



Lynn Johnson. Used with permission from the Robert Wood Johnson Foundation.



Roger Tully. Used with permission from the Robert Wood Johnson Foundation.

Investments in Education Are Investments in Health: *The State Perspective*

ANDREW J. BARNES, PHD ■ ROSE S. BONO ■ APRIL D. KIMMEL, PHD ■ STEVEN H. WOOLF, MD, MPH

Can we spend less on health care by investing in education?

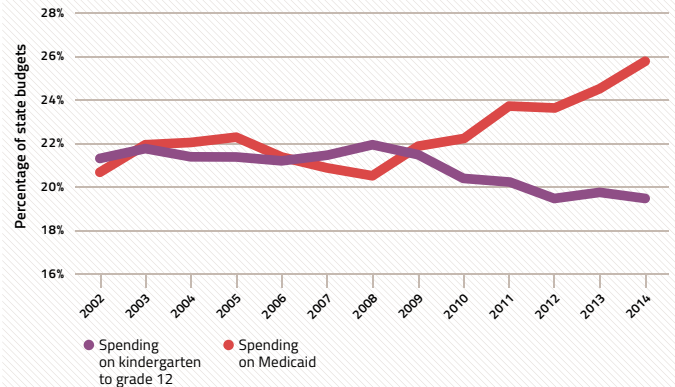
Across the country, health care accounts for an overwhelming proportion of state budgets. In particular, Medicaid expenditures currently account for 24.5 percent of state spending¹ and these state expenditures are expected to increase by 68 percent to \$342.5 billion by 2022.² Medicaid spending is projected to continue to outpace overall growth in state general fund budgets due to Medicaid expansion and increased enrollment among individuals who were already eligible prior to expansion but had not enrolled.³

This environment, coupled with pressure to balance budgets, puts increasing fiscal pressure on governors and state legislatures to limit spending in other areas, including education (see Figure 1). **What many fail to realize, however, is that education and health are intrinsically linked. Investments in education are investments in health—and can potentially lower health care spending.**

State outlays for health care go disproportionately to the care of people with limited education, who tend to be sicker and require more intensive care. About 80 percent of Medicaid costs go toward people with chronic diseases,⁴ such as diabetes and heart disease, which occur at much higher rates for people with a high school education or less.⁵⁻⁷ Diabetes occurs in 12.2 percent of adults with less than a high school education (see Figure 2),⁸ compared to 3.4 percent in those with a Bachelor’s degree.⁶ The economic implications are large: medical and indirect costs for diabetes vary across states from \$0.4 billion to \$27.6 billion per year.⁹

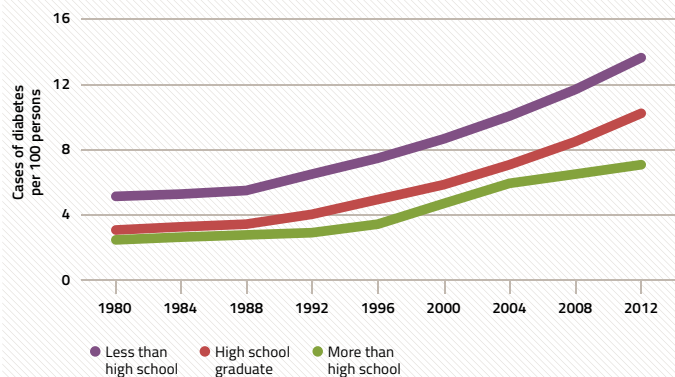
Education can improve health and help control the costs of health care (see Figure 3). Every additional year of education is associated with a host of improved health outcomes.¹⁰⁻¹³ Investments in education may decrease the frequency of chronic diseases like hypertension, obesity,¹⁴ and diabetes.⁶ Increasing educational attainment is associated with healthier behaviors related to exercise, smoking, and alcohol use.^{13,15,16} And education is important for obtaining jobs that include health benefits, such as health insurance coverage, and the income to not only live a healthier lifestyle but also live in neighborhoods that promote good health.^{16,17} (See additional information [HERE](#)).

Figure 1. State spending on Medicaid versus kindergarten to grade 12 education



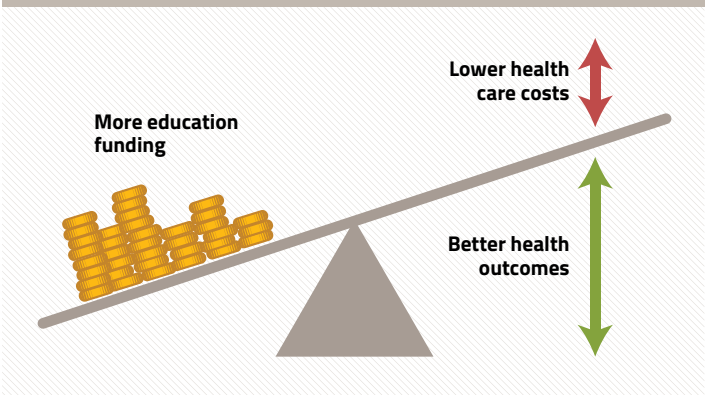
Source: National Association of State Budget Officers, *State Expenditure Report 2014*.

