

HEALTH CARE AND SOCIAL SERVICE SPENDING AND OUTCOMES: How Does Massachusetts Compare with Other States?

EXECUTIVE SUMMARY

MAY 2016



*prepared for the
Blue Cross Blue Shield of Massachusetts Foundation by
Maureen Canavan, Erika Rogan, Leslie A. Curry,
Lauren A. Taylor, and Elizabeth H. Bradley*

Yale Global Health Leadership Institute

EXECUTIVE SUMMARY

It is well known by now that despite being one of the highest spenders on health care, the United States performs considerably worse than other industrialized countries on several measures of health, including life expectancy, infant mortality, and maternal mortality, and it has a higher prevalence of chronic diseases including heart disease, diabetes, chronic lung disease, and overall disability (Woolf and Aron 2013). Contrary to popular belief, these health disparities are not fully explained by racial and economic inequality. Americans who are white, insured, and college educated have been shown to have poorer health than their European counterparts (Avendano, Glymour et al. 2009, Woolf and Aron 2013). As highlighted by previous research in *The American Health Care Paradox: Why Spending More Is Getting Us Less* (Bradley and Taylor 2013), the United States stands out from its peers by spending more on health care services (largely medical care) compared with spending on social services (such as housing support, nutritional assistance, income support, and education) that may more sustainably produce health.

International comparisons of industrialized countries show that nations with a higher ratio of social service and public health spending relative to health care spending have better health outcomes (Bradley, Elkins et al. 2011, Bradley and Taylor 2013). Social services include support in realms such as nutritional assistance, job training, income support, and housing. This finding is consistent with decades of research (McGinnis, Williams-Russo et al. 2002, Marmot 2005) underscoring the importance of social, behavioral, and environmental factors on health outcomes. This body of evidence, which academics refer to as the “social determinants of health” literature, indicates that the vast majority of premature morbidity and mortality is attributable to social, rather than medical, determinants of health. Physicians, particularly in primary care, have identified social conditions as “the blind side” of the current health care system (Robert Wood Johnson Foundation 2011). Recently, studies of innovative programs targeted at high-cost, high-need patients have found that addressing social needs is a key component of reducing health care expenditures (Bachrach, Pfister et al. 2014).

OBJECTIVES OF THIS ANALYSIS

With this internationally focused literature as a backdrop, the analysis reported here focused on the United States and examined the link between state-level spending on social services, public health, and health care and health behaviors and outcomes for the following year. Particular focus was given to Massachusetts’ experience in comparison with the experiences of its neighboring states (Connecticut, Maine, New Hampshire, New Jersey, New York, Rhode Island, and Vermont) and with national averages. This analysis relied on data for a 10-year period (2000–2009) from a variety of public sources. Below is a summary of key questions into which this analysis can offer insight.

Q.1: What is the relationship between spending on health care and social services plus public health¹ and subsequent health behaviors and outcomes² within the United States?

ANSWER:

A higher ratio of social service to health care spending is positively associated with better health outcomes at the state level. On average, states with higher ratios of social service to health care spending have statistically better health behaviors and outcomes on many, though not all, measures.

Q.2: Does Massachusetts spend more on health care than neighboring states do or than the national average?

ANSWER:

YES and NO, depending on how health care spending is measured. Massachusetts has higher Medicaid and higher total health care *spending per capita* (Figures 1 and 2) than neighboring states and the average of the other states in the nation.³ However, Medicaid and total health care *spending as a percentage of state gross domestic product (GDP)* (Figures 3 and 4) do not differ from neighboring states or the nation. The latter approach to comparing spending controls in part for differences across states in costs and prices (for all goods and services, not just health care), which may result in a more accurate depiction of relative spending.

1 Throughout the remainder of the report, when social service spending and ratios of social service to total health care spending are mentioned, public health is included in social service spending. Both social service and public health spending are categories that focus on addressing social and environmental determinants of health for the population, whereas health care spending supports medical care delivered to individuals.

