



Health Care Spending for Chronic Conditions in Michigan

Chronic conditions affect millions of Americans and have a major impact on U.S. health care spending each year. Chronic diseases account for seven out of every ten deaths in the United States annually,^{1,2} and it is estimated that more than 75 percent of all health care costs are associated with chronic diseases.³ Approximately 45 percent of Americans nationwide are affected by at least one chronic condition,⁴ and 60 percent of adults in Michigan suffer from a chronic condition.¹

In 2010, roughly 30 percent of total national health care spending—\$347 billion—was associated with the following chronic conditions: heart conditions, cancer, chronic obstructive pulmonary disease, asthma, diabetes, and hypertension.⁵ The largest contributing factors to the increase in prevalence of such conditions include physical inactivity, tobacco use, and poor diet.⁶ Currently, over 95 percent of Michigan adults report at least one behavior that may increase their risk for chronic conditions.¹

This issue brief summarizes health care spending in Michigan for five common chronic conditions for Blue Cross and Blue Shield of Michigan (BCBSM) members:

- Coronary artery disease (CAD)
- Congestive Heart Failure (CHF)
- Chronic obstructive pulmonary disease (COPD)
- Depression
- Diabetes

¹ Michigan Department of Community Health. 2014. Overview of the Chronic Disease Epidemiology Unit. https://www.michigan.gov/mdch/0,1607,7-132-2945_5104_5279-185986--,00.html (accessed 2/14/14).

² U.S. Department of Health & Human Services. November 2011. At Risk: Pre-existing conditions could affect 1 in 2 Americans: 129 million people could be denied affordable coverage without health reform <http://aspe.hhs.gov/health/reports/2012/pre-existing/> (accessed 12/26/13).

³ Centers for Disease Control and Prevention. December 17, 2009. The Power to Prevent, The Call to Control: At A Glance 2009. <http://www.cdc.gov/chronicdisease/resources/publications/AAG/chronic.htm> (accessed 12/16/13).

⁴ S. Wu and A. Green. Projection of Chronic Illness Prevalence and Cost Inflation (Santa Monica, CA: RAND, October 2000).

⁵ American Public Health Association. N. d. Public Health and Chronic Disease. Cost Savings and Return on Investment. http://www.apha.org/~media/files/pdf/fact_sheets/chronicdiseasefact_final.ashx (accessed 12/17/13).

⁶ Partnership to Fight Chronic Disease. N.d. The Growing Crisis of Chronic Disease in the United States. http://www.caaccess.org/pdf/chronic_disease.pdf (accessed 12/16/13).

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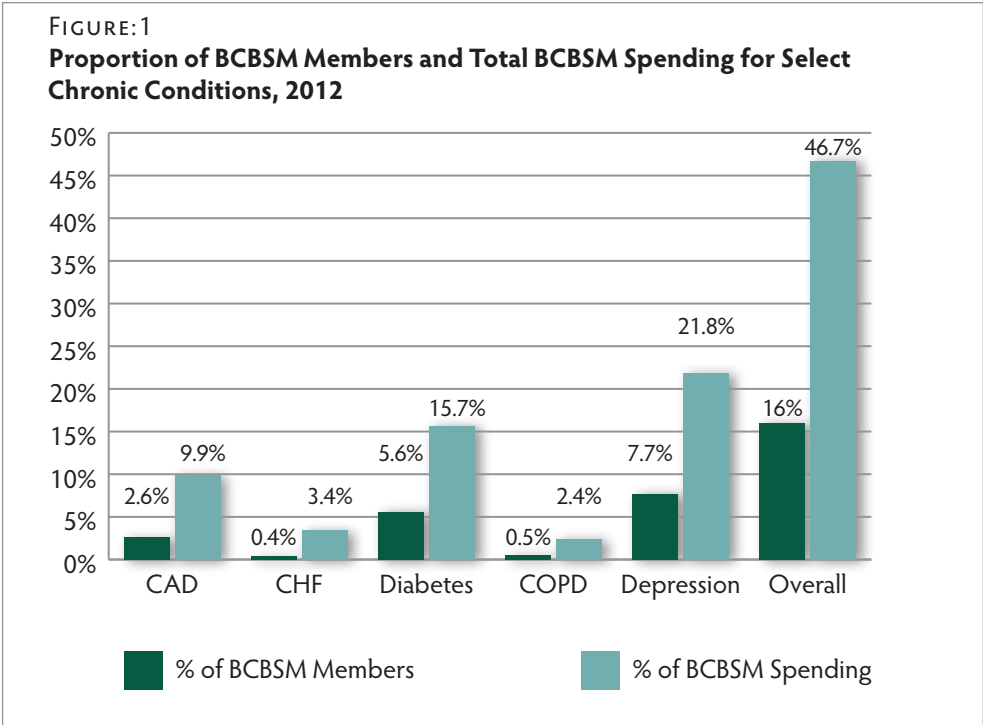
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Spending by Chronic Condition, Michigan

