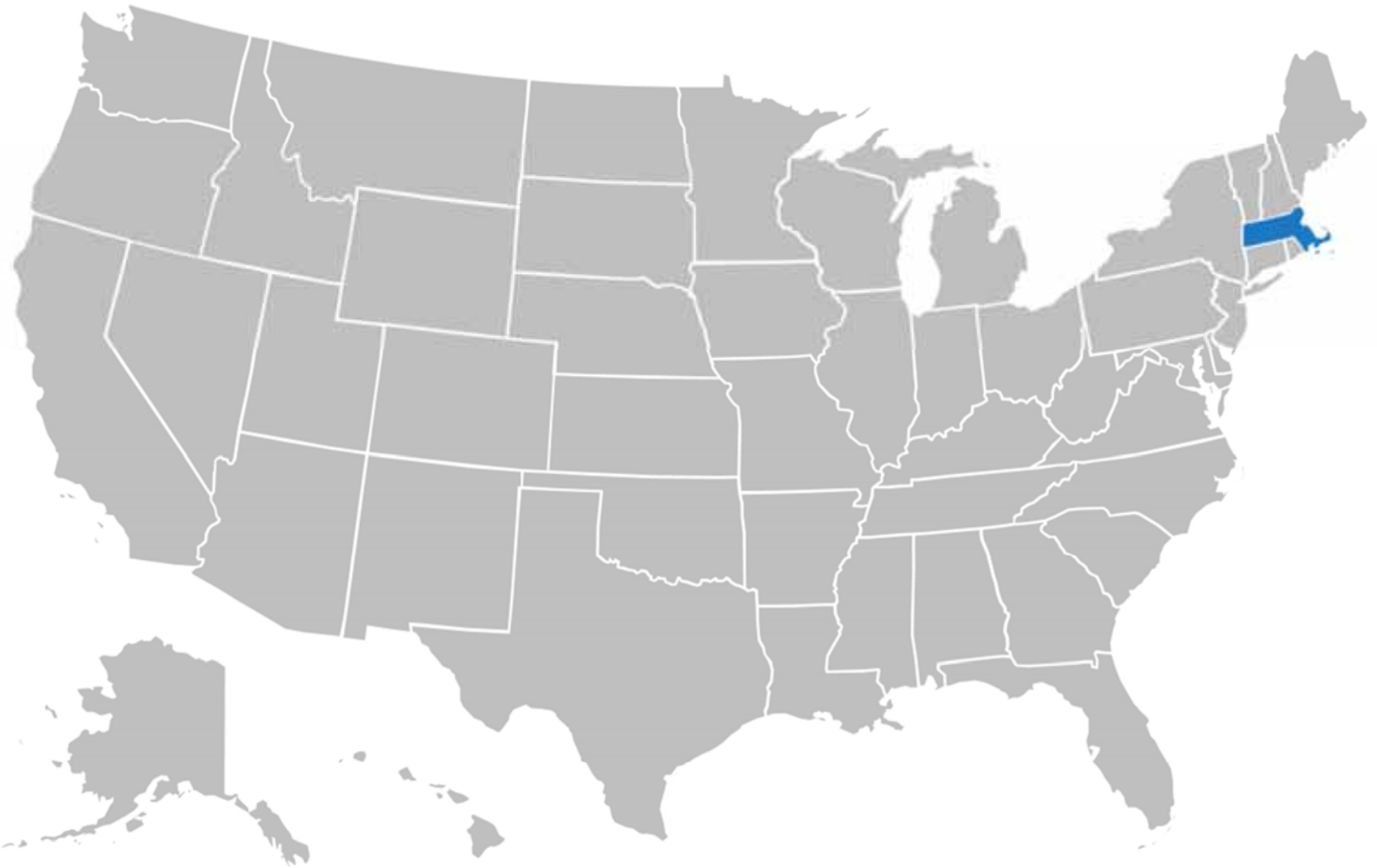


County Health Rankings & Roadmaps

Building a Culture of Health, County by County

A Robert Wood Johnson Foundation program

Massachusetts



2019 County Health Rankings Report

A collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute.



Support provided by

Robert Wood Johnson Foundation

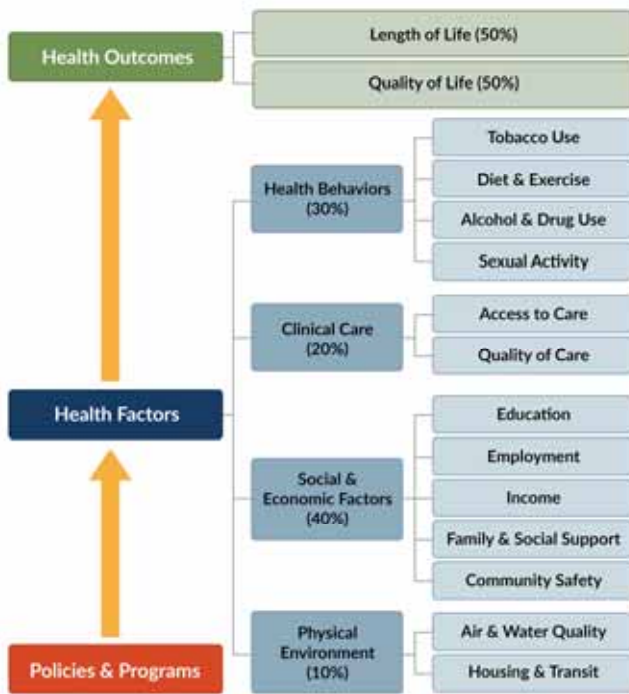


The County Health Rankings & Roadmaps (CHR&R) brings actionable data, evidence, guidance, and stories to communities to make it easier for people to be healthy in their neighborhoods, schools, and workplaces. Ranking the health of nearly every county in the nation (based on the model below), CHR&R illustrates what we know when it comes to what is keeping people healthy or making them sick and shows what we can do to create healthier places to live, learn, work, and play.

