Rhode Island's Health Assessment
July 2022

Table of Contents

About the Rhode Island Department of Health (RIDOH)

Mission, Vision, and Leading Priorities

Mission
Prevent disease and protect and promote the health and safety of the people of Rhode Island.

Vision
All people in Rhode Island will have the opportunity to live safe and healthy lives in safe and healthy communities

Leading Priorities
- Address the socioeconomic and environmental determinants of health.
- Eliminate health disparities and promote health equity.
- Ensure access to quality health services for all Rhode Islanders, including the state's vulnerable populations.

Five Strategies

- Promote healthy living for all, through all stages of life.
- Ensure access to safe food, water, and healthy environments in all communities.
- Promote a comprehensive health system that a person can navigate, access, and afford.
- Prevent, investigate, control, and eliminate health hazards and emergent threats.
- Analyze and communicate data to improve the public's health.

Governance
RIDOH is under the oversight of the Executive Office of Health and Human Services (EOHHS). EOHHS was created in December 2005 to facilitate cooperation and coordination among the State departments that administer Rhode Island's health and social services programs.

Other agencies joined by RIDOH under the EOHHS umbrella include the Department of Children, Youth, and Families (DCYF); Department of Human Services (DHS); Division of Elderly Affairs (DEA); Division of Veteran Affairs (VA); and the Department of Behavioral Healthcare, Developmental Disabilities, and Hospitals (BHDDH). These departments collectively affect the lives of virtually all Rhode Islanders, providing direct services and benefits to more than 300,000 citizens while working to protect the overall health, safety, and independence of all Rhode Islanders.

Utpala Bandy, MD, MPH has served as the Interim Director at RIDOH since June 2022. She currently manages the day-to-day responsibilities of the Director while the search for a permanent candidate is ongoing. Prior to Dr. Bandy, Dr James V. McDonald, MD, MPH, served as Interim Director of Health from March 2022 to June 2022, and Nicole Alexander-Scott, MD, MPH, served as the Director of Health from May 2015-January 2022.

Organizational Structure

RIDOH is led by the Director of Health and an Executive Leadership Team (ELT). Rhode Island has no local health departments, so the agency's divisions and centers coordinate public health activities across the state, involving a wide variety of programs and services (see Organizational Chart in Appendix 1). Main areas of responsibility include:

1. **Division of Community Health and Equity**: Works to eliminate health disparities, plan and implement public health activities using evidence-based and promising practices across the life course, and engage communities as key partners in public health.

2. **Division of Emergency Preparedness and Infectious Disease**: Protects health during catastrophic events and large-scale disasters and emergencies by coordinating education, assessment, planning, response, and support services with healthcare providers, public safety agencies, and government officials; monitors the prevalence of diseases in the community and investigates, controls, and prevents outbreaks.

3. **Division of Environmental Health**: Monitors the safety of public drinking water, private wells, licensed swimming pools, and beaches; ensures the safety and quality of the food supply; and ensures healthy homes and environments.

4. **Division of Healthcare Quality and Safety**: Licenses and regulates health professionals and emergency medical services; and registers, files, and maintains birth, death, and marriage certificates.

5. **Division of Policy, Information, and Communications**: Provides high-quality, timely, and accurate health information for the public so they can understand health risks and make healthy and safe choices; collects and analyzes health data about Rhode Islanders to identify health disparities and trends among the State's population and groups; evaluates applications for Certificates of Need, Changes in Effective Control, Initial Licensure and Hospital Conversions for Rhode Island's health systems; and addresses health disparities created by lack of access to high-quality health care.

6. **Division of State Laboratories**: Provides quality analytical and technical laboratory information in support of state and national disease prevention and control, environmental health programs, and the criminal justice system.

7. **Health Equity Institute:** Collaborates with community partners to ensure every Rhode Islander has a fair and just opportunity to be healthy by identifying root causes of uneven health outcomes across population groups; collaborating with partners to address those root causes; and monitoring Rhode Island's progress towards more equitable outcomes for all.

8. **RIDOH Academic Institute:** Enhances RIDOH's efforts to establish and facilitate partnerships and collaborations with academic and research colleagues across the state and build upon internal and external partnerships and synergy to expand workforce development for health care professionals.

9. **Office of Workforce Development and Engagement:** Provides career planning opportunities that meet the needs of the agency, support a diverse workforce, and develop individuals to become public health leaders.

10. **Office of State Medical Examiners:** Works in conjunction with state and federal partners to

recover and identify decedents, screen deaths for public health significance, and determine the cause and manner of deaths.

11. **Office of Policy, Planning and Strategy:** Collaborates with programmatic partners to develop key RIDOH policy positions and strategy recommendations for RIDOH leadership; analyzes new laws to determine if accompanying regulations are needed; works with programs to conduct policy research and draft legislative position papers; and manage legislatively mandated reports and regulations-related requests from constituents and legislators.

12. **Management Operational Functions**: Manages and delivers efficient purchasing, finance, and systems support services.

Location and Population Served

According to the 2021 US Census Bureau data, the current population of Rhode Island is 1,095,610, with 83.1% of inhabitants being White. Overall, the vast majority of Rhode Islanders are adults age 18 or older. Rhode Island continues to see a demographic shift and an increase in the minority populations.

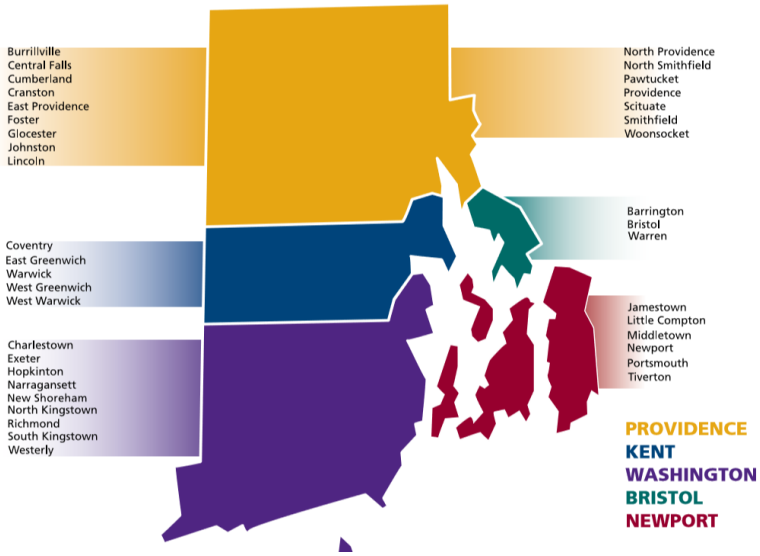
Racial/Ethnic Composition of Rhode Island Population *(US Census Bureau, 2021)*	
Race	**Population**
White	83.1%
Hispanic or Latino	17.1%
Black or African American	8.8%
Asian	3.7%
Two or More Races	3.0%
American Indian or Alaskan Native	1.2%
Native Hawaiian or Other Pacific Islander	0.2%

Source: US Census Bureau, 2016-2020 American Community Survey 5-Year Estimates

State of Rhode Island

The State of Rhode Island, often called the Ocean State— is a small and unique state. Although it is the smallest in land mass among the United States, Rhode Island is the second most densely populated state.

Counties in Rhode Island



Map of Rhode Island's five counties

All businesses and municipal affairs are managed by State offices and/or municipalities. Although Rhode Island has five counties, this governmental structure primarily serves the organizational structure of the judicial system. The Rhode Island General Assembly, the State's legislature, consists of a 75-member House of Representatives and a 38-member Senate.

Rhode Island's Health Assessment

Rhode Island's 39 Cities and Towns

For more information, visit: https://www.rikidscount.org/Data-Publications/Community-Profiles

Barrington

	Barrington	Rhode Island	Data Year
Median family income[1]	$150,522	$83,161	2016-2020
Low birthweight[2]	6.6%	7.7%	2016-2020
Infant mortality rate[3]	0.0	5.1	2017-2021
Teen birth rate[4]	*	9.4	2017-2021
High school graduation rate[5]	96%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

Bristol

	Bristol	Rhode Island	Data Year
Median family Income[1]	$115,500	$83,161	2016-2020
Low birthweight[2]	6.5%	7.7%	2016-2020
Infant mortality rate[3]	*	5.1	2017-2021
Teen birth rate[4]	*	9.4	2017-2021
High school graduation rate[5]	90%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

Burrillville

	Burrillville	Rhode Island	Data Year
Median family income[1]	$103,897	$83,161	2016-2020
Low birthweight[2]	6.0%	7.7%	2016-2020
Infant mortality rate[3]	*	5.1	2017-2021
Teen birth rate[4]	6.0	9.4	2017-2021
High school graduation rate[5]	90%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

Central Falls

	Central Falls	Rhode Island	Data Year
Median family income[1]	$32,983	$83,161	2016-2020
Low birthweight[2]	8.5%	7.7%	2016-2020
Infant mortality rate[3]	*	5.1	2017-2021
Teen birth rate[4]	22.1	9.4	2017-2021
High school graduation rate[5]	69%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

Charlestown

	Charlestown	Rhode Island	Data Year
Median family income[1]	$81,303	$83,161	2016-2020
Low birthweight[2]	8.2%	7.7%	2016-2020
Infant mortality rate[3]	*	5.1	2017-2021
Teen birth rate[4]	*	9.4	2017-2021
High school graduation rate[5]	NA	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering. Students from Little Compton attend high school in Portsmouth, and Jamestown students can choose to attend high school in Narragansett or North Kingstown. The Chariho school district is comprised of Charlestown, Richmond, and Hopkinton.

Coventry

	Coventry	Rhode Island	Data Year
Median family income[1]	$96,573	$83,161	2016-2020
Low birthweight[2]	6.2%	7.7%	2016-2020
Infant mortality rate[3]	*	5.1	2017-2021
Teen birth rate[4]	3.1	9.4	2017-2021
High school graduation rate[5]	88%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

Cranston

	Cranston	Rhode Island	Data Year
Median family income[1]	$86,083	$83,161	2016-2020
Low birthweight[2]	7.5%	7.7%	2016-2020
Infant mortality rate[3]	3.7	5.1	2017-2021
Teen birth rate[4]	10.4	9.4	2017-2021
High school graduation rate[5]	85%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

Cumberland

	Cumberland	Rhode Island	Data Year
Median family income[1]	$113,396	$83,161	2016-2020
Low birthweight[2]	6.2%	7.7%	2016-2020
Infant mortality rate[3]	*	5.1	2017-2021
Teen birth rate[4]	3.4	9.4	2017-2021
High school graduation rate[5]	87%	84%	2020

*The data are statistically unreliable, so rates are not reported and should not be calculated.

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

East Greenwich

	East Greenwich	Rhode Island	Data Year
Median family income[1]	$170,000	$83,161	2016-2020
Low birthweight[2]	6.3%	7.7%	2016-2020
Infant mortality rate[3]	*	5.1	2017-2021
Teen birth rate[4]	*	9.4	2017-2021
High school graduation rate[5]	96%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

East Providence

	East Providence	Rhode Island	Data Year
Median family income[1]	$79,784	$83,161	2016-2020
Low birthweight[2]	7.0%	7.7%	2016-2020
Infant mortality rate[3]	*	5.1	2017-2021
Teen birth rate[4]	14.6	9.4	2017-2021
High school graduation rate[5]	85%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

Exeter

	Exeter	Rhode Island	Data Year
Median family income[1]	$190,313	$83,161	2016-2020
Low birthweight[2]	5.8%	7.7%	2016-2020
Infant mortality rate[3]	0.0	5.1	2017-2021
Teen birth rate[4]	*	9.4	2017-2021
High school graduation rate[5]	94%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

Foster

	Foster	Rhode Island	Data Year
Median family income[1]	$104,208	$83,161	2016-2020
Low birthweight[2]	7.6%	7.7%	2016-2020
Infant mortality rate[3]	*	5.1	2017-2021
Teen birth rate[4]	*	9.4	2017-2021
High school graduation rate[5]	92%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

Glocester

	Glocester	Rhode Island	Data Year
Median family income[1]	$117,813	$83,161	2016-2020
Low birthweight[2]	5.5%	7.7%	2016-2020
Infant mortality rate[3]	0.0	5.1	2017-2021
Teen birth rate[4]	*	9.4	2017-2021
High school graduation rate[5]	92%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

Hopkinton

	Hopkinton	Rhode Island	Data Year
Median family income[1]	$101,000	$83,161	2016-2020
Low birthweight[2]	5.8%	7.7%	2016-2020
Infant mortality rate[3]	*	5.1	2017-2021
Teen birth rate[4]	*	9.4	2017-2021
High school graduation rate[5]	NA	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering. Students from Little Compton attend high school in Portsmouth, and Jamestown students can choose to attend high school in Narragansett or North Kingstown. The Chariho school district is comprised of Charlestown, Richmond, and Hopkinton.

Jamestown

	Jamestown	Rhode Island	Data Year
Median family Income[1]	$238,583	$83,161	2016-2020
Low birthweight[2]	*	7.7%	2016-2020
Infant mortality rate[3]	0.0	5.1	2017-2021
Teen birth rate[4]	*	9.4	2017-2021
High school graduation rate[5]	NA	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering. Students from Little Compton attend high school in Portsmouth, and Jamestown students can choose to attend high school in Narragansett or North Kingstown. The Chariho school district is comprised of Charlestown, Richmond, and Hopkinton.

Johnston

	Johnston	Rhode Island	Data Year
Median family income[1]	$100,906	$83,161	2016-2020
Low birthweight[2]	7.9%	7.7%	2016-2020
Infant mortality rate[3]	*	5.1	2017-2021
Teen birth rate[4]	5.3	9.4	2017-2021
High school graduation rate[5]	85%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

Lincoln

	Lincoln	Rhode Island	Data Year
Median family income[1]	$117,569	$83,161	2016-2020
Low birthweight[2]	6.5%	7.7%	2016-2020
Infant mortality rate[3]	*	5.1	2017-2021
Teen birth rate[4]	5.8	9.4	2017-2021
High school graduation rate[5]	90%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

Little Compton

	Little Compton	Rhode Island	Data Year
Median family income[1]	$89,321	$83,161	2016-2020
Low birthweight[2]	*	7.7%	2021
Infant mortality rate[3]	0.0	5.1	2017-2021
Teen birth rate[4]	0.0	9.4	2017-2021
High school graduation rate[5]	NA	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering. Students from Little Compton attend high school in Portsmouth, and Jamestown students can choose to attend high school in Narragansett or North Kingstown. The Chariho school district is comprised of Charlestown, Richmond, and Hopkinton.

Middletown

	Middletown	Rhode Island	Data Year
Median family income[1]	$82,995	$83,161	2016-2020
Low birthweight[2]	7.9%	7.7%	2016-2020
Infant mortality rate[3]	*	5.1	2017-2021
Teen birth rate[4]	*	9.4	2017-2021
High school graduation rate[5]	85%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

Narragansett

	Narragansett	Rhode Island	Data Year
Median family income[1]	$127,132	$83,161	2016-2020
Low birthweight[2]	8.7%	7.7%	2016-2020
Infant mortality rate[3]	*	5.1	2017-2021
Teen birth rate[4]	*	9.4	2017-2021
High school graduation rate[5]	97%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering. Students from Little Compton attend high school in Portsmouth, and Jamestown students can choose to attend high school in Narragansett or North Kingstown. The Chariho school district is comprised of Charlestown, Richmond, and Hopkinton.

New Shoreham (Block Island)

	New Shoreham	Rhode Island	Data Year
Median family income[1]	$56,548	$83,161	2016-2020
Low birthweight[2]	*	7.7%	2016-2020
Infant mortality rate[3]	0.0	5.1	2017-2021
Teen birth rate[4]	0.0	9.4	2017-2021
High school graduation rate[5]	93%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

Newport

	Newport	Rhode Island	Data Year
Median family income[1]	$66,600	$83,161	2016-2020
Low birthweight[2]	7.6%	7.7%	2016-2020
Infant mortality rate[3]	*	5.1	2017-2021
Teen birth rate[4]	8.3	9.4	2017-2021
High school graduation rate[5]	64%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

North Kingstown

	North Kingstown	Rhode Island	Data Year
Median family income[1]	$126,368	$83,161	2016-2020
Low birthweight[2]	6.4%	7.7%	2016-2020
Infant mortality rate[3]	*	5.1	2017-2021
Teen birth rate[4]	4.1	9.4	2017-2021
High school graduation rate[5]	91%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering. Students from Little Compton attend high school in Portsmouth, and Jamestown students can choose to attend high school in Narragansett or North Kingstown. The Chariho school district is comprised of Charlestown, Richmond, and Hopkinton.

North Providence

	North Providence	Rhode Island	Data Year
Median family income[1]	$67,389	$83,161	2016-2020
Low birthweight[2]	8.5%	7.7%	2016-2020
Infant mortality rate[3]	*	5.1	2017-2021
Teen birth rate[4]	7.0	9.4	2017-2021
High school graduation rate[5]	89%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

North Smithfield

	North Smithfield	Rhode Island	Data Year
Median family income[1]	$113,646	$83,161	2016-2020
Low birthweight[2]	6.6%	7.7%	2016-2020
Infant mortality rate[3]	0.0	5.1	2017-2021
Teen birth rate[4]	*	9.4	2017-2021
High school graduation rate[5]	87%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

Pawtucket

	Pawtucket	Rhode Island	Data Year
Median family income[1]	$50,776	$83,161	2016-2020
Low birthweight[2]	9.1%	7.7%	2016-2020
Infant mortality rate[3]	5.4	5.1	2017-2021
Teen birth rate[4]	17.7	9.4	2017-2021
High school graduation rate[5]	77%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

Portsmouth

	Portsmouth	Rhode Island	Data Year
Median family income[1]	$158,735	$83,161	2016-2020
Low birthweight[2]	5.5%	7.7%	2016-2020
Infant mortality rate[3]	*	5.1	2017-2021
Teen birth rate[4]	*	9.4	2017-2021
High school graduation rate[5]	92%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering. Students from Little Compton attend high school in Portsmouth, and Jamestown students can choose to attend high school in Narragansett or North Kingstown. The Chariho school district is comprised of Charlestown, Richmond, and Hopkinton.

Providence

	Providence	Rhode Island	Data Year
Median family income[1]	$50,393	$83,161	2016-2020
Low birthweight[2]	8.8%	7.7%	2016-2020
Infant mortality rate[3]	7.8	5.1	2017-2021
Teen birth rate[4]	16.1	9.4	2017-2021
High school graduation rate[5]	75%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

Richmond

	Richmond	Rhode Island	Data Year
Median family income[1]	$113,839	$83,161	2016-2020
Low birthweight[2]	6.1%	7.7%	2016-2020
Infant mortality rate[3]	0.0	5.1	2017-2021
Teen birth rate[4]	*	9.4	2017-2021
High school graduation rate[5]	NA	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering. Students from Little Compton attend high school in Portsmouth, and Jamestown students can choose to attend high school in Narragansett or North Kingstown. The Chariho school district is comprised of Charlestown, Richmond, and Hopkinton.

Scituate

	Scituate	Rhode Island	Data Year
Median family income[1]	$115,893	$83,161	2016-2020
Low birthweight[2]	6.0%	7.7%	2016-2020
Infant mortality rate[3]	*	5.1	2017-2021
Teen birth rate[4]	5.4	9.4	2017-2021
High school graduation rate[5]	92%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

Smithfield

	Smithfield	Rhode Island	Data Year
Median family Income[1]	$119,400	$83,161	2016-2020
Low birthweight[2]	5.5%	7.7%	2016-2020
Infant mortality rate[3]	*	5.1	2017-2021
Teen birth rate[4]	*	9.4	2017-2021
High school graduation rate[5]	94%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

South Kingstown

	South Kingstown	Rhode Island	Data Year
Median family income[1]	$118,859	$83,161	2016-2020
Low birthweight[2]	6.4%	7.7%	2016-2020
Infant mortality rate[3]	0.0	5.1	2017-2021
Teen birth rate[4]	0.6	9.4	2017-2021
High school graduation rate[5]	95%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

Tiverton

	Tiverton	Rhode Island	Data Year
Median family income[1]	$102,188	$83,161	2016-2020
Low birthweight[2]	7.5%	7.7%	2016-2020
Infant mortality rate[3]	*	5.1	2017-2021
Teen birth rate[4]	9.7	9.4	2017-2021
High school graduation rate[5]	89%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

Warren

	Warren	Rhode Island	Data Year
Median family income[1]	$97,798	$83,161	2016-2020
Low birthweight[2]	6.0%	7.7%	2016-2020
Infant mortality rate[3]	0.0	5.1	2017-2021
Teen birth rate[4]	10.5	9.4	2017-2021
High school graduation rate[5]	90%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

Warwick

	Warwick	Rhode Island	Data Year
Median family income[1]	$88,135	$83,161	2016-2020
Low birthweight[2]	6.7%	7.7%	2016-2020
Infant mortality rate[3]	4.4	5.1	2017-2021
Teen birth rate[4]	6.3	9.4	2017-2021
High school graduation rate[5]	86%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

West Greenwich

	West Greenwich	Rhode Island	Data Year
Median family income[1]	$145,326	$83,161	2016-2020
Low birthweight[2]	7.9%	7.7%	2016-2020
Infant mortality rate[3]	0.0	5.1	2017-2021
Teen birth rate[4]	*	9.4	2017-2021
High school graduation rate[5]	94%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

West Warwick

	West Warwick	Rhode Island	Data Year
Median family income[1]	$65,874	$83,161	2016-2020
Low birthweight[2]	7.6%	7.7%	2016-2020
Infant mortality rate[3]	*	5.1	2017-2021
Teen birth rate[4]	14.8	9.4	2017-2021
High school graduation rate[5]	85%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

Westerly

	Westerly	Rhode Island	Data Year
Median family income[1]	$99,092	$83,161	2016-2020
Low birthweight[2]	7.1%	7.7%	2016-2020
Infant mortality rate[3]	*	5.1	2017-2021
Teen birth rate[4]	9.2	9.4	2017-2021
High school graduation rate[5]	86%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

Woonsocket

	Woonsocket	Rhode Island	Data Year
Median family income[1]	$39,629	$83,161	2016-2020
Low birthweight[2]	8.5%	7.7%	2016-2020
Infant mortality rate[3]	5.2	5.1	2017-2021
Teen birth rate[4]	33.5	9.4	2017-2021
High school graduation rate[5]	73%	84%	2020

**The data are statistically unreliable, so rates are not reported and should not be calculated.*

Data Sources:

- *2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817*
- *US Census Bureau, American Community Survey, 2016-2020. Table B19126.*
- *Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2017-2021.*
- *Rhode Island Department of Education, Class of 2020.*

[1] Median family Income is the dollar amount which divides Rhode Island families' income distribution into two equal groups-half with incomes above the median, and half with incomes below the median. The numbers include only families with their own children younger than 18, defined as never-married children who are related to the family head by birth, marriage, or adoption.

[2] Low birthweight is the percentage of infants born weighing less than 2,500 grams (five pounds, eight ounces).

[3] Infant mortality rate is the number of deaths of infants younger than age one per 1,000 live births.

[4] Teen birth rate is the number of births to teen girls, age 15-19, per 1,000 teen girls.

[5] High school graduation rate is the percentage of students who graduate from high school within four years of entering.

America's Health Rankings Indicators (2021) and More

RIDOH is presenting a State Health Assessment following the structure of the America's Health Ranking (www.americashealthrankings.org) indicators. Since 1990, America's Health Rankings (AHR) has published an annual state-by-state analysis of health throughout the United States and the factors that affect it. The goal of the rankings is to engage each state's communities, partners, and health officials to stimulate actions to improve the state population's health. The annual report further identifies states with the best rankings, so others may learn from best practices.

RIDOH is utilizing AHR for the purposes of this report because these annual indicators efficiently track RIDOH's goal to make Rhode Island the healthiest state in the nation. The most recent AHR overall state health ranking was published in 2019. Overall state health ranking data is unavailable for 2020 and 2021. In 2019, Rhode Island was ranked 13th in the United States. While this is a respectable ranking, RIDOH ranked behind four of New England's five other states. In 2019, Vermont was ranked highest in the nation, with Massachusetts second, Connecticut fourth, New Hampshire sixth, and Maine 21st.

RIDOH refers to these rankings for inspiration to set targets and to identify areas where RIDOH can make a difference in public health. In 2021, AHR identified the following strengths for Rhode Island:

- Low prevalence of obesity
- High adult flu vaccination rate
- Low uninsured rate

AHR identified the following challenges for Rhode Island:

- High prevalence of excessive drinking
- High income inequality
- Low supply of dental care providers

Highlights included:

- Food insecurity decreased 42% from 14.4% to 8.4% of households between 2011-2013 and 2019-2021.
- Depression increased 19% from 19.6% to 23.3% of adults between 2019 and 2021.
- Premature death increased 15% from 6,174 to 7,082 years lost before age 75 per 100,000 population between 2018 and 2020.

Important work will be planned to make improvements within areas where Rhode Island is experiencing challenges. It is important to note that the AHR indicators being presented within this report are relative to other New England states and to the nation. Key highlights from the 2020 Commission for Health Advocacy and Equity Legislative Report have also been integrated throughout. All Rhode Island communities, legislators, decision-makers, health advocates, and residents are encouraged to pay attention to these rankings and look for ways to support public efforts and community partnerships to make Rhode Island healthier. Each of the indicators discuss current efforts underway to address health issues and shares how all Rhode Islanders can get involved as part of the solution.

Note: The information in the following pages was taken directly from the American Health Rankings website and the 2020 Commission for Health Advocacy and Equity Legislative Report. For more information, please visit https://www.americashealthrankings.org/ and https://health.ri.gov/publications/reports/2020CommissionForHealthAdvocacyAndEquityLegislative.pdf

America's Health Ranking Indicators: Rhode Island, 2021

Measure	2021 Value	2021 Rank	No. 1 State
Behaviors	0.271	20	1.179
Exercise (percentage of adults)	24.1%	18	28.5%
Fruit and vegetable Consumption (percentage of adults)	10.4%	4	14.1%
Physical inactivity (percentage of adults)	23.5%	28	15.9%
Chlamydia (per 100,000 population)	539.8	28	263.1
High-risk HIV behaviors (percentage of adults)	6.4%	45	4.0%
Teen births (births per 1,000 females)	10.0	6	6.6
Insufficient sleep (percentage of adults)	32.5%	26	26.8%
Smoking (percentage of adults)	13.5%	16	8.2%
E-cigarette use (percentage of adults)	4.6%	-	3.4%
Clinical Care	1.315	2	1.587
Dental care providers (per 100,000 population)	54.3	36	92.0
Mental health providers (per 100,000 population)	455.1	6	693.6
Primary care providers (per 100,000 population)	352.2	2	373.3
Uninsured (percentage of Population)	4.1%	2	3.0%
Colorectal cancer screening (percentage of adults 50-75)	80.8%	3	74.3%
Dental Visit (percentage of adults)	74.2%	2	74.7%
Childhood immunizations (percentage of children)	78.1%	21	92.3%
Flu vaccination (percentage of adults)	55.1%	2	56.5%
HPV vaccination (percentage of adolescents)	83.0%	1	83.0%
Dedicated healthcare provider (percentage of adults)	86.6%	3	87.9%
Preventable hospitalizations (per 100,000 adult Medicare beneficiaries)	3,784	27	1,841
Physical Environment	-0.109	38	0.610
Air pollution (micrograms per cubic meter)	7.0	19	4.2
Drinking water violations	0	1	0
Risk-screening environmental indicator score	34,967	5	333
Water fluoridation	83.2%	21	99.8%
Drive alone to work	79.6%	26	52.8%
Housing with lead risk	31.4%	49	5.2%
Severe housing problems	17.4%	39	11.1%
Social and Economic Factors	0.277	19	0.891
Occupational fatalities (per 100,000 workers)	4.1	18	2.8
Public health funding	$206	5	$449
Violent crime (per 100,000 population)	221	9	115
Economic hardship index	31	14	1
Food insecurity (percentage of households)	8.2%	5	5.7%
Income inequality (ratio based on median household income)	4.81	38	3.70
High school graduation (Percentage of high school students)	83.9%	35	91.7%
Voter participation (Average)	59.0%	29	70.5%
Health Outcomes	0.394	11	0.819
Drug deaths (Per 100,000 Population)	28.8	38	8.7
Excessive drinking (percentage of adults)	16.8%	21	12.1%
Frequent mental distress (percentage of adults)	13.3%	27	9.4%
Non-medical drug use	8.3%	8	4.7%
Premature death (Years lost before age 75 per 100,000 population)	6,502	13	5,703

Frequent physical distress (Percentage of Adults)	9.6%	22	7.3%
Low birthweight (percentage of infants)	7.8%	20	6.3%
Multiple chronic conditions (percentage of adults)	10.1%	32	6.5%
Obesity (percentage of adults)	30.1%	15	24.2%
All Determinants	0.402	14	0.836
Overall	0.422	-	-

Behaviors

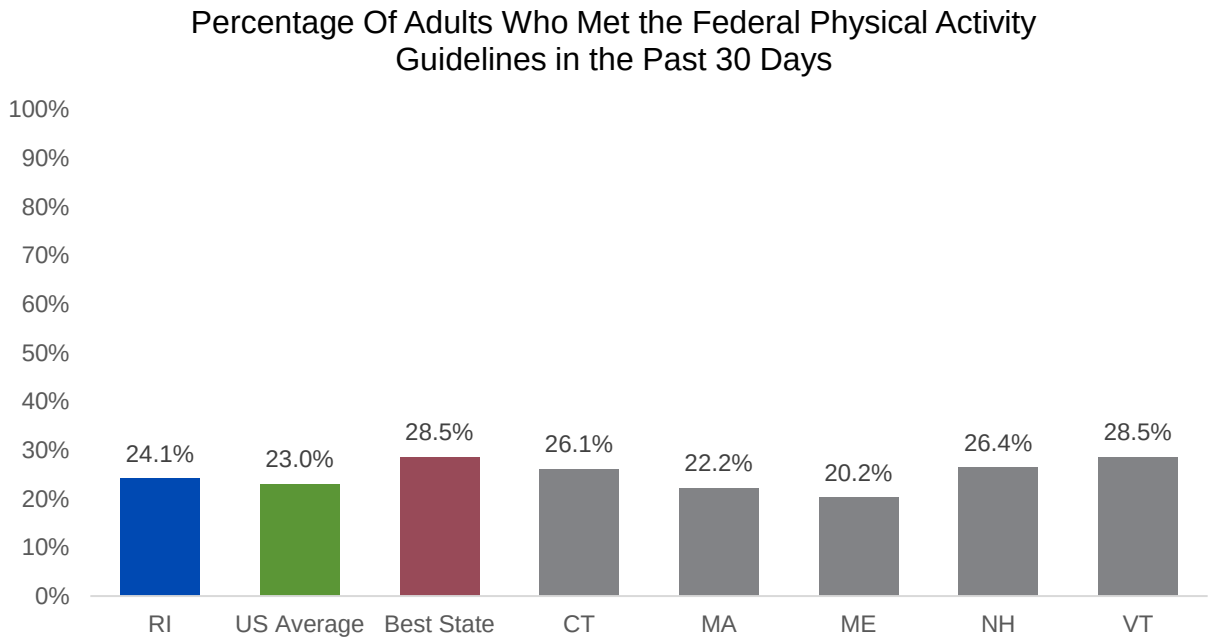
Exercise

Definition

Percentage of adults who met the federal physical activity guidelines (150 minutes of moderate or 75 minutes of vigorous aerobic activity and two days of muscle strengthening per week) in the past 30 days

Numbers at a Glance

- **Rhode Island:** 24.1%
- **US Average:** 23.0%
- **Best State:** Vermont, 28.5%



Data Source: Centers for Disease Control and Prevention (CDC), 2019 Behavioral Risk Factor Surveillance System (BRFSS)

Why It's Important

Being physically active and reducing sedentary behavior has many health benefits. Regular physical activity (at least 150 minutes a week) is associated with reduced risk of cardiovascular diseases, such as heart disease, stroke and hypertension; Type 2 diabetes; certain cancers, including bladder, breast and colon cancer; dementia; and anxiety and depression.

Key physical activity guidelines for adults include:

- At least 150 minutes per week of moderate intensity (or 75 minutes of vigorous intensity) aerobic physical activity, such as running, riding a bike, dancing, or swimming;
- Muscle strengthening activities involving all major muscle groups two or more days a week; and
- Moving more and sitting less throughout the day.

Getting more exercise is associated with lower healthcare expenditures. A 2015 study found that physically active adults spend, on average, $920 less on healthcare expenses per year than their inactive counterparts.

Who Is Affected

The prevalence of exercise (sufficient to meet aerobic and muscle strengthening guidelines) is higher among:

- Men compared with women;
- Adults age 18-44 compared with adults age 45 or older;
- Adults who identify as other race compared with Hispanic adults;
- College graduates compared with adults with lower levels of education; and
- Adults with an annual household income of $75,000 or more compared with adults with lower incomes.

Moving Forward

The Centers for Disease Control and Prevention (CDC) makes several recommendations for community efforts to increase physical activity, including built environment approaches to make it easier for people to walk, run, bike, skate or use wheelchairs to get to where they need to go.

County Health Rankings and Roadmaps lists many policies and programs that improve health through exercise and physical activity, including:

- Offering fitness and exercise programs in community centers;
- Writing prescriptions for physical activity and exercise;
- Building individually adapted physical activity programs; and
- Promoting mixed-use development.

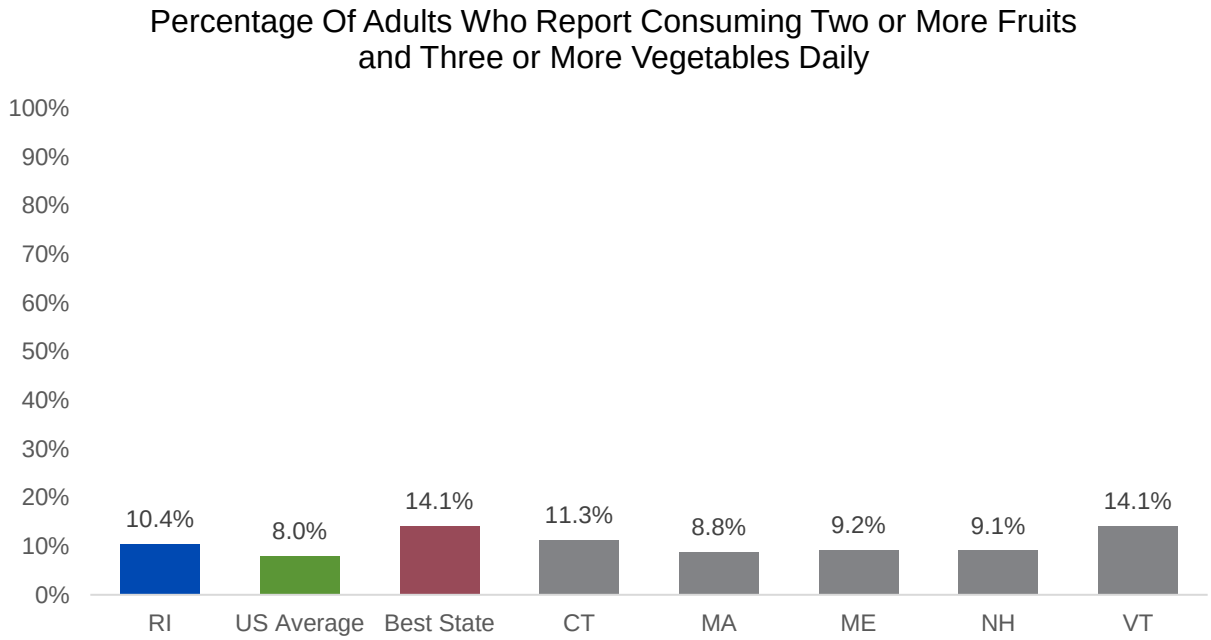
Fruit and Vegetable Consumption

Definition

Percentage of adults who reported consuming two or more fruits and three or more vegetables daily

Numbers at a Glance

- **Rhode Island:** 10.4%
- **US Average:** 8.0%
- **Best State:** Vermont, 14.1%



Data Source: CDC, 2019 BRFSS

Why It's Important

Diets high in fruits and vegetables reduce the risk of many chronic diseases, such as Type 2 diabetes, obesity, heart disease, and stroke. Consumption of three or more fruits and vegetables a day, as opposed to less than one, is associated with decreased cardiovascular deaths.

Roughly half of all adults in the United States suffer from preventable chronic diseases related to poor diet and physical inactivity. The *2020-2025 Dietary Guidelines for Americans* recommends that adults consume two cups of fruits and two and a half cups of vegetables per day. Consuming fruits and vegetables during pregnancy helps provide essential nutrients such as vitamin C and folic acid. The potential economic benefit of improved healthy eating in the US has been estimated at $114.5 billion (2012 dollars) per year in medical savings, increased productivity, and the value of prolonged life.

Who Is Affected

Barriers to regular consumption of fruits and vegetables include cost, lack of access to fresh produce, perceived lack of preparation time, and lack of cooking knowledge. Additionally, some Americans live in areas known as food deserts, where access to healthful foods is limited.

Populations of adults who report consuming more fruits and vegetables include:

- Women compared with men;
- Adults age 18-44 compared with adults age 65 or older;

- Hawaiian/Pacific Islander and Asian adults, as well as adults who identify as other race, compared with Hispanic adults;
- College graduates compared with adults with lower educational attainment;
- Adults with an annual household income of $75,000 or more compared with those with lower incomes; and
- Adults living in metropolitan areas compared with those in non-metropolitan areas.

Moving Forward

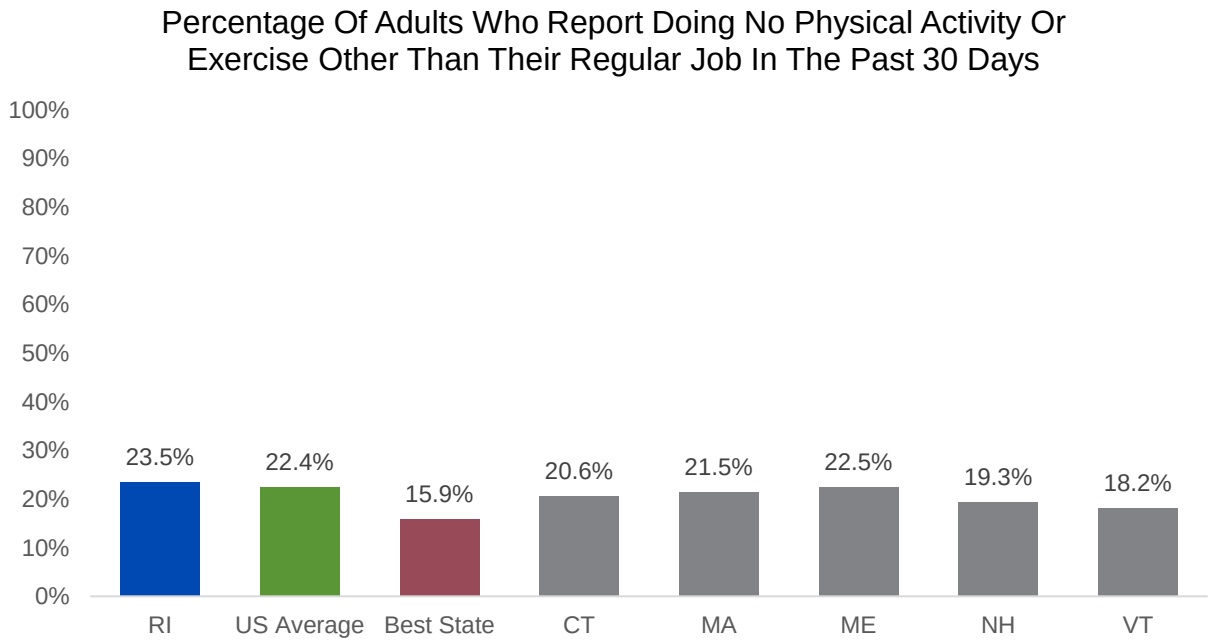
The CDC offers strategies for states and communities to improve access to fruits and vegetables, including:

- Adopt policies to ensure access to fruit and vegetable food service venues in worksites, hospitals, and universities.
- Encourage farm-to-institution programs in schools, hospitals, workplaces, and child care centers.
- Improve access to stores and markets that sell fruits and vegetables. States with a higher density of healthy food retailers, farmers markets, and acceptance of nutrition-assistance program benefits by farmers markets report higher consumption of fruits and vegetables.
- Eliminate food deserts. Funding is available from the US Department of Agriculture (USDA) to establish healthy retail outlets in underserved areas. USDA provides an interactive tool to identify food deserts at the census-tract level and resources to help individuals improve their diet.

Physical Inactivity

Definition
Percentage of adults who reported doing no physical activity or exercise other than their regular job in the past 30 days

Numbers at a Glance
- **Rhode Island:** 23.5%
- **US Average:** 22.4%
- **Best State:** Utah, 15.9%



Data Source: CDC, 2020 BRFSS

Why It's Important
Regular physical activity is a vital element of a healthy lifestyle. Examples of physical activity include running, calisthenics, golf, gardening, or walking. Many adults spend a large portion of their time being sedentary (sitting). Being physically active and reducing sedentary behavior can benefit health. Regular physical activity (at least 150 minutes a week) is associated with reduced risk of:
- Cardiovascular diseases, such as heart disease and stroke;
- Hypertension;
- Type 2 diabetes;
- Certain cancers, including bladder, breast and colon cancer;
- Dementia; and
- Anxiety and depression.

A study by the CDC found that 8.3% of deaths of non-disabled adults age 25 or older were attributed to physical inactivity.

Who Is Affected
The prevalence of physical inactivity among adults is higher among:
- Women compared with men;
- Adults age 65 or older compared with adults age 45-64 and 18-44;

- Hispanic, American Indian/Alaska Native and non-Hispanic black adults compared with non-Hispanic white, multiracial and Asian adults;
- Adults age 25 or older with less than a high school education compared with those who are college graduates; and
- Adults age 25 or older with an annual household income less than $25,000 compared with adults with an annual income of $75,000 or more.

Moving Forward

Reducing the amount of time spent sitting and increasing physical activity may decrease the health risks associated with physical inactivity. Physical activity guidelines specify that adults should move more and sit less throughout the day. Some physical activity is better than none. Physical activity guidelines for adults include:

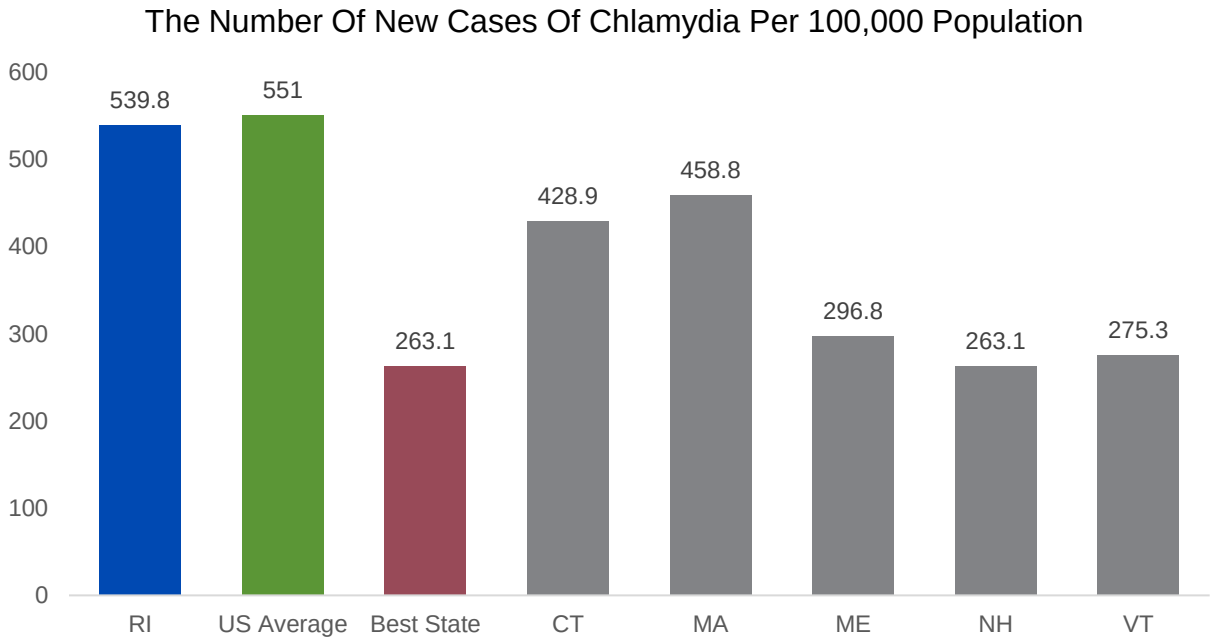
- At least 150 minutes per week of moderate-intensity (or 75 minutes of vigorous-intensity) aerobic physical activity, such as running, riding a bike, dancing or swimming; and
- Muscle-strengthening activities involving all major muscle groups two or more days a week.

The CDC makes several community-level recommendations to increase physical activity, including built environment approaches that make it easier and safer for people to walk, run, bike, skate or use wheelchairs to get to where they need to go. School and youth physical activity programs are also critical for promoting lifelong health and developing active habits early.

Chlamydia

Definition
Number of new cases of chlamydia per 100,000 population

Numbers at a Glance
- **Rhode Island:** 539.8 per 100,000 population
- **US Average:** 551.0 per 100,000 population
- **Best State:** New Hampshire, 263.1 per 100,000 population
- **Healthy People 2020 Target:** None



Data Source: CDC, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention Atlas (2019)

Why It's Important
Chlamydia is the most commonly reported sexually transmitted infection (STI) and can infect both men and women. Chlamydia is caused by the bacterium Chlamydia trachomatis. The rate of reported chlamydia infections has increased in the past two decades. In Rhode Island in 2019, 539.8 cases per 100,000 population were reported, though many more cases go undiagnosed and unreported.

Chlamydial infections are usually asymptomatic but can cause permanent damage to reproductive organs. In men, untreated chlamydia rarely causes life-threatening damage but can lead to epididymitis. Among women, untreated chlamydia can lead to:
- Pelvic inflammatory disease;
- Inability to get pregnant;
- Ectopic pregnancy (pregnancy outside the uterus); and
- Chronic pelvic pain

Who Is Affected
Populations that are at higher risk of contracting chlamydia include:
- **Women**: Women are more likely to be diagnosed with chlamydia than men. However, this is likely due to routine screening and the higher frequency of symptoms in women. Currently, men do not undergo routine screening for chlamydia despite having a similar prevalence of the

disease.

- **Adolescents and young adults**: Those age 20 to 24 have the highest rates of chlamydia compared with other age groups. Young women in this age group make up almost half of the reported cases of chlamydia.
- **Racial and ethnic minorities**: Populations that have higher rates of chlamydia diagnoses include Black, American Indian/Alaska Native, Native Hawaiian/other Pacific Islander, and Hispanic individuals compared with White, Asian, and multiracial individuals regardless of gender. The disparities in chlamydia rates between women of color and white women are significant. In 2017, the rate of infection among Black women was five times higher than that of White women.

Social conditions such as poverty, low educational attainment, and unemployment can also present barriers to accessing quality sexual healthcare. Living without consistent STI screening and medical care can lead to higher rates of chlamydia and untreated chlamydia.

Moving Forward

Effective prevention and treatment strategies can combat the spread of chlamydia. While abstinence is the only completely effective prevention strategy, having a single sexual partner, reducing the number of sex partners, and making sure to use latex condoms and/or dental dams properly during sex may reduce transmission.

Screening can prevent the development of pelvic inflammatory disease and other conditions from untreated chlamydia. Providers should integrate screening for chlamydia and other STIs into regular medical care. CDC recommends annual screening for:

- Sexually active women younger than 25;
- Sexually active women age 25 or older with a new partner, multiple partners, or a partner who tested positive for an STI; And
- Pregnant people at their first prenatal visit.

The CDC recommends routine screening for men only in high prevalence settings or in populations that have a high burden of infection, such as men who have sex with men.

Once diagnosed, chlamydia is easily treated with antibiotics combined with a short period of abstinence from sex. Expedited partner therapy is available in some states and allows providers to prescribe antibiotics for sexual partners of individuals diagnosed with chlamydia, which has been shown to prevent reinfection.

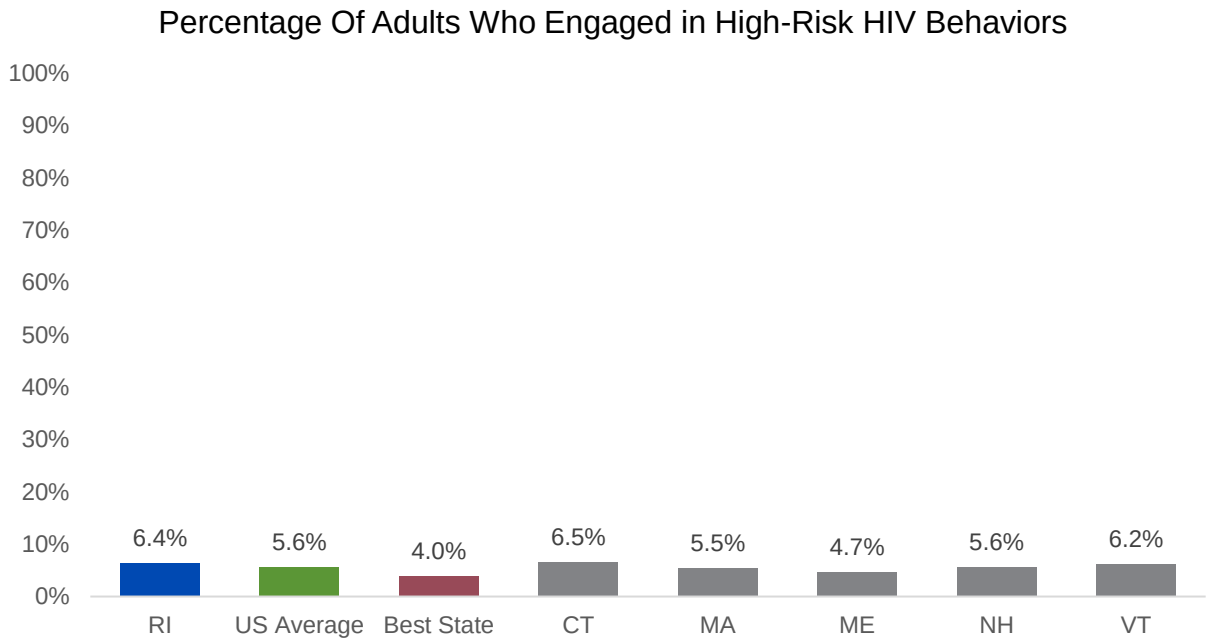
High-risk HIV Behaviors

Definition

Percentage of adults who reported any of the following in the past year: injected any drug other than those prescribed for you; treated for a sexually transmitted disease; or given or received money or drugs in exchange for sex

Numbers at a Glance

- **Rhode Island:** 6.4%
- **US Average:** 5.6%
- **Best State:** West Virginia, 4.0%



Data Source: CDC, 2020 BRFSS

Why It's Important

Human immunodeficiency virus (HIV) attacks the body's immune system. HIV is a chronic, lifelong condition. An estimated 1.2 million people are living with HIV in the United States. The virus spreads when certain bodily fluids of a person who has HIV enter the bloodstream of someone without HIV. The most common ways HIV is spread are by having unprotected sex or by sharing needles with someone who has HIV.