In 2012, approximately 16 percent of the BCBSM population had at least one of the five chronic conditions of interest: coronary artery disease, congestive heart failure, chronic obstructive pulmonary disease, depression or diabetes. **FIGURE 1** Total health care spending was disproportionately higher for members with these conditions; they made up 16 percent of the BCBSM population but accounted for 47 percent of total BCBSM spending in 2012. Those with congestive heart failure and chronic obstructive pulmonary disease accounted for 5.8 percent of the total spending. Depression was the most prevalent condition, with approximately 8 percent of BCBSM members having a primary or secondary diagnosis of depression in 2012. Spending for members with depression accounted for 22 percent of total BCBSM spending.



Source: CHRT analysis of BCBSM Data.

Note: In this analysis, individuals with more than one of the selected conditions—approximately two percent of BCBSM members—were counted in total spending and volume for each chronic condition.



Spending by Chronic Condition, Michigan *(continued)*

Average annual health care spending in 2012 for BCBSM members with any of these five chronic conditions ranged from \$13,801 for those with diabetes to \$47,412 for those with CHF. By comparison, average annual spending for BCBSM members without any of the selected chronic conditions was \$3,443 in the same year. Condition-specific annual spending was greatest for congestive heart failure, \$16,829 per patient. **FIGURE 2**

On average, 31 percent of total spending for those with these chronic diseases was directly related to the treatment of the condition itself, with the remaining 69 percent due to treatment of other health issues.

FIGURE:2

Condition-Specific Spending for Members with Select Chronic Conditions, BCBSM, 2012

Condition	Average Condition-Specific Spending per Member (% of total spending)	Average Non-Condition-Specific Spending per Member (% of total spending)	Average Annual Total Spending per Member
Congestive Heart Failure	\$16,829 (35%)	\$30,583 (65%)	\$47,412
Chronic Obstructive Pulmonary Disease	\$4,185 (18%)	\$18,996 (82%)	\$23,181
Coronary Artery Disease	\$5,937 (31%)	\$13,071 (69%)	\$19,008
Depression	\$5,643 (40%)	\$8,356 (60%)	\$13,999
Diabetes	\$4,242 (31%)	\$9,558 (69%)	\$13,801
No Selected Chronic Conditions	–	\$3,443 (100%)	\$3,443