What are the County Health Rankings?

Published online at countyhealthrankings.org, the Rankings help counties understand what influences how healthy residents are and how long they will live. The Rankings are unique in their ability to measure the current overall health of each county in all 50 states. They also look at a variety of measures that affect the future health of communities, such as high school graduation rates, access to healthy foods, rates of smoking, obesity, and teen births.

Communities use the Rankings to garner support for local health improvement initiatives among government agencies, health care providers, community organizations, business leaders, policymakers, and the public.



Moving with Data to Action

The Take Action to Improve Health section of our website, countyhealthrankings.org, helps communities join together to look at the many factors influencing health, select strategies that work, and make changes that will have a lasting impact. Take Action to Improve Health is a hub of information to help any community member or leader who wants to improve their community’s health and equity. You will find:

- What Works for Health, a searchable menu of evidence-informed policies and programs that can make a difference locally;
- The Action Center, your home for step-by-step guidance and tools to help you move with data to action;
- Action Learning Guides, self-directed learning on specific topics with a blend of guidance, tools, and hands-on practice and reflection activities;
- The Partner Center, information to help you identify the right partners and explore tips to engage them;
- Peer Learning, a virtual, interactive place to learn with and from others about what works in communities; and
- Action Learning Coaches, located across the nation, who are available to provide real-time guidance to local communities interested in learning how to accelerate their efforts to improve health and advance equity.

The Robert Wood Johnson Foundation (RWJF) collaborates with the University of Wisconsin Population Health Institute (UWPHI) to bring this program to cities, counties, and states across the nation.



Opportunities for Health Vary by Place and Race

Our country has achieved significant health improvements over the past century. We have benefited from progress in automobile safety, better workplace standards, good schools and medical clinics, and reductions in smoking and infectious diseases. But when you look closer, there are significant differences in health outcomes according to where we live, how much money we make, or how we are treated. The data show that, in counties everywhere, not everyone has benefited in the same way from these health improvements. There are fewer opportunities and resources for better health among groups that have been historically marginalized, including people of color, people living in poverty, people with physical or mental disabilities, LGBTQ persons, and women.

Differences in Opportunity Have Been Created, and Can Be Undone

Differences in opportunity do not arise on their own or because of the actions of individuals alone. Often, they are the result of policies and practices at many levels that have created deep-rooted barriers to good health, such as unfair bank lending practices, school funding based on local property taxes, and discriminatory policing and prison sentencing. The collective effect is that a fair and just opportunity to live a long and healthy life does not exist for everyone. Now is the time to change how things are done.

Measure What Matters

Achieving health equity means reducing and ultimately eliminating unjust and avoidable differences in health and in the conditions and resources needed for optimal health. This report provides data on differences in health and opportunities in Massachusetts that can help identify where action is needed to achieve greater equity and offers information on how to move with data to action.

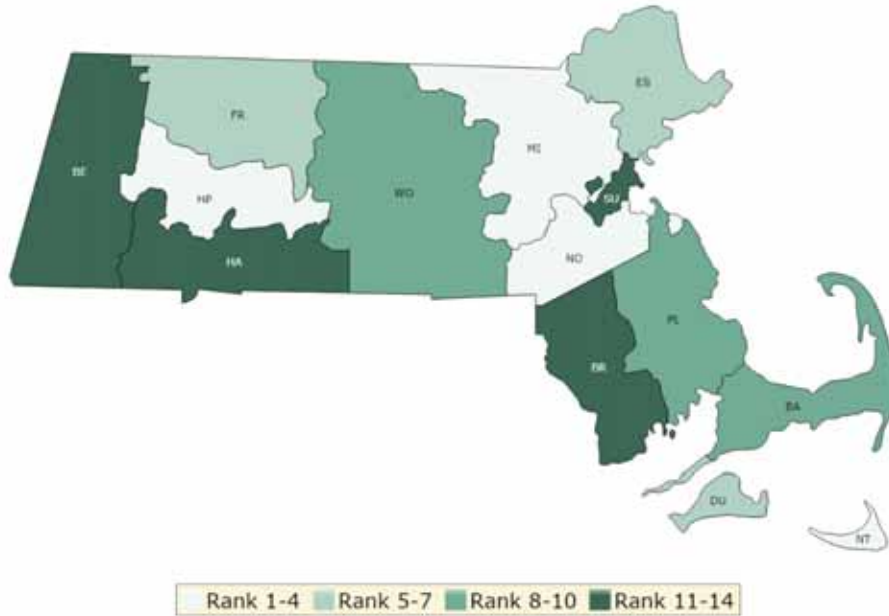
Specifically, this report will help illuminate:

1. Differences in health outcomes within the state by place and racial/ethnic groups
2. Differences in health factors within the state by place and racial/ethnic groups
3. What communities can do to create opportunity and health for all

Differences in Health Outcomes within States by Place and Racial/Ethnic Groups

How Do Counties Rank for Health Outcomes?