2 The following health behaviors and outcomes were assessed: the percent of adults with obesity (body mass index of 30 or more); the percent of adults with asthma; the percent of adults reporting 14 or more days in the last 30 days as mentally unhealthy; the percent of adults reporting 14 or more days in the last 30 days with activity limitations; the percent of adults who did not participate in leisure-time physical activity in the past month; the percent of adults who did not consume at least five servings of fruit and vegetables per day during the past month; the percent of adults who smoked tobacco each day during the past month; the percent of adults who reported heavy drinking (drinking 15 or more drinks per week for men or eight or more drinks per week for women) in the past month; the percent of adults who reported illicit drug use (excluding marijuana) in the past month; mortality rates for acute myocardial infarction, lung cancer, cervical cancer, colorectal cancer, breast cancer, and type II diabetes; and post-neonatal mortality rates (measured in three-year intervals) per 100,000 population.

3 Neither of these differences is large enough to reach statistical significance.

FIGURE 1. MEDICAID SPENDING PER CAPITA (2009)

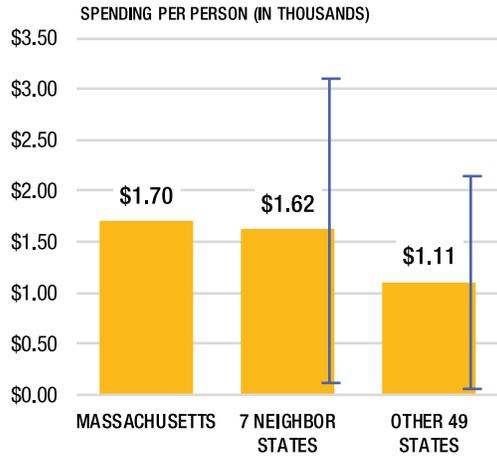


FIGURE 2. TOTAL HEALTH CARE SPENDING PER CAPITA (2009)

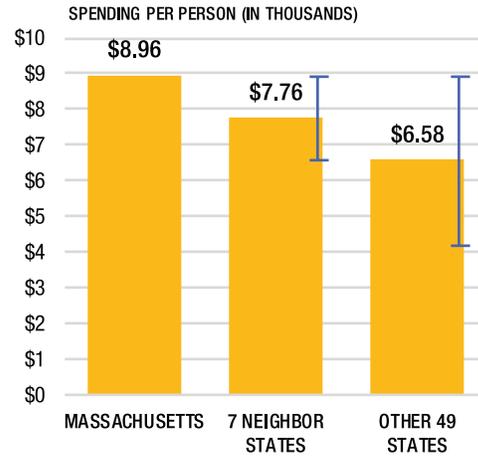


FIGURE 3. MEDICAID SPENDING AS A PERCENTAGE OF STATE GDP (2009)

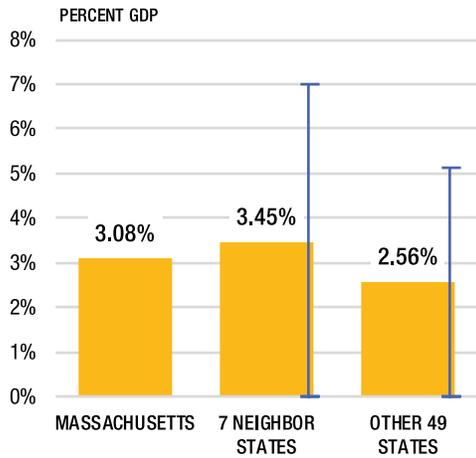
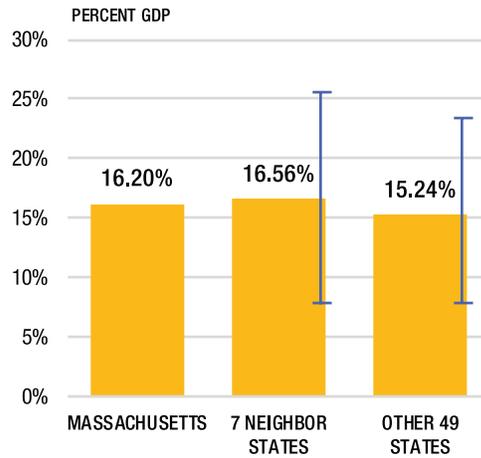


FIGURE 4. TOTAL HEALTH CARE SPENDING AS A PERCENTAGE OF STATE GDP (2009)



Q.3: Does Massachusetts spend more on social services than neighboring states or than the national average?