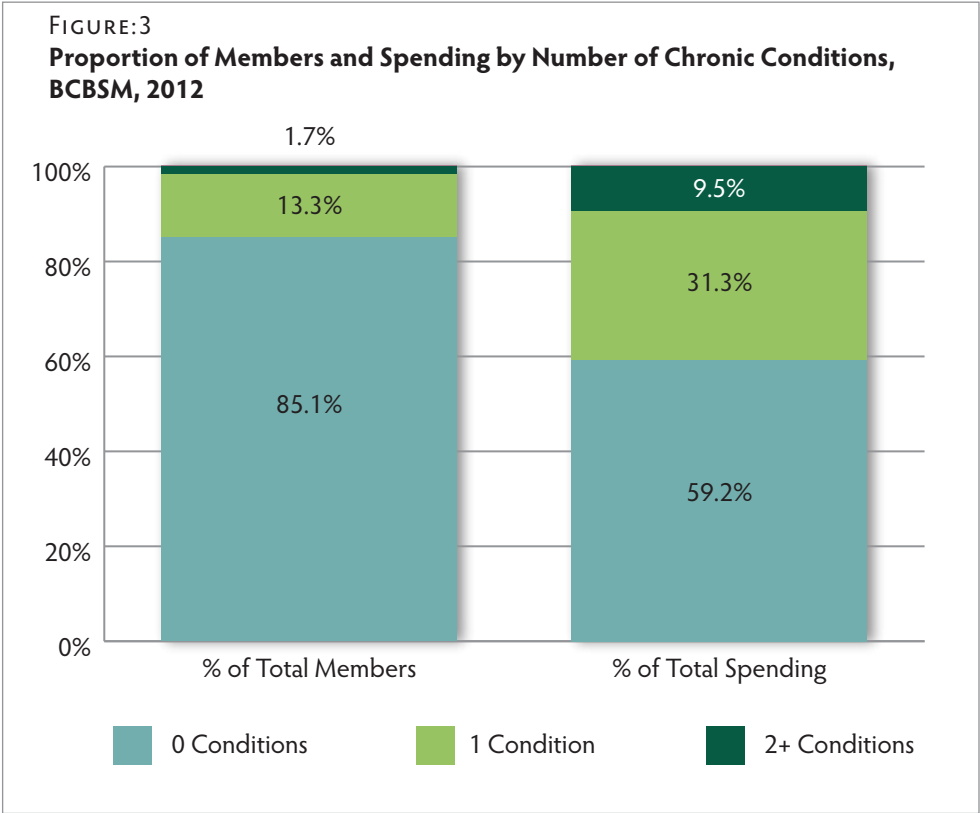
Source: CHRT analysis of BCBSM Data.



Number of Chronic Conditions

In 2012, 13 percent of BCBSM members had one of the five chronic conditions in this study. Spending for these members was disproportionately high, accounting for 31 percent of total BCBSM health expenditures.

FIGURE 3 Spending was higher for individuals with two or more chronic conditions, with only 1.7 percent of members accounting for 9.5 percent of total spending. By comparison, the 85 percent of BCBSM members with none of the five chronic conditions accounted for 59 percent of total BCBSM spending.