Health outcomes in the County Health Rankings represent measures of how long people live and how healthy people feel. Length of life is measured by premature death (years of potential life lost before age 75) and quality of life is measured by self-reported health status (percent of people reporting poor or fair health and the number of physically and mentally unhealthy days within the last 30 days) and the % of low birth weight newborns. Detailed information on the underlying measures is available at countyhealthrankings.org



The green map above shows the distribution of Massachusetts’s **health outcomes**, based on an equal weighting of length and quality of life. The map is divided into four quartiles with less color intensity indicating better performance in the respective summary rankings. Specific county ranks can be found in the table on page 10 at the end of this report.

How Do Health Outcomes Vary by Race/Ethnicity?

Length and quality of life vary not only based on where we live, but also by our racial/ethnic background. In Massachusetts, there are differences by race/ethnicity in length and quality of life that are masked when we only look at differences by place. The table below presents the five underlying measures that make up the Health Outcomes rank. Explore the table to see how health differs between the healthiest and the least healthy counties in Massachusetts, and among racial/ethnic groups.

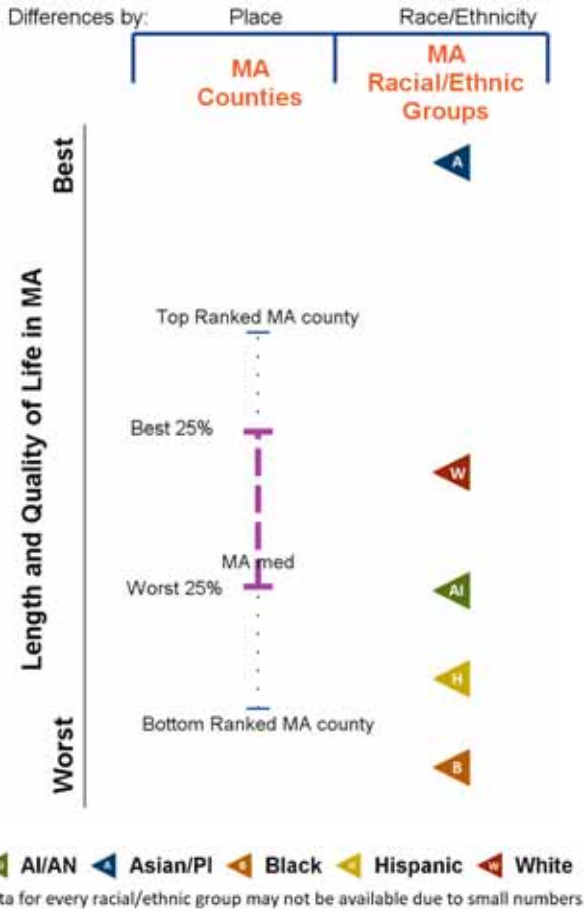
Differences in Health Outcome Measures among Counties and for Racial/Ethnic Groups in Massachusetts

	Healthiest MA County	Least Healthy MA County	AI/AN	Asian/PI	Black	Hispanic	White
Premature Death (years lost/100,000)	4,000	7,000	6,600	2,200	6,800	5,200	5,800
Poor or Fair Health (%)	12%	18%	N/A	8%	17%	32%	11%
Poor Physical Health Days (avg)	3.3	4.2	N/A	1.5	4.3	4.7	3.2
Poor Mental Health Days (avg)	3.9	4.5	N/A	3.2	4.5	3.8	4.0
Low Birthweight (%)	5%	8%	8%	8%	11%	8%	7%

American Indian/Alaskan Native (AI/AN), Asian/Pacific Islander (Asian/PI)

N/A = Not available. Data for all racial/ethnic groups may not be available due to small numbers

Health Outcomes in Massachusetts



The graphic to the left compares measures of length and quality of life by place (Health Outcomes ranks) and by race/ethnicity. To learn more about this composite measure, see the technical notes on page 14.

Taken as a whole, measures of length and quality of life in Massachusetts indicate:

- American Indians/Alaskan Natives are most similar in health to those living in the least healthy quartile of counties.
- Asians/Pacific Islanders are healthier than those living in the top ranked county.
- Blacks are less healthy than those living in the bottom ranked county.
- Hispanics are most similar in health to those living in the least healthy quartile of counties.
- Whites are most similar in health to those living in the middle 50% of counties.

(Quartiles refer to the map on page 4.)

AI/AN - American Indian/Alaskan Native/Native American
 Asian/PI - Asian/Pacific Islander