People who are HIV-positive may experience HIV-related stigma. Nearly eight in 10 HIV patients report feeling internalized HIV-related stigma, meaning they experience negative feelings such as shame, guilt, or worthlessness. Experiencing HIV-related stigma is associated with adverse health outcomes such as depression. People with HIV can also experience discrimination, such as being denied care by a healthcare professional.

Untreated HIV can lead to acquired immunodeficiency syndrome (AIDS). When AIDS occurs, a person's immune system has been severely damaged and they are more likely to develop infections and cancers. While there is no vaccine or cure for HIV or AIDS, medical therapies can help manage the symptoms.

Who Is Affected

HIV can infect anyone regardless of age, gender, sexual orientation, or race/ethnicity. However, certain behaviors such as sex or needle/syringe sharing, put some groups at higher risk than others. Populations with a higher percentage of high-risk HIV behaviors include:

- Males compared with females;
- Adults age 18-44 compared with adults age 45 or older;
- Hawaiian/Pacific Islander, multiracial, and Black adults compared with Asian and White adults;
- Adults with less than a college education compared with college graduates; and
- Adults with a household income less than $75,000 compared with adults with an income of $75,000 or more.

Moving Forward

HIV infection is preventable. There are steps people can take to lower their risk of being infected with HIV, including:

- Abstain from sex.
- Take medications such as pre-exposure prophylaxis (PrEP) or post-exposure prophylaxis (PEP).
- Make sure to use a condom correctly (external or internal condom) every time when engaging in sexual activity. Combining condom use with medication is recommended when a sexual partner is HIV-positive, as condoms do not eliminate risk even when used correctly.

Not engaging in injection drug use is the safest way to avoid HIV infection from drug use, but if that is not possible, the risk of infection can be lowered by:

- Use only clean, sterile needles and do not share needles with anyone.
- Avoid coming into contact with other people's blood.
- Dispose of needles appropriately after every use.

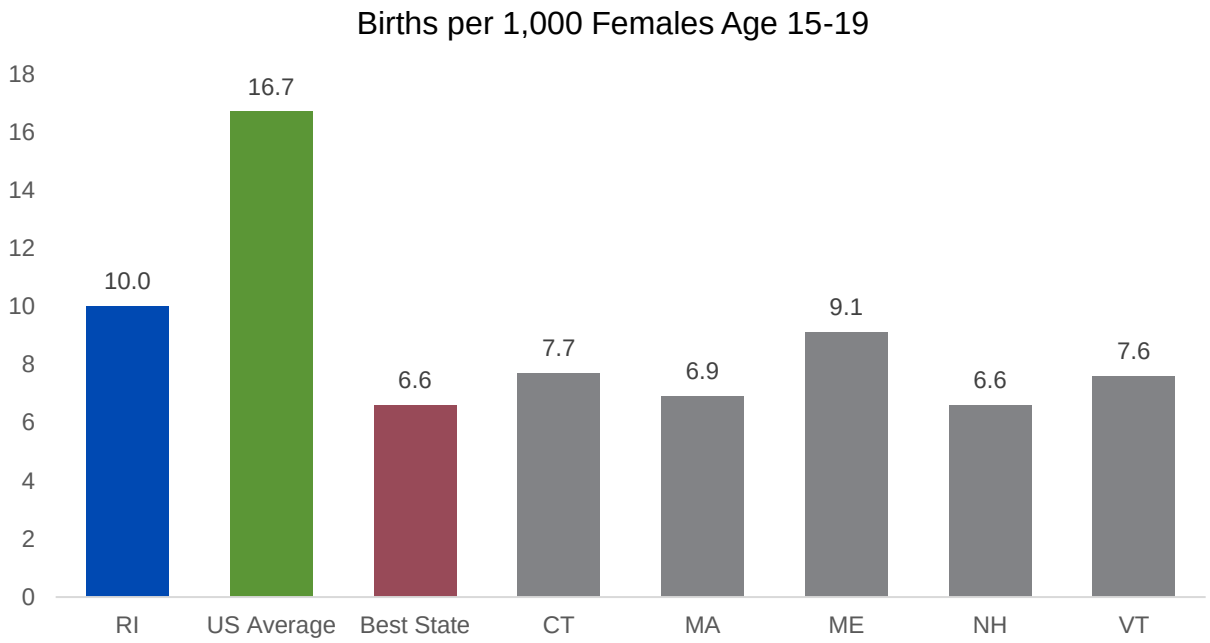
Many communities have started implementing syringe service programs, such as needle exchanges. These programs provide access to sterile needles, safe disposal of used syringes, and connections to resources such as substance use disorder treatment programs and treatment care for HIV. Studies indicate that needle and syringe programs have been effective at reducing new cases of HIV.
People who are diagnosed with HIV should start taking medicine to treat it as soon as possible. The medicine used to treat HIV is called antiretroviral therapy (ART) and it works by reducing the amount of HIV in the body. Antiretroviral therapy can decrease the amount of HIV in the body so much that it becomes undetectable. At that point, the person effectively has no risk of transmitting HIV to someone who is HIV-negative through sex.

The CDC has a tool to help people find HIV prevention services, including condoms, HIV testing, PrEP, and PEP in their area.

Teen Births

Definition
Births per 1,000 females age 15-19

Numbers at a Glance
- **Rhode Island:** 10.0
- **US Average:** 16.7
- **Best State:** New Hampshire, 6.6



Data Source: CDC, WONDER, 2019 Natality Public Use Files

Why It's Important
Substantial health, social, and economic costs are associated with teen pregnancy and childrearing. Teen mothers are significantly more likely to drop out of high school and face unemployment. The children of teen mothers have a higher risk of dropping out of school, becoming hospitalized, dying during infancy or childhood, and becoming teen mothers themselves.

According to the CDC, teen pregnancy and childbirth cost taxpayers in the United States about $9.4 billion annually.

Who Is Affected
Teenage births have declined steadily in the last several decades, but disparities persist. The rate of teenage pregnancy is higher among:
- Teens in foster care, who have a rate more than twice that of those not in foster care;
- American Indian/Alaska Native, Hispanic, non-Hispanic Black and Native Hawaiian/Pacific Islander females, whose teen pregnancy rates are all more than double that of non-Hispanic White females. Asian females have the lowest rate.
- Teens living in low-income counties compared with teens from high-income counties;

- Teens from counties with low educational attainment compared with teens from counties with high educational attainment; and
- Teens living in rural counties compared with teens living in urban counties.

Moving Forward

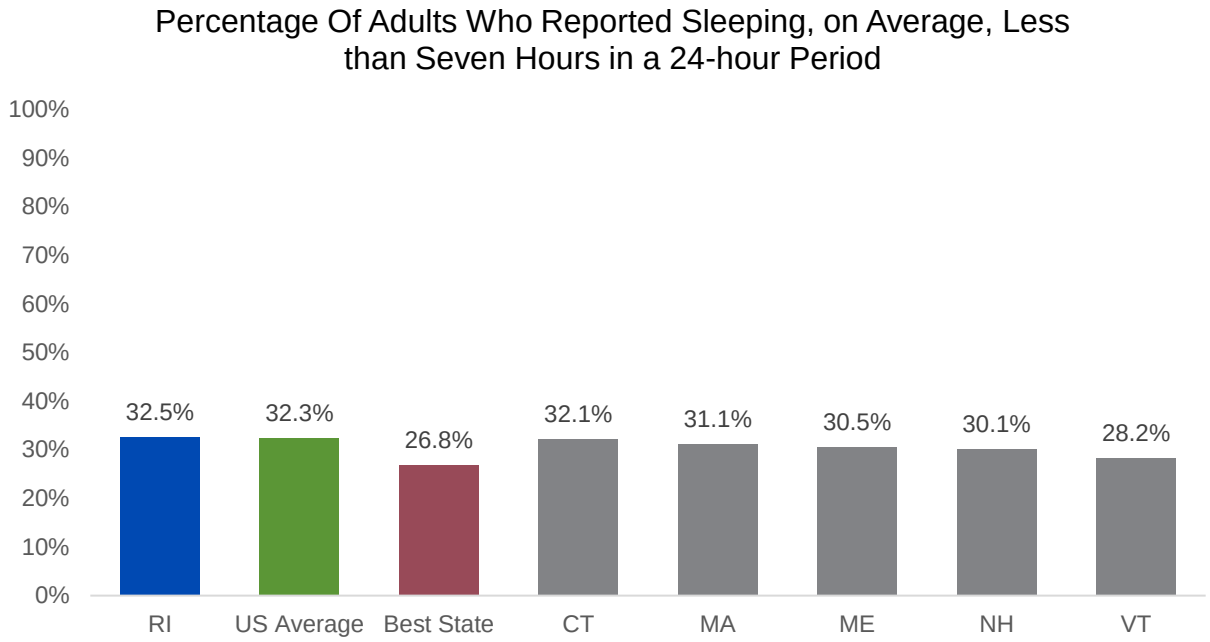
The CDC is focusing on eliminating disparities in teen pregnancy. Effective teenage pregnancy prevention strategies include:

- Delay sexual intercourse: Abstinence is the only method guaranteed to prevent pregnancy.
- Use two forms of contraception (birth control): More than 86% of sexually active teens used birth control the last time they had sex, but very few use the most effective forms of birth control. According to the American College of Obstetricians and Gynecologists (ACOG), the ideal contraceptive practice for sexually active adolescents is dual contraceptive use — both a condom to prevent sexually transmitted infections (STIs) and a method more effective at preventing unwanted pregnancies. They recommend that physicians routinely address adolescent contraceptive needs, expectations, and concerns regardless of a patient's age or previous sexual activity.
    - Long-acting reversible contraceptives (LARC), such as implants and intrauterine devices (IUDs), are more effective at preventing pregnancy compared with the more commonly known and used male condoms and birth control pills.
    - ACOG recommends that physicians routinely address adolescent contraceptive needs, expectations, and concerns regardless of a patient's age or previous sexual activity.
- Federal and State policies supporting access to family planning services, which is linked to lower birth rates.
- Comprehensive risk-reduction sex education in schools, which has proven effective at increasing use of contraception and decreasing sexual activity, prevalence of sexually transmitted infections, and teen pregnancies.

Insufficient Sleep

Definition
Percentage of adults who reported sleeping, on average, less than seven hours in a 24-hour period

Numbers at a Glance
- **Rhode Island:** 32.5%
- **US Average:** 32.3%
- **Best State:** Colorado, 26.8%



Data Source: CDC, 2020 BRFSS

Why It's Important
Insufficient sleep has been recognized as a threat to public health. More than a third of adults in the United States are not getting enough sleep regularly, and an estimated 50 to 70 million adults suffer from chronic sleep and wakefulness disorders such as sleep apnea and insomnia. Sleep is critical for brain and body functions including the immune system, hormonal and metabolic systems, cognition, and emotion. Insufficient sleep is associated with chronic diseases, including:

- Cancer;
- Depression;
- Diabetes;
- Hypertension; and
- Obesity.

Insufficient sleep is also associated with reduced productivity and quality of life and increased risk of motor vehicle and other transportation accidents, industrial accidents and medical errors. Drowsy driving caused 633 deaths in the United States in 2020, or 1.6% of all motor vehicle fatalities. A 2016 report by the Rand Corporation estimated insufficient sleep cost $411 billion in missed work days and reduced productivity.

Who Is Affected

Insufficient sleep tends to be lowest among individuals that exercise regularly and those with generally good physical and mental health. Research shows shift work schedules decrease sleep quality, which increases the risk of developing chronic sleep problems. Age, race, and socioeconomic status are also strongly associated with insufficient sleep.

The prevalence of insufficient sleep is higher among:

- Men compared with women;
- Adults age 18-64 compared with adults age 65 or older;
- Hawaiian/Pacific Islanders and Black adults compared with Asian, White and Hispanic adults;
- Adults with lower levels of education compared with college graduates; and
- Adults with a household income of $25,000 or less compared with adults with a household income of $75,000 or higher.

Moving Forward

The National Institute of Health recommends that adults sleep seven to eight hours nightly and school-aged children sleep between eight to 12 hours nightly. Everyone should follow a sleep schedule. It should be noted that making up for lost sleep through naps may provide short-term boosts of energy but does not provide the health benefits gained by regular adequate nighttime sleep.

Limiting use of electronic devices before bedtime may improve sleep quality — the blue light emitted from electronic devices can interfere with the body's circadian rhythm.

Policy solutions to address insufficient sleep in the US are limited, though some industries have effectively minimized the hazards of insufficient sleep. For example, in 2011 the Accreditation Council for Graduate Medical Education limited the number of hours medical residents can work consecutively, which led to increased safety among employees and patients.

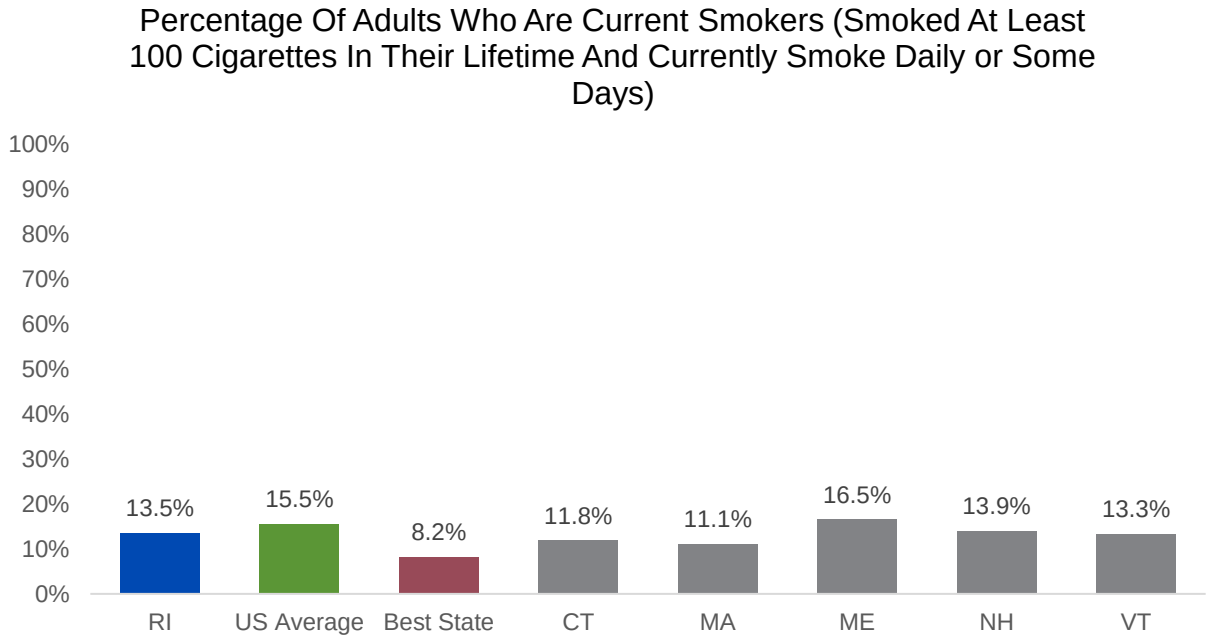
Smoking

Definition

Percentage of adults who reported smoking at least 100 cigarettes in their lifetime and currently smoke daily or some days

Numbers at a Glance

- **Rhode Island:** 13.5%
- **US Average:** 15.5%
- **Best State:** Utah, 8.2%



Data Source: CDC, 2020 BRFSS

Why It's Important

Smoking cigarettes has an adverse impact on health. As the leading cause of preventable death and disease in the United States, cigarette smoking is responsible for more than 480,000 deaths every year. Smokers live 10 years less than non-smokers, on average. Currently, more than 16 million Americans live with a disease caused by smoking.

Smoking damages nearly every organ and is associated with:

- Heart disease;
- Stroke;
- Respiratory diseases such as chronic obstructive pulmonary disease (COPD);
- Diabetes; and
- Multiple types of cancer.

People who do not smoke are also affected by smoking. Exposure to secondhand smoke is estimated to cause 41,000 deaths among US adults every year.

In recent years, there has been an increase in popularity of e-cigarettes, especially among youth. While e-cigarettes may be a beneficial tool for non-pregnant adults trying to quit smoking cigarettes, they are still a danger to health. Many contain nicotine and other cancer-causing chemicals and have been linked to lung injuries, hospitalizations, and death. In October 2021, the US Food and Drug Administration (FDA) authorized the marketing of certain electronic nicotine delivery system devices as

a tool to help addicted adults smoke less cigarettes.

Who Is Affected

The prevalence of smoking among adults is higher among:

- Men compared with women;
- American Indian/Alaska Native and multiracial, and non-Hispanic Black adults than Asian, Hispanic, and White adults;
- Adults age 25 or older who did not graduate from high school compared with those who graduated from college; and
- Adults age 25 or older with an annual household income less than $25,000 than those with an annual household income of $75,000 and above.

Additional populations with a high prevalence of smoking include:

- Adults with a disability or limitation such as vision, hearing, cognition, and movement;
- Adults who report serious psychological distress, such as feelings of sadness, nervousness, and worthlessness;
- LGBT adults; and
- Adults living in states with a high prevalence of e-cigarette use.

Moving Forward

Quitting smoking can have profound benefits on current and long-term health at any age, even among heavy and lifelong smokers. A variety of interventions are effective for smoking prevention and cessation.

In several decades, excise taxes and smoking bans have effectively prevented non-smokers from starting, increasing cessation, and decreasing smoking-related health problems. Raising the legal tobacco purchase age is one way to decrease the number of teens who become smokers. In December 2019, the federal *Food, Drug and Cosmetic Act* was changed to raise the legal tobacco age from 18 to 21.

County Health Rankings and Roadmaps provides a list of evidence-based strategies to address health issues. Smokefree.gov provides free, accurate and evidence-based information as well as professional assistance to support the immediate and long-term needs of smokers trying to quit.

E-Cigarette Use

Definition
Percentage of adults who reported using e-cigarettes or other electronic vaping products at least once in their lifetime and now use daily or some days

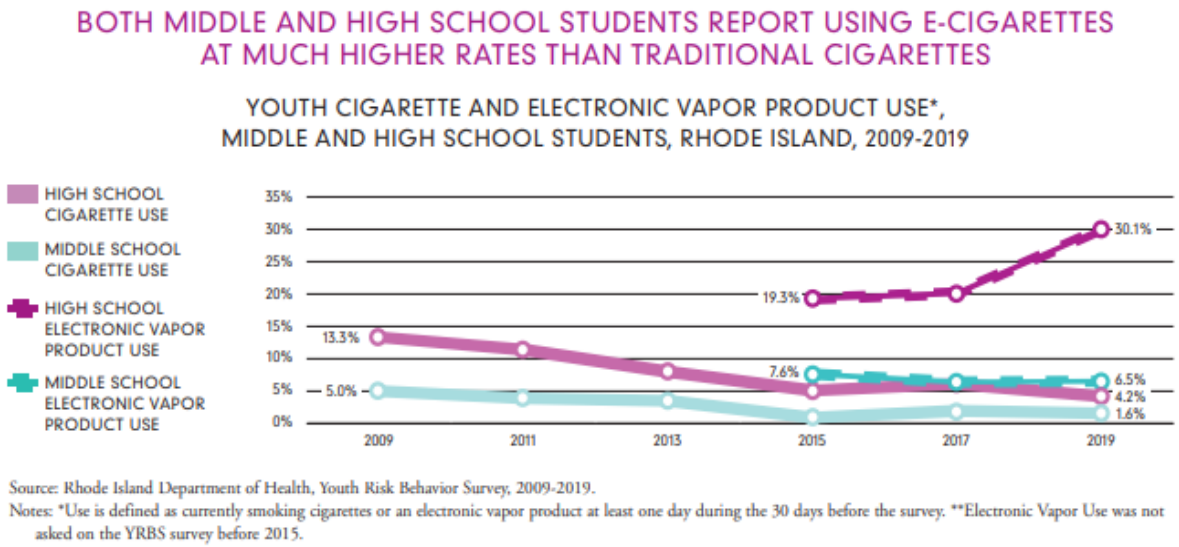
Numbers at a Glance
- **Rhode Island:** 4.6%
- **US Average:** 5.2%
- **Best State:** Illinois, 3.4%

Why It's Important
Electronic cigarettes, called e-cigarettes or vape pens, are electronic devices that use heat to make an aerosol that is inhaled by the user. The aerosol made by e-cigarettes contains toxic substances that cause cancer and serious lung disease. E-cigarettes are typically used to deliver the addictive compound nicotine or tetrahydrocannabinol (THC), the active component of cannabis, and contain flavorings and other additives. Nicotine is harmful to pregnant women and their developing babies and has also been found to negatively affect brain development in children and adolescents. Additives in e-cigarettes contain other harmful substances such as small particles that can go deep into lungs, cancer-causing chemicals, and flavoring chemicals that are linked to serious lung disease and lung injury.

As of October 2019, 1,888 cases of lung injury associated with e-cigarettes were reported. Vitamin E acetate is one additive used in THC e-cigarettes that has been linked with e-cigarette associated lung injury, though investigations are ongoing and other substances remain suspect. The CDC is currently studying cases to identify the cause.

In recent years, there has been an increase in the popularity of e-cigarettes, especially among youth. A recent study showed e-cigarette use in adolescence as a strong predictor of regular cigarette use in adulthood. While e-cigarettes may have some benefit when used to completely replace tobacco products, they are still a danger to health. More research is needed to determine its effects on health.

Who Is Affected
Populations with a higher rate of e-cigarette use include:
- Men are more likely to use e-cigarettes compared with women;
- Hawaiian/Pacific Islander and multiracial adults compared with Black adults;
- Adults with income less than $75,000 compared with adults with higher income levels;
- Adults age 18-44 compared with older adults;
- Adults living in non-metropolitan areas compared with those in metropolitan areas.



Data Source: Rhode Island Department of Health, Youth Risk Behavior Survey (YRBS), 2009-2019; Rhode Island KIDS COUNT Health Fact Sheet, Trends in Youth Tobacco Use: E-Cigarettes and Vaping, https://www.rikidscount.org/Portals/0/Uploads/Documents/Fact%20Sheets/6774%20YouthSmoking1_Final%20for%20Event.pdf?ver=2020-10-30-093705-380

Moving Forward

Regulations and policies to prevent e-cigarette-related harms include:

- Restrict flavors, including menthol, on all e-cigarette products.
- Restrict the nicotine content of products.
- Regulate e-cigarette companies directly by increasing taxes and limiting density for e-cigarette distributors.
- Restrict e-cigarette advertisements online and on social media such as YouTube, Twitter, and Instagram, particularly ads targeting youth.
- Report on and assess lung injuries caused by e-cigarette use.

The types of e-cigarette products available to consumers have evolved dramatically and regulations have been slow to respond. An expansion of existing tobacco policies and regulations to include e-cigarette products is needed to protect young people from e-cigarette addiction and related lung injury. Studies have shown mixed results on whether e-cigarettes are effective in smoking cessation. The FDA has only allowed the sale of e-cigarettes as a method to quit smoking and does not condone their recreational use.

Clinical Care

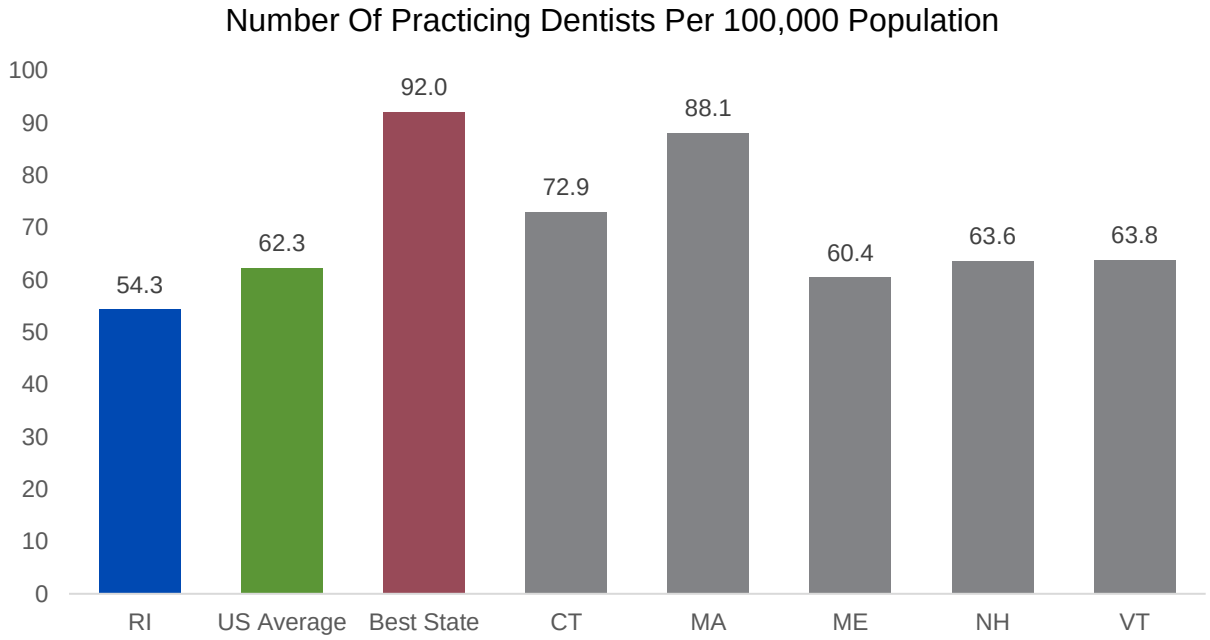
Dental Care Providers

Definition

Number of general dentists and advanced practice dental therapists per 100,000 population

Numbers at a Glance

- **Rhode Island:** 54.3 per 100,000 population
- **US Average:** 62.3 per 100,000 population
- **Best State:** Alaska, 92.0 per 100,000 population



Data Source: US HHS, Centers for Medicare and Medicaid Services (CMS), National Plan and Provider Enumeration System, September 2021

Why It's Important

Despite projections of steady growth in the number of working dentists, the Health Resources and Services Administration (HRSA) has identified many areas and populations that have an inadequate supply of dentists to meet current or future needs. Dentists diagnose oral diseases, create treatment plans, promote oral health and disease prevention, perform surgical procedures, and manage oral trauma.

Oral health provides an indication of general health. Many health conditions, such as eating disorders, diabetes, and immune disorders, have close connections to oral health. Oral infections and periodontal (gum) disease are also associated with heart disease, respiratory disease, cancer, and Alzheimer's disease.

Who Is Affected

Some of the most significant oral health disparities are in rural communities. Disparities in oral healthcare contribute to higher rates of dental caries and edentulism (toothlessness) in rural populations compared with urban populations. Contributing factors to these disparities include:

- An inadequate supply of dentists;
- Higher uninsurance rates and fewer dentists accepting Medicaid patients;
- Patient difficulty in traveling to a dentist;

- Poverty;
- Lack of a fluoridated community water supply; and
- A growing population of older adults.

Moving Forward

Strategies to increase the size of the dental workforce, particularly in rural communities, include:

- Expand the roles of dental therapists, hygienists, and assistants.
- Target dental school recruitment efforts for rural and in-state students.
- Train general/family practice physicians and primary care providers to conduct oral health exams and place fluoride varnish/sealants on children.
- Establish medical/dental mobile units for outreach services.
- Utilize teledentistry.
- Strengthen incentives and educational loan repayment for dentists who choose to work in rural areas.

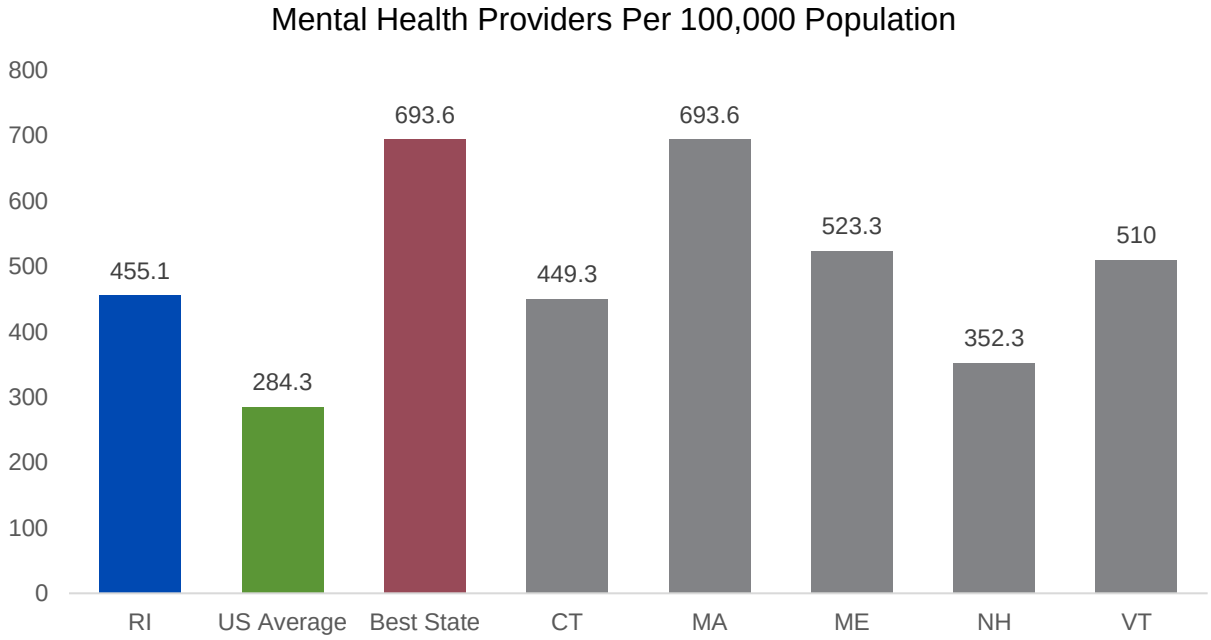
Mental Health Providers

Definition

Number of psychiatrists, psychologists, licensed clinical social workers, counselors, marriage and family therapists, and advanced practice nurses specializing in mental healthcare per 100,000 population

Numbers at a Glance

- **Rhode Island:** 455.1 per 100,000 population
- **US Average:** 284.3 per 100,000 population
- **Best State:** Massachusetts, 693.6 per 100,000 population



Data Source: US HHS, CMS, National Plan and Provider Enumeration System, September 2021

Why It's Important

Mental health providers offer essential care to adults and children who have a mental or behavioral disorder by offering services such as assessment, diagnosis, treatment, medication, and therapeutic interventions. The mental health workforce includes a broad array of professionals, including psychiatrists, psychologists, licensed clinical social workers, counselors, marriage and family therapists, professionals treating alcohol and other drug abuse, and advanced practice nurses specializing in mental healthcare.

According to the National Institutes of Mental Health, 20% of Americans experienced some form of mental illness (not including substance abuse disorders) in 2020, but only 46.2% of adults with any mental illness and 64.5% with a serious mental illness reported receiving treatment in the past year.

An analysis by the Kaiser Family Foundation found that more than 129 million Americans live in mental health shortage areas, and only 28.1% of the need is being met. The National Council of Behavioral Health (NCBH) reported that 77% of counties in the United States are experiencing a severe shortage of mental health providers. Demand for mental health professionals is projected to increase during and after the COVID-19 pandemic.

Who Is Affected

While most of the population (70%) lives close to a mental health treatment facility (less than 10 miles), mental health provider shortages remain common. Populations with limited access to mental health care include:

- Rural communities;
- Low-income communities; and
- Communities with a higher percentage of Black or Hispanic individuals.

Moving Forward

Strategies to cope with shortages and to increase the number of mental health professionals include:

- Increase the use of telemedicine.
- Use workforce development programs to provide mental health training to advanced practice nurses and primary care physicians.
- Encourage current medical students to become psychiatrists.
- Offer incentives to providers to practice in areas with a shortage of health professionals, like the National Health Service Corps' Rural Community Loan Repayment Program.
- Provide adequate reimbursement for psychiatric services.
- Integrate mental health into primary care settings, especially for younger populations.

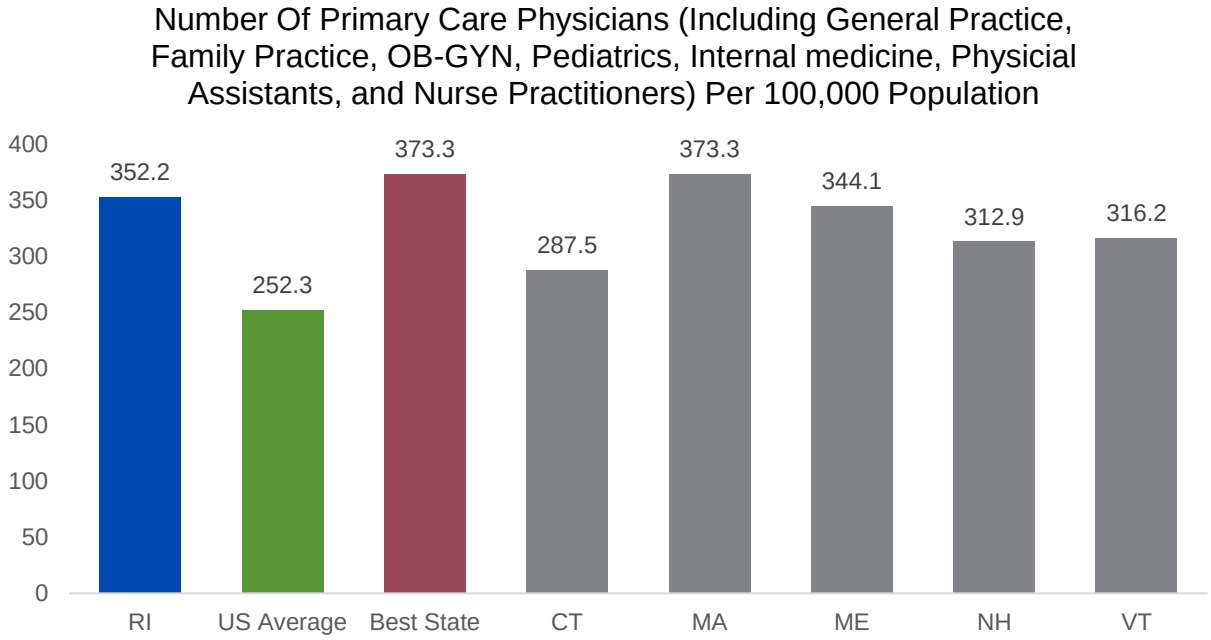
Primary Care Provider

Definition

Number of active primary care providers (including general practice, family practice, obstetrics and gynecology, pediatrics, geriatrics, internal medicine, physician assistants and nurse practitioners) per 100,000 population

Numbers at a Glance

- **Rhode Island:** 352.2 per 100,000 population
- **US Average:** 252.3per 100,000 population
- **Best State:** Massachusetts, 373.3 per 100,000 population



Data Source: US HHS, CMS, National Plan and Provider Enumeration System, September 2021

Why It's Important

An adequate physician supply is important for the effective and efficient delivery of healthcare services and, therefore, for population health and the cost and quality of healthcare. Primary care physicians provide direct patient care and counsel patients on the appropriate use of specialists and advanced treatment options. They are typically the patient's first point of contact with the healthcare system and provide critical preventive care, disease management, and referrals to specialists. Physician supply is important for healthcare spending and for population health because physician clinical decisions affect approximately 90% of each healthcare dollar spent. The United States faces a shortage of primary care physicians to meet the nation's healthcare needs.

Who Is Affected

Racial and socioeconomic disparities regarding access to primary care physicians have been documented and may lead to disparities in health outcomes.

Populations that are disproportionately affected by access to primary care include:

- Hispanic and non-Hispanic Black adults compared with White adults; and
- Residents of rural areas compared with those in urban areas.

Moving Forward

Immediate and long-term measures to address the nation's primary care shortage include:

- Increase primary care capacity by empowering licensed personnel, including nurse practitioners and physician assistants, to perform more responsibilities.
- Increase federal funding for medical residency training positions.
- Promote primary care practice among medical residents.

Increasing diversity within the physician workforce requires addressing barriers throughout students' education including:

- High-quality education within underserved and under-represented communities;
- Programs to encourage minority students to pursue medicine as a career;
- College and medical school admissions procedures that allow for the consideration of race and ethnicity; ands
- Mentorship for minority students in medical school.

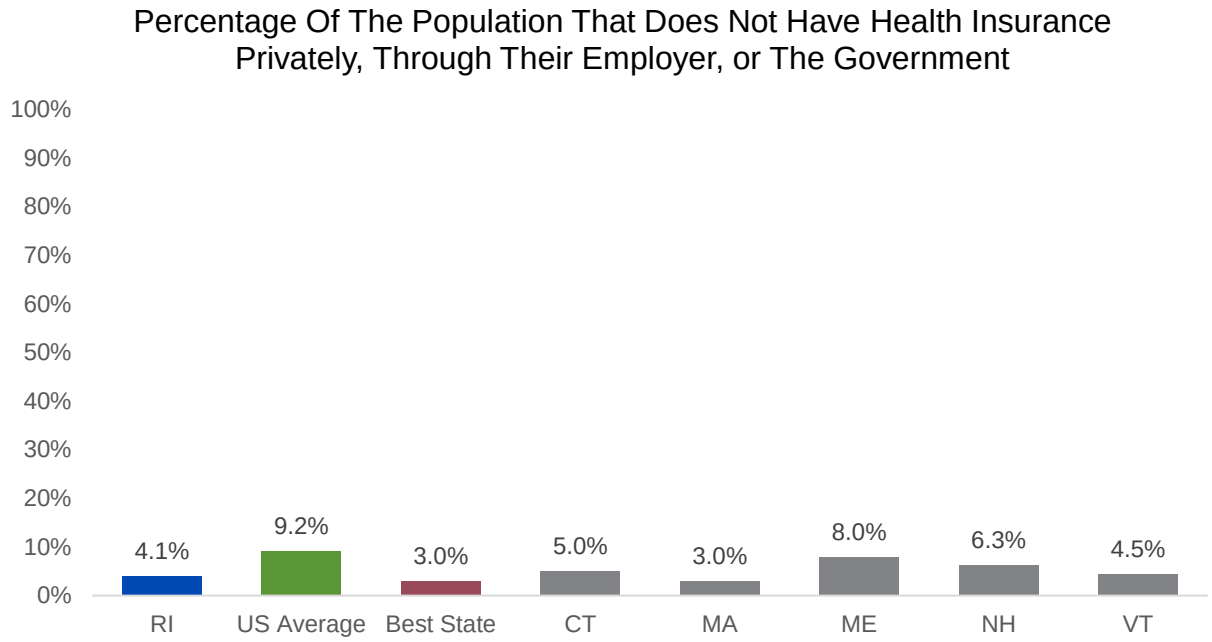
The effects of increased telehealth use on the demand for primary care providers are uncertain. The US Department of Health and Human Services (HHS) implemented policy changes in response to the COVID-19 public health emergency to make telehealth more accessible. Continuation of those policies may allow more physicians to continue to offer those services.

Regarding rural areas, CMS has developed the Rural Health Strategy in response to the modern needs of rural Americans. Educational interventions are particularly effective at increasing and retaining a rural health workforce. These include selecting university students with rural backgrounds, university and post-graduate training in rural locations, and supporting further education for qualified rural health professionals. However, more research is needed to address the physician shortage in rural areas.

Uninsured

Definition
Percentage of population not covered by private or public health insurance

Numbers at a Glance
- **Rhode Island:** 4.1%
- **US Average:** 9.2%
- **Best State:** Massachusetts, 3.0%



Data Source: US Census Bureau, American Community Survey, 2019

Why It's Important
Health insurance is critical in helping people receive the preventive and medical care they need to achieve and maintain good health. The nation's uninsured rate dropped significantly after the Affordable Care Act was enacted, yet nearly 28.2 million people were still uninsured in 2021. In 2019, an analysis found that 73.7% of uninsured adults reported that they were uninsured because they could not afford health insurance.

Compared with insured adults, uninsured adults have more health disadvantages, including:
- Worse health outcomes;
- Higher rates of mortality and premature death;
- Higher rates of cancer mortality and greater risk of a late-stage cancer diagnosis;
- Inadequate access to quality care, including preventive services;
- Expensive medical bills due to undiagnosed or untreated chronic conditions; and
- More complex emergency room visits.

One study estimated that adults age 20-64 in three Medicaid expansion states experienced a 6% decline in all-cause mortality compared with adults living in demographically and economically similar states that did not expand Medicaid. This decline was largely from medical conditions that respond well to medical management, such as HIV, heart disease, and diabetes.

Who Is Affected

Populations with higher uninsured rates include:

- Adults age 26-34 compared with all other age groups. Older adults age 55-64 had the lowest rates of being uninsured.
- American Indian/Alaska Native and Hispanic adults as well as those who identify as other race compared with other racial and ethnic groups. White adults had the lowest rate.
- Adults with less than a high school education compared with those with higher education levels;
- Individuals living in non-Medicaid expansion states compared with those in Medicaid expansion states; and
- Individuals with income levels below 100% of the federal poverty level compared with individuals with higher incomes.

Moving Forward

Medicaid expansion has decreased uninsured rates among low-income individuals and vulnerable populations in states that have enacted it. In 2019, 45% of the uninsured population did not have access to health coverage provided by the Affordable Care Act because they lived in a state that had not expanded Medicaid, they were not US citizens, or their income was too high to be eligible. Additional states adopting the Medicaid expansion could further decrease the number of uninsured individuals. Increasing knowledge of government assistance programs may increase enrollment of eligible individuals. Policy changes can also help address the affordability issue. Increasing the number of people with health insurance is important to improve health outcomes and decrease healthcare spending. However, a combination of three core strategies — expanding health insurance coverage, delivering better preventive and chronic care, and focusing on community prevention — is more effective at saving lives and money than implementing any of these strategies alone.

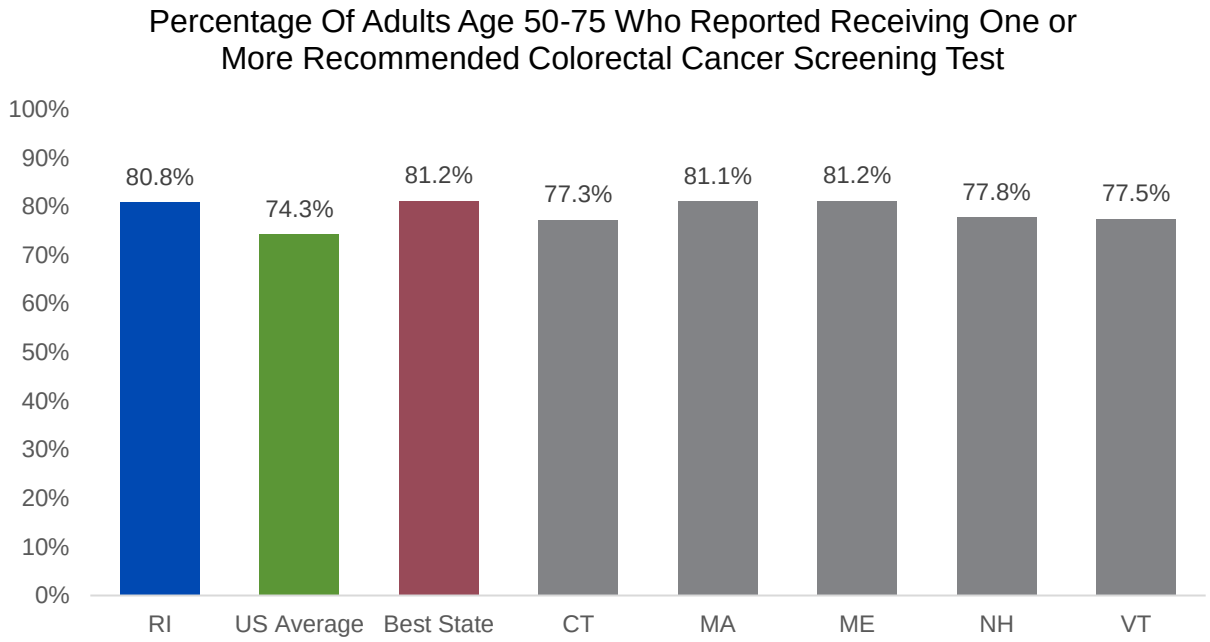
Colorectal Cancer Screening

Definition

Percentage of adults age 50-75 who reported receiving one or more of the recommended colorectal cancer screening tests within the recommended time interval (blood stool test within the past year, sigmoidoscopy within the past five years, colonoscopy within the past 10 years, stool DNA test within the past three years, virtual colonoscopy within the past five years, or sigmoidoscopy within the past 10 years and blood stool test in the past year)

Numbers at a Glance

- **Rhode Island:** 80.8%
- **US Average:** 74.3%
- **Best State:** Maine, 81.2%



Data Source: CDC, 2020 BRFSS

Why It's Important

There is strong evidence that screening for colorectal cancer reduces mortality by removing precancerous growths and increasing early detection, which is optimal for effective treatment. Colorectal cancer was the second-leading cause of cancer deaths in 2020 and the fourth-leading cause of new cancer cases for both men and women in the United States. The American Cancer Society's *Cancer Facts & Figures* report projects 151,030 new cases of colorectal cancer and more than 52,580 colorectal cancer deaths in 2022.

According to the US Preventive Services Task Force, screening for colorectal cancer, which may include fecal sample testing, colonoscopy, and/or sigmoidoscopy, is recommended for all adults age 50-75. Screening at an earlier age is recommended for those with particular risk factors or a family history of colorectal cancer.

Multiple studies have shown that screening for colorectal cancer is cost-effective compared with not screening. Furthermore, if routine screenings started at age 45, an estimated 24-28 colorectal cancer

deaths could be averted for every 1,000 adults screened.

Who Is Affected

Populations of adults age 50-75 with a higher percentage of colorectal cancer screening include:

- Women compared with men;
- Non-Hispanic Black adults compared with Asian adults;
- College graduates compared with those with lower levels of educational attainment;
- Adults with an annual household income of $75,000 or more compared with those with an income of less than $25,000;
- Adults with health insurance compared with those who are uninsured; and
- Adults with a regular healthcare provider compared with those without a regular provider.

Moving Forward

There are numerous strategies for increasing colorectal cancer screening. County Health Rankings and Roadmaps' recommendations include:

- Use patient navigators, also called system navigators, to help guide patients through medical, insurance, and social support systems.
- Provide financial incentives, such as payments or vouchers, for preventive care.

The Community Guide — a collection of evidence-based findings of the Community Preventive Services Task Force — recommends a multi-component approach. The guide lists several strategies that work best when more than one are used together. These strategies include:

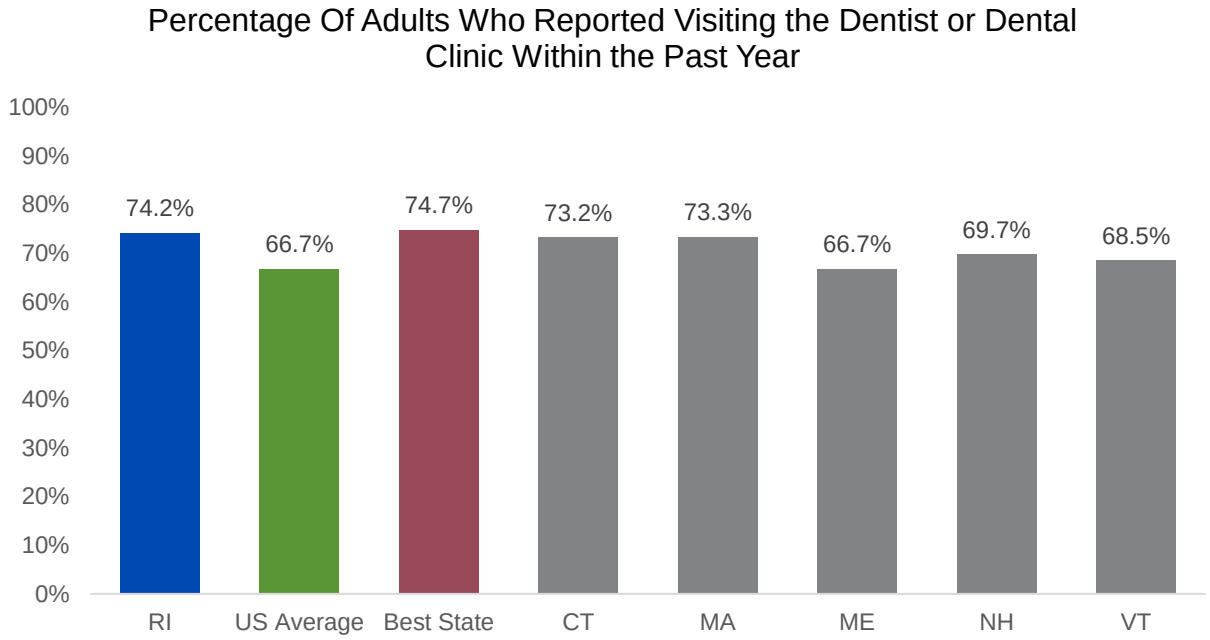
- Media campaigns to increase awareness;
- Client reminders;
- Cost reduction; and
- Addressing language and transportation barriers.

The CDC has implemented a Colorectal Cancer Control Program that focuses on increasing screening for targeted groups. The National Colorectal Cancer Roundtable has resources for increasing colorectal cancer screening rates in clinical practice and in community health centers.

Dental Visit

Definition
Percentage of adults who reported visiting the dentist or dental clinic within the past year

Numbers at a Glance
- **Rhode Island:** 74.2%
- **US Average:** 66.7%
- **Best State:** Hawaii, 74.7%



Data Source: CDC, 2020 BRFSS

Why It's Important
Oral health is a vital component of overall health. Oral diseases such as tooth decay, dental caries (cavities), gingivitis, and periodontal (gum) disease are common and can cause pain, tooth loss, oral infection, and chronic disease if left undiagnosed and untreated. Oral health is also associated with chronic conditions such as heart disease and diabetes.