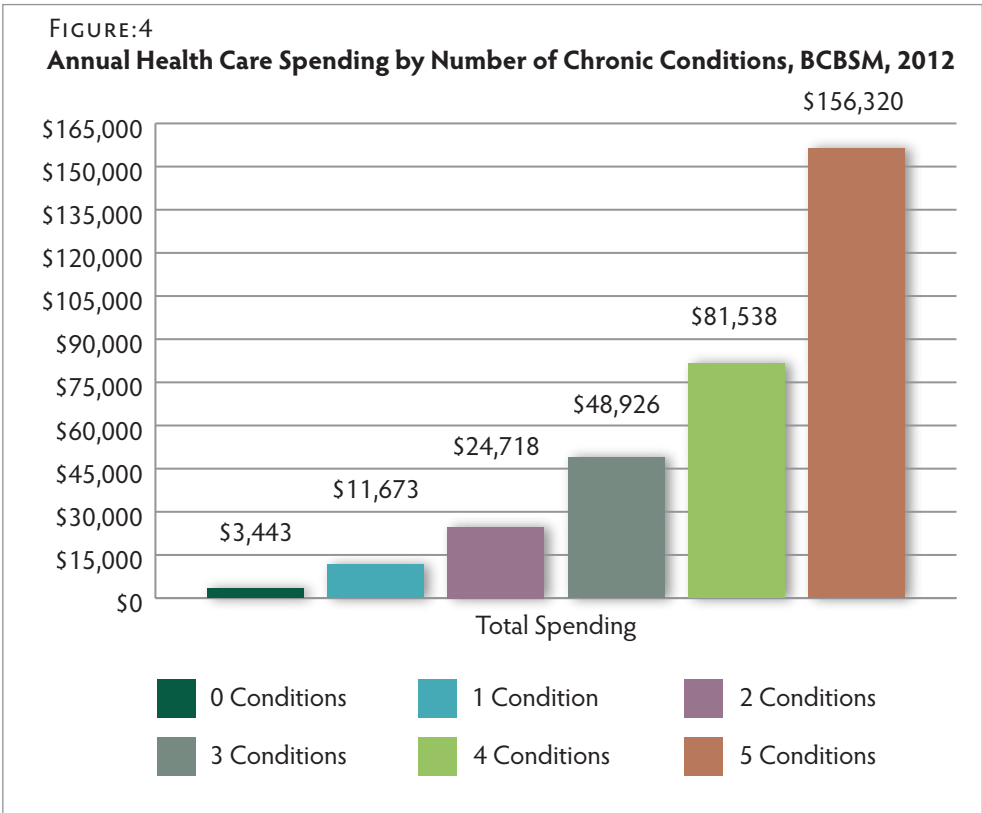


Source: CHRT analysis of BCBSM Data.



Number of Chronic Conditions *(continued)*

Annual BCBSM spending per member increased as the number of chronic conditions increased, and nearly doubled with each additional chronic condition. Average per capita spending ranged from \$11,673 for members with one of the five chronic conditions to \$156,320 for members with all five conditions. **FIGURE 4** Annual spending for members with one chronic condition was 3.4 times greater than spending for those with no chronic conditions.



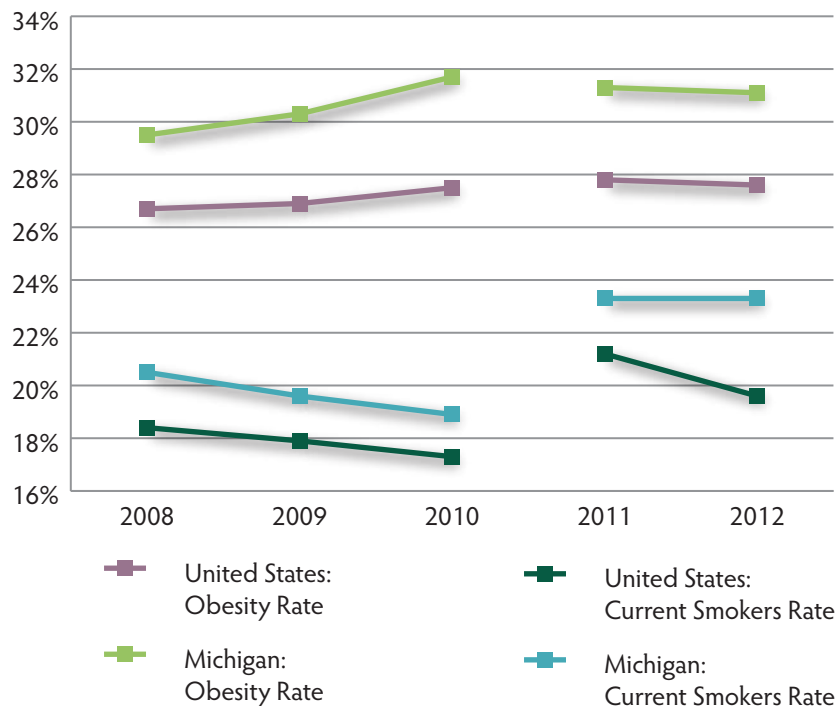
Source: CHRT analysis of BCBSM Data.



