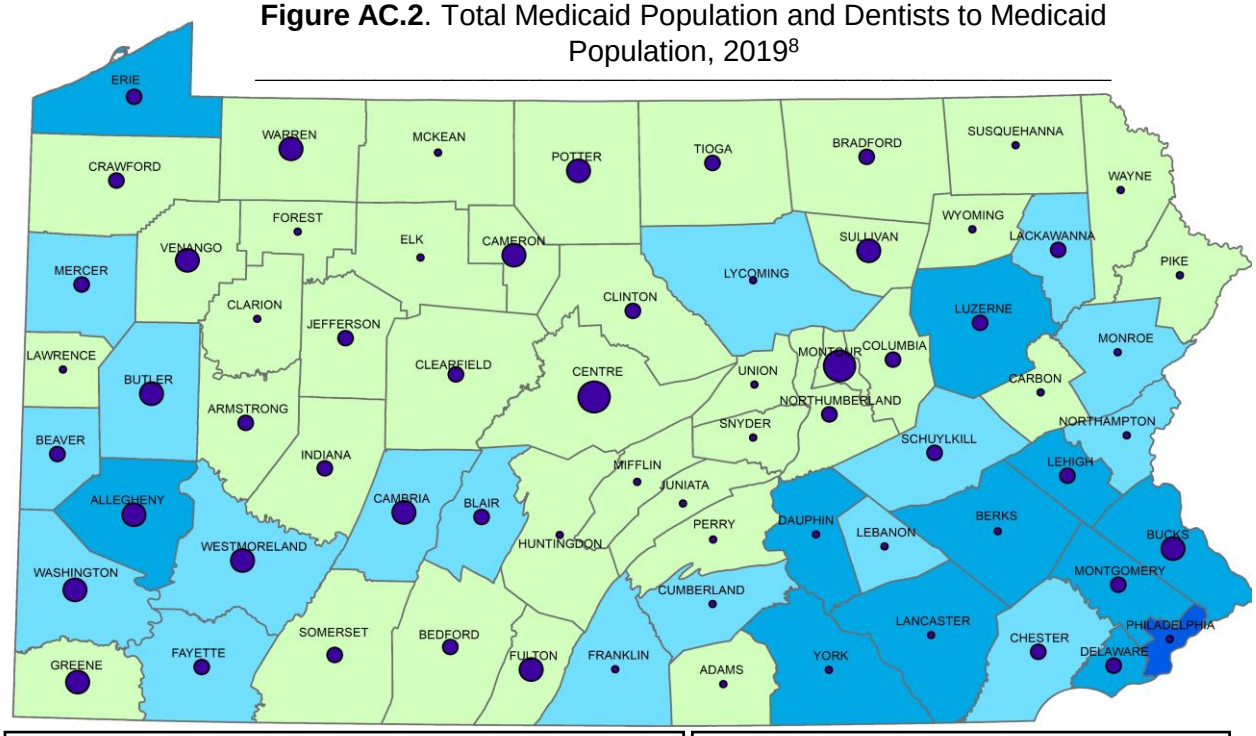
registered nurses per 100,000 residents (US 995 per 100,000)[7]

2019

84

nurse practitioners per 100,000 residents (US 85 per 100,000)[7]

Figure AC.2. Total Medicaid Population and Dentists to Medicaid Population, 2019[8]



Many individuals face barriers to care based on where they live.

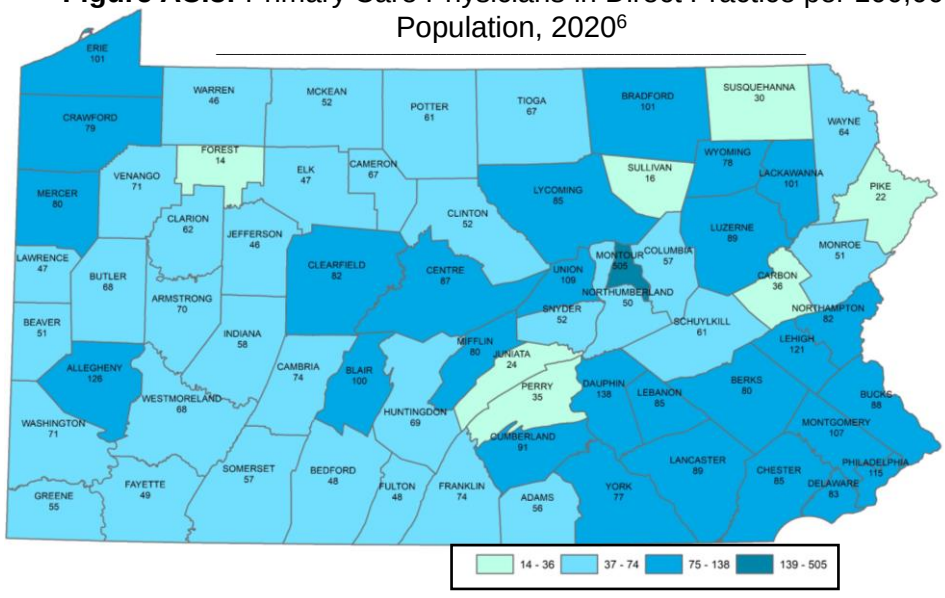
Health Professional Shortage Areas (HPSAs) indicate geographic areas and population groups experiencing a shortage of health care professionals and facilities in primary care, dental health, or mental health.

In 2021, about two million Pennsylvanians (16%) were living in dental HPSAs, 1.7 million (14%) were living in mental health care HPSAs, and half a million (4%) were living in primary care HPSAs. To remove these designations, an additional 280 dentists, 103 mental health professionals, and 117 primary care physicians would be needed.[9]

Medically Underserved Areas (MUA) or Medically Underserved Populations (MUP) are areas or populations with a shortage of health care services. In 2018, Pennsylvania had 143 MUAs and 13 MUPs.[10]

Based on the 2020 Physician Health Care Workforce Re-licensure Survey, there were 91 primary care physicians in direct patient practice per 100,000 population in the state. The response rate of the survey was 70%, so this rate could be underestimated.

Figure AC.3: Primary Care Physicians in Direct Practice per 100,000 Population, 2020[6]



2018-2019

79

EMT or paramedics per 100,000 residents (U.S. 67 per 100,000)[7]

2020

450

residents to one mental health provider (U.S. 380:1)[11]

Access to public transportation can improve health outcomes and reduce health disparities by promoting better air quality and increasing healthcare access to communities.

- Of workers 16 years and over, 5.7% used public transportation to commute to work in 2019, which is higher than the HP 2030 national goal (5.3%). Moreover, 75.2% drove alone to work, 8.4% carpooled to work, and 3.6% walked to work. About five percent were working from home in 2019; this estimate is expected to increase in 2020 due to the COVID-19 pandemic.[12]
- All Pennsylvanians with disabilities and the elderly have access at their door to public transportation via shared ride services. Pennsylvania Department of Transportation has published a map that shows five types of public transportation options for Pennsylvanians that include fixed bus routes, intercity passenger bus, medical assistance transportation, passenger rail, and Shared-Ride/Demand Response. For each county, these services have additional information on this map.

Stakeholders were particularly concerned about rural areas being especially vulnerable to access issues.

In 2018, there were lower rates per 100,000 residents of primary care physicians (refer to Figure AC.3 for the county breakdown), dentists, mental health providers, and nurse practitioners in rural Pennsylvania compared to urban areas.[5-7,11] The six counties with lowest rates pf primary care physicians were rural counties (refer to Table AC.1)

Telehealth is a growing option to address some of the barriers to access to care. Access to high-speed broadband is a barrier to expanding telehealth utilization. In Pennsylvania, access to broadband internet subscriptions increased from 81% in 2015 to 89% in 2019.[13,14] Still, older adults and rural residents had lower access to broadband.

Based on Medicaid data, telehealth claims have been increasing from 2015 to 2019 with a larger jump in 2020. The top three telehealth services in 2020 were outpatient office/clinic visits, outpatient psychotherapy, and speech language therapy.[8]

Table AC.1. Pennsylvania Counties with the Least and Most Primary Care Providers per 100,000 Population, 2018[6]

<30	>100
Pike*	Lehigh
Forest*	Philadelphia
Perry*	Dauphin
Juniata*	Allegheny
Susquehanna*	Montgomery
Bedford*	Montour*
* Denotes rural counties	

> *"The very normal situation of having to wait six months to see a psychiatrist. That is the first thing that comes to mind."*
>
> – Focus group participant

Health literacy and the cultural humility of providers add other challenges to accessing care.

Due to varying levels of health literacy, some patients do not get the health information they need. Language barriers can also prevent understanding of medical terms and impede one's ability to navigate care. Providers carry various levels of implicit bias, which impacts their delivery of care.[15] Stakeholders point out that providers may use stigmatizing language that can alienate patients.[16]

The 2020 LGBTQ Health Needs Assessment reported that lesbian, gay, bisexual, transgender, and queer (LGBTQ) individuals believed health care providers lack medical expertise related to their health needs. It also found that one in three of the respondents feared seeking health care services because of past or potential negative reactions from health care providers.[17]

Stakeholders also highlighted how complex our health care system is, noting that access is impacted by fear and discomfort and is particularly problematic for patients with lower health literacy.[16]

When public poll respondents were asked what barriers prior to COVID-19 led to difficulty seeing a provider regularly, cost of care, lack of time, health insurance challenges, delays, wait times, and fear were mentioned most.[16]

> *"On a day-to-day basis, most people don't understand the difference between a deductible and a co-pay, let alone the complexities of medical issues. I think we need to level the playing field by providing better initiatives around health literacy."*
>
> - Focus group participant

Older Pennsylvanians and individuals with disabilities have additional factors to navigate, often facing further challenges.

25% (2019)
of adult Pennsylvanians had one or more disability.[18]

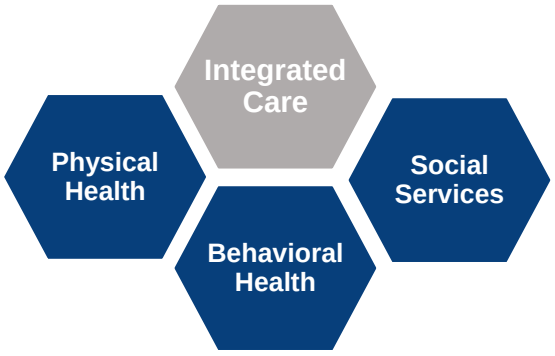
31% (2019)
of Black adult Pennsylvanians had one or more disability.[18]

$41.1
billion per year spent on health care disability costs in Pennsylvania (37% of the state's healthcare spending).[19]

- Older Pennsylvanians tend to have more disabilities and less access to internet. As a result, they have less access to disease information, health care via telehealth, self-care management programs with an online component, and other online activities to reduce social isolation. About 72% of Pennsylvanian's aged 65 and over have access to internet.[20]
- Twenty-five percent of Pennsylvanians reported having a disability (one or more difficulty in hearing, seeing, concentrating, remembering, making decisions, walking, dressing, bathing, and shopping), which is the same percent as the country overall.[18]
- By race and ethnicity, 24% of White, 28% of Hispanic, 31% of Black, and 37% of multi-race Pennsylvanians reported one or more disabilities.[18]
- Disabilities increased with age, from 19% of 18–44-year-olds to 40% among those 65 and over.[18]
- Many social determinants of health are impacted by having a disability, namely, housing, transportation, and social interations.[21]
- People with disabilities are more likely to also have other risk factors such as obesity, smoking, inactivity, and high blood pressure.[21]

Stakeholders referred to whole-person care as a possible solution to barriers to accessing care, as it bridges health, behavioral health, and social services.

- Whole-person care builds upon the notion that health and wellness are not limited simply to physical health and can be achieved through a more robust integration of care for the whole person, solutions, and interventions are strengthened.



> "I would like to see Pennsylvania work toward what is called whole-person primary health. It is a fusion of behavioral health, a fusion of medical, and it is something that is going to reshape…the terminology of primary care cannot be furthered without considering whole person health. That should be something that we, as a commonwealth, grasp and shape."
>
> – Focus group participant

This section summarized priority issues related to access to care and explored:

- Health insurance status and cost
- Primary care providers
- Dental and oral health care
- Geographic implications
- Health literacy and cultural competency
- People with disabilities
- Whole-person care

Visit these report sections for additional context:

- Social Determinants of Health, Equity & Racism
- COVID-19 Implications
- Assets

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Substance Use

Substance use, which includes the nonmedical use of illicit and legal psychoactive substances, is a major public health challenge in the U.S. and Pennsylvania. This section first presents information about the overall usage of various substances and the prevalence of substance use disorder. It shares rates of drug overdose deaths and emergency-room visits related to opioids. Factors contributing to health challenges and how certain populations are disproportionately impacted by problems with substance use are also discussed. Next, the section explores barriers to treatment for substance use issues, such as cost, lack of long-term recovery programs, and stigma. A discussion of the challenges caused by the separation between mental health and substance use systems is presented. Finally, substance use and prevention efforts among adolescents are explored.

This section includes the following:

- Key issues
- Datapoints to illustrate main points
- Factors contributing to health challenges
- Highlights on especially vulnerable populations
- Hyperlinks for further data exploration
- Data sources

Data shared in this section is from 2016 to 2021; data represents Pennsylvania unless otherwise noted.

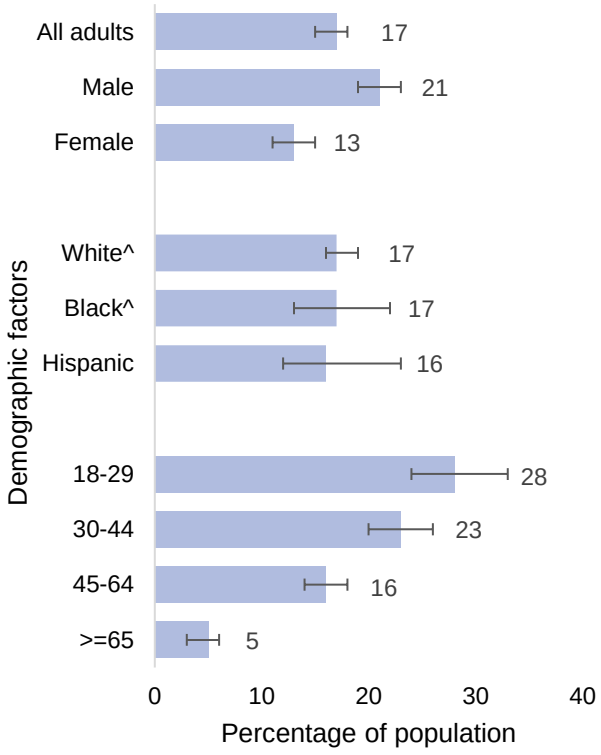
Pennsylvanians are concerned about substance use and its impact.

Pennsylvania faces a high number of substance use-related hospitalizations.[1,2] Substance use disorders occur when the recurrent use of alcohol and drugs causes clinically significant impairment, including health problems, disability, and failure to meet major responsibilities at work, school, or home.[3] Below are the list of some of the commonly used substances and their prevalence by age group (Table SU.1). Methamphetamine and marijuana use are increasing among all age groups.[4]

Table SU.1: Prevalence of Substances Used in the Year Before the Survey by Age Group (2018-2019)[4]

Substances	12-17 years (%)	18-25 years (%)	26 years and over (%)
Marijuana	12	33.7	13.9
Pain reliever	1.9	5.0	3.0
Heroin	0.02	0.7	0.4
Methamphetamine	0.2	0.9	0.7
Cocaine	0.4	6.4	1.7

Figure SU.1. Past Month Binge Drinking Among Adults, Pennsylvania, 2020[5]



- Binge drinking is defined as having five or more drinks for males and four or more drinks for females on one occasion.[5]
- Binge drinking was more common among males than females.
- In 2018, adults identifying as lesbian, gay, or bisexual were more likely to report binge drinking (31%) than heterosexual adults (16%).[5]
- Pennsylvania ranked 19th among 50 states in excessive drinking, with one being the state with the lowest percent of binge drinking.[6]
- The Healthy People 2020 target for past-month illicit drug use was 9%.[6] During 2018-2019, in the U.S., 12% of adults (aged 18 or older) used illicit substances in the past month, compared to 11% in Pennsylvania.[4]
- During 2018-2019, compared to other age groups, adults aged 18 to 25 had higher percentages of past-year illicit drug use disorder (8%), alcohol use disorder (10%), and any substance use disorder (15%).[4]

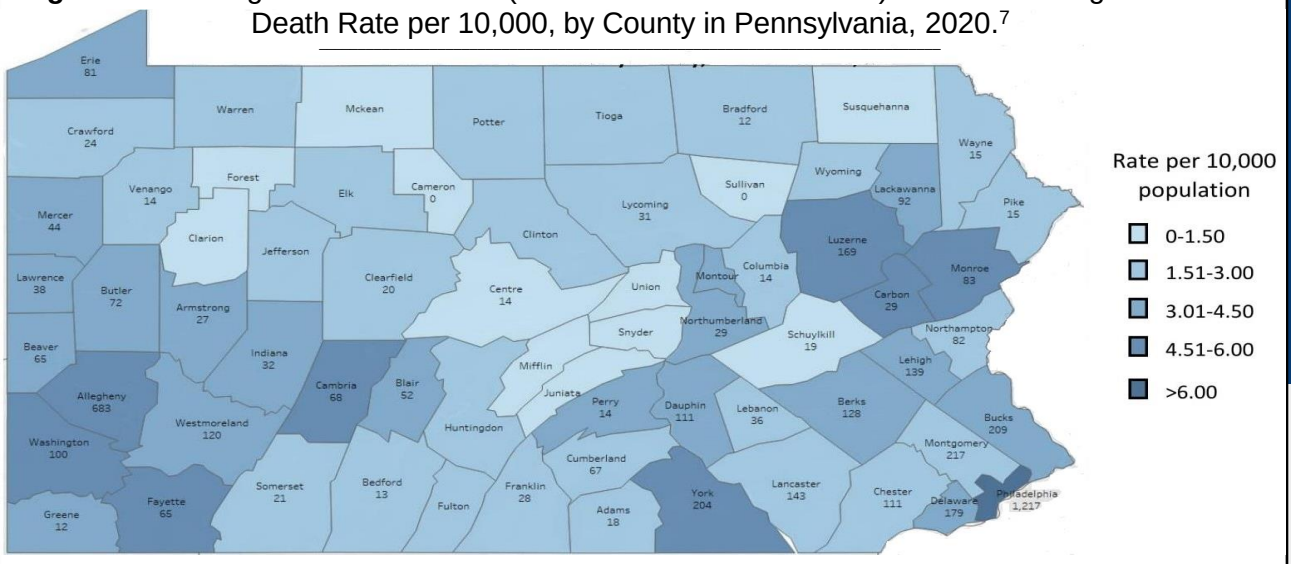
> *"There are long-term trends [in substance use], and it is typical that a trend toward opioid use will be followed by a stimulant trend. It's almost as if one generation does not learn to not use drugs; they learn to not use the drug that they saw harm the prior generation."*

^ Non-Hispanic

– Focus group participant

Drug overdose death rates vary across Pennsylvania.