In the United States:

- One in four adults has untreated cavities.
- Nearly half of adults age 30 or older have signs of gum disease.

Cost of care is the most common reason reported for not having visited the dentist within the past year, even among adults with private dental insurance. The annual cost of dental care was nearly $136 billion in 2018, representing 3.7% of total US healthcare spending. Patients' out-of-pocket costs accounted for approximately 40% of this cost — nearly $55 billion.

Inadequate access to oral health services results in the overuse of emergency departments as a primary and only source of care. Between 2000 and 2010, the number of individuals who sought care for dental conditions from an emergency department almost doubled. The American Dental Association estimates that emergency room visits for preventable oral health-related issues cost the US health care system up to $2 billion per year.

Who Is Affected

Populations with a lower prevalence of an annual dental visit include:

- Men compared with women;
- Adults age 18-44 compared with adults age 45 or older;
- American Indian/Alaska Native and Hispanic adults compared with White adults;
- Adults with less than a high school education compared with college graduates; and
- Adults with an annual household income of less than $25,000 compared with those with higher incomes.

Moreover, uninsured or underinsured adults are less likely to visit the dentist when needed compared with those with insurance.

Moving Forward

Some states have allowed mid-level dental professionals, such as dental therapists, to provide routine preventive and restorative treatment typically only performed by dentists. Such expansions of the dental workforce have increased access to cost-effective essential services, particularly for underserved populations.

Other strategies to meet the dental needs of underserved groups include:

- Integrate oral healthcare as an essential part of overall healthcare.
- Increase access to oral healthcare and expanding dental healthcare capacity.
- Decrease financial barriers to dental care.
- Support dental students of diverse backgrounds, including minority, low-income, and rural students.
- Increase Medicaid reimbursement rates to dental care providers.
- Train dental care providers in cultural sensitivity and providing interpretation services to remove cultural and language barriers.

School-based cavity prevention programs effectively increase children's dental care access. These programs offer multi-component cavity prevention provided by dental hygienists at schools.

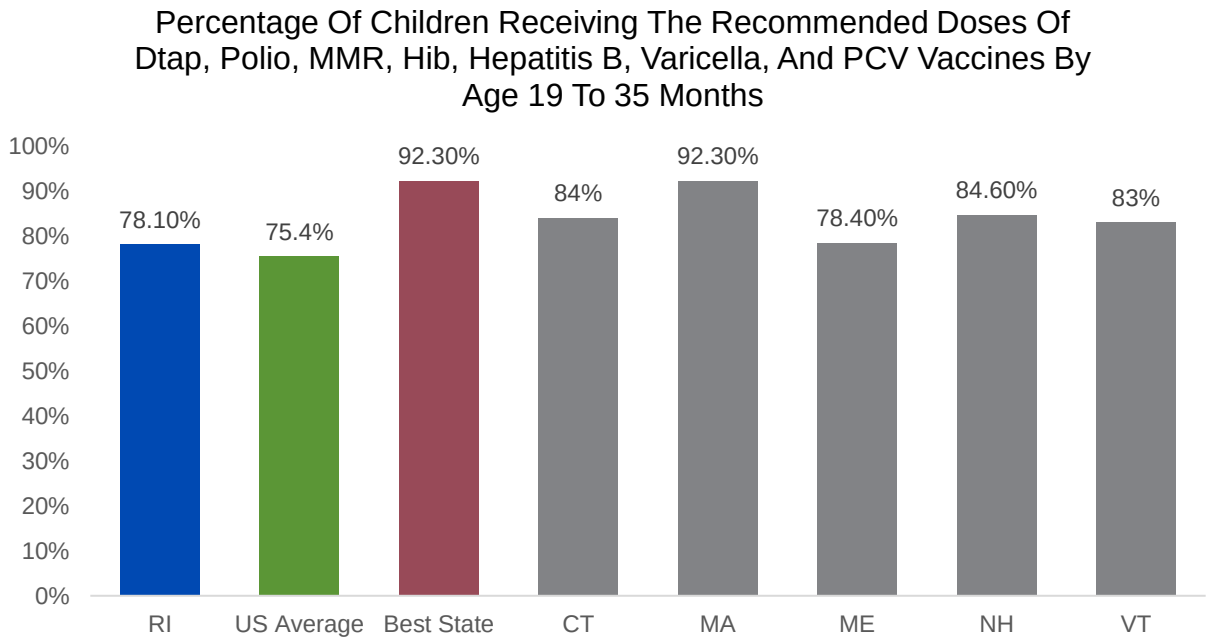
Childhood Immunizations

Definition

Percentage of children who received, by 35 months, all recommended doses of the combined seven-vaccine series: diphtheria and tetanus toxoids and acellular pertussis (DTaP) vaccine; measles, mumps and rubella (MMR) vaccine; poliovirus vaccine; Haemophilus influenzae type b (Hib) vaccine; hepatitis B (HepB) vaccine; varicella vaccine; and pneumococcal conjugate vaccine (PCV)

Numbers at a Glance

- **Rhode Island:** 78.10%
- **US Average:** 75.4%
- **Best State:** Massachusetts, 92.3%



Data Source: CDC, National Immunization Survey-Child (Birth Cohort), 2018-2020

Why It's Important

Early childhood immunization is a safe and cost-effective way of protecting infants and children from potentially life-threatening preventable diseases early in life when they are most vulnerable. High rates of immunization coverage in children also protects our communities from serious vaccine-preventable diseases and potential complications. Infants receiving recommended immunizations by age two are protected from 14 diseases. Statewide monitoring of annual childhood vaccination coverage levels over time is important in identifying unvaccinated populations and barriers to vaccination as well as monitoring progress toward achieving Healthy People 2020 childhood immunization objectives.

Vaccinations have led to a 95% decrease in vaccine-preventable diseases in the past 50 years, leading the CDC to call vaccines one of the 10 greatest public health achievements of the 20th century. After implementation of the Vaccines For Children (VFC) Program in 1994, modeling estimated that among all children born between 1994 and 2013, childhood vaccinations would prevent 322 million cases of disease and 21 million hospitalizations over their lifetimes and prevent 732,000 premature deaths due to vaccine preventable diseases.

Who Is Affected

According to the 2019 National Immunization Surveys, the prevalence of immunization among children is higher among:

- Children with private health insurance, compared with children with Medicaid or uninsured children for most recommended vaccines;
- Children in households living at or above the poverty line, compared with children living below the poverty line; and
- Asian, White and Hispanic children compared with Black and American Indian/Alaskan Native children.

Moving Forward

For all vaccines, achieving and maintaining high vaccination coverage is critical to sustain progress in reducing the impact of vaccine-preventable diseases. The VFC program supports the purchase of vaccines as well as immunization operations at the local, state, and national level. The *2010 Affordable Care Act* requires health insurance plans to cover preventive services, including immunizations, without charging deductibles, co-payments, or co-insurance.

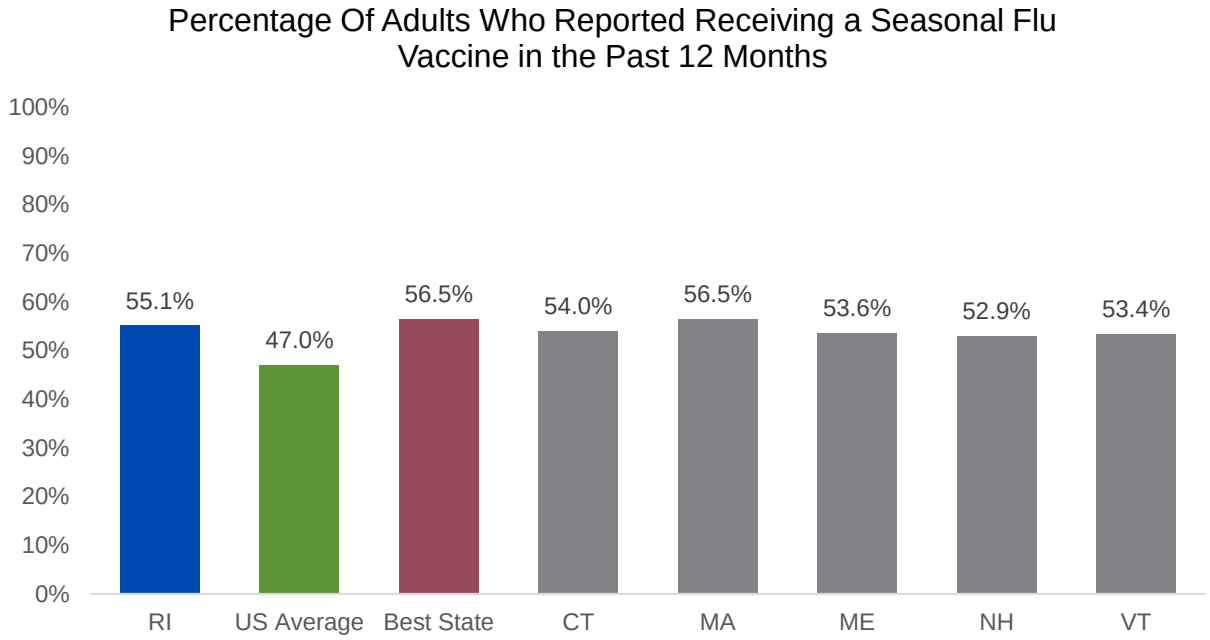
Community Preventive Services Task Force recommendations to increase vaccination rates include:

- Expand access in healthcare settings:
    - Reduce distance to places that offer vaccines.
    - Increase or modify hours during which vaccination services are provided.
    - Deliver vaccinations in additional clinical settings including emergency departments, inpatient units, and sub-specialty clinics.
    - Reduce administrative barriers to obtaining vaccinations by developing “drop-in” clinics or "express lane" vaccination services.
- Expand home visiting services.
- Establish vaccination programs in schools and child care centers.
- Increase community demand for vaccinations through active outreach, tracking, education, incentives, case management, and reminder and recall systems.

Flu Vaccination

Definition
Percentage of adults who reported receiving a seasonal flu vaccine in the past 12 months

Numbers at a Glance
- **Rhode Island:** 55.1%
- **US Average:** 47.0%
- **Best State:** Massachusetts, 56.5%



Data Source: CDC, 2020 BRFSS

Why It's Important
Influenza, or the flu, is a contagious respiratory illness that is caused by influenza viruses. A flu vaccine is the best protection against seasonal influenza viruses, which can pose a serious threat to health. Each year in the United States, millions of people get the flu, and thousands of people die from it. The vaccine can prevent people from coming down with the virus and help lessen the severity of the symptoms.

Recent studies have estimated the annual economic burden of the flu to be $11.2 billion in direct medical costs and indirect costs such as loss of productivity.

Who Is Affected
Populations of adults with a higher prevalence of receiving a seasonal flu vaccine include:
- Females compared with males;
- Adults age 65 or older compared with younger adults; the prevalence is lowest among adults age 18-44;
- White and Asian adults compared with other racial/ethnic groups. Hispanic adults had the lowest prevalence.
- College graduates compared with adults with lower levels of education. Adults with less than a high school education had the lowest prevalence.

- Adults with annual household incomes of $75,000 or more compared with those with lower household incomes; the prevalence increases with each increase in income level.
- Adults who live in metropolitan areas compared with those who live in non-metropolitan areas.

Moving Forward

For all vaccines, achieving and maintaining high vaccination coverage is critical to sustaining progress in reducing the impact of vaccine-preventable diseases. Everyone six months or older is recommended to get the flu vaccine every season. There are exceptions for infants younger than six months and anyone who has severe allergies to any of the components of the vaccine. The Community Guide has several evidence-based community interventions to increase vaccination rates.

The *2010 Affordable Care Act* requires health insurance plans to cover preventive services, including immunizations, without charging deductibles, co-payments, or co-insurance.

The US HHS has resources to help people determine if a flu shot is covered under their insurance and to find free or low-cost vaccination programs near them.

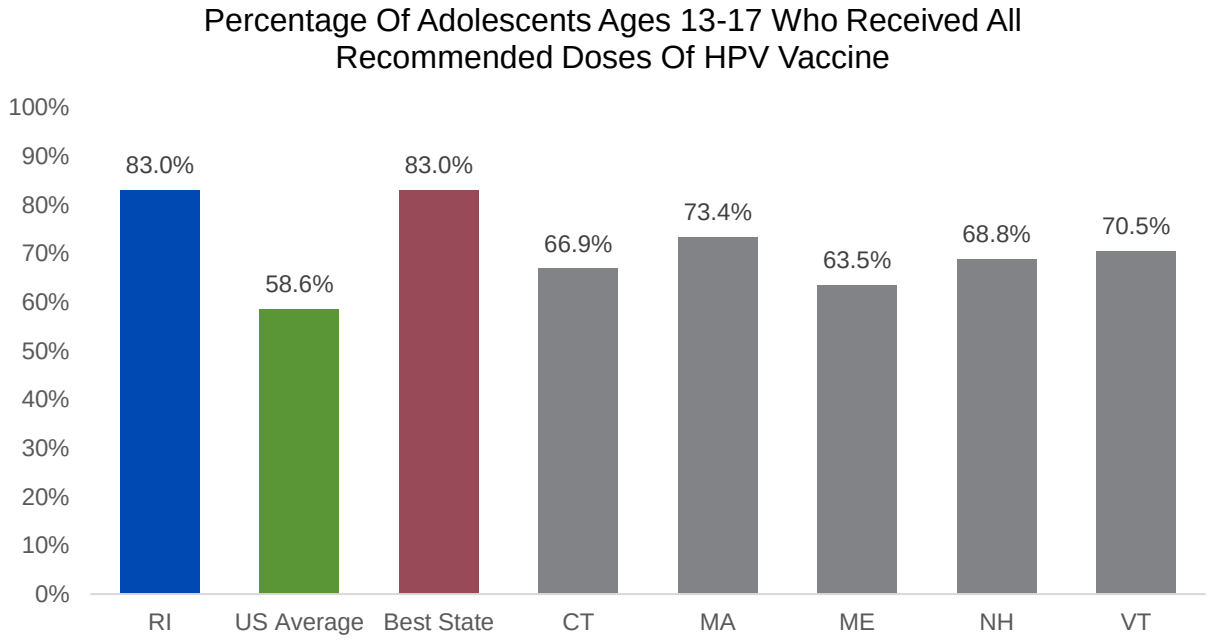
HPV Vaccination

Definition

Percentage of adolescents, age 13-17, who received all recommended doses of the human papillomavirus (HPV) vaccine

Numbers at a Glance

- **Rhode Island:** 83.0%
- **US Average:** 58.6%
- **Best State:** Rhode Island, 83.0%



Data Source: CDC, 2020 National Immunization Survey-Teen

Why It's Important

Every year, an estimated 19,000 cases of Human papillomavirus (HPV)-associated cancer among females and 13,100 cases of HPV-associated cancer among males could be prevented through vaccination.

HPV is the most common sexually transmitted infection in the United States, affecting about 85% of people in their lifetime. About 13 million people, including adolescents, become newly infected each year. HPV infections can cause different types of cancer as well as genital warts. In fact, most cases of genital warts; cervical cancer; and cancers of the anus, throat, vagina and vulva are associated with HPV infection.

HPV-associated diseases cost the US an estimated $8 billion (2010 dollars) in annual direct medical costs for preventing and treating all HPV types.

Who Is Affected

Adolescents remain the main focus of HPV immunization in the US. HPV vaccination is most effective when given before any exposure to HPV as the efficacy is reduced in older adults due to previous HPV infections.

Populations of teens with higher HPV immunization coverage in 2020 include:

- Females compared with males. Initial HPV vaccine trials were limited to female participants, resulting in a three-year delay between when males were first offered the vaccine versus females.
- Non-Hispanic Black, multiracial and Hispanic teens compared with non-Hispanic White teens; and
- Teens with health insurance compared with uninsured teens.

Moving Forward

The best time to vaccinate teens is before they are exposed to HPV. However, those who have already been infected with one or more strains of HPV can still get protection against other strains through vaccination.

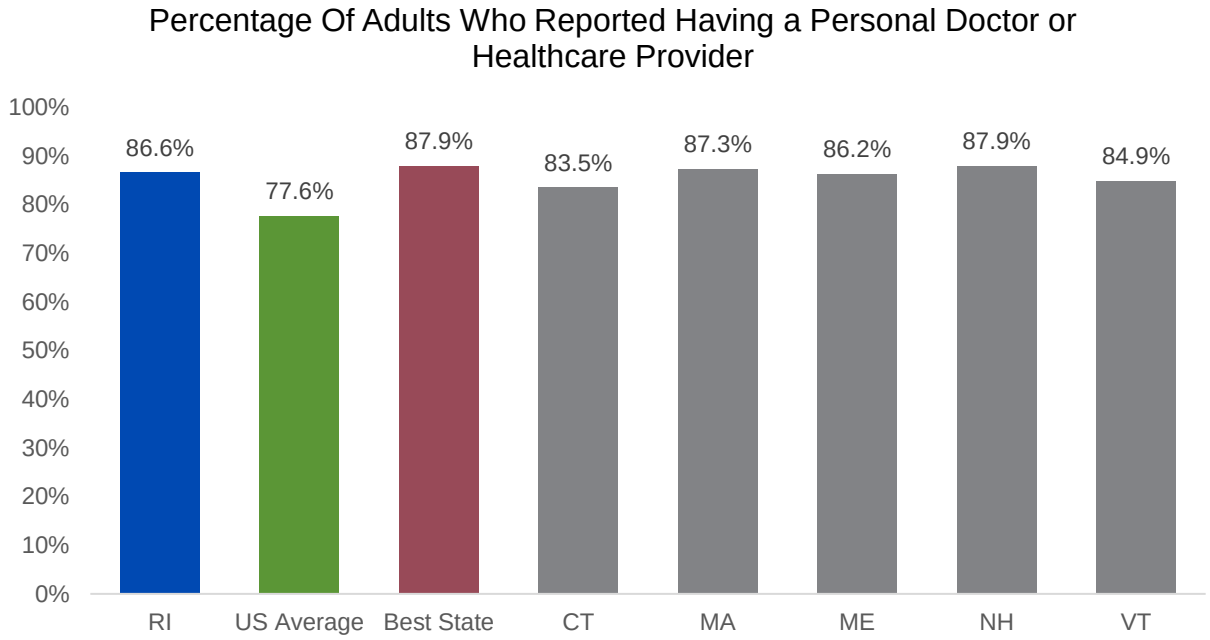
According to recommendations from CDC and the Advisory Committee on Immunization Practices (ACIP), all males and females age 11 or 12 should receive two doses of the HPV vaccine 6-12 months apart to complete the full series. Three doses remain recommended for those who start the vaccination series at or after age 15.

Achieving and maintaining high vaccination coverage is critical to sustaining progress in reducing the impact of vaccine-preventable diseases. CDC immunization programs, such as the VFC Program, support the purchase of vaccines as well as immunization operations at the local, state, and national levels. The *2010 Affordable Care Act* requires health insurance plans to cover preventive services, including immunizations, without charging deductibles, co-payments, or co-insurance. This legislation allows the VFC Program to provide eligible children with access to vaccines at no cost through certain doctors.

Dedicated Healthcare Provider

Definition
Percentage of adults who reported having a personal doctor or healthcare provider

Numbers at a Glance
- **Rhode Island:** 86.6%
- **US Average:** 77.6%
- **Best State:** New Hampshire, 87.9%



Data Source: CDC, 2020 BRFSS

Why It's Important
Individuals with a dedicated healthcare provider are better positioned to receive care that can prevent, detect, and manage disease and other health conditions. Having a regular healthcare provider helps the patient and provider build a stable, long-term relationship that is associated with several benefits, including:
- Appropriate preventive care;
- Lower healthcare costs;
- Better overall health status;
- Fewer emergency room visits for non-urgent or avoidable problems; and
- Improvements in chronic care management for asthma, hypertension, and diabetes.

Who Is Affected
The prevalence of having a dedicated healthcare provider is higher among:

- Females compared with males;
- Adults age 65 or older compared with adults age 18-44;
- White adults compared with all other racial/ethnic groups;
- College graduates compared with those with lower levels of education; the prevalence is significantly higher with each increase in education level; and
- Adults with an annual household income of $75,000 or more compared with those with lower levels of income; the prevalence is significantly higher with each increase in income level.

Moving Forward

Strategies for increasing the percentage of adults with a dedicated healthcare provider include:

- Expand primary care capacity by empowering licensed personnel, including nurse practitioners and physician assistants, to provide more care.
- Enact scope-of-practice laws that enable nurse practitioners to perform more primary care functions. Scope-of-practice laws lead to increases in the number of nurse practitioners per capita and higher yearly growth of the nurse practitioner workforce.
- Reorient healthcare systems to encourage patients to use primary care for new symptoms instead of seeking specialists with low-impact and high-cost procedures, which will also encourage capital investment in primary care.
- Reduce barriers to care such as lack of health insurance, high cost of care, poor geographic availability of services, and lack of culturally competent care.

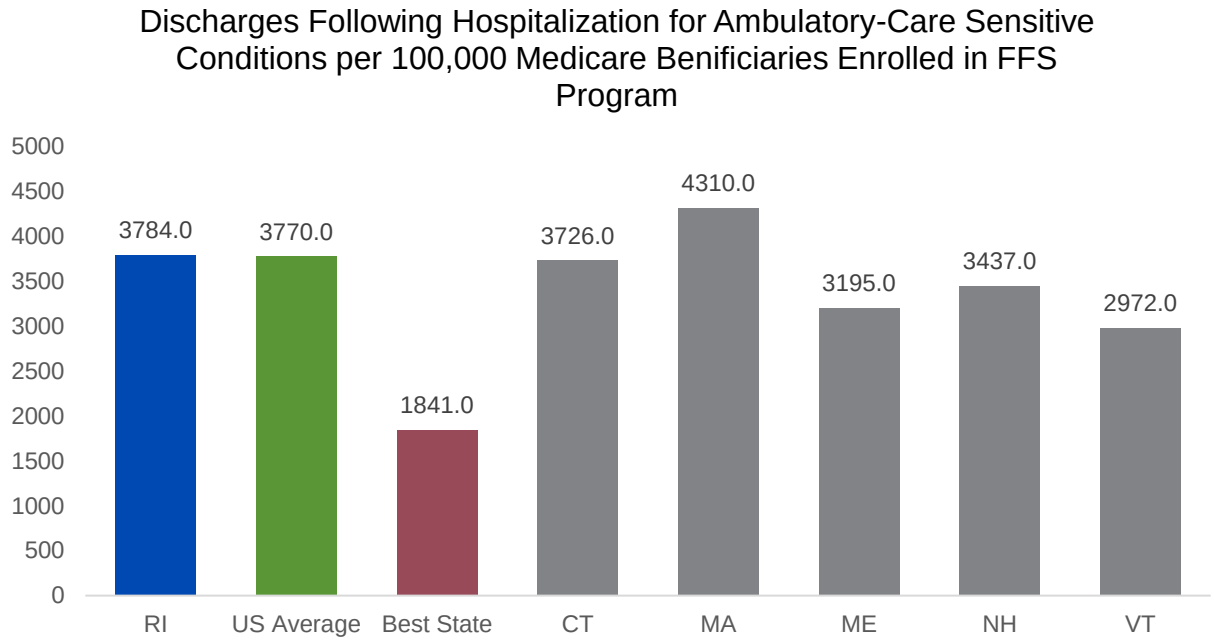
Key Findings from the 2020 Commission for Health Advocacy and Equity Legislative Report

- Hispanic Rhode Islanders were significantly less likely to seek medical care and dental care due to cost compared to White, non-Hispanic Rhode Islanders.
- Among Rhode Island adults with a disability, 19.3% reported not seeking medical care due to cost, and 26.7% reported not seeking dental care due to cost, compared to 7.3% and 9.0%, respectively, among adults without a disability.
- Rhode Islanders with less than a high school education were significantly less likely to seek medical care and dental care due to cost compared to those who attended at least some college.

Preventable Hospitalizations

Definition
Discharges following hospitalization for ambulatory-care sensitive conditions (PQI 90) per 100,000 Medicare beneficiaries age 18 or older enrolled in the fee-for-service (FFS) program

Numbers at a Glance
- **Rhode Island:** 3,784
- **US Average:** 3,770
- **Best State:** Hawaii, 1,841



Data Source: US HHS, CMS, Office of Minority Health, Mapping Medicare Disparities Tool, 2019

Why It's Important
Some hospital admissions related to chronic conditions or acute illnesses can be prevented through adequate management and treatment in outpatient settings. The number of preventable hospitalizations reflects the overuse of the hospital as a primary source of care and the accessibility and quality of primary care for outpatient services.

Preventable hospitalizations place financial burdens on patients, insurance providers, and hospitals. In 2017, $33.7 billion in hospital costs were attributed to preventable hospitalizations, of which the majority were for chronic conditions, such as heart failure, diabetes, and chronic obstructive pulmonary disease.

Who Is Affected
Populations that experience higher rates of preventable hospitalizations include:

- Black adults compared with Asian/Pacific Islander adults;
- Adults age 65 or older, who have a rate of preventable hospitalization more than 12 times that of those age 18-44; and
- Adults from lower income communities compared with those from higher income communities.

Moving Forward
Continuity of outpatient care for acute or chronic conditions can prevent complications, more severe

disease, and need for hospitalization among the general population and specifically, in older adults. A recent study found that Medicaid expansion was associated with a reduction in hospitalizations for ambulatory care conditions.

Physical Environment

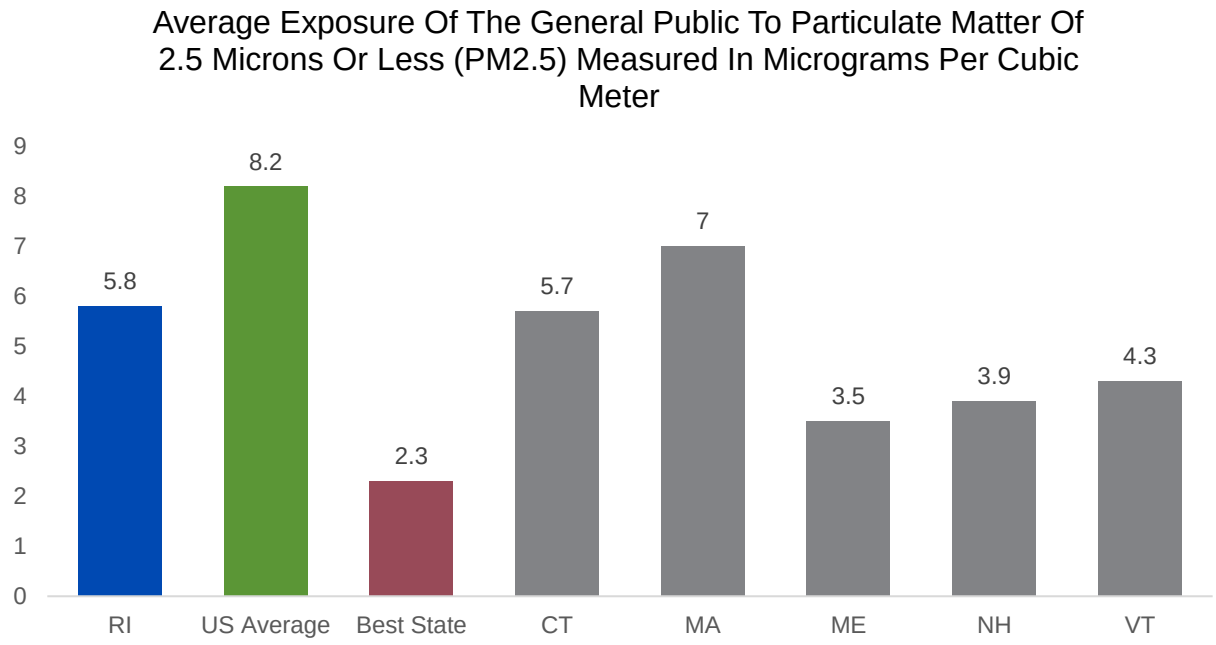
Air Pollution

Definition

Average exposure of the general public to particulate matter of 2.5 microns or less, measured in micrograms per cubic meter

Numbers at a Glance

- **Rhode Island:** 5.8 micrograms per cubic meter
- **US Average:** 8.2 micrograms per cubic meter
- **Best State:** Hawaii, 2.3 micrograms of fine particulate per cubic meter



Data Source: US Environmental Protection Agency (EPA), US Census Bureau, Annual Estimates of the Resident Population,2018-2020

Why It's Important

Air pollution was responsible for 6.7 million early deaths worldwide in 2019, the majority of pollution-related mortality. Large pollutant particles (PM10) in the air can cause irritation and discomfort, while small, fine pollutants (PM2.5) from sources such as auto exhaust, power plants, and smoke from wildfires can penetrate deeply into lung tissue and enter the bloodstream. Exposure to fine particle air pollution has been linked to heart and lung problems, including decreased lung function, asthma, irregular heartbeat, and heart attack.

The environment is also impacted by air pollution, as particles are carried from one area to another. Examples include increasing acidification in lakes and streams and changing nutrient patterns in soil. Fine particle air pollution originating from human activity was responsible for an estimated 107,000 premature deaths in the United States — at a cost of $886 billion to society — in 2011. The US Office of Management and Budget (OMB) found that regulations issued by the EPA limiting air pollution generated between $157 billion and $777 billion (in 2010 dollars) in benefits to the US economy, mainly by reducing the health risks of exposure to fine particulate air pollution.

Who Is Affected

Certain populations are more susceptible to health risks from air pollution:

- Individuals with heart and respiratory conditions tend to experience more severe side effects from pollution.
- Older adults are more likely to be hospitalized because of high levels of air pollution.
- Children are more likely to have complications from air pollution due to developing lungs, high activity levels, and high rates of asthma.
- Particulate pollution is associated with infant mortality and increased NICU admissions.

The following populations are more likely to be exposed to air pollution:

- Adults living in urban areas compared with those living in rural areas;
- Racial and ethnic minorities, particularly those living in neighborhoods with high levels of segregation; and
- Non-White individuals were also found to have been exposed to significantly higher concentrations of nitrous oxide emissions compared with white individuals.

Another study reported neighborhood characteristics such as racial composition and level of residential segregation played a bigger role in explaining individual exposure to air pollution than individual race or income levels.

Moving Forward

The health and environmental benefits of lower air pollution are significant. Studies have shown that decreasing the concentration of fine particulates in the air leads to lower risk of all-cause mortality, lung cancer, and death from cardiovascular disease. The EPA estimates that the *Clean Air Act* prevented an estimated 200,000 heart attacks, 2.4 million asthma attacks and 17 million lost workdays in 2020.

Air quality standards and environmental protection policies have helped reduce air pollution in the last four decades, but pollution remains high in many areas. Actions in recent years have eroded some of the progress made in the past 50 years, with industry consultants replacing scientists on the EPA's advisory groups. This has made it more difficult for scientists to provide expert recommendations to the EPA.

Individuals can reduce their contribution to air pollution by decreasing fossil fuel consumption or participating in local energy conservation programs. Individuals can try to limit their exposure to air pollution by:

- Monitor local air quality at www.AirNow.gov and stay indoors as much as possible on days with poor air quality.
- Avoid long periods of strenuous exercise near busy streets and on days with poor air quality.

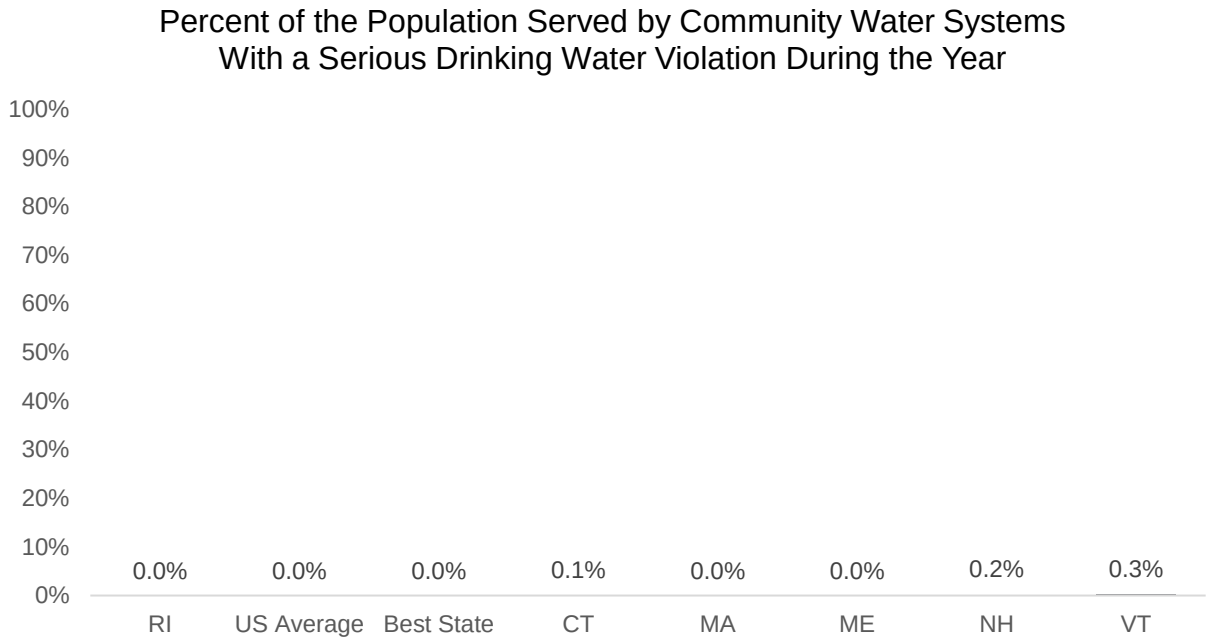
Drinking Water Violations

Definition

Percentage of population served by community water systems with a serious drinking water violation during the year

Numbers at a Glance

- **Rhode Island:** 0%
- **US.Average:** 0%
- **Best States:** California, Delaware, Hawaii, Iowa, Kentucky, Massachusetts, Maryland, Maine, North Carolina, North Dakota, Rhode Island, South Carolina, Utah, 0%



Data Source: US EPA, Enforcement and Compliance History Online, Safe Drinking Water Information System, 2021

Why It's Important

Safe drinking water is important to overall health and may aid in the prevention of certain birth defects, infectious diseases, and premature death. There are more than 148,000 public water systems providing drinking water to Americans. The EPA sets legal limits on more than 90 contaminants in drinking water. Maximum contaminant levels, maximum residual disinfectant levels, and treatment technique rules are all health-based drinking water standards.

Monitoring and enforcing health-based violations is critical to helping states and the EPA protect public health through safe drinking water. An estimated 3-10% of community water systems receive a health-based violation in any given year. The agriculture industry is one of the leading sources of drinking water contamination in America. While pesticides and fertilizers are used in many places, toxic runoff from these pollutants are found at higher readings in rural communities. Water contaminants such as arsenic, lead, and nitrates have been strongly linked to gastrointestinal illnesses, cancer, and neurodevelopmental damage in children.

Who Is Affected

Children,older adults, pregnant women, and people with compromised immune systems are more vulnerable to the damaging health effects of contaminated water. Drinking water violations are higher among:

- Rural areas compared with urban areas;
- Low-income communities compared with higher-income communities;
- Areas with previous violations, known as hot spots, that may struggle with recurring issues; and
- Areas with a higher percentage of racial minority populations.

Moving Forward

The *County Health Rankings and Roadmaps* lists multiple programs and interventions that reduce water pollution, thereby helping to decrease drinking water violations. The EPA provides detailed information on drinking water violations and works with all states to ensure compliance with the *Clean Water Act*. Adopting a water safety plan with one's community offers multiple benefits and has been shown to decrease contamination and improve regulation compliance.

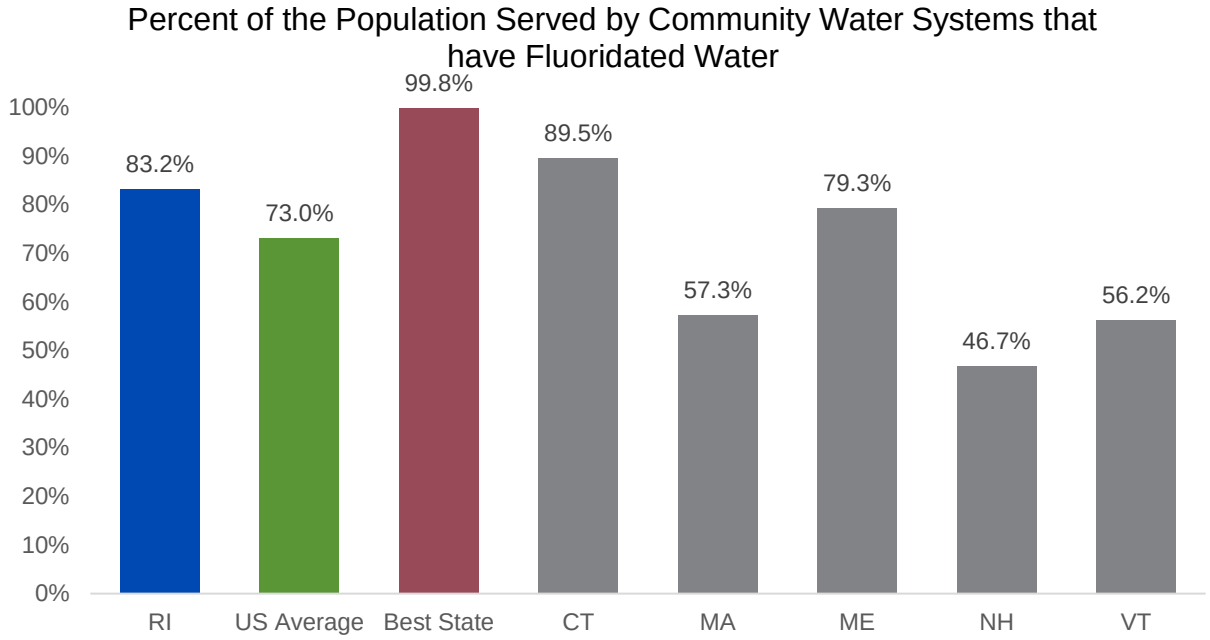
The Environmental Working Group has a tool for checking contaminants in drinking water violations based on ZIP code and recommends the following:

- Use an appropriate filter for different types of contaminants.
- Contact state representatives to take action after requesting and reviewing your water supplier's annual Consumer Confidence Report, which lists levels of contaminants found in the drinking water.

Water Fluoridation

Definition
Percentage of population served by community water systems that have fluoridated water

Numbers at a Glance
- **Rhode Island:** 83.2%
- **US Average:** 73.0%
- **Best State:** Kentucky, 99.8%



Data Source: CDC, 2020 BRFSS

Why It's Important
Community water fluoridation, the addition of an optimal amount of fluoride to a public water supply, effectively prevents tooth decay in children and adults. Fluoride inhibits mineral loss and enhances remineralization in tooth enamel. Tooth decay, also called dental caries, is the result of bacteria dissolving a tooth's enamel. Dental caries is one of the biggest threats to oral health and one of the most common chronic diseases in the United States. Untreated dental caries can lead to pain and bacterial infection.

Children with dental caries have nearly three times the odds of missing school due to dental pain than children with good oral health and, on average, have poorer school performance. Children from low-income families have a higher prevalence of tooth decay, experience more barriers to accessing dental care, and are less likely to have private dental insurance. Community water fluoridation is one of the primary methods of addressing this disparity — it can improve the oral health of large populations without adding time or cost burdens to individuals.

Who Is Affected
Roughly 73% of the US population with public water access in 2018 received water fortified with fluoride to the recommended concentration of 0.7 milligrams per liter. However, those using private wells — an estimated 23 million American households, according to the 2021 US Census American Housing Survey — may not be getting the recommended amount of fluoride and may experience higher

rates of tooth decay or other health concerns than individuals receiving fluoridated water through public water systems. A recent study found that children in low-income families just above the poverty level were less likely to live in a community where at least 75% of the population was served by a fluoridated water source, compared with children in both higher and lower-income groups.

Moving Forward

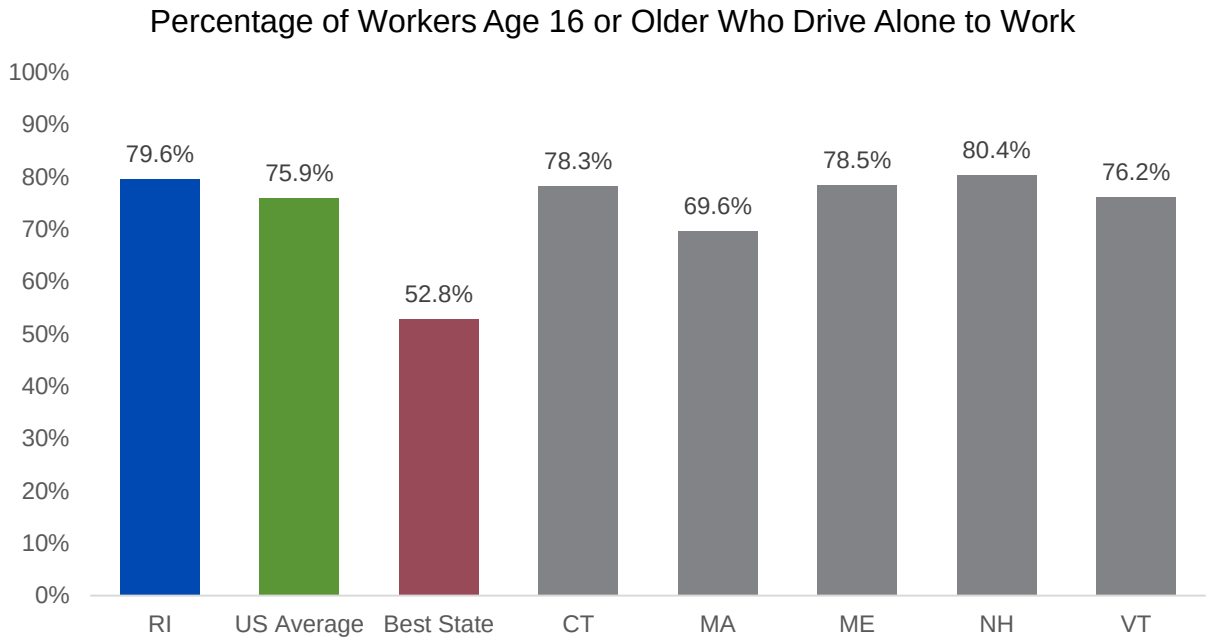
Community water fluoridation is a safe and cost-effective intervention to widely deliver fluoride to all community members, regardless of age, socioeconomic status, and race/ethnicity. The CDC named community water fluoridation one of the 10 Great Public Health Achievements of the 20th century.

Community water fluoridation saves money for both individuals and communities. The return on investment varies by community size, but even small communities experience economic benefits. Estimates suggest that community water fluoridation saved an average of $32.19 per person in 2013. Among children, water fluoridation is effective at reducing the prevalence of tooth decay. One community found that ceasing community water fluoridation led to a 51% increase in dental caries among young children up to age six.

Drive Alone to Work

Definition
Percentage of workers age 16 or older who drive alone to work

Numbers at a Glance
- **Rhode Island:** 79.6%
- **US Average:** 75.9%
- **Best State:** New York, 52.8%



Data Source: US Census Bureau, American Community Survey (2019)

Why It's Important
Commuting is a daily necessity for many people and driving alone is by far the most common mode of transportation to work. There are environmental and individual health concerns associated with daily driving; driving alone to work involves extended periods of social isolation and physical inactivity, and more motor vehicles on the road means more air pollution, noise pollution, and transportation congestion. Congestion, a common occurrence in large cities, creates concentrated areas of air and noise pollution, which disproportionately affect those with lower socioeconomic status. Long commutes can also increase the risk of high blood pressure, obesity, and physical inactivity.

Who Is Affected
The prevalence of driving alone to work is higher among men compared with women. Other populations that spend more time driving include:
- Adults age 25-74 compared with younger and older adults;
- White adults compared with those in other racial/ethnic groups;
- Adults with a college degree or some college education compared with those with less than a high school education;
- Married couples or cohabitating partners compared with adults who are widowed, divorced, or separated, or who never married;

- Adults living in the Midwest, South, and West regions compared with those in the Northeast; and
- Adults living in rural areas compared with those living in urban areas. Moreover, the shift from driving to biking or using public transit is occurring more in cities than rural areas.

Moving Forward

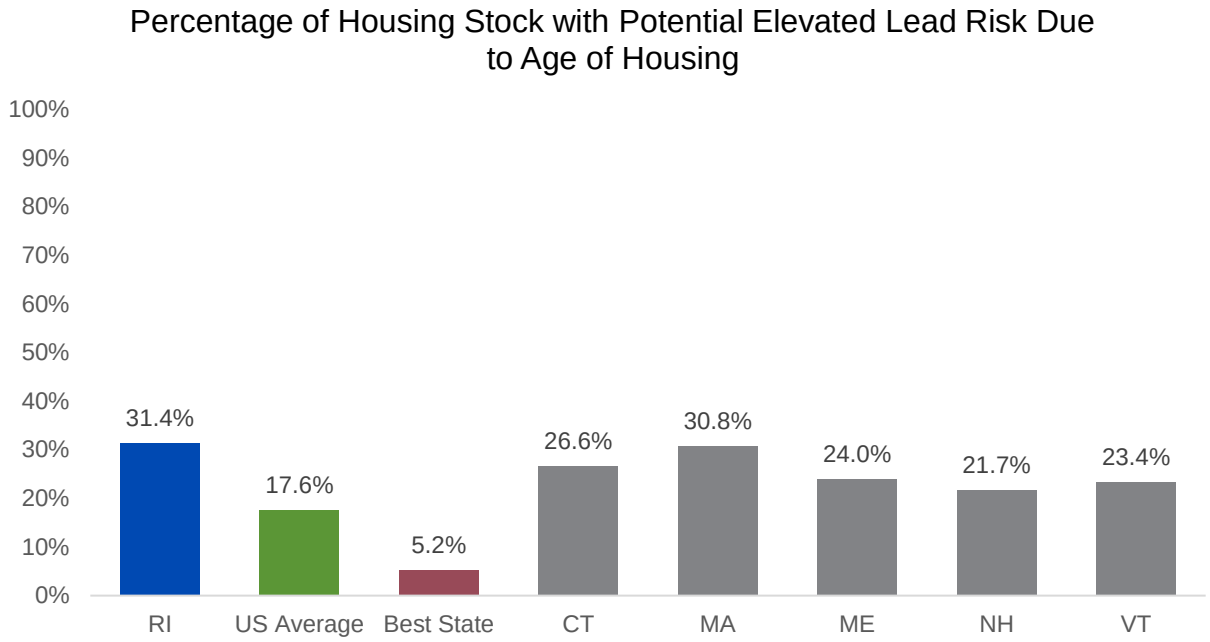
Strategies to promote modes of transportation other than driving, particularly driving alone, include:

- Increase flexibility to work from home.
- Ensure city planning that balances geographic distribution of places of employment.
- Build pedestrian and cycling-friendly infrastructure.
- Increase access and reduce the distance to public transportation.

Housing with Lead Risk

Definition
Percentage of housing stock with potentially elevated lead risk due to age of housing

Numbers at a Glance
- **Rhode Island:** 31.4%
- **US Average:** 17.6%
- **Best State:** Nevada, 5.2%



Data Source: US Census Bureau, American Community Survey (2019)

Why It's Important
Lead, a naturally occurring heavy metal, is highly toxic in large amounts, especially to young children and pregnant women. Once lead enters the bloodstream, it can mimic calcium and zinc and disrupt every organ system in the body. Lead exposure can occur through inhalation, ingestion, or skin contact and is found in many places, including in older homes, some water pipes, and soil.

There is no known safe level of lead exposure; in 2021, the CDC lowered the blood lead reference value — the threshold for identifying unsafe levels of lead in the blood — to 3.5 µg/dL. Blood lead levels of concern (above 10 µg/dL) are detrimental to neurological and physical development and can cause lasting negative health outcomes in children, including reduced intelligence, impaired hearing, and reduced stature. Even lower levels, below 10 µg/dL in children, have shown adverse health effects on intellectual function, attention-related behaviors, and academic and cognitive skills. High blood lead levels during pregnancy can be passed onto the developing fetus, which may cause miscarriages, low birthweight infants, preterm births, and other congenital disabilities.

Housing built before 1978 carries an elevated risk for lead exposure, and housing built before 1950 has the highest risk of lead exposure. Due to a ban on lead-based paint in 1978, housing built after this year carries minimal risk. The Department of Housing and Urban Development (HUD) estimates that 89% of homes built before 1978 had lead-based paint, accounting for the majority of the 34.6 million American homes that have lead paint in them as of 2018-2019. A study of young children age six months to two

years found that interior renovation of older homes — which often includes painting, sanding, scraping, or other activities that might release lead dust into the air — further increased risk of lead poisoning. More than three million homes with children younger than six had one or more lead-based paint hazards in 2021, 2.1 million of which were low-income households. Investing in lead paint hazard control for communities at high risk could provide a return of $17-$221 in societal and health costs for each $1 spent.

Who Is Affected

Populations most vulnerable to environmental lead exposure include:

- Young children younger than six, who tend to put their hands on objects that may be contaminated with lead dust;
- Low-income households compared with higher-income households. Among low-income households, those without government housing assistance have a higher prevalence of lead-based paint hazards than those receiving housing assistance.
- Those who live in the Northeast and Midwest regions, where the housing tends to be older and has significantly higher levels of lead-based paint and lead-based paint hazards.

Moving Forward

Strategies to reduce the negative consequences of lead exposure include:

- Reduce lead hazards (or permanently eliminate them through lead abatement) in homes with children before occupancy. Because the adverse health effects of lead exposure are permanent, primary prevention is the only effective way to prevent lead toxicity in children.
- Provide lead exposure education for parents of young children during routine check-ups. This education covers the basics regarding lead exposure risk, including keeping children away from peeling paint and frequently washing hands, toys, and other items children place in or near their mouths.
- Screen children at 12 months and at 24 months via blood lead test based on their risk level. While federal law mandates screening for all children covered by Medicaid, universal screening is no longer recommended by the CDC. States are instead encouraged to develop their own screening guidelines based on state-specific data.