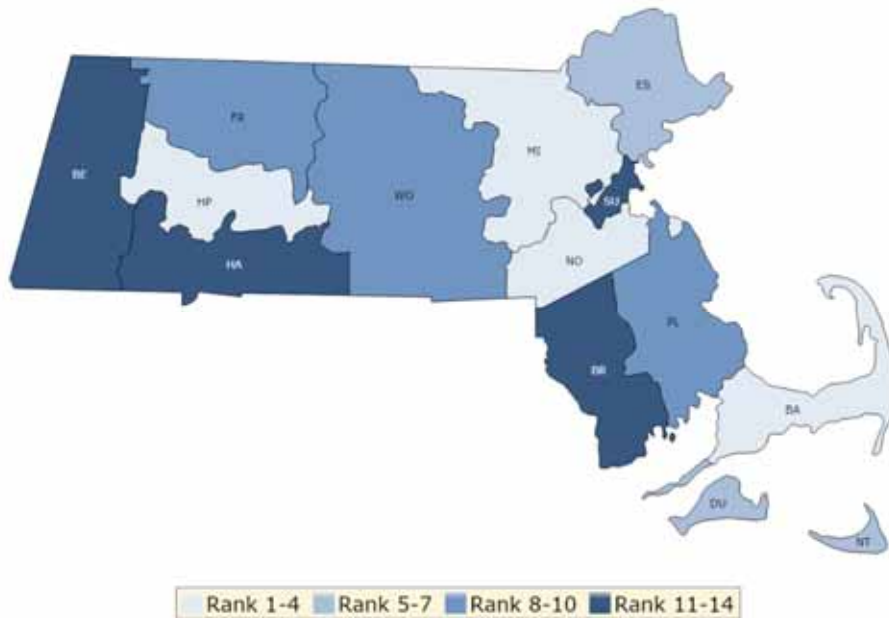
Across the US, values for measures of length and quality of life for Native American, Black, and Hispanic residents are regularly worse than for Whites and Asians. For example, even in the healthiest counties in the US, Black and American Indian premature death rates are about 1.4 times higher than White rates. Not only are these differences unjust and avoidable, they will also negatively impact our changing nation’s future prosperity.



Differences in Health Factors within States by Place and Racial/Ethnic Groups

How Do Counties Rank for Health Factors?

Health factors in the County Health Rankings represent the focus areas that drive how long and how well we live, including health behaviors (tobacco use, diet & exercise, alcohol & drug use, sexual activity), clinical care (access to care, quality of care), social and economic factors (education, employment, income, family & social support, community safety), and the physical environment (air & water quality, housing & transit).



The blue map above shows the distribution of Massachusetts’s **health factors** based on weighted scores for health behaviors, clinical care, social and economic factors, and the physical environment. Detailed information on the underlying measures is available at countyhealthrankings.org. The map is divided into four quartiles with less color intensity indicating better performance in the respective summary rankings. Specific county ranks can be found in the table on page 10.

What are the Factors That Drive Health and Health Equity and How Does Housing Play a Role?

Health is influenced by a range of factors. Social and economic factors, like connected and supportive communities, good schools, stable jobs, and safe neighborhoods, are foundational to achieving long and healthy lives. These social and economic factors also interact with other important drivers of health and health equity. For example, housing that is unaffordable or unstable can either result from poverty or exacerbate it. When our homes are near high performing schools and good jobs, it’s easier to get a quality education and earn a living wage. When people live near grocery stores where fresh food is available or close to green spaces and parks, eating healthy and being active is easier. When things like lead, mold, smoke, and other toxins are inside our homes, they can make us sick. And when so much of a paycheck goes toward the rent or mortgage, it makes it hard to afford to go to the doctor, cover the utility bills, or maintain reliable transportation to work or school.

How Do Opportunities for Stable and Affordable Housing Vary in Massachusetts?

Housing is central to people’s opportunities for living long and well. Nationwide, housing costs far exceed affordability given local incomes in many communities. As a result, people have no choice but to spend too much on housing, leaving little left for other necessities. Here, we focus on stable and affordable housing as an essential element of healthy communities. We also explore the connection between housing and children in poverty to illuminate the fact that these issues are made even more difficult when family budgets are the tightest.

In 2017, in Massachusetts, more than 180,000 children lived in poverty

60% of Massachusetts’s children in poverty were living in a household that spends more than ½ of its income on housing costs



Leaving little left over for other essentials like...



Healthy Food



Transportation



Medical Care

What can work to create and preserve stable and affordable housing that can improve economic and social well-being and connect residents to opportunity?

A comprehensive, strategic approach that looks across a community and multiple sectors is needed to create and preserve stable, affordable housing in our communities. The way forward requires policies, programs, and systems changes that respond to the specific needs of each community, promote inclusive and connected neighborhoods, reduce displacement, and enable opportunity for better health for all people. This includes efforts to:

Make communities more inclusive and connected, such as:

- Inclusive zoning
- Civic engagement in public governance and in community development decisions
- Fair housing laws and enforcement
- Youth leadership programs
- Access to living wage jobs, quality health care, grocery stores, green spaces and parks, and public transportation systems

Facilitate access to resources needed to secure affordable housing, particularly for low- to middle-income families, such as:

- Housing choice vouchers for low- and very low-income households
- Housing trust funds

Address capital resources needed to create and preserve affordable housing, particularly for low- to middle-income families, such as:

- Acquisition, management, and financing of land for affordable housing, like land banks or land trusts
- Tax credits, block grants, and other government subsidies or revenues to advance affordable housing development
- Zoning changes that reduce the cost of housing production

For more information about evidence-informed strategies that can address priorities in your community, visit What Works for Health at countyhealthrankings.org/whatworks

This report explores statewide data. To dive deeper into your county data, visit [Use the Data at countyhealthrankings.org](http://countyhealthrankings.org)