Figure SU.2: Drug Overdose Deaths (Accidental or Undetermined) and Crude Drug Overdose Death Rate per 10,000, by County in Pennsylvania, 2020.[7]



*Counts for counties with overdose death counts between 1 and 9 are suppressed

- Figure SU.2 shows the drug overdose deaths in Pennsylvania. Counties in the East and southwestern parts of the state have higher drug overdose deaths rates.
- As of September 2021, 2017 remains to the highest year (5,403) for accidental and undetermined overdose deaths in Pennsylvania. [7]
- In 2018, there was an 18% decrease (4,424) in drug overdoses deaths from 2017. In 2019, there was relatively a minor increase (4,457) compared to the previous year. In 2020, drug overdoses deaths again increased by 14% compared to 2019, with preliminary estimates of 5,074 deaths as of September 2021.[7]
- Most overdose deaths involve an opioid, and an increasing proportion involve both an opioid and a stimulant, such as methamphetamine/amphetamine or cocaine (31% in 2017 vs. 37% in 2020 as of September 2021).
- While the proportion of overdose deaths involving an opioid and cocaine have remained relatively steady (26% in 2017 vs. 25% in 2020 as of September 2021), there has been an increase in the proportion of overdose deaths involving an opioid + methamphetamine/amphetamine (7% in 2017 vs. nearly 15% in 2020 as of September 2021).[7]
- The proportion of overdose deaths involving methamphetamine/amphetamine without an opioid contributing to death have also increased (1% in 2017 vs. nearly 4% in 2020 as of September 2021).
- Non-fatal overdose surveillance is conducted via Pennsylvania's syndromic surveillance system - EpiCenter, which monitors the emergency department data for a variety of overdose-related visits.
- Stimulant-related overdoses, regardless of the presence or absence of additional drugs, have increased from 2.26 per 10,000 in 2017 to 3.99 in 2019.[7]
- Due to a significant decrease among all emergency visits in 2020 during the initial months of the COVID-19 pandemic, overdose rates in 2020 are difficult to interpret.

Opioid use continues to be a pressing issue.

2018

65%

of drug-overdose deaths involved opioids.[8]

- Between 2008 and 2017, Pennsylvania experienced a dramatic rise in opioid-related hospitalizations followed by a decrease in 2018.[1,2]
- In 2018, 42% of the opioid overdose admissions were reported as heroin overdoses, and 58% were pain medication overdoses.[2]
- Admissions were higher among males and those in areas with lower median income in 2018. Racial and ethnic differences were less pronounced: The rate among Black Non-Hispanics, White Non-Hispanics, and Hispanics were, respectively, 28.9, 25.2, and 20 per 100,000.[2]

Access to substance-use treatment is inadequate and could be impeded by stigma.

Stakeholders noted that people use multiple substances simultaneously and caution against focusing on any one substance. They emphasized the importance of a "whole-person" approach and a continuum of treatment services.

Stakeholders identified several obstacles that prevent residents from getting the full spectrum of care they need, including:

- Lack of public transportation;
- Lack of providers in rural areas;
- Prohibitive cost of treatment and insufficient insurance coverage;
- Lack of long-term treatment through recovery community organizations and other services; and
- Continued stigma and view of substance use as a moral problem.

> *"The most important thing to focus on moving forward is long-term solutions that don't just involve the treatment component, but rather new, creative, innovative ways to fund and mobilize recovery. We are talking about a chronic disease that is often treated as an acute episode. We don't always do the best job of providing that stable base of recovery services."*
>
> - Focus group participant

2018-2019

6%

of individuals (12+ years old) needed but did not receive treatment for substance use at a specialty facility.[4]

Needing but not receiving treatment services for substance use in the past year was higher among 18- to 25-year-olds compared to other age groups: 14% of 18- to 25-year-olds did not get the treatment they needed, compared to 3% of 12- to 17-year-olds and 6% of those 26 and older.[4]

Current treatment structures and systems separate mental health and substance use issues, which are often linked.

Although mental health and substance use issues can be closely related, people seeking help often must choose which treatment system to enter. In 2019, 21% of adults served through state mental health agencies had co-occurring mental health and substance use disorders.[9]

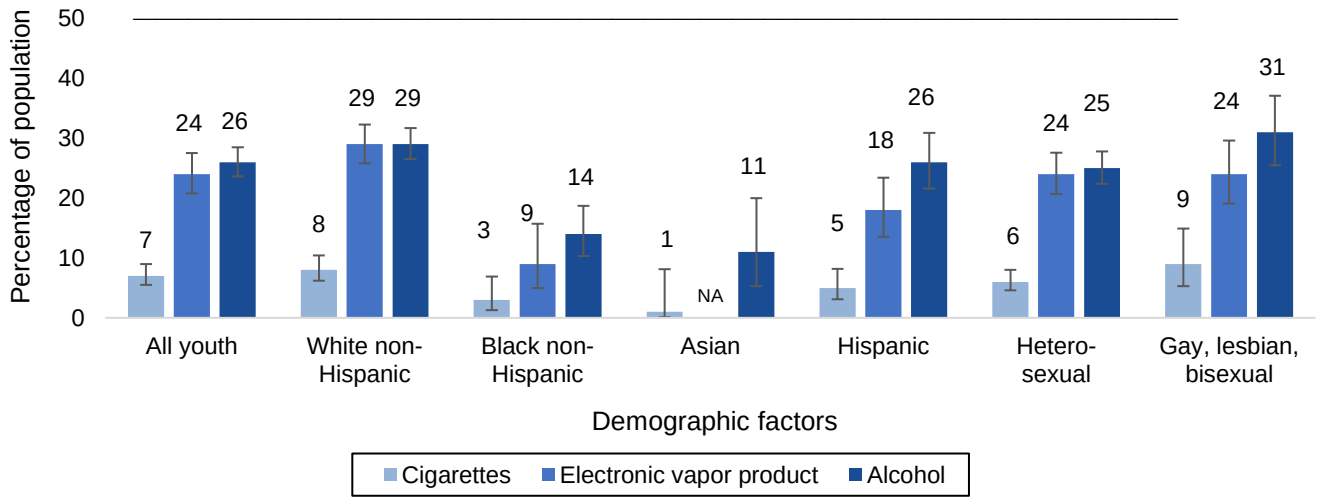
Despite this co-occurrence, communication between mental health and substance use systems is challenging. The treatment and system structures are different, and there are different professional standards regarding knowledge, skills, and abilities in the two fields.[10]

Together, these factors may complicate people's ability to get the treatment they need.

Substance use among high school students is particularly concerning, as it is a risk factor for developing substance-use disorders and impacts physical and mental functioning, which can extend into adulthood.[11]

- Current student use of cigarettes, cigars, smokeless tobacco, or electronic vapor products (at least one day during the 30 days before the survey) increased from 19% in 2017 to 27% in 2019.[12]
- In 2019, about one in four high school students used alcohol at least once in the past month and 11% binge drank.[12]
- Current cigarette use among high school students decreased from 18% in 2009 to 7% in 2019, and frequent cigarette use (20 or more days in the past 30 days) decreased from 8% in 2009 to 2% in 2019.[12]
- Current use of electronic vapor products was 24% in 2019, and frequent use (20 or more days of use in the past 30 days) of these products increased from 3% to 10% between 2015 and 2019.[11]
- As seen in figure SU.3, non-Hispanic White high school students were more likely to use cigarettes and electronic vapor products compared to Black non-Hispanic and Hispanic students.[12]
- Nearly one in five high school students (20%) were offered, sold, or given an illegal drug on school property in the past year, which has increased since 2009.[12]
- Gay, lesbian, and bisexual high school students were more likely to experiment with marijuana, prescription drugs, cocaine, and inhalants compared to heterosexual students.[12]

Figure SU.3. High School Students' Use of Cigarettes, Electronic Vapor Products, and Alcohol in Past Month, 2019[12]



> *"I would underscore the need for solid, comprehensive, upstream prevention and for it to not get lost. There's always the next substance and next epidemic. If we lose sight of prevention because we are focused on the immediacy of the epidemic, we are just going to be in Groundhog Day over and over again."*
>
> - Focus group participant

This section summarized priority issues related to substance use and explored:

- Overall usage of substances and its impact
- Drug overdose deaths
- Vulnerable populations
- Substance use treatment
- Substance use and mental health co-morbidity and system divisions
- Use of substances among high school students

Visit these report sections for additional context:

- Social Determinants of Health, Equity & Racism
- COVID-19 Implications
- Assets

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Chronic Diseases

Chronic diseases are a major public health challenge throughout Pennsylvania and the U.S. This section first presents overall prevalence of chronic diseases. Next, it explores various common chronic diseases: cardiovascular disease, cancer, diabetes, obesity, and asthma. Finally, this section reviews tobacco and nicotine use, healthy diet, and physical activity, which are all connected to preventing or managing several chronic diseases.

This section includes the following:

- Key issues
- Datapoints to illustrate main points
- Factors contributing to health challenges
- Highlights on especially vulnerable populations
- Hyperlinks for further data exploration
- Data sources

Data shared in this section is from 2016 to 2020; data represents Pennsylvania unless otherwise noted.

Chronic diseases are a major health problem in Pennsylvania.

Overall, 47% of Pennsylvania adults lived with one or more chronic diseases (i.e., cancer, cardiovascular disease, arthritis, asthma, Chronic Obstructive Pulmonary Diseases (COPD), and diabetes) with higher rates among age 65 and older (78%).[2]

Tobacco use, excessive alcohol use, physical inactivity, and poor nutrition are major risk behaviors of chronic diseases.

2019

68,926

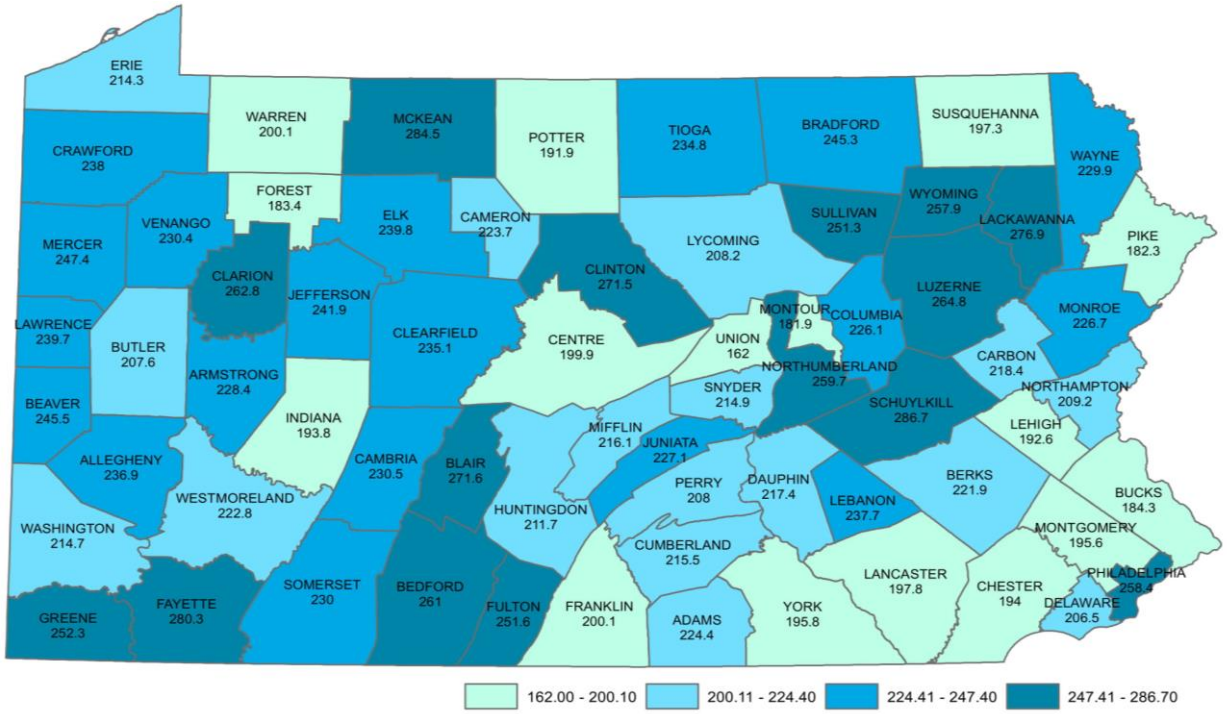
Pennsylvanians died of cancer or cardiovascular disease.[1]

The most common cause of death in Pennsylvania in 2019 was cardiovascular disease. That year, the age-adjusted death rate per 100,000 due to cardiovascular disease was 220, varying among counties from 145 per 100,000 residents in Montour County to 288 in Schuylkill County (see Figure CD.1).[1]

Rural counties were more impacted by chronic diseases compared to urban counties, with higher death rates due to cancer (rural=280 deaths per 100,000, urban=239 deaths per 100,000), heart diseases (rural=244 deaths per 100,000, urban=214 deaths per 100,000), and Alzheimer's disease (rural=39 deaths per 100,000, urban=28 deaths per 100,000).[1]

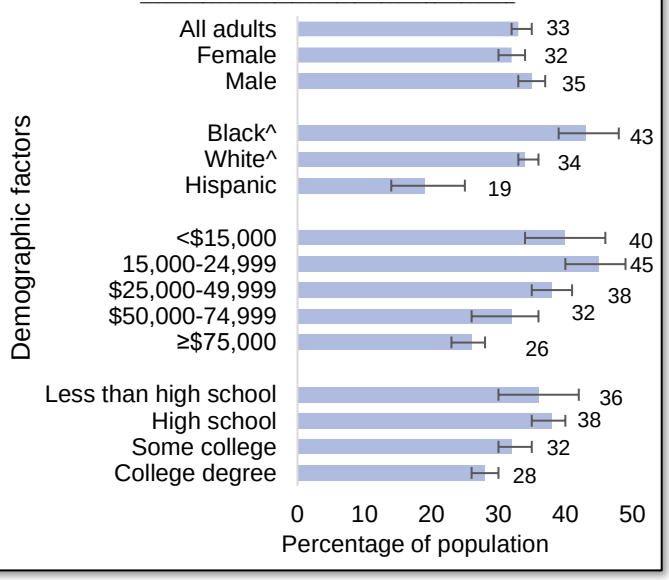
> *"[Chronic disease is] something that will affect a person over the long haul and in many domains of their life. Health is a precious asset."*
>
> – Focus group participant

Figure CD.1. Age-adjusted Cardiovascular Diseases Death Rate (per 100,000), by County, in Pennsylvania, 2018[1]



Cardiovascular disease does not strike all populations equally.

Figure CD.2. Adults Who Have Ever Been Told They Had High Blood Pressure, 2019[2]



- There were racial disparities in cardiovascular disease deaths in 2019. Among White adults the age-adjusted rate was 213 per 100,000, while among Black adults the rate was 288 per 100,000.[1]
- In 2020, 8% of residents over 35 reported that they had had a heart attack; those with lower household income and lower educational attainment were at higher risk.[2]
- In 2019, 33% of adults reported having ever been told they had high blood pressure. Black non-Hispanic adults, people with household income below $25,000, and people with high school education or less were particularly at risk for high blood pressure (Figure CD.2).[2]
- Among those with high blood pressure, 81% were taking medication for it.

Older Pennsylvanians are especially at risk for chronic diseases including diabetes.

- The prevalence of diabetes was 11% in 2020. Non-Hispanic Blacks, people aged 65 and older, and adults with lower household income levels were more likely to have diabetes.[2] Moreover, an additional 11% adults were also told they have pre-diabetes or borderline diabetes.
- There was low diabetes screening uptake among adults and Medicaid recipients.[2,3] During 2019, of those diagnosed with diabetes, only 33% had their A1C checked 4 or more times, 76% had a dilated eye exam, and 50% had taken a class on how to self-manage diabetes in the past year.[2]
- Chronic diseases were more prevalent among those 65 and over compared to those 45 to 64, as shown in table CD.1.

Table CD.1. Prevalence of Chronic Diseases Among Those Age 45 to 64 and 65 or Over, 2020

Chronic condition	45-64	65+
Diabetes[2]	14%	23%
COPD, emphysema or chronic bronchitis[2]	9%	13%
Stroke[2]	3%	9%
Arthritis[2]	34%	57%
Heart diseases[2]	9%	27%
Kidney disease[2]	3%	9%

^ Non-Hispanic

Older Pennsylvanians

- Roughly 2.4 million people in Pennsylvania are age 65 or older.[4]
- Among those age 65 and older, 280,000 are living with Alzheimer's disease, the sixth leading cause of death.[5]
- 83% of Pennsylvanians with memory problems have at least one chronic condition.[6]

The most common cancers in Pennsylvania are breast cancer, lung and bronchus cancer, and prostate cancer.[7]

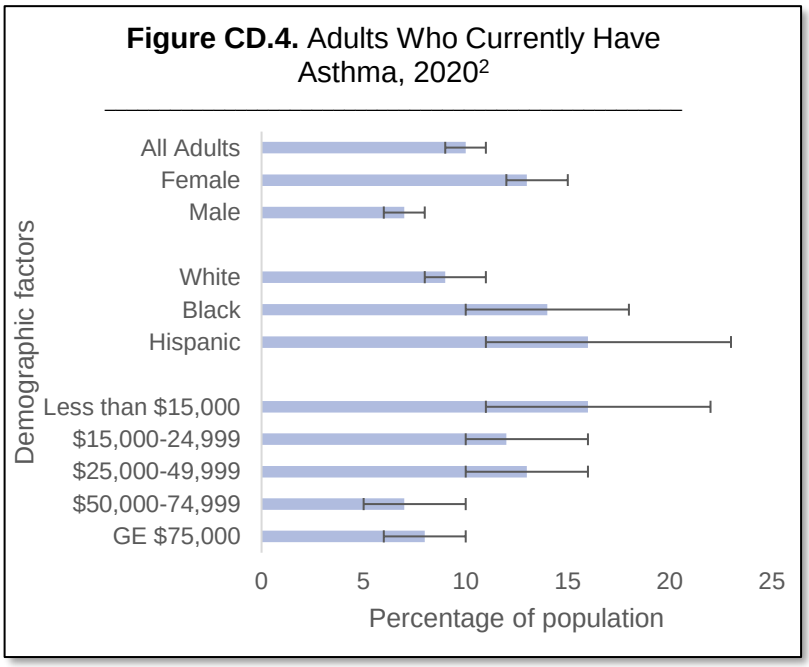
- Based on 2015-2017 data, approximately one in two Pennsylvanians, both males and females, will be diagnosed with cancer at some point during their lifetime, and 20% will die of cancer.[7]
- There were a total of 27,703 cancer deaths (153 deaths per 100,000 residents) in Pennsylvania in 2018. By county, the age-adjusted rate of all cancer deaths ranged from 117 deaths per 100,000 residents in Centre County to 221 deaths per 100,000 residents in Sullivan County.[1]
- Black residents were less likely to be diagnosed early and more likely to die of cancer than Whites. The age-adjusted cancer death rate was 177 per 100,000 residents for Blacks, 151 per 100,000 residents for Whites, and 73 per 100,000 residents for Asian/Pacific Islander. Among Hispanic residents, the rate was 102 per 100,000.[1,7]

Early detection is an important part of fighting cancer, yet there are significant differences in who receives cancer screenings.

- In 2020, 79% of females aged 21 to 65 reported that they had a Pap test in the past three years, and 81% of females aged 50 to 74 reported that they had a mammogram in the past two years. Those with income $15,000-24,999 are less likely to receive mammogram screening (67%) compared to those with income ≥75,000 (85%). Black women have higher rates of pap test (92%) compared to White women (79%).
- Colonoscopy was found to reduce colorectal cancer incidence and mortality by 69% and 68% respectively.[8] Approximately 71% of people aged 50 to 75 had a colonoscopy in the past ten years.[2]

Asthma is a chronic lung disease that affects many Pennsylvanians.