Risk Factors Associated with Chronic Conditions

Two of the most common risk factors associated with chronic conditions are tobacco use and obesity, both areas in which Michigan has higher rates than the national average. In Michigan in 2012, approximately 22.3 percent of adults were smokers, compared to the national average of 19.9 percent **FIGURE 5**. Additionally, Michigan had a significantly greater proportion of obese individuals than the U.S. average, 31.1 percent compared to 27.6 percent, respectively. Among privately insured individuals in one study in Michigan, 35 percent were categorized as obese.⁷ While obesity rates declined slightly from 2011 to 2012 in both Michigan and the United States, the declines were minor (two-tenths of a percentage point) and the rates remained high. The high rates of smoking and obesity in Michigan place the state's population at an increased risk for developing chronic conditions.

FIGURE 5
Risk Factors Associated with Chronic Conditions, U.S. and Michigan, 2008–2012



Source: CDC Behavioral Risk Factor Surveillance System (BRFSS), 2012.

Note: Due to changes in BRFSS methodology, estimates from 2011 onward cannot be compared to estimates from previous years.

⁷ B. Hemmings, January 2014. Obesity in Michigan: Impact and Opportunity. Ann Arbor, MI: CHRT. <http://www.chrt.org/assets/price-of-care/CHRT-Issue-Brief-January-2014-Obesity-in-Michigan.pdf> (accessed 02/14/14)



Risk Factors Associated with Chronic Conditions *(continued)*

Current research suggests that targeted obesity prevention programs can be effective. While the studies on prevention do not yet provide strong evidence around programs that work, one meta-analysis of obesity interventions found that prevention programs with certain characteristics have a greater chance of success. Specifically, the most effective programs targeted children, adolescents, and women and were short-term, voluntary, and focused exclusively on weight reduction.^{8,9} Other successful programs improved healthy behaviors in children through school- and family-oriented interventions, by working on lifestyle changes around diet and exercise.^{10,11}

There are also two evidence-based medical interventions that have been shown to reduce obesity: bariatric surgery and intensive behavioral therapy (IBT), a long-term patient counseling strategy.¹² IBT is a required preventive service under the Affordable Care Act, meaning that health plans must cover this intervention without any patient cost sharing.^{13,14}

From 2011 to 2012, the smoking rate in Michigan remained unchanged at 23.3 percent, while the national rate decreased by 1.6 percentage points, from 21.2 percent to 19.6 percent. Effective strategies to prevent tobacco use at a population level include increased tobacco taxes, smoke-free policies, and aggressive anti-smoking media campaigns, in addition to tobacco cessation interventions for people who want to quit.^{15,16,17} There is general consensus among researchers that increasing taxes by 10 percent reduces tobacco use by 3 to 5 percent—and by over 7 percent among children. Michigan's cigarette tax is currently \$2 per pack, compared to the national average of \$1.54 per pack.¹⁸ In 2009, Michigan also enacted the Dr. Ron Davis Smoke Free Air Law, one of 28 states to do so.^{19,20}

⁸ E. Stice. September 2006. A meta-analytic review of obesity prevention programs for children and adolescents: The skinny on interventions that work. *Psychol Bull.* 132(5): 667–691. <http://psycnet.apa.org/psycinfo/2006-10465-002> (accessed 8/13/14).

⁹ A. Hadley, M.S. E. Hair, and N. Dreisbach. March 2010. What Works For The Prevention And Treatment Of Obesity Among Children: Lessons from Experimental Evaluations of Programs and Interventions. *Child Trends Fact Sheet.* http://www.childtrends.org/wp-content/uploads/2013/03/Child_Trends_2010_03_25_FS_WWObesity.pdf (accessed 8/1/14).

¹⁰ M. J. Muller, et al. 2001. Prevention of obesity- more than an intention. Concept and first results of the Kiel Obesity Prevention Study (KOPS). *Int J Obes Relat Metab Disord.* 25 Suppl 1: S66–74. <http://europepmc.org/abstract/med/11466593> (accessed 7/21/14).