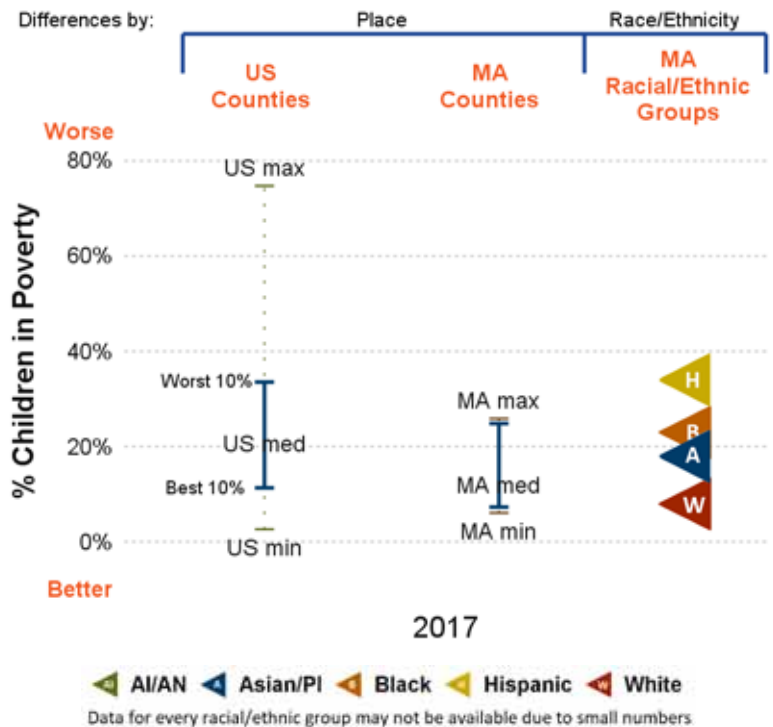
Consider these questions as you look at the data graphics throughout this report:

- What differences do you see among counties in your state?
- What differences do you see by racial/ethnic groups in your state?
- How do counties in your state compare to all U.S. counties?
- What patterns do you see? For example, do some racial/ethnic groups fare better or worse across measures?

CHILDREN IN POVERTY

Poverty limits opportunities for quality housing, safe neighborhoods, healthy food, living wage jobs, and quality education. As poverty and related stress increase, health worsens.

- In Massachusetts, 14% of children are living in poverty.
- Children in poverty among Massachusetts counties range from 6% to 26%.
- Child poverty rates among racial/ethnic groups in Massachusetts range from 8% to 34%.

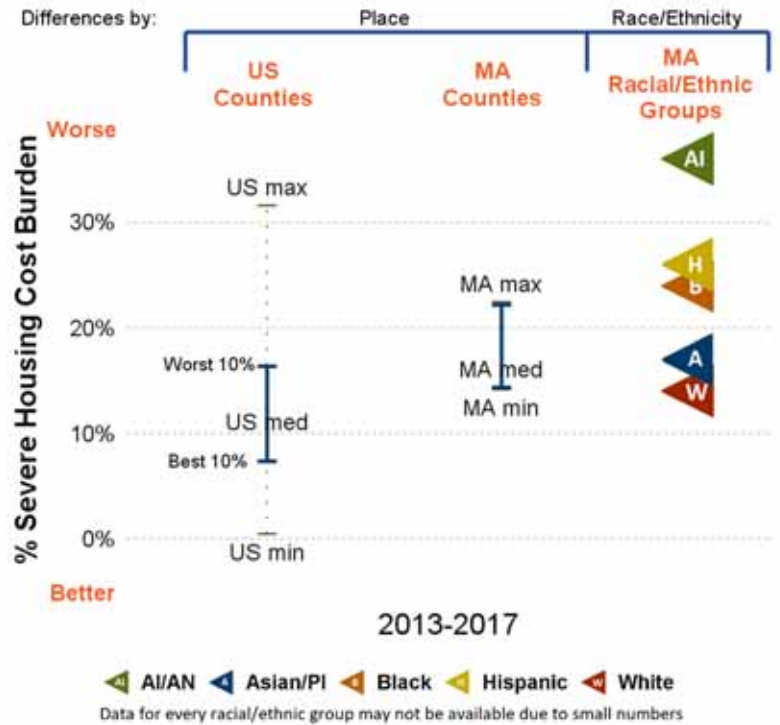


US and state values and the state minimum and maximum can be found in the table on page 12
 American Indian/Alaskan Native/Native American (AI/AN) Asian/Pacific Islander (Asian/PI)

SEVERE HOUSING COST BURDEN

There is a strong and growing evidence base linking stable and affordable housing to health. As housing costs have outpaced local incomes, households not only struggle to acquire and maintain adequate shelter, but also face difficult trade-offs in meeting other basic needs.