Figure CD.4. Adults Who Currently Have Asthma, 2020[2]

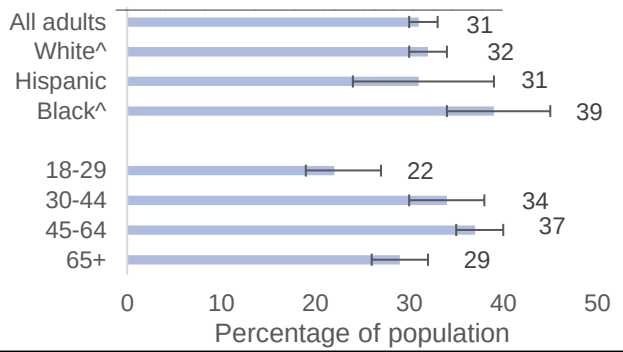


- The prevalence of asthma was 9% among those age 0 to 11, 10% among those age 12 to 17, and 19% among adults 18 and over.[2]
- There were disparities among those with asthma. Females, Hispanic adults, and adults with lower household incomes had higher prevalence of asthma than their counterparts (Figure CD.4).[2]
- Poor air quality can be related to geography, climate, population density, land use, tree cover, and regional industries, and can impact lung function and worsen asthma symptoms.[9]

Obesity continues to be a public challenge. People with obesity have poorer mental health conditions and reduced quality of life[10]

- Obesity is associated with several outcomes including hypertension, high LDL cholesterol, low HDL cholesterol, type 2 diabetes, coronary heart disease, stroke, gallbladder disease, osteoarthritis, sleep apnea, breathing problems, mental illness, and low quality of life. Being overweight is also a risk factor for many of these outcomes.[7] People with obesity who have bariatric surgery appear to have lower risks of obesity-related cancers than those who do not have bariatric surgery.[11]
- Obesity is also associated with increased risk of adenocarcinoma of the esophagus; cancers of the breast (in postmenopausal women); colon and rectum; endometrium (corpus uterus), gallbladder, gastric cardia; kidney (renal cell); liver; ovary; pancreas; thyroid; meningioma; and multiple myeloma.[11]

Figure CD.3. Obesity by Race and Ethnicity and Age Group Among Adults, 2020,[2]



- Obesity leads to significant economic consequences. In 2013, obesity-related medical care costs in the U.S. were estimated to be 342.2 billion dollars.[12]
- Obesity has increased in Pennsylvania, with high school student prevalence increasing from 12% to 15% between 2009 and 2019 and adult prevalence increasing from 29% to 31% between 2011 and 2020.[2,13]
- Among adults, more non-Hispanic Blacks, those with less than high school education, low income, and age group 45-64 had obesity (Figure CD.3).[2]

Healthy diet and physical activity can decrease risks of several common chronic conditions.

- Active people generally live longer and are at less risk for serious health problems like heart disease, type 2 diabetes, obesity, and some cancers.[14]
- Low-income and minority communities often lack convenient places with affordable healthier foods or safe places for exercise.

51% 2019
of adults exercised 150 minutes or more per week.[2]

- In 2019, 49% of adults did not participate in the recommended amount of physical exercise. Those with lower educational attainment and household income were at increased risk. Of those with household incomes over $75,000, 57% exercised at the recommended 150 minutes or more per week compared to 36% of those with incomes of $15,000 or less annually.[2]
- High school students who did not eat vegetables in the past seven days increased from 5% in 2009 to 8% in 2019. In contrast, high school students who drank soda or pop one or more times per day decreased between 2015 (26%) and 2019 (14%).[13]
- Only 10% of adults consumed five or more servings of fruits and vegetables daily.[2]
- Americans, particularly children, are eating more sugar than recommended. Excessive sugar intake is associated with cardiovascular disease.[15,16]

^ Non-Hispanic

Although tobacco use has declined, it is still a leading contributor to chronic disease and death.

Smoking is a major risk factor for chronic diseases (cancer, heart disease, stroke, lung diseases, type 2 diabetes, and other chronic health conditions.)[17] In Pennsylvania in 2020, 16% of adults were current cigarette smokers.[2] Cigarette smoking was higher among those with household incomes under $15,000 (32%) compared to those with household income of $75,000 or more (10%). Non-Hispanic Black residents had higher smoking prevalence (21%) than non-Hispanic White residents (15%).[2]

The prevalence of current cigarette smoking was over twice as high among those who identified as gay, lesbian, or bisexual (40% vs 17%).[18]

The life loss and economic cost of smoking is huge. More than 20,000 Pennsylvania adults die each year from their own smoking and 28% of cancer deaths are attributable to smoking. More than six billion dollars in annual health care costs in Pennsylvania are directly caused by smoking.[19,20]

Policies to reduce tobacco use have strengthened: Federal and state taxes on cigarettes increased from $1.60 in 2014 to $2.60 in 2018, and state taxes on smokeless tobacco increased from $0.00 in 2014 to $0.55 in 2018.[21]

Dental caries is one of the most common chronic diseases in the country.

- Oral health is an important aspect of an individual's physical well-being. Although dental caries (cavities) and periodontal disease are highly preventable, dental caries is one of the most common chronic diseases in the U.S.[22]
- Among children aged 1-17 in Pennsylvania, during 2018-2019, about 11% reported having one or more oral health problems and 10% reported having decayed teeth or cavities.[23] Among children aged 6-14, only 13.4% who were enrolled in Medicaid received sealants in 2018.[24]
- Oral and pharyngeal cancers are increasing in Pennsylvania (14% increase between 2010 and 2018).[23] In 2017, there were 2,086 oral and pharyngeal cancers diagnoses. The age-adjusted mortality rate was 2.4 per 100,000 residents in 2018.[1,25]
- Pennsylvania Oral Health Plan 2020-2030 identified main oral health priority areas namely: improving access to dental care, preventive services and health literacy, increasing oral health work force, and improving oral health infrastructure.[24]

This section summarized priority issues related to chronic disease and explored:

- Overall chronic diseases
- Cardiovascular disease
- Obesity
- Diabetes
- Common cancers
- Asthma
- Physical activity and healthy diet
- Tobacco use
- Oral health

Visit these report sections for additional context:

- Social Determinants of Health, Equity & Racism
- Substance use
- Mental health
- COVID-19 Implications
- Assets

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Mental Health

Mental health is an important part of overall health and well-being. This section examines the overall mental health status of Pennsylvanians, including the prevalence of mental health conditions, self-reported “poor” mental health days, and rates of depression and suicide. The section then reviews factors that contribute to mental distress and poor health outcomes, including social isolation, access to mental health treatment, and barriers to care. Youth mental health is another focus area, featuring issues such as depressive thoughts and suicidality. This section concludes with an overview of well-being and associated mental and physical outcomes.

This section includes the following:

- Key issues
- Datapoints to illustrate main points
- Factors contributing to health challenges
- Highlights on especially vulnerable populations
- Hyperlinks for further exploration
- Data sources

Data shared in this section is from 2016 to 2021; data represents Pennsylvania unless otherwise noted.

Of major concern are the prevalence of mental health issues and the increasing frequency of mental distress.

2019

14 per 100,000

suicide deaths (age-adjusted rate)[1]

2020

14%

of PA adults had 14+ poor mental health days in the past month.[2]

In 2019, there were 1,887 Pennsylvanians who lost their lives to suicide. Suicide rates in Pennsylvania have increased over the past decade, from 12 per 100,000 residents in 2010 to 14 per 100,000 residents in 2019.[1]

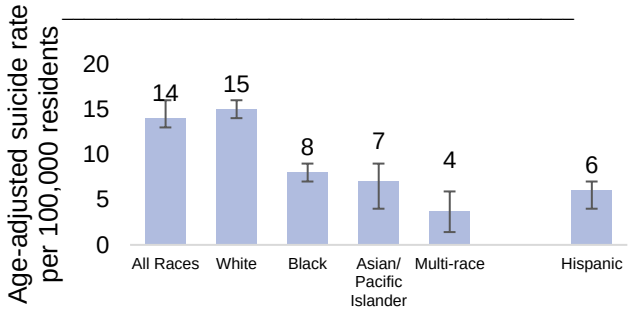
The suicide rate was higher among White residents (15 per 100,000) than other racial groups, as shown in figure MH.1.

Public poll respondents ranked "mental health problems" as the most important health issue facing their communities.

The percentage of adults reporting that their mental health was not good for 14 or more days in the past month before the survey, increased from 12% in 2014 to 14% in 2020.[2]

About 8% of Pennsylvanians aged 18 or older had a major depressive episode in 2019.[3]

Figure MH.1. Suicide by Race and Ethnicity, 2019[1]



Mental health is influenced by social factors, which can impact sub-populations in a variety of ways.

Socioeconomic status and geographic location may limit the accessibility of mental health treatment, as they may reduce access to facilities and providers.

Racial and ethnic minority groups are more likely to report poor mental health. In 2019, 19% of Hispanic Pennsylvanians reported having 14 or more poor mental health days in the past month compared to 13% for non-Hispanic White residents.[1]

Based on the LGBTQ 2020 survey, 72% of the respondents have experienced a mental health challenge in the year before the survey, and 75% of transgender, non-binary, or genderqueer respondents have considered suicide in their lifetime.[4]

Stakeholders discussed particularly vulnerable populations who have reduced access to essential services and higher rates of mental health problems,[5] including:

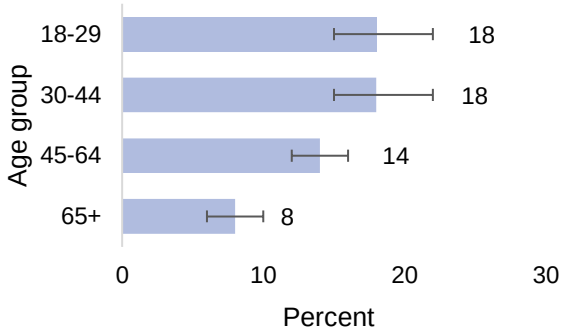
- Older adults (65+)
- Farmers
- Incarcerated people
- Residents in rural areas
- Institutionalized individuals
- Veterans
- LGTBQ+ individuals

Stakeholders highlighted spending time outdoors to improve mental health of residents.

Mental health among young adults is of particular concern.

- One in five adults aged 18 to 29 reported their mental health was "not good" for 14+ days in the past month in 2020.[2]
- Approximately 20% of adults reported having "any" mental illness, with the highest prevalence, 30%, among 18- to 25-year-olds.[3]
- Suicide was among the top three causes of death among the age groups 15 to 19 and 20 to 24.[1]
- In 2018/19, the risk for major depressive episodes and serious suicidal thoughts was highest among 18- 25- year-olds (15% and 13%), and trending upward.[3]

Figure MH.2. Adults Reporting "Not Good" Mental Health for 14+ Days in Past Month by Age, 2020[2]



Meaningful relationships are key to mental health, particularly among seniors, as social support and connection are associated with better health outcomes and overall well-being.

> *"When people are isolated and they don't feel like they are a part of the community, they are less likely to seek help, to help others. Those are all the protective factors that help our communities do better."*
>
> – Focus group participant

2021

Pennsylvania ranks

37th

of 50 states for risk of social isolation among adults 65+,[8]

Seniors without meaningful relationships or support networks are at higher risk for poor cognitive functioning and premature mortality.[6,7,8] Factors strongly related to overall risk of social isolation include: [8]

- Being divorced, separated, or widowed
- Never having married
- Higher levels of poverty
- Having difficulty living independently
- Living with a disability
- Living alone

What is mental health parity and how does it impact access to treatment?

The Mental Health Parity and Addiction Equity Act (2008) requires all benefits offered by health insurers to be equal, such that mental health benefits should be no lower than benefits for medical or surgical care.[9]

Accessing mental health services may be difficult for more vulnerable populations, especially when considering cost-related barriers associated with lack of parity in insurance reimbursement rates.

In 2017, the average in-network reimbursement rates in Pennsylvania for PPO plans were higher for medical or surgical office visits compared to those for behavioral health visits. Individuals received 17.9% higher reimbursement percent for primary medical care compared to behavioral health care.[9]

Youth mental health and crisis prevention are important issues for Pennsylvanians.

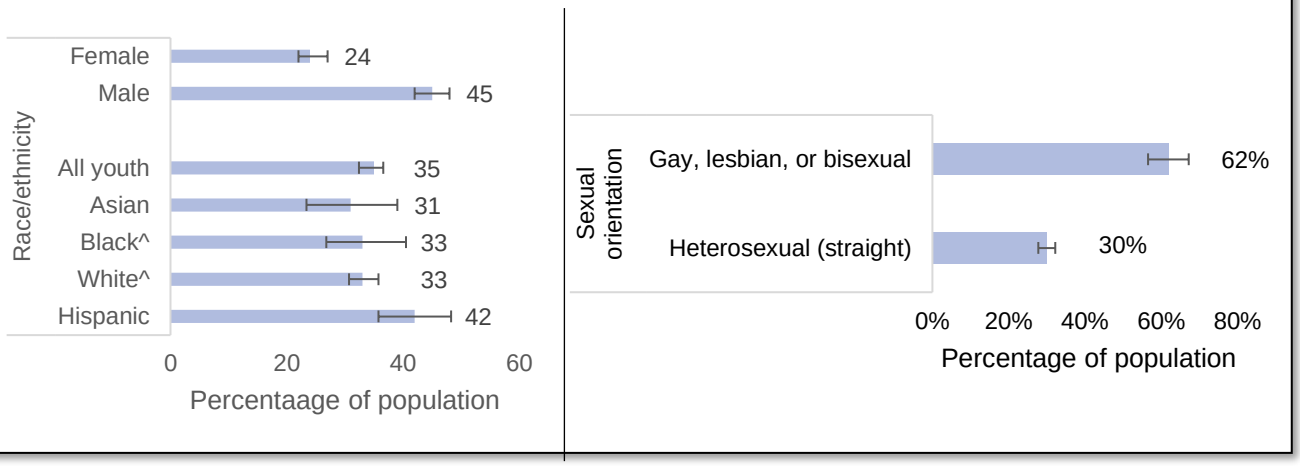
35% 2019
of high school students reported feeling sad or hopeless.[10]

8% 2019
of high school students attempted suicide.[10]

- The percent of high school students who, in the past 12 months, felt sad or hopeless almost every day for two weeks or more in a row, so that they stopped doing some usual activities, increased from 28% in 2015 to 35% in 2019, including 45% of female students .[10]
- A higher percentage of Hispanic high school students reported feeling sad or hopeless than did non-Hispanic White. Students who identified as lesbian, gay, or bisexual were over twice as likely to experience feeling sad or hopeless, as those identifying as heterosexual.[10]
- Stakeholders providing services in rural Pennsylvania expressed how the availability of mental health providers offering specialized services is limited, especially considering youth-focused services.

- In 2019, about 15% of students in the 6th, 8th, 10th, and 12th grades reported not participating in at least one pro-social activity; an increase from 13% in 2015. This could have negative impact on the mental health of the students. The most common activity was school sponsored activities, followed by family supported activities or hobbies and other activities.[11]

Figure MH.3. High School Students Reporting Feeling Sad/Hopeless by Race and Ethnicity and Sexual Orientation, 2019[10]



Stakeholders discussed the need for widespread prevention efforts and social-emotional learning in schools to address mental health issues early.

In 2018, 88% of Pennsylvania secondary schools reported having teachers who tried to increase student knowledge on emotional and mental health in a required course.[12] Several focus group participants highlighted the need for having additional supports inside schools, such as school-based health centers, to ease the burden placed on guidance counselors and school psychologists.

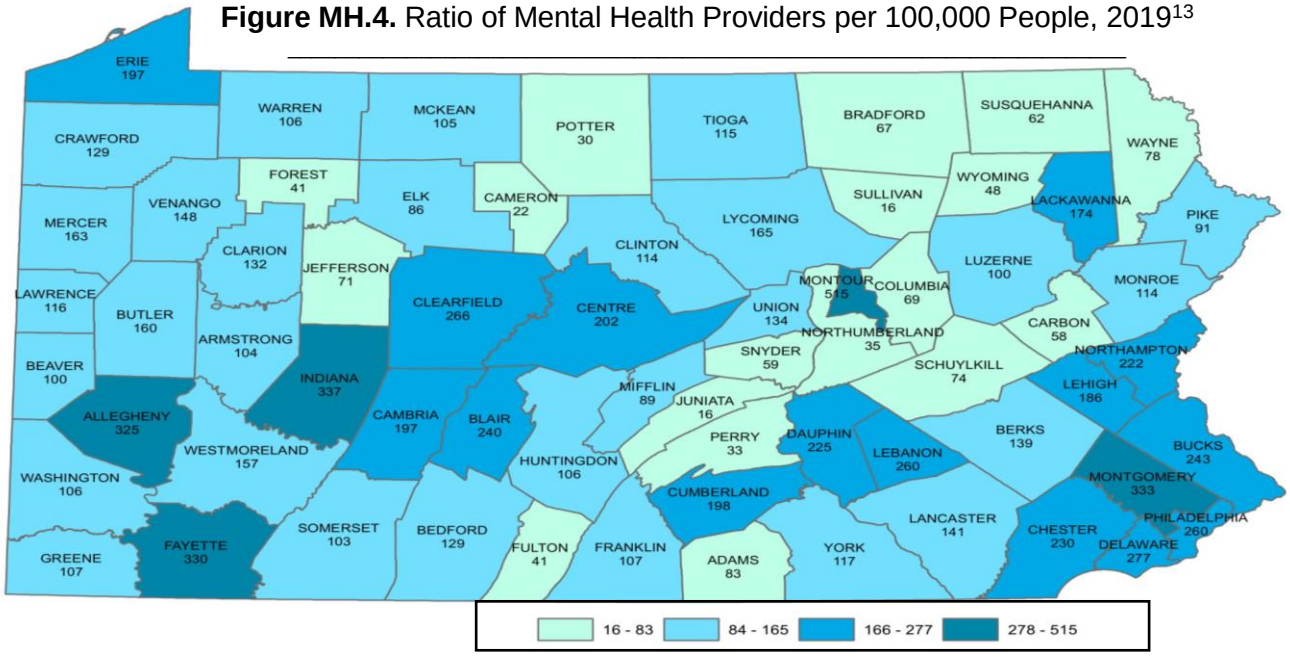
^ Non-Hispanic

While access to mental health providers has improved in recent years, Pennsylvania continues to face a shortage of licensed clinicians and mental health providers, particularly in rural areas.

Pennsylvania's ratio of population to mental health providers has improved in recent years from 600:1 people per provider in 2016 to 450:1 in 2020. However, the state remains above the national ratio of 380:1.[13] Rural areas face challenges especially with access to psychiatrists. In urban areas, there are18 psychiatrists, compared to five psychiatrists per 100,000 population in rural areas.[14] Additionally, non-licensed providers face barriers in getting the formal supervision needed for licensure, thus reducing the number of potential providers.[4]

It is also important to have geriatric specialists such as geriatric psychologists, which are key to early detection of dementia and other chronic diseases of this age group.[4] Lack of representation across clinicians is an added barrier for those who might benefit from provider-client cultural congruency.[4]

Figure MH.4. Ratio of Mental Health Providers per 100,000 People, 2019[13]



> *"In general, empowering all sorts of care providers, no matter what specialty, to be able to provide mental health care in any sort of integrated platform would be very useful....so that anybody who encounters a provider can feel that someone, somewhere is going to hear them and help them tackle their problems without having to go to a mental health provider specifically."*
>
> – Focus group participant

Even among those able to access a provider, stakeholders pinpoint challenges in continuity of care and navigation:[4]

- High staff turnover can result in patients seeing multiple providers in a shorter time span, potentially impacting quality of care, connection, and rapport.
- Navigation of paperwork and insurance can complicate access, especially when jumping from provider to provider.
- Lack of communication between health care providers can prevent patients from receiving timely care when facing a crisis.