Other strategies such as removing lead from drinking water pipelines, eliminating lead from airplane fuel, and increasing compliance with the EPA's lead-safe initiative could reduce lead exposure and save on future healthcare costs. Moreover, the Association of Maternal and Child Health Programs maintains a Lead Poisoning Prevention Toolkit for agencies working to prevent lead exposure.

Key Findings from the 2020 Commission for Health Advocacy and Equity Legislative Report

- Providence, Pawtucket, and Cranston had the highest number of children who were lead poisoned.
- Warren, Providence, and Central Falls had the highest percentages of children who were lead poisoned.

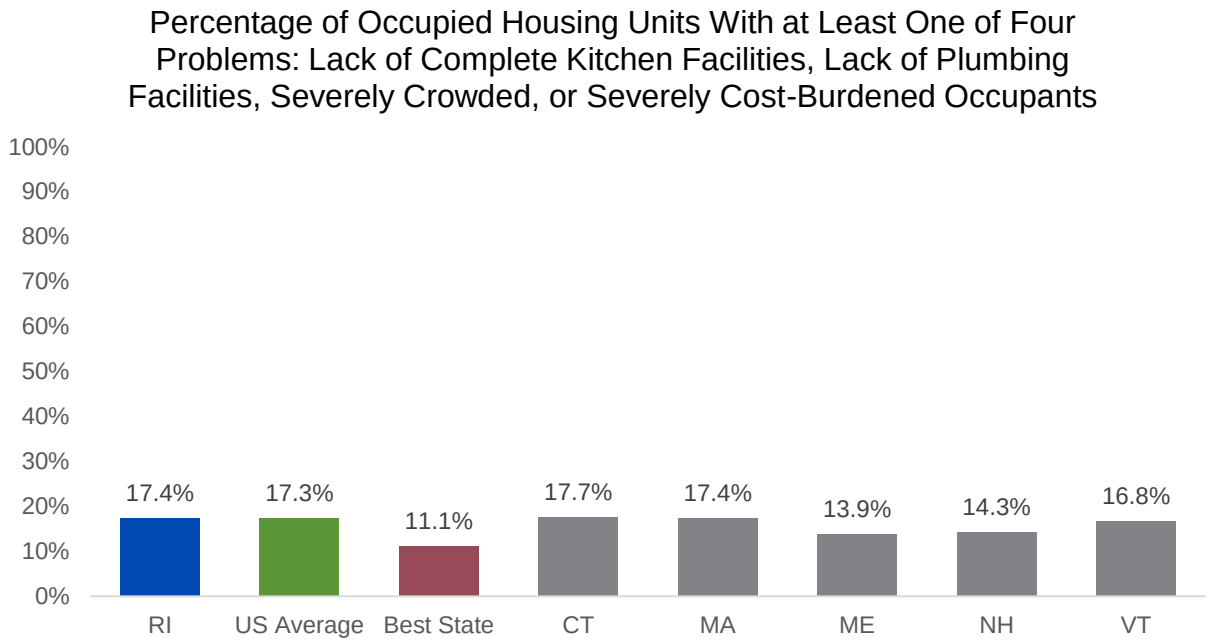
Severe Housing Problems

Definition

Percentage of occupied housing units with at least one of four problems: lack of complete kitchen facilities, lack of plumbing facilities, severely crowded, or severely cost-burdened occupants

Numbers at a Glance

- **Rhode Island:** 17.4%
- **US Average:** 17.3%
- **Best State:** West Virginia, 11.1%



Data Source: HUD, Comprehensive Housing Affordability Strategy, 2014-2018

Why It's Important

Housing influences health and well-being. Those lacking at least one basic household necessity (bathtub/shower, sink with faucet, stove, or refrigerator) have higher rates of being uninsured. Poor quality of housing can cause disease and injury and affect childhood development, while other housing-related factors such as neighborhood environment and overcrowding can lead to mental and physical health problems.

Housing-related factors and their associated health consequences include, but are not limited to:

- Affordability: Cost-burdened families may have difficulty affording other basic needs such as healthcare, food, and heat. Individuals who had difficulty affording housing were more likely to report fair or poor health, certain chronic conditions, and non-adherence to prescriptions due to cost. Housing has become less affordable over time as rental costs have increased more quickly than incomes. Between 2001 and 2019, median rent increased by 15%, but median renter household income increased only 3.4% during the same period. This finding underscores the continued importance of federal and local housing subsidies. More than 10 million renters were severely cost-burdened in 2018, paying more than 50% of their income toward rent.
- Hazards: Hazards in the home (such as lead paint; allergens; water leaks; poor ventilation; and inadequate heating, cooling, or plumbing) are associated with poor respiratory health and

disease, increased risk of cardiovascular conditions, and developmental delays in children.
- Overcrowding: Overcrowding is defined as having more than one person per room in a residence. It is associated with an increased risk of poor mental health and physical illnesses, such as tuberculosis and other infectious diseases.

Who Is Affected

While anyone may live in a home with conditions that threaten health, those with a greater risk of experiencing housing-related health conditions include:

- Low-income families and individuals;
- Racial/ethnic minorities;
- Renters; and
- Children and older adults.

Moving Forward

Evidence supports various interventions to prevent and minimize the impact of housing problems on health. Healthy Homes programs at state and local levels have been found to improve health by remedying unhealthy housing conditions, such as lead hazards, inadequate ventilation, and excess moisture.

Increasing affordable housing options through local and national housing development policies, rental vouchers, and subsidized housing programs can help cost-burdened individuals afford housing. More collaboration between the housing and health sectors is needed to promote healthy home environments and to better integrate healthcare into the housing systems — particularly for those with chronic health needs. The National Low Income Housing Coalition offers additional resources and policy recommendations related to housing challenges.

Key Findings from the 2020 Commission for Health Advocacy and Equity Legislative Report

- Compared to other cities and towns in Rhode Island, West Greenwich, Scituate, and Little Compton have the lowest availability of low to moderate-income housing relative to the estimated number of income-eligible households.
- No community in Rhode Island has enough low to moderate-income housing units relative to the estimated number of income-eligible households, and most communities have less than one low to moderate-income housing unit for every five income-eligible households.
- Central Falls, Providence, New Shoreham, and Pawtucket had the highest percentages of cost-burdened renters and owners.
- More than 24% of renters and owners are cost burdened in all municipalities in Rhode Island.
- Rhode Island’s core cities – Providence, Pawtucket, Central Falls, and Woonsocket – are four of the top five municipalities with the greatest housing cost burden.

Social and Economic Factors

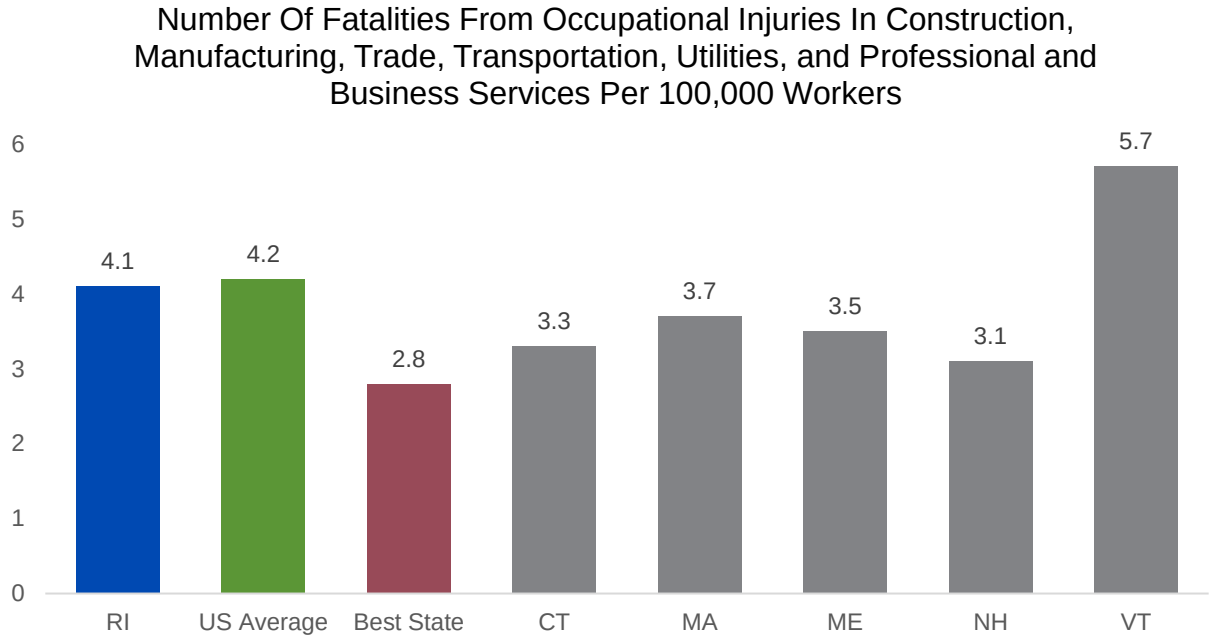
Occupational Fatalities

Definition

Number of fatal occupational injuries in construction, manufacturing, trade, transportation, and utility industries as well as professional and business services per 100,000 workers (three-year estimate)

Numbers at a Glance

- **Rhode Island:** 4.1 per 100,000
- **US Average:** 4.2 per 100,000
- **Best State:** New York, 2.8 per 100,000



Data Source: US Bureau of Labor Statistics, Census of Fatal Occupational Injuries, 2017-2019

Why It's Important

Occupational fatalities, also known as workplace fatalities, represent unsafe working conditions and personal risks faced by workers. In 2020, there were 4,764 fatal workplace injuries in the United States — a 10.7% decrease since 2019. Transportation incidents accounted for the majority of fatalities (37.3%). In 2020, fishing and hunting occupations had the highest rates of workplace fatalities, followed by logging and roofing.

Costs related to workplace injury and death were estimated at $163.9 billion in 2020, including workers' compensation, administrative expenses, wage and productivity losses, medical fees, and damages to company property.

Who Is Affected

Populations of workers who experience higher workplace fatalities include:

- Men compared with women;
- Hispanic or Latino workers compared with workers of other racial/ethnic groups. This may be due, in part, to large percentages of Hispanic or Latino adults working high-risk jobs (jobs with high fatal injury rates). The construction industry has one of the highest fatal injury rates, and the majority of the construction workforce is Hispanic/Latino.
- Adults age 65 or older compared with younger adults.

Moving Forward

Workplace fatalities are largely preventable, making them an important target for interventions. Improvements to workplace safety were lauded as one of the greatest public health achievements of the 20th century.

Strategies for preventing workplace injuries and fatalities include:

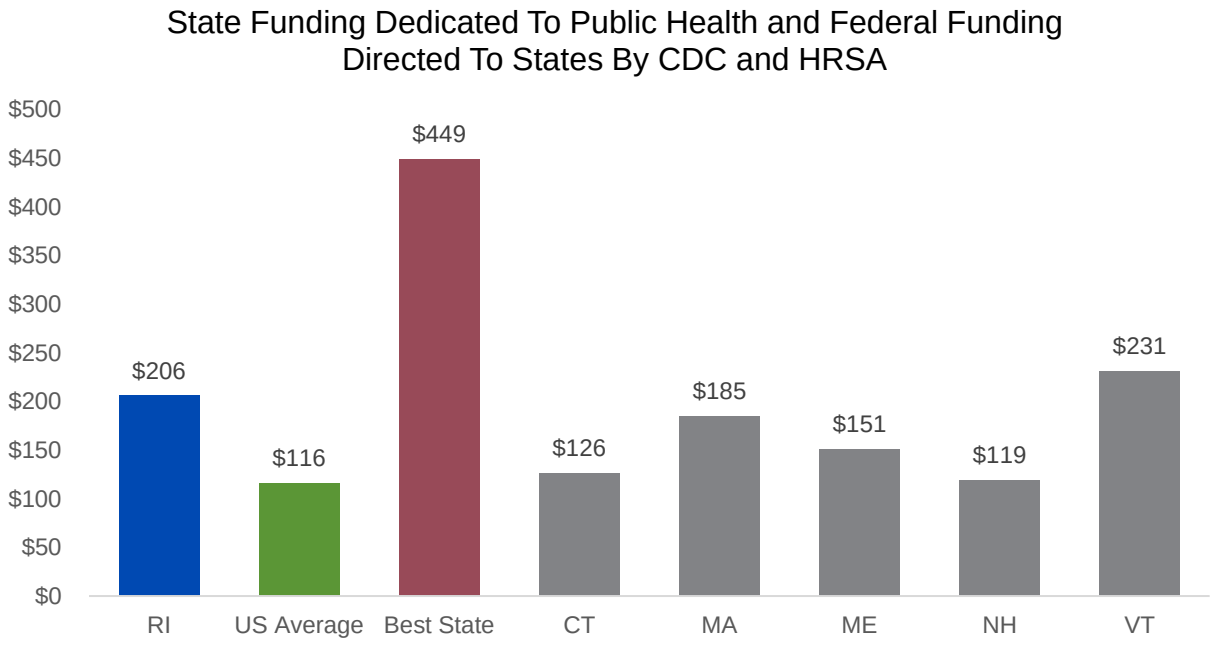
- Increase safety precautions and regulatory oversight.
- Encourage employers to continuously identify, evaluate, and minimize dangerous conditions.
- Provide high-visibility apparel to all workers in highway construction zones.
- Provide personal protective equipment, ladders, and information about safe lifting techniques to prevent fatal falls.
- Allow workers to unionize. A decline in unions in recent years due, in part, to right-to-work laws is associated with an increase in occupational fatalities in one study.

Moreover, the Occupational Safety and Health Administration (OSHA) provides various training materials for employers to prevent workplace fatalities.

Public Health Funding

Definition
State dollars dedicated to public health per person (including federal grants directed to states from the CDC and HRSA (two-year estimate)

Numbers at a Glance
- **Rhode Island:** $206 per person
- **US Average:** $116 per person
- **Best State:** Alaska, $449 per person



Data Source: CDC, HRSA, Trust for America's Health, 2019-2020

Why It's Important
Public health systems keep Americans safe and healthy through prevention, preparedness, and surveillance programs and serve as the first line of defense against epidemics. Increased spending on public health programs is associated with a decrease in mortality from preventable causes such as cardiovascular disease, diabetes, stroke, and cancer.

Public health program spending represents just around 10% of all healthcare spending in most countries, yet its impact can be substantial. An investment of $10 per person, per year in evidence-based community health programs could save the United States more than $16 billion annually. That is a potential savings of $5.60 for every $1 invested. The public health response to the COVID-19 pandemic was weakened by chronic underfunding of these systems at state and national levels.

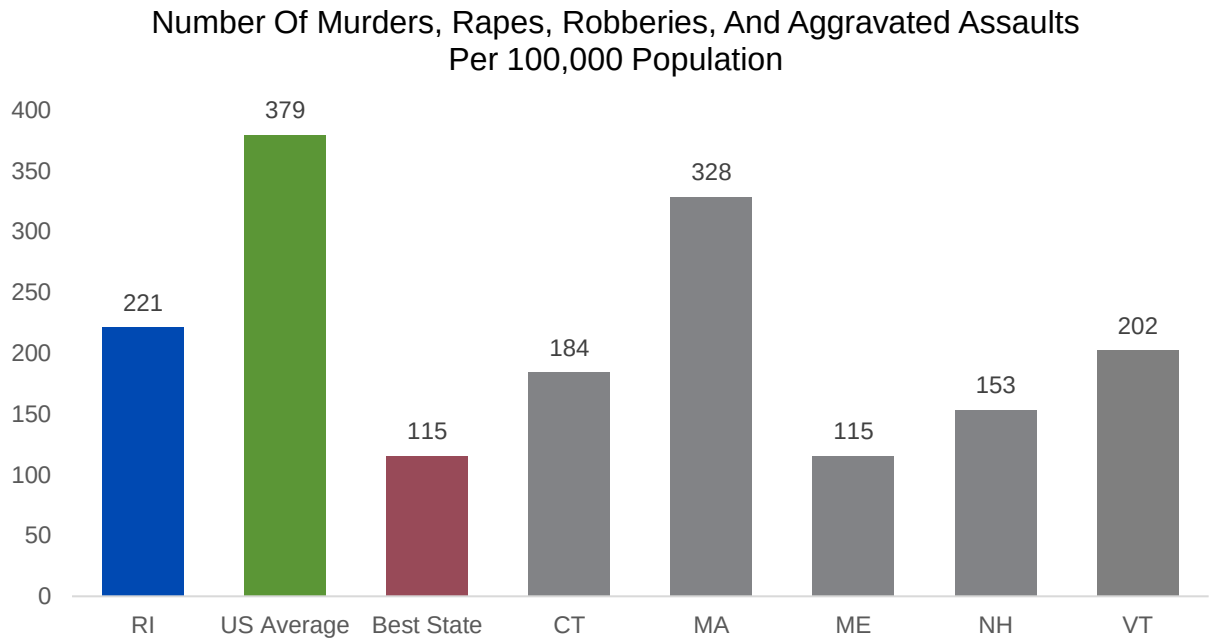
Moving Forward
The Prevention and Public Health Fund was established by the *Affordable Care Act* to expand and sustain national investments in evidence-based strategies to improve health outcomes and healthcare quality. The Prevention Fund supports $856 million in grants for public health programs throughout the US, including efforts to prevent infectious diseases such as measles and influenza and chronic diseases like diabetes and heart disease.

The effectiveness of a public health intervention, in part, depends on the resources of the community receiving the intervention. Studies have found that public health interventions focusing on behavior change are more successful in populations with high socioeconomic status, while those with low socioeconomic status or other disadvantages tend to benefit less from these interventions. Adopting a social determinants of health view of public health, which focuses on the conditions in which people live, work and play, is essential to improving health and reducing health disparities.

Violent Crimes

Definition
Number of murders, rapes, robberies, and aggravated assaults per 100,000 population

Numbers at a Glance
- **Rhode Island:** 221 per 100,000 population
- **US Average:** 379 per 100,000 population
- **Best State:** Maine, 115 per 100,000 population



Data Source: Federal Bureau of Investigation (FBI), Uniform Crime Reporting Program, 2019

Why It's Important
Families, neighborhoods, and communities are all affected when violent crime occurs. Violent crimes cause social and emotional harm and physical injury and can lead to disability, premature death, depression, anxiety, and post-traumatic stress disorder. High rates of violent crime are associated with less physical activity. When personal safety is threatened, individuals are less likely to choose to walk or bike to their destination, regardless of neighborhood income levels.

Rates of gender-based violence have increased through the years. One in four women and one in 10 men report having been impacted by sexual violence, physical violence, and/or stalking by an intimate partner. Gender-based violence also contributes to increased costs to the economy, including costs related to healthcare, criminal justice, and lost productivity.

Violent crimes place a financial burden on hospitals and healthcare systems. A 2010 study estimated the overall economic burden of violent crime at approximately $65 billion in lost productivity and $6 billion in direct medical costs. For victims of violent crime, the toll is even higher, averaging $450 billion annually. Researchers estimate the following per-offense total costs: $9 million per homicide, $241,000 per rape/sexual assault, $107,000 per aggravated assault, and $42,000 per robbery (in 2008 dollars).

Who Is Affected

According to the Bureau of Justice Statistics, populations that experienced higher rates of violent crime victimization (excluding homicide) in 2020 include:

- People age 12 and older of other minority races, including American Indian/Alaska Native and multiracial persons;
- Those age 18-34 compared with other age groups; adults ages 65 and older had the lowest rate.

Those with a martial status of separated; widowed persons had the lowest rate.

Moving Forward

Violence prevention has been a priority among health officials for decades, during which time a number of intervention programs have been developed. Strategies to address violent crime may require a thorough investigation of its root causes to determine the best route of intervention. Resources include:

- The National Institute of Justice's database of evidence-based programs and practices for violent crime prevention;
- *The Community Guide*, which evaluates interventions and recommends those with demonstrated effectiveness in violence prevention, particularly for children and youth; and
- Cure Violence, which applies an epidemiological approach of disease outbreaks to violence and has proven effective in several communities.

Key Findings from the 2020 Commission for Health Advocacy and Equity Legislative Report

- Central Falls, Woonsocket, and Providence had the highest violent crime rates.
- Newport, Providence, Pawtucket, and Woonsocket had the highest non-violent crime rates.

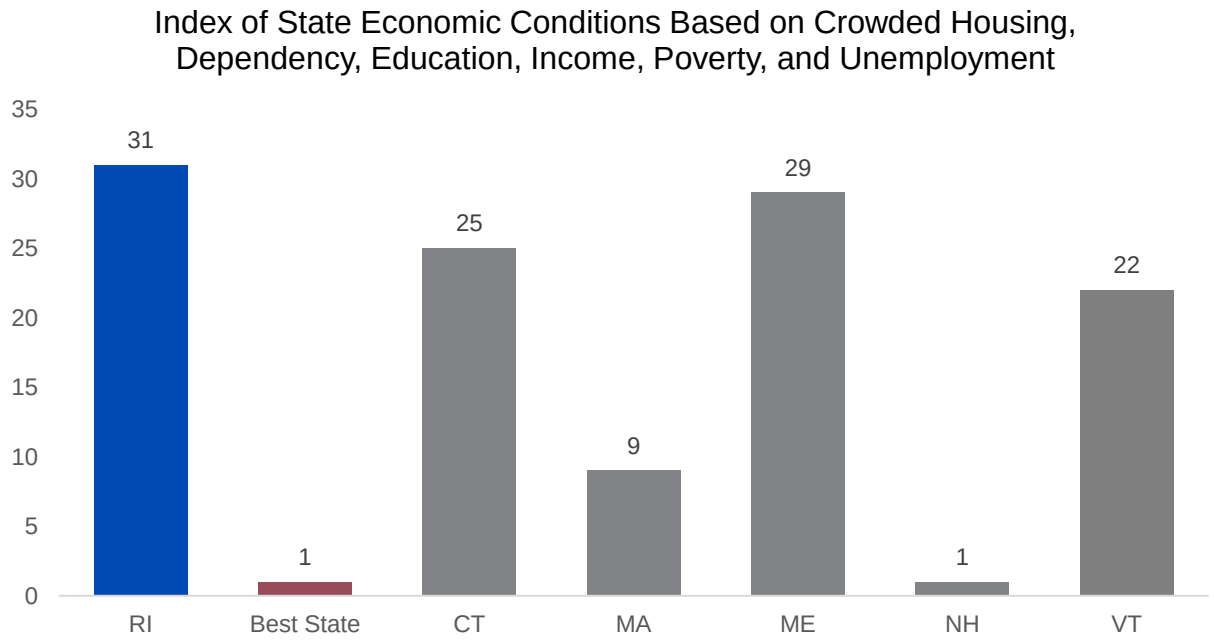
Economic Hardship Index

Definition

Index of state economic conditions based on crowded housing, dependency, education, income, poverty, and unemployment; normalized values are 1 to 100, with a higher value indicating worse economic conditions

Numbers at a Glance

- **Rhode Island:** 31
- **US Average:** N/A
- **Best State:** New Hampshire, 1



Data Source: US Census Bureau, American Community Survey, 2019

Why It's Important

The economic hardship index compares economic conditions between communities. The measure combines six population-level social and economic measures, providing a more comprehensive picture of the difficulties faced in a community than a single measure could provide. The measures include:

- Unemployment: The proportion of the population, age 16 to 64, that are unemployed; Unemployment places financial stress on individuals and their family leading to community-wide impacts.
- Dependency: The proportion of the population, younger than 18 or older than 64; While having dependents can be a positive experience, there are also hardships associated with caring for them. Raising a child from birth to 17 costs, on average, more than $233,000 and taking care of an aging parent can cost approximately $7,200 annually.
- Education: The proportion of the population, age 25 or older, without a high school degree; More education leads to better job prospects and higher income, though this can vary by other factors such as industry and geography.
- Per capita income: The community's per capita income is the average of the total income of a group divided by all the groups' members (e.g., every man, woman, and child). It is a measure

that represents the relative wealth of the community.
- Crowded housing: The proportion of housing units with more than one person per room; Housing with multiple occupants per room can negatively impact well-being and relationships, particularly for children.
- Poverty: The proportion of the population that is below the poverty level; There is strong evidence linking poverty with adverse health outcomes.

A high score on the economic hardship index is associated with lower life expectancy. Lower incomes can lead to chronic stress. This stress contributes to poor health through decreased life expectancy, educational attainment, and social mobility; it also contributes to increases in mental illness, obesity, infant mortality, teenage births, homicides, and imprisonment.

Who Is Affected

Economic hardship and its indicators tend to be distributed geographically, reflecting pockets of hardship and the contrasting areas of concentrated wealth. American Indian/Alaska Native, Black, and Hispanic adults are disproportionately affected by economic hardship. The effects of structural racism are evident in the higher rates of poverty, unemployment, crowded housing, and lower per capita income among racial and ethnic minority groups.

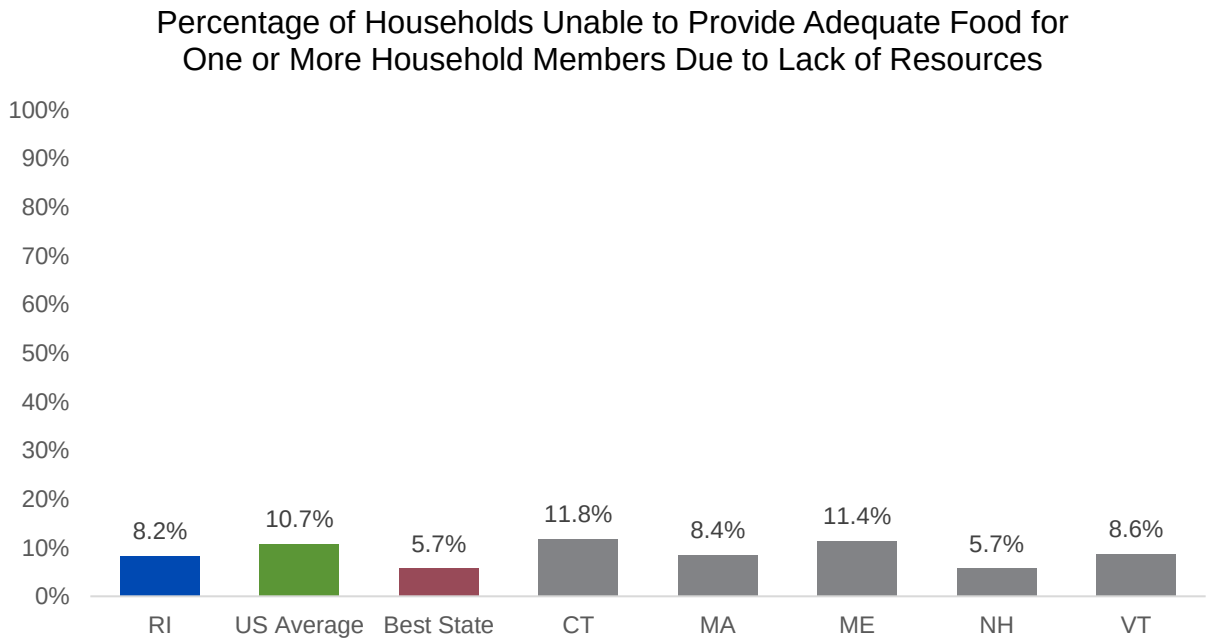
Moving Forward

The economic hardship index is sensitive to interventions that affect any of the six underlying components. Unemployment, education, housing, and poverty can all be improved through targeted interventions.

Food Insecurity

Definition
Percentage of households unable to provide adequate food for one or more household members due to lack of resources

Numbers at a Glance
- **Rhode Island:** 8.2%
- **US Average:** 10.7%
- **Best State:** New Hampshire, 5.7%



Data Source: USDA, Household Food Security in the United States Report, 2018-2020

Why It's Important
Food insecurity is an economic and social condition where one's regular access to food is limited or uncertain. It differs from hunger in that hunger is a physiological feeling. Food insecurity is a complex problem and does not exist in isolation for low-income families. Many food-insecure families also struggle with issues like disadvantages resulting from structural racism, lack of affordable housing, high medical costs and low wages. The COVID-19 pandemic has also exacerbated food insecurity.
Food insecurity has broad effects on health due to the mental and physical stress it places on the body. Children are particularly susceptible to the negative impacts of food insecurity because their brains and bodies are still developing. Among children, food insecurity is associated with anemia, asthma, depression and anxiety, cognitive and behavioral problems and a higher risk of being hospitalized. Health-related costs attributed to hunger were conservatively estimated at $160 billion nationally in 2014. Adding in lost economic productivity, education costs (such as special education support and costs of school dropout) and charity to combat hunger brings the total to $178.9 billion. A Centers for Disease Control and Prevention (CDC) study found that food insecure adults had annual health care expenditures $1,834 higher than food secure adults.

Who Is Affected
The prevalence of food insecurity is higher among:
- Non-Hispanic Black and Hispanic households, in which the prevalence of food insecurity is

more than 2 times higher than in non-Hispanic white households.
- Lower-income households (i.e., those below 185% of the poverty threshold) compared with higher-income households.
- Households with children, particularly children ages 0-5, compared with households without children.
- Households headed by a single adult, particularly a single woman, compared with households with multiple adults.

Moving Forward

Programs that have been effective at reducing food insecurity by providing either cash or food assistance to those in need include:

- The Supplemental Nutrition Assistance Program (SNAP) SNAP lifted 3.4 million people out of poverty in 2017. Despite this success, it is estimated that 27% of food-insecure individuals live in a household that does not qualify for SNAP. Households that lose SNAP benefits due to an increase in income have a higher prevalence of household food insecurity.
- The Special Supplemental Nutrition Program for Women, Infants and Children (WIC) provides food and nutritional support for children and pregnant and postpartum women.
- The National School Lunch Program (NSLP) and School Breakfast Program (SBP) provides free or low-cost meals to students at school. These programs have been shown to reduce food insecurity, improve the quality of students' diets, and improve school performance.
- Local food banks provide free food to those in need.

In 2021, the American Rescue Plan temporarily expanded the Child Tax Credit, resulting in direct payments of $250-$300 per month to families who qualified. Research indicates that the initial payments from this tax credit reduced food insufficiency among low-income households with children.

Key Findings from the 2020 Commission for Health Advocacy and Equity Legislative Report

- Richmond, Woonsocket, and West Greenwich had the highest percentages of income-eligible individuals enrolled in SNAP.
- Rhode Island's core cities - Providence, Central Falls, Pawtucket, and Woonsocket - are in the top 11 of Rhode Island's 39 municipalities for the percent of income-eligible people enrolled in SNAP.

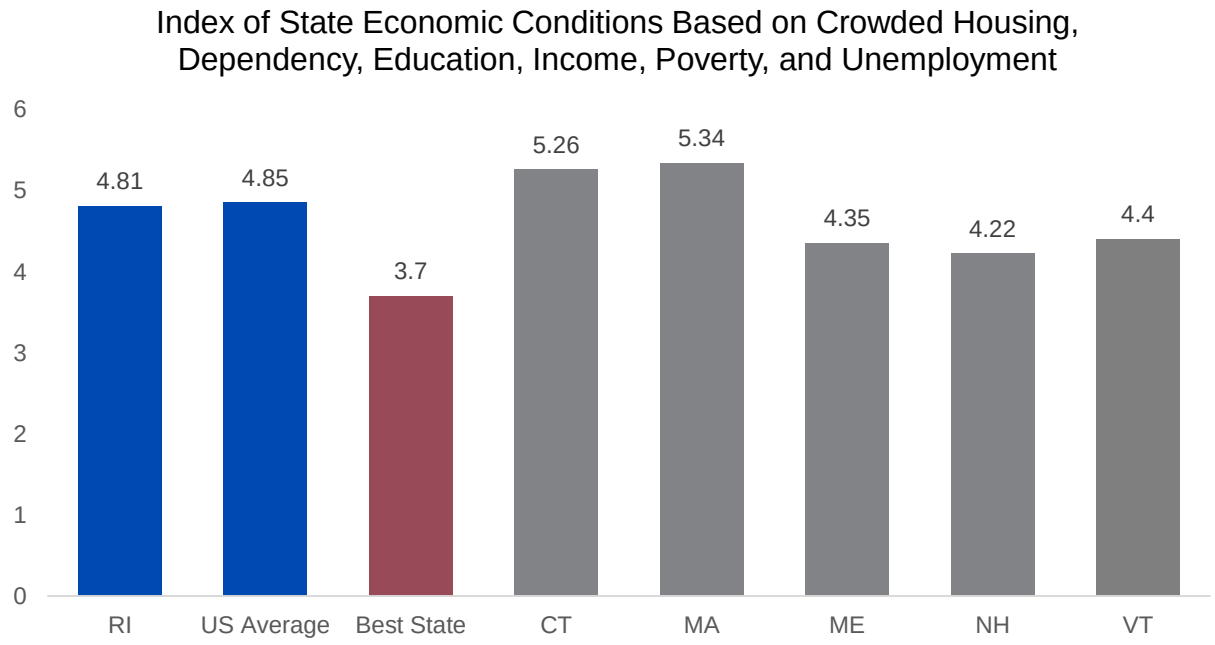
Income Inequality

Definition

Ratio of median household income at the 80th percentile to median household income at the 20th percentile

Numbers at a Glance

- **Rhode Island:** 4.81
- **US Average:** 4.85
- **Best State:** Utah, 3.70



Data Source: US Census Bureau, American Community Survey, 2019

Why It's Important

Research demonstrates an association between greater income disparity and worse population health in developed nations. Income inequality creates chronic social stress and social sensitivity among populations affected by low income and low social status. This stress can contribute to poorer health through decreased life expectancy, educational attainment, and social mobility, as well as increased rates of mental illness, obesity, infant mortality, teenage births, homicide, and imprisonment. Income inequality has increased in the past 50 years in the United States, with the top 20% of earners receiving more than half of all US income in 2021.

Income inequality is detrimental to the economy, according to a 2014 report from Standard and Poor's Ratings Services. The US income inequality level is diminishing gross domestic product (GDP) growth and, if left unchecked, is estimated to continue reducing long-term economic growth.
The income inequality ratio, sometimes called the S80/S20 or quintile ratio, is the ratio of the average income of the top 20% (richest) to the bottom 20% (poorest) in a population. A high ratio indicates greater income inequality and a ratio of 1 would indicate total income equality. This ratio is one of the measures of income inequality used by the Organization of Economic Cooperation and Development (OECD) to track and compare human development worldwide.

Who Is Affected

Income inequality affects society as a whole. However, those with the lowest income suffer the most. Populations more affected by income inequality include:

- Black adults, who consistently have the lowest median income compared with Asian, non-Hispanic White and Hispanic households;
- Women compared with men; A recent study of 2018 census data found that women earn 82 cents for every $1 earned by men. This gender pay gap is even wider for women of color.
- Adults with low educational attainment; Lower educational attainment is associated with worse jobs and lower earnings compared with higher educational attainment.

Moving Forward

Investing in education is an effective strategy to reduce income disparity. Standard and Poor's Rating Services estimated a 2.4% increase in GDP (equivalent to $525 billion) over five years if the American workforce were to complete one more year of school on average. Redistributive tax policies, reducing income inequality before tax, and expanding the earned income tax credit are other suggested strategies available to policymakers to tackle income disparity. The Peterson Institute for International Economics (PIIE) offers additional solutions by inequality experts for reducing income inequality, which include expanding tax policies, improving access to education and child care, and increasing the federal minimum wage.

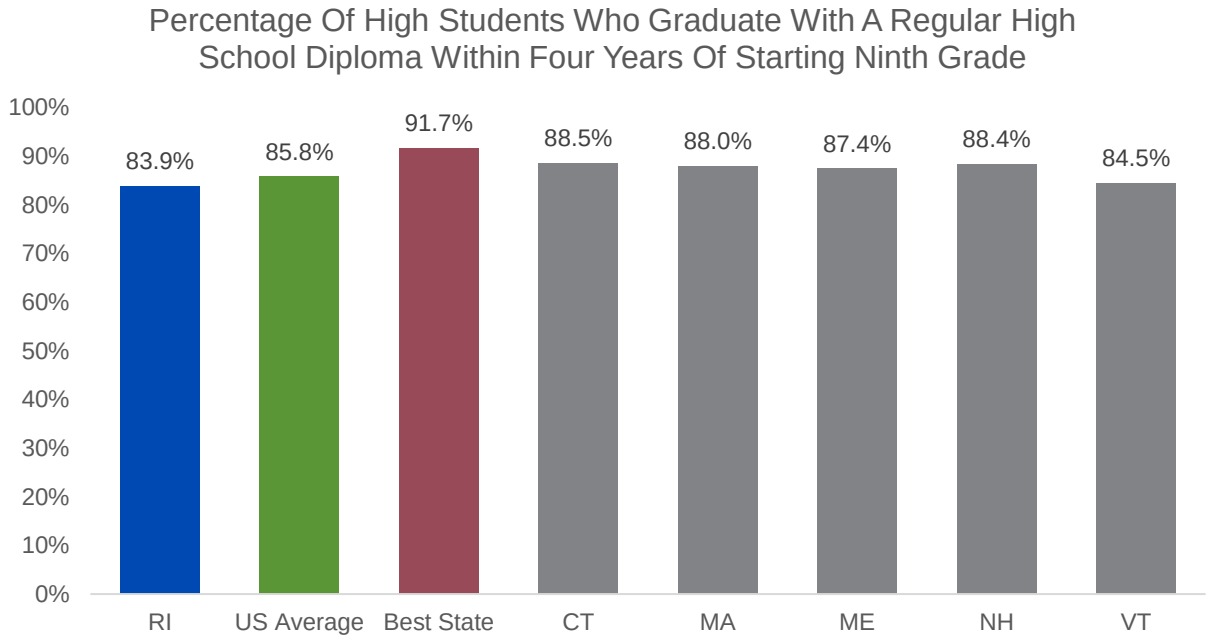
High School Graduation

Definition

Percentage of high school students graduating with a regular high school diploma within four years of starting ninth grade

Numbers at a Glance

- **Rhode Island:** 83.9%
- **US Average:** 85.8%
- **Best State:** Alabama, 91.7%



Data Source: US Department of Education, National Center for Education Statistics, Common Core of Data, 2018-2019 School Year

Why It's Important

Educational attainment is a strong predictor of future health outcomes. The connection between education and health is well documented, with lower educational attainment among adults having a high correlation with poorer health. Higher educational attainment is associated with better jobs, higher earnings, increased health knowledge, better self-reported health, and fewer chronic conditions, whereas those with lower educational attainment are at greater risk of:

- Cardiovascular disease;
- Obesity and overweight;
- Diabetes;
- Smoking;
- Anxiety and depression;
- Lung disease; and
- Premature death.

According to one study, investments to reduce education-related disparities could save up to eight times more lives than equal investments in medical advances.

Who Is Affected

The prevalence of high school graduation is higher among:

- Asian and non-Hispanic White students compared with American Indian/Alaska Native and non-Hispanic Black students;
- Students who do not have children compared with students who have children;
- Students who do not have a disability compared with students who have a disability; and
- Students who are proficient in English compared with students with limited English proficiency.

Moving Forward

Keeping children and adolescents in school through high school graduation and beyond is key to increasing equitable health outcomes. Several programs have been successful in improving high school graduation rates by targeting high-risk populations. Programs aimed at increasing high school graduation rates — and ultimately, health equity — include:

- Vocational training and alternative schooling;
- Social-emotional skills training;
- College-oriented programming, mentoring, and counseling;
- Attendance monitoring and case management; and
- Community service opportunities.

Interventions to increase high school graduation rates should target social, economic, and health-related barriers to graduation. These include absenteeism, chronic illness, poverty, hunger, developmental delay due to chronic stress, homelessness, and teen pregnancy. The expansion of school-based health centers can help address these barriers.

Key Findings from the 2020 Commission for Health Advocacy and Equity Legislative Report

- The graduation rate among economically disadvantaged students in Rhode Island was 76%, compared to 93.4% among students who were not economically disadvantaged.
- Hispanic and multiracial students had the lowest four-year graduation rates among all racial/ethnic groups, at 75.8% and 79.3%, respectively.
- Woonsocket, Central Falls, and Providence had the lowest four-year graduation rates among high school students.
- The graduation rate for students with disabilities was 63%, compared to 88.2% for students without disabilities.

Adverse Childhood Experiences

Definition

Percentage of children, up to age 17 who experienced two or more of the following:

- Economic hardship;
- Parental divorce or separation;
- Living with someone who had an alcohol or drug problem;
- Neighborhood violence victim or witness;
- Living with someone who was mentally ill, suicidal, or severely depressed;
- Domestic violence witness;
- Parent served jail time;
- Being treated or judged unfairly due to race or ethnicity; and
- Death of a parent.

Numbers at a Glance

- **Rhode Island:** 13.6%
- **US Average:** 14.8%
- **Best State:** New Jersey, 10.2%

Why It's Important

Adverse childhood experiences (ACEs) are stressful or traumatic events that may have a lasting impact on children's health. Early experiences have a broad and profound impact on an individual's development and subsequent emotional, cognitive, social, and biological functioning.

A 1998 study found that a higher number of adverse childhood exposures was associated with a higher number of risk factors for leading causes of death in adults. A recent study found that having four or more ACEs, compared to none, is associated with adverse health outcomes:

- Drug abuse and interpersonal and self-directed violence (very strong associations);
- Sexual risk-taking behaviors, poor mental health, and alcohol abuse (strong associations);
- Smoking, heavy alcohol use, poor self-rated health, cancer, heart disease, and respiratory disease (moderate associations); and
- Physical inactivity, overweight or obesity, and diabetes (weak or modest associations).

Additional studies have found associations between childhood physical, emotional, and sexual abuse and increased risk of negative physical health outcomes such as chronic pain, chronic fatigue, fibromyalgia, irritable bowel syndrome; and negative mental health outcomes such as depression, anxiety, post-traumatic stress disorder, eating disorders and suicide attempts. Further, ACEs are associated with socioeconomic challenges, including not graduating from high school, unemployment, and lack of health insurance.

Who Is Affected

Populations of children with a high prevalence of self-reported two or more ACEs include:

- Children living in poverty are more likely to confront one or more ACEs compared with children living above the poverty level.
- Non-Hispanic Black children are nearly twice as likely to experience two or more ACEs compared with non-Hispanic White children. Hispanic children have the next highest prevalence of two or more ACEs.

Moving Forward

Prevention strategies to address ACEs include:

- Improve social and economic support for children and families.

- Promote violence prevention.
- Ensure children have a strong start in life.
- Teach social-emotional and healthy relationship skills.
- Connect youth to adults and activities through mentoring or after-school programs.
- Intervene with services necessary to reduce short- and long-term harms of ACEs.

Policy recommendations for addressing ACEs include:

- Increase awareness of ACEs and their impact on health in both the professional and public spheres.
- Increase capacity of healthcare providers to assess the presence of ACEs and provide appropriate treatment options.
- Train healthcare providers in trauma-informed care.
- Support research for more sensitive assessment tools.
- Enhance the capacity of communities to prevent and respond to ACEs through investments in evidence-based prevention programming and trauma interventions.
- Increase access to needed mental health and substance abuse services.
- Encourage nurturing home and classroom environments.

The CDC's Division of Violence Prevention has a free online training module on ACEs prevention. The introductory module is appropriate for anyone interested in learning about ACEs, regardless of education level or profession, and is designed to help users understand, recognize, and prevent ACEs. Additional modules for professionals working directly with, and on behalf of, kids and families are also available.

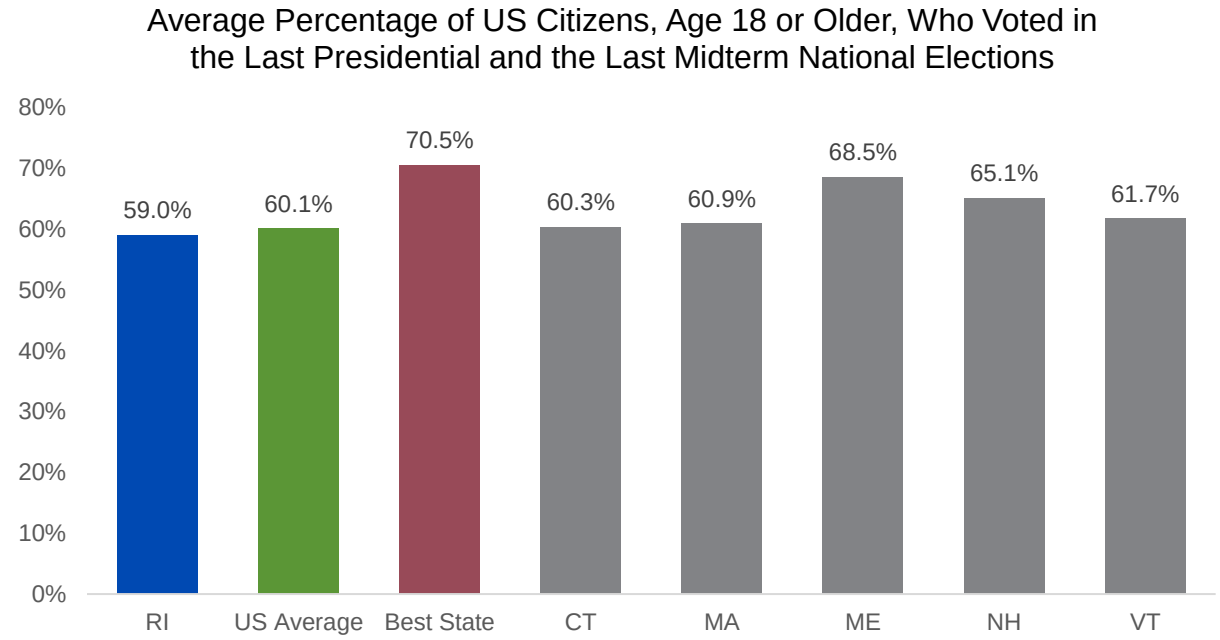
Voter Participation (Average)

Definition

Average of the percentage of US citizens, age 18 or older, who voted in the last presidential and the last midterm national elections

Numbers at a Glance

- **Rhode Island:** 59.0%
- **US Average:** 60.1%
- **Best State:** Minnesota, 70.5%



Data Source: US Census Bureau, Current Population Survey, Voting and Registration Supplement, 2018/2020

Why It's Important

Voting is a form of active civic engagement, which is associated with better health, reduced violence, and lower unemployment rates. Civic participation during adolescence and early adulthood is associated with higher educational attainment and income later in life. Voting, in particular, was found to be associated with fewer depressive symptoms and fewer risky health behaviors. While the exact mechanisms behind these relationships are unclear, research suggests that active civic participation improves mental health by providing a greater sense of belonging and decreased social isolation.

Who Is Affected

Although voter participation has increased steadily in the last several decades, disparities continue to exist among certain groups. Voter participation in 2020 was higher among:

- Non-Hispanic White adults compared with non-Hispanic Black and Hispanic adults; A recent study found that strict photo identification laws negatively impacted the voter turnout of Hispanic, Black, and multiracial citizens.
- Those with an annual household income of $100,000 or more compared with those with an income less than $30,000;
- College graduates compared with those with a high school degree or less; and
- Older adults, age 65-74, compared with those age 18-24.

Moving Forward

Interventions are needed at multiple levels to increase voter participation in the United States, including:

- Simplify voter registration processes.
- Relax voter identification laws that unfairly disadvantage racial and ethnic minorities.
- Target under-represented populations, such as high school and college students, with awareness campaigns.
- Send out notifications about voter identification requirements in advance of elections.

Many national and state-level organizations are committed to improving voter access and turnout. One such organization, Vot-ER, promotes civic engagement by empowering healthcare institutions and providers to register patients and others in their institutions to vote.

Key Findings from the 2020 Commission for Health Advocacy and Equity Legislative Report

- Central Falls (43%), Providence (45.3%), Woonsocket (46.3%), and Pawtucket (53.3%) (Rhode Island's core cities) had the lowest voter participation in the 2016 election.
- Scituate, Little Compton, and Jamestown had the highest voter participation in the 2016 election.

Health Outcomes

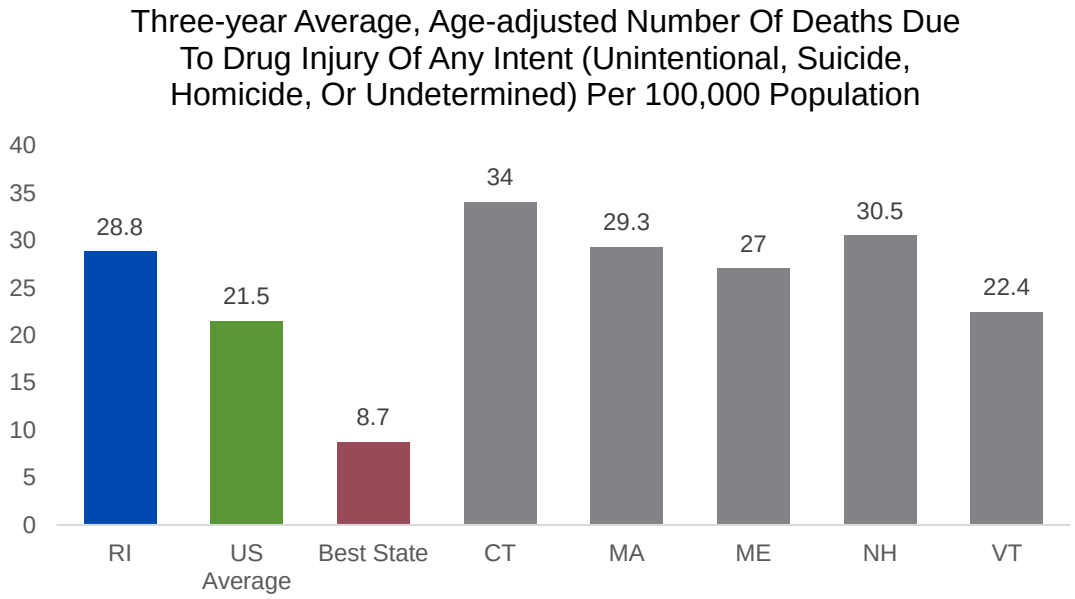
Drug Deaths

Definition

Deaths due to drug injury (unintentional, suicide, homicide, or undetermined) per 100,000 population (1-year)

Numbers at a Glance

- **Rhode Island:** 28.8 per 100,000 population
- **US Average:** 21.5 per 100,000 population
- **Best State:** Nebraska, 8.7 per 100,000 population



Data source: CDC WONDER Online Database, Underlying Cause of Death, Multiple Cause of Death files, 2019

Why It's Important

Heavy drug use and overdoses burden individuals, families, communities, the healthcare system, and the economy. Drug overdoses are a leading cause of injury death, increasing 56.5% between 2013 and 2019. There were more than 91,000 confirmed drug overdose deaths in the United States in 2020 and, of those, roughly 69,000 involved an opioid. Those who take a high daily dosage of prescription pain relievers (e.g., methadone, oxycodone, or hydrocodone) are vulnerable to overdose and abuse of prescription opioids. Increases in overdose deaths are associated with increases in child maltreatment reports and foster care placements. In 2017, fatal opioid overdoses and opioid use disorder cost the United States $1.02 trillion.