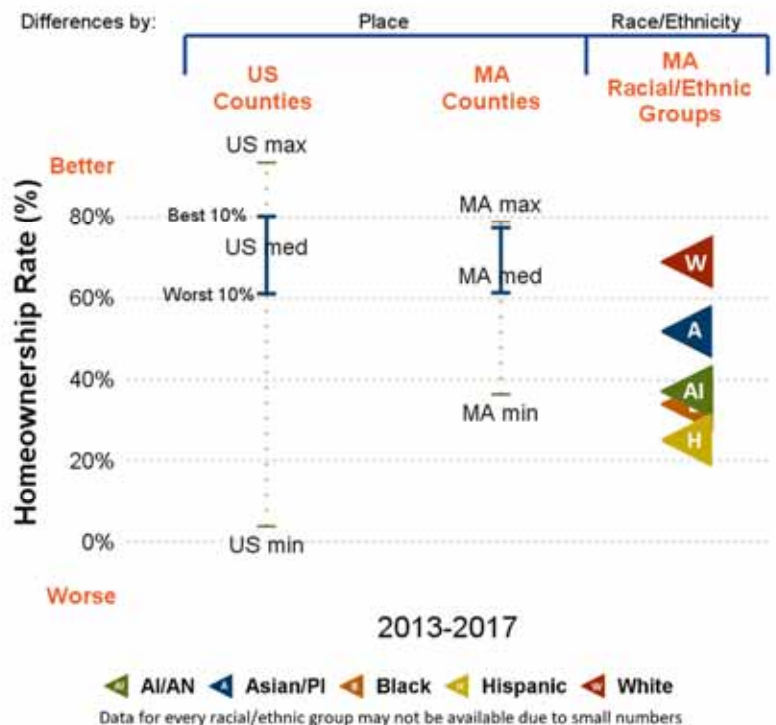
- In Massachusetts, 16% of households spend more than half of their income on housing costs.
- Across Massachusetts counties, severe housing cost burden ranges from 14% to 22% of households.
- Severe housing cost burden ranges from 14% to 36% among households headed by different racial/ethnic groups in Massachusetts.



HOMEOWNERSHIP

Homeownership has historically been a springboard for families to enter the middle class. Owning a home over time can help build savings for education or for other opportunities important to health and future family wealth. High levels of homeownership are associated with more stable housing and more tightly knit communities.

- In Massachusetts, 62% of households own their home.
- Homeownership rates among Massachusetts counties range from 36% to 79% of households.
- Homeownership rates among racial/ethnic groups in Massachusetts range from 25% to 69%.



2019 County Health Rankings for the 14 Ranked Counties in Massachusetts

County	Health Outcomes	Health Factors
Barnstable	10	4
Berkshire	13	11
Bristol	12	13
Dukes	5	6
Essex	6	7

County	Health Outcomes	Health Factors
Franklin	7	8
Hampden	14	14
Hampshire	4	3
Middlesex	2	2
Nantucket	1	5

County	Health Outcomes	Health Factors
Norfolk	3	1
Plymouth	8	10
Suffolk	11	12
Worcester	9	9



Stay Up-To-Date with County Health Rankings & Roadmaps

For the latest updates on our Rankings, community support, RWJF Culture of Health Prize communities, and more visit countyhealthrankings.org/news. You can see what we're featuring on our webinar series, what communities are doing to improve health, and how you can get involved!

2019 County Health Rankings for Massachusetts: Measures and National/State Results

Measure	Description	US	MA	MA Minimum	MA Maximum
HEALTH OUTCOMES					
Premature death	Years of potential life lost before age 75 per 100,000 population	6900	5,700	4,000	7,400
Poor or fair health	% of adults reporting fair or poor health	16%	14%	10%	18%
Poor physical health days	Average # of physically unhealthy days reported in past 30 days	3.7	3.4	2.9	4.2
Poor mental health days	Average # of mentally unhealthy days reported in past 30 days	3.8	4.0	3.5	4.7
Low birthweight	% of live births with low birthweight (< 2500 grams)	8%	8%	5%	9%
HEALTH FACTORS					
HEALTH BEHAVIORS					
Adult smoking	% of adults who are current smokers	17%	14%	11%	18%
Adult obesity	% of adults that report a BMI ≥ 30	29%	24%	20%	29%
Food environment index	Index of factors that contribute to a healthy food environment, (0-10)	7.7	9.3	8.0	9.1
Physical inactivity	% of adults aged 20 and over reporting no leisure-time physical activity	22%	20%	15%	25%
Access to exercise opportunities	% of population with adequate access to locations for physical activity	84%	94%	79%	100%
Excessive drinking	% of adults reporting binge or heavy drinking	18%	20%	19%	26%
Alcohol-impaired driving deaths	% of driving deaths with alcohol involvement	29%	29%	0%	35%
Sexually transmitted infections	# of newly diagnosed chlamydia cases per 100,000 population	497.3	394.5	90.5	493.7
Teen births	# of births per 1,000 female population ages 15-19	25	11	3	25
CLINICAL CARE					
Uninsured	% of population under age 65 without health insurance	10%	3%	2%	4%
Primary care physicians	Ratio of population to primary care physicians	1,330:1	960:1	1,930:1	670:1
Dentists	Ratio of population to dentists	1,460:1	990:1	1,580:1	490:1
Mental health providers	Ratio of population to mental health providers	440:1	180:1	300:1	120:1
Preventable hospital stays	# of hospital stays for ambulatory-care sensitive conditions per 100,000 Medicare enrollees	4,520	4,823	2,276	5,976
Mammography screening	% of female Medicare enrollees ages 65-74 that receive mammography screening	41%	54%	47%	57%
Flu vaccinations	% of Medicare enrollees who receive an influenza vaccination	45%	52%	38%	56%
SOCIAL AND ECONOMIC FACTORS					
High school graduation	% of ninth-grade cohort that graduates in four years	85%	88%	71%	94%
Some college	% of adults ages 25-44 with some post-secondary education	65%	73%	60%	82%
Unemployment	% of population aged 16 and older unemployed but seeking work	4.4%	3.7%	3.0%	5.0%
Children in poverty	% of children under age 18 in poverty	18%	14%	6%	26%
Income inequality	Ratio of household income at the 80th percentile to income at the 20th percentile	4.9	5.5	3.7	7.7
Children in single-parent households	% of children that live in a household headed by a single parent	33%	31%	18%	49%
Social associations	# of membership associations per 10,000 population	9.3	9.4	8.2	23.2
Violent crime	# of reported violent crime offenses per 100,000 population	386	384	158	752
Injury deaths	# of deaths due to injury per 100,000 population	67	59	49	80
PHYSICAL ENVIRONMENT					
Air pollution – particulate matter	Average daily density of fine particulate matter in micrograms per cubic meter (PM2.5)	8.6	7.7	6.0	8.5
Drinking water violations	Indicator of the presence of health-related drinking water violations. Yes - indicates the presence of a violation, No - indicates no violation.	N/A	N/A	No	Yes
Severe housing problems	% of households with overcrowding, high housing costs, or lack of kitchen or plumbing facilities	18%	18%	16%	26%
Driving alone to work	% of workforce that drives alone to work	76%	71%	41%	82%
Long commute – driving alone	Among workers who commute in their car alone, % commuting > 30 minutes	35%	42%	3%	51%