Well-being is a holistic means of assessing physical and mental health, with important implications for overall quality of life and numerous physical and mental health outcomes.[15]

Self-reported physical and mental health are measures of an individual's perceived quality of life. In 2020, the percentage of adults reporting fair or poor general health was particularly high among those making less than $25,000 per year and those with less than high school education.[1]

14% 2020

of adults reported having fair or poor general health.[16]

Other factors, like sleep hours, contribute to quality of life. Overall, 35% of Pennsylvanians reported getting an average of six or fewer hours of sleep per night, with a higher percent reported among non-Hispanic Black than non-Hispanic White adults.[1]

This section summarized priority issues related to mental health and explored:

- Overall mental health in Pennsylvania
- Social isolation
- Access to mental health treatment and parity
- Youth mental health
- Well-being

Visit these report sections for additional context:

- Social Determinants of Health and Equity
- COVID-19 Implications
- Assets

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Maternal and Infant Health

The Maternal and Infant Health section describes the health of women* as related to pregnancy, childbirth, and postpartum periods, family planning, and infant health. This section addresses disparities in maternal and infant health outcomes, such as infant mortality, maternal mortality, low birthweight, and preterm live births, followed by an examination of social determinants of health and racism as driving forces of these disparities. Next, the section discusses the need for culturally responsive health care services that cover the lifespan. Substance use and mental health data for pregnant and parenting women are also shared. The section then delves into infant health and breastfeeding and, finally, considers reproductive health and health services.

This section includes the following:

- Key issues
- Datapoints to illustrate main points
- Factors contributing to health challenges
- Highlights on especially vulnerable populations
- Hyperlinks for further data exploration
- Data sources

Data shared in this section is from 2013 to 2020; data represents Pennsylvania unless otherwise noted.

* Although it is recognized that not all individuals who may become pregnant or who interact with reproductive health services are cisgender women, this SHA did not explore the unique needs of non-binary and transgender individuals. Secondary data sources may or may not have included gender minorities in their samples. To be congruent with available data, the term “women” is used throughout this section to refer to those using reproductive health services and experiencing pregnancy.

As in the U.S, there are disparities in maternal and infant health outcomes across Pennsylvania.

Pennsylvania did not meet Healthy People 2020 (HP2020) goals related to infant mortality, maternal mortality, preterm births, and low birthweight.[1-4]

- In Pennsylvania, Black women and infants were about twice as likely to die than their White counterparts.[2,4]
- In Pennsylvania, pregnancy-associated deaths, defined as the death of a woman while pregnant or up to one year from the end of a pregnancy, have increased by 21% from 2013 to 2018.
- Several factors are associated with pregnancy-associated deaths. Among pregnancy-associated deaths between 2013 and 2018, two-thirds (64%) had less than high school and high school education, and nearly half did not receive adequate prenatal care. Moreover, accidental poisoning (drug-related overdose deaths) accounted for 50% of pregnancy-associated deaths in 2018.[5,6]

Figure MIH.1. Crude Infant Mortality per 1,000 Live Births by Race and Ethnicity, 2019[2]

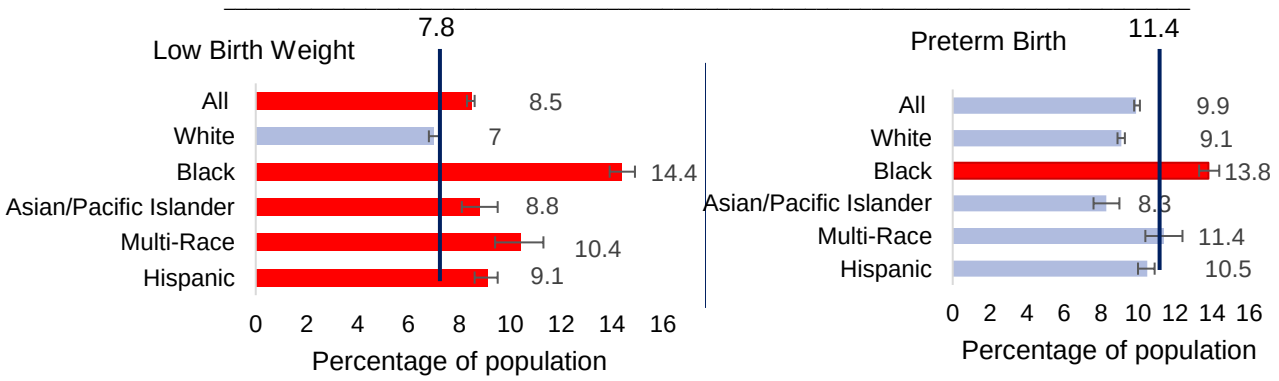
Vertical line indicates HP2020 goal.

Table MIH.1. Maternal Mortality per 100,000 by Race, 2015-2019[7]

	Maternal mortality rate per 100,000 live births	HP2020 goal
All	10.9	11.4
White	8.9	11.4
Black	22.0	11.4

- Preterm birth and low birthweight rates were higher among Black than White pregnant persons in 2019.[3]
- Both preterm birth and low birthweight can lead to increased risk of death and potential lifelong disabilities. Preterm birth occurs when a baby is born prior to completing 37 weeks of pregnancy. Low birthweight occurs when a baby is born weighing less than five pounds, eight ounces and can be caused by preterm birth.[8]
- Complications and causes of infant deaths can be attributed to birth defects, low birthweight, pregnancy complications, sudden infant death syndrome (SIDS), and injuries.[9]

Figure MIH.2. Preterm and Low Birthweight Births by Race and Ethnicity, 2019[3]



Vertical line indicates HP2020 goal.

Disparities in maternal health and birth outcomes are driven by many factors including inequities in social determinants of health and racism.

There are well-documented, individual-level risk factors for poor birth outcomes, such as age, marital status, income, and health behaviors. Yet, individual-level factors alone do not account for the racial disparities seen in preterm birth, low birthweight, and infant mortality.[10]

Structural racism refers to "the ways in which societies foster racial discrimination through mutually reinforcing systems of housing, education, employment, earnings, benefits, credit, media, health care, and criminal justice." One way to improve population health, including maternal health, is through the dismantling of these structures of systemic racism.[11]

> *"Your zip code impacts your health much more than your genetics."*
>
> - Focus group participant

Stakeholders raised nearly every aspect of social determinants of health when discussing maternal and infant health and identified additional populations that experience adverse birth outcomes, including rural and urban residents, low-income individuals, immigrants, undocumented individuals, those who are uninsured and underinsured, and populations lacking culturally appropriate services.

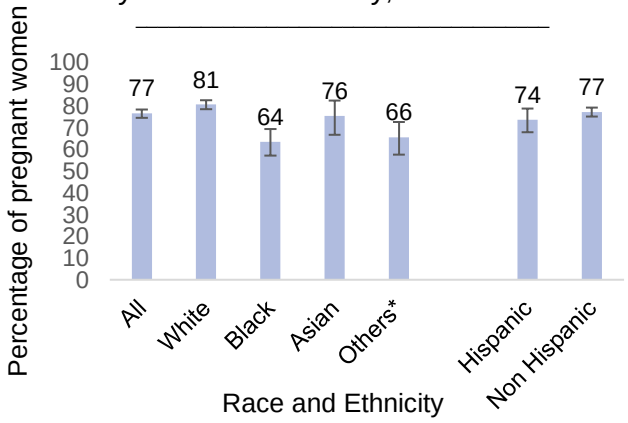
They stressed that basic needs must be met before health can improve.

> *"There is a lack of access – you can almost insert anything here – to fresh fruit and vegetables, transportation, education."*
>
> - Focus group participant

Many women of all races and ethnicities in Pennsylvania are not receiving early and adequate prenatal care.

- The HP2020 goal for live births to pregnant persons beginning prenatal care in the first trimester (early prenatal care) is 84.8%, an unmet goal for Pennsylvania. Sixty-four percent of Black pregnant persons and 78% of White pregnant persons received early prenatal care in 2019.[1,3]
- Early and adequate prenatal care is important for the health of the pregnant person to make sure the pregnant person is receiving folic acid and to reduce risks for low birth weight and newborn death. Between 2018 and 2020, 77% of pregnant women received early and adequate prenatal care (see Figure MIH.3).[12] Receipt of early and adequate prenatal care was higher among White pregnant women compared to Black pregnant women.

Figure MIH.3. Early and Adequate Prenatal Care among Pregnant Women by Race and Ethnicity, 2018-2020.*[12]



*Others include American Indian, Hawaiian, Alaskan Native, and Mixed race

* Early and adequate prenatal care as herein referenced is defined by the Kotelchuck Index, which uses a ratio of observed to expected visits. The index and determination of adequacy depends on the month in which prenatal care was initiated. Here, early and adequate prenatal care includes those with ratios of observed to expected visits that were 80% or higher.[12]

Women may struggle with other aspects of continuous health care access.

Roughly 32,000 women in Pennsylvania live in a maternity care desert,[13] where care is limited or absent through lack of services or other barriers to access.[14]

Focus group respondents identified access to health care challenges in the state to include the following:[15]

- a lack of accessible providers in rural and urban areas due to transportation challenges, provider shortages, and the merging of hospitals;
- insurance barriers preventing adequate health care before and after pregnancy;
- the stress associated with trying to access various types of care at multiple locations within typical business hours, while working and caring for children;
- lack of awareness of resources and services; and
- health information that is not communicated effectively to low-literacy populations and to those for whom English is not their first language.

In Pennsylvania, in 2019, 95% of urban residents were living within 15 miles of a hospital with Neonatal Intensive Care Units (NICU) but only 42% of rural residents were living within 15 miles of a hospital with NICU.[16]

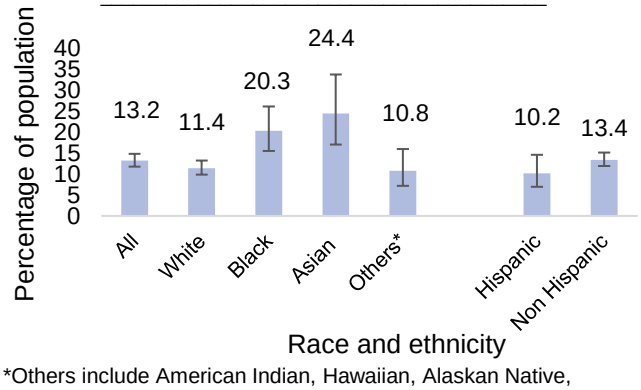
There is concern regarding stress among women and young families, their need for more personal connections and support, and improved access to mental health treatment.

Between 2018 and 2020, in the three months prior to pregnancy, 27% of women with a recent live birth reported experiencing anxiety and 17% reported experiencing depression. Approximately 13% of women reported postpartum depression.[12]

A higher percentage of Asian and Black women reported postpartum depression compared to White women (see Figure MIH.4).[12]

> *"We need to mitigate stress and toxic effects, talk about building strengths and resilience... Some say that having one safe, nurturing, positive relationship can be that mitigating factor. How do we do that for moms so that they can be the resilient source for the child?"*
>
> – Focus group participant

Figure MIH.4. Self-reported Postpartum Depression by Race and Ethnicity, 2018-2020[12]



*Others include American Indian, Hawaiian, Alaskan Native, Mixed race

Women who gave birth also faced challenges with substance use.

- Stakeholders spoke about substance use during pregnancy, including illicit substances, alcohol, and vaping, which is taking the place of tobacco.
- Cigarette smoking was higher and alcohol use was lower among pregnant women with lower educational attainment. Of those who had a live birth, 10% smoked in the last three months of pregnancy and 7% consumed alcohol, (Figure MIH.5).[12] Smoking in the last three months prior to pregnancy varied across the state from 6.4% in Chester County to 44.1% in Cameron County.[3]

Figure MIH.5. Cigarette Smoking and Alcohol Use in Last Three Months Among Pregnant Women by Education, 2018-2020[12]

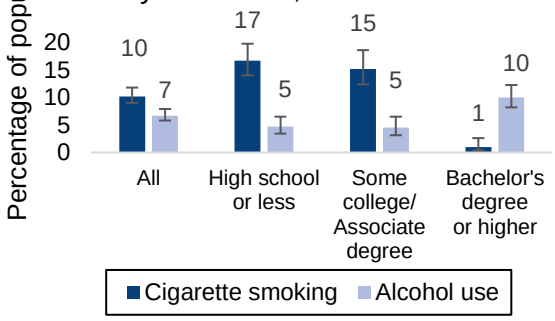
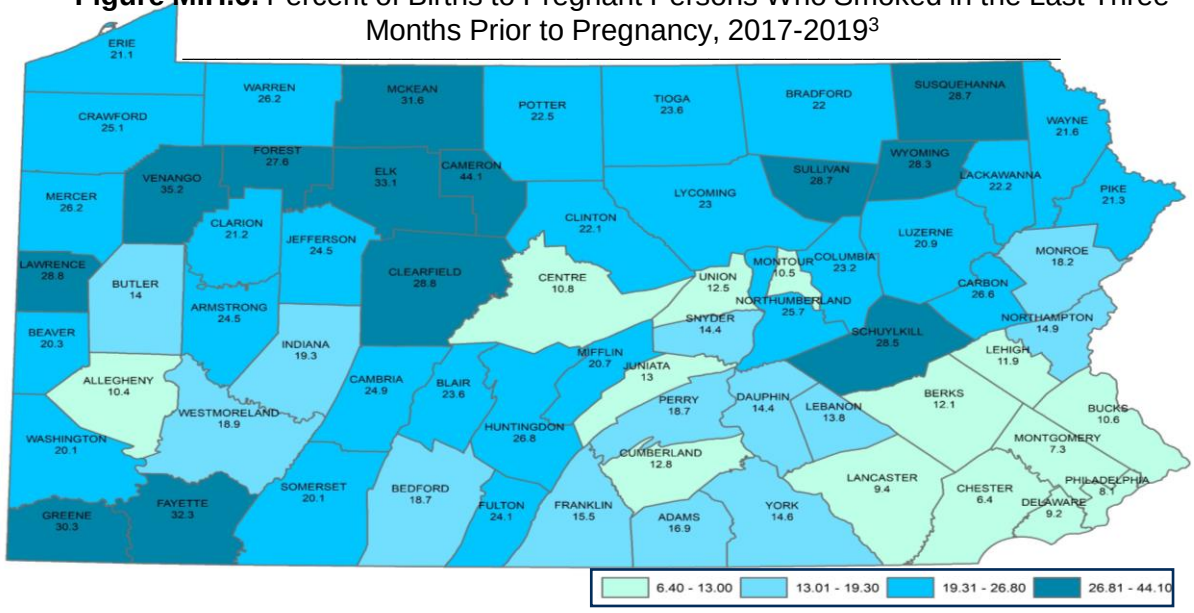


Figure MIH.6. Percent of Births to Pregnant Persons Who Smoked in the Last Three Months Prior to Pregnancy, 2017-2019[3]



- Between 2000 and 2016, maternal substance use presence grew from 15 to 40 per 1,000 hospital stays.[17]
- Close to 49% of maternal hospital stays with substance use in 2016-2017 involved an opioid drug.[17]
- Neonatal Abstinence Syndrome (NAS) is a newborn withdrawal syndrome due to prenatal exposure to opioids, benzodiazepines, and barbiturates. Newborns with NAS have higher rates of respiratory distress, difficulty feeding, low birth weight, prematurity, and added an estimated $15.2 million in hospital payments in 2018.[18]

2016-2017

1 in 25

maternal hospital stays had substance use present.[17]

- There were 1,610 NAS-related newborn hospital stays in Pennsylvania in 2019.[19] The rate of NAS in newborns increased by more than 1000% (from 1.2 to 15.0 per 1,000 newborn stays) between 2000-2001 and 2016-2017 but has decreased by 12% between 2017 and 2019. NAS was highest among residents who were White, from rural parts of the state, and had lower household incomes.[18,20]

Physical exercise, regular well-checks, and breastfeeding are important aspects of infant health.

The American Academy of Pediatrics provides the "Periodicity Schedule," which outlines the screenings and assessments that are needed at well-child visits from infancy through adolescence.[21] Pennsylvania ranked well at 12th of 50 states for children receiving one or more preventive services.[22]

85% 2016-2017

of children ages 0-17 who received one or more preventive visits in the past 12 months (2-year estimate).[22]

Breastfeeding is beneficial to both woman and infant. Breast-fed infants have a reduced risk of many conditions, including asthma, obesity, type 1 diabetes, and SIDS.[23] Breastfeeding women have a reduced risk of high blood pressure, type 2 diabetes, and ovarian and breast cancers.[23]

Breastfeeding initiation was less common among Black and multi-race infants compared to Whites.[3] Breastfeeding barriers among these populations include lack of provider and hospital support, the need for the woman to return to work, inflexible work environments, and lack of breastfeeding knowledge and social support.[24]

Women younger than 25 were also less likely to initiate breastfeeding. However, initiation of breastfeeding increased in women aged 20-24 from 60% in 2009 to 76% in 2019.[3]

Table MIH.2. Infants Ever Breastfed, 2019[3]

Race and ethnicity	Percentage breastfed
All	82%
White	83%
Black	77%
Hispanic	82%
Asian/Pacific Islander	91%
Multi-race	78%

Regular exercise during pregnancy benefits the pregnant person and the baby. Between 2018-2020, 39% of pregnant women reported doing exercise at least three days per week during the 12 months before pregnancy. Low income and women with lower educational attainment were less likely to exercise before pregnancy.[12]

Reproductive health is an integral part of overall health, and preventative services are crucial for lowering health risks.

70% 2017-2018

of women 18 to 44 had a preventive medical care visit in the past year.[25]

76% 2018-2020

of women with a recent live birth said that either they or their partner was doing something to prevent pregnancy after delivery.[12]

11% 2019

of sexually active high school students did not use any contraception at last sexual intercourse.[26]

- Pennsylvania ranked 20th among 50 states for women who had a preventative medical visit (well-woman visit) in the past year.[25]
- In 2020, Medicaid records show that 44% of women aged 15 to 44 were prescribed a contraceptive method during their postpartum visit.[27]
- During 2018-2020, about three in four women with a recent live birth said that they or their partner were doing something to prevent pregnancy after delivery.[12]
- Between 1990 to 2018, teen births have declined by 71%. Yet in 2019, 3.9% of births were to teens (15 to 19 years old), with a high prevalence among Black and multi-race women compared to Whites.[3]

This section summarized priority issues related to maternal and infant health and explored:

- Infant and maternal mortality
- Low birthweight and preterm birth
- Racism and social determinants of health
- Healthcare quality and access
- Mental health and substance use
- Infant health
- Reproductive health and health services

Visit these report sections for additional context:

- Social Determinants of Health, Equity & Racism
- COVID-19 Implications
- Injury and violence
- Assets

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Injury and Violence Prevention

Injury and violence prevention is another high-priority topic in Pennsylvania. This section examines preventable causes of death, including unintentional injuries and homicides. The section then reviews violent crime and the impact of violence, including sexual violence, intimate partner violence, and child maltreatment, on overall quality of life. Youth violence is another focus area, featuring issues such as bullying, juvenile arrest rates, and risk of violence and violent behaviors. The section concludes with a discussion of firearms, firearm safety, and the prevalence of hate crimes across the state.