Rhode Island ranks 38th in the nation for overdose deaths. The United States is in the midst of a drug crisis with fatal consequences. Drug overdoses have become the leading cause of injury death. There were more than 70,000 confirmed drug overdose deaths in 2019, and of those, more than 49,000 involved an opioid.

The effects of substance misuse contribute to significant public health problems including crime, homicide and suicide, teenage pregnancy, sexually transmitted infections, HIV/AIDS, domestic violence, child abuse, and motor vehicle accidents.

Who Is Affected

Populations of adults with high drug overdose death rates include:

- Men: Rates have been increasing for both men and women, but men have double the rate of drug overdose deaths compared with women.
- Young and middle-aged adults: Adults between age 25 and 54 have the highest rates of drug overdose death compared with younger adults (age 15-24) and older adults (age 55 or older).
- Those living in urban areas: While the drug overdose death rate is higher and is increasing faster in urban areas than in rural areas, rates based on urbanicity vary across gender and type of drug use.
- American Indian/Alaska Native, White, and Black adults have higher drug overdose death rates compared to Asian adults
- Individuals with overlapping prescriptions from multiple prescribers and/or pharmacies, and those who take a high daily dosage of prescription pain relievers (i.e. methadone, oxycodone and hydrocodone) are more vulnerable to overdose and abuse of prescription opioids.

Moving Forward

Opioid overdoses may be reversed with naloxone, an opioid antagonist. Strategies to prevent overdose deaths and reduce harm among those with opioid addiction include:

- Implement prescription drug monitoring programs at the state level to reduce opioid prescribing.
- Increase distribution of naloxone.
- Improve access to drug treatment programs, including medication-assisted treatment.
- Support law enforcement strategies to reduce the illicit opioid supply.
- Encourage cross-agency collaboration across states to more effectively and efficiently use resources to prevent and mitigate harms associated with substance use disorder.

For primary care providers, the CDC has developed the *Guideline for Prescribing Opioids for Chronic Pain* and a prescription checklist to encourage safe prescribing practices.

Individuals can work with their doctors to safely and effectively manage their pain and avoid the risk of opioid abuse. The National Institute on Drug Abuse (NIDA) offers resources and advice about what to do if someone you know has a problem with drugs.

Key Findings from the 2020 Commission for Health Advocacy and Equity Legislative Report

- Johnston and North Providence had the highest ratios of naloxone kits to overdose deaths.
- 24 out of 39 municipalities had fewer than five overdose deaths in 2018.

Excessive Drinking

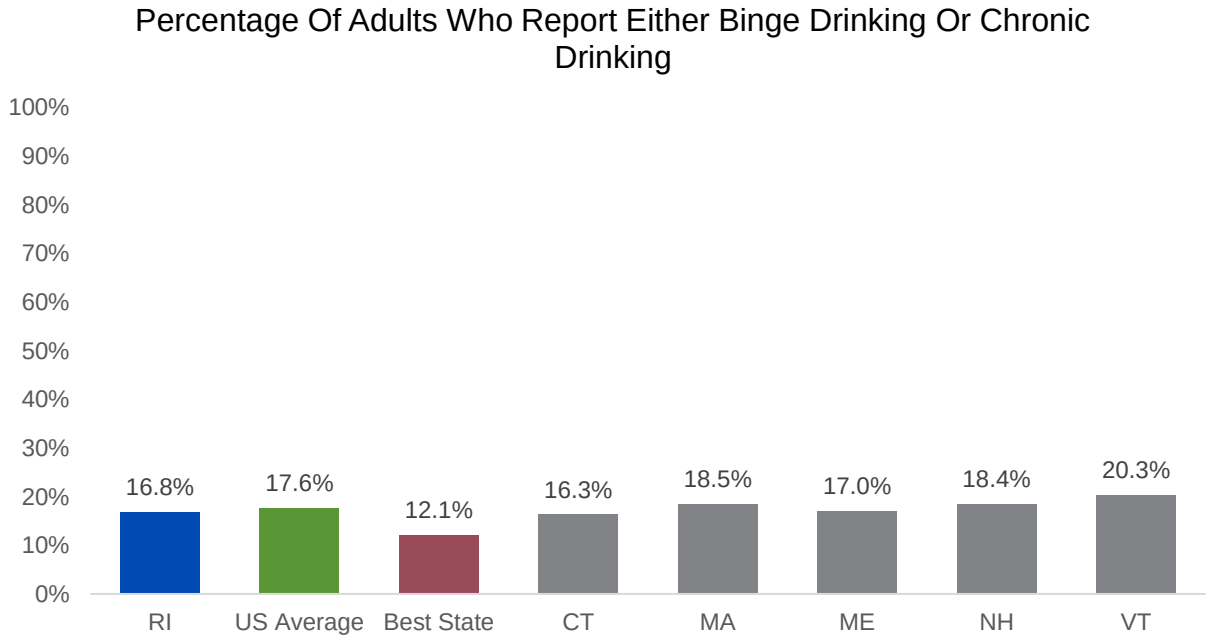
Definition

Percentage of adults who reported binge drinking (four or more [females] or five or more [males] drinks on one occasion in the past 30 days) or heavy drinking (eight or more [females] or 15 or more [males] drinks per week)

- **Binge drinking**: having four or more (women) or five or more (men) drinks on one occasion in the past 30 days
- **Chronic drinking**: having eight or more (women) or 15 or more (men) drinks per week

Numbers at a Glance

- **Rhode Island:** 16.8%
- **US Average:** 17.6%
- **Best State:** Utah, West Virginia, 12.1%



Data Source: CDC< 2020 BRFSS

Why It's Important

Alcohol is the third leading preventable cause of death in the United States behind tobacco and poor diet/physical inactivity. The CDC defines excessive drinking as binge drinking, heavy drinking, and any drinking by individuals younger than 21 or by pregnant women. Excessive drinking comes with short-term and long-term risks.

The short-term risks include:

- Unintentional injuries, such as falls, drowning, burns, and motor vehicle accidents;
- Violence, such as homicide, suicide, and sexual assault;
- Alcohol poisoning; and
- Poor decision-making and engagement in risky behaviors, such as unprotected sex.

The long-term risks include:

- Hypertension, heart disease, stroke, and liver disease;
- Cancer of the breasts, mouth, throat, esophagus, liver, or colon;
- Alcohol dependence; and

- Memory and learning problems.

Who Is Affected

The prevalence of excessive drinking among adults is highest among:

- Men compared with women;
- Adults age 18-44 compared with adults age 45-64 and 65 or older;
- Hawaiian/Pacific Islander, Hispanic, and White compared with Asian adults; and
- Adults age 25 or older with an annual household income of $75,000 or higher compared with adults with an annual household income of below $25,000.

Moving Forward

The CDC recommends that some people not drink at all, including anyone younger than 21 and those who are pregnant. For those who do drink, using moderation when consuming alcohol can reduce the risk of adverse health outcomes. More detailed recommendations for moderate drinking are provided by the *2020-2025 Dietary Guidelines for Americans*.

The US Preventive Services Task Force recommends that clinicians screen adults age 18 or older for unhealthy alcohol use and provide those with unhealthy alcohol use with brief behavioral counseling interventions. The CDC provides a free, evidence-based Alcohol Screening Tool to identify individual barriers to, and motivators for, drinking less.

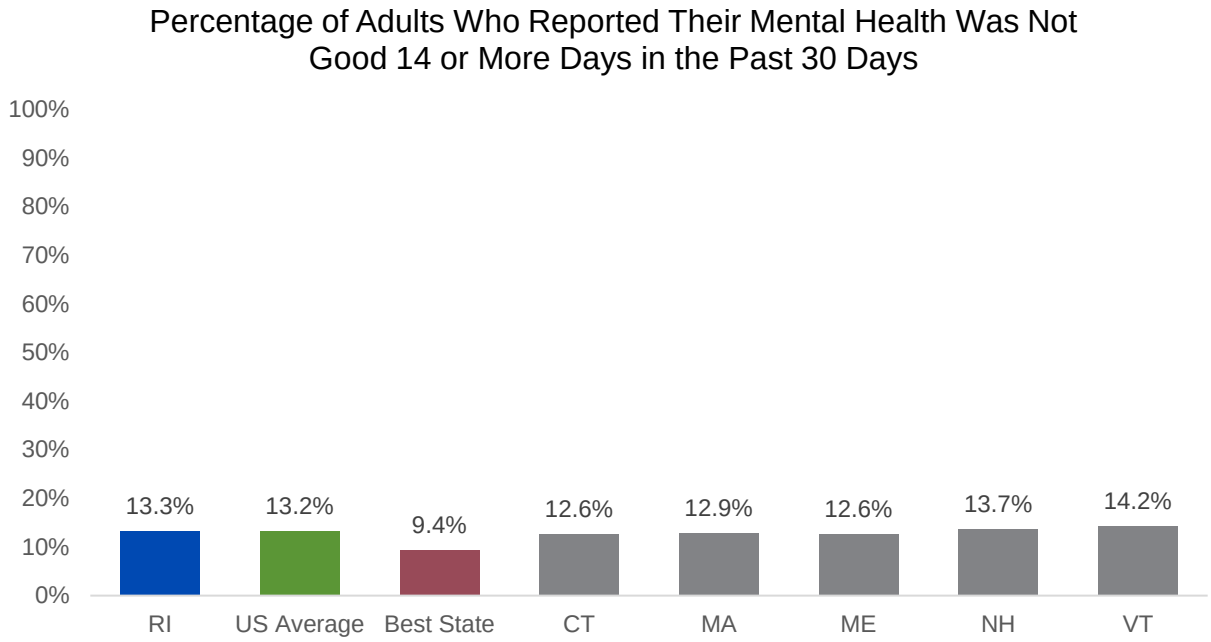
A variety of evidence-based strategies have been shown to effectively reduce excessive drinking and related health and social costs:

- Increase alcohol excise taxes.
- Reduce density of alcohol outlets.
- Reduce the days and hours of alcohol sales.
- Hold alcohol retailers liable for injuries or damage done by their intoxicated or underage customers.

Frequent Mental Distress

Definition
Percentage of adults who reported their mental health was not good 14 or more days in the past 30 days

Numbers at a Glance
- **Rhode Island:** 13.3%
- **US Average:** 13.2%
- **Best State:** South Dakota, 9.4%



Data Source: CDC, 2020 BRFSS

Why It's Important
A healthy mental state is essential to overall positive health and well-being. In some cases, poor mental health may lead to suicide. Frequent mental distress aims to capture the population experiencing persistent, and likely severe, mental health issues, defined by 14 or more days of self-reported poor mental health in the past month. There is a strong relationship between the 14-day period and clinically diagnosed mental disorders, such as depression and anxiety. Frequent mental distress is associated with smoking, physical inactivity, housing insecurity, food insecurity, and insufficient sleep.
Direct medical spending associated with mental health disorders (including anxiety, depression, and dementia) in the United States reached $201 billion in 2013, surpassing costs for heart disease ($147 billion) and traumatic injury ($143 billion).

Who Is Affected
The prevalence of frequent mental distress is higher among:
- Women compared with men;
- Adults age 18-44 compared with adults age 45 or older;
- Multiracial and American Indian/Alaska Native adults compared with Hawaiian/Pacific Islander and Asian adults;
- Adults with less than a high school education compared with those with a high school diploma or GED degree and college graduates;
- Adults with an annual household income of $25,000 or less compared with those with higher

income levels;
- Adults who have a disability compared with those who do not have a disability;
- Adults who are unemployed or unable to work compared with employed adults; and
- Adults who are divorced, widowed, or separated compared with those who are married or who never married.

Moving Forward

Although occasional short periods of mental distress may be unavoidable, more prolonged and serious episodes are treatable and may be prevented through early interventions. Effective early interventions for mental distress include:

- School-based cognitive behavioral therapy has been found to be effective in reducing depression and anxiety symptoms among adolescents.
- Home-based depression care management for older adults has been shown to improve short-term depression symptoms. This intervention includes active screening for depression, measurement-based outcomes, trained depression care managers, case management, patient education, and a supervising psychiatrist.
- Collaborative care, a team-based approach to depressive disorders care, provides multi-component intervention to patients. A healthcare manager and primary care provider work with the patient to develop a treatment plan.

Continued surveillance of frequent mental distress may help identify unmet social and mental health needs and guide prevention and treatment interventions. The CDC has a resources page for mental health, including a mental health services locator.

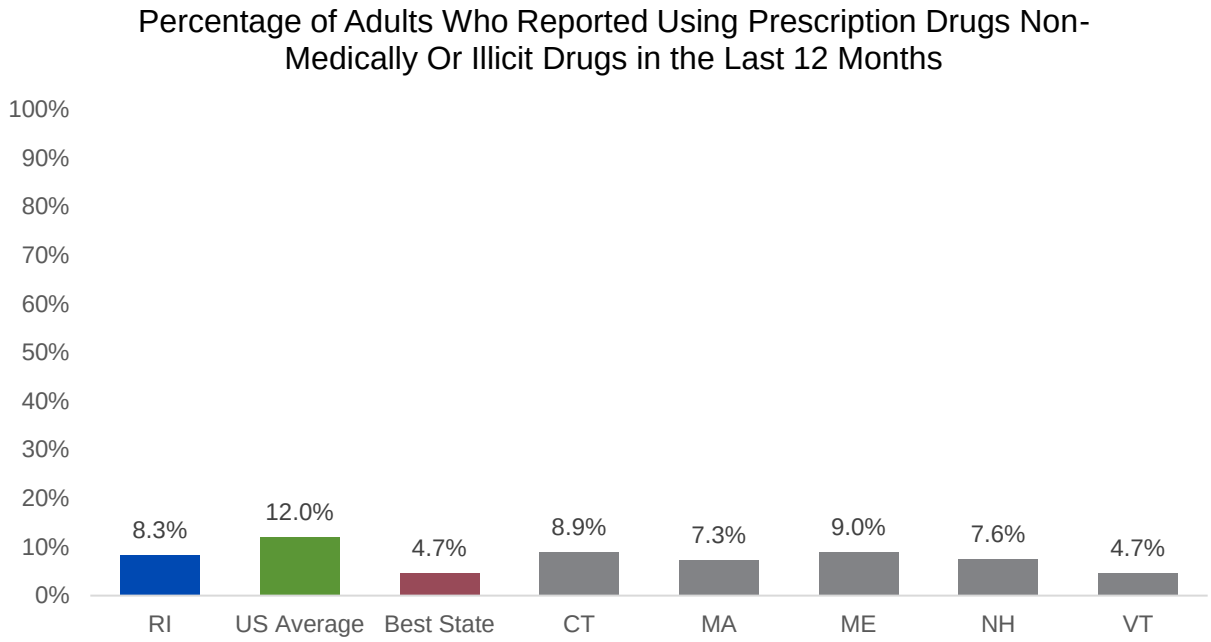
Non-medical Drug Use

Definition

Percentage of adults who reported using prescription drugs non-medically (including pain relievers, stimulants, and sedatives) or illicit drugs (excluding cannabis) in the last 12 months

Numbers at a Glance

- **Rhode Island:** 13.3%
- **US Average:** 12.0%
- **Best State:** Vermont, 4.7%



Data Source: Denver Health and Hospital Authority, RADARS® System Survey of Non-Medical Use of Prescription Drugs Program, 2021

Why It's Important

The use of illicit drugs, including the use of prescription drugs without a doctor's guidance, can be dangerous and have long-lasting consequences. While some short-term effects may be minor, emergency departments see almost two million non-fatal poisonings a year, nearly one million of which are non-fatal drug overdoses. Additional short-term effects include heart attack, stroke, psychosis, overdose, and death. Potential long-term effects include contracting diseases like HIV, hepatitis and endocarditis or developing a medical condition such as heart disease, certain cancers, and mental illness. Substance abuse can lead to addiction — also called substance use disorder — which often requires lifelong management.

In 2020, it was estimated that nearly 24 million people in the United States age 12 or older used an illicit drug other than marijuana (including cocaine, heroin, hallucinogens, inhalants, methamphetamines, and misused prescription psychotherapeutics, which include pain relievers, tranquilizers, stimulants and sedatives) in the past year.

The health consequences of using illicit drugs or prescription drugs without a doctor's guidance are costly to both individuals and society. In 2007, it was estimated that illicit drug use cost the U.S. $193 billion. Emergency room visits for drug misuse have increased from about 33 visits per 10,000 people in

2009 to about 40 visits per 10,000 people in 2017.

Who Is Affected

The prevalence of past-year non-medical drug use is higher among:

- Men compared with women;
- Adults who identified as other race compared with all other racial/ethnic groups; Asian and Black adults had the lowest prevalences.
- Adults with some post-high school education and college graduates compared with those with less education; and
- Adults with an annual household income of less than $25,000 compared with those with higher annual incomes.

Moving Forward

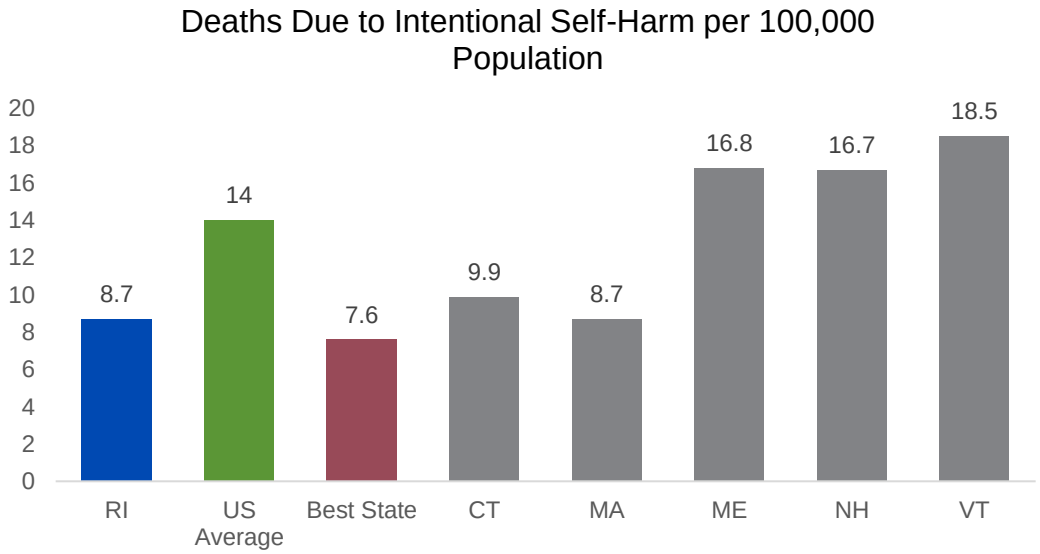
Non-medical drug use can be prevented and treated. The National Institute on Drug Abuse lists 16 principles for choosing and implementing substance abuse prevention programs. The Substance Abuse and Mental Health Services Administration (SAMHSA) has evidence-based programs and resources for parents, schools, and primary care doctors, many of them focusing on children and adolescents.

When prevention is no longer an option, there are research-based treatment programs. Treatment often requires lifelong management. SAMHSA's treatment locator can help individuals find state-licensed providers specializing in substance use disorders.

Suicide

Definition
Deaths due to intentional self-harm per 100,000 population

Numbers at a Glance
- **Rhode Island:** 11.3 per 100,000 population
- **US Average:** 14.5 per 100,000 population
- **Best State:** New Jersey, 8.4 per 100,000 population



Data source: CDC WONDER, Multiple Cause of Death Files, 2019

Why It's Important
Suicide is the 12th leading cause of death in the United States. It is the fourth leading cause of death for adolescents age 15-19 globally. In 2020, an estimated 3.2 million people planned a suicide, 1.2 million attempted suicide, and there were 45,979 deaths by suicide. More than half of all suicides involved firearms and there were almost twice as many deaths by suicide than by homicide.
When someone dies by suicide, as with any cause of death, the loss is felt by many people. The ripples of loss spread from close family and friends to community members, acquaintances and even people the deceased did not know. All of those exposed to the loss may experience different levels of grief and trauma.

Societal costs associated with suicide and suicide attempts are estimated at $93.5 billion. These costs include lifetime medical fees and lost work.

Mental health and substance use disorders are the most significant risk factors for suicidal behaviors. In addition, environmental factors such as stressful life events and access to lethal means such as firearms or drugs may increase the risk of suicide. Previous suicide attempts and a family history of suicide are also important risk factors.

Who Is Affected
The rate of suicide is higher among:
- Males, who have a rate four times higher than females;
- The American Indian/Alaska Native population, who have a rate more than three times higher than the Asian population;

- Adults age 85 and older than individuals age 15-24;
- Veterans compared with non-veteran adults;
- Those living in rural areas compared with those living in urban areas; and
- LGBTQ adults and youth compared with heterosexual adults and youth.

Moving Forward

Strategies to reduce suicide include:

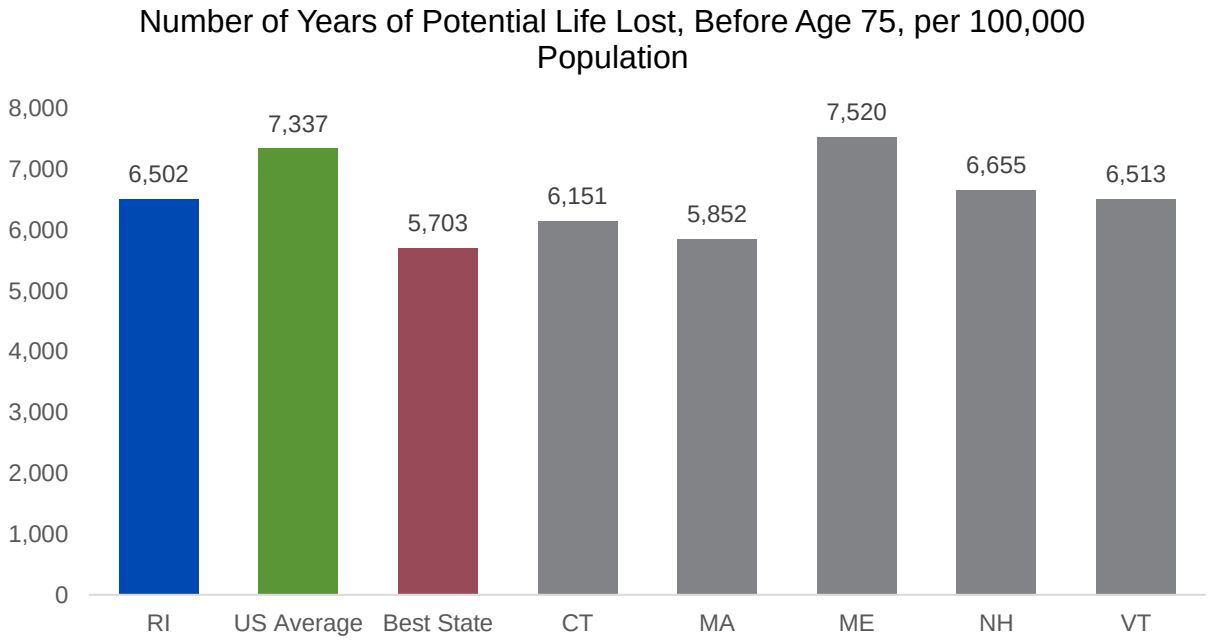
- Universal screening at emergency rooms to identify patients at higher risk of suicide;
- Safety planning at emergency rooms to assist patients with suicidal behaviors by providing them with a prioritized list of evidence-based coping strategies and sources of support;
- Cognitive behavioral therapy to identify and manage suicidal thoughts;
- Reducing access to lethal means such as firearms, lethal doses of medications, and alcohol; Studies in the past two decades show a strong association between the presence of a firearm in the home and an increased risk of suicide for the gun owner and the gun owner's spouse and children. At the community level, the Gun Shop Project builds partnerships between firearms businesses and public health experts to provide firearm suicide prevention educational materials to firearms retailers, instructors and customers.
- Devoting resources to the 10 public health domains of suicide prevention outlined in *The State of State, Tribal and Territorial Suicide Prevention* report.

The Suicide Prevention Resource Center has detailed resources for implementing effective suicide prevention in schools and universities, emergency departments, American Indian/Alaska Native communities, and other organizations that serve populations at risk for suicide. In 2022, the 988 Suicide & Crisis Lifeline was launched to provide an easy-to-remember number and 24/7 confidential support for people in distress, as well as prevention and crisis resources, by call, text, or online chat.
The previous National Suicide Prevention Lifeline number (1-800-273-TALK(8255)) is also active and can still be used.

Premature Deaths

Definition
Years of potential life lost, before age 75, per 100,000 population (one-year estimate)

Numbers at a Glance
- **Rhode Island:** 6,502
- **US Average:** 7.337
- **Best State:** California, 5.703



Data Source: CDC WONDER Online Database, Underlying Cause of Death, Multiple Cause of Death Files (2019)

Why It's Important
Premature death is a measure of years of potential life lost due to death occurring before the age of 75. Deaths at younger ages contribute more to the premature death rate than deaths occurring closer to age 75. For example, a person dying at age 70 would lose five years of potential life, whereas a child dying at age five would lose 70 years of potential life.

According to the National Center for Health Statistics WISQARS Years of Potential Life Lost (YPLL) Report, cancer, unintentional injury, heart disease, suicide, deaths in the perinatal period, and homicide were the leading causes of years of potential life lost before age 75 in 2017. Since 2012, increases have occurred in suicide and unintentional injuries, largely due to drug deaths, both contributing to the rise in premature death.

Many premature deaths may be preventable through lifestyle modifications such as smoking cessation or healthy eating and exercise. CDC estimates that 20-40% of premature deaths are preventable.

Social factors such as low education, poverty, racial segregation, and inadequate social support also contribute to premature death. While not the direct cause of death, social factors can play a role in how and why a person dies.

Who Is Affected

Populations at higher risk for premature death include:

- American Indian/Alaska Native people, who have premature death rates persistently 50% greater than those of non-Hispanic Whites; Infant mortality rates are almost two times higher among American Indian/Alaska Native children than White children and are a major contributor to the premature death rate. American Indian/Alaska Native populations also have a disproportionately high rate of unintentional injury deaths due to a number of factors, including rural environments, lack of traffic safety, and higher rates of alcohol-related accidents.
- Black people, whose premature mortality rates were consistently double those of the White population from 1960 through 2009; Racial disparities in cardiovascular disease and homicide have long been the leading drivers of higher rates of premature mortality, as well as staggering and persistent gaps in birth outcomes. Black populations have the highest infant mortality rate in the United States — more than twice those of non-Hispanic White and Asian populations.
- People who live in rural counties compared with those in urban counties; Non-Hispanic Black adults in rural counties have the highest mortality rate; however, non-Hispanic White adults in rural areas are the only population with a steadily increasing mortality rate. This spike is largely due to increased poisonings, including drug overdoses, and suicides.

Moving Forward

The conditions that contribute to premature death differ from community to community and local solutions need to be found that account for specific health needs. The CDC estimates that 20%-40% of premature deaths are preventable. Lifestyle changes can help prevent premature deaths by reducing risk factors. These may include changes in diet, exercise, alcohol consumption, and tobacco use, as well as medical treatment for chronic conditions such as depression, diabetes, or hypertension.

The CDC has documented several strategies for reducing health disparities, including:

- The Traditional Foods Project, aimed at reducing rates of Type 2 diabetes in American Indian/Alaska Native populations;
- The Boston Children's Hospital's Community Asthma Initiative, an intervention for Black and Hispanic children at risk of asthma complications;
- Programs funded by the CDC's Colorectal Cancer Control Program (CRCCP) that implemented multicomponent interventions to increase colorectal cancer screening among racial and ethnic minority populations.

Intervention strategies that encourage individuals to seek preventive medical care and achieve healthy lifestyles can be effective in reducing premature death by:

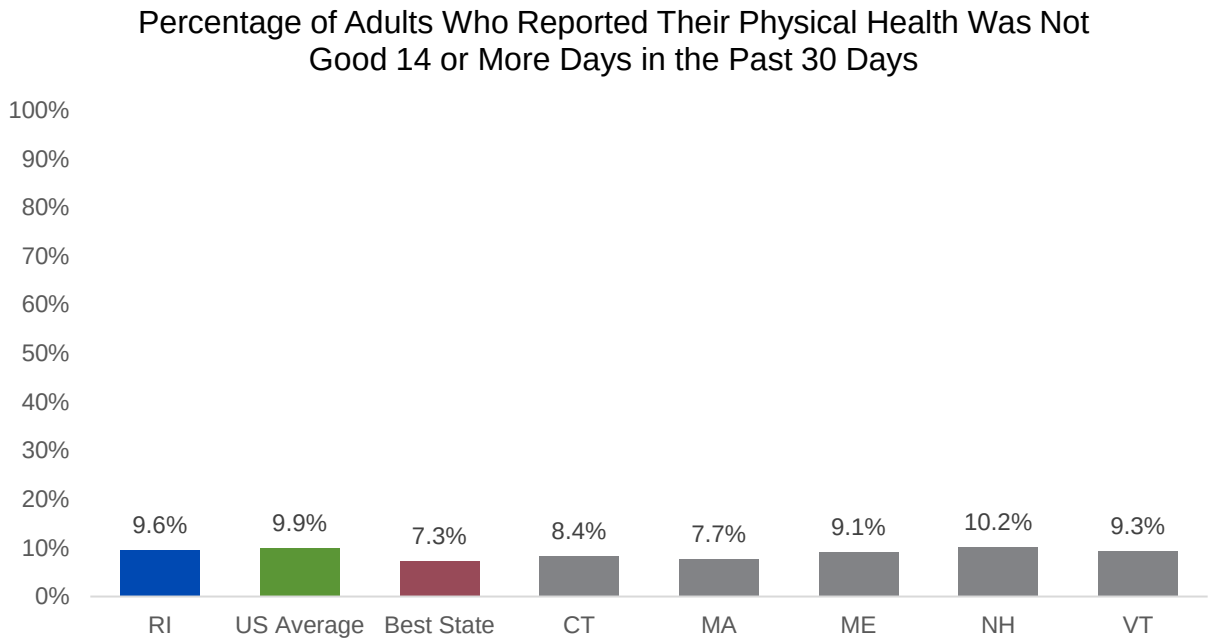
- Screen for certain health risks, such as alcohol misuse; diabetes; depression; obesity; high blood pressure; and breast, cervical and colorectal cancers.
- Increase vaccination rates. Vaccines are a safe and cost-effective way of protecting infants, adolescents, and adults from potentially life-threatening preventable diseases. A complete list of vaccine-specific recommendations is available from the ACIP, and the CDC publishes vaccine schedules by age.

Increasing access to mental health and primary care for currently underserved minority populations is critical for decreasing premature death rates. More research is needed to determine effective methods of increasing access to behavioral health and primary care for racial and ethnic minority populations.

Frequent Physical Distress

Definition
Percentage of adults who reported their physical health was not good 14 or more days in the past 30 days

Numbers at a Glance
- **Rhode Island:** 9.6%
- **US Average:** 9.9%
- **Best State**: Hawaii and Maryland, 7.3%



Data Source: CDC, 2020 BRFSS

Why It's Important
Frequent physical distress is based on self-reported poor physical health days. The measure aims to capture the population experiencing persistent, and likely severe, physical health problems, which may have a significant impact on health-related quality of life and overall wellness. The cutoff point of 14 or more days of poor physical health has been validated by the CDC as constituting a substantial level of physical impairment. Frequent physical distress is associated with chronic health conditions, such as diabetes and hypertension, and chronic obstructive pulmonary disease. It is also associated with smoking, obesity, and physical inactivity.

Who Is Affected
Populations that experience a higher prevalence of frequent physical distress include:
- Females compared with males;
- Adults age 65 or older compared with adults age 18-44; The prevalence is significantly higher with each increase in age group.
- American Indian/Alaska Native and multiracial adults compared with Asian, Hawaiian/Pacific Islander, Hispanic and White adults; Asian adults have the lowest prevalence.
- Adults with less than a high school education compared with college graduates;
- Adults with an annual household income less than $25,000 compared with those with incomes

of $75,000 or more; The prevalence is significantly lower with each increase in income level.
- Adults who live in non-metropolitan areas compared with those who live in metropolitan areas; and
- Adults with one or more chronic illnesses compared with those without chronic illnesses.

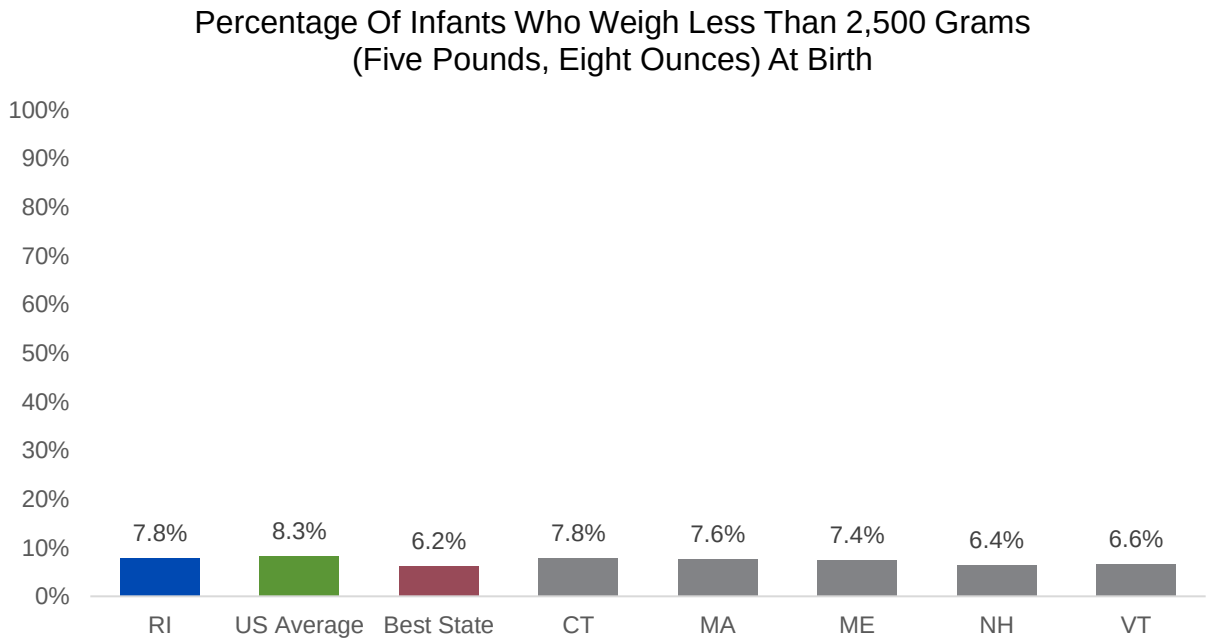
Moving Forward

Strategies to reduce the prevalence of frequent physical distress include reducing the risk of developing chronic conditions such as cardiovascular disease, cancer, diabetes, obesity, and arthritis. This may be done by focusing on evidence-based interventions that curb smoking, increase physical activity, and promote healthy eating.

Low Birthweight

Definition
Percentage of infants weighing less than 2,500 grams (five pounds, eight ounces) at birth

Numbers at a Glance
- **Rhode Island:** 7.8%
- **US Average:** 8.3%
- **Best State:** Alaska, 6.3%



Data Source: CDC WONDER Online Database, Natality Public-Use Data (2019)

Why It's Important
Low birthweight infants — babies weighing less than 2,500 grams at birth — are at increased risk of infant mortality and a host of short and long-term complications. There are two categories of low birthweight infants:
- Moderately low birthweight infants (between 1,500 and 2,499 grams at birth)
- Very low birthweight infants (less than 1,500 grams at birth)

Very low birthweight infants account for the majority of differences seen in health outcomes between low birthweight and normal weight infants.

Health conditions related to low birthweight include:
- For infants
    - Respiratory distress syndrome;
    - Bleeding in the brain;
    - Heart problems;
    - Intestinal disorders; and
    - Retinopathy
- For children and adults who were born with low birthweight
    - Vision or hearing loss;
    - Breathing problems;
    - Cerebral palsy;

- Learning and behavioral problems;
- Type 2 diabetes;
- Heart disease;
- High blood pressure; and
- Obesity

Who Is Affected

The most common causes of low birthweight are premature birth (birth prior to 37 weeks gestation) and restricted fetal growth, meaning babies don't grow to a normal weight.

Populations that experience more low birthweight births include:

- Non-Hispanic Black mothers compared with non-Hispanic White mothers;
- Mothers younger than 15 or older than 40;
- Mothers with the following conditions:
  - Chronic health conditions such as high blood pressure; diabetes; or heart, lung; and kidney problems;
  - Sexually transmitted infections;
  - Insufficient weight gain during pregnancy;
  - Low educational attainment;
  - Low income;
  - Unemployment.
  - Mothers receiving inadequate prenatal care than mothers receiving adequate prenatal care. Prenatal care can help identify health risks and steps that are needed to improve a mother's health prior to giving birth.
  - Women who smoke or drink alcohol during pregnancy due to restricted fetal growth.

Moving Forward

Improving women's health prior to pregnancy may be more beneficial than interventions during pregnancy. Strategies to prevent low birthweight include:

- Focus on women's long-term health before and beyond prenatal care (e.g., expand women's access to medical and dental services).
- Promote smoking prevention and cessation programs.
- Ensure that pregnant women are able to obtain adequate nutrition.
- Address factors related to demographic, social, and environmental risks.
- Support research on the causes of low birthweight.

According to the American Public Health Association, effective tools for reducing disparities in low birthweight include "educating the public and health care providers, broadening access to quality health care services, promoting healthier physical and social environments, supporting innovative research and advocating for efforts to address racial and social inequalities."

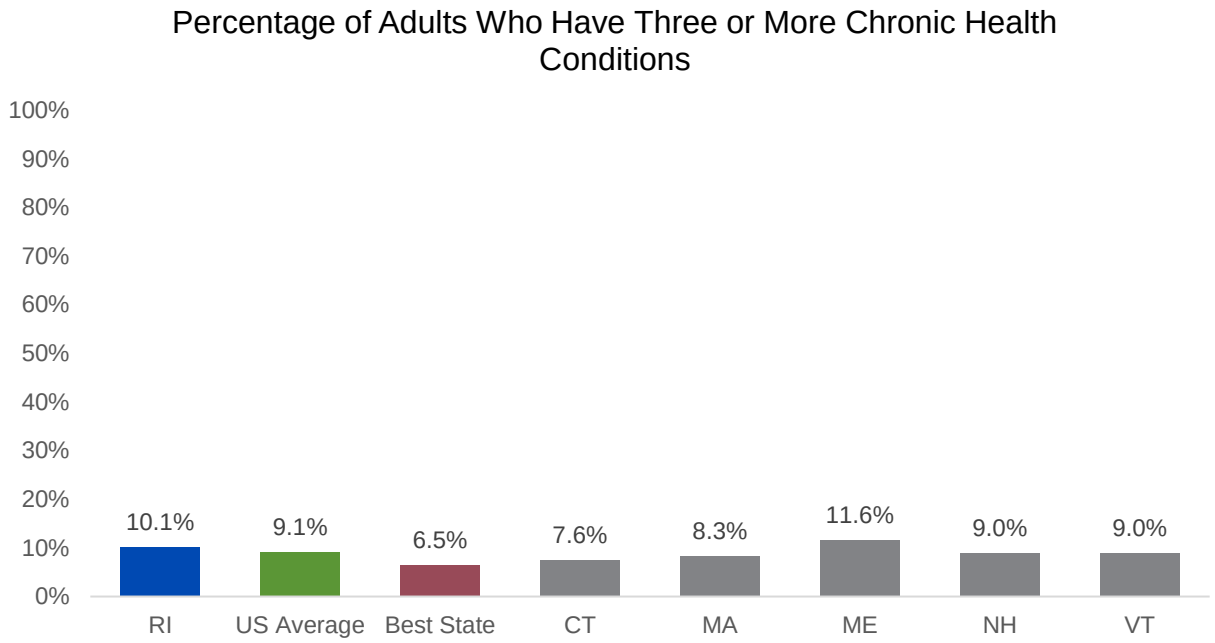
Multiple Chronic Conditions

Definitions

Percentage of adults who have three or more of the following chronic health conditions: arthritis, asthma, chronic kidney disease, chronic obstructive pulmonary disease, cardiovascular disease (heart disease, heart attack, or stroke), cancer (excluding skin), depression, and diabetes

Numbers at a Glance

- **Rhode Island:** 10.1%
- **US Average:** 9.1%
- **Best State:** Hawaii, 6.5%



Data Source: CDC, 2020 BRFSS

Why It's Important

Chronic conditions are medical conditions that last more than a year, require ongoing medical attention, and/or limit daily life activities. Adults with multiple chronic conditions represent one of the highest-need segments of the population, since each chronic condition is likely to require extra medication and monitoring.

As the number of chronic conditions an individual has increases, the risks of the following outcomes also increase:

- Physical, social, and cognitive limitations;
- Mortality;
- Unnecessary hospitalizations;
- Adverse drug events; and
- Depression.

The economic burden of multiple chronic conditions is substantial. Adults who have five or more chronic conditions spend 14 times more on health services compared with adults who have no chronic conditions. It is estimated that 71 cents of every dollar of healthcare spending goes toward treating people with multiple chronic conditions.

Who Is Affected

Populations of adults that have a higher prevalence of multiple chronic conditions include:

- Women compared with men;
- Adults age 65 or older; the prevalence is lower with each decrease in age range.
- American Indian/Alaska Native adults compared with all other race and ethnicity groups;
- Multiracial adults compared with Hawaiian/Pacific Islander, Hispanic and Asian adults; The prevalence is higher among White adults than among Black, Hispanic and Asian adults.
- Adults with less than a high school education compared with adults with higher levels of education; And
- Adults with an annual household income less than $25,000 compared with adults with higher household incomes; The prevalence decreases with each increase in income level.

Moving Forward

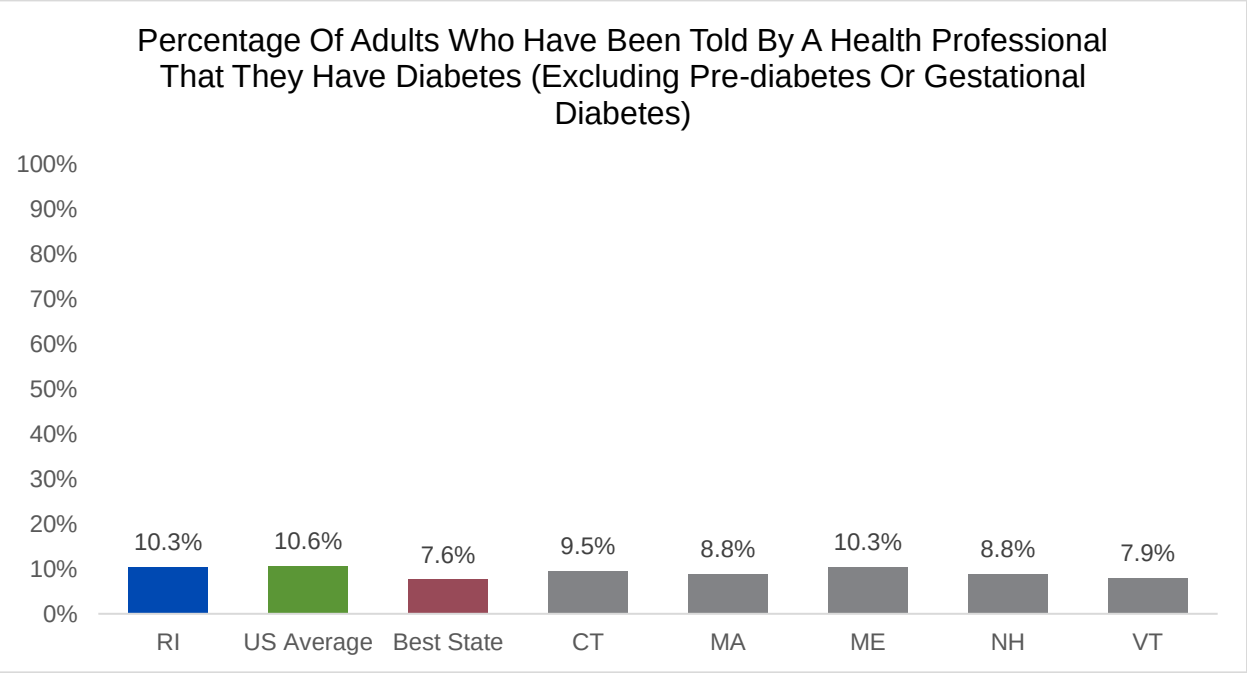
There are many things that an individual can do to reduce their risk of developing chronic diseases, including eating healthy, not smoking, getting enough regular physical activity, and avoiding excessive drinking. These lifestyle modifications can also help manage existing chronic conditions. It is recommended that individuals take an active role in their care by understanding and learning about their chronic conditions and medications, communicating with their healthcare providers, and taking medications as prescribed.

County Health Rankings and Roadmaps has a page on evidence-based programs that involve practitioners and support networks as well as patients in the management of chronic diseases.

Diabetes

Definition
Percentage of adults who reported ever being told by a health professional that they have diabetes (excluding pre-diabetes and gestational diabetes)

Numbers at a Glance
- **Rhode Island:** 10.3%
- **US Average:** 10.6%
- **Best State:** Alaska, 7.6%%



Data Source: CDC, 2020 BRFSS

Why It's Important
Diabetes was the nation's eighth-leading cause of death in 2020, accounting for 102,188 deaths annually. Those with diabetes are twice as likely to have heart disease or a stroke than those without diabetes. There are three types of diabetes: Type 1, Type 2, and gestational (diabetes while pregnant). Type 2 diabetes accounts for 90%-95% of all cases.

Diabetes is the leading cause of kidney failure, non-traumatic lower-limb amputations, and blindness among adults. Currently 37.3 million adults are estimated to have diabetes, 8.5 million of whom are undiagnosed.

Diabetes cost the United States an estimated $327 billion in direct medical costs and lost productivity in 2017.

Who Is Affected
The prevalence of diabetes is higher among:
- Men compared with women;
- Adults age 65 or older compared with adults age 18-64;
- Black and American Indian/Alaska Native adults compared with Asian adults;
- Adults with less than a high school education compared with those with higher levels of education;

the prevalence decreases as educational attainment increases.
- Adults with an annual household income less than $25,000 compared with those with higher levels of income; and
- Adults living in non-metropolitan areas compared with those in metropolitan areas.

Moving Forward

Type 2 diabetes is influenced by risk factors that are amenable to change such as smoking, overweight and obesity, physical inactivity, high blood pressure, and high cholesterol. Studies show that the onset of Type 2 diabetes can largely be prevented through weight loss, increasing physical activity, and improving dietary choices. The National Diabetes Prevention Program, a partnership of public and private organizations working to prevent or delay Type 2 diabetes, includes an evidence-based lifestyle change program that focuses on healthy eating and physical activity. Through the program, people with pre-diabetes have reduced their risk of developing Type 2 diabetes by 58%.

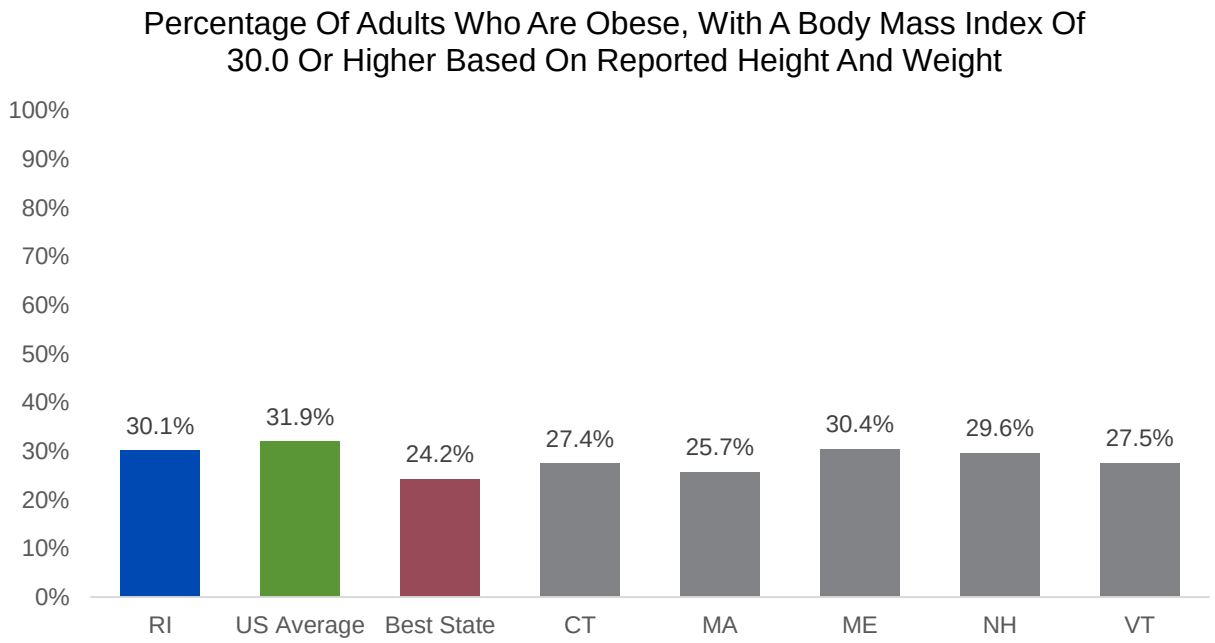
The National Clinical Care Commission report from the (HHS) discusses population-level strategies for federal programs in order to prevent and control diabetes. The report emphasizes the need for federal agencies to promote the consumption of water over sugar-sweetened beverages, support breastfeeding individuals, and expand housing opportunities for low-income individuals and families in areas with access to healthy food, green space, and walkability.

Diabetes management is critical to prevent complications from the disease. Diabetes may be managed through a healthy diet and physical activity as well as insulin or oral diabetes medicines. More information on diabetes prevention and management can be found on CDC's website and through the American Diabetes Association.

