



Prevention Status Reports



PSR

Office for State, Tribal, Local and Territorial Support

Prevention Status Report for Michigan

Accessed on October 26, 2020

About the Prevention Status Reports

The Prevention Status Reports (PSRs) highlight—for all 50 states and the District of Columbia—the status of public health policies and practices designed to address the following important public health problems and concerns:



Alcohol-Related Harms



Food Safety



Healthcare-Associated Infections



Heart Disease and Stroke



HIV



Motor Vehicle Injuries



Nutrition, Physical Activity, and Obesity



Prescription Drug Overdose



Teen Pregnancy



Tobacco Use

PSR Framework



Each report follows a simple framework:

- Describe the public health *problem* using public health data
- Identify potential *solutions* to the problem drawn from research and expert recommendations
- Report the *status* of those solutions for each state and the District of Columbia

Criteria for Selection of Policies and Practices

The policies and practices reported in the PSRs were selected because they—

- Can be monitored using state-level data that are readily available for most states and the District of Columbia
- Meet one or more of the following criteria:



Supported by systematic review(s) of scientific evidence of effectiveness (e.g., *The Guide to Community Preventive Services*)



Explicitly cited in a national strategy or national action plan (e.g., *Healthy People 2020*)



Recommended by a recognized expert body, panel, organization, study, or report with an evidence-based focus (e.g., Institute of Medicine)

Ratings

The PSRs use a simple, three-level rating scale—green, yellow, or red—to show the extent to which the state has implemented the policy or practice in accordance with supporting evidence and/or expert recommendations. The ratings reflect the *status of policies and practices* and do not reflect the *status of efforts* of state health departments, other state agencies, or any other organization to establish or strengthen those policies or practices.

Suggested Citations

For a state report:

Centers for Disease Control and Prevention. *Prevention Status Reports: [State name]*. Atlanta, GA: US Department of Health and Human Services; 2016. Accessed [month date, year].

For the National Summary:

Centers for Disease Control and Prevention. *Prevention Status Reports: National Summary*. Atlanta, GA: US Department of Health and Human Services; 2016. Accessed [month date, year].

State Summary

Prevention Status Reports 2015 – Michigan Summary

The Prevention Status Reports (PSRs) highlight—for all 50 states and the District of Columbia—the status of public health policies and practices designed to prevent or reduce problems in 10 important public health topics. Below is a summary of the ratings for the 2013 and 2015 PSR policies and practices for Michigan.

	2013	2015
PSR Policies and Practices by Topic		
Alcohol-Related Harms		
State beer excise tax	Red	Red
State distilled spirits excise tax	—	—
State wine excise tax	Red	Red
Commercial host (dram shop) liability laws	Green	Green
Food Safety		
Speed of pulsed-field gel electrophoresis testing of reported <i>E. coli</i> O157 cases	Green	Green
Completeness of pulsed-field gel electrophoresis testing of reported <i>Salmonella</i> cases	Green	Green
State adoption of selected foodborne disease-related provisions	*	Yellow
Healthcare-Associated Infections (HAIs)		
State activities to build capacity for HAI prevention	*	Green
Stewardship programs to improve antibiotic use in acute care hospitals	*	Red
Heart Disease and Stroke		
Meaningful use of electronic health records	Yellow	Green
State pharmacist collaborative drug therapy management policy	Red	Red
HIV		
State Medicaid reimbursement for routine HIV screening	*	Green
Consistency of state HIV testing law with CDC's 2006 HIV testing recommendations	Green	Green
State reporting of all CD4 and all viral load data	*	Green
HIV viral suppression	*	Red
Motor Vehicle Injuries		

Seat belt law	Yellow	Yellow
Child passenger restraint law	Yellow	Yellow
Graduated driver licensing: learner's permit age	*	Yellow
Graduated driver licensing: learner's permit holding period	*	Yellow
Graduated driver licensing: nighttime driving restriction	*	Green
Graduated driver licensing: young passenger restriction	*	Green
Graduated driver licensing: unrestricted licensure age	*	Yellow
Ignition interlock law	Yellow	Yellow
Nutrition, Physical Activity, and Obesity		
Secondary schools not selling less nutritious foods and beverages	Red	Red
Nutrition standards policy for foods and beverages sold on state executive branch property	*	Red
Inclusion of obesity prevention standards in state licensing regulations of childcare facilities	Red	Red
State average birth facility score for breastfeeding support	Red	Yellow
Prescription Drug Overdose		
Requirement for timely data submission to prescription drug monitoring program	*	Green
Requirement for universal use of state prescription drug monitoring program	*	Red
Teen Pregnancy		
Expansion of state Medicaid family planning eligibility	Yellow	Yellow
Tobacco Use		
State cigarette excise tax	Green	Green
Comprehensive state smoke-free policy	Green	Green
State funding for tobacco control	Red	Red

* 2015 data not comparable to 2013 data because of changes in the policy/practice indicator or rating scale

— Data not available

Alcohol-Related Harms

Public Health Problem



Excessive alcohol use can result in harms such as motor vehicle injuries, violence, heart disease, cancer, alcohol poisoning, and poor birth outcomes. Excessive alcohol use includes binge drinking (five or more drinks per occasion for men or four or more drinks per occasion for women), heavy drinking (15 or more drinks a week for men or 8 or more drinks a week for women), and any alcohol use by pregnant women or underage youth (1).



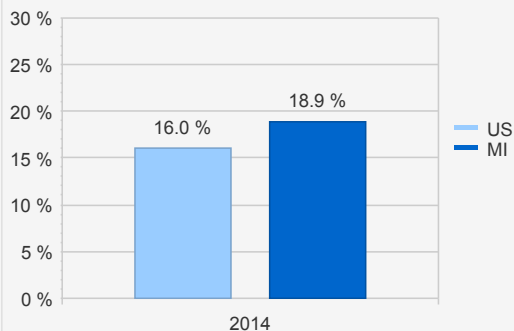
Excessive drinking is responsible for about 88,000 deaths and 2.5 million years of potential life lost in the United States each year (2). Binge drinking is responsible for more than half of the deaths and two-thirds of the years of potential life lost resulting from excessive alcohol use (3). In Michigan, each year 2,945 deaths and 84,215 years of potential life are lost due to the harms resulting from excessive alcohol use (2).



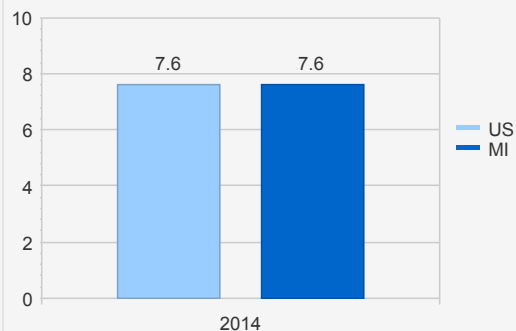
In Michigan, 18.9% of adults reported binge drinking in 2014 (4) and 16.7% of high school students reported binge drinking in 2013 (5).

The harms related to excessive alcohol use cost the United States \$249.0 billion, or \$2.05 per drink, in 2010. Most of these costs were due to reduced workplace productivity, law enforcement and other criminal justice expenses, the cost of treating people for health problems caused by excessive drinking, and costs attributable to motor vehicle crashes (6). In Michigan, excessive alcohol use cost \$8.2 billion, or \$2.10 per drink in 2010 (6).

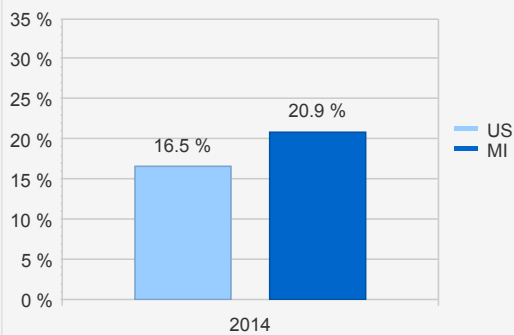
Binge drinking* among adults



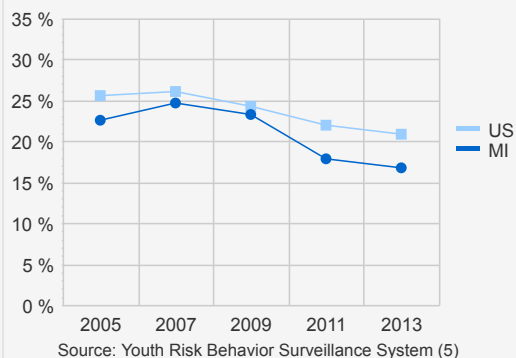
Binge drinking* intensity among adults (in number of drinks per binge occasion)



Binge drinking* among women of childbearing age (18-44 years)



Binge drinking** among high school students



*Four or more drinks (women) or five or more drinks (men) on an occasion at least once in the last 30 days

** Five or more drinks in a row within a couple of hours on at least 1 day during the 30 days before the survey

Solutions and Ratings

This report focuses on the following evidence-based policies recommended by the Community Preventive Services Task Force for preventing alcohol-related harms (7,8):

- Increasing state excise taxes on beer
- Increasing state excise taxes on distilled spirits
- Increasing state excise taxes on wine
- Having commercial host (dram shop) liability laws

Other strategies recommended by the Community Preventive Services Task Force for reducing alcohol-related harms include regulating alcohol outlet density, avoiding further privatization of retail alcohol sales, and providing adults (including pregnant women) with screening and brief intervention for excessive alcohol use (9–11).

State beer excise tax

The excise tax rate, in dollars per gallon, imposed by the state on beer containing 5% alcohol by volume. State beer excise tax does not include any additional taxes, such as those based on price rather than volume (e.g., ad valorem or sales taxes) that states have implemented at the wholesale or retail level.

As of January 1, 2014, Michigan's excise tax per gallon of beer was \$0.20 (12).

Rating	State beer excise tax
Green	≥\$1.00 per gallon
Yellow	\$0.50–\$0.99 per gallon
Red	<\$0.50 per gallon

Community Preventive Services Task Force recommendation: Increase alcohol taxes (7). Studies show that a 10% increase in the price of beer would likely reduce beer consumption by approximately 5% (7). Doubling alcohol taxes could reduce alcohol-related mortality by an average of 35% (13).

How This Rating Was Determined

Data on state beer excise taxes were obtained from the Alcohol Policy Information System (12). As of January 1, 2014, state beer excise taxes ranged from \$0.02 to \$1.29 per gallon across states for which data were available. This rating reflects where the state's tax fell within this range. For states with different tax rates for off-premises (e.g., liquor stores) and on-premises (e.g., restaurants) retailers, the off-premises tax rate was reported.

State distilled spirits excise tax

The excise tax rate, in dollars per gallon, imposed by the state on distilled spirits containing 40% alcohol by volume. State distilled spirits excise tax does not include any additional taxes, such as those based on price rather than volume (e.g., ad valorem or sales taxes) that states have implemented at the wholesale or retail level.

As of January 1, 2014, Michigan directly controlled the sale of distilled spirits at the retail and/or wholesale levels.

State prices for distilled spirits combined both markups and taxes, so tax rates for this beverage type could not be determined (14).

Rating	State distilled spirits excise tax
Green	≥\$8.00 per gallon
Yellow	\$4.00–\$7.99 per gallon
Red	<\$4.00 per gallon

Community Preventive Services Task Force recommendation: Increase alcohol taxes (7). Studies show that a 10% increase in the price of distilled spirits would likely reduce distilled spirits consumption by approximately 8% (7). Doubling alcohol taxes could reduce alcohol-related mortality by an average of 35% (13).

How This Rating Was Determined

Data on state distilled spirits excise taxes were obtained from the Alcohol Policy Information System (14). As of January 1, 2014, state distilled spirits excise taxes ranged from \$1.50 to \$14.25 per gallon across states for which data were available. This rating reflects where the state's tax fell within this range. For states with different tax rates for off-premises (e.g., liquor stores) and on-premises (e.g., restaurants) retailers, the off-premises tax rate was reported.

State wine excise tax

The excise tax rate, in dollars per gallon, imposed by the state on wine containing 12% alcohol by volume. State wine excise tax does not include any additional taxes, such as those based on price rather than volume (e.g., ad valorem or sales taxes) that states have implemented at the wholesale or retail level.

As of January 1, 2014, Michigan's excise tax per gallon of wine was \$0.51 (15).

Rating	State wine excise tax
Green	≥\$2.00 per gallon
Yellow	\$1.00–\$1.99 per gallon
Red	<\$1.00 per gallon

Community Preventive Services Task Force recommendation: Increase alcohol taxes (7). Studies show that a 10% increase in the price of wine would likely reduce wine consumption by approximately 6% (7). Doubling alcohol taxes could reduce alcohol-related mortality by an average of 35% (13).

How This Rating Was Determined

Data on state wine excise taxes were obtained from the Alcohol Policy Information System (15). As of January 1, 2014, state wine excise taxes ranged from \$0.11 to \$2.50 per gallon across states for which data were available. This rating reflects where the state's tax fell within this range. For states with different tax rates for off-premises (e.g., liquor stores) and on-premises (e.g., restaurants) retailers, the off-premises tax rate was reported.

Commercial host (dram shop) liability laws

Laws that permit alcohol retail establishments to be held liable for injuries or harms caused by illegal service to intoxicated or underage customers.

As of January 1, 2015, Michigan had commercial host liability with no major limitations (16–18).

Community Preventive Services Task Force recommendation: Commercial host (dram shop) liability for illegal sales or service of alcohol (8). Evidence shows these laws are associated with a reduction in alcohol-related harms, including a median 6.4% reduction in deaths from motor vehicle crashes (8).

How This Rating Was Determined

This rating reflects data provided by Alcohol Policy Consultations and ChangeLab Solutions on current state laws for commercial host liability (16–18). A state's commercial host liability law was considered to have major limitations if it 1) covered underage patrons or intoxicated adults but not both, 2) required increased evidence for finding liability, 3) set limitations on damage awards, or 4) set restrictions on who may be sued.

Rating	State had
Green	Commercial host liability with no major limitations
Yellow	Commercial host liability with major limitations
Red	No commercial host liability

Alcohol-Related Harms References

1. CDC. [Fact Sheets—Alcohol Use and Your Health](http://www.cdc.gov/alcohol/fact-sheets/alcohol-use.htm) (<http://www.cdc.gov/alcohol/fact-sheets/alcohol-use.htm>). Accessed Nov 9, 2015.
2. CDC. [Alcohol-Related Disease Impact \(ARDI\)](http://www.cdc.gov/ardi) (<http://www.cdc.gov/ardi>). Accessed Jun 12, 2015.
3. Stahre M, Roeber J, Kanny D, et al. [Contribution of excessive alcohol consumption to deaths and years of potential life lost in the United States](http://www.cdc.gov/pcd/issues/2014/13_0293.htm) (http://www.cdc.gov/pcd/issues/2014/13_0293.htm). Preventing Chronic Disease 2014;11:130293.
4. CDC. Behavioral Risk Factor Surveillance System data, 2014.
5. CDC. [Youth Online: High School Youth Risk Behavior Surveillance](https://nccd.cdc.gov/youthonline/App/Default.aspx?SID=HS) (<https://nccd.cdc.gov/youthonline/App/Default.aspx?SID=HS>). Accessed Jun 12, 2015.
6. Sacks JJ, Gonzales KR, Bouchery EE, Tomedi LE, Brewer RD. [2010 National and state costs of excessive alcohol consumption](https://www.ncbi.nlm.nih.gov/pubmed/26477807) [↗](https://www.ncbi.nlm.nih.gov/pubmed/26477807) (<https://www.ncbi.nlm.nih.gov/pubmed/26477807>). American Journal of Preventive Medicine 2015;49(5):e73–9.
7. Community Preventive Services Task Force. [Preventing excessive alcohol consumption: increasing alcohol taxes](http://www.thecommunityguide.org/alcohol/increasingtaxes.html) [↗](http://www.thecommunityguide.org/alcohol/increasingtaxes.html) (<http://www.thecommunityguide.org/alcohol/increasingtaxes.html>). In: Guide to Community Preventive Services. Updated Jun 2007.
8. Community Preventive Services Task Force. [Preventing excessive alcohol consumption: dram shop liability](http://www.thecommunityguide.org/alcohol/dramshop.html) [↗](http://www.thecommunityguide.org/alcohol/dramshop.html) (<http://www.thecommunityguide.org/alcohol/dramshop.html>). In: Guide to Community Preventive Services. Updated Mar 2010.
9. Community Preventive Services Task Force. [Preventing excessive alcohol consumption: regulation of alcohol outlet density](http://www.thecommunityguide.org/alcohol/outletdensity.html) [↗](http://www.thecommunityguide.org/alcohol/outletdensity.html) (<http://www.thecommunityguide.org/alcohol/outletdensity.html>). In: Guide to Community Preventive Services. Updated Feb 2007.
10. Community Preventive Services Task Force. [Preventing excessive alcohol consumption: privatization of retail alcohol sales](http://www.thecommunityguide.org/alcohol/privatization.html) [↗](http://www.thecommunityguide.org/alcohol/privatization.html) (<http://www.thecommunityguide.org/alcohol/privatization.html>). In: Guide to Community Preventive Services. Updated Apr 2011.
11. US Preventive Services Task Force. [Alcohol Misuse: Screening and Behavioral Counseling Interventions in Primary Care](http://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/alcohol-misuse-screening-and-behavioral-counseling-interventions-in-primary-care) [↗](http://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/alcohol-misuse-screening-and-behavioral-counseling-interventions-in-primary-care) (<http://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/alcohol-misuse-screening-and-behavioral-counseling-interventions-in-primary-care>). Updated May 2013.
12. National Institute on Alcohol Abuse and Alcoholism. [Alcohol beverages taxes: beer](http://alcoholpolicy.niaaa.nih.gov/Taxes_Beer.html) [↗](http://alcoholpolicy.niaaa.nih.gov/Taxes_Beer.html) (http://alcoholpolicy.niaaa.nih.gov/Taxes_Beer.html). Alcohol Policy Information System. Accessed Jun 17, 2015.
13. Wagenaar AC, Tobler AL, Komro KA. [Effects of alcohol tax and price policies on morbidity and mortality: a systematic review](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2951962/) [↗](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2951962/) (<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2951962/>). American Journal of Public Health 2010;100(11):2270–8.
14. National Institute on Alcohol Abuse and Alcoholism. [Alcohol beverages taxes: distilled spirits](http://alcoholpolicy.niaaa.nih.gov/Taxes_Spirits.html) [↗](http://alcoholpolicy.niaaa.nih.gov/Taxes_Spirits.html) (http://alcoholpolicy.niaaa.nih.gov/Taxes_Spirits.html). Alcohol Policy Information System. Accessed Jun 17, 2015.
15. National Institute on Alcohol Abuse and Alcoholism. [Alcohol beverages taxes: wine](http://alcoholpolicy.niaaa.nih.gov/Taxes_Wine.html) [↗](http://alcoholpolicy.niaaa.nih.gov/Taxes_Wine.html) (http://alcoholpolicy.niaaa.nih.gov/Taxes_Wine.html). Alcohol Policy Information System. Accessed Jun 17, 2015.
16. Substance Abuse and Mental Health Services Administration. [Report to Congress on the Prevention and Reduction of Underage Drinking](http://store.samhsa.gov/product/Report-to-Congress-on-the-Prevention-and-Reduction-of-Underage-Drinking/PEP14-RTCUAD) [↗](http://store.samhsa.gov/product/Report-to-Congress-on-the-Prevention-and-Reduction-of-Underage-Drinking/PEP14-RTCUAD) (<http://store.samhsa.gov/product/Report-to-Congress-on-the-Prevention-and-Reduction-of-Underage-Drinking/PEP14-RTCUAD>). Rockville, MD: Substance Abuse

and Mental Health Services Administration; 2015.