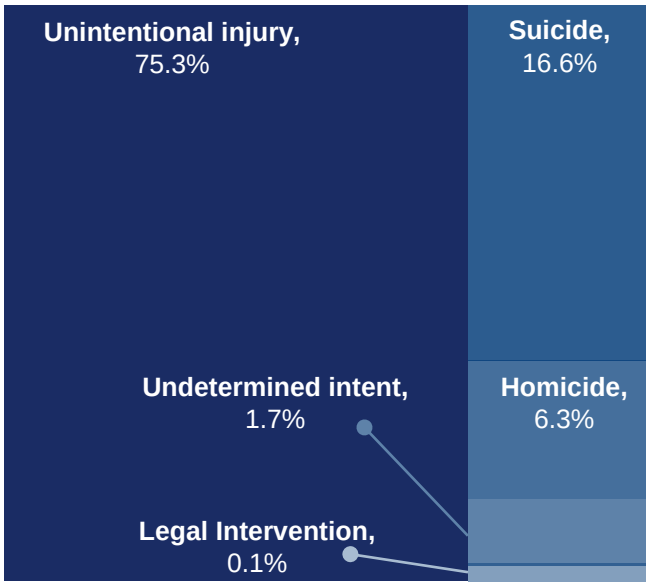
This section includes the following:

- Key issues
- Datapoints to illustrate main points
- Highlights on especially vulnerable populations
- Hyperlinks for further data exploration
- Data sources

Data shared in this section is from 2015 to 2020; data represents Pennsylvania unless otherwise noted.

Unintentional injuries and preventable deaths are high-priority issues for Pennsylvanians with high rates of fatal injuries.

Figure IVP.1. Fatal Injuries by Type, 2019[1]



Fatal injuries are deaths resulting from unintentional injury (accidents) and violence. In 2019, the age-adjusted rate of fatal accidents in Pennsylvania (82.3 per 100,000) was higher than the national rate of 71.1 per 100,000.[2]

In 2019, the leading cause of death among those aged 15-44 was unintentional injury.[2]

The overall trend of unintentional injury deaths increased between 2010 (40.1 per 100,000) and 2019 (61 per 100,000) with higher rates among those 80 years old and over, males and Blacks.[2]

Experiences of violence impact quality of life, can have lasting emotional, physical, and financial effects, and may contribute to premature death.[3,4]

In 2020, Pennsylvania ranked 22nd of 50 states for its violent crime rate (306 per 100,000) (first being the safest state), which includes rapes, robberies, aggravated assaults, and homicides. During the past five years, Pennsylvania has stayed in the middle quintile for violent crime rates among states.[5]

There were total of 721 homicides in Pennsylvania in 2019 (6.1 per 100,000 population). Philadelphia, Lycoming, Allegheny, Delaware and Dauphin counties had significantly higher 5-year homicide rates compared to the rest of the state.[2]

The rate of homicides in Pennsylvania was 6.1 per 100,000 residents in 2019 and was approximately ten times higher among Black residents (29 per 100,000) compared to White residents (2 per 100,000). Over the past five years, while the rate of homicides among White residents held steady, there was an increase among Black residents.[2]

Figure IVP.2. Violent Crime in the US and PA, 2008-2020[6]

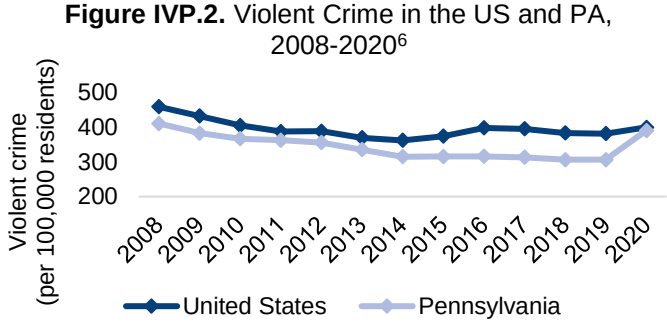
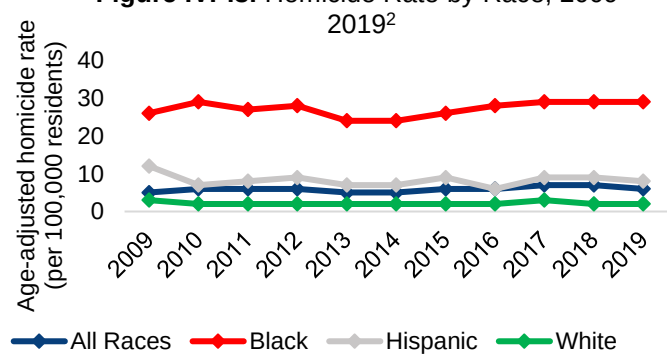


Figure IVP.3. Homicide Rate by Race, 2009-2019[2]



Violent crime is costly for victims, and the resulting financial burden may compound the negative effects of an already traumatic experience.

Table IVP.1. Victim Compensation by Crime Type, Fiscal Year 2019[7]

Types of crime	Amount paid	% Total
Child sexual abuse	$ 3,645,061	28.9%
Assault	$ 3,287,808	26.1%
Homicide	$ 2,362,647	18.7%
Sexual assault	$ 1,399,766	11.1%
Fraud/finance crimes	$ 795,312	6.3%
Robbery	$ 334,367	2.6%
Other vehicular crimes	$ 314,546	2.5%
Child physical abuse/neglect	$ 159,194	1.3%
Burglary	$ 137,525	1.1%
DUI/DWI	$ 77,460	0.6%
Stalking, arson, terrorism, kidnapping	$ 75,445	0.6%

In fiscal year 2019, the Victims Compensation Assistance Program (VCAP) approved compensation for 6,565 applications and awarded 10,032 people money for their claims. In total, VCAP awarded $12,618,360 for expenses related to approved claims (Table IVP.1).[7]

A stark majority (74%) of approved victim compensation was paid for child sexual abuse, assault, and homicide, highlighting the costly nature of violent crime.

With Pennsylvania's growing senior population, elder abuse and neglect remain important areas of focus.

Symptoms of elder abuse and neglect may include weight loss, isolation, depression, bruises or broken bones, increased confusion, and unusual withdrawals from any account.[8] Statewide reports of elder abuse increased by 80% over the past five years (2014/2015 to 2019/2020 fiscal year) from 20,133 to 36,329, while the average percent of substantiated cases remains consistent year-to-year (34 to 36%).[9]

According to the Pennsylvania Department of Aging, the most reported forms of substantiated elder abuse in 2019-2020 were self-neglect (38%), caregiver neglect (18%), financial exploitation (16%), and physical abuse (16%). The most identified perpetrator is a female caretaker (22%).[9]

Hate crimes are violent or property crimes based in prejudice and serve to terrorize persons holding marginalized identities.

There were 41 hate crimes in Pennsylvania reported to the FBI in 2019. Most hate crimes (68%) were committed due to bias against race, ethnicity, or ancestry, followed by bias against religion (22%) and sexual orientation (10%).[10]

In 2020, the Southern Poverty Law Center reported 36 known hate groups in Pennsylvania. The state was fifth of 50 states and Washington, DC for its number of hate groups, accounting for approximately 4% of the nation's 838 active groups.[12]

What is the legal definition of a hate crime?

Hate crimes are defined as those committed criminal offenses that are "motivated, in whole or in part, by the offender's bias(es) against a race, religion, disability, sexual orientation, ethnicity, gender, or gender identity."[11]

Females, people of color, and the elderly are especially vulnerable to experiences of violence, as shown by disproportionately high rates of sexual, domestic, and intimate partner violence.

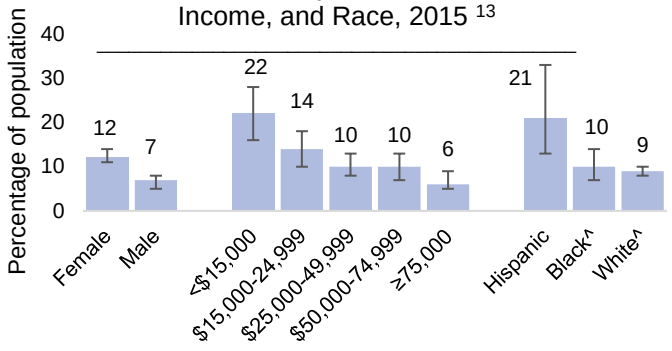
10% 2015

of adults reported ever being hit, slapped, pushed, kicked, or hurt in any way by an intimate partner.[13]

7% 2015

of females reported ever experiencing unwanted sex by a current or former intimate partner.[13]

Figure IVP.4. Adults Ever Being Hurt by an Intimate Partner by Gender, Household Income, and Race, 2015 [13]



- In 2015, about 10% of adults reported ever being physically hurt by an intimate partner, with a higher percent among females (12%) compared to males (7%). Additionally, the percent was higher among Hispanic residents (21%) compared to non-Hispanic White residents (9%), and higher among those within lower income brackets (Figure IVP.4).[13]
- Between 2013 and 2019, the percent of reported rapes increased: 30 per 100,000 in 2008 to 34 per 100,000 in 2019.[6] In 2015, approximately 4% of adults reported experiencing unwanted sex by a current or former intimate partner, reported higher among females (7%) than males (1%).
- In 2020, there were 109 domestic violence homicides, 55% of which were perpetrated by a current or former intimate partner. By gender, 59% of total victim deaths were female, and a higher percentage of female victims were killed by a current or former intimate partner (83%) compared to male victims (24%).[14]
- The majority (64%) of the domestic violence homicides were killed by shooting and 20% were killed by stabbing.[14]

> *"During COVID our domestic shelter has been full…pretty much brimming over because of the close quarters. So, there is a significant uptick in domestic violence during this time."*
>
> – Focus group participant

Intimate partner violence is of particular concern for females aged 17 to 24, as later patterns of intimate partner violence may begin through early experiences of teen dating violence.[15]

- Approximately 10% of high school students reported experiencing sexual violence in the last year. Reports included unwanted kissing or touching and being physically forced to have sexual intercourse.[16]
- Sexual violence was about two times higher among students identifying as gay, lesbian, or bisexual (19%) than heterosexual students (9%), and four times higher among females (17%) than males (4%).[16]
- Between 2006-2016, there were 88 intimate partner homicides among people aged 17 to 24, 90% of which had female victims.[17]

10% 2019

of high school students reported experiencing sexual violence at least once in the past year.[16]

^ Non-Hispanic

Child maltreatment is an issue of national concern with lifelong implications. Substantiated reports of child maltreatment were higher in rural than urban areas of Pennsylvania.[18]

> *I can speak for Tioga County. We are completely rural. …We are geographically dispersed. We are seeing … poverty, family dysfunction, …a lot of isolation, lack of services so that people are struggling to get to … things that they need. So, the frustrations run high, and kids bear the brunt of that with their caregivers being upset about things and ending up in emotional and physical injury.*
>
> – Focus group participant

Pennsylvania Child Protective Services received 32,919 reports of child abuse in 2020. Of those reports,12% (4,865) were substantiated and resulted in 73 fatalities and 115 near fatalities. Most child abuse reports (80%) came from mandated reporters.[18]

The most frequently reported type of abuse was sexual abuse (39%), followed by physical abuse/ bodily injury (28%).[18]

There are several risk factors associated with child abuse and neglect, including:[19]

- **Parent/Caregiver:** Previous familial abuse, substance misuse, mental health issues, single parenting, young age, low income, low educational attainment
- **Family:** Social isolation, family stress, separation or divorce, violence in the home
- **Community:** Concentrated neighborhood disadvantage, community violence

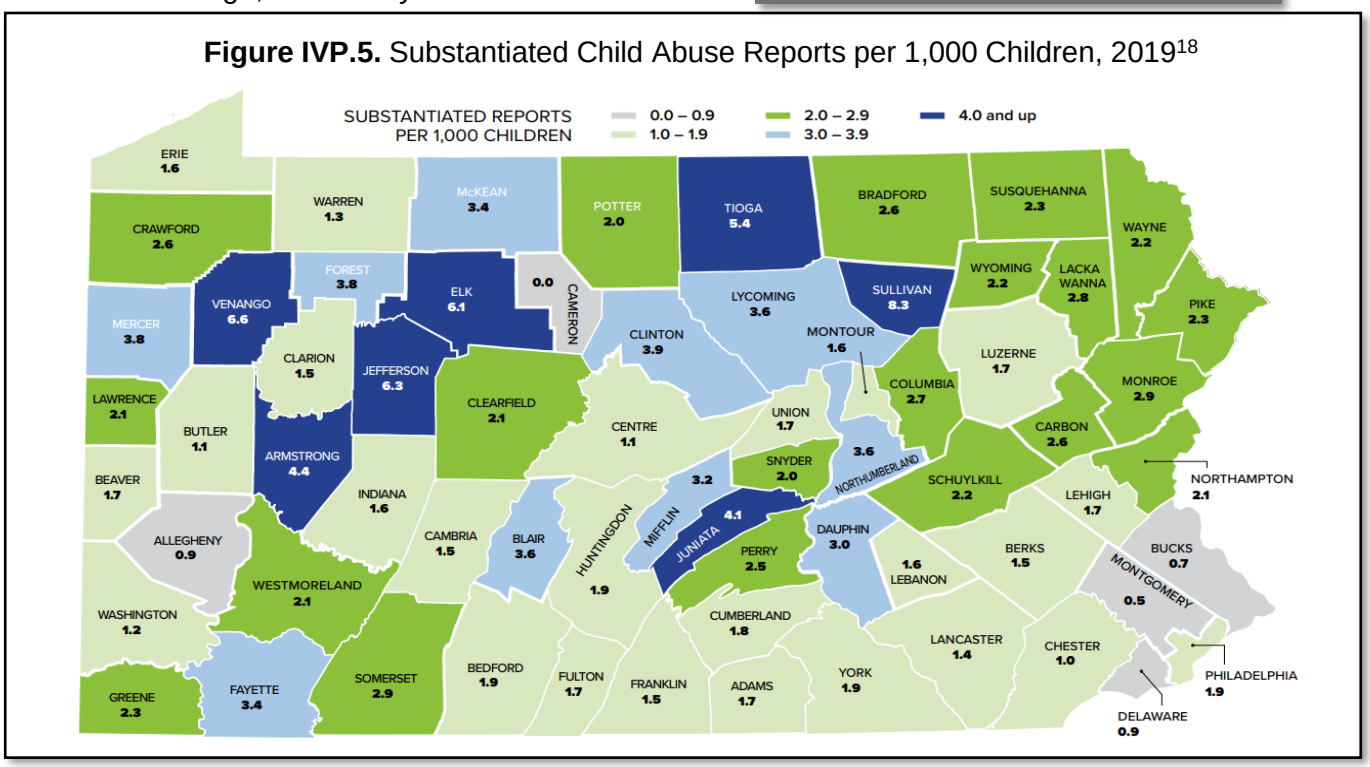
2020

1.7 per 1,000 children under the age of 18 experienced child maltreatment.[18]

2019

2.7 per 100,000 children under the age of 18 died due to child maltreatment.[18]

Figure IVP.5. Substantiated Child Abuse Reports per 1,000 Children, 2019[18]



Youth violence is an adverse childhood experience that is linked with many violent behaviors and poor health outcomes later in life.[22]

What is youth violence?

Youth violence is defined as the "intentional use of physical force or power to threaten or harm others by young people ages 10-24," [20] and often involves the violent behaviors listed in the boxes below.

2019

22%

of high school students were in a physical fight at least once in the past year.[16]

2019

8%

of high school students did not go to school because they felt unsafe at school or on their way to school at least once in the last month.[16]

2019

8%

of high school students were threatened or injured with a weapon on school property at least once in the past year.[16]

> *"I think the other thing that people need to remember is that when children grow up in a home where there is a lot of domestic violence…that child is being abused as well....and we need to remember children imitate what they see."*
>
> - Focus group participant

Juvenile arrest rates decreased between 2013 and 2018 across five major areas of crime, including larceny-theft (688 to 377 per 100,000), drug misuse (349 to 223 per 100,000), aggravated assault (169 to 144 per 100,000), robbery (101 to 49 per 100,000), and possession of weapons (98 to 50 per 100,000).[21]

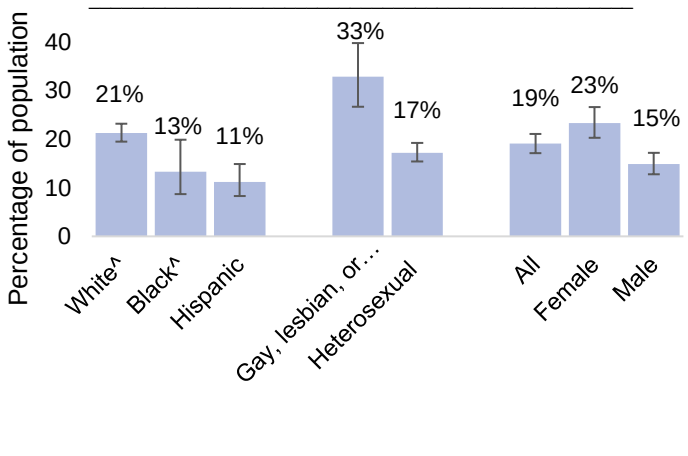
Stakeholders emphasized the importance of contextualizing violent or criminal activity of youth, as there are numerous risk factors associated with youth violence. Additionally, arrest rates may be further inflated as a result of systemic racism.[22]

Stakeholders also discussed the effects of intergenerational trauma on families, which often precedes abuse. Child abuse and maltreatment often overlap with domestic violence,[23] which highlights the importance of primary prevention efforts in addressing abuse holistically, at the family level and in schools.

The percent of students who did not go to school because they felt unsafe at school or on their way to school in the last month increased from 5% in 2009 to 8% in 2019.[16]

Approximately 19% of high schoolers reported being bullied on school property during the past year. Female students were more frequently bullied than male students, as were those who identified as gay, lesbian or bisexual compared to heterosexual-identifying students (Figure IVP.6).[16]

Figure IVP.6. High School Students Bullied on School Property by Race, Sexual Identity, and Gender, 2019[16]



^ Non-Hispanic

Firearm-related injuries and deaths remain issues of high priority for the health of Pennsylvanians.

A Pennsylvania Special Council on gun violence recommended the following focus areas to reduce gun violence[24]

- Prevention
- Keeping firearms out of the wrong hands
- Mental health
- Community gun violence prevention
- Training and education
- Coordinated planning and response
- Informing better policies and practices

2019

11.6 per 100,000

deaths due to firearm-related incidents (age-adjusted rate)[2]

> *Guns are really essential in all of this. Guns are obviously a huge factor for homicide and suicide, and they make situations of domestic violence and child abuse turn deadly when they otherwise would not be… to me that feels like something that is crosscutting.*
>
> - Focus group participant

In 2018, firearm-related injuries were the second leading cause of traumatic pediatric death and third leading cause of overall pediatric death in the U.S.[25]

In 2018, in Pennsylvania, 167 deaths in which the cause of death involved firearms, sharp instruments, or when a person's body part was used as a primary means of the assault, were reviewed by the Child Death Review teams.[26] Of those 167 deaths, 141 deaths involved firearms.