Obesity

Definition
Percentage of adults with a body mass index of 30.0 or higher based on reported height and weight

Numbers at a Glance
- **Rhode Island:** 30.1%
- **US Average:** 31.9%
- **Best State:** Colorado, 24.2%



Data Source: CDC, 2020 BRFSS

Why It's Important
Obesity is a complex health condition. Contributing factors to obesity include the social and physical environment, genetics, prenatal and early life influences, and behaviors such as poor diet and physical inactivity.

Adults who have obesity (a weight categorized as a BMI of 30 or higher based a person's height and weight) are more likely to have decreased quality of life and increased risk of developing serious health conditions, such as hypertension, Type 2 diabetes, heart disease and stroke, sleep apnea and breathing problems, some cancers, and mental health conditions such as depression and anxiety. Weight stigma, or discrimination and stereotyping based on an individual's weight, may also negatively influence psychological and physical health.

The costs associated with obesity and obesity-related health problems are staggering. One study estimated the medical costs of obesity to be $342.2 billion (in 2013 dollars). Beyond direct medical costs, the indirect costs of decreased productivity tied to obesity are estimated at $8.65 billion per year among American workers.

Who Is Affected
Obesity is a complex condition that can affect anyone. Contributing factors to obesity include the social and physical environment, genetics, medical history, and behaviors such as poor diet and physical

inactivity. Childhood maltreatment has also been identified as a risk factor for obesity.

The prevalence of obesity among adults is higher among:

- Men compared with women;
- Adults age 45-64 compared with adults age 18-44 and 65 or older;
- Hawaiian/Pacific Islander and Black adults compared with Asian adults;
- Adults with less than a college education compared with college graduates;and
- Adults with annual household incomes less than $25,000 compared with those with incomes of $75,000 or more.

Moving Forward

Addressing obesity requires a multifaceted approach with efforts from policymakers, state and local government, healthcare, schools, child care, families, and individuals. The built environment, health promotion, food policy, and government regulations can support healthy behaviors and help prevent obesity.

The CDC offers prevention strategies at state and local levels, community efforts, and tips for living a healthy lifestyle. The Community Preventive Services Task Force has compiled a list of resources for community-level interventions that can lower obesity rates by supporting healthy eating and active living in various settings. Examples of policy recommendations that address obesity include:

- Increase the price of sugary drinks.
- Expand funding to implement evidence-based obesity prevention programs.
- Support pedestrian safety initiatives like Safe Routes to School and Complete Streets.
- Discourage advertisements for unhealthy food that target children.

The Healthy Weight Checklist is a resource for staying healthy; it provides information on eating healthy, getting enough sleep and physical activity, limiting screen time, and reducing stress. The CDC recommends that pregnant women track their weight gain to promote healthy pregnancy weight.

Health Equity in Rhode Island

Data Source: PolicyLink/USC Equity Research Institute, National Equity Atlas, www.nationalequityatlas.org

Note: The information below was taken directly from the National Equity Atlas website. For more information, please visit https://nationalequityatlas.org/.

The Face of America is Changing

The United States is undergoing a profound demographic transformation in which people of color are quickly becoming the majority. Already more than half of all children younger than five are of color, and by 2045, people of color will be the majority overall. This shift is happening not only in cities, the traditional bastions of diversity, but also in suburban and rural communities across the country.

Diversity is increasing

America is becoming a true world nation that is increasingly multiracial and multicultural. In 1980, 80% of the population was White. By 2045, a majority of Americans will be people of color.

Communities of color are driving growth

Since 2010, almost all net population growth in the United States (96%) came from people of color, and in many places, growing communities of color prevented population decline. People with mixed racial backgrounds had the highest growth rate (24%), followed by Asian or Pacific Islanders, Latinos, and African Americans. The White population grew by less than one percent nationally and declined in many communities.

Inequity Threatens Economic Prosperity

The country's growing, diverse population is a tremendous economic asset in the global economy. But rising income inequality and persistent racial gaps in health, wealth, income, employment, education, and opportunity prevent low-income people and people of color from realizing their full economic potential. And as the nation becomes more diverse, the costs of inequity will grow. Here are some of the key challenges:

- **Income inequality continues to increase**
  - In the past few decades gains in income and wages have gone largely to the very top earners, while wages and incomes of working and middle-class workers have declined or stagnated. Nationally, since 1979, incomes of workers at the bottom fell by 12% while those at the top increased 20%.
- **Racial economic gaps are wide and persistent**
  - Rising inequality disproportionately affects workers of color, who are concentrated in low-wage jobs that provide few opportunities for economic security or upward mobility. Workers of color consistently earn lower wages and are more likely to be jobless compared to their white counterparts, and racial gaps remain even among workers with similar education levels. Nationwide, full-time workers of color currently earn 22% less than their white counterparts—the gap is slightly more than in 1979 and is growing rather than shrinking.

- **Barriers to higher education perpetuate workforce inequities**
    - America’s future jobs will require ever-higher levels of skills and education, but our education and job training systems are not adequately preparing Latinos, African Americans, and other workers of color who are growing as a share of the workforce to succeed in the knowledge-driven economy. Today, only 20% of US-born Latinos, 20% of African Americans, and 12% of Latino immigrants, have a bachelor's degree or higher.

Equity is the Superior Growth Model

Economists, business leaders, and elected officials increasingly recognize that inequality is hindering economic growth, and that racial and economic inclusion are the drivers of robust economic growth. To build a strong next economy, leaders in the private and public sectors need to advance an equitable growth agenda: a strategy to create good jobs, increase human capabilities, and expand opportunities for everyone to participate and prosper. Equity will make America stronger.

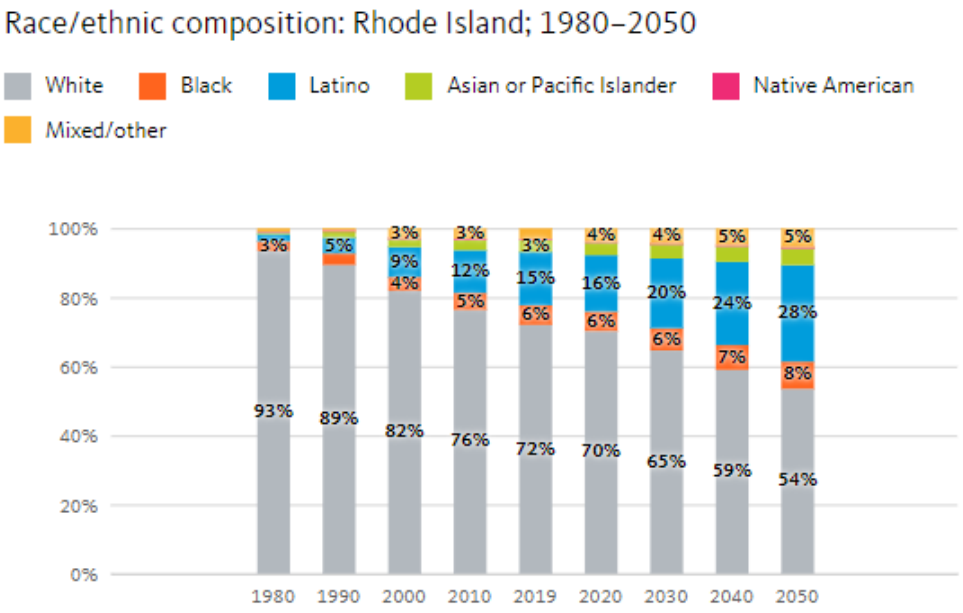
The economic benefits of equity

Eliminating racial inequities in income would strengthen families, communities, and local economies. Wage and employment gaps by race (as well as gender) are not only bad for people of color—they hold back the entire economy. Increasing wages and incomes, particularly for low-income households, leads to more consumer spending, which is a key driver of economic growth and job creation.

Rhode Island

Race/ethnic composition: Rhode Island

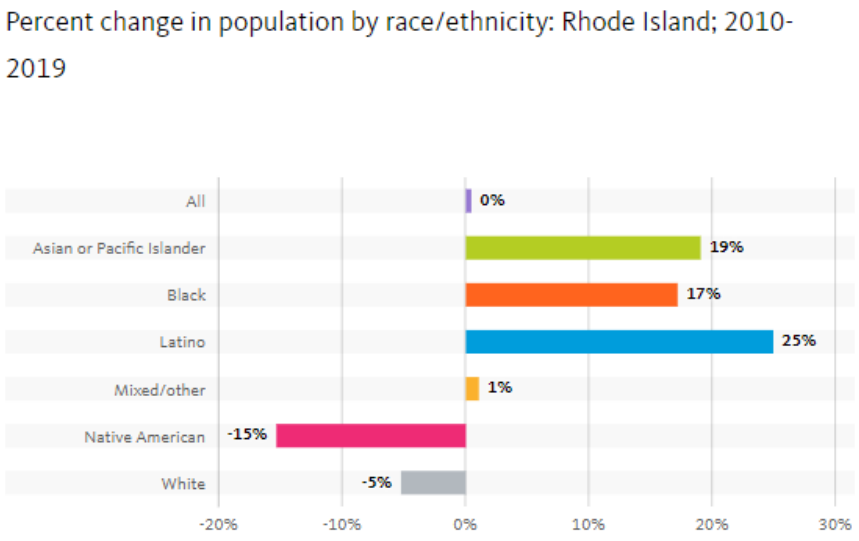
- From 1980-2019, people of color increased from 7% to 28% of the population.



Data source: U.S. Census Bureau; Woods & Poole Economics, Inc. | National Equity Atlas

Percent change in population by race/ethnicity: Rhode Island

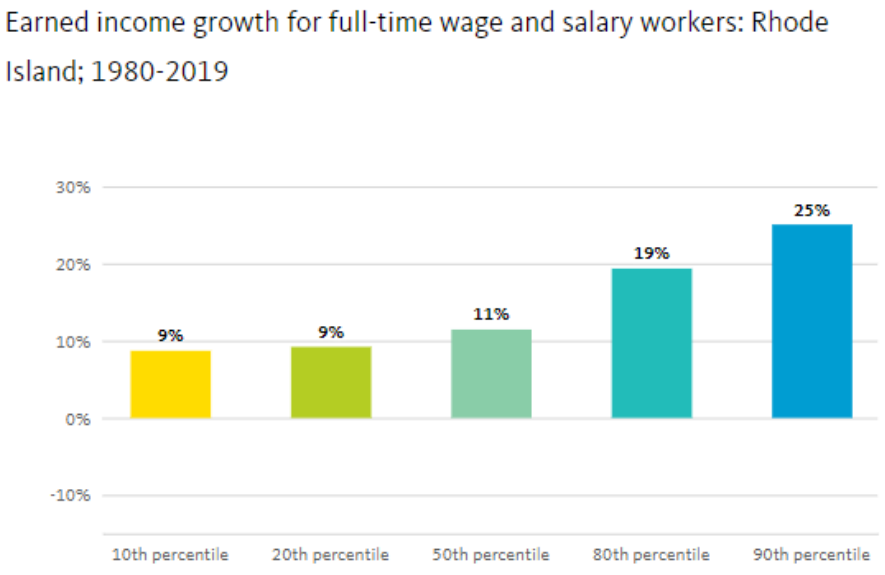
- From 2010-2019, the Latino population had the highest growth rate (25%) and the Native American population had the lowest (-15%).



Data source: U.S. Census Bureau; Woods & Poole Economics, Inc. | National Equity Atlas

Earned income growth for full-time wage and salary workers: Rhode Island

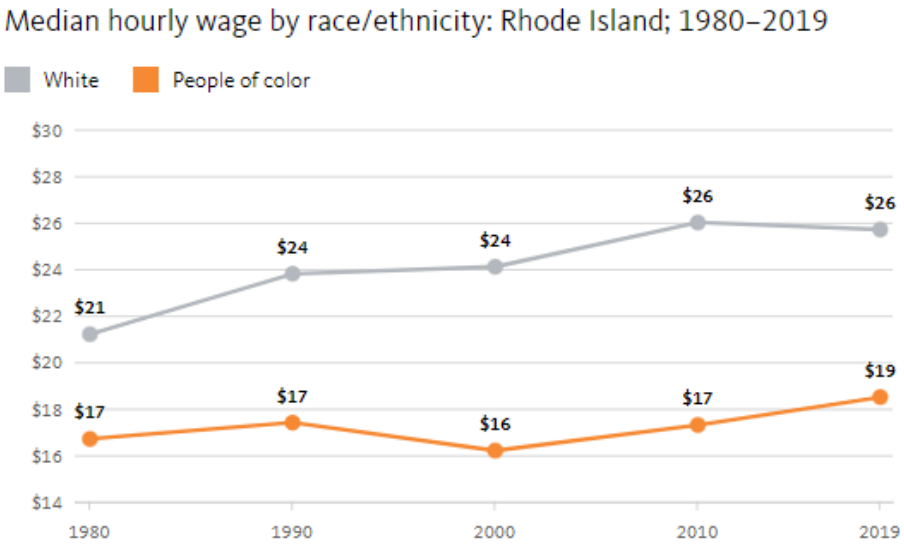
- Since 1979, income for full-time workers at the 10th percentile increased 9% while income for those at the 90th percentile increased 25%.



Data source: IPUMS USA | National Equity Atlas

Median hourly wage by race/ethnicity: Rhode Island

- In 2019, the median wage for workers of color was $19, compared to $26 for White workers.

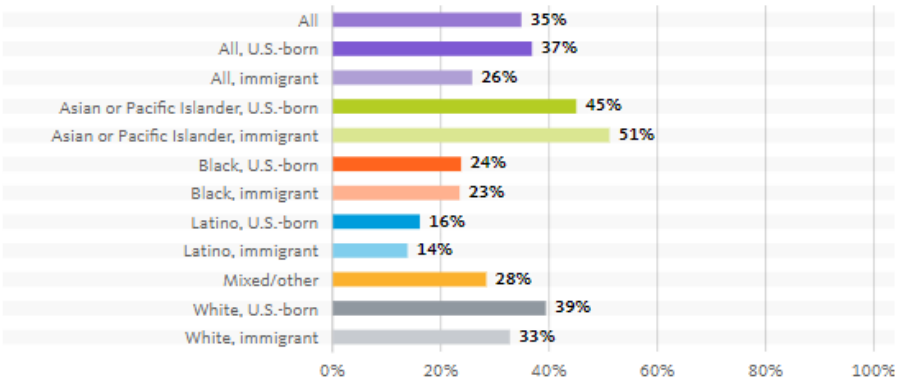


Data source: IPUMS USA | National Equity Atlas

Higher Education: Rhode Island

- In 2019, 51% of the immigrant Asian or Pacific Islander population and 14% of the immigrant Latino population had a bachelor's degree or higher.

Current percent of population with a Bachelor's Degree or higher by race/ethnicity and nativity: Rhode Island; 2019

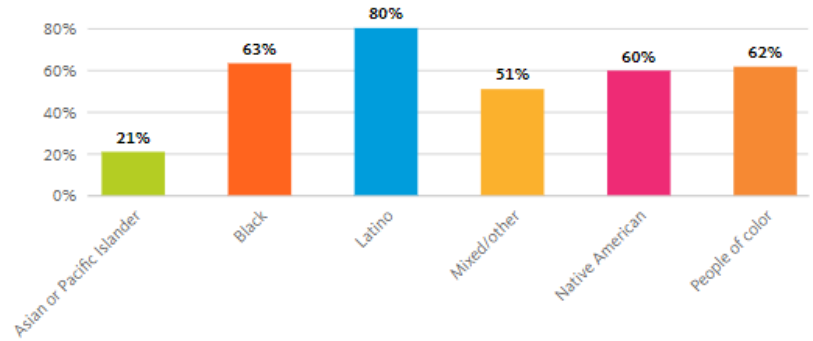


Data source: IPUMS USA | National Equity Atlas

Percent gain in income by race/ethnicity: Rhode Island

- In 2019, the income for Latino residents would have increased the most among all racial/ethnic groups if racial gaps in income were eliminated.

Percent gain in income by race/ethnicity: Rhode Island; 2019

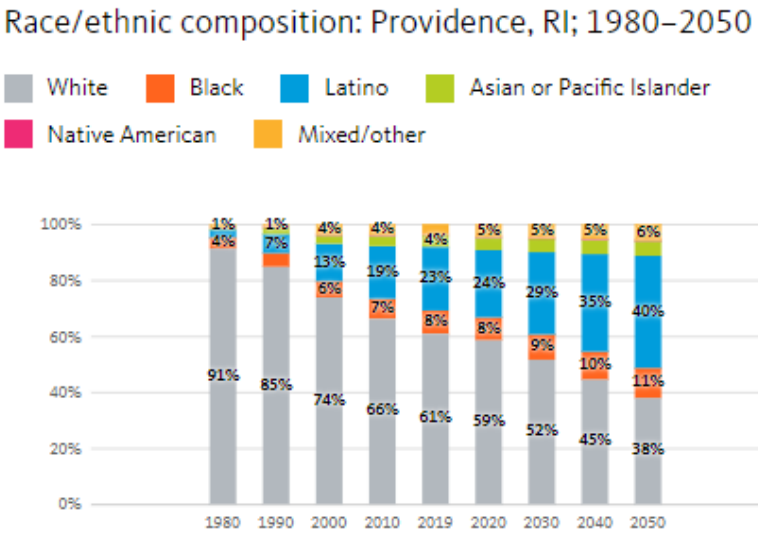


Data source: IPUMS USA | National Equity Atlas

Providence County

Race/ethnic composition: Providence County

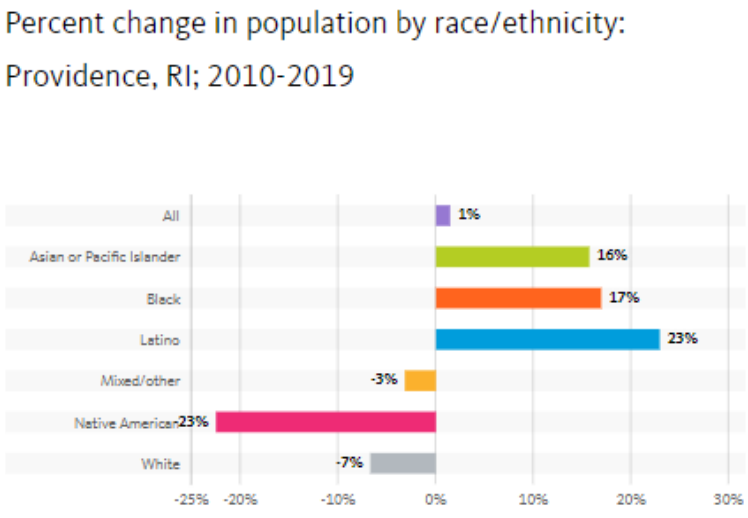
- From 1980-2019, people of color increased from 9% to 39% of the population.



Data source: U.S. Census Bureau; Woods & Poole Economics, Inc. | National Equity Atlas

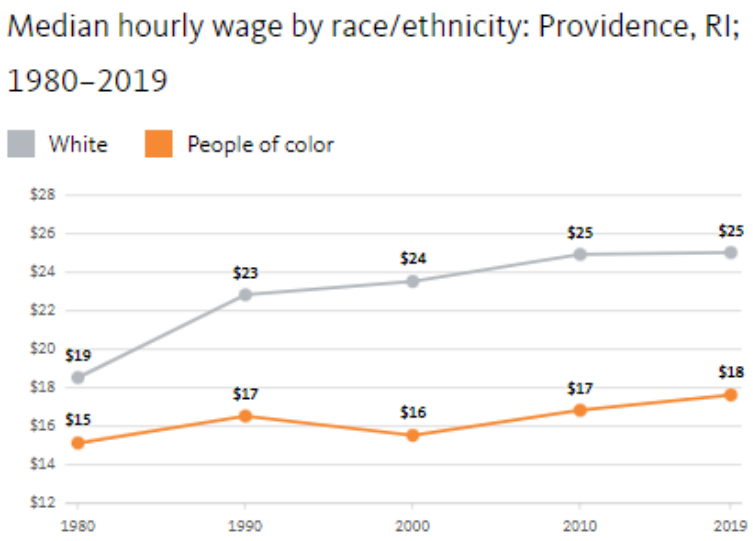
Percent change in population by race/ethnicity: Providence County

- From 2010-2019, the Latino population had the highest growth rate (23%) and the Native American population had the lowest (-23%).



Data source: U.S. Census Bureau; Woods & Poole Economics, Inc. | National Equity Atlas

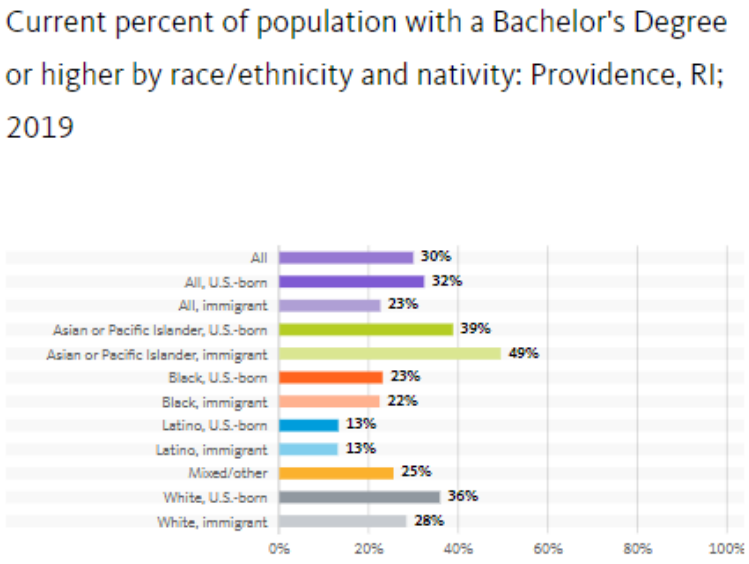
Median hourly wage by race/ethnicity: Providence County In 2019, the median wage for workers of color was $18, compared to $25 for White workers.



Data source: IPUMS USA | National Equity Atlas

Higher Education: Providence County

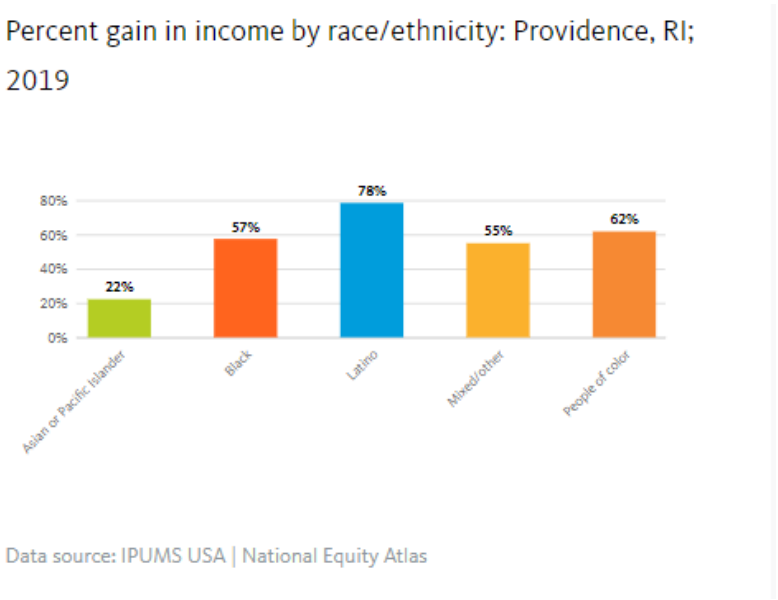
- In 2019, 49% of the immigrant Asian or Pacific Islander population and 13% of the immigrant Latino population had a bachelor's degree or higher.



Data source: IPUMS USA | National Equity Atlas

Percent gain in income by race/ethnicity: Providence County

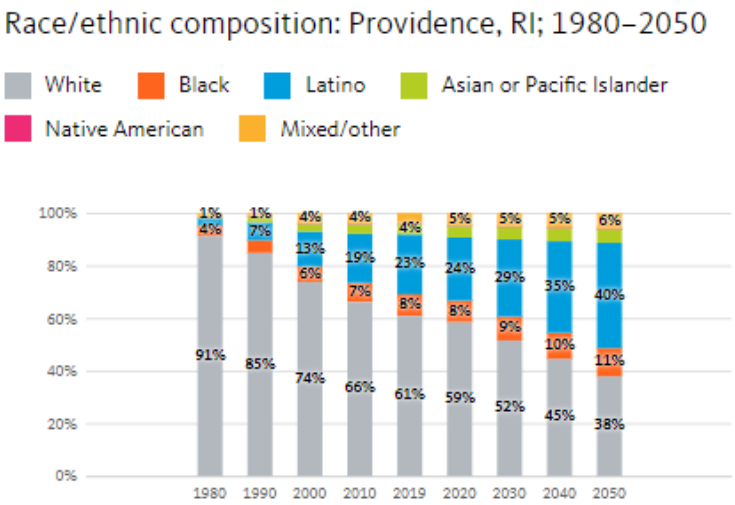
- In 2019, the income for Latino residents would have increased the most among all racial/ethnic groups if racial gaps in income were eliminated.



Kent County

Race/ethnic composition: Kent County

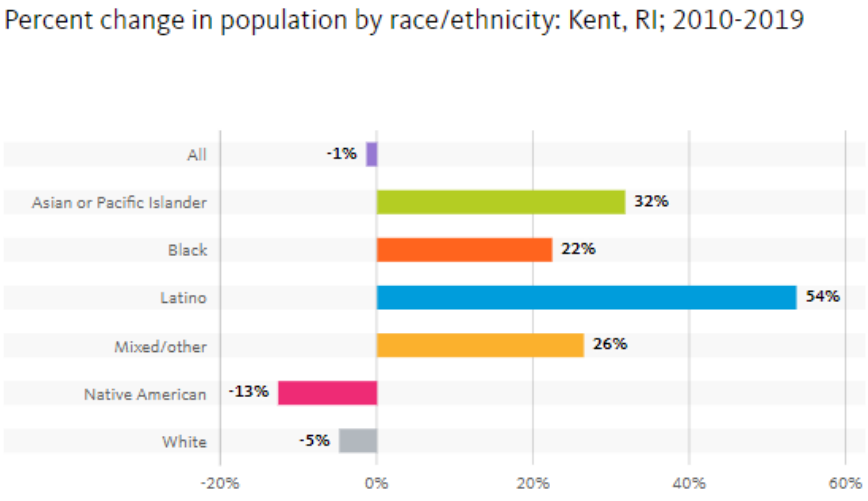
- From 1980-2019, people of color increased from 2% to 12% of the population.



Data source: U.S. Census Bureau; Woods & Poole Economics, Inc. | National Equity Atlas

Percent change in population by race/ethnicity: Kent County

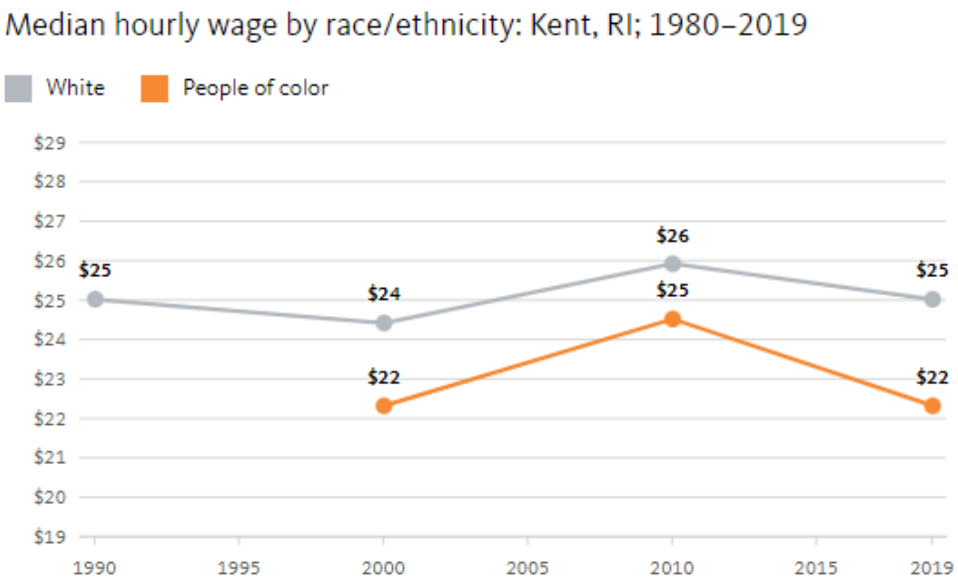
- From 2010-2019, the Latino population had the highest growth rate (54%) and the Native American population had the lowest (-13%_.



Data source: U.S. Census Bureau; Woods & Poole Economics, Inc. | National Equity Atlas

Median hourly wage by race/ethnicity: Kent County

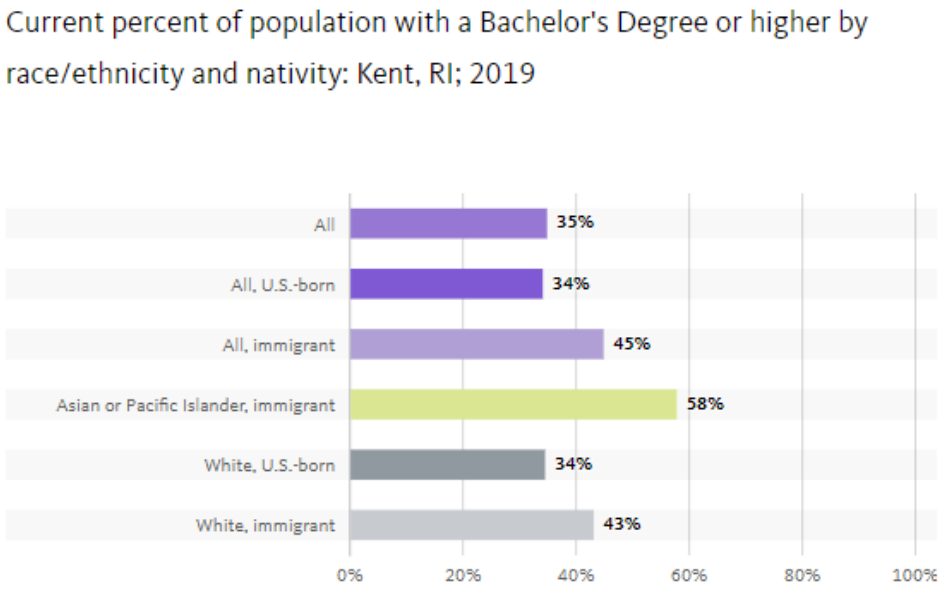
- In 2019, the median wage for workers of color was $22, compared to $25 for White workers.



Data source: IPUMS USA | National Equity Atlas

Higher Education: Kent County

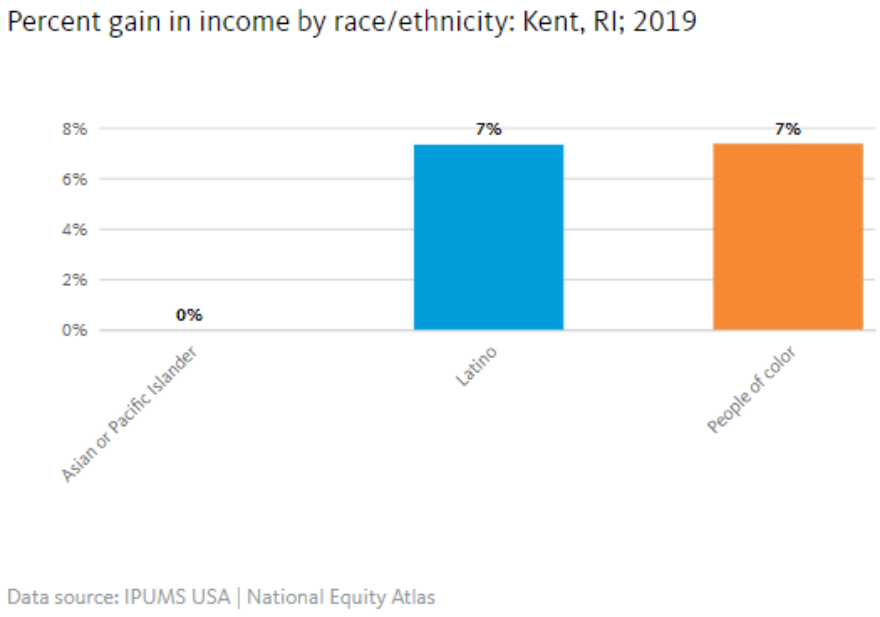
- In 2019, 58% of the immigrant Asian or Pacific Islander population and 34% of all of the US-born population had a bachelor's degree or higher.



Data source: IPUMS USA | National Equity Atlas

Percent gain in income by race/ethnicity: Kent County

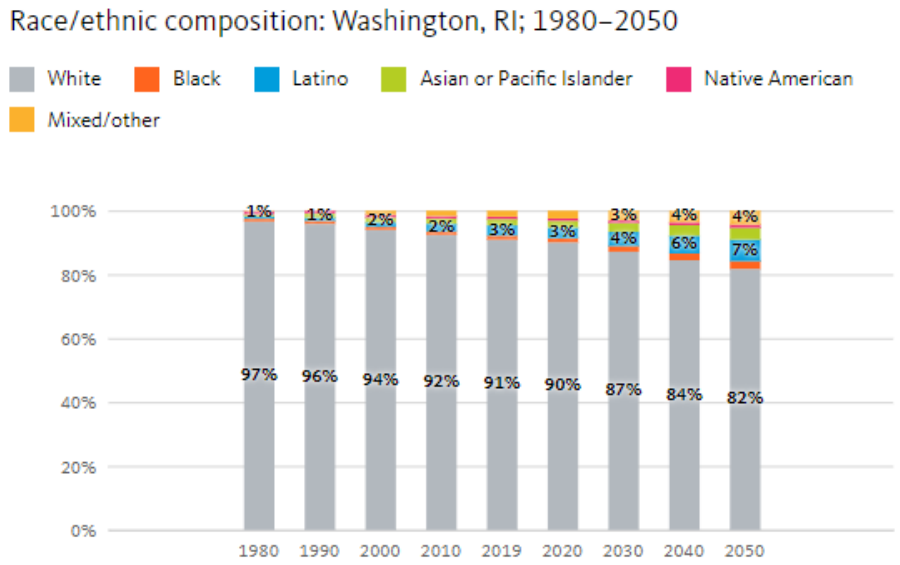
- In 2019, the income for people of color residents would have increased the most among all racial/ethnic groups if racial gaps in income were eliminated.



Washington County

Race/ethnic composition: Washington County

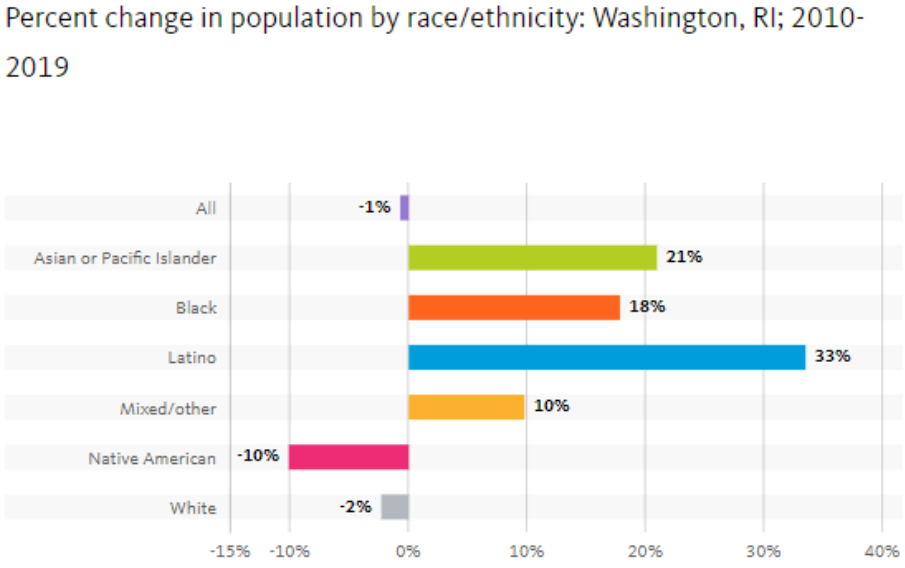
- From 1980-2019, people of color increased from 3% to 9% of the population.



Data source: U.S. Census Bureau; Woods & Poole Economics, Inc. | National Equity Atlas

Percent change in population by race/ethnicity: Washington County

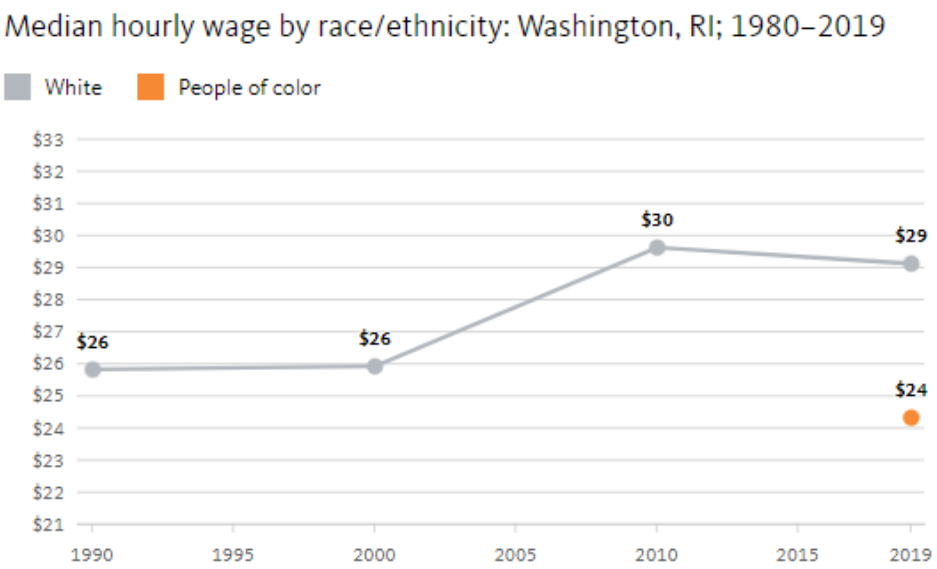
- From 2010-2019, the Latino population had the highest growth rate (33%) and the Native American population had the lowest (-10%).



Data source: U.S. Census Bureau; Woods & Poole Economics, Inc. | National Equity Atlas

Median hourly wage by race/ethnicity: Washington County

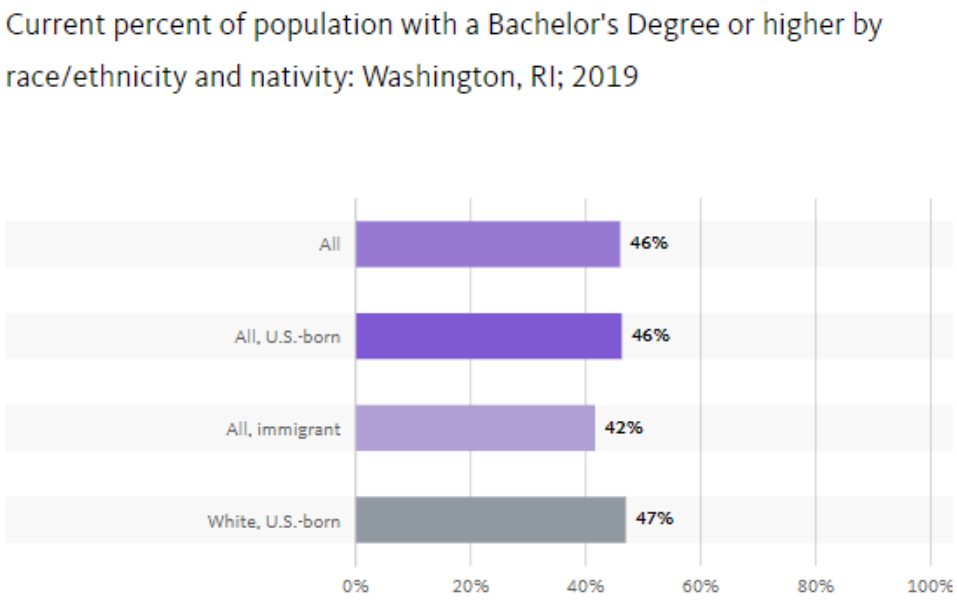
- In 2019, the median wage for workers of color was $24, compared to $29 for White workers.



Data source: IPUMS USA | National Equity Atlas

Higher Education: Washington County

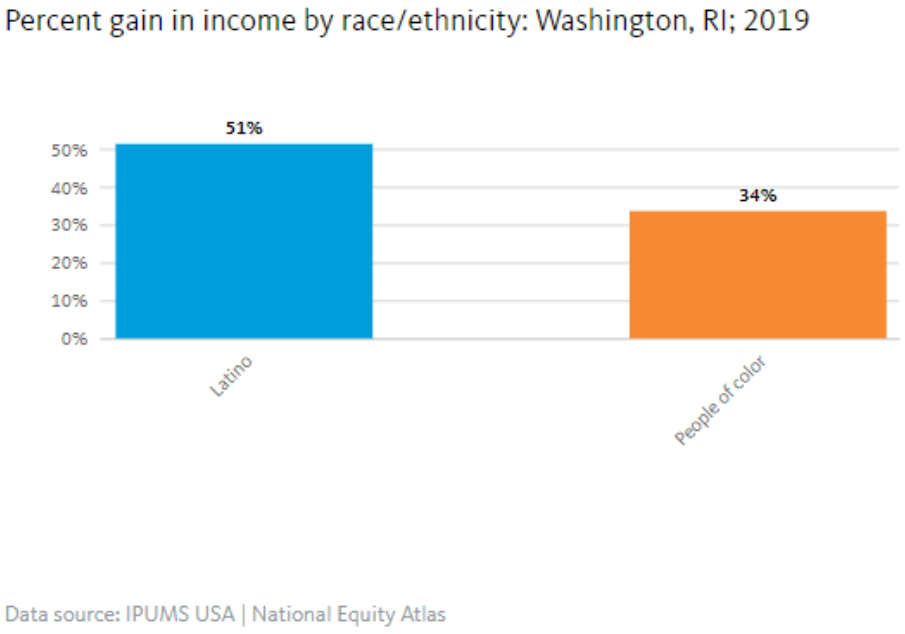
- In 2019, 47% of the US-born White population and 42% of all of the immigrant population had a bachelor's degree or higher.



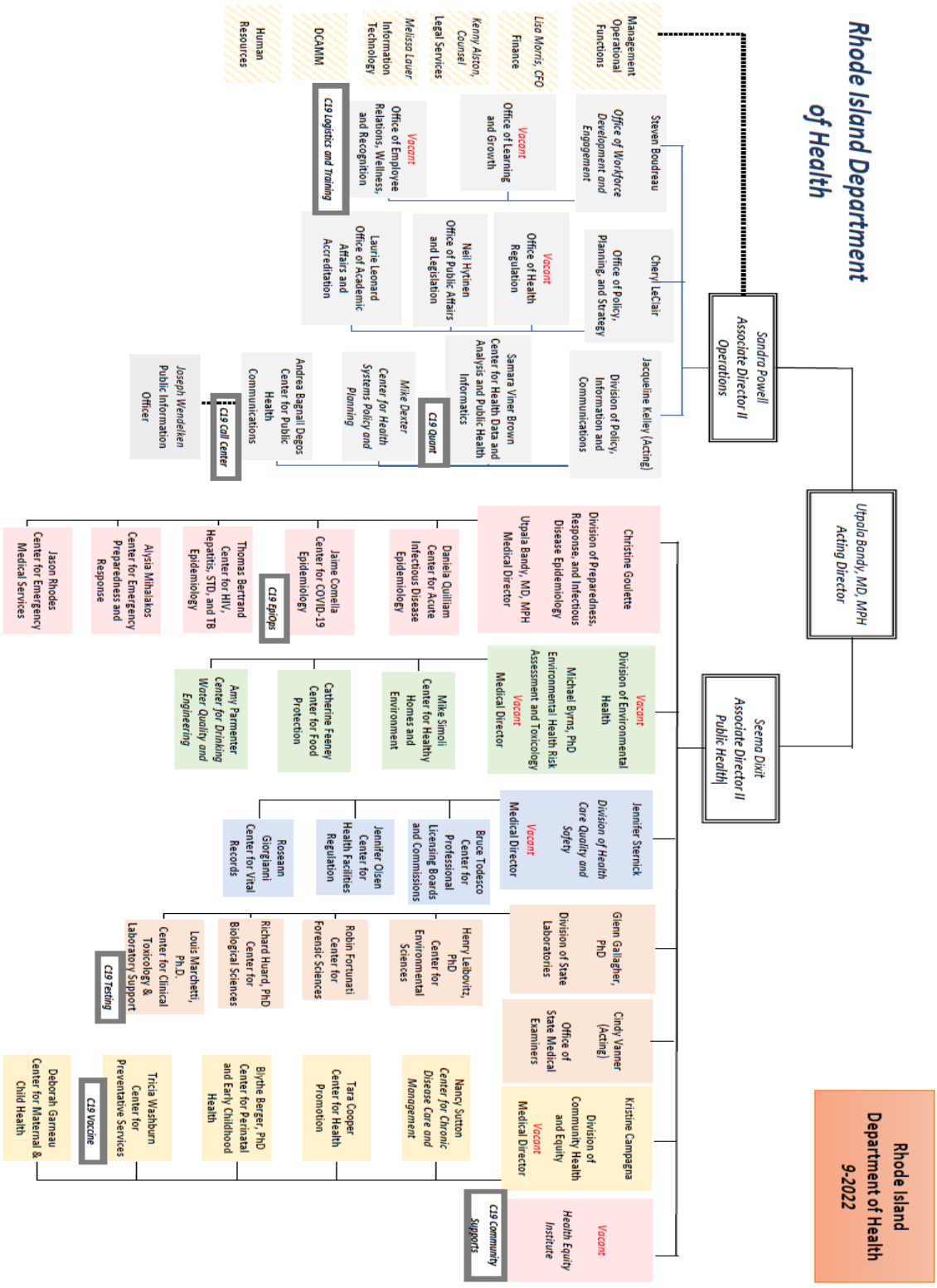
Data source: IPUMS USA | National Equity Atlas

Percent gain in income by race/ethnicity: Washington County

- In 2019, the income for Latino residents would have increased the most among all racial/ethnic groups if racial gaps in income were eliminated.



Appendix A: RIDOH Organizational Chart



References

1. ———. 2007. “Education and Health.” Policy Brief #9 9. Ann Arbor, MI: National Poverty Center, Gerald R. Ford School of Public Policy at University of Michigan. http://www.npc.umich.edu/publications/policy_briefs/brief9/.
2. ———. 2018. “2018 State Indicator Report on Fruits and Vegetables.” Atlanta, GA: U.S. Department of Health and Human Services. https://www.cdc.gov/nutrition/downloads/fruits-vegetables/2018/2018-fruit-vegetable-report-508.pdf.
3. “2020 Review of Physician and Advanced Practitioner Recruiting Incentives and the Impact of COVID-19.” Dallas, TX: Merritt Hawkins, AMN Healthcare, 2020. https://www.merritthawkins.com/uploadedFiles/Merritt_Hawkins_Incentive_Review_2020.pdf.
4. “2020-2025 Dietary Guidelines for Americans.” Washington, D.C.: U.S. Department of Agriculture and U.S. Department of Health and Human Services, December 2020. https://www.dietaryguidelines.gov/sites/default/files/2020-12/Dietary_Guidelines_for_Americans_2020-2025.pdf.
5. “America’s Rental Housing 2020.” 2020. Cambridge, MA: Joint Center for Housing Studies of Harvard University. https://www.jchs.harvard.edu/sites/default/files/reports/files/Harvard_JCHS_Americas_Rental_Housing_2020.pdf.
6. “Cancer Facts & Figures 2022.” 2022. Atlanta, GA: American Cancer Society. https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/annual-cancer-facts-and-figures/2022/2022-cancer-facts-and-figures.pdf.
7. “Colorectal Cancer Facts & Figures 2020-2022.” 2020. Atlanta, GA: American Cancer Society. https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/colorectal-cancer-facts-and-figures/colorectal-cancer-facts-and-figures-2020-2022.pdf.
8. “Committee Opinion No. 710: Counseling Adolescents About Contraception.” *Obstetrics & Gynecology* 130, no. 2 (August 2017): e74–80. https://doi.org/10.1097/AOG.0000000000002234.
9. “Low Level Lead Exposure Harms Children: A Renewed Call for Primary Prevention,” January 4, 2012. https://www.cdc.gov/nceh/lead/acclpp/final_document_030712.pdf\.
10. “Multiple Chronic Conditions—A Strategic Framework: Optimum Health and Quality of Life for Individuals with Multiple Chronic Conditions.” 2010. Washington, D.C.: U.S. Department of Health and Human Services. https://www.hhs.gov/sites/default/files/ash/initiatives/mcc/mcc_framework.pdf.
11. “New American Driving Survey: Updated Methodology and Results from July 2019 to June 2020.” 2021. Technical Report. Washington, D.C.: AAA Foundation for Traffic Safety. https://newsroom.aaa.com/wp-content/uploads/2021/07/New-American-Driving-Survey-Report-April-2021.pdf.
12. “Oral Health Care: Can Access to Services Be Improved?” n.d. *Health Policy Institute* (blog). Accessed November 24, 2022. https://hpi.georgetown.edu/oralhealth/.
13. “QuickStats: Percentage of Adults Aged 18–64 Years with a Usual Place for Health Care, by Race/Ethnicity — National Health Interview Survey, United States, 2008 and 2018.” 2020. *MMWR. Morbidity and Mortality Weekly Report* 69 (5): 147. https://doi.org/10.15585/mmwr.mm6905a6.
14. “Return on Investments in Public Health: Saving Lives and Money.” Policy Highlight Brief. Robert Wood Johnson Foundation, December 2013.
15. “Strategies for Improving the Affordability of High-Quality Health Care and Coverage.” National Coalition on Health Care, July 10, 2018. https://nchc.org/wp-content/uploads/2018/07/Final-Affordability-Report.pdf.
16. “The Nourishing Effect: Ending Hunger, Improving Health, Reducing Inequality (2016 Hunger Report).” 2015. Washington, D.C.: Bread for the World Institute. http://hungerreport.org/2016/wp-content/uploads/2015/11/HR2016-Full-Report-Web.pdf.
17. “The State of the Nation’s Housing 2022.” 2022. Cambridge, MA: Joint Center for Housing Studies of Harvard University. https://www.jchs.harvard.edu/sites/default/files/reports/files/Harvard_JCHS_State_Nations_Housing_2022.pdf.
18. “Why Education Matters to Health: Exploring the Causes.” 2014. Issue Brief #2 2. Education and Health Initiative. Richmond, VA: The VCU Center on Society and Health and Robert Wood Johnson Foundation. https://societyhealth.vcu.edu/media/society-health/pdf/test-folder/CSH-EHI-Issue-Brief-2.pdf.
19. “Why Education Matters to Health: Exploring the Causes.” 2014. Issue Brief #2 2. Education and Health Initiative. Richmond, VA: The VCU Center on Society and Health and Robert Wood Johnson Foundation. https://societyhealth.vcu.edu/media/society-health/pdf/test-folder/CSH-EHI-Issue-Brief-2.pdf.
20. 2022 Rhode Island KIDS COUNT Factbook Providence, RI: Rhode Island KIDS COUNT, https://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202022/fm6798_Factbook2022_web.pdf?ver=2022-05-18-151346-817
21. Abdul-Quader, Abu S., Jonathan Feelemyer, Shilpa Modi, Ellen S. Stein, Alya Briceno, Salaam Semaan, Tara Horvath, Gail E. Kennedy, and Don C. Des Jarlais. “Effectiveness of Structural-Level Needle/Syringe Programs to Reduce HCV and HIV Infection Among People Who Inject Drugs: A Systematic Review.” *AIDS and Behavior* 17, no. 9 (November 2013): 2878–92. https://doi.org/10.1007/s10461-013-0593-y.
22. Abrams, Zara. 2019. “The Future of Remote Work.” *Monitor on Psychology* 50 (9). https://www.apa.org/monitor/2019/10/cover-remote-work.
23. Alegría, Margarita, Kiara Alvarez, Rachel Zack Ishikawa, Karissa DiMarzio, and Samantha McPeck. 2016. “Removing Obstacles to Eliminating Racial and Ethnic Disparities in Behavioral Health Care.” *Health Affairs* 35 (6): 991–99. https://doi.org/10.1377/hlthaff.2016.0029.