17. Mosher JF, Cohen EN, Jernigan DH. Commercial host (dram shop) liability: current status and trends [\[link\]](http://www.ncbi.nlm.nih.gov/pubmed/23953363) (<http://www.ncbi.nlm.nih.gov/pubmed/23953363>). American Journal of Preventive Medicine 2013;45(3):347–53.
18. ChangeLab Solutions. 2015 PSR Update: Status of State Dram Shop Liability [\[link\]](http://changelabsolutions.org/publications/2015-dram-shop-liability-update) (<http://changelabsolutions.org/publications/2015-dram-shop-liability-update>). Nov 30, 2015.

Food Safety

Public Health Problem



Diseases spread by a wide variety of contaminated foods continue to challenge the public health system. Bacteria, viruses, parasites, and chemicals can cause foodborne diseases, which can vary from mild to fatal (1). Robust surveillance for these diseases is essential for detecting outbreaks (2). It also provides critical information to food regulatory agencies and the food industry so that appropriate prevention and control measures can be implemented (3,4).



CDC estimates that each year, roughly 1 in 6 Americans (or 48 million people) gets sick, 128,000 are hospitalized, and 3,000 die due to foodborne diseases (5). Risk for infection and severity of illness vary at different ages and stages of health (6).



Foodborne illness is costly. According to a 2015 study, 15 pathogens alone are estimated to cost \$15.5 billion in the United States per year. This includes medical costs (doctor visits and hospitalizations) and productivity loss due to premature death and time lost from work (7).

Solutions and Ratings

The three practices in this report are recommended by the Council to Improve Foodborne Outbreak Response and the US Food and Drug Administration (FDA) because scientific evidence supports their effectiveness in improving foodborne disease surveillance, detection, and prevention (2–4). These practices are

- Increasing the speed of DNA fingerprinting using pulsed-field gel electrophoresis (PFGE) testing for all reported cases of Shiga toxin-producing *Escherichia coli* (*E. coli*) O157
- Increasing the completeness of PFGE testing of *Salmonella*
- Adopting provisions recommended in the FDA Food Code into state food safety regulations

Other strategies supported by scientific evidence include using trained staff and standardized questionnaires to interview persons with suspected foodborne illness as soon as possible after illness is reported and conducting environmental assessments as a routine component of foodborne disease outbreak investigations (2).

Speed of pulsed-field gel electrophoresis testing of reported *E. coli* O157 cases

The annual proportion of E. coli O157 PFGE patterns reported to CDC (i.e., uploaded into PulseNet, the CDC-coordinated national molecular subtyping network for foodborne disease surveillance) within four working days of receiving the isolate in the state or local public health PFGE lab. PFGE is a technique used to distinguish between strains of organisms at the DNA level.

In 2014, Michigan tested 100% of *E. coli* O157 cases within 4 days (8).

Rating	Percentage of annual reported cases tested within four days
Green	≥90.0%
Yellow	60.0%–89.9%
Red	<60.0%

CDC target: Testing of ≥90% of annual reported *E. coli* O157 cases within four days. The CDC Public Health Emergency Preparedness Cooperative Agreement, which provides federal funding to state, local, tribal, and territorial health departments, has two national laboratory performance targets for food safety, including the *E. coli* testing target. Performing DNA fingerprinting as quickly as possible for all Shiga toxin-producing *E. coli* improves outbreak detection, helps prevent additional cases, and identifies prevention and control measures for food regulatory agencies and the food industry (2).

How This Rating Was Determined

The speed of PFGE testing for reported *E. coli* O157 cases was determined by accessing the PulseNet (<http://www.cdc.gov/pulsenet/>) national *E. coli* O157 database for calendar year 2014. Turnaround times were calculated per lab by subtracting the received date (receipt in the PFGE lab) from the upload date (upload to the PulseNet national database), excluding weekends and federal holidays. The percentage of samples tested within four days was calculated by dividing the number tested within four days (numerator) by the total number uploaded to the PulseNet national database (denominator). If the received date for a sample was missing, the sample was counted in the denominator but not the numerator, thus lowering the percentage.

The rating reflects the extent to which the state tested *E. coli* O157 cases within four days as determined by the PulseNet database.

Completeness of pulsed-field gel electrophoresis testing of reported *Salmonella* cases

The annual proportion of Salmonella cases reported to CDC's National Notifiable Diseases Surveillance System with PFGE patterns uploaded into PulseNet.

In 2014, Michigan tested 100% of reported *Salmonella* cases (8,9).

Research and experts in the field agree that performing DNA fingerprinting of all *Salmonella* cases would improve outbreak detection, help prevent additional cases, and identify prevention and control measures for food regulatory agencies and the food industry (2).

How This Rating Was Determined

The completeness of PFGE testing of reported *Salmonella* cases was determined by accessing the [PulseNet](http://www.cdc.gov/pulsenet/) (<http://www.cdc.gov/pulsenet/>) national *Salmonella* database for calendar year 2014. The number of *Salmonella* entries per state was determined and used as the numerator. The denominator was the number of cases reported by each lab to the National Notifiable Diseases Surveillance System for calendar year 2014.

The rating reflects the proportion of all *Salmonella* cases tested in the state as determined by the PulseNet database.

Rating	Percentage of annual reported cases tested by PFGE
Green	≥90.0%
Yellow	60.0%–89.9%
Red	<60.0%

State adoption of selected foodborne disease-related provisions

Inclusion in the state's food safety regulations of selected provisions contained in the 2013 FDA Food Code related to norovirus and other foodborne illnesses.

As of September 2014, Michigan had adopted three of the four selected provisions in the 2013 FDA Food Code: excluding ill food service staff from working until at least 24 hours after symptoms of vomiting and diarrhea have ended, prohibiting bare hand contact with ready-to-eat food, and requiring food service employees to wash their hands (10).

Rating	Number of selected provisions contained in the 2013 FDA Food Code adopted into the state food code
Green	All four
Yellow	Three
Red	Two or fewer

The FDA publishes model food safety practices to prevent transmission of norovirus and other foodborne illnesses, but adoption is at the discretion of state governments (3). CDC has identified four provisions that are critical to reducing foodborne illnesses (11):

- Excluding ill food service staff from working until at least 24 hours after symptoms of vomiting and diarrhea have ended (section 2-2 of the 2013 FDA Food Code)
- Prohibiting bare hand contact with ready-to-eat food (section 3-301.11)
- Requiring at least one employee in a food service establishment to be a certified food protection manager (sections 2-102.12 and 2-102.20)
- Requiring food service employees to wash their hands (section 2-3)

How This Rating Was Determined

Publicly accessible state food code regulations were assessed for the presence of the selected provisions contained in the 2013 FDA Food Code (10). The rating reflects the number of provisions included in state food safety regulations.

Food Safety References

1. Scallan E, Hoekstra RM, Angulo FJ, et al. Foodborne illness acquired in the United States—major pathogens (http://wwwnc.cdc.gov/eid/article/17/1/p1-1101_article). Emerging Infectious Diseases 2011;17:7–15.
2. Council to Improve Foodborne Outbreak Response. Guidelines for Foodborne Disease Outbreak Response [\[PDF\]](http://www.cifor.us/CIFORGuidelinesProjectMore.cfm) (<http://www.cifor.us/CIFORGuidelinesProjectMore.cfm>). Second Edition. Atlanta, GA: Council of State and Territorial Epidemiologists; 2014.
3. Food and Drug Administration. Food Code: 2013 Recommendations of the United States Public Health Service Food and Drug Administration [\[PDF\]](http://www.fda.gov/downloads/Food/GuidanceRegulation/RetailFoodProtection/FoodCode/UCM374510.pdf) (<http://www.fda.gov/downloads/Food/GuidanceRegulation/RetailFoodProtection/FoodCode/UCM374510.pdf>). College Park, MD: US Department of Health and Human Services; 2013.
4. Council to Improve Foodborne Outbreak Response. Foodborne Illness Response Guidelines for Owners, Operators and Managers of Food Establishments [\[PDF\]](http://www.cifor.us/projind.cfm) (<http://www.cifor.us/projind.cfm>). Washington, DC: National Association of County and City Health Officials; 2013.
5. Scallan E, Griffin P, Angulo F, et al. Foodborne illness acquired in the United States—unspecified agents (http://wwwnc.cdc.gov/eid/article/17/1/p2-1101_article). Emerging Infectious Diseases 2011;17:16–22.
6. Lund BM, O'Brien SJ. The occurrence and prevention of foodborne disease in vulnerable people [\[PDF\]](http://online.liebertpub.com/doi/abs/10.1089/fpd.2011.0860) (<http://online.liebertpub.com/doi/abs/10.1089/fpd.2011.0860>). Foodborne Pathogens and Disease 2011;8:961–73.
7. Hoffmann S, Macculloch B, Batz M. Economic burden of major foodborne illnesses acquired in the United States [\[PDF\]](http://www.ers.usda.gov/publications/eib-economic-information-bulletin/eib140.aspx) (<http://www.ers.usda.gov/publications/eib-economic-information-bulletin/eib140.aspx>). Economic Information Bulletin 140: US Department of Agriculture, Economic Research Service; May 2015.
8. CDC. PulseNet. Accessed Aug 1, 2015.
9. CDC. Final 2013 reports of nationally notifiable infectious diseases (<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6332a6.htm>). MMWR 2014;63(32):702-715.
10. CDC. State-Level Food Code Provisions. Unpublished data; Sep 2014.
11. Hall AJ, Wikswo, ME, Pringle K, et al. Vital Signs: foodborne norovirus outbreaks—United States, 2009–2012 (http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6322a3.htm?s_cid=mm6322a3_w). MMWR 2014;63(22):491–5.

Healthcare-Associated Infections

Public Health Problem



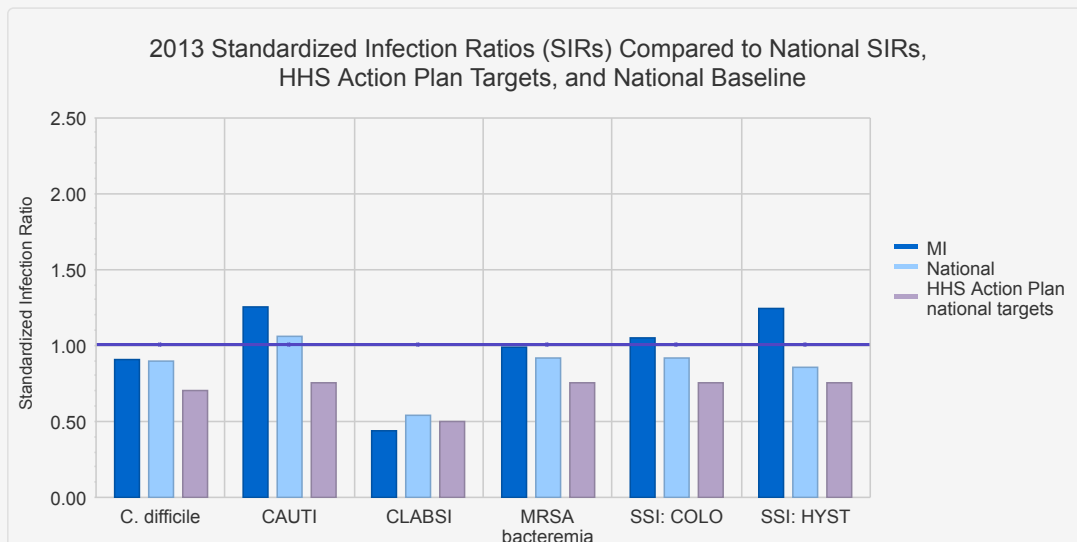
Healthcare-associated infections (HAIs) are linked with increased illnesses, deaths, and healthcare costs (1, 2). Each year, about 1 in 25 US hospital patients is diagnosed with at least one infection related to hospital care. In 2011, there were approximately 722,000 HAIs in US acute care hospitals, and approximately 75,000 hospital patients with HAIs died during their hospitalizations (2).

Many HAIs are caused by antibiotic-resistant (AR) pathogens and *Clostridium difficile* (*C. difficile*), often as a consequence of inappropriate antibiotic use. Each year in the United States, at least 2 million people are infected by an AR pathogen and at least 23,000 will die as a direct result of these infections (3).

More than half of all hospital patients receive an antibiotic, and 30%–50% of all antibiotics are prescribed inappropriately or are unnecessary (4). Poor prescribing practices put patients at risk for adverse reactions and also contribute to antibiotic resistance, making these drugs less likely to work in the future.



Despite progress in reducing some HAIs—such as central line-associated bloodstream infections (CLABSIs)—more progress needs to be made in preventing other infections, including *C. difficile* infection and catheter-associated urinary tract infections (CAUTIs). These infections can be prevented by using infection control and prevention procedures in healthcare settings and improving antibiotic prescribing.



Source: 2015 National and State Healthcare-Associated Infections Progress Report, based on 2013 data (5); National Action

Plan to Prevent Health Care-Associated Infections: Roadmap to Elimination (6)

Standardized infection ratio compares infections that occurred to infections predicted.

MRSA: methicillin-resistant *Staphylococcus aureus*

SSI: surgical site infections

COLO: colon surgery

HYST: abdominal hysterectomy

National baseline (purple line): For more information, visit the FAQs (<http://www.cdc.gov/psr/faq.html>)

Solutions and Ratings

This report highlights two practices to reduce HAIs and AR:

- Implementing state activities to build capacity for HAI prevention
- Implementing stewardship programs to improve antibiotic use in acute care hospitals

Improving health care through HAI and AR prevention, detection, and response are priorities for CDC, the US Department of Health and Human Services (HHS), and the White House. The White House's National Strategy for Combating Antibiotic-Resistant Bacteria (CARB) and National Action Plan stress the judicious use of antibiotics to prevent transmission of AR infections (7,8). The HHS HAI action plan sets national goals for reducing HAIs and provides a framework for state HAI prevention plans (6). In CDC's 2014 National Healthcare Safety Network (NHSN) Annual Hospital Survey, 39.2% of US hospitals reported having antibiotic stewardship programs (9) that included seven core elements CDC deems critical for such programs (4).

Other strategies supported by evidence include optimizing infection control practices within healthcare facilities, using a coordinated regional approach to preventing infections, and implementing CDC's Targeted Assessment for Prevention (TAP) strategy (10,11).

State activities to build capacity for HAI prevention

State health department implementation of activities to improve the state's ability to prevent and control HAIs across four prevention areas: 1) building and maintaining partnerships (e.g., collaborating with quality improvement organizations or hospital associations), 2) supporting HAI-related outbreak response by building infrastructure to identify and respond to reports of outbreaks in healthcare settings, 3) conducting or supporting HAI training, and 4) validating HAI data (i.e., analyzing data for quality and completeness and/or reviewing medical records to check data accuracy).

As of July 31, 2015, Michigan's HAI activities addressed all four prevention areas (11).

Rating	Number of HAI prevention areas addressed
Green	All four
Yellow	Three
Red	Two or fewer

HHS's HAI action plan sets national goals and targets for reducing and preventing HAIs (6). CDC helps states achieve these targets by providing technical expertise and assistance in addressing the following prevention areas: HAI partnerships, outbreak response, training, and data validation. State programs that address these four areas are critical for reducing HAIs (6). Increasing states' capacity to prevent HAIs can reduce illnesses, save money, and improve healthcare quality for patients (6).

How This Rating Was Determined

The rating reflects the number of HAI prevention areas the state has addressed. Ratings are based on data from a CDC 2015 survey of state HAI coordinators, which asked states whether their HAI prevention activities had addressed the following prevention areas: HAI partnerships, outbreak response, training, and data validation (12). Data validation responses were confirmed using the findings of the 2015 *National and State Healthcare-Associated Infections Progress Report* (13).

Stewardship programs to improve antibiotic use in acute care hospitals

Programs in acute care hospitals that incorporate seven core elements CDC deems critical to successful hospital antibiotic stewardship: 1) leadership commitment, 2) accountability, 3) drug expertise, 4) actions to improve antibiotic use, 5) tracking antibiotic use and outcomes, 6) reporting antibiotic use and outcomes to staff, and 7) education (4).

As of December 2014, 44.3% of acute care hospitals in Michigan reported having antibiotic stewardship programs that incorporated all 7 core elements deemed critical by CDC (9).

Rating	Percentage of acute care hospitals with antibiotic stewardship programs
Green	≥75.0%
Yellow	50.0%–74.9%
Red	≤49.9%

The White House's National Strategy and Action Plan for fighting antibiotic resistance encourage the use of antibiotic stewardship programs to ensure and improve the judicious use of antibiotics (7,8). AR infections prolong hospitalizations and increase costs, disabilities, and deaths. Inappropriate antibiotic use is a major cause of these infections. Stewardship programs in acute care hospitals are critical to improving antibiotic use and prescribing practices, ensuring optimal treatment of patients, and prolonging the time antibiotics are effective (4). Stewardship programs can reduce AR infections, *C. difficile* infections, and antibiotic adverse events; decrease drug and healthcare costs; and improve healthcare quality for patients.

How This Rating Was Determined

The rating reflects the percentage of the state's acute care hospitals participating in the Patient Safety Component of NHSN that reported having antibiotic stewardship programs that incorporated CDC's seven core elements (4). Ratings are based on data from the 2014 NHSN Annual Hospital Survey Patient Safety Component (9).

Healthcare-Associated Infections References

1. Scott RD 2nd. *The Direct Medical Costs of Healthcare-Associated Infections in U.S. Hospitals and the Benefits of Prevention* (http://www.cdc.gov/HAI/pdfs/hai/Scott_CostPaper.pdf). Atlanta, GA: US Department of Health and Human Services; 2009.
2. Magill SS, Edwards JR, Bamberg W, et al. *Multistate point-prevalence survey of health care-associated infections* [\[\]](http://www.nejm.org/doi/full/10.1056/NEJMoa1306801) (<http://www.nejm.org/doi/full/10.1056/NEJMoa1306801>). *New England Journal of Medicine* 2014;370:1198–208.
3. CDC. *Antibiotic Resistance Threats in the United States, 2013* (<http://www.cdc.gov/drugresistance/pdf/ar-threats-2013-508.pdf>). Atlanta, GA: US Department of Health and Human Services; 2013.
4. CDC. *Vital signs: improving antibiotic use among hospitalized patients* (<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6309a4.htm>). *MMWR* 2014;63(09):194–200.
5. CDC. *National and State Healthcare-Associated Infections Progress Report* (<http://www.cdc.gov/HAI/pdfs/progress-report/hai-progress-report.pdf>). Atlanta, GA: US Department of Health and Human Services; 2015.
6. US Department of Health and Human Services. *National Action Plan to Prevent Health Care-Associated Infections: Road Map to Elimination* [\[\]](http://health.gov/hcq/prevent-hai-action-plan.asp) (<http://health.gov/hcq/prevent-hai-action-plan.asp>). Washington, DC: US Department of Health and Human Services. Updated Jun 2015.
7. The White House. *National Strategy for Combating Antibiotic-Resistant Bacteria* [\[\]](https://www.whitehouse.gov/sites/default/files/docs/carb_national_strategy.pdf) (https://www.whitehouse.gov/sites/default/files/docs/carb_national_strategy.pdf). Washington, DC: The White House; 2014.
8. The White House. *National Action Plan for Combating Antibiotic-Resistant Bacteria* [\[\]](https://www.whitehouse.gov/sites/default/files/docs/national_action_plan_for_combating_antibiotic-resistant_bacteria.pdf) (https://www.whitehouse.gov/sites/default/files/docs/national_action_plan_for_combating_antibiotic-resistant_bacteria.pdf). Washington, DC: The White House; 2015.
9. CDC. *2014 NHSN Annual Hospital Survey* (http://www.cdc.gov/nhsn/forms/57.103_PSHospSurv_BLANK.pdf). Unpublished data, 2015.
10. CDC. *Vital signs: estimated effects of a coordinated approach for action to reduce antibiotic-resistant infections in health care facilities—United States* (<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6430a4.htm>). *MMWR* 2015;64(30):826–31.
11. CDC. *The Five "W"s of the Targeted Assessment for Prevention (TAP) Strategy* (<http://www.cdc.gov/hai/prevent/tap.html>). Updated Jul 2015.
12. CDC. *2015 State HAI Prevention Activities Survey*. Unpublished data, 2015.
13. CDC. *National and State Healthcare-Associated Infections Progress Report*. Atlanta, GA: US Department of Health and Human Services; 2016.