2019 County Health Rankings: Ranked Measure Sources and Years of Data

	Measure	Source	Years of Data
HEALTH OUTCOMES			
Length of Life	Premature death	National Center for Health Statistics – Mortality files	2015-2017
Quality of Life	Poor or fair health	Behavioral Risk Factor Surveillance System	2016
	Poor physical health days	Behavioral Risk Factor Surveillance System	2016
	Poor mental health days	Behavioral Risk Factor Surveillance System	2016
	Low birthweight	National Center for Health Statistics – Natality files	2011-2017
HEALTH FACTORS			
HEALTH BEHAVIORS			
Tobacco Use	Adult smoking	Behavioral Risk Factor Surveillance System	2016
Diet and Exercise	Adult obesity	CDC Diabetes Interactive Atlas	2015
	Food environment index	USDA Food Environment Atlas, Map the Meal Gap	2015 & 2016
	Physical inactivity	CDC Diabetes Interactive Atlas	2015
	Access to exercise opportunities	Business Analyst, Delorme map data, ESRI, & U.S. Census Files	2010 & 2018
Alcohol and Drug Use	Excessive drinking	Behavioral Risk Factor Surveillance System	2016
	Alcohol-impaired driving deaths	Fatality Analysis Reporting System	2013-2017
Sexual Activity	Sexually transmitted infections	National Center for HIV/AIDS, Viral Hepatitis, STD, and TB	2016
	Teen births	National Center for Health Statistics – Natality files	2011-2017
CLINICAL CARE			
Access to Care	Uninsured	Small Area Health Insurance Estimates	2016
	Primary care physicians	Area Health Resource File/American Medical Association	2016
	Dentists	Area Health Resource File/National Provider Identification file	2017
	Mental health providers	CMS, National Provider Identification file	2018
Quality of Care	Preventable hospital stays	Mapping Medicare Disparities Tool	2016
	Mammography screening	Mapping Medicare Disparities Tool	2016
	Flu vaccinations	Mapping Medicare Disparities Tool	2016
SOCIAL AND ECONOMIC FACTORS			
Education	High school graduation	State-specific sources & ED Facts	Varies
	Some college	American Community Survey	2013-2017
Employment	Unemployment	Bureau of Labor Statistics	2017
Income	Children in poverty	Small Area Income and Poverty Estimates	2017
	Income inequality	American Community Survey	2013-2017
Family and Social Support	Children in single-parent households	American Community Survey	2013-2017
	Social associations	County Business Patterns	2016
Community Safety	Violent crime	Uniform Crime Reporting – FBI	2014 & 2016
	Injury deaths	CDC WONDER mortality data	2013-2017
PHYSICAL ENVIRONMENT			
Air and Water Quality	Air pollution – particulate matter*	Environmental Public Health Tracking Network	2014
	Drinking water violations	Safe Drinking Water Information System	2017
Housing and Transit	Severe housing problems	Comprehensive Housing Affordability Strategy (CHAS) data	2011-2015
	Driving alone to work	American Community Survey	2013-2017
	Long commute – driving alone	American Community Survey	2013-2017

*Not available for AK and HI.