24. Alhusen, Jeanne L., Kelly M. Bower, Elizabeth Epstein, and Phyllis Sharps. 2016. “Racial Discrimination and Adverse Birth Outcomes: An Integrative Review.” *Journal of Midwifery & Women’s Health* 61 (6): 707–20. https://doi.org/10.1111/jmwh.12490.
25. Allaire, Maura, Haowei Wu, and Upmanu Lall. 2018. “National Trends in Drinking Water Quality Violations.” *Proceedings of the National Academy of Sciences* 115 (9): 2078–83. https://doi.org/10.1073/pnas.1719805115.
26. Allchin, Adelyn, Vicka Chaplin, and Joshua Horwitz. “Limiting Access to Lethal Means: Applying the Social Ecological Model for Firearm Suicide Prevention.” *Injury Prevention* 25, no. Suppl 1 (September 1, 2019): i44–48. https://doi.org/10.1136/injuryprev-2018-042809.
27. America’s Health Rankings analysis of America's Health Rankings composite measure, United Health Foundation, AmericasHealthRankings.org, accessed 2023. https://www.americashealthrankings.org/explore/annual/state/RI?edition-year=2021
28. America’s Health Rankings analysis of CDC WONDER, Multiple Cause of Death Files, United Health Foundation, AmericasHealthRankings.org, accessed 2023.
29. America’s Health Rankings analysis of CDC WONDER, Natality Public Use Files, United Health Foundation, AmericasHealthRankings.org, accessed 2023.
30. America’s Health Rankings analysis of CDC, Behavioral Risk Factor Surveillance System, United Health Foundation, AmericasHealthRankings.org, accessed 2023.
31. America’s Health Rankings analysis of CDC, HRSA and Trust for America's Health, United Health Foundation, AmericasHealthRankings.org, accessed 2023.
32. America’s Health Rankings analysis of CDC, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention Atlas, United Health Foundation, AmericasHealthRankings.org, accessed 2023.
33. America’s Health Rankings analysis of CDC, National Immunization Survey-Teen, United Health Foundation, AmericasHealthRankings.org, accessed 2023.
34. America’s Health Rankings analysis of CDC, Water Fluoridation Reporting System, United Health Foundation, AmericasHealthRankings.org, accessed 2023.
35. America’s Health Rankings analysis of Denver Health and Hospital Authority, RADARS® System Survey of Non-Medical Use of Prescription Drugs Program, United Health Foundation, AmericasHealthRankings.org, accessed 2023.
36. America’s Health Rankings analysis of Federal Bureau of Investigation, Uniform Crime Reporting Program, United Health Foundation, AmericasHealthRankings.org, accessed 2023.
37. America’s Health Rankings analysis of National Survey of Children's Health, U.S. Department of Health and Human Services, Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau (MCHB), United Health Foundation, AmericasHealthRankings.org, accessed 2023.
38. America’s Health Rankings analysis of U.S. Bureau of Labor Statistics, Census of Fatal Occupational Injuries, United Health Foundation, AmericasHealthRankings.org, accessed 2023.
39. America’s Health Rankings analysis of U.S. Census Bureau, American Community Survey, United Health Foundation, AmericasHealthRankings.org, accessed 2023.
40. America’s Health Rankings analysis of U.S. Census Bureau, Current Population Survey, Voting and Registration Supplement, United Health Foundation, AmericasHealthRankings.org, accessed 2023.
41. America’s Health Rankings analysis of U.S. Department of Agriculture, Household Food Security in the United States Report, United Health Foundation, AmericasHealthRankings.org, accessed 2023.
42. America’s Health Rankings analysis of U.S. Department of Education, National Center for Education Statistics, Common Core of Data, United Health Foundation, AmericasHealthRankings.org, accessed 2023.
43. America’s Health Rankings analysis of U.S. Department of Housing and Urban Development, Comprehensive Housing Affordability Strategy, United Health Foundation, AmericasHealthRankings.org, accessed 2023.
44. America’s Health Rankings analysis of U.S. Environmental Protection Agency, United Health Foundation, AmericasHealthRankings.org, accessed 2023.
45. America’s Health Rankings analysis of U.S. Environmental Protection Agency, Enforcement and Compliance History Online, Safe Drinking Water Information System, United Health Foundation, AmericasHealthRankings.org, accessed 2023.
46. America’s Health Rankings analysis of U.S. HHS, Centers for Medicare & Medicaid Services, National Plan and Provider Enumeration System, United Health Foundation, AmericasHealthRankings.org, accessed 2023.
47. America’s Health Rankings analysis of U.S. HHS, Centers for Medicare & Medicaid Services, Office of Minority Health, Mapping Medicare Disparities Tool, United Health Foundation, AmericasHealthRankings.org, accessed 2023.
48. American Diabetes Association. 2018. “Economic Costs of Diabetes in the U.S. in 2017.” *Diabetes Care* 41 (5): 917–28. https://doi.org/10.2337/dci18-0007.
49. American Public Health Association. 2018. “The Dropout Crisis: A Public Health Problem and the Role of School-Based Health Care.” Washington, D.C.: APHA Center for School, Health and Education. https://apha.org/-/media/Files/PDF/SBHC/Dropout_Crisis.ashx.
50. Andreyeva, Tatiana, Joerg Luedicke, and Y. Claire Wang. “State-Level Estimates of Obesity-Attributable Costs of Absenteeism.” *Journal of Occupational and Environmental Medicine* 56, no. 11 (November 2014): 1120–27. https://doi.org/10.1097/JOM.0000000000000298.
51. Anekwe, Tobenna D., and Ilya Rahkovsky. 2013. “Economic Costs and Benefits of Healthy Eating.” *Current Obesity Reports* 2 (3): 225–34. https://doi.org/10.1007/s13679-013-0064-9.

52. Arango, Celso, Covadonga M. Díaz-Caneja, Patrick D. McGorry, Judith Rapoport, Iris E. Sommer, Jacob A. Vorstman, David McDaid, et al. 2018. “Preventive Strategies for Mental Health.” *The Lancet Psychiatry* 5 (7): 591–604. https://doi.org/10.1016/S2215-0366(18)30057-9.
53. Arenson, Michael, Philip J. Hudson, NaeHyung Lee, and Betty Lai. 2019. “The Evidence on School-Based Health Centers: A Review.” *Global Pediatric Health* 6 (January): 2333794X1982874. https://doi.org/10.1177/2333794X19828745.
54. Bailey, Zinzi D., Nancy Krieger, Madina Agénor, Jasmine Graves, Natalia Linos, and Mary T. Bassett. “Structural Racism and Health Inequities in the USA: Evidence and Interventions.” The Lancet 389, no. 10077 (2017): 1453–63. https://doi.org/10.1016/S0140-6736(17)30569-X.
55. Ballard, Parissa J., Lindsay T. Hoyt, and Mark C. Pachucki. “Impacts of Adolescent and Young Adult Civic Engagement on Health and Socioeconomic Status in Adulthood.” *Child Development* 90, no. 4 (2019): 1138–54. https://doi.org/10.1111/cdev.12998.
56. Bashshur, Rashid L., Gary W. Shannon, Noura Bashshur, and Peter M. Yellowlees. “The Empirical Evidence for Telemedicine Interventions in Mental Disorders.” *Telemedicine and E-Health* 22, no. 2 (February 2016): 87–113. https://doi.org/10.1089/tmj.2015.0206.
57. Baum, Fran, and Matthew Fisher. “Why Behavioural Health Promotion Endures despite Its Failure to Reduce Health Inequities.” *Sociology of Health & Illness* 36, no. 2 (2014): 213–25. https://doi.org/doi:10.1111/1467-9566.12112.
58. Bazzano, Lydia A., Jiang He, Lorraine G. Ogden, Catherine M. Loria, Suma Vupputuri, Leann Myers, and Paul K. Whelton. 2002. “Fruit and Vegetable Intake and Risk of Cardiovascular Disease in US Adults: The First National Health and Nutrition Examination Survey Epidemiologic Follow-up Study.” *The American Journal of Clinical Nutrition* 76 (1): 93–99. https://doi.org/10.1093/ajcn/76.1.93.
59. Bellinger, David C. “Very Low Lead Exposures and Children’s Neurodevelopment.” *Current Opinion in Pediatrics* 20, no. 2 (April 2008): 172–77. https://doi.org/10.1097/MOP.0b013e3282f4f97b.
60. Bellis, Mark A., Karen Hughes, Kat Ford, Gabriela Ramos Rodriguez, Dinesh Sethi, and Jonathon Passmore. “Life Course Health Consequences and Associated Annual Costs of Adverse Childhood Experiences across Europe and North America: A Systematic Review and Meta-Analysis.” *The Lancet Public Health* 4, no. 10 (October 1, 2019): e517–28. https://doi.org/10.1016/S2468-2667(19)30145-8.
61. Beltz, Martha A., Vanessa H. Sacks, Kristin A. Moore, and Mary Terzian. “State Policy and Teen Childbearing: A Review of Research Studies.” *Journal of Adolescent Health* 56, no. 2 (February 1, 2015): 130–38. https://doi.org/10.1016/j.jadohealth.2014.11.001.
62. Benjamin, Regina M. 2010. “Oral Health: The Silent Epidemic.” *Public Health Reports*, Surgeon General’s Perspectives, 125 (2): 158–59. https://doi.org/10.1177/003335491012500202.
63. Berkowitz, Seth A., Sanjay Basu, Craig Gundersen, and Hilary K. Seligman. 2019. “State-Level and County-Level Estimates of Health Care Costs Associated with Food Insecurity.” *Preventing Chronic Disease* 16 (July): 180549. https://doi.org/10.5888/pcd16.180549.
64. Betancourt, Joseph R., Alexander R. Green, and J. Emilio Carrillo. 2002. “Cultural Competence in Health Care: Emerging Frameworks and Practical Approaches.” Field Report. The Commonwealth Fund. https://www.commonwealthfund.org/sites/default/files/documents/___media_files_publications_fund_report_2002_oct_cultural_competence_in_health_care__emerging_frameworks_and_practical_approaches_betancourt_culturalcompetence_576_pdf.pdf.
65. Bethell, Christina D., M.B. Davis, Narangerel Gombojav, Scott Stumbo, and Kathleen Powers. “A National and Across-State Profile on Adverse Childhood Experiences Among U.S. Children and Possibilities to Heal and Thrive.” Issue Brief. Baltimore, MD: Johns Hopkins Bloomberg School of Public Health, October 2017. https://www.cahmi.org/docs/default-source/resources/issue-brief-a-national-and-across-state-profile-on-adverse-childhood-experiences-among-children-and-possibilities-to-heal-and-thrive-(2017).pdf.
66. Bhatta, Dharma N., and Stanton A. Glantz. 2020. “Association of E-Cigarette Use With Respiratory Disease Among Adults: A Longitudinal Analysis.” *American Journal of Preventive Medicine* 58 (2): 182–90. https://doi.org/10.1016/j.amepre.2019.07.028.
67. Biener, Adam, John Cawley, and Chad Meyerhoefer. “The High and Rising Costs of Obesity to the US Health Care System.” *Journal of General Internal Medicine* 32, no. S1 (April 2017): 6–8. https://doi.org/10.1007/s11606-016-3968-8.
68. Billock, Rachael M. 2022. “*QuickStats:* Age-Adjusted Drug Overdose Death Rates* Among Workers Aged 16–64 Years in Usual Occupation† Groups with the Highest Drug Overdose Death Rates — National Vital Statistics System, United States,§ 2020.” *MMWR. Morbidity and Mortality Weekly Report* 71 (29): 948. https://doi.org/10.15585/mmwr.mm7129a5.
69. Bjork, Adam, and Valerie Morelli. “Immunization Strategies for Healthcare Practices and Providers.” In *Epidemiology and Prevention of Vaccine-Preventable Diseases*, 14th ed. Washington, D.C.: Public Health Foundation, 2021. https://www.cdc.gov/vaccines/pubs/pinkbook/strat.html.
70. Bodenheimer, Thomas S., and Mark D. Smith. 2013. “Primary Care: Proposed Solutions To The Physician Shortage Without Training More Physicians.” *Health Affairs* 32 (11): 1881–86. https://doi.org/10.1377/hlthaff.2013.0234.
71. Boonstra, Heather D. “Teen Pregnancy Among Young Women In Foster Care: A Primer.” *Guttmacher Policy Review* 14, no. 2 (Spring 2011). https://www.guttmacher.org/gpr/2011/06/teen-pregnancy-among-young-women-foster-care-primer.
72. Braswell, Anne, and Nalo Johnson. 2013. “Rural America’s Oral Health Care Needs.” National Rural Health Association Policy Brief. National Rural Health

Association. https://www.ruralhealth.us/getattachment/Advocate/Policy-Documents/RuralAmericasOralHealthCareNeeds-(1).pdf.aspx?lang=en-US.
73. Braveman, Paula, Mercedes Dekker, Susan Egerter, Tabashir Sadegh-Nobari, and Craig Pollack. 2011. “Housing and Health.” Issue Brief #7: Exploring the Social Determinants of Health. Robert Wood Johnson Foundation Commission to Build a Healthier America. https://www.rwjf.org/en/library/research/2011/05/housing-and-health.html.
74. Brennan, Jan. “Increasing Voter Turnout in Local Elections.” *National Civic Review* 109, no. 1 (Spring 2020): 16–23.
75. Bruning, John, Ahmed A. Arif, and James E. Rohrer. 2014. “Medical Cost and Frequent Mental Distress among the Non-Elderly US Adult Population.” *Journal of Public Health* 36 (1): 134–39. https://doi.org/10.1093/pubmed/fdt029.
76. Butryn, Tracy, Leah Bryant, Christine Marchionni, and Farhad Sholevar. “The Shortage of Psychiatrists and Other Mental Health Providers: Causes, Current State, and Potential Solutions.” *International Journal of Academic Medicine* 3, no. 1 (2017): 5–9. https://doi.org/10.4103/IJAM.IJAM_49_17.
77. Buttorff, Christine, Teague Ruder, and Melissa Bauman. 2017. “Multiple Chronic Conditions in the United States.” TL221. Tools. Santa Monica, CA: RAND Corporation. https://doi.org/10.7249/TL221.
78. Calvin, Rosie, Karen Winters, Sharon B. Wyatt, David R. Williams, Frances C. Henderson, and Evelyn R. Walker. 2003. “Racism and Cardiovascular Disease in African Americans.” *The American Journal of the Medical Sciences* 325 (6): 315–31. https://doi.org/10.1097/00000441-200306000-00003.
79. Carlson, Susan A., E. Kathleen Adams, Zhou Yang, and Janet E. Fulton. “Percentage of Deaths Associated With Inadequate Physical Activity in the United States.” *Preventing Chronic Disease* 15 (March 29, 2018): 170354. https://doi.org/10.5888/pcd18.170354.
80. Carlson, Susan A., Janet E. Fulton, Michael Pratt, Zhou Yang, and E. Kathleen Adams. “Inadequate Physical Activity and Health Care Expenditures in the United States.” *Progress in Cardiovascular Diseases*, 2013 Global Congress on Physical Activity - All Hearts Need Exercise: A Global Call to Action by the AHA, 57, no. 4 (January 1, 2015): 315–23. https://doi.org/10.1016/j.pcad.2014.08.002.
81. Carlson, Susan A., Janet E. Fulton, Michael Pratt, Zhou Yang, and E. Kathleen Adams. “Inadequate Physical Activity and Health Care Expenditures in the United States.” *Progress in Cardiovascular Diseases*, 2013 Global Congress on Physical Activity - All Hearts Need Exercise: A Global Call to Action by the AHA, 57, no. 4 (January 1, 2015): 315–23. https://doi.org/10.1016/j.pcad.2014.08.002.
82. Cederbaum, Julie A., Chung H. Jeong, Chaoyue Yuan, and Jungeun Olivia Lee. “Sex and Substance Use Behaviors among Children of Teen Mothers: A Systematic Review.” *Journal of Adolescence* 79 (February 1, 2020): 208–20. https://doi.org/10.1016/j.adolescence.2020.01.008.
83. Centers for Disease Control and Prevention (CDC). “Ten Great Public Health Achievements--United States, 1900-1999.” MMWR. Morbidity and Mortality Weekly Report, vol. 48, no. 12, Apr. 1999, pp. 241–43. PMID:10220250
84. Centers for Disease Control and Prevention. “Achievements in Public Health, 1900-1999: Improvements in Workplace Safety -- United States, 1900-1999.” *MMWR. Morbidity and Mortality Weekly Report* 48, no. 22 (June 11, 1999): 461–69.
85. Centers for Disease Control and Prevention. “Strategies to Prevent Obesity and Other Chronic Diseases: The CDC Guide to Strategies to Increase the Consumption of Fruits and Vegetables.” Atlanta, GA: U.S. Department of Health and Human Services, 2011. https://stacks.cdc.gov/view/cdc/21639.
86. Centers for Disease Control and Prevention. 2011. “Strategies to Prevent Obesity and Other Chronic Diseases: The CDC Guide to Strategies to Increase the Consumption of Fruits and Vegetables.” Atlanta, GA: U.S. Department of Health and Human Services. https://stacks.cdc.gov/view/cdc/21639.
87. Centers for Disease Control and Prevention. 2016. “Strategies for Reducing Health Disparities — Selected CDC-Sponsored Interventions, United States, 2016.” *MMWR. Morbidity and Mortality Weekly Report*, Supplement, 65 (1). https://stacks.cdc.gov/view/cdc/37922.
88. Centers for Disease Control and Prevention. 2020. “National Diabetes Statistics Report 2020.” Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. https://www.cdc.gov/diabetes/library/features/diabetes-stat-report.html.
89. Chaloupka, Frank J., Kurt Straif, and Maria E. Leon. “Effectiveness of Tax and Price Policies in Tobacco Control.” *Tobacco Control* 20, no. 3 (May 1, 2011): 235–38. https://doi.org/10.1136/tc.2010.039982.
90. Chen, Han-Yang, Dennis J. Baumgardner, and Jessica P. Rice. “Health-Related Quality of Life among Adults with Multiple Chronic Conditions in the United States, Behavioral Risk Factor Surveillance System, 2007.” *Preventing Chronic Disease* 8, no. 1 (January 2011): A09.
91. Chesson, Harrell W., Donatus U. Ekwueme, Mona Saraiya, Meg Watson, Douglas R. Lowy, and Lauri E. Markowitz. “Estimates of the Annual Direct Medical Costs of the Prevention and Treatment of Disease Associated with Human Papillomavirus in the United States.” *Vaccine* 30, no. 42 (September 2012): 6016–19. https://doi.org/10.1016/j.vaccine.2012.07.056.
92. Chin, Helen B., Theresa Ann Sipe, Randy Elder, Shawna L. Mercer, Sajal K. Chattopadhyay, Verughese Jacob, Holly R. Wethington, et al. “The Effectiveness of Group-Based Comprehensive Risk-Reduction and Abstinence Education Interventions to Prevent or Reduce the Risk of Adolescent Pregnancy, Human Immunodeficiency Virus, and Sexually Transmitted Infections: Two Systematic Reviews for the Guide to Community Preventive Services.” *American Journal of Preventive Medicine* 42, no. 3 (March 1, 2012): 272–94. https://doi.org/10.1016/j.amepre.2011.11.006.
93. Citrin, Jack, Donald P. Green, and Morris Levy. “The Effects of Voter ID Notification on Voter Turnout: Results from a Large-Scale Field Experiment.” *Election Law Journal: Rules, Politics, and Policy* 13, no. 2 (June 2014): 228–42. https://doi.org/10.1089/elj.2013.0209.

94. Clark, Lara P., Dylan B. Millet, and Julian D. Marshall. 2014. “National Patterns in Environmental Injustice and Inequality: Outdoor NO2 Air Pollution in the United States.” Edited by Yinping Zhang. *PLOS ONE* 9 (4): e94431. https://doi.org/10.1371/journal.pone.0094431.
95. Committee on Measuring Lead in Critical Populations. *Measuring Lead Exposure in Infants, Children, and Other Sensitive Populations*. Washington, D.C.: The National Academies Press, 1993. https://doi.org/10.17226/2232.
96. Committee on the Public Health Implications of Raising the Minimum Age for Purchasing Tobacco Products, Board on Population Health and Public Health Practice, and Institute of Medicine. *Public Health Implications of Raising the Minimum Age of Legal Access to Tobacco Products*. Edited by Richard J. Bonnie, Kathleen Stratton, and Leslie Y. Kwan. Washington, D.C.: National Academies Press, 2015. https://doi.org/10.17226/18997.
97. Committee to Study the Prevention of Low Birthweight, Division of Health Promotion and Disease Prevention, and Institute of Medicine. 1985. *Preventing Low Birthweight*. Washington, D.C.: National Academies Press. https://www.ncbi.nlm.nih.gov/books/NBK214456/.
98. Conner, Kenneth R., Jeffrey A. Bridge, Dustin J. Davidson, Carly Pilcher, and David A. Brent. “Metaanalysis of Mood and Substance Use Disorders in Proximal Risk for Suicide Deaths.” *Suicide and Life-Threatening Behavior* 49, no. 1 (2019): 278–92. https://doi.org/10.1111/sltb.12422.
99. Cornelius, Monica E., Caitlin G. Loretan, Teresa W. Wang, Ahmed Jamal, and David M. Homa. “Tobacco Product Use Among Adults — United States, 2020.” *MMWR. Morbidity and Mortality Weekly Report* 71, no. 11 (March 18, 2022): 397–405. https://doi.org/10.15585/mmwr.mm7111a1.
100. Corso, Phaedra S., James A. Mercy, Thomas R. Simon, Eric A. Finkelstein, and Ted R. Miller. “Medical Costs and Productivity Losses Due to Interpersonal and Self-Directed Violence in the United States.” *American Journal of Preventive Medicine* 32, no. 6 (June 1, 2007): 474-482.e2. https://doi.org/10.1016/j.amepre.2007.02.010.
101. Cree, Robyn A., Catherine A. Okoro, Matthew M. Zack, and Eric Carbone. 2020. “Frequent Mental Distress Among Adults, by Disability Status, Disability Type, and Selected Characteristics — United States, 2018.” *MMWR. Morbidity and Mortality Weekly Report* 69 (36): 1238–43. https://doi.org/10.15585/mmwr.mm6936a2.
102. Crowley, Daniel Max, Christian M. Connell, Damon Jones, and Michael W. Donovan. 2019. “Considering the Child Welfare System Burden from Opioid Misuse: Research Priorities for Estimating Public Costs.” *The American Journal of Managed Care* 25 (13 Suppl): S256–63.
103. Cummings, Janet R., Hefei Wen, Michelle Ko, and Benjamin G. Druss. “Geography and the Medicaid Mental Health Care Infrastructure: Implications for Health Care Reform.” *JAMA Psychiatry* 70, no. 10 (October 1, 2013): 1084. https://doi.org/10.1001/jamapsychiatry.2013.377.
104. Cummings, Janet R., Lindsay Allen, Julie Clennon, Xu Ji, and Benjamin G. Druss. “Geographic Access to Specialty Mental Health Care Across High- and Low-Income US Communities.” *JAMA Psychiatry* 74, no. 5 (May 1, 2017): 476. https://doi.org/10.1001/jamapsychiatry.2017.0303.
105. Cutler, David, and Adriana Lleras-Muney. 2006. “Education and Health: Evaluating Theories and Evidence.” w12352. NBER Working Paper 12352. Cambridge, MA: National Bureau of Economic Research. https://doi.org/10.3386/w12352.
106. Dahlberg, Linda L., and James A. Mercy. “The History of Violence as a Public Health Issue.” Atlanta, GA: Centers for Disease Control and Prevention, 2009. https://stacks.cdc.gov/view/cdc/24078.
107. Dasgupta, Nabarun, and Alfredo Morabia. 2022. “Experimental Forum 2: Two Years After the 2020 Food and Drug Administration Guidance on E-Cigarette Flavors.” *American Journal of Public Health* 112 (7): 995–98. https://doi.org/10.2105/AJPH.2022.306921.
108. de la Cruz, Maria Syl D., and Mona Sarfaty. 2014. “Steps for Increasing Colorectal Cancer Screening Rates: A Manual for Community Health Centers.” National Colorectal Cancer Roundtable, American Cancer Society. http://nccrt.org/wp-content/uploads/0305.60-Colorectal-Cancer-Manual_FULFILL.pdf.
109. DeBaun, Bill, and Martens Roc. 2013. “Saving Futures, Saving Dollars: The Impact of Education on Crime Reduction and Earnings.” Washington, D.C.: Alliance for Excellent Education. https://all4ed.org/wp-content/uploads/2013/09/SavingFutures.pdf.
110. DeGroff, Amy, Krishna Sharma, Anamika Satsangi, Kristy Kenney, Djenaba Joseph, Katherine Ross, Steven Leadbetter, et al. 2018. “Increasing Colorectal Cancer Screening in Health Care Systems Using Evidence-Based Interventions.” *Preventing Chronic Disease* 15 (August): 180029. https://doi.org/10.5888/pcd15.180029.
111. Di, Qian, Lingzhen Dai, Yun Wang, Antonella Zanobetti, Christine Choirat, Joel D. Schwartz, and Francesca Dominici. 2017. “Association of Short-Term Exposure to Air Pollution With Mortality in Older Adults.” *JAMA* 318 (24): 2446. https://doi.org/10.1001/jama.2017.17923.
112. Donald, Ian P. 2009. “Housing and Health Care for Older People.” *Age and Ageing* 38 (4): 364–67. https://doi.org/10.1093/ageing/afp060.
113. Dorling, Danny. 2015. “The Mother of Underlying Causes - Economic Ranking and Health Inequality.” *Social Science & Medicine* 128 (March): 327–30. https://doi.org/10.1016/j.socscimed.2015.01.008.
114. Dowell, Deborah, Tamara M. Haegerich, and Roger Chou. 2016. “CDC Guideline for Prescribing Opioids for Chronic Pain — United States, 2016.” *MMWR. Recommendations and Reports* 65 (RR-1): 1–49. http://dx.doi.org/10.15585/mmwr.rr6501e1.
115. Dunlap, Laura J., Stephen Orme, Gary A. Zarkin, Sarah A. Arias, Ivan W. Miller, Carlos A. Camargo, Ashley F. Sullivan, et al. “Screening and Intervention for Suicide Prevention: A Cost-Effectiveness Analysis of the ED-SAFE Interventions.” *Psychiatric Services* 70, no. 12 (August 27, 2019): 1082–87. https://doi.org/10.1176/appi.ps.201800445.

116. Dutko, Paula, Michele Ver Ploeg, and Tracey Farrigan. 2012. “Characteristics and Influential Factors of Food Deserts.” ERR-140. Washington, D.C.: United States Department of Agriculture, Economic Research Service. https://www.ers.usda.gov/webdocs/publications/45014/30940_err140.pdf.
117. Dwyer-Lindgren, Laura, Johan P. Mackenbach, Frank J. van Lenthe, and Ali H. Mokdad. “Self-Reported General Health, Physical Distress, Mental Distress, and Activity Limitation by US County, 1995-2012.” *Population Health Metrics* 15, no. 1 (April 26, 2017): 16. https://doi.org/10.1186/s12963-017-0133-5.
118. Elam-Evans, Laurie D., et al. “National, Regional, State, and Selected Local Area Vaccination Coverage Among Adolescents Aged 13–17 Years — United States, 2019.” MMWR. Morbidity and Mortality Weekly Report, vol. 69, no. 33, Aug. 2020, pp. 1109–16. DOI.org (Crossref), doi:10.15585/mmwr.mm6933a1.
119. England, Lucinda J., Rebecca E. Bunnell, Terry F. Pechacek, Van T. Tong, and Tim A. McAfee. 2015. “Nicotine and the Developing Human.” *American Journal of Preventive Medicine* 49 (2): 286–93. https://doi.org/10.1016/j.amepre.2015.01.015.
120. Esser, Marissa B., Adam Sherk, Yong Liu, Timothy S. Naimi, Timothy Stockwell, Mandy Stahre, Dafna Kanny, Michael Landen, Richard Saitz, and Robert D. Brewer. “Deaths and Years of Potential Life Lost From Excessive Alcohol Use — United States, 2011–2015.” *MMWR. Morbidity and Mortality Weekly Report* 69, no. 39 (October 2, 2020): 1428–33. https://doi.org/10.15585/mmwr.mm6939a6.
121. Esser, Marissa B., Sarra L. Hedden, Dafna Kanny, Robert D. Brewer, Joseph C. Gfroerer, and Timothy S. Naimi. “Prevalence of Alcohol Dependence Among US Adult Drinkers, 2009–2011.” *Preventing Chronic Disease* 11 (November 20, 2014): 140329. https://doi.org/10.5888/pcd11.140329.
122. Ettinger de Cuba, Stephanie, Mariana Chilton, Allison Bovell-Ammon, Molly Knowles, Sharon M. Coleman, Maureen M. Black, John T. Cook, et al. 2019. “Loss Of SNAP Is Associated With Food Insecurity And Poor Health In Working Families With Young Children.” *Health Affairs* 38 (5): 765–73. https://doi.org/10.1377/hlthaff.2018.05265.
123. Felitti, Vincent J., Robert F. Anda, Dale Nordenberg, David F. Williamson, Alison M. Spitz, Valerie Edwards, Mary P. Koss, and James S. Marks. “Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults.” *American Journal of Preventive Medicine* 14, no. 4 (May 1998): 245–58. https://doi.org/10.1016/S0749-3797(98)00017-8.
124. Flanagan, Constance, Peter Levine, and Richard Settersten. 2009. “Civic Engagement and the Changing Transition to Adulthood.” CIRCLE, Tufts University. https://circle.tufts.edu/sites/default/files/2020-02/civic_engagement_changing_transition_adulthood.pdf.
125. Freeman, Joseph D., Srikanth Kadiyala, Janice F. Bell, and Diane P. Martin. “The Causal Effect of Health Insurance on Utilization and Outcomes in Adults: A Systematic Review of US Studies.” *Medical Care* 46, no. 10 (2008). https://doi.org/10.1097/MLR.0b013e318185c913.
126. Freund, Deborah, Chengcheng Zhang, Petra W Rasmussen, Safia Hassan, and Gerald Kominski. n.d. “Despite Gains From ACA, Lower Rates of Health Insurance Coverage Persist Among Those Lacking Housing Basics,” 3.
127. Friedberg, Mark W., Peter S. Hussey, and Eric C. Schneider. 2010. “Primary Care: A Critical Review Of The Evidence On Quality And Costs Of Health Care.” *Health Affairs* 29 (5): 766–72. https://doi.org/10.1377/hlthaff.2010.0025.
128. Fuller, Richard, Philip J. Landrigan, Kalpana Balakrishnan, Glynda Bathan, Stephan Bose-O’Reilly, Michael Brauer, Jack Caravanos, et al. 2022. “Pollution and Health: A Progress Update.” *The Lancet Planetary Health* 6 (6): e535–47. https://doi.org/10.1016/S2542-5196(22)00090-0.
129. Gable, Jennifer, Jennifer Eder, and Cynthia Mollen. 2016. “Preventing Chlamydia and Gonorrhea Reinfection through Increased Use of Expedited Partner Therapy.” Evidence to Action Brief. Philadelphia: PolicyLab at CHOP Research Institute. https://policylab.chop.edu/sites/default/files/pdf/publications/Preventing_Chlamydia_Gonorrhea_Reinfection_through_Increased_Use_of_EPT.pdf.
130. Galea, Sandro, Melissa Tracy, Katherine J. Hoggatt, Charles DiMaggio, and Adam Karpati. 2011. “Estimated Deaths Attributable to Social Factors in the United States.” *American Journal of Public Health* 101 (8): 1456–65. https://doi.org/10.2105/AJPH.2010.300086.
131. Gallaway, M. Shayne, S. Jane Henley, C. Brooke Steele, Behnoosh Momin, Ahmed Jamal, Katrina F. Trivers, Cheryll C. Thomas, Simple D. Singh, and Sherri L. Stewart. “Surveillance for Cancers Associated with Tobacco Use — United States, 2010–2014.” *MMWR. Surveillance Summaries* 67, no. 12 (November 2, 2018): 1–42. https://doi.org/10.15585/mmwr.ss6712a1.
132. Gamble, Sonya, Tebitha Mawokomatanda, Fang Xu, Pranesh P. Chowdhury, Carol Pierannunzi, David Flegel, William Garvin, and Machell Town. “Surveillance for Certain Health Behaviors and Conditions Among States and Selected Local Areas — Behavioral Risk Factor Surveillance System, United States, 2013 and 2014.” *MMWR. Surveillance Summaries* 66, no. 16 (September 15, 2017): 1–144. https://doi.org/10.15585/mmwr.ss6616a1.
133. Garfield, Rachel, and Kendal Orgera. “The Uninsured and the ACA: A Primer — Key Facts about Health Insurance and the Uninsured amidst Changes to the Affordable Care Act.” KFF, January 2019. https://files.kff.org/attachment/The-Uninsured-and-the-ACA-A-Primer-Key-Facts-about-Health-Insurance-and-the-Uninsured-amidst-Changes-to-the-Affordable-Care-Act.
134. Gibson, Marcia, Mark Petticrew, Clare Bambra, Amanda J. Sowden, Kath E. Wright, and Margaret Whitehead. 2011. “Housing and Health Inequalities: A Synthesis of Systematic Reviews of Interventions Aimed at Different Pathways Linking Housing and Health.” *Health & Place* 17 (1): 175–84. https://doi.org/10.1016/j.healthplace.2010.09.011.
135. Gilchrist, Susan C., Virginia J. Howard, Tomi Akinyemiju, Suzanne E. Judd, Mary Cushman, Steven P. Hooker, and Keith M. Diaz. “Association of Sedentary Behavior With Cancer Mortality in Middle-Aged and Older US Adults.” *JAMA Oncology* 6, no. 8 (June 18, 2020): 1210–17. https://doi.org/10.1001/jamaoncol.2020.2045.

136. Giles-Corti, Billie, Anne Vernez-Moudon, Rodrigo Reis, Gavin Turrell, Andrew L. Dannenberg, Hannah Badland, Sarah Foster, et al. 2016. “City Planning and Population Health: A Global Challenge.” *The Lancet* 388 (10062): 2912–24. https://doi.org/10.1016/S0140-6736(16)30066-6.
137. Glass, Hannah, Andrew Costarino, Stephen Stayer, Claire Brett, Franklyn Cladis, and Peter Davis. 2015. “Outcomes for Extremely Premature Infants.” *Anesthesia & Analgesia* 120 (6): 1337–51. https://doi.org/10.1213/ANE.0000000000000705.
138. Goodkind, Andrew L., Christopher W. Tessum, Jay S. Coggins, Jason D. Hill, and Julian D. Marshall. 2019. “Fine-Scale Damage Estimates of Particulate Matter Air Pollution Reveal Opportunities for Location-Specific Mitigation of Emissions.” *Proceedings of the National Academy of Sciences* 116 (18): 8775–80. https://doi.org/10.1073/pnas.1816102116.
139. Gould, Elise. “Childhood Lead Poisoning: Conservative Estimates of the Social and Economic Benefits of Lead Hazard Control.” *Environmental Health Perspectives* 117, no. 7 (July 2009): 1162–67. https://doi.org/10.1289/ehp.0800408.
140. Grandner, Michael A., Nicholas J. Jackson, Bilgay Izci-Balserak, Rebecca A. Gallagher, Renee Murray-Bachman, Natasha J. Williams, Nirav P. Patel, and Girardin Jean-Louis. 2015. “Social and Behavioral Determinants of Perceived Insufficient Sleep.” *Frontiers in Neurology* 6 (112): 1–14. https://doi.org/10.3389/fneur.2015.00112.
141. Greenberg, Michael, Thomas Burke, Bernard Goldstein, Richard Jackson, and Jonathan Samet. 2020. “Endangering the Health of All: Destroying a Half Century of Health Leadership Along With America’s Environment.” *American Journal of Public Health* 110 (3): 284–85. https://doi.org/10.2105/AJPH.2019.305533.
142. Gundersen, Craig, Adam Dewey, Amy S. Crumbaugh, Michael Kato, Emily Engelhard, Brian Odeen, Mitch Kriss, and Patricia Ratulangi. 2018. “Map the Meal Gap 2018: A Report on County and Congressional District Food Insecurity and County Food Cost in the United States in 2016.” Chicago, IL: Feeding America. https://www.feedingamerica.org/sites/default/files/research/map-the-meal-gap/2016/2016-map-the-meal-gap-all-modules.pdf.
143. Gundersen, Craig, and James P. Ziliak. 2015. “Food Insecurity and Health Outcomes.” *Health Affairs* 34 (11): 1830–39. https://doi.org/10.1377/hlthaff.2015.0645.
144. Gunnarsdottir, Maria J., Sigurdur M. Gardarsson, Mark Elliott, Gudrun Sigmundsdottir, and Jamie Bartram. 2012. “Benefits of Water Safety Plans: Microbiology, Compliance, and Public Health.” *Environmental Science & Technology* 46 (14): 7782–89. https://doi.org/10.1021/es300372h.
145. Guth, Madeline, Rachel Garfield, and Robin Rudowitz. “The Effects of Medicaid Expansion under the ACA: Updated Findings from a Literature Review.” KFF, March 17, 2020. https://www.kff.org/medicaid/report/the-effects-of-medicaid-expansion-under-the-aca-updated-findings-from-a-literature-review/.
146. Hahn, Robert A., John A. Knopf, Sandra Jo Wilson, Benedict I. Truman, Bobby Milstein, Robert L. Johnson, Jonathan E. Fielding, et al. 2015. “Programs to Increase High School Completion: A Community Guide Systematic Health Equity Review.” *American Journal of Preventive Medicine* 48 (5): 599–608. https://doi.org/10.1016/j.amepre.2014.12.005.
147. Hajnal, Zoltan, Nazita Lajevardi, and Lindsay Nielson. “Voter Identification Laws and the Suppression of Minority Votes.” *The Journal of Politics* 79, no. 2 (2017): 363–79. https://doi.org/10.1086/688343.
148. Hake, Monica, Adam Dewey, Emily Engelhard, Mark Strayer, Sena Dawes, Tom Summerfelt, and Craig Gundersen. 2021. “The Impact of the Coronavirus on Food Insecurity in 2020 & 2021.” Chicago, IL: Feeding America. https://www.feedingamerica.org/sites/default/files/2021-03/National%20Projections%20Brief_3.9.2021_0.pdf.
149. Hamilton, Brady E., Lauren M. Rossen, and Amy M. Branum. “Teen Birth Rates for Urban and Rural Areas in the United States, 2007-2015.” NCHS Data Brief No. 264. Hyattsville, MD: National Center for Health Statistics, November 2016. https://pubmed.ncbi.nlm.nih.gov/27849147/.
150. Hamman, Richard F., Rena R. Wing, Sharon L. Edelstein, John M. Lachin, George A. Bray, Linda Delahanty, Mary Hoskin, et al. 2006. “Effect of Weight Loss With Lifestyle Intervention on Risk of Diabetes.” *Diabetes Care* 29 (9): 2102–7. https://doi.org/10.2337/dc06-0560.
151. Hannan, Casey J., Timothy L. Ricks, Lorena Espinoza, and Jane A. Weintraub. 2021. “Addressing Oral Health Inequities, Access to Care, Knowledge, and Behaviors.” *Preventing Chronic Disease* 18. https://doi.org/10.5888/pcd18.210060.
152. Hannan, Casey, and Lorena Espinoza. 2018. “Statement on the Evidence Supporting the Safety and Effectiveness of Community Water Fluoridation.” Atlanta, GA: Centers for Disease Control and Prevention, Department of Health and Human Services. https://www.cdc.gov/fluoridation/guidelines/cdc-statement-on-community-water-fluoridation.html.
153. Harrou, Fouzi, Abdelhafid Zeroual, Mohamad Mazen Hittawe, and Ying Sun. 2022. “Chapter 5 - Traffic Congestion Detection: Data-Based Techniques.” In *Road Traffic Modeling and Management*, edited by Fouzi Harrou, Abdelhafid Zeroual, Mohamad Mazen Hittawe, and Ying Sun, 141–95. Elsevier. https://doi.org/10.1016/B978-0-12-823432-7.00010-0.
154. Hedegaard, Holly, and Merianne Rose Spencer. 2021. “Urban–Rural Differences in Drug Overdose Death Rates, 1999–2019.” NCHS Data Brief No. 403. Hyattsville, MD: National Center for Health Statistics. https://doi.org/10.15620/cdc:102891.
155. Hendrick, C. Emily, and Julie Maslowsky. “Teen Mothers’ Educational Attainment and Their Children’s Risk for Teenage Childbearing.” *Developmental Psychology* 55, no. 6 (June 2019): 1259–73. https://doi.org/10.1037/dev0000705.

156. Hill, Holly A., et al. “Vaccination Coverage Among Children Aged 19–35 Months — United States, 2017.” MMWR. Morbidity and Mortality Weekly Report, vol. 67, no. 40, Oct. 2018, pp. 1123–28. DOI.org (Crossref), doi:10.15585/mmwr.mm6740a4.
157. Hoehner, Christine M., Carolyn E. Barlow, Peg Allen, and Mario Schootman. 2012. “Commuting Distance, Cardiorespiratory Fitness, and Metabolic Risk.” *American Journal of Preventive Medicine* 42 (6): 571–78. https://doi.org/10.1016/j.amepre.2012.02.020.
158. Hoynes, Hilary W., and Ankur J. Patel. 2015. “Effective Policy for Reducing Inequality? The Earned Income Tax Credit and the Distribution of Income.” 21340. Working Paper 21340. National Bureau of Economic Research. https://doi.org/10.3386/w21340.
159. Hu, S. Sean, David M. Homa, Teresa Wang, Yessica Gomez, Kimp Walton, Hua Lu, and Linda Neff. “State-Specific Patterns of Cigarette Smoking, Smokeless Tobacco Use, and E-Cigarette Use Among Adults — United States, 2016.” *Preventing Chronic Disease* 16 (February 7, 2019): 180362. https://doi.org/10.5888/pcd16.180362.
160. Hughes, Karen, Mark A. Bellis, Katherine A. Hardcastle, Dinesh Sethi, Alexander Butchart, Christopher Mikton, Lisa Jones, and Michael P. Dunne. “The Effect of Multiple Adverse Childhood Experiences on Health: A Systematic Review and Meta-Analysis.” *The Lancet Public Health* 2, no. 8 (August 2017): e356–66. https://doi.org/10.1016/s2468-2667(17)30118-4.
161. Iheozor-Ejiofor, Zipporah, Helen V. Worthington, Tanya Walsh, Lucy O’Malley, Jan E. Clarkson, Richard Macey, Rahul Alam, Peter Tugwell, Vivian Welch, and Anne-Marie Glenny. 2015. “Water Fluoridation for the Prevention of Dental Caries.” *Cochrane Database of Systematic Reviews*, no. 6. https://doi.org/10.1002/14651858.CD010856.pub2.
162. Institute of Medicine, Committee on Oral Health Access to Services, and National Research Council, eds. 2011. *Improving Access to Oral Health Care for Vulnerable and Underserved Populations*. Washington, D.C.: National Academies Press. https://doi.org/10.17226/13116.
163. Jackson, Chandra L., Susan Redline, and Karen M. Emmons. 2015. “Sleep as a Potential Fundamental Contributor to Disparities in Cardiovascular Health.” *Annual Review of Public Health* 36 (March): 417–40. https://doi.org/10.1146/annurev-publhealth-031914-122838.
164. Jackson, Stephanie L., William F. Vann, Jonathan B. Kotch, Bhavna T. Pahel, and Jessica Y. Lee. 2011. “Impact of Poor Oral Health on Children’s School Attendance and Performance.” *American Journal of Public Health* 101 (10): 1900–1906. https://doi.org/10.2105/AJPH.2010.200915.
165. Janke, Katharina, Carol Propper, and Michael A. Shields. “Assaults, Murders and Walkers: The Impact of Violent Crime on Physical Activity.” *Journal of Health Economics* 47 (May 2016): 34–49. https://doi.org/10.1016/j.jhealeco.2016.01.006.
166. Johnson, Tricia J., Aloka L. Patel, Briana Jegier, Janet L. Engstrom, and Paula Meier. 2013. “Cost of Morbidities in Very Low Birth Weight Infants.” *Journal of Pediatrics* 162 (2): 243-49 e1. https://doi.org/10.1016/j.jpeds.2012.07.013.
167. Joiner, Jessica, Melissa Jordan, Keshia Reid, Kristina Kintziger, and Chris Duclos. “Economic Hardship and Life Expectancy in Nassau County, Florida.” Preventing Chronic Disease 16 (March 14, 2019): 180481. https://doi.org/10.5888/pcd16.180481.
168. Jones, Miranda R., Ana V. Diez-Roux, Anjum Hajat, Kiarri N. Kershaw, Marie S. O’Neill, Eliseo Guallar, Wendy S. Post, Joel D. Kaufman, and Ana Navas-Acien. 2014. “Race/Ethnicity, Residential Segregation, and Exposure to Ambient Air Pollution: The Multi-Ethnic Study of Atherosclerosis (MESA).” *American Journal of Public Health* 104 (11): 2130–37. https://doi.org/10.2105/AJPH.2014.302135.
169. Jordan, Catherine M., Becky L. Yust, Leslie L. Robison, Peter Hannan, and Amos S. Deinard. “A Randomized Trial of Education to Prevent Lead Burden in Children at High Risk for Lead Exposure: Efficacy as Measured by Blood Lead Monitoring.” *Environmental Health Perspectives* 111, no. 16 (December 2003): 1947–51. https://doi.org/10.1289/ehp.6352.
170. Joseph, Djenaba A., Diana Redwood, Amy DeGroff, and Emily L. Butler. 2016. “Use of Evidence-Based Interventions to Address Disparities in Colorectal Cancer Screening.” *MMWR Supplements* 65 (1): 21–28. https://doi.org/10.15585/mmwr.su6501a5.
171. Joseph, Djenaba A., Jessica B. King, Nicole F. Dowling, Cheryll C. Thomas, and Lisa C. Richardson. 2020. “*Vital Signs:* Colorectal Cancer Screening Test Use — United States, 2018.” *MMWR. Morbidity and Mortality Weekly Report* 69 (10): 253–59. https://doi.org/10.15585/mmwr.mm6910a1.
172. Jutte, Douglas P., Noralou P. Roos, Marni D. Brownell, Gemma Briggs, Leonard MacWilliam, and Leslie L. Roos. “The Ripples of Adolescent Motherhood: Social, Educational, and Medical Outcomes for Children of Teen and Prior Teen Mothers.” *Academic Pediatrics* 10, no. 5 (September 1, 2010): 293–301. https://doi.org/10.1016/j.acap.2010.06.008.
173. Kanny, Dafna, Robert D. Brewer, Jessica B. Mesnick, Leonard J. Paulozzi, Timothy S. Naimi, and Hua Lu. “Vital Signs: Alcohol Poisoning Deaths - United States, 2010-2012.” *MMWR. Morbidity and Mortality Weekly Report* 63, no. 53 (January 9, 2015): 1238–42.
174. Kao, Yu-Hsiang, Wei-Ting Lin, Wan-Hsuan Chen, Shiao-Chi Wu, and Tung-Sung Tseng. “Continuity of Outpatient Care and Avoidable Hospitalization: A Systematic Review.” The American Journal of Managed Care 25, no. 4 (April 1, 2019): e126–34.
175. Katzmarzyk, Peter T., and I-Min Lee. “Sedentary Behaviour and Life Expectancy in the USA: A Cause-Deleted Life Table Analysis.” *BMJ Open* 2, no. 4 (2012). https://doi.org/10.1136/bmjopen-2012-000828.
176. Kecklund, Göran, and John Axelsson. 2016. “Health Consequences of Shift Work and Insufficient Sleep.” *BMJ* 355 (8080). https://doi.org/10.1136/bmj.i5210.