Heart Disease and Stroke

Public Health Problem



Cardiovascular disease—including heart disease, stroke, and other vascular diseases—is the leading cause of death in the United States. Each year, nearly 800,000 people die from cardiovascular disease, accounting for one in every three deaths (1).

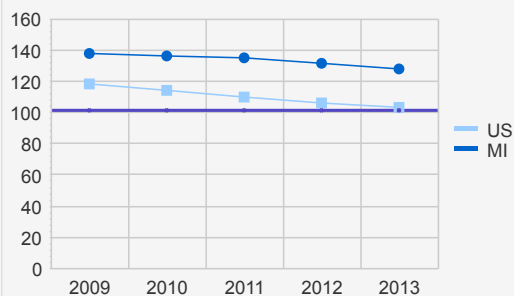


Twenty-nine percent of US adults—more than 70 million people—have high blood pressure and approximately 73.5 million have high levels of low-density lipoprotein (LDL) cholesterol. High blood pressure and high LDL are two leading risk factors for heart disease and stroke (2,3).



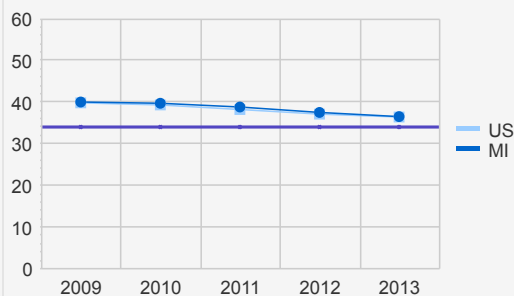
About one of every six healthcare dollars in the United States is spent on treating cardiovascular disease. Annual US cardiovascular disease costs exceed \$195.6 billion in direct medical expenses and \$320.1 billion when indirect expenses are included (3).

Coronary heart disease death rate
(age-adjusted rate per 100,000 population)



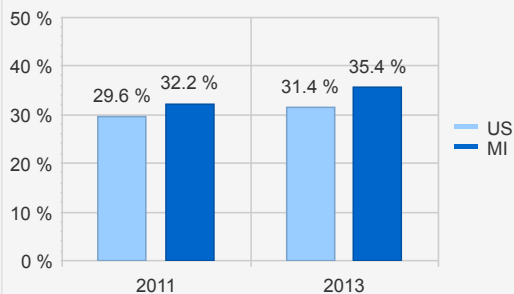
Source: National Vital Statistics System—Mortality (1,4)
Healthy People 2020 target: 100.8/100,000
(purple line) (5)

Stroke death rate
(age-adjusted rate per 100,000 population)



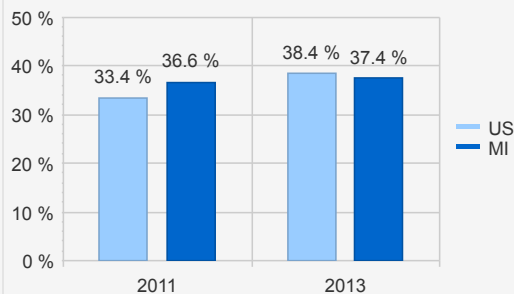
Source: National Vital Statistics System—Mortality (1,4)
Healthy People 2020 target: 33.8/100,000
(purple line) (6)

Percentage of self-reported hypertension
(age-adjusted)



Source: Behavioral Risk Factor Surveillance System (6)
Note: These rates were adjusted using the direct method and the 2000 standard US population (7).

Percentage of self-reported high cholesterol
(age-adjusted)



Source: Behavioral Risk Factor Surveillance System (6)
Note: These rates were adjusted using the direct method and the 2000 standard US population (7).

Solutions and Ratings

This report focuses on one policy and one practice recommended by the Community Preventive Services Task Force, the US Public Health Service, Institute of Medicine, and the American College of Clinical Pharmacy because scientific studies support their effectiveness in managing heart disease and stroke risks (8–11):

- Implementing meaningful use of certified electronic health records
- Establishing state collaborative drug therapy management (CDTM) policies that authorize pharmacists to provide certain patient services

Other strategies for reducing heart disease and stroke that are supported by scientific evidence and practice include promoting team-based care, implementing clinical decision-support systems, using interventions that engage community health workers, reducing out-of-pocket costs for cardiovascular disease preventive services, and reducing sodium consumption at the community level (12,13).

Meaningful use of electronic health records

The percentage of office-based physicians demonstrating meaningful use of certified electronic health record (EHR) technology, as defined by the Centers for Medicare & Medicaid Services EHR Incentive Program's meaningful use criteria (14).

As of December 2014, 69.5% of office-based physicians in Michigan demonstrated meaningful use of EHRs (15).

Rating	Percentage of office-based physicians in the state who demonstrated meaningful use
Green	≥62.0%
Yellow	53.0%–61.9%
Red	<53.0%

According to the Institute of Medicine, using electronic health records supports high-quality primary care (10). The Community Preventive Services Task Force recommends clinical decision-support systems, which are used in certified EHR technology, for prevention of cardiovascular disease (13). Research shows that meaningful use of EHRs allows physicians, nurses, pharmacists, and other healthcare providers to proactively monitor and manage the health of their patients by tracking heart disease and stroke risk factors (16–23). “Meaningful use” involves using EHRs to 1) improve quality, safety, and efficiency; 2) engage patients and family; 3) improve care coordination; 4) maintain privacy and security of patient health information; 5) improve population and public health; and 6) reduce health disparities (23).

How This Rating Was Determined

The rating reflects meaningful use of certified EHRs in the state as measured by the Centers for Medicare & Medicaid Services (23). Certified EHR technology must include clinical decision supports, such as alerts for elevated blood pressure and cholesterol levels based on laboratory results, to support guidelines-based clinical decision making (24).

State pharmacist collaborative drug therapy management policy

A state legislative, regulatory, or other written administrative policy that authorizes qualified pharmacists working within the context of a collaborative practice agreement or defined protocol to perform patient assessments; order drug therapy-related laboratory tests; administer drugs; and/or select, initiate, monitor, continue, and adjust drug regimens (8–11).

As of June 2015, Michigan did not have a statewide pharmacist CDTM policy (25).

The Community Preventive Services Task Force recommends team-based care to improve blood pressure control (8). State policies such as CDTM laws, which authorize pharmacists to enter into collaborative practice agreements with prescribing providers, can increase medication adherence rates and improve health outcomes (e.g., reduced hemoglobin A1c, lower blood pressure and LDL cholesterol level, fewer adverse drug events) (9).

How This Rating Was Determined

The rating reflects the status of the state's CDTM policies as reviewed by CDC policy analysts (25). CDTM policies were rated on the extent to which pharmacists were able to enter into collaborative practice agreements that included all health conditions and all healthcare settings.

Rating	State CDTM policy
Green	Authorized pharmacists to collaborate or provide patient services under protocol for all health conditions
Yellow	Authorized pharmacists to collaborate or provide patient services under protocol but did not cover chronic diseases, OR collaboration was limited to specified hospital, medical, or clinical practice settings
Red	No policy existed

Heart Disease and Stroke References

1. CDC. [Deaths: final data for 2013—detailed tables](http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_02.pdf) (http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_02.pdf). National Vital Statistics Reports; 2015.
2. Nwankwo T, Yoon SS, Burt V, et al. [Hypertension Among Adults in the United States: National Health and Nutrition Examination Survey, 2011–2012](http://www.cdc.gov/nchs/data/databriefs/db133.htm) (<http://www.cdc.gov/nchs/data/databriefs/db133.htm>). NCHS Data Brief, No. 133. Hyattsville, MD: US Department of Health and Human Services; 2013.
3. Mozaffarian D, Benjamin EJ, Go AS, et al. [Heart disease and stroke statistics—2015 update: a report from the American Heart Association](http://circ.ahajournals.org/content/early/2014/12/18/CIR.0000000000000152) [↗](#) (<http://circ.ahajournals.org/content/early/2014/12/18/CIR.0000000000000152>). Circulation 2014;131:e29–e322 [Epub ahead of print].
4. CDC. [Compressed Mortality File 1999–2013](http://wonder.cdc.gov/cmfi-icd10.html) (<http://wonder.cdc.gov/cmfi-icd10.html>). CDC WONDER. Released Oct 2014. Accessed Jun 12, 2015.
5. US Department of Health and Human Services. [Heart disease and stroke](http://www.healthypeople.gov/2020/topics-objectives/topic/heart-disease-and-stroke) [↗](#) (<http://www.healthypeople.gov/2020/topics-objectives/topic/heart-disease-and-stroke>). In: Healthy People 2020. Rockville, MD: US Department of Health and Human Services; 2010.
6. CDC. Behavioral Risk Factor Surveillance System data, 2011–2013.
7. Klein RJ, Schoenborn CA. [Age Adjustment Using the 2000 Projected U.S. Population](http://www.cdc.gov/nchs/data/statnt/statnt20.pdf) (<http://www.cdc.gov/nchs/data/statnt/statnt20.pdf>). Healthy People Statistical Notes, No. 20. Hyattsville, MD: National Center for Health Statistics; 2001.
8. Community Preventive Services Task Force. [Cardiovascular disease prevention and control: team-based care to improve blood pressure control](http://www.thecommunityguide.org/cvd/teambasedcare.html) [↗](#) (<http://www.thecommunityguide.org/cvd/teambasedcare.html>). In: Guide to Community Preventive Services. Updated Apr 2012.
9. Giberson S, Yoder S, Lee MP. [Improving Patient and Health System Outcomes Through Advanced Pharmacy Practice. A Report to the U.S. Surgeon General 2011](http://www.pharmacist.com/improving-patient-and-health-system-outcomes-through-advanced-pharmacy-practice-report-surgeon) [↗](#) (<http://www.pharmacist.com/improving-patient-and-health-system-outcomes-through-advanced-pharmacy-practice-report-surgeon>). Rockville, MD: US Public Health Service; 2011.
10. Institute of Medicine. [Primary Care and Public Health: Exploring Integration to Improve Population Health](http://iom.nationalacademies.org/Reports/2012/Primary-Care-and-Public-Health.aspx) [↗](#) (<http://iom.nationalacademies.org/Reports/2012/Primary-Care-and-Public-Health.aspx>). Washington, DC: National Academies Press; 2012.
11. American College of Clinical Pharmacy. [ACCP position statement: collaborative drug therapy management by pharmacists—2003](https://www.accp.com/docs/positions/positionStatements/pos2309.pdf) [↗](#) (<https://www.accp.com/docs/positions/positionStatements/pos2309.pdf>). Pharmacotherapy 2003;23(9)1210–25.
12. Frieden TR, Berwick DM. [The “Million Hearts” initiative—preventing heart attacks and strokes](http://www.nejm.org/doi/full/10.1056/NEJMp1110421) [↗](#) (<http://www.nejm.org/doi/full/10.1056/NEJMp1110421>). New England Journal of Medicine 2011;365(13):e27.
13. Community Preventive Services Task Force. [Cardiovascular disease prevention and control](http://www.thecommunityguide.org/cvd/index.html) [↗](#) (<http://www.thecommunityguide.org/cvd/index.html>). In: Guide to Community Preventive Services. Updated Nov 24, 2015.
14. US Department of Health and Human Services. [EHR Incentives & Certification: How to Attain Meaningful Use](http://healthit.gov/providers-professionals/how-attain-meaningful-use) [↗](#) (<http://healthit.gov/providers-professionals/how-attain-meaningful-use>). Accessed Jun 10, 2015.
15. Centers for Medicare and Medicaid Services. [Data Documentation: Office-based Physician EHR](#)

Adoption and Use [\[link\]](http://dashboard.healthit.gov/datadashboard/documentation/physician-health-it-adoption-use-data-documentation.php) (<http://dashboard.healthit.gov/datadashboard/documentation/physician-health-it-adoption-use-data-documentation.php>). Updated Feb 2015.

16. Bright TJ, Wong A, Dhurjati R, et al. Effect of clinical decision-support systems: a systematic review [\[link\]](http://www.ncbi.nlm.nih.gov/pubmed/22751758) (<http://www.ncbi.nlm.nih.gov/pubmed/22751758>). Annals of Internal Medicine 2012;157(1):29–43.
17. Hicks LS, Sequist TD, Ayanian JZ, et al. Impact of computerized decision support on blood pressure management and control: a randomized controlled trial [\[link\]](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2359515/) (<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2359515/>). Journal of General Internal Medicine 2008;23(4):429–41.
18. McCullough CM, Wang JJ, Parsons AS, et al. Quality measure performance in small practices before and after electronic health record adoption [\[link\]](http://repository.edm-forum.org/egems/vol3/iss1/1/) (<http://repository.edm-forum.org/egems/vol3/iss1/1/>). EGEMS 2015;3(1):1131.
19. Persell SD, Lloyd-Jones DM, Friesema EM, et al. Electronic health record-based patient identification and individualized mailed outreach for primary cardiovascular disease prevention: a cluster randomized trial [\[link\]](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3599027/) (<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3599027/>). Journal of General Internal Medicine 2013;28(4):554–60.
20. Roshanov PS, Misra S, Gerstein HC, et al. Computerized clinical decision support systems for chronic disease management: a decision-maker-researcher partnership systematic review [\[link\]](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3170626/) (<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3170626/>). Implementation Science 2011;6:92.
21. Samal L, Linder JA, Lipsitz SR, et al. Electronic health records, clinical decision support, and blood pressure control [\[link\]](http://www.ajmc.com/journals/issue/2011/2011-9-vol17-n9/AJMC_11sep_Samal_626to632/) (http://www.ajmc.com/journals/issue/2011/2011-9-vol17-n9/AJMC_11sep_Samal_626to632/). American Journal of Managed Care 2011;17(9):626–32.
22. Wang JJ, Sebek KM, McCullough CM, et al. Sustained improvement in clinical preventive service delivery among independent primary care practices after implementing electronic health record systems [\[link\]](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3733479/) (<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3733479/>). Preventing Chronic Disease 2013;10:E130.
23. US Department of Health and Human Services. EHR Incentives & Certification: Meaningful Use Definition & Objectives [\[link\]](http://www.healthit.gov/providers-professionals/meaningful-use-definition-objectives) (<http://www.healthit.gov/providers-professionals/meaningful-use-definition-objectives>). Accessed Sep 25, 2015.
24. US Department of Health and Human Services. ONC Health IT Certification Program [\[link\]](http://healthit.gov/policy-researchers-implementers/onc-health-it-certification-program) (<http://healthit.gov/policy-researchers-implementers/onc-health-it-certification-program>). Standards and Certification Criteria. Accessed Jun 11, 2015.
25. CDC. Chronic Disease State Policy Tracking System (<http://nccd.cdc.gov/CDPHPPolicySearch/default.aspx>). Accessed Jun 10, 2015.

HIV

Public Health Problem



CDC estimates that more than 1.2 million people in the United States are living with HIV and that 12.8% (about one in eight) are not aware they are infected (1). In 2010, the White House released the first National HIV/AIDS Strategy for the United States to increase the nation's sense of urgency and to improve HIV prevention and care (2).

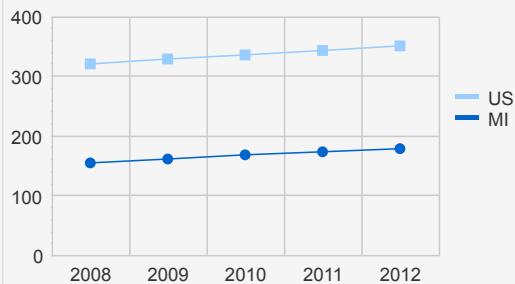


In 2013, 782 people (aged ≥ 13 years) in Michigan were diagnosed with HIV infection (1). Twenty-six percent of these people were diagnosed late in the disease (1) and therefore were at increased risk for disease progression, death, and transmission of HIV to others. In 2012, an estimated 17,858 people with HIV died in the United States. Of these, CDC estimates that 341 were from Michigan (1).



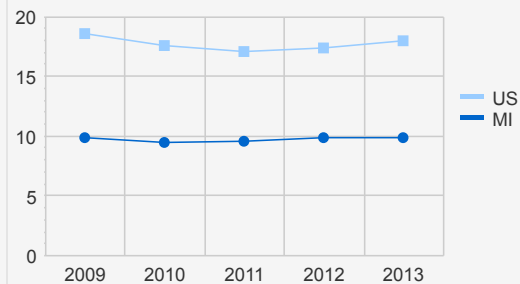
The lifetime cost of medical care for a person with an early HIV diagnosis is about \$402,000 (3). This means that lifetime medical costs for the 782 Michigan residents diagnosed with HIV in 2013 could exceed \$295.5 million.

Estimated annual prevalence rate of persons aged ≥ 13 years living with diagnosed HIV (per 100,000 population)



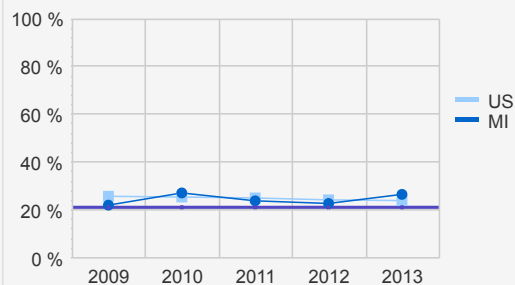
Source: National HIV Surveillance System (4)
Note: The y-axis for this graph varies by state.

Estimated annual rate of HIV diagnoses among persons aged ≥ 13 years (per 100,000 population)



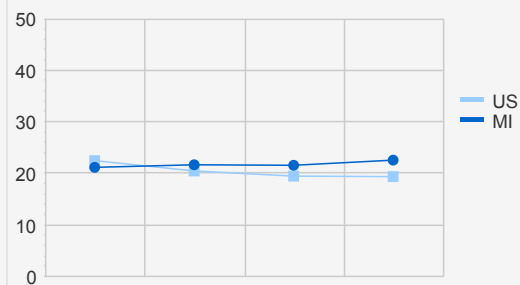
Source: National HIV Surveillance System (4)
Note: The y-axis for this graph varies by state.