¹¹ Harvard School of Public Health. N.d. Obesity Prevention Strategies. <http://www.hsph.harvard.edu/obesity-prevention-source/obesity-prevention/> (accessed 4/16/14).

¹² B. Hemmings, January, 2014. Obesity in Michigan

¹³ The U.S. Preventive Services Task Force does not explicitly define the mandated components of IBT but suggests that effective IBT interventions involve a minimum of 12 counseling sessions and multiple behavioral management activities.

¹⁴ U.S. Preventive Services Task Force. June 2012. Screening for and Management of Obesity In Adults. <http://www.uspreventiveservicestaskforce.org/uspstf11/obeseadult/obesers.htm> (accessed 8/7/14).

¹⁵ Centers for Disease Control and Prevention. September 9, 2011. Vital signs: current cigarette smoking among adults aged ≥ 18 years—United States, 2005–2010. *Morbidity and mortality weekly report* 60(35): 1207–12.

¹⁶ Centers for Disease Control and Prevention. September 12, 2012. Tobacco Use. <http://www.cdc.gov/WinnableBattles/Tobacco/index.html> (accessed 6/23/14).

¹⁷ World Health Organization. Reducing risks and preventing disease: population-wide interventions. http://www.who.int/nmh/publications/ncd_report_chapter4.pdf (accessed 4/16/14).

¹⁸ Tobacco Free Kids. June 20, 2014. State Cigarette Excise Tax Rates and Rankings <http://www.tobaccofreekids.org/research/factsheets/pdf/0097.pdf> (accessed 7/2/14).

¹⁹ The Dr. Ron Davis Smoke Free Air Law prevents individuals from exposure to secondhand tobacco smoke in all bars, businesses, and restaurants.

²⁰ Michigan Department of Community Health. Michigan's Smoke Free Air Law. 2014. http://www.michigan.gov/mdch/0,1607,7-132-2940_2955_2973_55026---,00.html (accessed 7/2/14).

Conclusion

Chronic conditions have a significant impact on health care spending. Over the next several years, the CDC estimates that total spending for chronic conditions will rise considerably. Because Michigan has higher obesity and tobacco use rates than the national average, the state is at higher risk of increased spending for chronic conditions. Michigan should continue to commission aggressive anti-smoking campaigns, allocate additional resources to the implementation of targeted obesity prevention programs, and focus on proven, evidence-based obesity reduction strategies. By working to reduce the prevalence of these risk factors, Michigan may limit the incidence of chronic conditions and help stem the rise in health care spending.



Methodology

The study population included all BCBSM members ages 18–64 that had pharmacy coverage, were continuously enrolled for at least 11 months in 2012, and were Michigan residents. The analyses used 2012 claims data, and applied disease definitions from the Healthcare Effectiveness Data and Information Set (HEDIS) criteria for all conditions except depression. The definition of depression was modified to be more inclusive than the HEDIS definition.²¹ HEDIS criteria were used for ease of data extraction, since the BCBSM Physician Group Incentive Program utilizes HEDIS criteria for reporting purposes.

This analysis further stratified BCBSM member spending as condition-specific or non-condition-specific. Spending was condition-specific if claims contained a primary or secondary diagnosis code related to the chronic condition. All other claims, including all pharmacy claims, were allocated as non-condition-specific spending.

²¹ For the BCBSM data, claims for depression were identified for individuals with at least one of the following diagnosis codes: 296.20–296.25, 296.30–296.35, 298.0, and 311. This was a more inclusive definition of depression than the HEDIS criteria. The HEDIS criteria define depression in claims data as individuals prescribed antidepressants, without regard to diagnoses. More information on HEDIS measurements can be found at <http://www.ncqa.org/HEDISQualityMeasurement.aspx>.

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