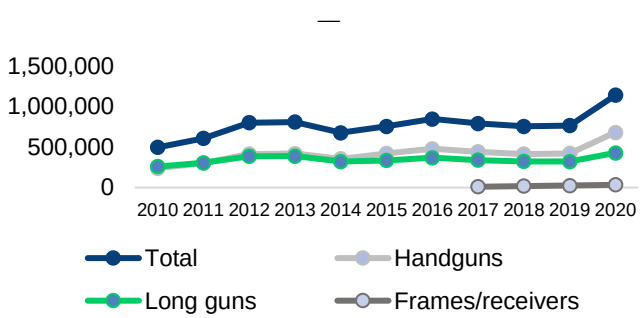
During 2010-2019, the rate of firearm-related deaths in Pennsylvania increased 15% compared to a 17% increase nationwide. Moreover, the rate of firearm-related suicides increased 20% and firearm-related homicides increased 12%. [27]

In 2019, the firearm-related death rate was higher for males (20.8 per 100,000) compared to females (2.9 per 100,000). Across racial and ethnic groups, the rate of death is highest for non-Hispanic Black individuals at 29 deaths per 100,000.[2]

States with stricter gun laws had fewer pediatric firearm-related deaths.[28,29] In 2019, Pennsylvania received a C+ rating from Giffords Law Center for its gun safety laws. The state ranked 12th of 50 for gun law strength and 29th of 50 for gun deaths.[29]

- Approximately 1,141,413 firearms were purchased or transferred in 2020, a 49% increase from 2019. The Pennsylvania Instant Check System processed a total of 1,445,910 background checks, and this number represents a 47.2% increase from 2019.[30] Firearm sales have increased in the past decade, with higher jump in 2020 (see Figure IVP.7).

Figure IVP.7. Sales/Transfers of Firearms, 2010-2020[30]



- Firearms were used in 78% of homicides, 37% of robberies, and 27% of aggravated assaults in 2020.[30]

This section summarized priority issues related to injury and violence and explored:

- Overall injury and violence in Pennsylvania
- Violent crime
- Child abuse and neglect
- Youth violence
- Firearm-related injuries and deaths

Visit these report sections for additional context:

- Social Determinants of Health, Equity & Racism
- COVID-19 Implications
- Assets

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Immunizations and Infectious Diseases

Immunizations and infectious diseases comprise a key public health theme, especially as the world faces COVID-19. This section begins by examining vaccination coverage for vaccine-preventable diseases such as measles, mumps, and rubella. It reviews the impacts of communicable diseases such as pertussis and tuberculosis on different populations. The focus then turns to the low rates of human papillomavirus (HPV) and influenza (flu) vaccination. Next, the section details the impact of COVID-19's racial disparities, followed by a look at the state of HIV and AIDS, sexually transmitted infections (STIs), and hepatitis C. Finally, this section addresses foodborne illnesses and Lyme disease in Pennsylvania.

This discussion includes the following:

- Key issues
- Datapoints to illustrate main points
- Factors contributing to health challenges
- Highlights on especially vulnerable populations
- Hyperlinks for further data exploration
- Data sources

Data shared in this section is from 2016 to 2021; data represents Pennsylvania unless otherwise noted.

Although vaccinations have been a great public health success, Pennsylvania needs to increase vaccination coverage for some populations.

75%
of children born between 2014 and 2017 received the combined seven vaccine series by the age of 24 months.[1]

2017
45%
of adults aged 65 and older had ever received the shingles vaccine.[2]

Of 50 states, Pennsylvania ranked well in third place in childhood immunizations (among those 19 to 35 months), 11th in recommended adolescent immunizations (among those age 13 to 17), and third in flu immunization (among those 65 and older).[3]

Among children born between 2014 and 2017, 75% received the combined seven vaccine series by the age of 24 months.[1] Table IID.1 shows vaccination coverage by race and ethnicity by the age of 24 months among children born between 2014 and 2017.

Some Pennsylvanians, such as members of the Anabaptist community, may not receive vaccines for religious or cultural reasons, because of philosophical objections, or due to misinformation about safety. Other reasons can include cost, poor insurance coverage, transportation challenges, language barriers, and lack of time for appointments.[4]

> *A lot of well care is being put off; can we catch everyone up before we see outbreaks of vaccine-preventable diseases? We know from other countries and other situations in this country, that when immunization rates decrease, the vaccine-preventable diseases do reoccur.*
>
> - Focus group participant

Table IID.1. Vaccination Coverage by Age 24 Months among Children Born 2014-2017, Pennsylvania[1]

	All (%)	Non-Hispanic White (%)	Non-Hispanic Black (%)	Hispanic (%)	Non-Hispanic (%)
4 doses of tetanus, diphtheria & acellular pertussis (DTaP)	84	85	75	82	89
3 doses of polio	93	93	91	96	92
1 dose of measles, mumps & rubella (MMR)	93	92	92	95	95
3 doses of hepatitis B	93	92	90	94	94
1 does of varicella (chickenpox)	92	92	90	95	95
Combined seven vaccine series	75	76	64	76	89

Vaccination coverage for flu and HPV merit concern. Stakeholders suggested that immunization levels in the state can be improved through a more robust state registry.

> *"We know that, in most communities, flu vaccination coverage is less than 50%. That is one of the biggest challenges that we face year after year. This year will be even more challenging with COVID thrown in the equation."*
>
> – Focus group participant

2020

59%

of adults 50+ received a flu shot.[6]

2019

62%

of females aged 13 to 17 and

46%

of males aged 13 to 17 were up-to-date with recommended doses of HPV vaccine.[3]

Influenza is a respiratory illness caused by flu viruses that can manifest mild to severe symptoms resulting in hospitalization or even death.[5] Flu vaccination among adults 50 and over varied from 52% among those with less than high school education to 64% among those with a college degree.[6]

HPV is a vaccine-preventable virus that can lead to six types of cancers, namely; cervix, vagina, vulva, penis, anus and back of the throat (oropharyngeal).[7]

CDC recommends HPV vaccines for individuals aged 11 to 12 up to 26. Among 50 states, Pennsylvania ranked 30th in HPV vaccination among 13- to 17-year-old males, and eight among same-aged females.[3]

The Pennsylvania Statewide Immunization Information System (PA-SIIS) is a registry that aims to curb vaccine-preventable diseases through accurate management and reporting of vaccination data. It is a web-based system available to all health care providers and staff, and participation is voluntary.[8]

Despite vaccine availability, there are still cases of pertussis, tuberculosis, measles, and mumps in Pennsylvania.

- Pertussis, or whooping cough, is a highly contagious vaccine-preventable disease.[9] From 2017 to 2019, there were a total of 2,086 new pertussis cases in Pennsylvania, 185 of which were in children under the age of one.[10]
- There were 198 tuberculosis cases in Pennsylvania in 2019. The disease disproportionately affected Blacks (2.8 per 100,000) and Hispanic (1.8 per 100,000) residents compared to Whites (0.4 per 100,000).[10]
- There were 17 reported confirmed measles cases and 204 confirmed mumps cases in 2019. The 10-year (2010-2019) average cases were 4.4 cases per year for measles and 40.4 cases per year for mumps.[11]

2019

25

per 100,000 children under one year were diagnosed with pertussis.[10]

2019

1.5

per 100,000 residents were diagnosed with tuberculosis.[10]

Amidst the coronavirus pandemic, Pennsylvania is focused on the disparate impact of the virus across racial and ethnic populations.

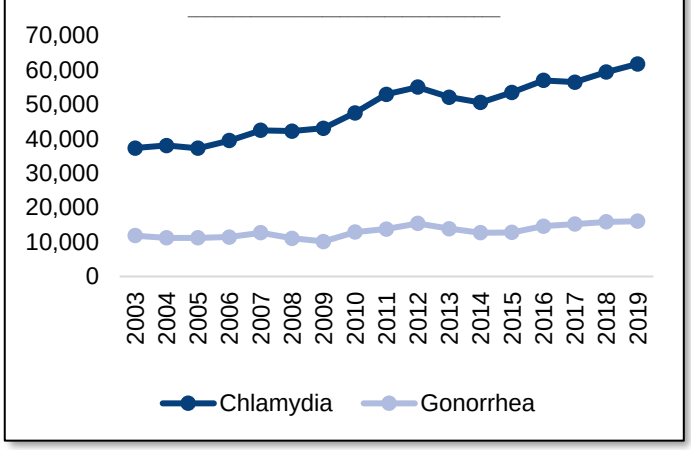
> *"Populations that experience challenges related to poverty–such as problems with water, adequate food supply, housing, and whether they can appropriately socially distance when somebody in the home is sick–are probably more impacted from infectious diseases. Those are all things that contribute to infectious diseases running through poorer populations more quickly … than they would in other populations …."*
>
> - Focus group participant

- The COVID-19 pandemic has highlighted underlying, long-standing health system gaps and social inequities affecting racial and ethnic minorities. There was erratic reporting of race and ethnicity during the pandemic, and as of December 16, 2021, 83% of the records include race and 62% included ethnicity.[12] This incomplete reporting makes it difficult to estimate accurate race and ethnicity specific rates.
- The rates of COVID-19 cases, deaths rates, and vaccination coverage varies between counties. Details in COVID-19 case rates, death rates, and percent fully vaccinated (aged five and older) by county as of December 16, 2021, is given in Appendix C.

Pennsylvanians continue to prioritize addressing HIV and STIs.

- The annual number of diagnoses of HIV infection have continued to decrease since the mid-1990s. In 2011, 1,386 new HIV infections were diagnosed compared to 779 in 2020, a 43.8% decline in new HIV diagnoses. An estimated 35,941 persons diagnosed with HIV in Pennsylvania were alive at year-end 2020. Disparities exist in who is impacted the most by the disease. The predominant mode of transmission of HIV remains men who have sex with men, with disproportionate impacts seen in individuals aged 25 to 34 and the minority population, primarily Blacks, African Americans, and Hispanics.[13]
- Between 2003 and 2019, both primary and secondary syphilis increased by nearly 400%. Figure IID.1 shows a 16-year, 65% increase in chlamydia, and a 36% increase in gonorrhea over that same time. Disparities by race and ethnicity were evident: compared to Whites, Black individuals were much more likely to be diagnosed with syphilis (seven times), gonorrhea (13 times), and chlamydia (nine times). Similarly, compared to the overall population, Hispanic residents were more likely to be diagnosed with syphilis and chlamydia.[14]

Figure IID.1. Chlamydia and Gonorrhea, 2003-2019[14]



"Note: 36% of race and 58% of ethnicity data is unknown for STIs. The percentage was calculated among those whose race and ethnicity was known"

Pennsylvania faces a high burden of Hepatitis B and Hepatitis C.

- Hepatitis B is a vaccine-preventable liver infection that can lead to serious, even life-threatening health issues like cirrhosis or liver cancer.[15] Only an estimated 33% of adults in the U.S. are vaccinated for hepatitis B. [16]
- Pennsylvania has the fourth highest number of people living with Hepatitis B in the U.S., with over 50,000 affected residents –mostly in communities of color. [17]
- In Pennsylvania, there are approximately 1,000 new Hepatitis B infections reported each year – but many others remain undiagnosed.[17]
- Approximately four in every ten of acute hepatitis B infections in Pennsylvania are due to injection drug use. [17]
- Hepatitis C can result in serious health problems, including cirrhosis and liver cancer. The CDC recommends one-time hepatitis C testing of all adults (aged 18 and older) and all pregnant women during every pregnancy.[18]
- In 2019, in Pennsylvania, the incidence of acute hepatitis C was 1.6 per 100,000, eight times higher than the HP2020 goal of 0.2 per 100,000.[19]
- In 2019, in Pennsylvania, the incidence of acute hepatitis B was 0.7 per 100,000, compared to the national rate of 1.0 per 100,000.[20]

Foodborne diseases pose health hazards to Pennsylvanians.

- Reports of foodborne illnesses caused by Campylobacter, Salmonella, and Escherichia coli (E. coli) are routinely monitored by Pennsylvania Department of Health.
- Campylobacteriosis is one of the most common causes of bacterial diarrhea. In 2019, in Pennsylvania, there were 21 Campylobacter infections per 100,000 people, which is higher than the HP2020 goal of 8.5 per 100,000.[9,21]
- Salmonellosis is often found in undercooked meat, raw vegetables, and unpasteurized milk, causing diarrhea or vomiting.[22] In 2019, there were 1,701 cases (13.3 per 100,00) of Salmonellosis reported. The HP2020 goal is 11.4 per 100,000.[9,21]
- E. coli is a group of bacteria which may make people sick. The illness usually causes severe bloody diarrhea, vomiting, and abdominal cramps.[22] In 2019, there were 3.4 E. coli infections per 100,000 people, which is higher than the HP2020 goal of 0.6 per 100,000.[9,21]

Pennsylvania continues to be among the top states for incidence of Lyme disease, with the number of cases more than doubling in the past 15 years.[9]

29% 2019
of Lyme disease cases in the U.S were in Pennsylvania.[23]

70 2019
per 100,000 residents were diagnosed with Lyme disease.[9]

Lyme disease is a bacterial infection spread by tick bites and has caused more than 30,000 illnesses in each of the past three years in Pennsylvania.[9] Reasons for the increase in Lyme disease may include warmer winters that cause less tick die-back and increased exposure as Pennsylvanians spend more time in wooded parts of the state.[24]

This section summarized priority issues related to immunizations and infectious diseases and explored:

- Routine immunizations, especially among children
- Vaccine-preventable diseases
- Vaccination coverage for flu and HPV
- Social determinants of health
- HIV and AIDS, STIs, and hepatitis B and C
- Foodborne illnesses
- Lyme disease

Visit these report sections for additional context:

- Social Determinants of Health, Equity & Racism
- COVID-19 Implications
- Assets

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Environmental Health

Environmental health is a cross-cutting issue of immense importance that impacts the lives of Pennsylvanians in many ways. This section provides an overview of environmental justice and equity in Pennsylvania before moving to more specific topics, such as the built environment, air quality, and water quality. It then reviews environmental exposures and hazards that impact health within the home and built environments, as well as the impact of environmental hazards on children. The section also briefly reviews pedestrian safety and motor vehicle accidents and access to safe recreational spaces. Air and water quality are other focus areas, featuring discussions on air pollution, cancer risk, and access to safe drinking water. The section concludes with an overview of Pennsylvania's current status on global climate change initiatives emphasizing the state's current Climate Action Plan released in 2021.

This section includes the following:

- Key issues
- Data to illustrate main points
- Highlights on especially vulnerable populations
- Hyperlinks for further exploration
- Data sources

Data shared in this section is from 2014 to 2021; data represents Pennsylvania unless otherwise noted.

Environmental health is interrelated with policy, infrastructure, and structural justice and injustice.

Environmental health is defined by the World Health Organization (WHO) as being "all the physical, chemical, and biological factors external to a person, and all the related behaviors" that impact health, such as air and water quality, homes and communities, infrastructure and surveillance, exposure to toxic substances and hazardous wastes, and global environmental health.[1]

Section 27 of the Pennsylvania Constitution includes the Environmental Rights Amendment:

> ***"The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people."***

Stakeholders recognize that environmental health influences access to care and healthy spaces, chronic disease, cardiovascular health, injury prevention, infectious disease, and more. Those with less control over their environment face greater risk of long-term exposure to toxins and environmental hazards.[2] Populations at greatest risk include the following:[2]

- Communities of color
- Individuals with lower incomes
- Children
- Pregnant women
- Senior residents (65+)
- Those with lower literacy and limited English proficiency
- Those employed in occupations subject to environmental hazards
- Those with disabilities
- Those who are legally detained or incarcerated

The Environmental Protection Agency (EPA) stresses the necessity of practicing environmental justice to ensure all persons have equal access to safe environments and decision-making power.[3] Populations most vulnerable to environmental inequities are identified as living in "environmental justice areas," which are census tracts in which at least 20% of residents live in poverty and 30% is a racial minority.[4]

Pennsylvania environmental justice areas maps are available from DEP's Office of Environmental Justice. Mapping environmental justice areas helps us identify communities that are affected by environmental pollution and related health outcomes, socially vulnerable, or have been left out of decision-making that influences the health of their surroundings.

Stakeholders emphasized addressing structural racism and systemic inequities as key to improving air quality, water quality, and home health problems, such as lead, pests, asbestos, and crowding.[2]

Housing quality and the built environment, such as work environments and schools, can impact health outcomes of Pennsylvanians.

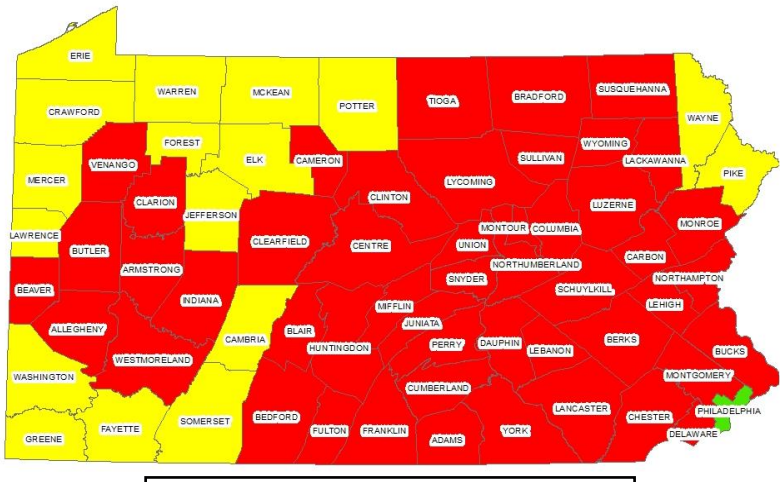
Older housing stock – In 2021, Pennsylvania ranked 47th out of 50 states in terms of having the greatest percent of housing stock at risk for lead exposure (29% compared to the national average of 18%).[5] According to 2015-2019 estimates, approximately 67% of Pennsylvania homes were built before 1978, increasing residents' lead exposure risk.[6] The counties with the highest proportion of older homes included Philadelphia (86%), McKean, Delaware, and Cambria (80% each).[6*] Stakeholders noted environmental health risks, like lead in the home, may take longer to manifest and be harder to prioritize when more imminent needs are present.[2]

> *"We've been talking about social determinants of health for a decade and we need to chip away at it. Poverty, racism, that is what is leading us down this path and that is what we need to address."*
>
> – Focus group participant

Housing-related discrimination – Real estate redlining, a form of structural racism, labeled neighborhoods with high percentages of people of color as 'high risk' resulting in banks not lending money to people to do needed home repairs.[7] This and other unjust municipal infrastructure policies and decisions have contributed to residential segregation, often leaving communities of color with more socioeconomic and home-related health challenges. Historical redlining has led to tree inequity today, meaning that people of color and of lower incomes live in neighborhoods with lower tree canopy, that impacts their health.

Community-level exposures – On their National Priorities List (NPL), also known as the Superfund List, EPA tracks sites that either have released or are in danger of releasing hazardous substances, pollutants, or contaminants. The list serves as an information and management tool for EPA's Superfund Cleanup Remedial program. As of 2021, Pennsylvania has 90 active sites, two proposed NPL sites, and 35 deleted sites (EPA determines that no further response is required to protect human health or the environment). Superfund Sites can include contaminants such as lead, asbestos, and radiation which can lead to cancer, birth defects, and other serious health issues. Some groups of people, such as children, pregnant women, and the elderly, may be at particular risk.[8]

Figure EH.2. Radon Zones in Pennsylvania Counties, 2020[10]



Radon, a radioactive gas within homes and built environments, is the second leading cause of lung cancer after smoking. With lifetime exposure to radon levels above four pCi/L (picocuries per liter), risk of lung cancer increases for smokers and non-smokers alike.[9] Most counties have a predicted average indoor radon screening level above recommended levels.[9]

*The number of houses built between 1950 and 1978 is not directly reported by ACS. To calculate the number of houses built before 1978, 80% of the number of houses built between 1970-1979 were added to the number of houses built before 1970.