Percentage of persons with diagnosed HIV who have late stage HIV



Source: National HIV Surveillance System (1)
Healthy People 2020 target: 20.8% by 2015 (purple line) (5)

Estimated annual death rate among persons aged ≥ 13 years with diagnosed HIV (per 1,000 persons living with HIV)



Source: National HIV Surveillance System (1)

Solutions and Ratings

This report highlights four policies that reflect recent scientific advances (6) in HIV prevention and medical care that can reduce new HIV infections and related illnesses and deaths:

- Facilitating state Medicaid reimbursement for HIV screening (7–9)
- Making state HIV testing laws compatible with the 2006 CDC and 2013 US Preventive Services Task Force HIV testing recommendations (8–10)
- Reporting all CD4 and all HIV viral load data to the state HIV surveillance program and complete lab reporting to CDC (11)
- Increasing the percentage of HIV-infected persons who have a suppressed viral load (2)

These policies are important state-level tools that further the goals of the 2010 National HIV/AIDS Strategy (2). Another strategy supported by scientific evidence is use of antiretroviral medications by persons with HIV to prevent transmission to uninfected partners (6).

State Medicaid reimbursement for routine HIV screening

Medicaid (traditional state Medicaid programs and Medicaid expansion programs) reimbursement of healthcare providers for costs associated with routine HIV screening, regardless of the patient's HIV infection risk. (In states with Medicaid expansion, persons insured under the expansion are covered for routine HIV screening as required by law [13], while enrollees in traditional state Medicaid programs might or might not be covered for routine HIV screening.)

As of May 12, 2015, Michigan's Medicaid program reimbursed for routine HIV screening of persons aged 15–65 years, regardless of risk (7,12).

Rating	Coverage for routine HIV screening
Green	All Medicaid recipients
Yellow	Some Medicaid recipients
Red	No Medicaid recipients

CDC/US Preventive Services Task Force recommendation: HIV screening of adolescents, adults, and pregnant women, regardless of risk (8,9). All state Medicaid programs cover medically necessary HIV testing (7). Reimbursement for routine screening—meaning broad, population-based HIV screening, in contrast with medically necessary testing and screening targeted at those at higher risk—increases the availability of this important preventive service for low-income populations (5,13).

How This Rating Was Determined

The rating reflects the extent to which the state's Medicaid program supported routine HIV screening, as assessed by the Kaiser Family Foundation (KFF) and the National Alliance of State and Territorial AIDS Directors (NASTAD) (7,12,14).

Coverage of Routine HIV Screening—Traditional Medicaid: To assess coverage of routine HIV screening in traditional Medicaid fee-for-service programs, KFF surveyed state Medicaid officials in 2010 and 2013 (7). NASTAD updated the results in 2015 for all states without such coverage, except for two states (Alabama and Mississippi) that did not respond to requests for information (12).

Coverage of Routine HIV Screening—Medicaid Expansion Plans: Routine HIV screening is recommended with an "A" grade by the US Preventive Services Task Force and is covered without cost sharing in the "essential health benefits" package that Medicaid expansion plans provide to enrollees (9,15). Accordingly, all states that have expanded Medicaid coverage under the Affordable Care Act cover routine HIV screening for their expansion populations. State Medicaid expansion status was determined on the basis of data collected and posted by KFF as of April 29, 2015 (14).

Consistency of state HIV testing law with CDC's 2006 HIV testing recommendations

Consistency of the state's HIV testing law with key parameters of consent and counseling outlined in CDC's 2006 HIV testing recommendations (8).

As of January 2015, Michigan's HIV testing law was consistent with CDC's 2006 HIV testing recommendations (8,10).

Rating	Consistency of state HIV testing law with consent and counseling parameters
Green	Consistent
Yellow	N/A
Red	Inconsistent

CDC recommendation: HIV testing of all people aged 13–64 years (8). HIV testing enables individuals with HIV to become aware of their health status and to access medical care and treatment. Studies show that people diagnosed with HIV are less likely to transmit HIV to others (16). State laws can facilitate access to HIV testing.

How This Rating Was Determined

The rating reflects the extent to which the state's laws governing HIV testing met every consent and counseling parameter stated below.

CDC researches state laws, regulations, and policies that could influence risk behaviors or alter the environment in which HIV prevention services are accessed and delivered (17). To assess HIV testing laws, staff reviewed laws and regulations in the 50 states and the District of Columbia using WestlawNext® (an online legal research system), literature reviews, and web searches. Relevant laws and regulations were coded using the following parameters:

Consent parameters:

- Opt-out (rather than opt-in) testing
- Inclusion of HIV testing consent as part of general medical consent forms (rather than HIV-specific consent forms)
- Permission to give consent orally

Counseling parameter:

- No requirement for HIV prevention counseling prior to testing

State reporting of all CD4 and all viral load data

Existence of a state statute, regulation, or policy that requires reporting of all CD4 and HIV viral load test results (detectable and undetectable); reporting of $\geq 95\%$ of CD4 and viral load results to the state or local health department; AND reporting by the health department of $\geq 95\%$ of laboratory results to CDC by the end of each year.

As of December 2014, Michigan required reporting of all CD4 and all viral load results (including undetectable results) and reported complete data to CDC (10,11).

CD4 results (providing a measure of a person's immune function) and HIV viral load data (measuring the amount of virus in a person's blood) provide critical data for the management of medical care and health of people living with HIV. These data are also used to monitor progress toward achieving the goals of the National HIV/AIDS Strategy and to ensure that people living with HIV are linked to HIV medical care and retained in care (2).

How This Rating Was Determined

The rating reflects the extent to which state CD4 and viral load reporting requirements were in place, as determined by a policy assessment conducted by CDC (10,11), and whether complete CD4 and viral load data were reported to CDC (1,10,11).

CDC researches state laws, regulations, and policies that could influence risk behavior or alter the environment in which HIV prevention services are accessed and delivered (17). To assess CD4 and viral load reporting requirements, staff reviewed laws, regulations, and directives in the 50 states and the District of Columbia using WestlawNext® (an online legal research system), literature reviews, and web searches. Relevant laws, regulations, and directives were coded using the following parameters:

- CD4 reporting: Required laboratories to report all values (not just those below a specified threshold)
- HIV viral load: Required laboratories to report all results (detectable and undetectable)

States were assessed as having complete reporting of laboratory results to CDC if, in addition to having state laws requiring the reporting of all levels of CD4 and viral load, the following criteria were met: 1) laboratories that perform HIV-related testing had reported a minimum of 95% of HIV-related test results to the state or local health department, and 2) by December 2014, the state had reported to CDC at least 95% of all CD4 and viral load test results received during January 2012–September 2014 (1).

Rating	State reporting requirement and completeness of reporting
Green	Reporting of all CD4 and viral load test results required, AND complete data reported to CDC
Yellow	Reporting of all CD4 and viral load test results required, BUT incomplete data reported to CDC
Red	Reporting of all CD4 and viral load test results not required OR no policy existed

HIV viral suppression

Statewide percentage of viral suppression among persons with diagnosed HIV infection. A person's viral load is considered suppressed when the results of a viral load test show either that HIV is undetectable or there are fewer than 200 copies/mL of virus in the blood.

As of December 31, 2012, 51.3% of persons in Michigan with diagnosed HIV infection had a suppressed viral load (1).

Rating	Percentage of persons with viral suppression
Green	≥80.0%
Yellow	N/A
Red	<80.0%

Viral suppression is a primary goal of HIV treatment. Having a suppressed viral load improves one's health, increases one's chance of survival, and reduces one's risk of transmitting HIV. A target of 80% of persons with HIV having viral suppression is consistent with the updated 2020 National HIV/AIDS Strategy and aligns with the 90-90-90 goals set by the Joint United Nations Programme on HIV/AIDS (2,18).

How This Rating Was Determined

The rating reflects whether a state had a viral suppression prevalence ≥80% among persons aged ≥13 years who had HIV infection diagnosed by the end of 2011 and were alive at the end of 2012 (1).

Ratings are reported only for those states that met the following criteria: 1) the state's law or regulations required reporting of all CD4 and all viral load data to the state or local health department (11), 2) laboratories that perform HIV-related testing had reported a minimum of 95% of HIV-related test results to the state or local health department, and 3) by December 2014, the state had reported to CDC at least 95% of all CD4 and viral load test results received during January 2012–September 2014 (1). Geographic designations of viral suppression reflect where persons resided at HIV diagnosis.

HIV References

1. CDC. [Monitoring selected national HIV prevention and care objectives by using HIV surveillance data—United States and 6 dependent areas—2013](http://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillancereport_vol20_no2.pdf) (http://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillancereport_vol20_no2.pdf). HIV Surveillance Supplemental Report 2015;20(2).
2. White House Office of National AIDS Policy. [National HIV/AIDS Strategy for the United States: Updated to 2020](https://www.whitehouse.gov/sites/default/files/docs/national_hiv_aids_strategy_update_2020.pdf) [↗](https://www.whitehouse.gov/sites/default/files/docs/national_hiv_aids_strategy_update_2020.pdf) (https://www.whitehouse.gov/sites/default/files/docs/national_hiv_aids_strategy_update_2020.pdf). Washington, DC: The White House; 2015.
3. Farnham PG, Gopalappa C, Sansom SL, et al. [Updates on lifetime costs of care and quality-of-life estimates for HIV-infected persons in the United States: late versus early diagnosis and entry into care](http://www.ncbi.nlm.nih.gov/pubmed/23615000) [↗](http://www.ncbi.nlm.nih.gov/pubmed/23615000) (<http://www.ncbi.nlm.nih.gov/pubmed/23615000>). Journal of Acquired Immune Deficiency Syndrome 2013;64(2):183–9.
4. CDC. National HIV Surveillance System. [NCHHSTP Atlas](http://www.cdc.gov/nchhstp/atlas/) (<http://www.cdc.gov/nchhstp/atlas/>). Accessed Dec 4, 2015.
5. US Department of Health and Human Services. [HIV](http://www.healthypeople.gov/2020/topics-objectives/topic/hiv) [↗](http://www.healthypeople.gov/2020/topics-objectives/topic/hiv) (<http://www.healthypeople.gov/2020/topics-objectives/topic/hiv>). In: Healthy People 2020. Rockville, MD: US Department of Health and Human Services; 2010.
6. Cohen M, representing the HPTN 052 Study Team. [Prevention of HIV-1 infection with early antiretroviral therapy](http://www.nejm.org/doi/full/10.1056/NEJMoa1105243) [↗](http://www.nejm.org/doi/full/10.1056/NEJMoa1105243) (<http://www.nejm.org/doi/full/10.1056/NEJMoa1105243>). New England Journal of Medicine 2011;365(6):493–505.
7. The Henry J. Kaiser Family Foundation. [State Medicaid Coverage of Routine HIV Screening](http://kff.org/hivaids/fact-sheet/state-medicaid-coverage-of-routine-hiv-screening/) [↗](http://kff.org/hivaids/fact-sheet/state-medicaid-coverage-of-routine-hiv-screening/) (<http://kff.org/hivaids/fact-sheet/state-medicaid-coverage-of-routine-hiv-screening/>). Menlo Park, CA: The Henry J. Kaiser Family Foundation; 2014.
8. CDC. [Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings](http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm) (<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm>). MMWR 2006;55(RR-14):1–17.
9. Moyer VA, on behalf of the US Preventive Services Task Force. [Screening for HIV: U.S. Preventive Services Task Force recommendation statement](http://annals.org/article.aspx?articleid=1700660) [↗](http://annals.org/article.aspx?articleid=1700660) (<http://annals.org/article.aspx?articleid=1700660>). Annals of Internal Medicine 2013;159(1):51–60.
10. CDC. [State HIV Laws](http://www.cdc.gov/hiv/policies/law/states/index.html) (<http://www.cdc.gov/hiv/policies/law/states/index.html>). Accessed Jun 2, 2015.
11. CDC. [State Laboratory Reporting Laws: Viral Load and CD4 Requirements](http://www.cdc.gov/hiv/policies/law/states/reporting.html) (<http://www.cdc.gov/hiv/policies/law/states/reporting.html>). Accessed Jun 2, 2015.
12. Personal communication with Natalie Cramer, senior director, National Association of State and Territorial AIDS Directors, May 12, 2015.
13. Kates J. [Medicaid and HIV: A National Analysis](https://kaiserfamilyfoundation.files.wordpress.com/2013/01/8218.pdf) [↗](https://kaiserfamilyfoundation.files.wordpress.com/2013/01/8218.pdf) (<https://kaiserfamilyfoundation.files.wordpress.com/2013/01/8218.pdf>). Menlo Park, CA: The Henry J. Kaiser Family Foundation; 2011.
14. The Henry J. Kaiser Family Foundation. [Current Status of State Medicaid Expansion Decisions](http://kff.org/health-reform/slide/current-status-of-the-medicaid-expansion-decision/) [↗](http://kff.org/health-reform/slide/current-status-of-the-medicaid-expansion-decision/) (<http://kff.org/health-reform/slide/current-status-of-the-medicaid-expansion-decision/>). Accessed Jun 2, 2015.
15. The Henry J. Kaiser Family Foundation. [Preventive Services Covered by Private Health Plans under the Affordable Care Act](http://kff.org/health-reform/fact-sheet/preventive-services-covered-by-private-health-plans/) [↗](http://kff.org/health-reform/fact-sheet/preventive-services-covered-by-private-health-plans/) (<http://kff.org/health-reform/fact-sheet/preventive-services-covered-by-private-health-plans/>). Accessed Jun 2, 2015.
16. Marks G, Crepaz N, Janssen R.S. [Estimating sexual transmission of HIV from persons aware](#)

and unaware that they are infected with the virus in the USA [↗](#)

(<http://www.ncbi.nlm.nih.gov/pubmed/16791020>). AIDS 2006;20(10):1447–50.

17. CDC. HIV and the Law (<http://www.cdc.gov/hiv/policies/law/index.html>). Accessed Jun 2, 2015.
18. UNAIDS (Joint United Nations Programme on HIV/AIDS). 90-90-90: An Ambitious Treatment Target To Help End the AIDS Epidemic [↗](#) (http://www.unaids.org/sites/default/files/media_asset/90-90-90_en_0.pdf). Geneva, Switzerland; 2014.

Motor Vehicle Injuries

Public Health Problem



Motor vehicle crashes are a leading cause of death in the United States for people aged 1–54 years (1).

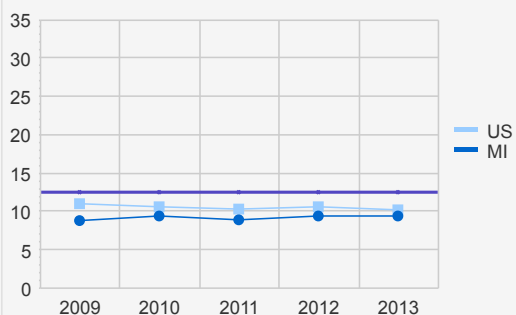


In 2013, motor vehicle crashes killed more than 32,700 people in the United States and injured more than 2.3 million (1,2).



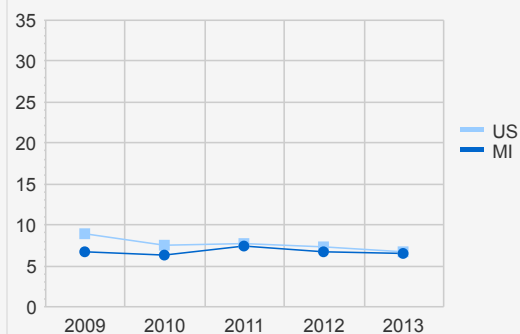
In 2013 alone, occupants in motor vehicle traffic crashes cost Americans nearly \$56 billion in medical care and productivity losses (3).

Age-adjusted motor vehicle-related death rate
(per 100,000 population)



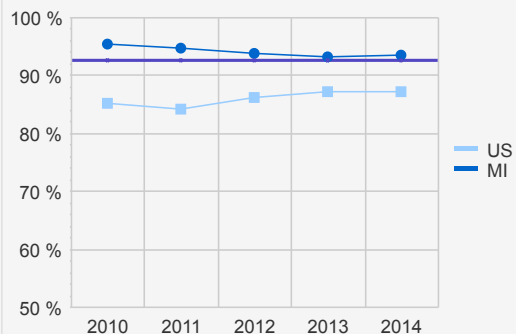
Source: National Highway Traffic Safety Administration (4).
HHS Healthy People 2020 Target: 12.4/100,000 (purple line) (5)

Motor vehicle-related death rate among drivers
aged 15–20 years (per 100,000 population)



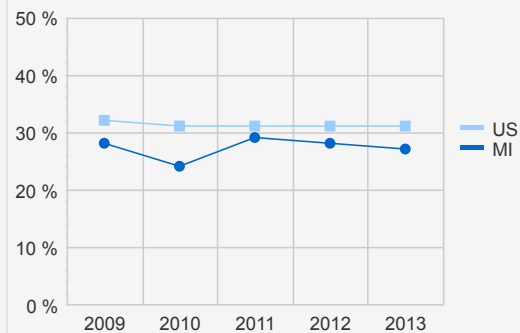
Source: National Highway Traffic Safety Administration (6)

Observed seat belt use



Source: National Highway Traffic Safety Administration (7).
HHS Healthy People 2020 Target: 92.4% (purple line) (5)

Percentage of crash-related deaths that
involved alcohol-impaired drivers



Source: National Highway Traffic Safety Administration (8)

Solutions and Ratings

The following policies are recommended by the Community Preventive Services Task Force and the National Highway Traffic Safety Administration because scientific studies support their effectiveness in preventing or reducing crash-related injuries and deaths (9–23):

- Implementing primary enforcement seat belt laws that cover occupants in all seating positions
- Mandating the use of car seats and booster seats for motor vehicle passengers through at least age 8 years
- Implementing comprehensive graduated driver licensing (GDL) systems, which help new drivers gain experience under low-risk conditions by granting driving privileges in stages. Research shows that more comprehensive GDL systems prevent more crashes and deaths than less comprehensive GDL systems (12–19). Components of comprehensive GDL systems include
 - A minimum age of 16 years for learner's permits
 - A mandatory holding period of at least 12 months for learner's permits
 - Nighttime driving restrictions between 10:00 pm and 5:00 am (or longer) for intermediate or provisional license holders
 - A limit of zero or one young passengers who can ride with intermediate or provisional license holders without adult supervision
 - A minimum age of 18 years for unrestricted licensure
- Requiring the use of ignition interlock devices for everyone convicted of alcohol-impaired driving

Other strategies recommended by scientific evidence for preventing motor vehicle injuries include enhanced seat belt enforcement campaigns (9,12), 0.08% blood alcohol concentration laws (24), minimum legal drinking age laws (12,24), publicized sobriety checkpoint programs (12,24,25), alcohol-impaired driving mass media campaigns (12,26), increased alcohol taxes (27), car and booster seat distribution plus education campaigns (10), and community-wide car seat and booster seat information and enhanced enforcement campaigns (10).

Seat belt law

A primary enforcement seat belt law allows police to stop a vehicle solely because a driver or passenger is not wearing a seat belt. A secondary enforcement seat belt law requires police to have another reason for stopping a vehicle before citing a driver or passenger for not buckling up. The most comprehensive policies are primary seat belt laws that cover all occupants, regardless of where they are sitting.

As of July 1, 2015, Michigan had a primary enforcement seat belt law covering only the front seats (28).

Task Force on Community Preventive Services recommendation: Primary enforcement seat belt laws are recommended on the basis of strong evidence that they are substantially more effective than secondary enforcement laws at reducing motor vehicle-related injuries and deaths (9). Seat belt use rates are an average of 9–14 percentage points higher in primary enforcement states than in secondary enforcement states (9,21–23).

How This Rating Was Determined

The rating reflects the extent to which the state’s seat belt law allowed for primary enforcement and covered all seating positions. Ratings are based on data collected from the Insurance Institute for Highway Safety (IIHS) on July 1, 2015, and therefore reflect IIHS’s interpretation of each state’s policy at that time (28). The “as of” date referenced—July 1, 2015—is the date CDC assessed the policy. The date does not reflect when the law was enacted or became effective.