ANSWER:

YES and NO. The total amount that Massachusetts spends on social services per capita (Figure 5) is similar to that spent by neighboring states, all of which spend more than the national average. However, as a percentage of its GDP, Massachusetts has lower total social service spending relative to neighboring states and national averages (Figure 6).⁴ The one component of social service spending in which Massachusetts is significantly different from its neighboring states is in housing spending per capita. In this category, Massachusetts spends significantly more than its peers.

FIGURE 5. SOCIAL SERVICE SPENDING PER CAPITA (2009)

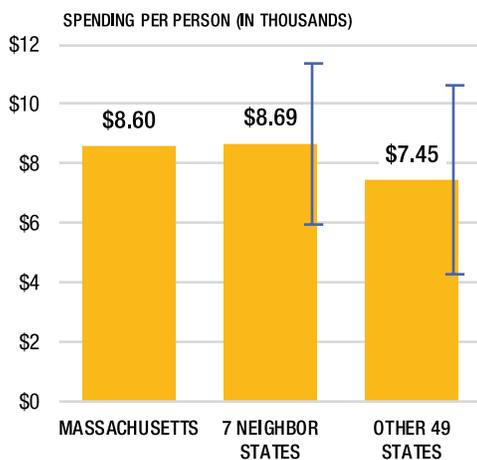
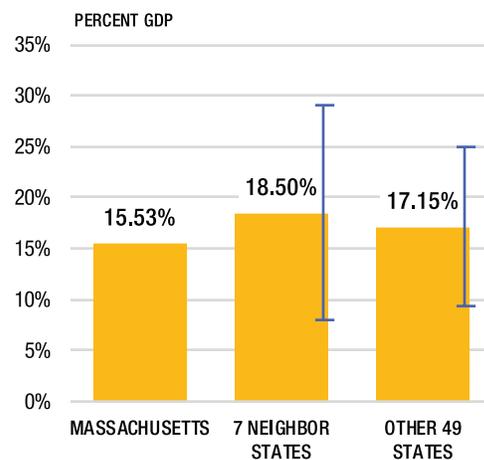


FIGURE 6. SOCIAL SERVICE SPENDING AS A PERCENTAGE OF STATE GDP (2009)



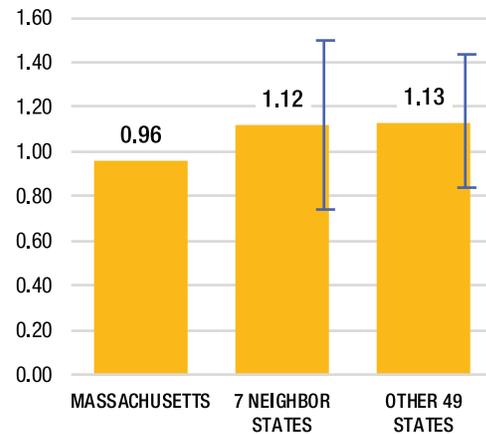
⁴ None of these differences are large enough to reach statistical significance.

Q.4: How does Massachusetts' ratio of social service spending to health care spending compare with the ratio for neighboring states and with the national average?

ANSWER:

Massachusetts' ratio is among the lowest in the nation. Although the state's total spending for social services and health care as a percent of GDP is close to the national average, the state's allocation between these two components favors health care spending, resulting in a consistently low ratio of social service to health care spending (Figure 7).⁵ In 2009 (the most recent year for which data was available), Massachusetts' ratio was the lowest in the United States.

FIGURE 7. SOCIAL SERVICE TO TOTAL HEALTH CARE SPENDING RATIO (2009)



Q.5: How does Massachusetts compare with its neighboring states and the country in terms of health behaviors and outcomes?

ANSWER:

IT DEPENDS. For most measures of health behaviors and outcomes used in this analysis, Massachusetts' performance is not statistically different from the performances of neighboring states or the average of the other 49 states. However, its neonatal mortality rate is statistically lower than the rate in neighboring states.

⁵ Neither the difference between Massachusetts' ratio of social service to total health care spending and the average ratio of neighboring states nor the difference between Massachusetts' ratio of social service to total health care spending and the average ratio of the other states is statistically significant.

Q.6: How does Massachusetts' actual health compare with what might be predicted⁶ given the state's socioeconomic, demographic, and spending profile?