Children are especially vulnerable to environmental hazards and exposures because they take in proportionately more air per body weight.

Childhood lead poisoning- There are many long-term, irreversible consequences of childhood lead poisoning, including neurological deficits, learning and behavioral problems, hearing and speech problems, and developmental delays.[11]

In 2019, 20% of children under age six (167,608) were tested for lead. Among those tested, 3.5% had a blood lead level greater than five µg/dL. Non-Hispanic Black children were nearly three times as likely (6.4%) and Hispanic children were nearly two times as likely (4.2%) as non-Hispanic White children (2.3%) to have elevated blood lead levels.[12] In 2021, CDC updated the blood lead reference value from 5.0 to 3.5 µg/dL, and in January 2022, Pennsylvania Department of Health aligned with the updated reference value.[11]

Environmental health in schools- Act 39 of 2018 encourages all schools to test and report elevated lead levels in drinking water to the Pennsylvania Department of Education. While Pennsylvania schools are not required to test for lead in drinking water, schools that opt out of lead testing must facilitate a discussion about lead-based issues facing the school at a public meeting once a year.[14]

In 2020, DEP conducted a total of 125,399 radon tests in households, businesses, or schools, and 30% of these were found to have over four pCi.[13]

Stakeholders discussed the need for mandatory testing and reporting to the state on environmental hazards in schools.

Secondhand smoke among children- Children exposed to secondhand smoke are also at risk of adverse health conditions such as middle ear infections, respiratory problems, and sudden infant death syndrome.[15] Based on the 2018-2019 National Survey of Children's Health, in Pennsylvania 16% of children lived with someone who smoked.[16]

Pedestrian and vehicular deaths may be reduced by ensuring safe walkways, bicycle paths, and other policy supports are in place.

2019

8.3 per 100,000 people died in car crashes.[17]

2019

1.2 per 100,000 pedestrians died in car crashes.[17]

2019

36 min / 54 min average arrival time to hospital from time of crash for EMS, urban vs. rural[17]

- Pennsylvania developed the Pennsylvania Walkable Communities Collaborative in 2016 to increase walkability across the state and link residents to their communities.[18]
- In 2020, pedestrian-related crashes represented 2.7% of the total reported traffic crashes; however, they accounted for 13% of all traffic-crash fatalities.[19]
- In 2018, there were 974 bicycle crashes, representing 1% of the total reported crashes and 1.5% of traffic fatalities. [19]
- In 2020, Pennsylvania scored 92 out of 200 on the Safe Routes to School report on support for walking, bicycling, and active kids and communities, demonstrating momentum and opportunities for improvement.[20]

The magnitude of risk varies across jobs.

- Occupational health and safety aims to reduce work-related injuries and accidents, and exposure to harmful substances. In 2018, about 132,500 workers experienced non-fatal work-related injuries and illnesses, 1,284 pneumoconiosis hospitalizations, and 172 fatal work-related injuries. Table EH.1 shows the count and rate of occupational injuries and hospitalizations.[21]
- Transportation incidents and contact with objects and equipment accounted for 61% of all workplace fatalities in the state.
- Most of the work-related fatalities were among males (91%), Non-Hispanic Whites (79%), and those over 55 years old (42%).[22]

Table EH.1. Fatal and Non-fatal Occupational Injuries and Hospitalizations, 2017[21]

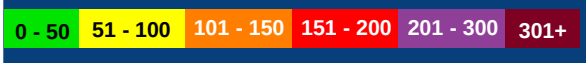
Occupational condition	Count	Rate
Non-fatal work-related injuries and illnesses	132,500	3,100 per 100,000 full-time equivalent (FTEs)
Work-related hospitalizations	4,570	75 per 100,000 employed persons
Fatal work-related injuries	172	3 per 100,000 FTEs
Pneumoconiosis hospitalizations	1,284	121 per 100,000 FTEs

Air quality varies by geographic location, often tied to industry and climate change, heat, and ozone.

Among Pennsylvania's greatest health challenges, are high levels of air pollution which can lead to cardiovascular disease, respiratory diseases, reproductive and central nervous system dysfunctions and cancers. Nationally, in 2021, Pennsylvania ranked 41st of 50 states, among the worst for the general public's exposure to acceptable levels of particulate matter (PM, 2.5 micrograms or less per cubic meter). Based on 2018-2020 data, the state's average exposure levels of PM was 8.5 µg/m^3.[23]

A Healthy People 2020 leading health indicator is number of days people are exposed to unhealthy air. This is measured by the number of days the Air Quality Index (AQI) exceeds 100, multiplied by the population (AQI-weighted people days).[24] Pennsylvania's AQI-weighted people days decreased by 95% from 2006-2008 to 2017-2019, which surpasses the HP2020 goal of a 10% decrease.[25]

What does the Air Quality Index (AQI) measure?[28]



The AQI is a composite measure of air pollution (lead, ozone, particle pollution, SO_2, NO_2, and CO) in which higher values equate to higher pollution levels. Values at or below 100 are considered "satisfactory," while values above 100 are considered "unhealthy."

In 2020, the Commonwealth-wide average of the 90th percentile AQI value was 55. In 1980, the same AQI metric was 130.[26]

The total cancer risk per million people was last recorded as 31.7 both in Pennsylvania and the U.S. based on a 2014 EPA National Air Toxics Assessment report.[27] There was wide variation within Pennsylvania, with the most recent highest reported emission levels in Lehigh County attributable to corporate manufacturing emissions of large amounts of ethylene oxide.[27]

Access to safe drinking water is essential to promoting the health of Pennsylvanians and preventing waterborne disease outbreaks.

2019

98%

of community water systems complied with health-based standards.[30]

2020

61%

of residents were served by optimally fluoridated community water systems.[31,32]

Between 2010 and 2018, Pennsylvania had 37 waterborne disease outbreaks that resulted in 351 illnesses, 158 hospitalizations, and 18 deaths.[29]

Optimal water fluoridation is a public health innovation that is an important means of preventing tooth decay in the general public. In 2018, the state ranked 42nd of the 50 states and Washington, D.C. for access to fluoridated water. The percentage of residents with access to fluoridated water (61%) was far below the national average (73%).[31]

In 2020, 26% of Pennsylvanians used a private well as their main source of drinking water.[33] Unregulated water systems, such as private wells, are not monitored by the EPA and there are no federal or state requirements for private well-water testing, and there are no siting or construction standards.[34] Well water testing and treatment can be expensive and may not be consistently performed; there are also potential gaps in knowledge about the importance of testing and how to do it, which may lead to contamination and increased health risks.[35]

Increasing greenhouse gas emissions and resulting climate change is an issue of global concern with widespread and devastating consequences.

The greatest climate hazards facing Pennsylvania over the next century are precipitation, flooding, and extreme heat.

More intense rain events with heavy precipitation pose both direct (physical safety risks, limited access to critical services, mental health impacts) and indirect (via economic instability and infrastructure failures) health risks.

Some populations including the homeless, low-income residents, renters, and communities of color are likely to be disproportionately affected.

Heat waves, particularly in urban areas that already experience an urban heat island effect, present additional environmental and public health challenges including the following:[36]

- worsening air quality will exacerbate respiratory conditions and lead to increased premature death;
- changes to the distribution and prevalence of vector borne disease;
- increased violence and mental health problems; and
- rising rates of heat-related illness, health complications, and death

29% / 24%

29% of greenhouse gas emissions were from nonrenewable electricity generation and 24% were from transportation.[37]

+1.8°

The average temperature increased 1.8°F in the last century and is projected to be 5.4°F warmer by 2050.[37]

+10%

The annual precipitation has increased by about 10% in the past 100 years.[37]

Having access to safe recreational spaces is another key component of healthy living environments.

Obesity in Pennsylvania is projected to increase from 31% in 2020 to 50% by 2030.[38,34] Stakeholders discussed how access to safe recreational spaces may impact childhood and adult obesity, particularly among those who rely on these spaces for physical activity, and cited risk factors such as neighborhood safety and gun violence as potential barriers.[2]

Access to greenspace and outdoor recreation is needed for all, especially children and older adults, including those in long-term care, and benefits people physically, emotionally, and mentally. While over half of Pennsylvanians reported having access to trailheads within 15 minutes (69%) and walking access to parks (52%), there were noted racial disparities in access. About 41% of Black residents cited transportation issues as being the main barrier to visiting state parks.[18] Pennsylvania Department of Conservation and Natural Resources (DCNR) has released Outdoor Recreation Access in Pennsylvania, Pursuing a Goal of Recreation for All, which identifies areas which do and do not have access to green, recreational space within ten minutes.

> *"I just wanted to stress, once again, structural racism and residential segregation. These may have been mentioned…access to safe outdoor recreational places which kind of gets at the obesity and then also kind of taps into urban gun violence, and then walkability. And somehow, they are all intertwined with poverty."*
>
> – Focus group participant

Current regulations and legislation have set the stage for future health improvement opportunities.

No state has met the United Nations's Sustainable Development Goals, and none are currently on track to achieve them by 2030. Pennsylvania is in the lower half of states. These global targets, agreed upon by all 193 member counties for economic, social, and environmental justice, were agreed upon at the national level, but local action is needed for their achievement.[39]

As part of the 2021 Pennsylvania Climate Action Plan, the state plans for a 26% reduction in greenhouse gases (GHG) by 2025 and an 80% reduction by 2050. The plan presents 19 strategies and actions to reduce its GHG emissions and provides an outline of 100 actions for government leaders.[37]

Climate interventions such as those presented in the Climate Action Plan cannot undo the damage already done, but they can mitigate future hazards while improving resilience in the face of socio-environmental change.

Pennsylvania also has an Emergency Operation Plan that is prepared, exercised, and maintained by the Pennsylvania Emergency Management Agency. It outlines procedures and responsibilities that are employed in event of a disaster or emergency.[40]

Unconventional oil and natural gas development, commonly known as fracking, is often located near residential areas. While research has not been able to identify causation, there are concerns of impacts to water, air, and soil quality, traffic, stress, and other health outcomes.[41] A voluntary registry for collecting oil and natural gas production-related health concerns gives residents participation in data collection on the impacts of this industry.

This section summarized priority issues related to environmental health and explored:

- Environmental justice
- Built environment hazards and exposures
- Air quality
- Water quality
- Climate change
- Pennsylvania policy landscape for environmental health

Visit these report sections for additional context:

- Social Determinants of Health, Equity & Racism
- COVID-19 Implications
- Assets

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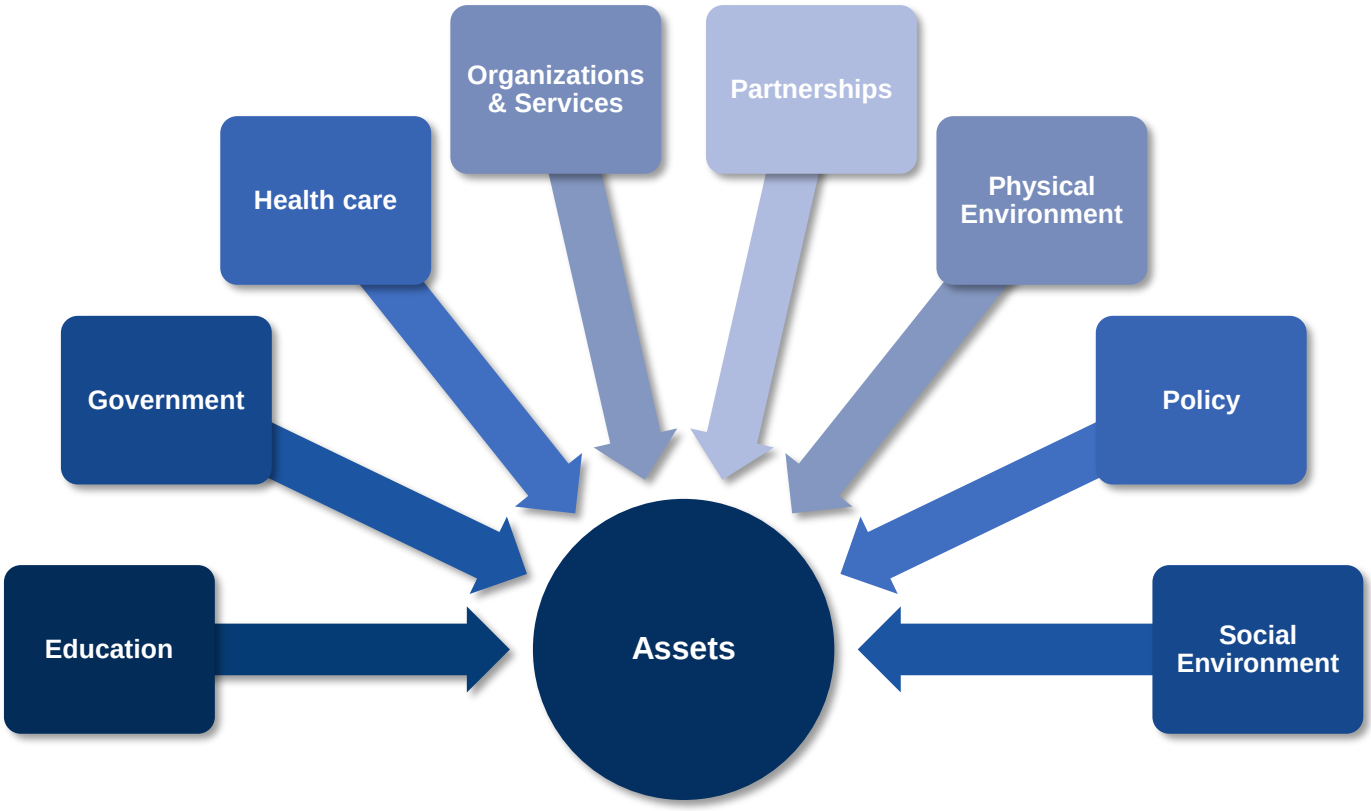
XII. Assets in Pennsylvania

There are many strengths and opportunities within Pennsylvania, positioning the state to address gaps and barriers to health. Pennsylvania has a strong public health and health care infrastructure, with many successful programs and other resources that can be leveraged to improve health, which is further detailed in this section.

- Throughout the SHA process, public health stakeholders and community residents identified assets and resources at local and state levels.
- Top community strengths cited by poll respondents include parks and recreational spaces, availability of fresh food, good schools, and safety.
- The assets shared here, while not exhaustive, demonstrate many resources in Pennsylvania that can be built upon to support health and improve quality of life.
- It is important to note that these assets may not be equally distributed across the state and throughout all communities. Pennsylvania can strive to distribute and activate assets equitably.
- The below image shows the types of assets identified by stakeholders, and the following page details these assets by category.

Types of Assets Identified by Stakeholders



Education
- Higher education
- Public education (K-12)

Government
- Emergency preparedness
- Local government agencies and public health infrastructure *****
- State government leadership (i.e. governor, secretary of health)
- State government entities' focus on underserved populations, collaboration, progressiveness, quality, infrastructure, and diversity within *****

Health care
- Academic research centers
- Community health workers *****
- Community-led visiting nurse programs
- Federally qualified health centers and other public clinics
- Health care and hospital systems (e.g. quality and supply) *****
- Health information exchanges
- Local providers and health care systems (e.g. quality and supply) *****
- Managed care organizations
- Medical education (e.g. medical schools, teaching hospitals, health care training programs)
- Mental health services and workforce
- Mobile units
- School-based health centers
- Students in health-related fields
- Telemedicine/telehealth *

Physical Environment
- Affordable housing
- Air quality and monitoring
- Clean fuel Initiatives
- Local agriculture *****
- Natural lands
- Natural resources
- Outdoor recreation *****
- Potential funding to clear lead from drinking water in schools and day cares
- Transportation
- Walkability

Partnerships
- Coalitions
- Community-based partners *****
- Cross-sector collaborations at local, regional, and state levels *****
- Resource networks
- Stakeholders

Organizations & Services
- 211 (service linking residents to local resources)
- Advocacy organizations and community activists
- Childcare services (e.g. after-school and early-childhood programs)
- Community-based organizations *****
- Evidence-based programs (e.g. availability of and training in)
- Faith-based organizations
- First responders (i.e. EMS, police, fire) and mental health support and training for 1st responders
- Food banks *****
- Harm reduction efforts
- Local review boards
- Professional associations (e.g., physician associations)
- Recreation services
- Regional tobacco cessation programs
- Senior centers
- Social services *

Policy
- Affordable Care Act
- Focus on social determinants of health
- Data collection efforts
- Medicaid
- Strategic implementation plans and strategic funding

Social Environment
- Arts and culture *****
- Community characteristics (e.g. cohesion, support, stability, permanency, diversity) *
- Engaged residents and leaders
- Schools as community hubs

* Refers to most frequently mentioned assets

XIII. Next Steps

This state health assessment reviews a broad range of indicators of health and conditions to describe health in Pennsylvania and the factors contributing to disparate health outcomes. This report explores social determinants of health and health equity and eight health themes:

- Access to Care
- Substance Use
- Chronic Diseases
- Mental Health
- Maternal and Infant Health
- Injury and Violence Prevention
- Immunizations and Infectious Diseases
- Environmental Health

The assessment is the first in a series of steps to improve the health of Pennsylvanians. This report is intended to be used to foster discussion, promote ongoing and expanded data analysis, support local health improvement interventions, and inform the next Healthy Pennsylvania Partnership (HPP) State Health Improvement Plan.

The State Health Improvement Plan will use these findings to collaboratively select priority health issues and develop intervention strategies to effect change in Pennsylvania.

No single person or organization can address all the health and health equity concerns described in this broad assessment. However, working in partnership, especially by addressing equitable and upstream needs, will lead to necessary change.

Learn more about public health improvement planning, including how to participate, by contacting: RA-SHA@pa.gov

The Pennsylvania Department of Health and the Healthy Pennsylvania Partnership intend for this assessment and the subsequent improvement plan to shape specific, service- and system-level actions to improve equity in health conditions and outcomes across Pennsylvania.