Rating	State seat belt law
Green	Primary enforcement law covering all seating positions
Yellow	Primary enforcement law covering only the front seats
Red	Secondary enforcement law OR no law

Child passenger restraint law

A law that requires child passengers to travel in appropriate child passenger restraints, such as car seats or booster seats, until adult seat belts fit them properly.

As of July 1, 2015, Michigan required that all motor vehicle passengers aged ≤7 years be buckled in a car seat or booster seat (28).

Rating	Age requirement for use of child passenger restraints
Green	Children through age 8 years
Yellow	Children through age 6 or 7 years
Red	Children aged 5 years or younger

Evidence shows that laws mandating the use of car seats and booster seats increase their use (10). Increasing the required age for car seat or booster seat use is an effective way to keep children protected. For example, among states that increased the required age to 7 or 8 years, car seat and booster seat use tripled (11).

How This Rating Was Determined

The rating reflects the age through which the state required child passengers to travel in appropriate child passenger restraints. Ratings are based on data collected from the Insurance Institute for Highway Safety (IIHS) on July 1, 2015, and therefore reflect IIHS's interpretation of each state's policy at that time (28). The "as of" date referenced—July 1, 2015—is the date CDC assessed the policy. The date does not reflect when the law was enacted or became effective.

Graduated driver licensing: learner's permit age

Age at which a young driver can first acquire a learner's permit, which requires a novice driver to practice driving under the supervision of an adult.

As of July 1, 2015, the minimum age for acquiring a learner's permit in Michigan was 14 years, 9 months (29).

A minimum age of 16 years for a learner's permit is one of the five recommended components of a comprehensive GDL system (13–16,19).

Rating	Minimum age for state learner's permit
Green	≥ 16 years
Yellow	14 years, 7 months through 15 years, 11 months
Red	≤ 14 years, 6 months

How This Rating Was Determined

The rating reflects the age at which the state allowed drivers to first acquire a learner's permit. Ratings are based on data collected from the Insurance Institute for Highway Safety (IIHS) on July 1, 2015, and therefore reflect IIHS's interpretation of each state's policy at that time (29). The "as of" date referenced—July 1, 2015—is the date CDC assessed the policy. The date does not reflect when the law was enacted or became effective.

Graduated driver licensing: learner's permit holding period

The length of time a driver must maintain a learner's permit before being allowed to apply for an intermediate or provisional license.

As of July 1, 2015, the mandatory holding period for a learner's permit in Michigan was 6 months (29).

Rating	State learner's permit mandatory holding period
Green	≥12 months
Yellow	6–11 months
Red	<6 months

A 12-month holding period for a learner's permit is one of the five recommended components of a comprehensive GDL system (12,14,16,19).

How This Rating Was Determined

The rating reflects the length of time the state required a driver to maintain a learner's permit before being allowed to apply for an intermediate or provisional license. Ratings are based on data collected from the Insurance Institute for Highway Safety (IIHS) on July 1, 2015, and therefore reflect IIHS's interpretation of each state's policy at that time (29). The "as of" date referenced—July 1, 2015—is the date CDC assessed the policy. The date does not reflect when the law was enacted or became effective. If a state had varying holding periods dependent on the age the young driver received his/her learner's permit, the rating was based on the shortest holding period allowable for novice drivers. Exceptions to learner's permit holding periods (e.g., a shorter holding period for completion of a driver's education course) were not considered, and states were rated based on the general law.

Graduated driver licensing: nighttime driving restriction

A restriction against intermediate or provisional license holders driving without adult supervision during certain nighttime hours.

As of July 1, 2015, Michigan had a restriction for intermediate or provisional license holders against nighttime driving between 10:00 pm and 5:00 am (29).

Rating	State nighttime driving restriction
Green	Began on or before 10:00 pm and ended on or after 5:00 am
Yellow	Began between 10:01 pm and 11:59 pm
Red	Began on or after midnight OR no restriction

A restriction against nighttime driving between 10:00 pm and 5:00 am (or longer) is one of the five recommended components of a comprehensive GDL system (12,14,16,17,19).

How This Rating Was Determined

The rating reflects the extent to which the state restricted intermediate or provisional license holders from driving without adult supervision at night. Ratings are based on data collected from the Insurance Institute for Highway Safety (IIHS) on July 1, 2015, and therefore reflect IIHS's interpretation of each state's policy at that time (29). The "as of" date referenced—July 1, 2015—is the date CDC assessed the policy. The date does not reflect when the law was enacted or became effective. If a state had varying nighttime driving restrictions dependent on the month of the year or day of the week, the rating was based on the least restrictive requirement. Provisions loosening restrictions based on the length of time the young driver had been licensed were not considered; states were rated based on the initial restriction only.

Graduated driver licensing: young passenger restriction

A restriction against intermediate or provisional license holders transporting more than a certain number of young passengers without adult supervision.

As of July 1, 2015, Michigan limited to one the number of young passengers who can ride with intermediate or provisional license holders without adult supervision (29).

A limit of zero or one on the number of young passengers who can ride with an intermediate or provisional license holder is one of the five recommended components of a comprehensive GDL system (12,14,16,17,19).

How This Rating Was Determined

The rating reflects the extent to which the state restricted intermediate or provisional license holders from transporting young passengers without adult supervision. Ratings are based on data collected from the Insurance Institute for Highway Safety (IIHS) on July 1, 2015, and therefore reflect IIHS's interpretation of each state's policy at that time (29). The "as of" date referenced—July 1, 2015—is the date CDC assessed the policy. The date does not reflect when the law was enacted or became effective. If a state had varying young passenger restrictions dependent on the time of day, the rating was based on the least restrictive requirement. Provisions loosening restrictions based on the length of time the young driver had been licensed were not considered; states were rated based on the initial restriction only.

Rating	State young passenger restriction
Green	Limit of zero or one young passengers without adult supervision
Yellow	Limit of two or more young passengers without adult supervision
Red	No limit on young passengers

Graduated driver licensing: unrestricted licensure age

The minimum age at which drivers, who have met all requirements of intermediate or provisional license, may first drive unsupervised without nighttime or young passenger restrictions.

As of July 1, 2015, Michigan lifted nighttime and young passenger restrictions beginning at age 17 years (29).

A minimum age of 18 years for unrestricted licensure is one of the five recommended components of a comprehensive GDL system (12,14,16,17,19).

Rating	State unrestricted licensure age
Green	Nighttime and young passenger restrictions existed and were lifted for drivers aged ≥ 18 years
Yellow	Nighttime and young passenger restrictions existed, and one or both were lifted for drivers between ages 16 years, 7 months and 17 years, 11 months
Red	Nighttime and/or young passenger restrictions were lifted for drivers aged ≤ 16 years, 6 months; OR only one or no restriction existed

How This Rating Was Determined

The rating reflects the minimum age at which the state allowed drivers, who have met all requirements of intermediate or provisional license, to first drive unsupervised with no nighttime driving or young passenger restrictions. States that did not have both restrictions were rated red. Ratings are based on data collected from the Insurance Institute for Highway Safety (IIHS) on July 1, 2015, and therefore reflect IIHS's interpretation of each state's policy at that time (29). The "as of" date referenced—July 1, 2015—is the date CDC assessed the policy. The date does not reflect when the law was enacted or became effective.

Ignition interlock law

A law that mandates the use of ignition interlocks for drivers convicted of alcohol-impaired driving. An ignition interlock is a device that analyzes a driver's breath and prevents the vehicle from starting if alcohol is detected.

As of July 1, 2015, Michigan required ignition interlocks for repeat offenders convicted of alcohol-impaired driving and first-time offenders with a particularly high blood alcohol concentration (30).

Task Force on Community Preventive Services recommendation: Use of ignition interlocks is recommended for all people convicted of alcohol-impaired driving on the basis of strong evidence of interlocks' effectiveness in reducing re-arrest rates while the interlocks are installed (20).

Rating	State ignition interlock law
Green	Ignition interlocks required for all offenders convicted of alcohol-impaired driving (i.e., driving with a blood alcohol concentration [BAC] ≥ 0.08 g/dL), which includes both first-time and repeat offenders
Yellow	Ignition interlocks required for repeat offenders convicted of alcohol-impaired driving or first-time offenders with a particularly high BAC (e.g., BAC ≥ 0.15 g/dL)
Red	Ignition interlocks not required for any offenders convicted of alcohol-impaired driving

How This Rating Was Determined

The rating reflects the extent to which the state required use of ignition interlocks for drivers convicted of alcohol-impaired driving. Ratings are based on data collected from the Insurance Institute for Highway Safety (IIHS) on July 1, 2015, and therefore reflect IIHS's interpretation of each state's policy at that time (30). The "as of" date referenced—July 1, 2015—is the date CDC assessed the policy. The date does not reflect when the law was enacted or became effective.

Motor Vehicle Injuries References

1. CDC. WISQARS (Web-based Injury Statistics Query and Reporting System) Leading Causes of Death Reports, National and Regional, 1999–2013 (http://webappa.cdc.gov/sasweb/ncipc/leadcaus10_us.html). Accessed May 27, 2015.
2. National Highway Traffic Safety Administration. Traffic Safety Facts, 2013: A Compilation of Motor Vehicle Crash Data from the Fatality Analysis Reporting System and the General Estimates System [\[PDF\]](http://www-nrd.nhtsa.dot.gov/Pubs/812139.pdf) (<http://www-nrd.nhtsa.dot.gov/Pubs/812139.pdf>). Washington, DC: US Department of Transportation; 2015.
3. CDC. WISQARS (Web-based Injury Statistics Query and Reporting System) Cost of Injury Reports (<https://wisqars.cdc.gov:8443/costT/>). Accessed May 28, 2015.
4. National Highway Traffic Safety Administration. Fatality Analysis Reporting System [\[PDF\]](http://www-fars.nhtsa.dot.gov/QueryTool/QuerySection/SelectYear.aspx) (<http://www-fars.nhtsa.dot.gov/QueryTool/QuerySection/SelectYear.aspx>). US Department of Transportation, Washington, DC. Accessed May 29, 2015.
5. US Department of Health and Human Services. Injury and violence prevention [\[PDF\]](https://www.healthypeople.gov/2020/topics-objectives/topic/injury-and-violence-prevention/objectives) (<https://www.healthypeople.gov/2020/topics-objectives/topic/injury-and-violence-prevention/objectives>). In: Healthy People 2020. Rockville, MD: US Department of Health and Human Services; 2010.
6. National Highway Traffic Safety Administration. Traffic Safety Facts, 2012 Data: Young Drivers [\[PDF\]](http://www-nrd.nhtsa.dot.gov/Pubs/812019.pdf) (<http://www-nrd.nhtsa.dot.gov/Pubs/812019.pdf>). Washington, DC: US Department of Transportation; 2014.
7. National Highway Traffic Safety Administration. Traffic Safety Facts, Crash, Stats: Seat Belt Use in 2013—Use Rates in the States and Territories [\[PDF\]](http://www-nrd.nhtsa.dot.gov/Pubs/812030.pdf) (<http://www-nrd.nhtsa.dot.gov/Pubs/812030.pdf>). Washington, DC: US Department of Transportation; 2014.
8. National Highway Traffic Safety Administration. Traffic Safety Facts, 2012 Data: State Alcohol-Impaired Driving Estimates [\[PDF\]](http://www-nrd.nhtsa.dot.gov/Pubs/812017.pdf) (<http://www-nrd.nhtsa.dot.gov/Pubs/812017.pdf>). Washington, DC: US Department of Transportation; 2014.
9. Shults RA, Nichols JL, Dinh-Zarr TB, et al. Effectiveness of primary enforcement safety belt laws and enhanced enforcement of safety belt laws: a summary of the Guide to Community Preventive Services systematic reviews [\[PDF\]](http://www.ncbi.nlm.nih.gov/pubmed/15178238) (<http://www.ncbi.nlm.nih.gov/pubmed/15178238>). Journal of Safety Research 2004;35(2):189–96.
10. Zaza S, Sleet DA, Thompson R, et al. Reviews of evidence regarding interventions to increase use of child safety seats [\[PDF\]](http://www.thecommunityguide.org/mvoi/mvoi-AJPM-evrev-child-safety-seat.pdf) (<http://www.thecommunityguide.org/mvoi/mvoi-AJPM-evrev-child-safety-seat.pdf>). American Journal of Preventive Medicine 2001;21(4S):31–47.
11. Eichelberger AH, Chouinard AO, Jermakian JS. Effects of booster seat laws on injury risk among children in crashes [\[PDF\]](http://www.ncbi.nlm.nih.gov/pubmed/23137094) (<http://www.ncbi.nlm.nih.gov/pubmed/23137094>). Traffic Injury Prevention 2012;13(6):631–9.
12. Goodwin A, Kirley B, Sandt L, et al. Countermeasures That Work: A Highway Safety Countermeasures Guide for State Highway Safety Offices [\[PDF\]](http://www.nhtsa.gov/staticfiles/nti/pdf/811727.pdf) (<http://www.nhtsa.gov/staticfiles/nti/pdf/811727.pdf>). 7th edition. Washington, DC: National Highway Traffic Safety Administration; 2013.
13. Williams AF, McCartt AT, Mayhew DR, et al. Licensing age issues: deliberations from a workshop devoted to this topic [\[PDF\]](http://www.ncbi.nlm.nih.gov/pubmed/23441941) (<http://www.ncbi.nlm.nih.gov/pubmed/23441941>). Traffic Injury Prevention 2013;14(3):237–43.
14. Williams AF, Chaudhary NK, Tefft BC, et al. Evaluation of New Jersey's graduated driver licensing program [\[PDF\]](http://www.ncbi.nlm.nih.gov/pubmed/20146137) (<http://www.ncbi.nlm.nih.gov/pubmed/20146137>). Traffic Injury Prevention 2010;11(1):1–7.
15. Williams AF. Licensing age and teenage driver crashes: a review of the evidence [\[PDF\]](#)

(<http://www.ncbi.nlm.nih.gov/pubmed/19214872>). Traffic Injury Prevention 2009;10(1):9–15.

16. Masten SV, Foss RD, Marshall SW. Graduated driver licensing program component calibrations and their association with fatal crash involvement [↗](#)
(<http://www.sciencedirect.com/science/article/pii/S0001457513001486>). Accident Analysis & Prevention 2013;57:105–13.
17. Baker SP, Chen LH, Li G. National evaluation of graduated driver licensing programs [↗](#)
([http://www.nhtsa.gov/DOT/NHTSA/Traffic Injury Control/Teen Driver/files/GDL_6-20-2006.pdf](http://www.nhtsa.gov/DOT/NHTSA/Traffic%20Injury%20Control/Teen%20Driver/files/GDL_6-20-2006.pdf)). Washington, DC: US Department of Transportation; 2006.
18. Williams AF, Tefft BC, Grabowski JG. Graduated driver licensing research, 2010–present [↗](#)
(<http://www.ncbi.nlm.nih.gov/pubmed/22974685>). Journal of Safety Research 2012;43(3):195–203.
19. Mayhew D, Williams A, Pashley C. A new GDL framework: evidence base to integrate novice driver strategies [↗](#) (http://www.nsc.org/TeenDrivingDocuments/NSC_GDL_Report_6.pdf). Ottawa, Canada: Traffic Injury Research Foundation; 2014.
20. Elder RW, Voas R, Beirness D, et al. Effectiveness of ignition interlocks for preventing alcohol-impaired driving and alcohol-related crashes: a Community Guide systematic review [↗](#)
(<http://www.ncbi.nlm.nih.gov/pubmed/21335270>). American Journal of Preventive Medicine 2011;40(3):362–76.
21. Shults RA, Elder RW, Sleet DA, et al. Primary enforcement seat belt laws are effective even in the face of rising belt use rates [↗](#) (<http://www.ncbi.nlm.nih.gov/pubmed/15003594>). Accident Analysis & Prevention 2004;36(3):491–3.
22. Beck LF, West BA. Vital signs: nonfatal, motor vehicle-occupant injuries (2009) and seat belt use (2008) among adults—United States (<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5951a3.htm>). MMWR 2011;59(51):1681–6.
23. Shults RA, Beck LF. Self-reported seatbelt use, United States, 2002–2010: does prevalence vary by state and type of seatbelt law? [↗](#) (<http://www.ncbi.nlm.nih.gov/pubmed/23206516>). Journal of Safety Research 2012;43(5–6):417–20.
24. Shults RA, Elder RW, Sleet DA, et al. Reviews of evidence regarding interventions to reduce alcohol-impaired driving [↗](#) (<http://www.thecommunityguide.org/mvoi/mvoi-AJPM-evrev-alchl-impr-drvng.pdf>). American Journal of Preventive Medicine 2001;21(4S):66–88.
25. Bergen G, Pitan A, Qu S, et al. Publicized sobriety checkpoint programs: a Community Guide systematic review [↗](#) (<http://www.thecommunityguide.org/mvoi/mvoi-AJPM-evrev-sobrietychkpts.pdf>). American Journal of Preventive Medicine 2014;46(5):529–39.
26. Elder RW, Shults RA, Sleet DA, et al. Effectiveness of mass media campaigns for reducing drinking and driving and alcohol-involved crashes: a systematic review [↗](#)
(http://www.thecommunityguide.org/mvoi/massmedia_AJPM.pdf). American Journal of Preventive Medicine 2004;27(1):57–65.
27. Elder RW, Lawrence B, Ferguson A, et al. The effectiveness of tax policy interventions for reducing excessive alcohol consumption and related harms [↗](#)
(<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3735171/>). American Journal of Preventive Medicine 2010;38(2):217–29.
28. Insurance Institute for Highway Safety/Highway Loss Data Institute. State Laws: Safety Belts—Safety Belts and Child Safety Seats [↗](#) (<http://www.iihs.org/iihs/topics/laws/safetybeltuse?topicName=safety-belts>). Arlington, VA: Insurance Institute for Highway Safety/Highway Loss Data Institute; 2015.
29. Insurance Institute for Highway Safety/Highway Loss Data Institute. State Laws: Teenagers—Graduated Driver Licensing Introduction [↗](#)

(<http://www.iihs.org/iihs/topics/laws/graduatedlicenseintro?topicName=teenagers>). Arlington, VA: Insurance Institute for Highway Safety/Highway Loss Data Institute; 2015.

30. Insurance Institute for Highway Safety/Highway Loss Data Institute. [State Laws: Alcohol-Impaired Driving—DUI/DWI](#)  (<http://www.iihs.org/iihs/topics/laws/dui?topicName=alcohol-impaired-driving>). Arlington, VA: Insurance Institute for Highway Safety/Highway Loss Data Institute; 2015.