ANSWER:

BETTER THAN PREDICTED. For several measures of health, Massachusetts' actual experience outperforms the experience that would be predicted based on the state's socioeconomic, demographic, and spending performance in 2009. Because no statistical test exists to compare actual with predicted experience within one state (and therefore identify statistical significance), highlighted are health behaviors and outcomes with substantive differences (at least 25 percent) from those that were predicted. Massachusetts had rates substantively lower than predicted for smoking, for mortality from acute myocardial infarction (AMI or heart attack), and for colorectal cancer mortality. No health measures showed worse performance than predicted given the socioeconomic, demographic, and spending profile of the state.

6 Predictions for each health behavior and outcome were calculated for Massachusetts using a regression model with data on sociodemographic and spending variables for the other 49 states. The sociodemographic and spending variables for Massachusetts were entered into a model to obtain predicted values for each health outcome and behavior. These predicted values were then compared with the actual rates of health behaviors and outcomes observed within Massachusetts in 2009. A more detailed description of methodology and data analysis can be found in Appendix A of the full report.

WHAT DOES THIS MEAN FOR MASSACHUSETTS?

Massachusetts has achieved a particularly strong record of health behaviors and outcomes in three areas. Smoking rates and mortality rates from AMI (heart attack) and colorectal cancer are lower than would be predicted by the socioeconomic, demographic, and spending profile of the state. It is challenging to parse out the drivers of these findings. For example, performance in smoking rates may be influenced by prior public health initiatives in Massachusetts (e.g., the state's anti-tobacco campaign in the 1990s [Siegel 1998]), while mortality rates from heart attacks and colorectal cancer may be influenced by the availability and quality of medical care in the state.

For all other health behaviors and outcomes, Massachusetts' performance is average, despite substantially higher health care spending and total combined health care and social service spending. As mentioned above, however, Massachusetts has among the lowest ratios of social service to health care spending. In national analyses, a higher ratio has been associated with better health outcomes. Thus, Massachusetts' particularly low ratio may suggest opportunities to improve health by directing more attention toward the social determinants, rather than the medical determinants, of health.

A shift in mental models and financial incentives for providers may foster effective health care and social service coordination, potentially limiting duplication and increasing synergy across these sectors. Shifts in mental models will require increased opportunities for health care and social service providers to recognize the interdependent nature of their work and client bases. Although these two sectors are frequently seen as competing priorities in state budgets, in fact the degree to which each can succeed is dependent on the other. Critical will be the development of innovative financing and payment schemes that reward coordination between health care and social service providers in ways that promote health outcomes at reduced overall costs to the state—including expenditures on health care, social services, and public health.

EXECUTIVE SUMMARY BIBLIOGRAPHY

- Avendano, M., M. M. Glymour, J. Banks, and J. P. Mackenbach (2009). "Health disadvantage in U.S. adults aged 50 to 74 years: A comparison of the health of rich and poor Americans with that of Europeans." *American Journal of Public Health* 99(3): 540-548.
- Bachrach, D., H. Pfister, K. Wallis, and M. Lipson (2014). *Addressing patients' social needs: An emerging business case for provider investment*. New York, The Commonwealth Fund.
- Bradley, E. H., B. R. Elkins, J. Herrin, and B. Elbel (2011). "Health and social services expenditures: associations with health outcomes." *BMJ Qual Saf* 20(10): 826-831.
- Bradley, E. H. and L. A. Taylor (2013). *The American health care paradox: Why spending more is getting us less*. New York, Public Affairs.
- Marmot, M. (2005). "Social determinants of health inequalities." *Lancet* 365(9464): 1099-1104.
- McGinnis, J. M., P. Williams-Russo, and J. R. Knickman (2002). "The case for more active policy attention to health promotion." *Health Aff (Millwood)* 21(2): 78-93.
- Robert Wood Johnson Foundation (2011). "Health care's blind side: The overlooked connection between social needs and health."
- Siegel, M. (1998). "Mass media antismoking campaigns: A powerful tool for health promotion." *Annals of Internal Medicine* 129(2): 128-132.
- Woolf, S. H. and L. Aron, eds., (2013). *U.S. health in international perspective: Shorter lives, poorer health*. Washington, DC, National Academies Press.

15
years



FOUNDATION
MASSACHUSETTS