XIV. Appendices

A. Leading Causes of Death by Age Group
B. Leading Causes of Death by Race and Ethnicity
C. COVID-19 Rates, Deaths and Vaccination
D. Methods
E. Data Indicator Index

Appendix A:
Leading Causes of Death by Age Group

Table XII.1. Leading Causes of Death by Age Group, 2019

	Age Group and Number of Deaths							
Rank	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25-44**	**45-64**	**65+**
1	Perinatal conditions, 423	Accidents, 25	Suicide, 23	Accidents, 101	Accidents, 352	Accidents, 2,669	Cancer, 6,385	Heart disease, 27,049
2	Congenital malforma-tions, 160	Cancer, 21	Accidents, 20	Suicide, 64	Drug-induced deaths, 220	Drug-induced deaths, 2,266	Heart disease, 4,648	Cancer, 20,720
3	Accidents, 56	Infectious and parasitic diseases, ND	Cancer, 17	Homicide, 55	Homicide, 134	Heart disease, 499	Accidents, 2,369	Mental and behavioral disorders, 7,867
4	Infectious and parasitic diseases, 19	Homicide, ND	Homicide, 10	Drug-induced deaths, 33	Suicide, 118	Cancer, 492	Drug-induced deaths, 1,702	Cerebro-vascular diseases, 5,904
5	Homicide, 18	Congenital malforma-tions, ND	Infectious and parasitic diseases, ND	Cancer, 20	Cancer, 31	Suicide, 478	Digestive system, 1,401	Chronic lower respiratory diseases, 5,462
6	Cancer, 17	Chronic lower respiratory diseases, ND	Heart disease, ND	Heart disease, 17	Heart disease, 16	Homicide (assault), 347	Athero-sclerotic cardio-vascular disease, 852	Alzheimer's disease, 4,107
7	Heart disease, 14	Heart disease, ND	Congenital malforma-tions, ND	Epilepsy, ND	Congenital malforma-tions, ND	Diabetes mellitus, 109	Chronic lower respiratory diseases, 827	Genitouri-nary system, 3,436
8	Influenza and pneumonia, 12	Epilepsy, ND	Digestive system, ND	Congenital malforma-tions, ND	Cerebro-vascular diseases, ND	Athero-sclerotic cardio-vascular disease, 94	Diabetes mellitus, 784	Digestive system, 3,343
9	Digestive system, ND	Influenza and pneumonia, ND	Drug-induced deaths, ND	Infectious and parasitic diseases, ND	Diabetes mellitus, ND	Infectious and parasitic diseases, 87	Infectious and parasitic diseases, 682	Accidents, 2,970
10	Cerebro-vascular diseases, ND	Cerebro-vascular diseases, ND	Infectious and parasitic diseases, ND	Influenza and pneumonia, 4	Digestive system, ND	Cerebro-vascular diseases, 64	Cerebrovas-cular diseases, 660	Diabetes mellitus, 2,753
All deaths	**909**	**72**	**109**	**348**	**763**	**5,943**	**6,591**	**103,300**

*ND= Data Not Displayed. When death count < 10, data is not displayed.

Pennsylvania Death Certificate Dataset, 2018. Pennsylvania Department of Health. Enterprise Data Dissemination Informatics Exchange. Health.pa.gov. Retrieved from: https://www.phaim1.health.pa.gov/EDD/WebForms/DeathCntySt.aspx. Published 2018. Accessed October 9, 2020.

Appendix B:
Leading Causes of Death by Race and Ethnicity

Table XII.2. Leading Causes of Death by Race and Ethnicity, 2019

	Race and Ethnicity and Number of Deaths				
Rank	White	Black	Asian/Pacific Islander	Multi-Race	Hispanic
1	Heart diseases, 28,385	Heart disease, 3,161	Cancer, 283	Cancer, 43	Cancer, 554
2	Cancer, 24,294	Cancer, 2,592	Heart disease, 251	Heart disease, 40	Heart disease, 518
3	Mental and behavioral disorders, 7,588	Accidents, 965	Cerebrovascular diseases, 99	Accidents, 25	Accidents, 498
4	Accidents, 7,123	Cerebrovascular diseases, 690	Accidents, 78	Drug-induced deaths, 17	Drug-induced deaths, 339
5	Chronic lower respiratory diseases, 5,804	Drug-induced deaths, 681	Mental and behavioral disorders, 54	Mental and behavioral disorders, 16	Cerebrovascular diseases, 153
6	Cerebrovascular diseases, 5,717	Mental and behavioral disorders, 538	Digestive system, 46	Perinatal conditions, 13	Mental and behavioral disorders, 134
7	Digestive system, 4,415	Infectious and parasitic diseases, 513	Genitourinary system, 45	Cerebrovascular diseases, 11	Digestive system, 117
8	Alzheimer's disease, 3,888	Genitourinary system, 462	Infectious and parasitic diseases, 39	Digestive system, 10	Diabetes mellitus, 107
9	Drug-induced deaths, 3,493	Homicide (assault), 459	Diabetes mellitus, 37	Suicide (intentional self-harm), 10	Infectious and parasitic diseases, 95
10	Genitourinary system, 3,369	Chronic lower respiratory diseases, 433	Suicide (intentional self-harm), 33	Homicide (assault), ND	Homicide (assault), 81
All deaths	**116,993**	**12,973**	**1,222**	**236**	**3,078**

*ND= Data Not Displayed. When death count < 10, data is not displayed.

Pennsylvania Death Certificate Dataset, 2018. Pennsylvania Department of Health. Enterprise Data Dissemination Informatics Exchange. Health.pa.gov. Retrieved from: https://www.phaim1.health.pa.gov/EDD/WebForms/DeathCntySt.aspx. Published 2018. Accessed October 9, 2020.

Appendix C:
COVID-19 Rates, Deaths and Vaccination

Table XII.3. COVID-19 Case Rates, Death Rates, and Percent Fully Vaccinated (Aged Five and Older) by County as of March 22, 2022, Pennsylvania.

County	Case rates (per 100,000)	Death rate (per 100,000)	Percent fully vaccinated (age five and older)
Adams	23,938.7	347.5	53.2
Allegheny	21,597.7	269.6	70.9
Armstrong	23,491.2	522.1	61.1
Beaver	24,420.9	445.3	56.1
Bedford	22,861.7	574.3	38.0
Berks	24,220.0	377.1	61.7
Blair	24,275.0	497.4	51.2
Bradford	24,881.1	331.6	41.1
Bucks	19,518.7	297.8	65.5
Butler	23,591.3	385.9	65.2
Cambria	26,488.6	551.5	55.3
Cameron	18,304.5	449.7	55.0
Carbon	24,628.4	450.3	62.1
Centre	21,562.3	213.1	60.8
Chester	17,374.8	216.0	73.7
Clarion	21,353.9	525.5	44.8
Clearfield	24,258.4	426.5	50.5
Clinton	23,348.5	321.0	46.8
Columbia	23,091.3	372.5	60.8
Crawford	23,308.8	371.0	48.9
Cumberland	20,039.1	348.9	68.2
Dauphin	21,181.9	342.8	64.4
Delaware	19,310.7	326.8	66.8
Elk	23,788.0	324.3	57.2
Erie	21,092.0	277.0	60.3
Fayette	23,933.7	512.9	55.6
Forest	30,867.9	483.0	71.3
Franklin	25,951.6	442.5	47.0
Fulton	28,320.7	447.4	31.7
Greene	23,274.4	281.5	46.5
Huntingdon	25,416.4	536.1	49.8
Indiana	20,649.9	417.5	45.2
Jefferson	20,670.1	525.0	49.6
Juniata	19,230.3	706.7	42.6
Lackawanna	20,621.1	357.7	71.6

County	Case rates (per 100,000)	Death rate (per 100,000)	Percent fully vaccinated (age five and older)
Lancaster	22,100.2	343.4	61.3
Lawrence	22,092.8	481.8	52.6
Lebanon	25,707.2	359.7	56.0
Lehigh	24,127.4	333.1	75.4
Luzerne	23,085.7	421.5	65.4
Lycoming	25,032.0	449.3	54.6
McKean	20,071.4	339.7	45.2
Mercer	21,261.3	453.3	51.7
Mifflin	26,544.3	598.2	51.1
Monroe	21,627.3	303.6	59.4
Montgomery	18,226.9	276.7	68.6
Montour	24,701.0	504.7	80.7
Northampton	25,937.1	353.4	69.4
Northumberland	25,050.9	581.2	59.1
Perry	19,041.8	395.5	50.5
Philadelphia	19,397.6	318.7	84.8
Pike	17,982.8	170.2	53.2
Potter	19,127.4	550.7	37.9
Schuylkill	24,300.5	474.7	60.6
Snyder	20,033.7	383.9	44.5
Somerset	25,404.7	543.3	48.5
Sullivan	17,260.1	593.5	53.5
Susquehanna	19,140.5	265.3	42.4
Tioga	19,602.9	470.6	45.6
Union	25,971.1	336.1	50.8
Venango	22,158.0	465.8	46.9
Warren	18,644.6	530.7	47.5
Washington	24,493.8	311.8	64.4
Wayne	19,616.1	327.1	58.9
Westmoreland	22,780.8	390.1	58.4
Wyoming	18,866.2	388.2	60.6
York	26,342.9	328.9	59.1

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Appendix D: Methods

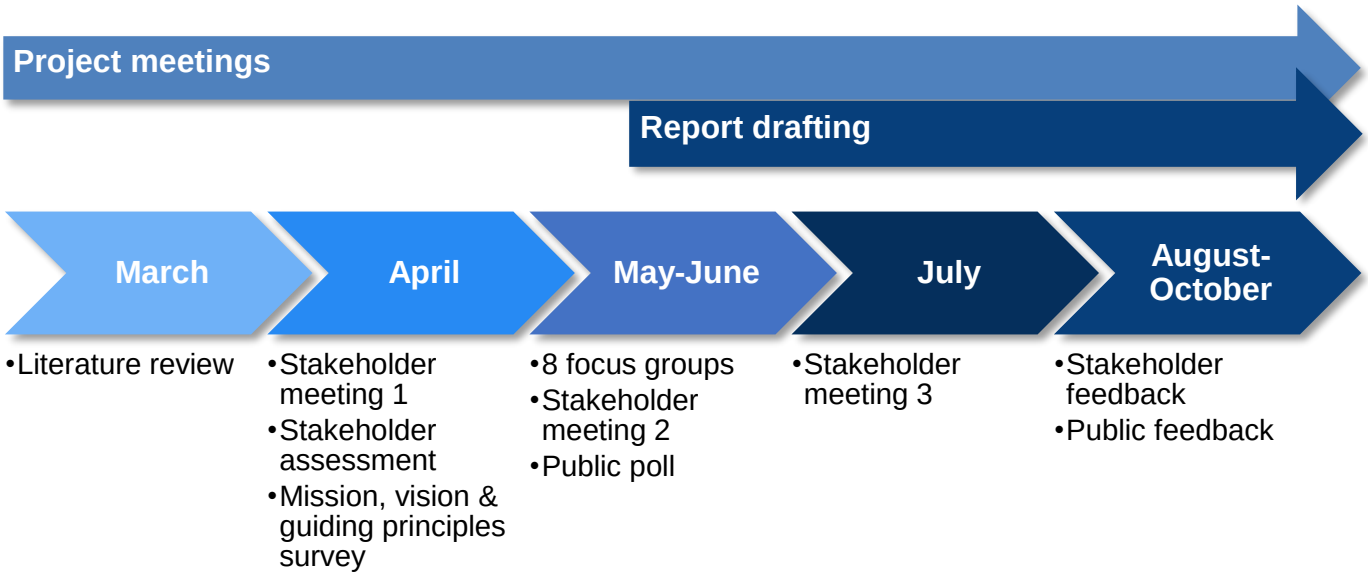
Pennsylvania State Health Assessment Process

The Pennsylvania Department of Health contracted with the Research & Evaluation Group at the Public Health Management Corporation (PHMC) and Bloom Planning and partnered with the Healthy Pennsylvania Partnership (HPP) to develop this State Health Assessment (SHA). These stakeholders have participated in identifying key areas of focus and priority issues, selecting and suggesting relevant indicators and data sources, and describing impacts on populations.

This section provides an in-depth description of the methods used to compile the PA SHA, including:

- Public Health Accreditation Board (PHAB) guidance
- Stakeholder engagement
- Literature review
- Mission, vision, and guiding principles
- Stakeholder assessment
- Public poll
- Indicator selection

Timeline



PHAB Guidance

The PHAB Standards and Measures Version 1.5[1] was reviewed to determine best practices and results that would meet PHAB SHA requirements. The PHAB standards guided the inclusion of clear descriptions of the state's health with areas of improvement, factors contributing to statewide challenges, and existing resources to addressing such challenges. The standards also directed the appropriate dissemination of findings and outlined the collaborative process. Overall, the PHAB standards guided the SHA process and served as a touchpoint to ensure a comprehensive assessment was performed.

Community Health Assessment Toolkit

This project utilized the Community Health Assessment Toolkit.[2] This toolkit provides nine steps for conducting a health assessment, illustrated in the image below. Steps one through six were referenced throughout the planning and writing of the SHA report.

Stakeholder Engagement

Guidance from HPP stakeholders was essential to the SHA's development. At the process outset, the HPP was comprised of 144 partners; this number grew to 227 over the course of the work. These partners were from health care and public health sectors across the state. Stakeholder engagement in the SHA process occurred in three ways:

- Large stakeholder group: All participants in the HPP supported the identification of themes, key health issues, indicators, assets, and other useful input.
- DOH stakeholder group: This group consisted of department staff who supported the development of the SHA.
- Project group: This group consisted of Pennsylvania DOH staff, PHMC project staff, and Bloom Planning advisors. The project group authored the SHA and managed all meetings, data collection, and data analysis.

Large stakeholder group participation is itemized below. Meetings were conducted virtually due to the COVID-19 pandemic. Weekly project meetings occurred with the project group and core stakeholder group to manage project tasks.

Table XXII.2. Large Stakeholder Group Participation

Activity	Purpose	Date
Stakeholder meeting 1	Kick-off SHA; review mission, vision, guiding principles for the HPP; share literature findings; discuss SHA report visuals	4/1/2020
Stakeholder assessment	Gather input on key health issues, vulnerable populations, assets & indicator selection criteria	4/6/2020
Mission, vision & guiding principles survey	Refine mission, vision & guiding principles	5/21-26/2020
Eight focus groups	Contextualize key themes, health issues, assets, social determinants of health (SDOH) & populations facing challenges	4/28-5/8/2020
Stakeholder meeting 2	Refine indicators for substance use, mental health, access to care & chronic diseases; establish SDOH & equity as organizing framework	5/27/2020
Stakeholder meeting 3	Refine indicators for maternal & infant health, injury & violence prevention, environmental health & immunizations, infectious diseases; discuss SDOH & equity as organizing framework	7/29/2020

Literature Review & Dataset Compilation

The project group completed a literature review of 14 state and local health assessments. A total of eight SHAs were selected based on geographic and demographic similarity to Pennsylvania (Minnesota, Washington, Illinois, Oregon, Ohio, Colorado, Massachusetts, and Vermont). Six Community Health Assessments (CHA) were gathered from local county health departments when available (Allegheny, Chester, Erie, and Philadelphia) and from hospitals conducting Community Health Needs Assessments (CHNAs) when CHAs were unavailable from the local health departments (Wilkes-Barre and Montgomery).

From each report, primary health topic areas or "themes," key health issues, and indicators were catalogued and compiled into a single dataset, organized by geographic area, report type (i.e. SHA vs. CHA vs. CHNA), and theme category. Themes, key health issues, and indicators were aligned with the national Healthy People 2020[3] topics and objectives.

The 12 most frequently occurring themes to appear across all reports were condensed into nine topics: chronic disease, access to care, maternal and infant health, social determinants of health (SDOH), mental health, injury and violence prevention, environmental health, substance use, and immunizations and infectious diseases. These themes formed the core content of this SHA. Additionally, 1,073 health indicators identified during the literature review were analyzed and grouped into key health issues within each theme. These key health issues provided a foundation for topics to explore in the SHA process.

Mission, Vision & Guiding Principles Development

As part of the 2020 SHA, the project group and the HPP engaged in a visioning process to develop a vision, a mission, and guiding principles. The process included the following steps:

1. The project group aggregated SHA reports from eight states and reviewed the vision, mission, and guiding principles detailed in each report.
2. The project group used example statements from other SHAs and prior internal visioning efforts to create draft vision, mission, and guiding principles.
3. During stakeholder meeting 1, participants reflected on and suggested refinements to the draft vision content.
4. The project team leveraged meeting participants' suggestions to develop two versions of the vision, mission, and each guiding principle.
5. The HPP selected a vision, a mission, and guiding principles through a statewide survey of feedback on the two versions.

Stakeholder Assessment

Members of the HPP completed an assessment designed to gather input on pressing public health needs in Pennsylvania. Following the April stakeholder meeting, participants received an email invitation to complete the online assessment via SurveyGizmo. A total of 146 members received the invitation and 77 completed the assessment.

The assessment included open- and close-ended questions on respondents' occupational affiliation, vision for the SHA report, populations most vulnerable to health problems, criteria for selecting data to be included in the SHA, local and statewide assets, and prioritizing of health issues within the eight themes and in consideration of the SDOH. Respondents' feedback was used to prioritize information to include in the SHA.

Focus Groups

Virtual focus groups for each theme were conducted during April and May 2020. SDOH and equity were addressed in each of the focus groups, as a framework through which all themes were reviewed. The focus groups were conducted with 68 stakeholders from across the state representing various nonprofit organizations, government agencies, community organizations, universities, and health care centers and facilities. Prior to each focus group, stakeholders were invited to choose the theme(s) to which they wanted to contribute their expertise. Each focus group gathered input on challenges and barriers experienced by communities across the state related to the theme at hand, resources and assets within communities, and implications of SDOH.

Public Poll

A public poll was conducted to better understand the greatest health needs of Pennsylvania residents and to identify priority health issues for the SHA report. The poll was conducted among volunteers across the state, between May 4, 2020, and May 11, 2020. A total of 2,000 individuals from 66 of Pennsylvania's 67 counties participated with age, sex, race, and ethnicity of participants balanced to demographics of the state. The poll was conducted online through the SurveyGizmo platform. The poll consisted of mostly close-ended questions related to personal health, health equity, and community health concerns and assets, with one open-ended question included.

Issues and Indicator Selection

Stakeholder assessment data were analyzed to identify respondents' perceptions of priority health issues within each of the eight themes (maternal and infant health, chronic disease, substance use, access to care, mental health, environmental health, infectious diseases, and injury and violence prevention) plus the overarching framework of SDOH and equity. In the assessment, participants ranked health issues on their perceived degree of importance, from one (not that important; does not need to be addressed immediately) to four (very important; needs attention immediately). Mean scores were calculated for each health issue. Issues with higher mean scores were selected in each theme and considered priority issues (generally, those issues with a mean of 3.5 or higher). Additional health issues were incorporated based on a review of qualitative data from the stakeholder assessment, the general public poll, and the focus groups. A total of 47 priority health issues were identified across themes.

From the literature review, corresponding indicators for these health issues were identified. Members of the project group inventoried each indicator by data values, data sources, and availability of national and subgroup data. To establish inclusion priorities, indicators were scored by two independent topic experts across a set of criteria. Criteria included whether the indicator 1) is a leading health indicator for 2020 or 2030, 2) impacts multiple health issues, 3) represents the issue well, 4) is severe or high in magnitude, 5) has trend data available, and 6) can be analyzed by subgroups. Scores from the two raters were averaged, and higher scoring indicators within each health issue were selected. Reviewers' preliminary indicators were selected for review with stakeholders with consideration of each themes full picture of indicators.

During the second and third large stakeholder meetings, HPP members worked in groups to review the indicators by theme. Participants discussed priority populations, indicator refinement, and potential data sources. Pennsylvania DOH and the PHMC team reviewed stakeholder feedback on indicators, in concert with additional research on the potential for subgroup analysis, to select final indicators for inclusion.

1. Standards and Measures, Version 1.5. Public Health Accreditation Board. Published December 2013. https://phaboard.org/standards-and-measures-for-initial-accreditation/. Accessed April 2020.
2. Community Health Assessment Toolkit. Association for Community Health Improvement. Published 2017. https://www.healthycommunities.org/resources/community-health-assessment-toolkit. Accessed February 2020.
3. Leading Health Indicators. Healthy People 2020. Updated April 2019. https://www.cdc.gov/nchs/healthy_people/hp2020/hp2020_indicators.htm. Accessed March 2020.

Appendix E: Data Indicator Index

Theme Key

Data Indicators (listed in alphabetical order)

Data Indicators (listed in alphabetical order)