Nutrition, Physical Activity, and Obesity

Public Health Problem



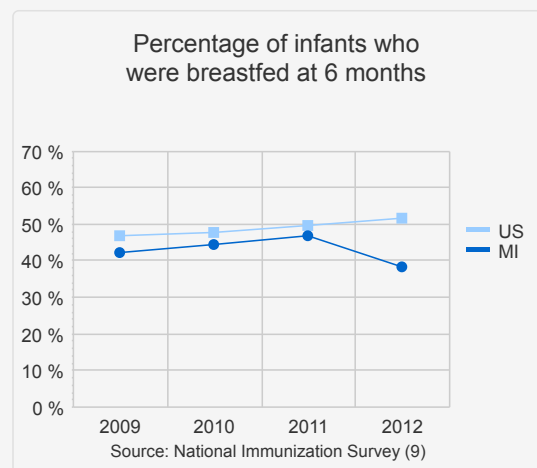
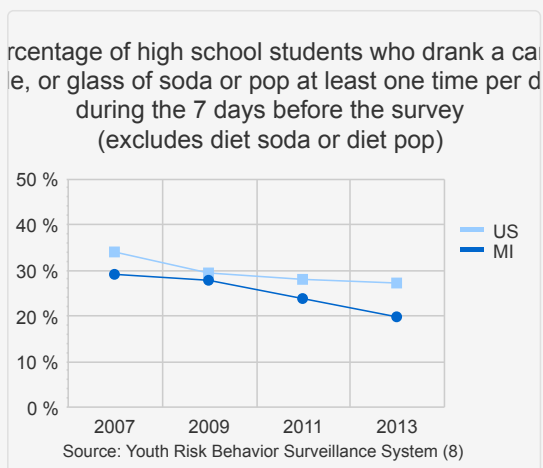
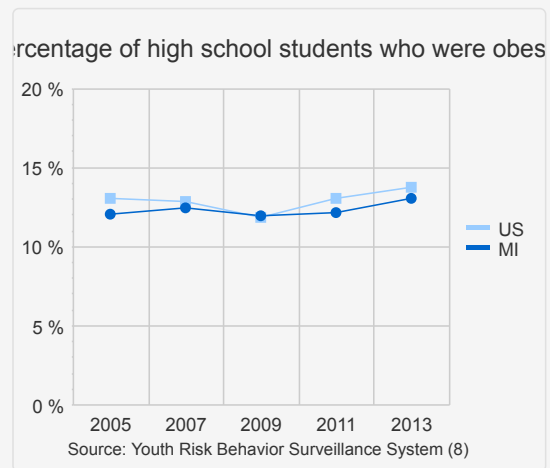
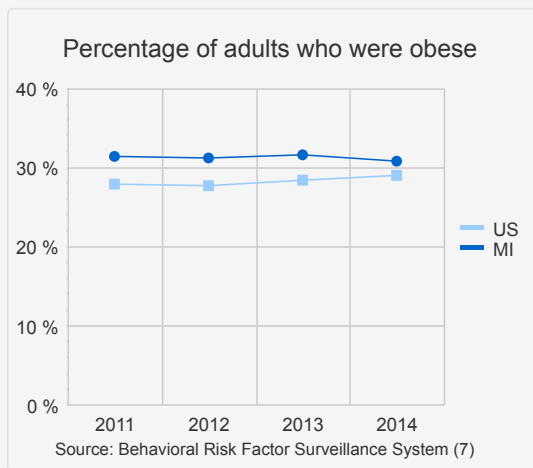
Poor diet and physical inactivity contribute to many serious and costly health conditions, including obesity, heart disease, type II diabetes, some cancers, unhealthy cholesterol levels, and high blood pressure (1,2).

Obesity is associated with increased blood pressure; unhealthy cholesterol levels; chronic diseases such as heart disease, diabetes, some cancers, and osteoarthritis; complications of pregnancy; and premature death (3).

Children who are not breastfed are at greater risk for various health problems, including childhood infections and obesity (4).

During 2011–2014, approximately 17% of children and adolescents and 36% of adults were obese, according to data from the National Health and Nutrition Examination Survey (5).

US direct medical costs associated with adult obesity were estimated to be as high as \$147 billion in 2008 (6).



Solutions and Ratings

This report focuses on four policies and practices recommended by the Institute of Medicine, Community Preventive Services Task Force, US Surgeon General, CDC, and other expert bodies. The recommendations are based on expert judgment and/or evidence from scientific studies that the policies and practices can improve diet, increase breastfeeding, increase physical activity, or reduce obesity (10–15). These policies and practices are

- Limiting the availability of less nutritious foods and beverages in schools
- Implementing nutrition standards for foods and beverages sold on government property
- Including obesity prevention standards in state regulations of licensed childcare facilities
- Promoting evidence-based practices that support breastfeeding in hospitals and birth centers

Additional strategies to prevent obesity and promote healthy eating, physical activity, and breastfeeding are supported by scientific evidence or expert judgment (11–18). Examples include requiring daily physical education in schools (14), designing communities to support physical activity (16), and improving the availability and promotion of healthier foods in the retail environment (11).

Secondary schools not selling less nutritious foods and beverages

Percentage of secondary schools (middle schools and high schools) in the state that did not allow students to purchase less nutritious foods and beverages from vending machines, school stores, canteens, and snack bars.

In 2014, 44.4% of secondary schools in Michigan did not sell the following items in vending machines or at school stores, canteens, or snack bars: candy, baked goods that are not low in fat, salty snacks that are not low in fat, soda pop, or fruit drinks that are not 100% juice (19).

Rating	Percentage of secondary schools
Green	≥66.6%
Yellow	50.0%–66.5%
Red	<50.0%

In addition to providing school meals, many schools offer foods and beverages in venues such as school stores, canteens, snack bars, and vending machines. The USDA's regulation commonly known as Smart Snacks in School requires that all foods and beverages sold at school during the school day meet federally defined nutrition standards (20). These standards were implemented in school year 2014–2015 for schools participating in the federal school meal programs and apply to foods and beverages sold a la carte, in the school store, and in vending machines.

How This Rating Was Determined

The rating reflects the extent to which the state's secondary schools limited the sale of less nutritious foods and beverages. For a school to be identified as not selling less nutritious foods and beverages, the school principal had to respond "no" to each of the following five items on the CDC School Health Profiles principal questionnaire when asked whether students can purchase that item: 1) chocolate candy; 2) other kinds of candy; 3) salty snacks that are not low in fat, such as regular potato chips; 4) cookies, crackers, cakes, pastries, or other baked goods that are not low in fat; and 5) soda pop or fruit drinks that are not 100% juice (19). Data were collected prior to implementation of the Smart Snacks in School regulation and do not reflect impact of the regulation on school nutrition standards.

Nutrition standards policy for foods and beverages sold on state executive branch property

A state nutrition standards policy for sale of foods and beverages that meets the following criteria: 1) provides or references quantifiable nutrition standards (e.g., sets a maximum for the amount of sodium a food item can include) addressing four or more of the following nine foods or nutrients: fruits, vegetables, whole grains, water, added sugars, sodium, trans fat, saturated fat, and calories/portion sizes; 2) applies to all property and facilities owned, leased, or operated by the state executive branch; and 3) applies to two or more food service venues (e.g., vending machines, cafeterias, snack bars).

As of February 2015, Michigan did not have a nutrition standards policy for sale of foods and beverages (21).

The Institute of Medicine recommends that government agencies implement “strong nutrition standards for all foods and beverages sold or provided through the government” and ensure “that healthy options are available in all places frequented by the public” to reduce the availability of less healthy foods and beverages and increase the availability of more healthy options (11).

Rating	State's nutrition standards policy for sale of foods and beverages
Green	Provided or referenced quantifiable nutrition standards AND applied to two or more food service venues on state executive branch property
Yellow	Provided or referenced quantifiable nutrition standards AND applied to a single food service venue on state executive branch property
Red	Did not provide or reference quantifiable nutrition standards, did not apply to state executive branch property, OR no policy existed

How This Rating Was Determined

The rating reflects whether the state had a nutrition standards policy for sale of foods and beverages and the extent to which the policy meets the following three criteria: 1) provides or references quantifiable nutrition standards (1,22), 2) applies to all state executive branch property, and 3) applies to two or more food service venues.

A policy was defined as a regulation, statute, or executive order. Policies were identified by searching WestlawNext® (an online legal research system) for statutes and regulations and LexisNexis® (an online database) for executive orders. Ratings indicate the presence of a policy, not whether it was implemented. For the purposes of this report, correctional facilities, schools, nursing homes, and personal care homes were excluded from the analyses.

Inclusion of obesity prevention standards in state licensing regulations of childcare facilities

Inclusion of some or all of the 47 components of national standards considered to have a high impact for obesity prevention into state licensing regulations of childcare facilities.

In 2014, Michigan's state licensing regulations for childcare facilities included 7 of the 47 components of national standards for obesity prevention (23).

Rating	Number of components included in state licensing regulations
Green	≥38
Yellow	24-37
Red	<24

Building on a comprehensive set of national standards defined in 2011 (15), the National Resource Center for Health and Safety in Child Care and Early Education has identified 47 licensing standards components considered to have a high impact for obesity prevention (24). These components include nutrition, physical activity, screen time, and infant feeding in licensed childcare settings (24). In addition, the Institute of Medicine has recommended that childcare regulations include requirements related to physical activity, sedentary activity, and child feeding (12).

How This Rating Was Determined

The rating reflects the extent to which state licensing regulations for childcare facilities included the 47 recommended components of national standards considered to have a high impact for obesity prevention. Data were compiled from a report of the National Resource Center for Health and Safety in Child Care and Early Education (23). A state was considered to have included a component if its regulations for childcare centers, large family childcare homes, and small family childcare homes fully met the requirements of the component.

State average birth facility score for breastfeeding support

The average score for breastfeeding support in the state's participating birth facilities.

In 2013, Michigan had an average birth facility score of 73 out of a possible 100 (25).

Rating	State average birth facility score
Green	≥80
Yellow	70–79
Red	<70

The US Surgeon General recommends that maternity care practices throughout the United States fully support breastfeeding (13). A review of evidence by the Cochrane Collaboration found that institutional changes in maternity care practices effectively increased breastfeeding initiation and duration rates (26).

How This Rating Was Determined

The rating reflects the extent to which birth facilities (e.g., hospitals and birth centers) within the state implemented multiple evidence-based strategies that support breastfeeding. State average birth facility scores were obtained from CDC's National Survey of Maternity Practices in Infant Nutrition and Care (mPINC) (25). Each birth facility that responded to a self-administered survey was scored on multiple evidence-based practices that support breastfeeding across seven categories: 1) labor and delivery, 2) breastfeeding assistance, 3) mother-newborn contact, 4) newborn feeding practices, 5) breastfeeding support after discharge, 6) nurse/birth attendant breastfeeding training and education, and 7) structural and organizational factors related to breastfeeding. The total score can range from 0 to 100, with a higher score representing more support. The national average score across all states was 75.

Nutrition, Physical Activity, and Obesity References

1. US Department of Agriculture and US Department of Health and Human Services. [Dietary Guidelines for Americans, 2010](#)  (http://www.cnpp.usda.gov/sites/default/files/dietary_guidelines_for_americans/PolicyDoc.pdf). 7th edition. Washington, DC: US Government Printing Office; 2010.
2. US Department of Health and Human Services. [2008 Physical Activity Guidelines for Americans](#)  (<http://www.health.gov/PAGuidelines/pdf/paguide.pdf>). Washington, DC: US Department of Health and Human Services; 2008.
3. National Heart, Lung, and Blood Institute. [Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults](#)  (<http://www.ncbi.nlm.nih.gov/books/NBK2003/>). Bethesda, MD: National Institutes of Health; 1998.
4. Ip S, Chung M, Raman G, et al. [Breastfeeding and Maternal and Infant Health Outcomes in Developed Countries](#)  (<http://archive.ahrq.gov/downloads/pub/evidence/pdf/brfout/brfout.pdf>). Evidence Report/Technology Assessment No. 153. AHRQ Publication No. 07-E007. Rockville, MD: Agency for Healthcare Research and Quality; 2007.
5. Ogden CL, Carroll MD, Fryar CD, et al. [Prevalence of Obesity Among Adults and Youth: United States, 2011–2014](#) (<http://www.cdc.gov/nchs/data/databriefs/db219.htm>). NCHS Data Brief, No. 219. Hyattsville, MD: US Department of Health and Human Services; 2015.
6. Finkelstein EA, Trogdon JG, Cohen JW, et al. [Annual medical spending attributable to obesity: payer- and service-specific estimates](#)  (<http://content.healthaffairs.org/content/28/5/w822.long>). Health Affairs (Millwood) 2009;28(5):w822–w831.
7. CDC. Behavioral Risk Factor Surveillance System data, 2011–2014.
8. CDC. [Youth Online: High School Youth Risk Behavior Survey](#) (<https://nccd.cdc.gov/youthonline/App/Default.aspx>). Accessed Jun 30, 2015.
9. CDC. [Breastfeeding among U.S. Children Born 2002–2012](#) (http://www.cdc.gov/breastfeeding/data/nis_data/index.htm). National Immunization Survey. Accessed Aug 30, 2015.
10. Institute of Medicine. [Nutrition Standards for Foods in Schools: Leading the Way toward Healthier Youth](#)  (<http://iom.nationalacademies.org/Reports/2007/Nutrition-Standards-for-Foods-in-Schools-Leading-the-Way-toward-Healthier-Youth.aspx>). Washington, DC: National Academies Press, 2007.
11. Institute of Medicine. [Accelerating Progress in Obesity Prevention: Solving the Weight of the Nation](#)  (<http://iom.nationalacademies.org/Reports/2012/Accelerating-Progress-in-Obesity-Prevention.aspx>). Washington, DC: National Academies Press; 2012.
12. Institute of Medicine. [Early Childhood Obesity Prevention Policies](#)  (<http://iom.nationalacademies.org/reports/2011/early-childhood-obesity-prevention-policies.aspx>). Washington, DC: National Academies Press; 2011.
13. Office of the Surgeon General. [The Surgeon General's Call to Action to Support Breastfeeding](#)  (<http://www.surgeongeneral.gov/library/calls/breastfeeding/index.html>). Washington, DC: US Department of Health and Human Services; 2011.
14. CDC. [School health guidelines to promote healthy eating and physical activity](#) (<http://www.cdc.gov/mmwr/pdf/rr/rr6005.pdf>). MMWR 2011;60(RR–5).
15. American Academy of Pediatrics, American Public Health Association, National Resource Center for Health and Safety in Child Care and Early Education. [Caring for Our Children: National Health and Safety Performance Standards; Guidelines for Early Care and Education Programs](#)  (<http://cfoc.nrckids.org/>). 3rd edition. Elk Grove Village, IL: American Academy of Pediatrics;

Washington, DC: American Public Health Association; 2011.

16. Task Force on Community Preventive Services. [Recommendations to increase physical activity in communities](http://www.thecommunityguide.org/pa/pa-ajpm-recs.pdf)  (<http://www.thecommunityguide.org/pa/pa-ajpm-recs.pdf>). American Journal of Preventive Medicine 2002;22(4S):67–72.
17. Institute of Medicine. [Educating the Student Body: Taking Physical Activity and Physical Education to School](http://iom.nationalacademies.org/reports/2013/educating-the-student-body-taking-physical-activity-and-physical-education-to-school.aspx)  (<http://iom.nationalacademies.org/reports/2013/educating-the-student-body-taking-physical-activity-and-physical-education-to-school.aspx>). Washington, DC: National Academies Press; 2013.
18. National Association for Sport and Physical Education. Physical Education Is Critical to Educating the Whole Child. Reston, VA: National Association for Sport and Physical Education; 2011. Reston, VA: National Association for Sport and Physical Education; 2011.
19. Demissie Z, Brener ND, McManus T, et al. [School Health Profiles 2014: Characteristics of Health Programs Among Secondary Schools](http://www.cdc.gov/healthyyouth/data/profiles/pdf/2014/2014_profiles_report.pdf) (http://www.cdc.gov/healthyyouth/data/profiles/pdf/2014/2014_profiles_report.pdf). Atlanta, GA: US Department of Health and Human Services; 2015.
20. US Department of Agriculture. 7 CFR Parts 210 and 220. [National School Lunch Program and School Breakfast Program: nutrition standards for all foods sold in school as required by the Healthy, Hunger-Free Kids Act of 2010; interim final rule](http://www.gpo.gov/fdsys/pkg/FR-2013-06-28/pdf/2013-15249.pdf)  (<http://www.gpo.gov/fdsys/pkg/FR-2013-06-28/pdf/2013-15249.pdf>). Federal Register 2013;78(125):39068–120.
21. CDC Public Health Law Program. Unpublished data; Apr 2015.
22. US Department of Health and Human Services, General Services Administration. [Health and Sustainability Guidelines for Federal Concessions and Vending Operations](http://www.cdc.gov/chronicdisease/pdf/Guidelines_for_Federal_Concessions_and_Vending_Operations.pdf) (http://www.cdc.gov/chronicdisease/pdf/Guidelines_for_Federal_Concessions_and_Vending_Operations.pdf). Washington, DC: US Department of Health and Human Services and General Services Administration; 2011.
23. National Resource Center for Health and Safety in Child Care and Early Education. [Achieving a State of Healthy Weight: 2014 Update](http://nrckids.org/default/assets/File/Products/ASHW/ASHW_Report_2014_Final_4-29-15.pdf)  (http://nrckids.org/default/assets/File/Products/ASHW/ASHW_Report_2014_Final_4-29-15.pdf). Aurora, CO: University of Colorado Denver; 2015.
24. National Resource Center for Health and Safety in Child Care and Early Education. [Achieving a State of Healthy Weight: A National Assessment of Obesity Prevention Terminology in Child Care Regulations 2010](http://nrckids.org/default/assets/File/Products/ASHW/regulations_report_2010.pdf)  (http://nrckids.org/default/assets/File/Products/ASHW/regulations_report_2010.pdf). Aurora, CO: University of Colorado Denver; 2011.
25. CDC. [National Survey of Maternity Practices in Infant Nutrition and Care \(mPINC\)](http://www.cdc.gov/breastfeeding/data/mpinc/index.htm) (<http://www.cdc.gov/breastfeeding/data/mpinc/index.htm>). Atlanta, GA: US Department of Health and Human Services; 2013.
26. Fairbank L, O'Meara S, Renfrew MJ, et al. [A systematic review to evaluate the effectiveness of interventions to promote the initiation of breastfeeding](http://www.journalslibrary.nihr.ac.uk/_data/assets/pdf_file/0003/64947/FullReport-hta4250.pdf)  (http://www.journalslibrary.nihr.ac.uk/_data/assets/pdf_file/0003/64947/FullReport-hta4250.pdf). Health Technology Assessment 2000;4(25):1–171.

Prescription Drug Overdose

Public Health Problem



Opioid pain relievers, such as oxycodone, hydrocodone, fentanyl, and hydromorphone, are responsible for three-fourths of all prescription drug overdose deaths and caused more than 16,200 deaths in the United States in 2013 (1). Nationally, deaths involving opioids have quadrupled since 1999 (1).



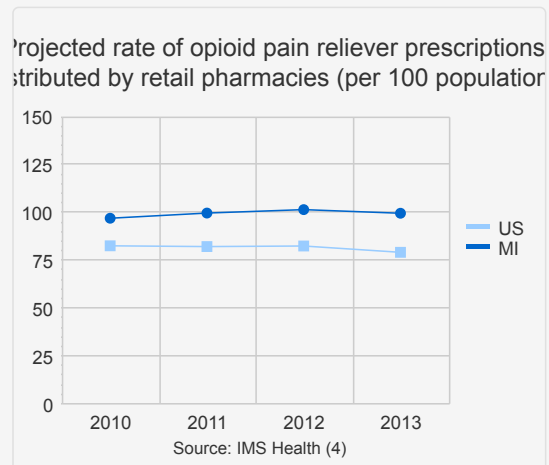
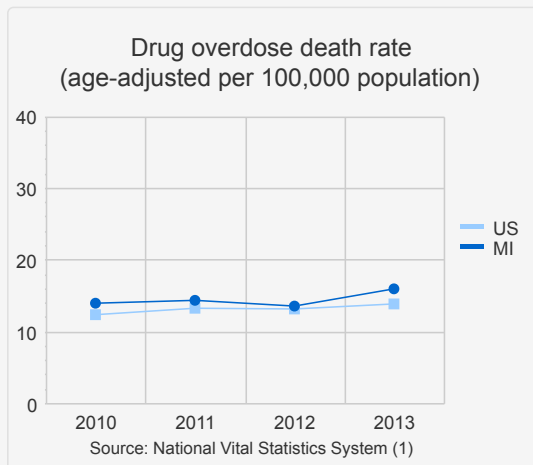
The sharp rise in prescription opioid overdose deaths closely parallels an equally sharp increase in the prescribing of these drugs. Opioid pain reliever sales in the United States quadrupled from 1999 to 2010 (2).