177. Keisler-Starkey, Katherine, and Lisa N. Bunch. “Health Insurance Coverage in the United States: 2019.” Current Population Reports P60-271. Washington, D.C.: U.S. Census Bureau, September 2020. https://www.census.gov/content/dam/Census/library/publications/2020/demo/p60-271.pdf.
178. Khullar, Dhruv, and Dave A. Chokshi. “Health, Income, & Poverty: Where We Are & What Could Help.” Health Affairs Health Policy Brief. Bethesda, MD: Project HOPE, October 4, 2018. https://doi.org/10.1377/hpb20180817.901935.
179. Kim, Pearl C., Wenlian Zhou, Shawn J. McCoy, Ian K. McDonough, Betty Burston, Marcia Ditmyer, and Jay J. Shen. 2019. “Factors Associated with Preventable Emergency Department Visits for Nontraumatic Dental Conditions in the U.S.” *International Journal of Environmental Research and Public Health* 16 (19): 3671. https://doi.org/10.3390/ijerph16193671.
180. Kondo, Naoki, Rob M. van Dam, Grace Sembajwe, S. V. Subramanian, Ichiro Kawachi, and Zentaro Yamagata. 2012. “Income Inequality and Health: The Role of Population Size, Inequality Threshold, Period Effects and Lag Effects.” *Journal of Epidemiology & Community Health* 66 (6): e11. https://doi.org/10.1136/jech-2011-200321.
181. Koppelman, Jane, Kelly Vitzthum, and Lisa Simon. 2016. “Expanding Where Dental Therapists Can Practice Could Increase Americans’ Access To Cost-Efficient Care.” *Health Affairs* 35 (12): 2200–2206. https://doi.org/10.1377/hlthaff.2016.0844.
182. Kost, Katheryn, Isaac Maddow-Zimet, and Alex Arpaia. “Pregnancies, Births and Abortions Among Adolescents and Young Women in the United States, 2013: National and State Trends by Age, Race and Ethnicity.” Washington, D.C.: Guttmacher Institute, September 2017. https://www.guttmacher.org/report/us-adolescent-pregnancy-trends-2013.
183. Kowlessar, Niranjana M., H. Joanna Jiang, and Claudia Steiner. 2013. “Hospital Stays for Newborns, 2011.” HCUP Statistical Brief #163. Rockville, MD: Agency for Healthcare Research and Quality. https://pubmed.ncbi.nlm.nih.gov/24308074/.
184. Krieger, Nancy, Jarvis T. Chen, Brent A. Coull, Jason Beckfield, Mathew V. Kiang, and Pamela D. Waterman. 2014. “Jim Crow and Premature Mortality Among the US Black and White Population, 1960–2009: An Age–Period–Cohort Analysis.” *Epidemiology* 25 (4): 494–504. https://doi.org/10.1097/EDE.0000000000000104.
185. Kumar, Sagar, Harrell W. Chesson, Ian H. Spicknall, Kristen M. Kreisel, and Thomas L. Gift. 2021. “The Estimated Lifetime Medical Cost of Chlamydia, Gonorrhea, and Trichomoniasis in the United States, 2018.” *Sexually Transmitted Diseases* 48 (4): 238–46. https://doi.org/10.1097/OLQ.0000000000001357.
186. Kuthy, Raymond A., Susan C. McKernan, Jed S. Hand, and David C. Johnsen. 2009. “Dentist Workforce Trends in a Primarily Rural State.” *The Journal of the American Dental Association* 140 (12): 1527–34. https://doi.org/10.14219/jada.archive.2009.0105.
187. Langelier, Margaret. 2018. “The Impact of Changing Workforce Models on Access to Oral Health Care Services.” Harvard School of Dental Medicine, Boston, MA, October 23. https://www.oralhealthworkforce.org/wp-content/uploads/2018/10/OHWRC_Harvard_10_2018.pdf.
188. Langton, Lynn, and Jennifer Truman. “Socio-Emotional Impact of Violent Crime.” Washington, D.C.: U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics, September 2014. https://www.bjs.gov/content/pub/pdf/sivc.pdf.
189. Lanphear, Bruce P., Kim Dietrich, Peggy Auinger, and Christopher Cox. “Cognitive Deficits Associated with Blood Lead Concentrations <10 Pg/DL in US Children and Adolescents.” *Public Health Reports* 115, no. 6 (2000): 521–29. https://doi.org/10.1093/phr/115.6.521.
190. Lanphear, Bruce P., Richard Hornung, Jane Khoury, Kimberly Yolton, Peter Baghurst, David C. Bellinger, Richard L. Canfield, et al. “Low-Level Environmental Lead Exposure and Children’s Intellectual Function: An International Pooled Analysis.” *Environmental Health Perspectives* 113, no. 7 (July 2005): 894–99. https://doi.org/10.1289/ehp.7688.
191. Lindo, Jason M., and Analisa Packham. “How Much Can Expanding Access to Long-Acting Reversible Contraceptives Reduce Teen Birth Rates?” NBER Working Paper 21275. Cambridge, MA: National Bureau of Economic Research, June 15, 2015. https://doi.org/10.3386/w21275.
192. Lino, Mark, Kevin Kuczynski, Nestor Rodriguez, and TusaRebecca Schap. “Expenditures on Children by Families, 2015.” Miscellaneous Report No. 1528-2015. U.S. Department of Agriculture, Center for Nutrition Policy and Promotion, January 2017. https://www.cnpp.usda.gov/sites/default/files/expenditures_on_children_by_families/crc2015.pdf.
193. Liu, Stephen, Lawrence Scholl, Brooke Hoots, and Puja Seth. “Nonfatal Drug and Polydrug Overdoses Treated in Emergency Departments — 29 States, 2018–2019.” *MMWR. Morbidity and Mortality Weekly Report* 69, no. 34 (August 28, 2020): 1149–55. https://doi.org/10.15585/mmwr.mm6934a1.
194. Liu, Yong, Anne G. Wheaton, Daniel P. Chapman, Timothy J. Cunningham, Hua Lu, and Janet B. Croft. 2016. “Prevalence of Healthy Sleep Duration among Adults — United States, 2014.” *MMWR. Morbidity and Mortality Weekly Report* 65 (6): 137–41. https://doi.org/10.15585/mmwr.mm6506a1.
195. Liu, Yong, Rashid Njai, and Kurt J. Greenlund. 2014. “Relationships Between Housing and Food Insecurity, Frequent Mental Distress, and Insufficient Sleep Among Adults in 12 US States, 2009.” *Preventing Chronic Disease* 11 (March). https://doi.org/10.5888/pcd11.130334.
196. Lundborg, Petter. 2012. “The Health Returns to Schooling—What Can We Learn from Twins?” *Journal of Population Economics* 26 (2): 673–701. https://doi.org/10.1007/s00148-012-0429-5.
197. Ma, Jennifer, Matea Pender, and Meredith Welch. 2019. “Education Pays 2019: The Benefits of Higher Education for Individuals.” Trends in Higher Education Series. College Board. https://research.collegeboard.org/pdf/education-pays-2019-full-report.pdf.

198. Mac Kenzie, William R., Neil J. Hoxie, Mary E. Proctor, M. Stephen Gradus, Kathleen A. Blair, Dan E. Peterson, James J. Kazmierczak, et al. 1994. “A Massive Outbreak in Milwaukee of Cryptosporidium Infection Transmitted through the Public Water Supply.” *New England Journal of Medicine* 331 (3): 161–67. https://doi.org/10.1056/NEJM199407213310304.
199. Maguire, Joe. 2014. “How Increasing Income Inequality Is Dampening U.S. Economic Growth, And Possible Ways To Change The Tide.” Standard & Poor’s Financial Services. https://www.ncsl.org/Portals/1/Documents/forum/Forum_2014/Income_Inequality.pdf.
200. Mahmoudi, Elham, and Gail A. Jensen. 2012. “Diverging Racial and Ethnic Disparities in Access to Physician Care: Comparing 2000 and 2007.” *Medical Care* 50 (4): 327–34. https://doi.org/10.1097/MLR.0b013e318245a111.
201. Malecki, Kristen, Lauren E. Wisk, Matthew Walsh, Christine McWilliams, Shoshannah Eggers, and Melissa Olson. 2015. “Oral Health Equity and Unmet Dental Care Needs in a Population-Based Sample: Findings From the Survey of the Health of Wisconsin.” *American Journal of Public Health* 105 (S3): S466–74. https://doi.org/10.2105/AJPH.2014.302338.
202. Markowitz, Lauri E., Julianne Gee, Harrell Chesson, and Shannon Stokley. “Ten Years of Human Papillomavirus Vaccination in the United States.” *Academic Pediatrics* 18, no. 2 (March 2018): S3–10. https://doi.org/10.1016/j.acap.2017.09.014.
203. Mattson, Christine L., Lauren J. Tanz, Kelly Quinn, Mbabazi Kariisa, Priyam Patel, and Nicole L. Davis. 2021. “Trends and Geographic Patterns in Drug and Synthetic Opioid Overdose Deaths — United States, 2013–2019.” *MMWR. Morbidity and Mortality Weekly Report* 70 (6): 202–7. https://doi.org/10.15585/mmwr.mm7006a4.
204. Mays, Glen P., and Cezar B. Mamaril. “Public Health Spending and Medicare Resource Use: A Longitudinal Analysis of U.S. Communities.” *Health Services Research* 52, no. S2 (2017): 2357–77. https://doi.org/doi:10.1111/1475-6773.12785.
205. Mays, Glen P., and Sharla A. Smith. “Evidence Links Increases in Public Health Spending to Declines in Preventable Deaths.” *Health Affairs* 30, no. 8 (August 2011): 1585–93. https://doi.org/10.1377/hlthaff.2011.0196.
206. McCollister, Kathryn E., Michael T. French, and Hai Fang. “The Cost of Crime to Society: New Crime-Specific Estimates for Policy and Program Evaluation.” *Drug and Alcohol Dependence* 108, no. 1 (April 1, 2010): 98–109. https://doi.org/10.1016/j.drugalcdep.2009.12.002.
207. McDermott, Kimberly W., and H. Joanna Jiang. “Characteristics and Costs of Potentially Preventable Inpatient Stays, 2017.” Statistical Brief #259. Rockville, MD: Agency for Healthcare Research and Quality, June 2020. https://www.hcup-us.ahrq.gov/reports/statbriefs/sb259-Potentially-Preventable-Hospitalizations-2017.jsp.
208. McDonald, Yolanda J., and Nicole E. Jones. 2018. “Drinking Water Violations and Environmental Justice in the United States, 2011–2015.” *American Journal of Public Health* 108 (10): 1401–7. https://doi.org/10.2105/AJPH.2018.304621.
209. McKillop, Matt, and Dara Alpert Lieberman. “The Impact of Chronic Underfunding on America’s Public Health System: Trends, Risks, and Recommendations, 2021.” Issue Brief. Washington, D.C.: Trust for America’s Health, 2021. https://www.tfah.org/wp-content/uploads/2021/05/2021_PHFunding_Fnl.pdf.
210. Medic, Goran, Micheline Wille, and Michiel E. H. Hemels. 2017. “Short- and Long-Term Health Consequences of Sleep Disruption.” *Nature and Science of Sleep* 2017 (9): 151–61. https://doi.org/10.2147/NSS.S134864.
211. Meites, Elissa, Peter G. Szilagyi, Harrell W. Chesson, Elizabeth R. Unger, José R. Romero, and Lauri E. Markowitz. “Human Papillomavirus Vaccination for Adults: Updated Recommendations of the Advisory Committee on Immunization Practices.” *MMWR. Morbidity and Mortality Weekly Report* 68, no. 32 (August 16, 2019): 698–702. https://doi.org/10.15585/mmwr.mm6832a3.
212. Merrick, Melissa T., Derek C. Ford, Katie A. Ports, Angie S. Guinn, Jieru Chen, Joanne Klevens, Marilyn Metzler, et al. “Vital Signs: Estimated Proportion of Adult Health Problems Attributable to Adverse Childhood Experiences and Implications for Prevention — 25 States, 2015–2017.” *MMWR. Morbidity and Mortality Weekly Report* 68, no. 44 (November 8, 2019): 999–1005. https://doi.org/10.15585/mmwr.mm6844e1.
213. Meyer, Jennifer, Vasileios Margaritis, and Aaron Mendelsohn. 2018. “Consequences of Community Water Fluoridation Cessation for Medicaid-Eligible Children and Adolescents in Juneau, Alaska.” *BMC Oral Health* 18 (1): 215. https://doi.org/10.1186/s12903-018-0684-2.
214. Morgan, Rachel E., and Alexandra Thompson. “Criminal Victimization, 2020 – Supplemental Statistical Tables.” Washington, D.C.: U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics, February 2022. https://bjs.ojp.gov/content/pub/pdf/cv20sst.pdf.
215. Moriarty, David G., Matthew M. Zack, James B. Holt, Daniel P. Chapman, and Marc A. Safran. 2009. “Geographic Patterns of Frequent Mental Distress: U.S. Adults, 1993–2001 and 2003–2006.” *American Journal of Preventive Medicine* 36 (6): 497–505. https://doi.org/10.1016/j.amepre.2009.01.038.
216. Moy, Ernest, Eva Chang, and Marguerite Barrett. “Potentially Preventable Hospitalizations - United States, 2001-2009.” MMWR Supplements 62, no. 3 (November 22, 2013): 139–43.
217. Mravec, Boris, Miroslav Tibensky, Lubica Horvathova, and Pavel Babal. 2020. “E-Cigarettes and Cancer Risk.” *Cancer Prevention Research* 13 (2): 137–44. https://doi.org/10.1158/1940-6207.CAPR-19-0346.
218. Munson, Bradley, and Marko Vujicic. 2021. “Projected Supply of Dentists in the United States, 2020 – 2040.” American Dental Association. https://www.ada.org/-/media/project/ada-organization/ada/ada-org/files/resources/research/hpi/hpibrief_0521_1.pdf?rev=b5f3e8a7c15f4fd5a238314d0f58945c&hash=1688579EF176F8C6B240A4BBC5477E30.

219. Naimi, Timothy S., Leslie E. Lipscomb, Robert D. Brewer, and Brenda Colley Gilbert. “Binge Drinking in the Preconception Period and the Risk of Unintended Pregnancy: Implications for Women and Their Children.” *Pediatrics* 111, no. 5 Pt 2 (May 2003): 1136–41.
220. Nathan, Richard P., and Charles Adams. “Understanding Central City Hardship.” Political Science Quarterly 91, no. 1 (1976): 47–62. https://doi.org/10.2307/2149158.
221. National Clinical Care Commission. 2021. “National Clinical Care Commission: Report to Congress on Leveraging Federal Programs to Prevent and Control Diabetes and Its Complications.” Washington, D.C.: U.S. Department of Health and Human Services, Office of the Assistant Secretary for Health. https://health.gov/sites/default/files/2022-01/NCCC%20Report%20to%20Congress.pdf.
222. National Council for Mental Wellbeing. “The Psychiatric Shortage: Causes and Solutions.” Medical Director Institute, March 2017. https://www.thenationalcouncil.org/wp-content/uploads/2022/02/Revised-Final-Access-Paper.pdf.
223. National Institutes of Health. 2021. “Oral Health in America: Advances and Challenges.” Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Institute of Dental and Craniofacial Research. https://www.nidcr.nih.gov/sites/default/files/2021-12/Oral-Health-in-America-Advances-and-Challenges.pdf.
224. National LGBT Health Education Center. “Suicide Risk and Prevention for LGBTQ People.” Boston, MA: The Fenway Institute, September 2018. https://www.lgbtqiahealtheducation.org/wp-content/uploads/2018/10/Suicide-Risk-and-Prevention-for-LGBTQ-Patients-Brief.pdf.
225. Newton, Manya F., Carla C. Keirns, Rebecca Cunningham, Rodney A. Hayward, and Rachel Stanley. “Uninsured Adults Presenting to US Emergency Departments: Assumptions vs Data.” *JAMA* 300, no. 16 (October 22, 2008): 1914–24. https://doi.org/10.1001/jama.300.16.1914.
226. Nieuwenhuijsen, Mark J. 2016. “Urban and Transport Planning, Environmental Exposures and Health-New Concepts, Methods and Tools to Improve Health in Cities.” *Environmental Health* 15 (December): S38. https://doi.org/10.1186/s12940-016-0108-1.
227. Nyweide, David J., Denise L. Anthony, Julie P. W. Bynum, Robert L. Strawderman, William B. Weeks, Lawrence P. Casalino, and Elliott S. Fisher. “Continuity of Care and the Risk of Preventable Hospitalization in Older Adults.” JAMA Internal Medicine 173, no. 20 (November 11, 2013): 1879–85. https://doi.org/10.1001/jamainternmed.2013.10059.
228. O’Connell, Joan, Jennifer Rockell, Judith Ouellet, Scott L. Tomar, and William Maas. 2016. “Costs and Savings Associated With Community Water Fluoridation in the United States.” *Health Affairs* 35 (12): 2224–32. https://doi.org/10.1377/hlthaff.2016.0881.
229. Office of Mental Health and Suicide Prevention. “2021 National Veteran Suicide Prevention Annual Report.” Washington, D.C.: U.S. Department of Veterans Affairs, September 2021. https://www.mentalhealth.va.gov/docs/data-sheets/2021/2021-National-Veteran-Suicide-Prevention-Annual-Report-FINAL-9-8-21.pdf.
230. Opoliner, April, Deborah Azrael, Catherine Barber, Garrett Fitzmaurice, and Matthew Miller. “Explaining Geographic Patterns of Suicide in the US: The Role of Firearms and Antidepressants.” *Injury Epidemiology* 1, no. 1 (March 20, 2014): 6. https://doi.org/10.1186/2197-1714-1-6.
231. Osterman, Michelle, Brady Hamilton, Joyce Martin, Anne Driscoll, and Claudia Valenzuela. “Births: Final Data for 2020.” *National Vital Statistics Reports* 70, no. 17 (February 7, 2022). https://doi.org/10.15620/cdc:112078.
232. Owusu-Edusei, Kwame Jr., Harrell W. Chesson, Thomas L. Gift, Guoyu Tao, Reena Mahajan, Marie Cheryl Bañez Ocfemia, and Charlotte K. Kent. 2013. “The Estimated Direct Medical Cost of Selected Sexually Transmitted Infections in the United States, 2008.” *Sexually Transmitted Diseases* 40 (3): 197–201. https://doi.org/10.1097/OLQ.0b013e318285c6d2.
233. Parolin, Zachary, Elizabeth Ananat, Sophie M. Collyer, Megan Curran, and Christopher Wimer. 2021. “The Initial Effects of the Expanded Child Tax Credit on Material Hardship.” Working Paper. Working Paper Series. National Bureau of Economic Research. https://doi.org/10.3386/w29285.
234. Patel, Shaan S., and Meredith L. Kilgore. 2015. “Cost Effectiveness of Colorectal Cancer Screening Strategies.” *Cancer Control: Journal of the Moffitt Cancer Center* 22 (2): 248–58. https://doi.org/10.1177/107327481502200219.
235. Patel, Vikram, Alan J. Flisher, Sarah Hetrick, and Patrick McGorry. “Mental Health of Young People: A Global Public-Health Challenge.” *The Lancet* 369, no. 9569 (April 14, 2007): 1302–13. https://doi.org/10.1016/S0140-6736(07)60368-7.
236. Patnode, Carrie D., Jillian T. Henderson, Jamie H. Thompson, Caitlyn A. Senger, Stephen P. Fortmann, and Evelyn P. Whitlock. “Behavioral Counseling and Pharmacotherapy Interventions for Tobacco Cessation in Adults, Including Pregnant Women: A Review of Reviews for the U.S. Preventive Services Task Force.” *Annals of Internal Medicine* 163, no. 8 (October 20, 2015): 608. https://doi.org/10.7326/M15-0171.
237. Penchansky, Roy, and J. William Thomas. “The Concept of Access: Definition and Relationship to Consumer Satisfaction.” Medical Care 19, no. 2 (1981): 127–40. https://doi.org/10.1097/00005650-198102000-00001.
238. Perper, Kate, Kristen Peterson, and Jennifer Manlove. 2010. “Diploma Attainment Among Teen Mothers By Kate Perper, M.P.P., Kristen Peterson, B.A., and Jennifer Manlove, Ph.D.” Publication #2010-01. Child Trends. https://www.childtrends.org/es/publications/diploma-attainment-among-teen-mothers.
239. Petrou, Stavros, Tracey Sach, and Leslie Davidson. 2001. “The Long-Term Costs of Preterm Birth and Low Birth Weight: Results of a Systematic Review.” *Child: Care, Health and Development* 27 (2): 97–115. https://doi.org/10.1046/j.1365-2214.2001.00203.x.

240. Pickett, Kate E., and Richard G. Wilkinson. “Income Inequality and Health: A Causal Review.” Social Science & Medicine 128 (March 2015): 316–26. https://doi.org/10.1016/j.socscimed.2014.12.031.
241. Pickett, Kate E., and Richard G. Wilkinson. 2015. “Income Inequality and Health: A Causal Review.” *Social Science & Medicine* 128 (March): 316–26. https://doi.org/10.1016/j.socscimed.2014.12.031.
242. Pingali, Cassandra, David Yankey, Laurie D. Elam-Evans, Lauri E. Markowitz, Charnetta L. Williams, Benjamin Fredua, Lucy A. McNamara, Shannon Stokley, and James A. Singleton. “National, Regional, State, and Selected Local Area Vaccination Coverage Among Adolescents Aged 13–17 Years — United States, 2020.” *MMWR. Morbidity and Mortality Weekly Report* 70, no. 35 (September 3, 2021): 1183–90. https://doi.org/10.15585/mmwr.mm7035a1.
243. Planalp, Colin, Caroline M. Au-Yeung, and Tyler N. A. Winkelman. “Escalating Alcohol-Involved Death Rates: Trends and Variation across the Nation and in the States from 2006 to 2019.” State Health Access Data Assistance Center (SHADAC), April 2021. https://www.shadac.org/sites/default/files/publications/Alcohol-Involved-Deaths/AID-4.21-SHADAC-Brief.pdf.
244. Poghosyan, Lusine, Edward J. Timmons, Cilgy M. Abraham, and Grant R. Martsolf. 2019. “The Economic Impact of the Expansion of Nurse Practitioner Scope of Practice for Medicaid.” *Journal of Nursing Regulation* 10 (1): 15–20. https://doi.org/10.1016/S2155-8256(19)30078-X.
245. PolicyLink/USC Equity Research Institute, National Equity Atlas, www.nationalequityatlas.org.
246. Pollack, Craig Evan, Beth Ann Griffin, and Julia Lynch. 2010. “Housing Affordability and Health Among Homeowners and Renters.” *American Journal of Preventive Medicine* 39 (6): 515–21. https://doi.org/10.1016/j.amepre.2010.08.002.
247. Pollack, Craig, Susan Egerter, Tabashir Sadegh-Nobari, Mercedes Dekker, and Paula Braveman. “Where We Live Matters for Our Health: The Links Between Housing and Health.” Issue Brief #2. Robert Wood Johnson Foundation Commission to Build a Healthier America, September 2008. http://www.commissiononhealth.org/PDF/e6244e9e-f630-4285-9ad7-16016dd7e493/Issue Brief 2 Sept 08 - Housing and Health.pdf.
248. Pope, C. Arden, Majid Ezzati, and Douglas W. Dockery. 2009. “Fine-Particulate Air Pollution and Life Expectancy in the United States.” *New England Journal of Medicine* 360 (4): 376–86. https://doi.org/10.1056/NEJMsa0805646.
249. Potter, Wendell B. 2017. “Expanding the Dental Workforce to Improve Access and Reduce Disparities in Oral Health.” *American Journal of Public Health* 107 (S1): S26–27. https://doi.org/10.2105/AJPH.2017.303832.
250. Proietti, Elena, Martin Röösli, Urs Frey, and Philipp Latzin. 2013. “Air Pollution During Pregnancy and Neonatal Outcome: A Review.” *Journal of Aerosol Medicine and Pulmonary Drug Delivery* 26 (1): 9–23. https://doi.org/10.1089/jamp.2011.0932.
251. Putri, Wayan C. W. S., David J. Muscatello, Melissa S. Stockwell, and Anthony T. Newall. “Economic Burden of Seasonal Influenza in the United States.” *Vaccine* 36, no. 27 (June 22, 2018): 3960–66. https://doi.org/10.1016/j.vaccine.2018.05.057.
252. Quiñones, Ana R., Maya O’Neil, Somnath Saha, Michele Freeman, Stephen R. Henry, and Devan Kansagara. 2011. *Interventions to Improve Minority Health Care and Reduce Racial and Ethnic Disparities*. VA Evidence-Based Synthesis Program Reports. Washington, D.C.: Department of Veterans Affairs. http://www.ncbi.nlm.nih.gov/books/NBK82564/.
253. Rhode Island Department of Education, Class of 2020.
254. Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2016-2020.
255. Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2015-2019
256. Rhode Island Department of Health, Youth Risk Behavior Survey, 2009-2019; Rhode Island KIDS COUNT Health Fact Sheet, Trends in Youth Tobacco Use: E-Cigarettes and Vaping, https://www.rikidscount.org/Portals/0/Uploads/Documents/Fact%20Sheets/6774%20YouthSmoking1_Final%20for%20Event.pdf?ver=2020-10-30-093705-380
257. Richardson, Ann K. “Investing in Public Health: Barriers and Possible Solutions.” *Journal of Public Health* 34, no. 3 (August 2012): 322–27. https://doi.org/10.1093/pubmed/fds039.
258. Roehrig, Charles. 2016. “Mental Disorders Top The List Of The Most Costly Conditions In The United States: $201 Billion.” *Health Affairs* 35 (6): 1130–35. https://doi.org/10.1377/hlthaff.2015.1659.
259. Rome, Sunny Harris. “Why Voting Matters.” In *Promote the Vote*, by Sunny Harris Rome, 31–49. Cham, Switzerland: Springer International Publishing, 2022. https://doi.org/10.1007/978-3-030-84482-0_2.
260. Romero, Lisa, Karen Pazol, Lee Warner, Shanna Cox, Charlan Kroelinger, Ghenet Besera, Anna Brittain, Taleria R. Fuller, Emilia Koumans, and Wanda Barfield. “Reduced Disparities in Birth Rates Among Teens Aged 15–19 Years — United States, 2006–2007 and 2013–2014.” *MMWR. Morbidity and Mortality Weekly Report* 65, no. 16 (April 29, 2016): 409–14. https://doi.org/10.15585/mmwr.mm6516a1.
261. Rosano, Aldo, Christian Abo Loha, Roberto Falvo, Jouke van der Zee, Walter Ricciardi, Gabriella Guasticchi, and Antonio Giulio de Belvis. “The Relationship between Avoidable Hospitalization and Accessibility to Primary Care: A Systematic Review.” European Journal of Public Health 23, no. 3 (May 29, 2012): 356–60. https://doi.org/10.1093/eurpub/cks053.
262. Ross, Catherine E., and Chia-ling Wu. 1995. “The Links Between Education and Health.” *American Sociological Review* 60 (5): 719–45. https://doi.org/10.2307/2096319.
263. Ruckart, Perri Zeitz, Robert L. Jones, Joseph G. Courtney, Tanya Telfair LeBlanc, Wilma Jackson, Mateusz P. Karwowski, Po-Yung Cheng, Paul Allwood, Erik R. Svendsen, and Patrick N. Breysse. “Update of the Blood Lead

Reference Value — United States, 2021." *MMWR. Morbidity and Mortality Weekly Report* 70, no. 43 (October 29, 2021): 1509–12. https://doi.org/10.15585/mmwr.mm7043a4.
264. Rudd, Rose A., Puja Seth, Felicita David, and Lawrence Scholl. 2016. "Increases in Drug and Opioid-Involved Overdose Deaths — United States, 2010–2015." *MMWR. Morbidity and Mortality Weekly Report* 65 (5051): 1445–52. https://doi.org/10.15585/mmwr.mm655051e1.
265. Rueda, Sergio, Sanjana Mitra, Shiyi Chen, David Gogolishvili, Jason Globerman, Lori Chambers, Mike Wilson, et al. "Examining the Associations between HIV-Related Stigma and Health Outcomes in People Living with HIV/AIDS: A Series of Meta-Analyses." *BMJ Open* 6, no. 7 (July 2016): e011453. https://doi.org/10.1136/bmjopen-2016-011453.
266. Rui, Pinyao. "*QuickStats:* Number of Emergency Department Visits for Substance Abuse or Dependence per 10,000 Persons Aged ≥18 Years, by Age Group — United States, 2008–2009 and 2016–2017." *MMWR. Morbidity and Mortality Weekly Report* 68, no. 50 (December 20, 2019): 1171. https://doi.org/10.15585/mmwr.mm6850a7.
267. Russell, Deborah, Supriya Mathew, Michelle Fitts, Zania Liddle, Lorna Murakami-Gold, Narelle Campbell, Mark Ramjan, et al. 2021. "Interventions for Health Workforce Retention in Rural and Remote Areas: A Systematic Review." *Human Resources for Health* 19 (1): 103. https://doi.org/10.1186/s12960-021-00643-7.
268. Sandel, Megan, and Matthew Desmond. 2017. "Investing in Housing for Health Improves Both Mission and Margin." *JAMA* 318 (23): 2291–92. https://doi.org/10.1001/jama.2017.15771.
269. Sanders, Anne E., William B. Grider, William R. Maas, John A. Curiel, and Gary D. Slade. 2019. "Association Between Water Fluoridation and Income-Related Dental Caries of US Children and Adolescents." *JAMA Pediatrics* 173 (3): 288. https://doi.org/10.1001/jamapediatrics.2018.5086.
270. Satterfield, Dawn, Lemyra DeBruyn, Marjorie Santos, Larry Alonso, and Melinda Frank. 2016. "Health Promotion and Diabetes Prevention in American Indian and Alaska Native Communities — Traditional Foods Project, 2008–2014." *MMWR Supplements* 65 (1): 4–10. https://doi.org/10.15585/mmwr.su6501a3.
271. Scholes, Delia, Andy Stergachis, Fred E. Heidrich, Holly Andrilla, King K. Holmes, and Walter E. Stamm. 1996. "Prevention of Pelvic Inflammatory Disease by Screening for Cervical Chlamydial Infection." *New England Journal of Medicine* 334 (21): 1362–66. https://doi.org/10.1056/NEJM199605233342103.
272. Schulze, Matthias B., and Frank B. Hu. 2005. "Primary Prevention of Diabetes: What Can Be Done and How Much Can Be Prevented?" *Annual Review of Public Health* 26 (1): 445–67. https://doi.org/10.1146/annurev.publhealth.26.021304.144532.
273. Seabury, Seth A., Sophie Terp, and Leslie I. Boden. "Racial And Ethnic Differences In The Frequency Of Workplace Injuries And Prevalence Of Work-Related Disability." *Health Affairs* 36, no. 2 (February 2017): 266–73. https://doi.org/10.1377/hlthaff.2016.1185.
274. Semega, Jessica, and Melissa Kollar. 2022. "Income in the United States: 2021 Current Population Reports by Jessica Semega and Melissa Kollar Issued September 2022 P60-276." Current Population Reports P60-276. Washington, D.C.: U.S. Census Bureau.
275. Senkomago, Virginia, S. Jane Henley, Cheryll C. Thomas, Jacqueline M. Mix, Lauri E. Markowitz, and Mona Saraiya. "Human Papillomavirus–Attributable Cancers — United States, 2012–2016." *MMWR. Morbidity and Mortality Weekly Report* 68, no. 33 (August 23, 2019): 724–28. https://doi.org/10.15585/mmwr.mm6833a3.
276. Shefer, A., et al. "Improving Immunization Coverage Rates: An Evidence-Based Review of the Literature." Epidemiological Reviews, vol. 21, no. 1, Jan. 1999, pp. 96–142. DOI.org (Crossref), doi:10.1093/oxfordjournals.epirev.a017992.
277. Shepard, Donald S., Deborah Gurewich, Aung K. Lwin, Gerald A. Reed, and Morton M. Silverman. "Suicide and Suicidal Attempts in the United States: Costs and Policy Implications." *Suicide and Life-Threatening Behavior* 46, no. 3 (June 2016): 352–62. https://doi.org/10.1111/sltb.12225.
278. Shiels, Meredith S., Zaria Tatalovich, Yingxi Chen, Emily A. Haozous, Patricia Hartge, Anna M. Nápoles, Eliseo J. Pérez-Stable, et al. 2020. "Trends in Mortality From Drug Poisonings, Suicide, and Alcohol-Induced Deaths in the United States From 2000 to 2017." *JAMA Network Open* 3 (9): e2016217–e2016217. https://doi.org/10.1001/jamanetworkopen.2020.16217.
279. Shih, Margaret, and Paul A. Simon. "Health-Related Quality of Life among Adults with Serious Psychological Distress and Chronic Medical Conditions." *Quality of Life Research* 17, no. 4 (May 1, 2008): 521–28. https://doi.org/10.1007/s11136-008-9330-9.
280. Shore, Rima, and Barbara Shore. 2009. "Kids Count Indicator Brief: Preventing Low Birthweight." Baltimore, MD: The Annie E. Casey Foundation. https://www.aecf.org/resources/kids-count-indicator-brief-preventing-low-birthweight.
281. Singleton, Chelsea R., Sydney Fouché, Rucha Deshpande, Angela Odoms-Young, Corey Chatman, and Connie Spreen. 2018. "Barriers to Fruit and Vegetable Consumption among Farmers' Market Incentive Programme Users in Illinois, USA." *Public Health Nutrition* 21 (7): 1345–49. https://doi.org/10.1017/S1368980018000101.
282. Skufca, Laura, and Chuck Rainville. "2021 Caregiving Out-of-Pocket Costs Study." AARP Research, 2021. https://doi.org/10.26419/res.00473.001.
283. Slabaugh, S. Lane, Mona Shah, Matthew Zack, Laura Happe, Tristan Cordier, Eric Havens, Evan Davidson, Michael Miao, Todd Prewitt, and Haomiao Jia. 2016. "Leveraging Health-Related Quality of Life in Population Health Management: The Case for Healthy Days." *Population Health Management* 20 (1): 13–22. https://doi.org/10.1089/pop.2015.0162.
284. Smith, G S. "Public Health Approaches to Occupational Injury Prevention: Do They Work?" *Injury Prevention* 7, no. 90001 (September 1, 2001): 3i–10. https://doi.org/10.1136/ip.7.suppl_1.i3.
285. Solari, Claudia D., and Robert D. Mare. "Housing Crowding Effects on Children's Wellbeing." Social Science Research 41, no. 2 (2012): 464–76. https://doi.org/10.1016/j.ssresearch.2011.09.012.

286. Sommers, Benjamin D. “State Medicaid Expansions and Mortality, Revisited: A Cost-Benefit Analysis.” *American Journal of Health Economics* 3, no. 3 (May 11, 2017): 392–421. https://doi.org/10.1162/ajhe_a_00080.
287. Soneji, Samir, Jessica L. Barrington-Trimis, Thomas A. Wills, Adam M. Leventhal, Jennifer B. Unger, Laura A. Gibson, JaeWon Yang, et al. 2017. “Association Between Initial Use of E-Cigarettes and Subsequent Cigarette Smoking Among Adolescents and Young Adults: A Systematic Review and Meta-Analysis.” *JAMA Pediatrics* 171 (8): 788–97. https://doi.org/10.1001/jamapediatrics.2017.1488.
288. Spanier, Adam J., Stephen Wilson, Mona Ho, Richard Hornung, and Bruce P. Lanphear. “The Contribution of Housing Renovation to Children’s Blood Lead Levels: A Cohort Study.” *Environmental Health* 12 (August 27, 2013): 72. https://doi.org/10.1186/1476-069X-12-72.
289. Squarza, Chiara, Odoardo Picciolini, Laura Gardon, Maria L. Giannì, Alessandra Murru, Silvana Gangi, Ivan Cortinovis, Silvano Milani, and Fabio Mosca. 2016. “Learning Disabilities in Extremely Low Birth Weight Children and Neurodevelopmental Profiles at Preschool Age.” *Frontiers in Psychology* 7 (June). https://doi.org/10.3389/fpsyg.2016.00998.
290. Stanley, Barbara, Gregory K. Brown, Lisa A. Brenner, Hanga C. Galfalvy, Glenn W. Currier, Kerry L. Knox, Sadia R. Chaudhury, Ashley L. Bush, and Kelly L. Green. “Comparison of the Safety Planning Intervention With Follow-up vs Usual Care of Suicidal Patients Treated in the Emergency Department.” *JAMA Psychiatry* 75, no. 9 (September 1, 2018): 894–900. https://doi.org/10.1001/jamapsychiatry.2018.1776.
291. Starfield, Barbara, Leiyu Shi, and James Macinko. 2005. “Contribution of Primary Care to Health Systems and Health.” *The Milbank Quarterly* 83 (3): 457–502. https://doi.org/10.1111/j.1468-0009.2005.00409.x.
292. Starr, Jacqueline R., Ryan R. Ruff, Joseph Palmisano, J. Max Goodson, Omair M. Bukhari, and Richard Niederman. 2021. “Longitudinal Caries Prevalence in a Comprehensive, Multicomponent, School-Based Prevention Program.” *The Journal of the American Dental Association* 152 (3): 224-233.e11. https://doi.org/10.1016/j.adaj.2020.12.005.
293. Steelesmith, Danielle L., Cynthia A. Fontanella, John V. Campo, Jeffrey A. Bridge, Keith L. Warren, and Elisabeth D. Root. “Contextual Factors Associated With County-Level Suicide Rates in the United States, 1999 to 2016.” *JAMA Network Open* 2, no. 9 (September 4, 2019): e1910936–e1910936. https://doi.org/10.1001/jamanetworkopen.2019.10936.
294. Stein, Elizabeth M., Keith P. Gennuso, Donna C. Ugboaja, and Patrick L. Remington. 2017. “The Epidemic of Despair Among White Americans: Trends in the Leading Causes of Premature Death, 1999–2015.” *American Journal of Public Health* 107 (10): 1541–47. https://doi.org/10.2105/AJPH.2017.303941.
295. Stellefson, Michael, Samantha R. Paige, Adam E. Barry, Min Qi Wang, and Avery Apperson. “Risk Factors Associated with Physical and Mental Distress in People Who Report a COPD Diagnosis: Latent Class Analysis of 2016 Behavioral Risk Factor Surveillance System Data.” *International Journal of Chronic Obstructive Pulmonary Disease* 14 (April 2019): 809–22. https://doi.org/10.2147/COPD.S194018.
296. Stewart, Timothy. 2022. “Overview of Motor Vehicle Crashes in 2020.” NHTSA Technical Report DOT HS 813 266. Washington, D.C.: National Center for Statistics and Analysis, National Highway Traffic Safety Administration. https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813266.
297. Strosnider, Heather, Caitlin Kennedy, Michele Monti, and Fuyuen Yip. 2017. “Rural and Urban Differences in Air Quality, 2008–2012, and Community Drinking Water Quality, 2010–2015 — United States.” *MMWR. Surveillance Summaries* 66 (13): 1–10. https://doi.org/10.15585/mmwr.ss6613a1.
298. The VCU Center on Society and Health, and Robert Wood Johnson Foundation. “Why Education Matters to Health: Exploring the Causes.” Issue Brief #2. Richmond, VA: The VCU Center on Society and Health, April 2014. https://societyhealth.vcu.edu/media/society-health/pdf/test-folder/CSH-EHI-Issue-Brief-2.pdf
299. Thorsen, Maggie L., Andreas Thorsen, and Ronald McGarvey. 2019. “Operational Efficiency, Patient Composition and Regional Context of U.S. Health Centers: Associations with Access to Early Prenatal Care and Low Birth Weight.” *Social Science & Medicine* 226 (April): 143–52. https://doi.org/10.1016/j.socscimed.2019.02.043.
300. U.S. Census Bureau, American Community Survey, 2016-2020. Table B19126.
301. U.S. Census Bureau. (2021). *2016-2020 American Community Survey 5-year Estimates Data Profiles* [Excel file]. Retrieved from https://data.census.gov/table?g=0400000US44&tid=ACSDP5Y2020.DP05
302. U.S. Department of Agriculture and U.S. Department of and Health and Human Services. 2020. “2020-2025 Dietary Guidelines for Americans.” 9th edition. Washington, D.C.: U.S. Department of Agriculture and U.S. Department of Health and Human Services. https://www.dietaryguidelines.gov/sites/default/files/2020-12/Dietary_Guidelines_for_Americans_2020-2025.pdf.
303. U.S. Department of Health and Human Services. “Physical Activity Guidelines for Americans, 2nd Edition.” Washington, D.C.: U.S. Department of Health and Human Services, 2018. https://health.gov/sites/default/files/2019-09/Physical_Activity_Guidelines_2nd_edition.pdf.
304. U.S. Department of Health and Human Services. “The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General.” Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014. https://pubmed.ncbi.nlm.nih.gov/24455788/.
305. U.S. Department of Health and Human Services. 2000. “Oral Health in America: A Report of the Surgeon General.” Rockville, MD: U.S. Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health. https://www.nidcr.nih.gov/sites/default/files/2017-10/hck1ocv.%40www.surgeon.fullrpt.pdf.

306. U.S. HHS, Centers for Medicare & Medicaid Services, National Plan and Provider Enumeration System, September 2021
307. Valero-Elizondo, Javier, Joseph A. Salami, Chukwuemeka U. Osondu, Oluseye Ogunmoroti, Alejandro Arrieta, Erica S. Spatz, Adnan Younus, et al. "Economic Impact of Moderate-Vigorous Physical Activity Among Those With and Without Established Cardiovascular Disease: 2012 Medical Expenditure Panel Survey." *Journal of the American Heart Association* 5, no. 9 (August 29, 2016). https://doi.org/10.1161/JAHA.116.003614.
308. van Schalkwyk, M. C. I., and J. S. Mindell. 2018. "Current Issues in the Impacts of Transport on Health." *British Medical Bulletin* 125 (1): 67–77. https://doi.org/10.1093/bmb/ldx048.
309. Vogeli, Christine, Alexandra E. Shields, Todd A. Lee, Teresa B. Gibson, William D. Marder, Kevin B. Weiss, and David Blumenthal. 2007. "Multiple Chronic Conditions: Prevalence, Health Consequences, and Implications for Quality, Care Management, and Costs." *Journal of General Internal Medicine* 22 (S3): 391–95. https://doi.org/10.1007/s11606-007-0322-1.
310. Vujicic, Marko, Thomas Buchmueller, and Rachel Klein. 2016. "Dental Care Presents The Highest Level Of Financial Barriers, Compared To Other Types Of Health Care Services." *Health Affairs* 35 (12): 2176–82. https://doi.org/10.1377/hlthaff.2016.0800.
311. Wang, Fu, Yingxiao Hua, Paul K. Whelton, Tao Zhang, Camilo Alonso Fernandez, Huijie Zhang, Lydia Bazzano, Jiang He, Wei Chen, and Shengxu Li. 2017. "Relationship Between Birth Weight and the Double Product in Childhood, Adolescence, and Adulthood (from the Bogalusa Heart Study)." *American Journal of Cardiology* 120 (6): 1016–19. https://doi.org/10.1016/j.amjcard.2017.06.037.
312. Ward, Elizabeth, Michael Halpern, Nicole Schrag, Vilma Cokkinides, Carol DeSantis, Priti Bandi, Rebecca Siegel, Andrew Stewart, and Ahmedin Jemal. "Association of Insurance with Cancer Care Utilization and Outcomes." *CA Cancer J Clin* 58, no. 1 (February 2008): 9–31. https://doi.org/10.3322/CA.2007.0011.
313. Weaver, Matthew D., Jason P. Sullivan, Céline Vetter, Wei Wang, Conor S. O'Brien, Salim Qadri, Christopher P. Landrigan, Charles A. Czeisler, and Laura K. Barger. 2017. "Work Hour Policies Are Associated With Improved Safety Among Medical Residents." *Sleep* 40 (Abstract Supplement): A441. https://doi.org/10.1093/sleepj/zsx050.1182.
314. Wen, Hefei, Kenton J. Johnston, Lindsay Allen, and Teresa M. Waters. "Medicaid Expansion Associated With Reductions In Preventable Hospitalizations." Health Affairs 38, no. 11 (November 1, 2019): 1845–49. https://doi.org/10.1377/hlthaff.2019.00483.
315. White House Gender Policy Council. "National Strategy on Gender Equity and Equality." Washington, D.C.: White House, March 2021. https://www.whitehouse.gov/wp-content/uploads/2021/10/National-Strategy-on-Gender-Equity-and-Equality.pdf.
316. Whitney, Cynthia G., et al. "Benefits from Immunization during the Vaccines for Children Program Era - United States, 1994-2013." MMWR. Morbidity and Mortality Weekly Report, vol. 63, no. 16, Apr. 2014, pp. 352–55. PMID:24759657
317. Wickstrom, Ronny. 2007. "Effects of Nicotine During Pregnancy: Human and Experimental Evidence." *Current Neuropharmacology* 5 (3): 213–22. https://doi.org/10.2174/157015907781695955.
318. Wilkinson, Richard G, and Kate E. Pickett. 2006. "Income Inequality and Population Health: A Review and Explanation of the Evidence." *Social Science & Medicine* 62 (7): 1768–84. https://doi.org/10.1016/j.socscimed.2005.08.036.
319. Wilper, Andrew P., Steffie Woolhandler, Karen E. Lasser, Danny McCormick, David H. Bor, and David U. Himmelstein. "Health Insurance and Mortality in US Adults." *American Journal of Public Health* 99, no. 12 (December 1, 2009): 2289–95. https://doi.org/10.2105/AJPH.2008.157685.
320. Winters, Paul, Daniel Tancredi, and Kevin Fiscella. 2010. "The Role of Usual Source of Care in Cholesterol Treatment." *The Journal of the American Board of Family Medicine* 23 (2): 179–85. https://doi.org/10.3122/jabfm.2010.02.090084.
321. Wolff, Jennifer L., Barbara Starfield, and Gerard Anderson. 2002. "Prevalence, Expenditures, and Complications of Multiple Chronic Conditions in the Elderly." *Archives of Internal Medicine* 162 (20): 2269–76. https://doi.org/10.1001/archinte.162.20.2269.
322. Wong, Mitchell D., Martin F. Shapiro, W. John Boscardin, and Susan L. Ettner. 2002. "Contribution of Major Diseases to Disparities in Mortality." *New England Journal of Medicine* 347 (20): 1585–92. https://doi.org/10.1056/NEJMsa012979.
323. Woo, Bongki, Nicole Kravitz-Wirtz, Victoria Sass, Kyle Crowder, Samantha Teixeira, and David T. Takeuchi. 2019. "Residential Segregation and Racial/Ethnic Disparities in Ambient Air Pollution." *Race and Social Problems* 11 (1): 60–67. https://doi.org/10.1007/s12552-018-9254-0.
324. Woods, Elizabeth R., Urmi Bhaumik, Susan J. Sommer, Elaine Chan, Lindsay Tsopelas, Eric W. Fleegler, Margarita Lorenzi, et al. 2016. "Community Asthma Initiative to Improve Health Outcomes and Reduce Disparities Among Children with Asthma." *MMWR Supplements* 65 (1): 11–20. https://doi.org/10.15585/mmwr.su6501a4.
325. Woodworth, Kate R., Emily O'Malley Olsen, Varsha Neelam, Elizabeth L. Lewis, Romeo R. Galang, Titilope Oduyebo, Kathryn Aveni, et al. 2020. "Birth and Infant Outcomes Following Laboratory-Confirmed SARS-CoV-2 Infection in Pregnancy — SET-NET, 16 Jurisdictions, March 29–October 14, 2020." *MMWR. Morbidity and Mortality Weekly Report* 69 (44): 1635–40. https://doi.org/10.15585/mmwr.mm6944e2.
326. Woolf, Steven H., Robert E. Johnson, Robert L. Jr. Phillips, and Maike Philipsen. 2007. "Giving Everyone the Health of the Educated: An Examination of Whether Social Change Would Save More Lives than Medical Advances." *American Journal of Public Health* 97 (4): 679–83. https://doi.org/10.2105/AJPH.2005.084848.

327. Woolhandler, Steffie, and David U. Himmelstein. “The Relationship of Health Insurance and Mortality: Is Lack of Insurance Deadly?” *Annals of Internal Medicine* 167, no. 6 (June 27, 2017): 424–31. https://doi.org/10.7326/M17-1403.
328. World Bank, and Institute for Health Metrics and Evaluation. 2016. “The Cost of Air Pollution: Strengthening the Economic Case for Action.” Washington, D.C.: World Bank. http://hdl.handle.net/10986/25013.
329. World Health Organization. “Global Status Report on Alcohol and Health 2018.” Geneva, Switzerland: World Health Organization, September 27, 2018. https://www.who.int/publications/i/item/9789241565639.
330. Xie, Wubin, Alayna P. Tackett, Jonathan B. Berlowitz, Alyssa F. Harlow, Hasmeena Kathuria, Panagis Galiatsatos, Jessica L. Fetterman, et al. 2022. “Association of Electronic Cigarette Use with Respiratory Symptom Development among U.S. Young Adults.” *American Journal of Respiratory and Critical Care Medicine* 205 (11): 1320–29. https://doi.org/10.1164/rccm.202107-1718OC.
331. Xue, Ying, Zhiqiu Ye, Carol Brewer, and Joanne Spetz. 2016. “Impact of State Nurse Practitioner Scope-of-Practice Regulation on Health Care Delivery: Systematic Review.” *Nursing Outlook* 64 (1): 71–85. https://doi.org/10.1016/j.outlook.2015.08.005.
332. Yang, Lin, Chao Cao, Elizabeth D. Kantor, Long H. Nguyen, Xiaobin Zheng, Yikyung Park, Edward L. Giovannucci, Charles E. Matthews, Graham A. Colditz, and Yin Cao. “Trends in Sedentary Behavior Among the US Population, 2001-2016.” *JAMA* 321, no. 16 (April 23, 2019): 1587. https://doi.org/10.1001/jama.2019.3636.
333. Yeh, Ming-Chin, Scott B. Ickes, Lisa M. Lowenstein, Kerem Shuval, Alice S. Ammerman, Rosanne Farris, and David L. Katz. 2008. “Understanding Barriers and Facilitators of Fruit and Vegetable Consumption among a Diverse Multi-Ethnic Population in the USA.” *Health Promotion International* 23 (1): 42–51. https://doi.org/10.1093/heapro/dam044.
334. Yoon, Paula W., Brigham Bastian, Robert N. Anderson, Janet L. Collins, Harold W. Jaffe, and Centers for Disease Control and Prevention (CDC). “Potentially Preventable Deaths from the Five Leading Causes of Death--United States, 2008-2010.” *MMWR. Morbidity and Mortality Weekly Report* 63, no. 17 (May 2, 2014): 369–74. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4584887/ .
335. Zoorob, Michael. “Does ‘Right to Work’ Imperil the Right to Health? The Effect of Labour Unions on Workplace Fatalities.” *Occupational and Environmental Medicine* 75, no. 10 (October 2018): 736–38. https://doi.org/10.1136/oemed-2017-104747.
336. Zulfiqar, Hassam, and Omar Rahman. “Vaping Associated Pulmonary Injury.” In *StatPearls*. Treasure Island (FL): StatPearls Publishing, 2022. http://www.ncbi.nlm.nih.gov/books/NBK560656/.