2019 County Health Rankings: Additional Measure Sources and Years of Data

	Measure	Source	Years of Data
HEALTH OUTCOMES			
Length of Life	Life expectancy	National Center for Health Statistics - Mortality Files	2015-2017
	Premature age-adjusted mortality	CDC WONDER mortality data	2015-2017
	Child mortality	CDC WONDER mortality data	2014-2017
	Infant mortality	CDC WONDER mortality data	2011-2017
Quality of Life	Frequent physical distress	Behavioral Risk Factor Surveillance System	2016
	Frequent mental distress	Behavioral Risk Factor Surveillance System	2016
	Diabetes prevalence	CDC Diabetes Interactive Atlas	2015
	HIV prevalence	National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention	2015
HEALTH FACTORS			
HEALTH BEHAVIORS			
Diet and Exercise	Food insecurity	Map the Meal Gap	2016
	Limited access to healthy foods	USDA Food Environment Atlas	2015
Alcohol and Drug Use	Drug overdose deaths	CDC WONDER mortality data	2015-2017
	Motor vehicle crash deaths	CDC WONDER mortality data	2011-2017
Other Health Behaviors	Insufficient sleep	Behavioral Risk Factor Surveillance System	2016
CLINICAL CARE			
Access to Care	Uninsured adults	Small Area Health Insurance Estimates	2016
	Uninsured children	Small Area Health Insurance Estimates	2016
	Other primary care providers	CMS, National Provider Identification File	2018
SOCIAL & ECONOMIC FACTORS			
Education	Disconnected youth	American Community Survey	2013-2017
Income	Median household income	Small Area Income and Poverty Estimates	2017
	Children eligible for free or reduced price lunch	National Center for Education Statistics	2016-2017
Family and Social Support	Residential segregation - black/white	American Community Survey	2013-2017
	Residential segregation - non-white/white	American Community Survey	2013-2017
Community Safety	Homicides	CDC WONDER mortality data	2011-2017
	Firearm fatalities	CDC WONDER mortality data	2013-2017
PHYSICAL ENVIRONMENT			
Housing and Transit	Homeownership	American Community Survey	2013-2017
	Severe housing cost burden	American Community Survey	2013-2017
DEMOGRAPHICS			
All	Population	Census Population Estimates	2017
	% below 18 years of age	Census Population Estimates	2017
	% 65 and older	Census Population Estimates	2017
	% Non-Hispanic African American	Census Population Estimates	2017
	% American Indian and Alaskan Native	Census Population Estimates	2017
	% Asian	Census Population Estimates	2017
	% Native Hawaiian/Other Pacific Islander	Census Population Estimates	2017
	% Hispanic	Census Population Estimates	2017
	% Non-Hispanic white	Census Population Estimates	2017
	% not proficient in English	American Community Survey	2013-2017
	% Females	Census Population Estimates	2017
	% Rural	Census Population Estimates	2010

Technical Notes and Glossary of Terms

What is health equity? What are health disparities? And how do they relate?

Health equity means that everyone has a fair and just opportunity to be as healthy as possible. This requires removing obstacles to health such as poverty and discrimination, and their consequences, including powerlessness and lack of access to good jobs with fair pay, quality education and housing, safe environments, and health care.

Health disparities are differences in health or in the key determinants of health such as education, safe housing, and discrimination, which adversely affect marginalized or excluded groups.

Health equity and health disparities are closely related to each other. Health equity is the ethical and human rights principle or value that motivates us to eliminate health disparities. Reducing and ultimately eliminating disparities in health and its determinants of health is how we measure progress toward health equity.

Braveman P, Arkin E, Orleans T, Proctor D, and Plough A. What is Health Equity? And What Difference Does a Definition Make? Robert Wood Johnson Foundation. May 2017

How do we define racial/ethnic groups?

In our analyses by race/ethnicity we define each category as follows:

- Hispanic includes those who identify themselves as Mexican, Puerto Rican, Cuban, Central or South American, other Hispanic, or Hispanic of unknown origin.
- American Indian/Alaskan Native includes people who identify themselves as American Indian or Alaskan Native and do not identify as Hispanic. This group is sometimes referred to as Native American in the report.
- Asian/Pacific Islander includes people who identify themselves as Asian or Pacific Islander and do not identify as Hispanic.
- Black includes people who identify themselves as black/African American and do not identify as Hispanic.
- White includes people who identify themselves as white and do not identify as Hispanic.

All racial/ethnic categories are exclusive so that one person fits into only one category. Our analyses do not include people reporting more than one race, as this category was not measured uniformly across our data sources.

We recognize that “race” is a social category, meaning the way society may identify individuals based on their cultural ancestry, not a way of characterizing individuals based on biology or genetics. A strong and growing body of empirical research provides support for the notion that genetic factors are not responsible for racial differences in health factors and very rarely for health outcomes.

How did we compare county ranks and racial/ethnic groups for length and quality of life?

Data are from the same data sources and years listed in the table on page 14. The mean and standard deviation for each health outcome measure (premature death, poor or fair health, poor physical health days, poor mental health days, and low birthweight) are calculated for all ranked counties within a state. This mean and standard deviation are then used as the metrics to calculate z-scores, a way to put all measures on the same scale, for values by race/ethnicity within the state. The z-scores are weighted using CHR&R measure weights for health outcomes to calculate a health outcomes z-score for each race/ethnicity. This z-score is then compared to the health outcome z-scores for all ranked counties within a state; the identified-score calculated for the racial/ethnic groups is compared to the quartile cut-off values for counties with states. You can learn more about calculating z-scores on our website under [Rankings Methods](#).

How did we select evidence-informed approaches?

Evidence-informed approaches included in this report represent those backed by strategies that have demonstrated consistently favorable results in robust studies or reflect recommendations by experts based on early research. To learn more about evidence analysis methods and evidence-informed strategies that can make a difference to improving health and decreasing disparities, visit [What Works for Health](#).

Technical Notes:

- In this report, we use the terms disparities, differences, and gaps interchangeably.
- We follow basic design principles for cartography in displaying color spectrums with less intensity for lower values and increasing color intensity for higher values. We do not intend to elicit implicit biases that “darker is bad”.
- In our graphics of state and U.S. counties we report the median of county values, our preferred measure of central tendency for counties. This value can differ from the state or U.S. overall values.

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County Health Rankings & Roadmaps

Building a Culture of Health, County by County

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