The severity of the epidemic varies widely across US states and regions. For example, the state with the highest drug overdose death rate has a rate more than 10 times that of the state with the lowest rate. Michigan's drug overdose death rate for 2013 (15.9 per 100,000 population) exceeds the national rate (13.8 per 100,000 population) (1).



The epidemic of prescription drug overdose imposes a major financial toll nationally and at the state level. The societal costs of prescription opioid abuse were estimated to exceed \$55 billion in 2007, including workplace, healthcare, and criminal justice expenses (3).

Prescription drug overdose also burdens state Medicaid programs, with prescription opioid abuse costing state Medicaid programs an estimated \$8 billion (3).



Solutions and Ratings

CDC and other agencies continue to identify and evaluate interventions to reduce prescription opioid overdose deaths. This report focuses on two key policies concerning state prescription drug monitoring programs (PDMPs), electronic systems that track the dispensing of controlled substances to patients. The following policies are supported by emerging evidence, expert consensus, and extensive review of the primary drivers of the epidemic (5–7):

- Requiring timely data submission to the PDMP
- Requiring universal PDMP use by prescribers

These policies are especially promising but are not the only interventions needed to address this epidemic. Rather, they should be seen as key pieces in a much larger, multisector approach to preventing prescription drug abuse and overdose. Other important PDMP practices for states to consider include ensuring that their PDMP 1) is easy to use and access (e.g., by allowing delegates of the provider to access the system); 2) can be linked to electronic health records for point-of-care decision making by providers; 3) is accessible to public health agencies for tracking trends; and 4) has the capacity to proactively notify users of high-risk behaviors (5). Also, the Department of Health and Human Services outlines three priority areas to advance a comprehensive approach to reversing the epidemic: improving opioid prescribing practices, expanding use and distribution of naloxone, and expanding medication-assisted treatment to reduce opioid use disorders and overdose (6).

Requirement for timely data submission to prescription drug monitoring program

State-required interval between dispensing a controlled substance and submitting the dispensing data to the state PDMP.

As of July 31, 2015, Michigan required that dispensing data be submitted to the PDMP within 24 hours (8).

Requiring timely submission of drug dispensing data to PDMPs is an important policy to enable informed prescribing and help identify questionable activity (5). When pharmacists dispense controlled substances to patients, they have to enter the prescription into the state PDMP system. However, states vary in how quickly they require pharmacies to submit these data to the PDMPs. Required intervals can range from one month to one day or even “real-time” (i.e., less than five minutes). When there is a significant time lag between dispensing a prescription and submitting data to the state PDMP, providers and other PDMP users lack information about patients’ most recent prescriptions. Delayed data submission reduces the usefulness of the prescription history data and has implications for patient safety and public health.

How This Rating Was Determined

The rating reflects data provided by the National Alliance of Model State Drug Laws about state legal requirements for the timeliness of data submission to the state PDMP. CDC translated this information into a rating for each state. The rating does not reflect how fully the state has carried out the law. The “as of” date referenced—July 31, 2015—is the date CDC assessed the law. The date does not reflect when the law was enacted or became effective.

Rating	State dispensing data submission requirement
Green	Within 24 hours
Yellow	More than 24 hours but within one week
Red	More than one week OR no reporting requirement

Requirement for universal use of state prescription drug monitoring program

State requirement that prescribers must consult the patient's PDMP history before initially prescribing opioid pain relievers and benzodiazepines, and at least every three months thereafter.

As of October 31, 2015, Michigan did not require prescribers to consult the PDMP before initially prescribing opioids (9).

PDMPs are promising tools, allowing healthcare providers to see patients' prescription histories to inform their prescribing decisions. However, a PDMP is useful to healthcare providers only if they check the system before prescribing, and checking the PDMP prior to prescribing opioid pain relievers and benzodiazepines is particularly important. States have sought to increase PDMP use by requiring providers to consult the PDMP before initially prescribing opioids and benzodiazepines. These policies have significant potential for maximizing the usefulness and promise of PDMPs as a clinical decision support tool (7,10).

How This Rating Was Determined

The rating reflects data provided by the National Alliance of Model State Drug Laws and the PDMP Center of Excellence at Brandeis University about state laws requiring prescriber use of state PDMPs. CDC translated this information into a rating for each state. The rating does not reflect how fully the state has carried out the law. The "as of" date referenced—October 31, 2015—is the date CDC assessed the law. The date does not reflect when the law was enacted or became effective.

For the purposes of this report, a law was deemed to "require" a PDMP check when it applied to most or all prescribers. To be rated green, a state's policy must have required a check for both opioid and benzodiazepine prescriptions; to be rated yellow, the requirement must have applied to at least opioid prescriptions.

Laws were considered to be requiring a PDMP check even if they had limited exceptions to the requirement (e.g., exempting prescriptions written in emergency departments) or if they exempted short prescriptions (i.e., lasting less than seven days). Laws that applied only to limited classes of providers (e.g., only opioid treatment programs or pain clinics) or that had overly broad exceptions (e.g., exempting prescriptions lasting 90 days or less), were not deemed as requiring PDMP checks in this report and were rated as red. In addition, laws in

Rating	State PDMP use requirement
Green	Prescribers are required to consult the PDMP before initial opioid and benzodiazepine prescriptions and at least every three months thereafter
Yellow	Prescribers are required to consult the PDMP before initial opioid prescriptions and again within one year
Red	Prescribers are not required to consult the PDMP before initial opioid prescriptions, OR such a requirement does exist but there is no required subsequent check and/or the policy includes subjective standards or broad exceptions

which the requirement depended on a subjective standard (e.g., the provider was required to check the PDMP only when having a reasonable belief of inappropriate use by the patient or only when treating chronic pain) were rated red.

Prescription Drug Overdose References

1. CDC. CDC WONDER Multiple Cause of Death data, 1999–2013.
2. CDC. [Vital signs: overdoses of prescription opioid pain relievers—United States, 1999–2008](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6043a4.htm) (<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6043a4.htm>). MMWR 2011;60:1487–92.
3. Birnbaum HG, White AG, Schiller M, et al. [Societal costs of prescription opioid abuse, dependence, and misuse in the United States](http://www.ncbi.nlm.nih.gov/pubmed/21392250) [↗](http://www.ncbi.nlm.nih.gov/pubmed/21392250) (<http://www.ncbi.nlm.nih.gov/pubmed/21392250>). Pain Medicine 2011;12(4):657–67.
4. IMS Health. National Prescription Audit. Unpublished data; 2015.
5. Clark T, Eadie J, Knue, P, et al. [Prescription Drug Monitoring Programs: An Assessment of the Evidence for Best Practices](http://www.pdmpexcellence.org/sites/all/pdfs/Brandeis_PDMP_Report.pdf) [↗](http://www.pdmpexcellence.org/sites/all/pdfs/Brandeis_PDMP_Report.pdf) (http://www.pdmpexcellence.org/sites/all/pdfs/Brandeis_PDMP_Report.pdf). Waltham, MA: Prescription Drug Monitoring Center of Excellence, Brandeis University; 2012.
6. US Department of Health and Human Services. [ASPE Issue Brief: Opioid Abuse in the U.S. and HHS Actions to Address Opioid-Drug Related Overdoses and Deaths](http://aspe.hhs.gov/basic-report/opioid-abuse-us-and-hhs-actions-address-opioid-drug-related-overdoses-and-deaths) [↗](http://aspe.hhs.gov/basic-report/opioid-abuse-us-and-hhs-actions-address-opioid-drug-related-overdoses-and-deaths) (<http://aspe.hhs.gov/basic-report/opioid-abuse-us-and-hhs-actions-address-opioid-drug-related-overdoses-and-deaths>). Washington, DC: US Department of Health and Human Services; 2015.
7. Prescription Drug Monitoring Center of Excellence, Brandeis University. [Mandating PDMP Participation by Medical Providers: Current Status and Experience in Selected States](http://www.pdmpexcellence.org/sites/all/pdfs/COE_briefing_mandates_2nd_rev.pdf) [↗](http://www.pdmpexcellence.org/sites/all/pdfs/COE_briefing_mandates_2nd_rev.pdf) (http://www.pdmpexcellence.org/sites/all/pdfs/COE_briefing_mandates_2nd_rev.pdf). Waltham, MA: Prescription Drug Monitoring Center of Excellence, Brandeis University; 2014.
8. National Alliance of Model State Drug Laws. Unpublished data; 2015.
9. National Alliance of Model State Drug Laws and the PDMP Center of Excellence at Brandeis University. Unpublished data; 2015.
10. Freeman PR, Goodin A, Troske S, et al. [Kentucky House Bill 1 Impact Evaluation Prepared for the Kentucky Cabinet for Health and Family Services](http://www.chfs.ky.gov/NR/rdonlyres/8D6EBE65-D16A-448E-80FF-30BED11EBDEA/0/KentuckyHB1ImpactStudyReport03262015.pdf) [↗](http://www.chfs.ky.gov/NR/rdonlyres/8D6EBE65-D16A-448E-80FF-30BED11EBDEA/0/KentuckyHB1ImpactStudyReport03262015.pdf) (<http://www.chfs.ky.gov/NR/rdonlyres/8D6EBE65-D16A-448E-80FF-30BED11EBDEA/0/KentuckyHB1ImpactStudyReport03262015.pdf>). Lexington, KY: University of Kentucky; 2015.

Teen Pregnancy

Public Health Problem



In 2014, about 252,000 women under age 20 gave birth; 99% (about 249,000) of these births were among girls aged 15–19 years of age (1). In 2014 in Michigan, 6,967 teen girls aged 15–19 years gave birth (2).

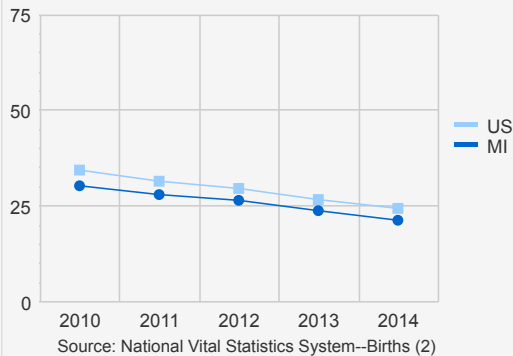


Teen mothers are more likely to experience negative social outcomes, including lower school completion rates and reduced earnings, than teens who do not have children. The children of teenaged mothers are more likely to achieve less in school, experience abuse or neglect, have more health problems, be incarcerated at some time during adolescence, and give birth during their teen years (3,4).

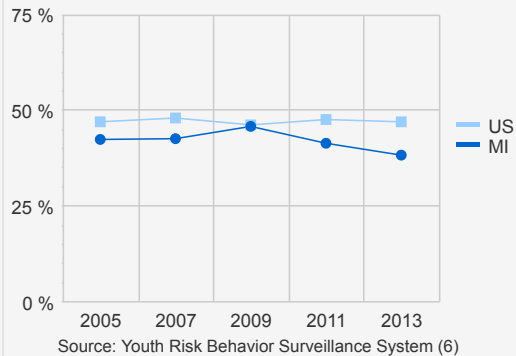


The annual costs of teen childbearing in 2010 were \$9.4 billion in the United States (3,4) and \$283 million in Michigan (5).

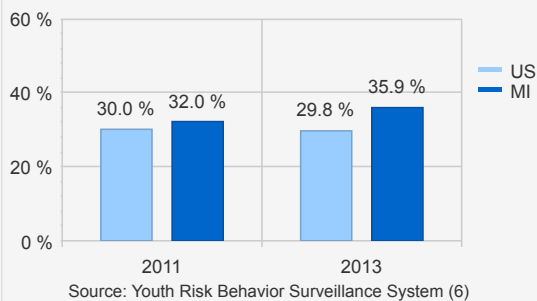
Birth rate among females aged 15–19 years
(per 1,000 population)



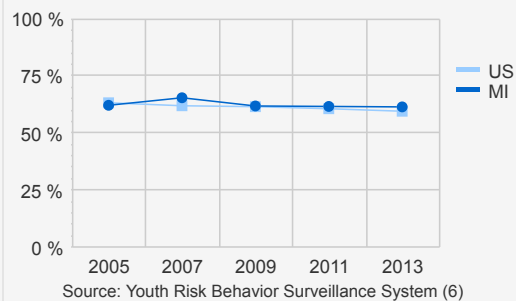
Percentage of high school students who ever had
sexual intercourse



Percentage of currently sexually active female high
school students who used birth control pills, any
ectable birth control, any birth control ring or implan
or intrauterine device before last sexual intercourse



Percentage of currently sexually
active high school students
who used a condom during last
sexual intercourse



Solutions and Ratings

This report highlights the status of a key policy that states can use to reduce teen pregnancy: increasing access to contraceptive counseling and services by expanding the age and income eligibility levels for Medicaid coverage of family planning services to increase teens' access to healthcare services, including contraception and other preventive services.

Prior to the Affordable Care Act (ACA), women qualified for full Medicaid coverage only if their incomes were very low and they belonged to one of Medicaid's categories of eligibility—parent, senior, or disabled. Pregnant women were eligible for prenatal, delivery, and newborn care at a somewhat higher income level but generally lost coverage soon after delivery. Since the 1990s, many states have broadened Medicaid eligibility for family planning services and supplies for people who were not otherwise eligible for Medicaid (7). Many states offered family planning services to women at higher income levels through waivers applied for and granted by the Centers for Medicare and Medicaid Services (CMS). The ACA included an option for states to expand full Medicaid services to individuals based on income eligibility alone. Another ACA provision allowed states to make coverage for family planning services available at the same income level as for pregnancy care through a state plan amendment (8–13). Thus, states have three options to provide Medicaid coverage for family planning services to low-income individuals. Income-based Medicaid expansions have been shown to be effective in reducing births among teens aged 15–19 years (8–11).

States can expand access to their Medicaid family planning program and reduce teen births by 1) extending coverage to teens under age 18 years and 2) setting the income eligibility level for family planning coverage to at least the same income level required for pregnancy care coverage (this level varies by state). Expanding Medicaid coverage for family planning services is consistent with US Department of Health and Human Services recommendations to support reproductive and sexual health services (14) and with *Healthy People 2020* family planning objectives (15). Other strategies for reducing teen pregnancy that are supported by scientific evidence include providing sexual health education for adolescents, using positive youth development approaches, and improving parent-child communication and parental monitoring of youth behavior (16–19).

Expansion of state Medicaid family planning eligibility

State expansion of eligibility for Medicaid coverage of family planning services to include teens under age 18 years and to be set to at least the income eligibility level for coverage of pregnancy care (this level varies by state).

As of October 2015, Michigan had 1) expanded Medicaid coverage through the ACA to include all teens and adults with incomes up to 138% of the federal poverty level (FPL) and 2) expanded Medicaid coverage of family planning services to include teens aged ≥ 18 years and adults with incomes up to 185% FPL. The expansions did not include all teens and adults with incomes up to 200% of the FPL, the state's income level for pregnancy-related Medicaid coverage (20–22).

Rating	State Medicaid family planning eligibility
Green	Income-based, meets the income eligibility level for pregnancy-related care, and covers all women, including teens
Yellow	Limited, not income-based, does not meet the eligibility level for pregnancy-related services, and/or excludes some teens
Red	Not expanded

Healthy People 2020 objectives: 1) Increase the number of states that set the income eligibility level for Medicaid-covered family planning services to at least the same level used to determine eligibility for Medicaid-covered pregnancy-related care and 2) Increase the proportion of sexually experienced females aged 15–44 years who received reproductive health services in the past 12 months (15). Income-based Medicaid expansions have been shown to be effective in reducing births among teens aged 15–19 years (8–11).

How This Rating Was Determined

The rating reflects the extent to which the state had expanded eligibility for Medicaid coverage of family planning services. A review of state Medicaid family planning waivers and state plan amendments (SPAs) was conducted to determine whether a state's income eligibility level for family planning coverage was set to at least the same income level as for pregnancy care coverage (20,21). The income eligibility level for family planning services extended to applicants whose income was up to 5 percentage points above the set FPL for the following states: Alabama, Connecticut, Indiana, Louisiana, Mississippi, Missouri, Montana, New Hampshire, New Mexico, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, South Carolina, Virginia, and Wisconsin. This review also examined the extent to which the state waiver or SPAs covered all teens, regardless of pregnancy status (20). In addition, a review was conducted of those states that had expanded their Medicaid programs under the ACA to cover adults aged < 65 years with incomes up to 138% of the FPL

(22). Teens aged ≤ 18 years with family incomes up to 138% of the FPL (or higher, depending on the state) are eligible for free or low-cost health coverage, including family planning services, in all states that have expanded Medicaid.

Teen Pregnancy References

1. Hamilton BE, Martin JA, Osterman MJK, et al. [Births: Final Data for 2014](http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_12.pdf) (http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_12.pdf). National Vital Statistics Reports. 2015.
2. CDC. [2014 Births Data Files](http://www.cdc.gov/nchs/data_access/vitalstats/VitalStats_Births.htm) (http://www.cdc.gov/nchs/data_access/vitalstats/VitalStats_Births.htm). VitalStats. Released Oct 2015. Accessed Nov 17, 2015.
3. Hoffman SD, Maynard RA (Eds). *Kids Having Kids: Economic Costs and Social Consequences of Teen Pregnancy*, 2nd edition. Washington, DC: The Urban Institute Press; 2008.
4. The National Campaign to Prevent Teen and Unplanned Pregnancy. [Counting It Up—The Public Costs of Teen Childbearing: Key Data](https://thenationalcampaign.org/sites/default/files/resource-primary-download/counting-it-up-key-data-2013-update.pdf) [↗](https://thenationalcampaign.org/sites/default/files/resource-primary-download/counting-it-up-key-data-2013-update.pdf) (<https://thenationalcampaign.org/sites/default/files/resource-primary-download/counting-it-up-key-data-2013-update.pdf>). Washington, DC: The National Campaign to Prevent Teen and Unplanned Pregnancy; 2013.
5. The National Campaign to Prevent Teen and Unplanned Pregnancy. [Counting It Up—Total Costs to Taxpayers Associated with Teen Childbearing in 2010](https://thenationalcampaign.org/sites/default/files/resource-primary-download/total-costs.pdf) [↗](https://thenationalcampaign.org/sites/default/files/resource-primary-download/total-costs.pdf) (<https://thenationalcampaign.org/sites/default/files/resource-primary-download/total-costs.pdf>). Washington, DC: The National Campaign to Prevent Teen and Unplanned Pregnancy; 2014.
6. CDC. [Youth Online: High School Youth Risk Behavior Survey](https://nccd.cdc.gov/youthonline/App/Default.aspx) (<https://nccd.cdc.gov/youthonline/App/Default.aspx>). Accessed May 23, 2015.
7. Sills S, Johnson B. [Medicaid 1115 family planning demonstration waiver programs](http://www.nashp.org/sites/default/files/FamilyPlanningMonitor.pdf) [↗](http://www.nashp.org/sites/default/files/FamilyPlanningMonitor.pdf) (<http://www.nashp.org/sites/default/files/FamilyPlanningMonitor.pdf>). State Health Policy Monitor 2008;2(4).
8. Foster DG, Biggs MA, Rostovtseva D, et al. [Estimating the fertility effect of expansions of publicly funded family planning services in California](http://www.ncbi.nlm.nih.gov/pubmed/21802962) [↗](http://www.ncbi.nlm.nih.gov/pubmed/21802962) (<http://www.ncbi.nlm.nih.gov/pubmed/21802962>). *Women's Health Issues* 2011;21(6):418–24.
9. Yang Z, Gaydos LM. [Reasons for and challenges of recent increases in teen birth rates: a study of family planning service policies and demographic changes at the state level](http://www.ncbi.nlm.nih.gov/pubmed/20472207) [↗](http://www.ncbi.nlm.nih.gov/pubmed/20472207) (<http://www.ncbi.nlm.nih.gov/pubmed/20472207>). *Journal of Adolescent Health* 2010;46(6):517–24.
10. Lindrooth RC, McCullough JS. [The effect of Medicaid family planning expansions on unplanned births](http://www.whijournal.com/article/S1049-3867%2807%2900037-0/fulltext) [↗](http://www.whijournal.com/article/S1049-3867%2807%2900037-0/fulltext) (<http://www.whijournal.com/article/S1049-3867%2807%2900037-0/fulltext>). *Women's Health Issues* 2007;17(2):66–74.
11. Kearney MS, Levine PB. [Subsidized contraception, fertility, and sexual behavior](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2815331/) [↗](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2815331/) (<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2815331/>). *The Review of Economics and Statistics* 2009;91(1):137.
12. Edwards J, Bronstein J, Adams K. Evaluation of Medicaid family planning demonstrations. In: CMS Contract No 752-2-415921. Arlington, VA: The CNA Corporation; 2003.
13. Thomas A. [Policy Solutions for Preventing Unplanned Pregnancy](http://www.brookings.edu/research/reports/2012/03/unplanned-pregnancy-thomas) [↗](http://www.brookings.edu/research/reports/2012/03/unplanned-pregnancy-thomas) (<http://www.brookings.edu/research/reports/2012/03/unplanned-pregnancy-thomas>). Washington, DC: Brookings Institution; 2012.
14. US Department of Health and Human Services. [National Prevention Strategy: America's Plan for Better Health and Wellness](http://www.surgeongeneral.gov/priorities/prevention/strategy/report.pdf) [↗](http://www.surgeongeneral.gov/priorities/prevention/strategy/report.pdf) (<http://www.surgeongeneral.gov/priorities/prevention/strategy/report.pdf>). Rockville, MD: US Department of Health and Human Services; 2011.
15. US Department of Health and Human Services. [Family Planning](http://www.healthypeople.gov/2020/topics-objectives/topic/family-planning/objectives). In: *Healthy People 2020* [↗](http://www.healthypeople.gov/2020/topics-objectives/topic/family-planning/objectives) (<http://www.healthypeople.gov/2020/topics-objectives/topic/family-planning/objectives>). Rockville, MD: US Department of Health and Human Services; 2010.
16. US Department of Health and Human Services. [Educational and Community-Based Programs](#). In:

Healthy People 2020 [\[link\]](http://www.healthypeople.gov/2020/topics-objectives/topic/educational-and-community-based-programs/objectives) (<http://www.healthypeople.gov/2020/topics-objectives/topic/educational-and-community-based-programs/objectives>). Rockville, MD: US Department of Health and Human Services; 2010.

17. Oringanje C, Meremikwu MM, Eko H, et al. Interventions for preventing unintended pregnancies among adolescents [\[link\]](http://www.ncbi.nlm.nih.gov/pubmed/19821341) (<http://www.ncbi.nlm.nih.gov/pubmed/19821341>). The Cochrane Database of Systematic Reviews 2009(4):CD005215.
18. US Department of Health and Human Services. Evidence-Based Programs [\[link\]](http://www.hhs.gov/ash/oah/oah-initiatives/teen_pregnancy/db/tpp-searchable.html) (http://www.hhs.gov/ash/oah/oah-initiatives/teen_pregnancy/db/tpp-searchable.html). Accessed Jun 10, 2015.
19. Chin HB, Sipe TA, Elder R, 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 [\[link\]](http://www.ncbi.nlm.nih.gov/pubmed/22341164) (<http://www.ncbi.nlm.nih.gov/pubmed/22341164>). American Journal of Preventive Medicine 2012;42(3):272–94.
20. Guttmacher Institute. State Policies in Brief (as of November 1, 2015): Medicaid Family Planning Eligibility Expansions [\[link\]](http://www.guttmacher.org/statecenter/spibs/spib_SMFPE.pdf) (http://www.guttmacher.org/statecenter/spibs/spib_SMFPE.pdf). New York, NY: Guttmacher Institute; 2015.
21. The Henry J. Kaiser Family Foundation. Table 3: Pregnant Women Income Eligibility Limits as a Percent of the Federal Poverty Level, January 2015 [\[link\]](https://kaiserfamilyfoundation.files.wordpress.com/2015/04/7993-07-table-3-3a.pdf) (<https://kaiserfamilyfoundation.files.wordpress.com/2015/04/7993-07-table-3-3a.pdf>). In: Modern Era Medicaid: Findings from a 50-State Survey of Eligibility, Enrollment, Renewal, and Cost-Sharing Policies in Medicaid and CHIP as of January 2015 [\[link\]](http://files.kff.org/attachment/report-modern-era-medicaid-findings-from-a-50-state-survey-of-eligibility-enrollment-renewal-and-cost-sharing-policies-in-medicaid-and-chip-as-of-january-2015) (<http://files.kff.org/attachment/report-modern-era-medicaid-findings-from-a-50-state-survey-of-eligibility-enrollment-renewal-and-cost-sharing-policies-in-medicaid-and-chip-as-of-january-2015>). Washington, DC: The Henry J. Kaiser Family Foundation; 2015.
22. The Henry J. Kaiser Family Foundation. Medicaid Income Eligibility Limits for Adults as a Percent of the Federal Poverty Level [\[link\]](http://kff.org/health-reform/state-indicator/medicaid-income-eligibility-limits-for-adults-as-a-percent-of-the-federal-poverty-level/) (<http://kff.org/health-reform/state-indicator/medicaid-income-eligibility-limits-for-adults-as-a-percent-of-the-federal-poverty-level/>). Updated Nov 2015. In: Modern Era Medicaid: Findings from a 50-State Survey of Eligibility, Enrollment, Renewal, and Cost-Sharing Policies in Medicaid and CHIP as of January 2015 [\[link\]](http://files.kff.org/attachment/report-modern-era-medicaid-findings-from-a-50-state-survey-of-eligibility-enrollment-renewal-and-cost-sharing-policies-in-medicaid-and-chip-as-of-january-2015) (<http://files.kff.org/attachment/report-modern-era-medicaid-findings-from-a-50-state-survey-of-eligibility-enrollment-renewal-and-cost-sharing-policies-in-medicaid-and-chip-as-of-january-2015>). Washington, DC: The Henry J. Kaiser Family Foundation; 2015.

Tobacco Use

Public Health Problem



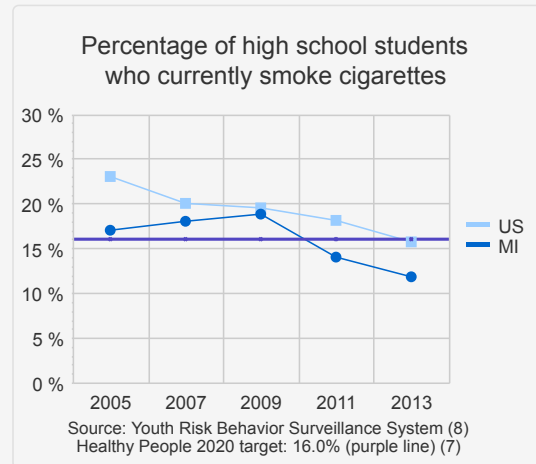
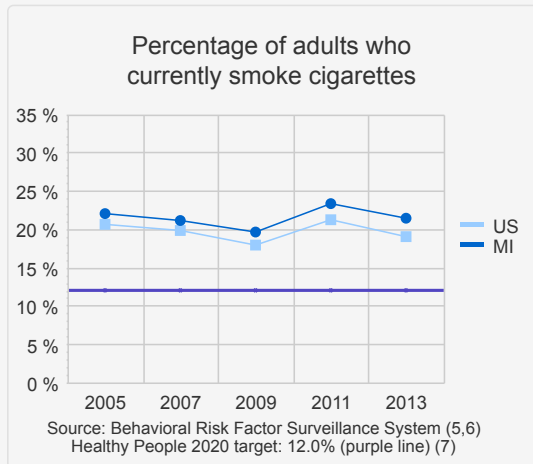
Tobacco use is the leading cause of preventable death in Michigan and the United States overall (1). Smoking harms nearly every organ in the body and causes cancer, heart disease, stroke, respiratory illness, and other health problems (1).



In 2012, despite progress in reducing exposure to secondhand smoke, 1 in 4 nonsmoking adults and about 2 in 5 children aged 3–11 years in the United States were still exposed to secondhand smoke. Among black children aged 3–11 years, 7 in 10 were still exposed to secondhand smoke in 2012 (2).



Smoking costs the United States more than \$300 billion each year, including nearly \$170 billion for direct medical care of adults and more than \$156 billion from lost productivity (1,3). In Michigan, smoking costs \$ 4.59 billion a year for medical care alone (4).



Solutions and Ratings

The three policies and practices in this report are recommended by the Institute of Medicine, World Health Organization, Community Preventive Services Task Force, US Surgeon General, and Centers for Disease Control and Prevention because scientific studies support their effectiveness in preventing or reducing tobacco use (1,4,9–11):

- Increasing the price of tobacco products, such as through state cigarette excise taxes
- Establishing comprehensive, statewide smoke-free policies to protect all nonsmokers from exposure to secondhand smoke
- Sustaining comprehensive tobacco control program funding

Other strategies also supported by scientific evidence include hard-hitting media campaigns and systemic changes to increase access to and use of cessation services (4).

State cigarette excise tax

The amount of state excise tax, in dollars, on a pack of 20 cigarettes.

As of September 30, 2015, Michigan's cigarette excise tax was \$2.00 per pack, compared with the highest state tax of \$4.35 (range = \$0.17–\$4.35) (12).

Rating	State excise tax
Green	≥\$2.00 per pack
Yellow	\$1.00–\$1.99 per pack
Red	<\$1.00 per pack

Healthy People 2020 target: An increased excise tax in all states and the District of Columbia by \$1.50 per pack by the year 2020 (7). This increase would generate millions of dollars in revenue annually, prevent more children from starting to smoke, help smokers quit, save lives, and save millions in long-term healthcare costs (1,9–11).

How This Rating Was Determined

The rating reflects the amount of cigarette excise tax in the state as reported by CDC's State Tobacco Activities Tracking and Evaluation (STATE) System (12). The data reflect laws in effect as of September 30, 2015; data do not reflect laws that had been enacted but had not yet taken effect.

Comprehensive state smoke-free policy

A state law that prohibits smoking in all indoor areas of private workplaces, restaurants, and bars, with no exceptions.

As of September 30, 2015, Michigan had a statewide smoke-free policy covering workplaces, restaurants, and bars (12).

Rating	Locations covered by state smoke-free policy
Green	Workplaces, restaurants, and bars
Yellow	One or two of the three locations
Red	None of the locations

Healthy People 2020 target: A statewide prohibition on smoking in public places and worksites in all states and the District of Columbia (7). Studies have shown that smoke-free policies reduce secondhand smoke exposure, help smokers quit, and reduce heart attack and asthma hospitalizations (1,9–11,13–17).

How This Rating Was Determined

The rating reflects the comprehensiveness of the state's smoke-free policies as reported by CDC's State Tobacco Activities Tracking and Evaluation (STATE) System (12). The data reflect laws in effect as of September 30, 2015; data do not reflect laws that had been enacted but had not yet taken effect.

State funding for tobacco control

The amount of state funding allocated for state comprehensive tobacco control activities.

As of fiscal year 2015, Michigan allocated 1.4% of the CDC-recommended funding for tobacco control (\$1.5 million of \$110.6 million) (4,18).

Rating	State funding level
Green	≥ 100% of CDC recommendation
Yellow	50.0%–99.9% of CDC recommendation
Red	<50.0% of CDC recommendation

CDC recommendation: Tobacco control funding at 100% of CDC's recommended annual investment in all states and the District of Columbia (4). States that have invested in comprehensive tobacco control programs at recommended levels (or above) have seen cigarette sales drop more than twice as much as sales in the United States as a whole (4). Smoking prevalence among adults and youth has also declined faster as spending for tobacco control programs has increased (1,4,19,20).

How This Rating Was Determined

The rating reflects the extent to which state tobacco control funding meets CDC's recommendations. Ratings were determined by comparing each state's FY 2015 funding for comprehensive tobacco control programs with recommendations from CDC's *Best Practices for Comprehensive Tobacco Control Programs—2014* (4,18). According to the Campaign for Tobacco-Free Kids' Broken Promises report, the funding data are accurate as of each state's fiscal year 2015—which ended June 30, 2015, for most states—and do not include additional funds that might have been received later (18).

Tobacco Use References

1. US Department of Health and Human Services. *The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General* [\[link\]](http://www.surgeongeneral.gov/library/reports/50-years-of-progress/index.html) (<http://www.surgeongeneral.gov/library/reports/50-years-of-progress/index.html>). Rockville, MD: US Department of Health and Human Services; 2014.
2. CDC. *Vital signs: disparities in nonsmokers' exposure to secondhand smoke—United States, 1999–2012* (http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6404a7.htm?s_cid=mm6404a7_w). MMWR 2015;64(4):103–8.
3. Xu X, Bishop EE, Kennedy SM, et al. *Annual healthcare spending attributable to cigarette smoking: an update* [\[link\]](http://www.ncbi.nlm.nih.gov/pubmed/25498551) (<http://www.ncbi.nlm.nih.gov/pubmed/25498551>). American Journal of Preventive Medicine 2014;48(3):326–33.
4. CDC. *Best Practices for Comprehensive Tobacco Control Programs—2014* (http://www.cdc.gov/tobacco/stateandcommunity/best_practices/pdfs/2014/comprehensive.pdf). Atlanta, GA: US Department of Health and Human Services; 2014.
5. CDC. Behavioral Risk Factor Surveillance System data, 2005–2013.
6. Nguyen K, Marshall L, Hu S, et al. *State-specific prevalence of current cigarette smoking and smokeless tobacco use among adults aged ≥18 years—United States, 2011–2013* (<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6419a6.htm>). MMWR 2015;64(19):532–6.
7. US Department of Health and Human Services. *Tobacco use across the life stages* [\[link\]](http://www.healthypeople.gov/2020/leading-health-indicators/2020-lhi-topics/Tobacco/determinants) (<http://www.healthypeople.gov/2020/leading-health-indicators/2020-lhi-topics/Tobacco/determinants>). In: Healthy People 2020. Rockville, MD: US Department of Health and Human Services; 2010.
8. CDC. *Youth Online: High School Youth Risk Behavior Survey* (<https://nccd.cdc.gov/youthonline/App/Default.aspx>). Accessed Jun 13, 2013.
9. Institute of Medicine. *Ending the Tobacco Problem: A Blueprint for the Nation* [\[link\]](http://www2.aap.org/richmondcenter/pdfs/IOMReport_BlueprintforNation.pdf) (http://www2.aap.org/richmondcenter/pdfs/IOMReport_BlueprintforNation.pdf). Washington, DC: National Academies Press; 2007.
10. World Health Organization. *WHO Report on the Global Tobacco Epidemic, 2008—The MPOWER Package* [\[link\]](http://www.who.int/tobacco/mpower/mpower_report_full_2008.pdf) (http://www.who.int/tobacco/mpower/mpower_report_full_2008.pdf). Geneva, Switzerland: World Health Organization; 2008.
11. The Task Force on Community Preventive Services. *Part 1: Changing Risk Behaviors and Addressing Environmental Challenges. Chapter 1—Tobacco* [\[link\]](http://www.thecommunityguide.org/tobacco/Tobacco.pdf) (<http://www.thecommunityguide.org/tobacco/Tobacco.pdf>). In: The Guide to Community Preventive Services: What Works to Promote Health? New York, NY: Oxford University Press; 2005.
12. CDC. *State Tobacco Activities Tracking and Evaluation (STATE) System* (<http://www.cdc.gov/statesystem/>). Accessed Nov 2, 2015.
13. Hopkins DP, Razi S, Leeks KD, et al. *Smokefree policies to reduce tobacco use: a systematic review* [\[link\]](http://www.ncbi.nlm.nih.gov/pubmed/20117612) (<http://www.ncbi.nlm.nih.gov/pubmed/20117612>). American Journal of Preventive Medicine 2010;38(2S):275–89.
14. Hahn EJ. *Smokefree legislation: a review of health and economic outcomes research* [\[link\]](http://www.ncbi.nlm.nih.gov/pubmed/21074680) (<http://www.ncbi.nlm.nih.gov/pubmed/21074680>). American Journal of Preventive Medicine 2010;39(6 Suppl 1):S66–S76.
15. Institute of Medicine. *Secondhand Smoke Exposure and Cardiovascular Effects: Making Sense of the Evidence* [\[link\]](http://iom.nationalacademies.org/Reports/2009/Secondhand-Smoke-Exposure-and-Cardiovascular-Effects-Making-Sense-of-the-Evidence.aspx) (<http://iom.nationalacademies.org/Reports/2009/Secondhand-Smoke-Exposure-and-Cardiovascular-Effects-Making-Sense-of-the-Evidence.aspx>). Washington, DC: National Academies Press; 2010.

16. Millett C, Lee JT, Lavery AA, et al. Hospital admissions for childhood asthma after smoke-free legislation in England [\[↗\]](http://pediatrics.aappublications.org/content/early/2013/01/15/peds.2012-2592.full.pdf+html) (<http://pediatrics.aappublications.org/content/early/2013/01/15/peds.2012-2592.full.pdf+html>). *Pediatrics* 2013;131(2):e495–e501.
17. Herman PM, Walsh ME. Hospital admissions for acute myocardial infarction, angina, stroke, and asthma after implementation of Arizona's comprehensive statewide smoking ban [\[↗\]](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3036684/pdf/491.pdf) (<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3036684/pdf/491.pdf>). *American Journal of Public Health* 2011;101(3):491–6.
18. Campaign for Tobacco-Free Kids. Broken Promises to Our Children: A State-by-State Look at the 1998 State Tobacco Settlement 16 Years Later [\[↗\]](http://www.tobaccofreekids.org/microsites/statereport2015/) (<http://www.tobaccofreekids.org/microsites/statereport2015/>). Washington, DC: Campaign for Tobacco Free Kids; 2015.
19. Farrelly MC, Pechacek TP, Chaloupka FJ. The impact of tobacco control program expenditures on aggregate cigarette sales: 1981–2000 [\[↗\]](http://www.ncbi.nlm.nih.gov/pubmed/12946462) (<http://www.ncbi.nlm.nih.gov/pubmed/12946462>). *Journal of Health Economics* 2003;22(5):843–59.
20. Tauras JA, Chaloupka FJ, Farrelly MC, et al. State tobacco control spending and youth smoking [\[↗\]](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1449175/) (<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1449175/>). *American Journal of Public Health* 2005;95(4):338–44.