Figure 2. The prevalence of diabetes is increasing, especially among people with less educational attainment



Source: Geiss et al. *JAMA* 2014;312:1218-26.

Figure 3. More funding for education may work as a counterweight to rising health care costs by improving health



According to one study, if the health status of less-educated Americans was the same as that of their college-educated peers, the related improvements in health would save more than **a trillion dollars annually**.¹⁸ For example, among African American men, each additional high school graduate could save more than \$30,000 in lifetime health costs.¹⁹ With an estimated 200,000 African American young men who do not complete high school,²⁰ this could mean savings of more than \$6 billion in total health costs each year. The savings for each state would of course be smaller, but significant nonetheless.

THE LARGER RETURN ON INVESTMENT FROM EDUCATION

The economic implications of a healthier, more educated population—and thus the total return on investment—go beyond spending on health care. Educated Americans are more likely to be employed, are more productive, and are less likely to require economic assistance and safety net programs. Their higher earnings contribute to state tax revenue and a stronger state economy; in their communities, higher earnings increase property values and the tax base for local services (see Figure 4).

The collective return on investment spills out to other areas of state spending. For example, halving the number of 20-year-olds who do not complete high school could save up to \$45 billion across multiple sectors.²¹ Demand for welfare services may be diminished, and lower crime rates associated with higher graduation rates mean lower costs for the criminal justice system, correctional facilities, and the courts. Therefore, governors and state legislatures may find that improving education may be more important to improving health and fiscal balance than spending in the health sector alone.²²

Figure 4. Beyond improving health, education brings broader economic returns



SHORT-TERM AND LONG-TERM BENEFITS

Investments in education have the potential to save money on Medicaid spending in both the short- and long-run. For example, extending the length of the preschool day improves the physical health of children,²³ and Head Start programs are associated with reductions in childhood^{24,25} and adolescent²⁶ obesity. Nearly 17 percent of children and adolescents are obese,²⁷ making them more likely to require health care²⁸ and to miss school.²⁹ Healthier children place fewer demands on state-financed health care and social services.

In the longer term, investments in education can also save Medicaid dollars by reducing the incidence of costly chronic diseases later in life such as diabetes, obesity or cardiovascular disease. The treatment of just one disease—diabetes—costs approximately \$85,000 over the lifetime of a diabetic patient³⁰ and \$1.77 trillion to the U.S. economy.^{30,31,1} Overweight and obese Americans cost the country more than \$110 billion annually, accounting for 5–10 percent of national health care costs.³² The U.S. spends nearly 17 percent of its health dollars on cardiovascular diseases, representing \$149 billion per year.³³ Among adult Medicaid enrollees, at least 3 in 10 have a preventable chronic condition that could also occur at lower rates with increased educational investments.³⁴

AS STATE MEDICAID SPENDING INCREASES, CAN EDUCATION INVESTMENTS BEND THE CURVE?

State budgets have grown for five consecutive years, with the general fund increasing by an estimated 5 percent in FY2014 and 2.9 percent in FY2015.³ Although many governors and legislatures have proposed increasing funds for kindergarten through grade 12 and higher education,³ they also struggle with tradeoffs between education and health,³⁵ particularly given additional spending resulting from Medicaid expansion under the Affordable Care Act. However, it is important for state leaders to recognize that funding for education could help control state spending on health care, perhaps with a bigger return on investment than investing in health care itself. Investing in education could also benefit state budgets in the long term by increasing income tax revenue, since better educated people tend to earn higher wages.³⁶

INVESTING IN EDUCATION IS INVESTING IN OPPORTUNITY FOR AMERICA

Education is key to creating economic opportunity. We know that education can improve health, and healthier workers are more productive. In today's knowledge economy, young people need education for better jobs, and American businesses need an educated workforce to compete in the global marketplace.

The bottom line: strategic investment in education is important for the economic wellbeing of the country—but the return on these investments also includes enormous health benefits and their impact on soaring health care costs. Cutting spending on education to pay for health care could be counterproductive.

i \$85,000³⁰ x 20.8 million Americans living with diabetes³¹ = \$1.77 trillion.

Other issue briefs from the Education and Health Initiative

HOW BIG OF AN ISSUE IS THIS?

ISSUE BRIEF 1: The Growing

Importance of Education: Education matters more to health now than it ever has before. Today, people with less education live shorter lives with worse health and greater disability than their more educated peers. Education is important not only for higher paying jobs and economic productivity, but also for saving lives and saving dollars. Policies that address early child care, housing, transportation, food security, unemployment, and economic development are important to improving the deteriorating health of Americans with fewer years of education.

WHAT'S CAUSING THIS?

ISSUE BRIEF 2: Exploring the

Causes: The full “back story” on the links between education and health are complex. This issue brief expands upon the interconnections between education and health alongside the perspectives of residents of a disadvantaged urban community in Richmond, Virginia.

WILL HEALTH CARE REFORM SOLVE THE PROBLEM?

ISSUE BRIEF 3: Health Care:

Necessary but Not Sufficient: Efforts to achieve improved access to health care and health insurance are vital, but they cannot erase the health gaps related to education. Evidence from integrated health systems where all members have access to care still show that college-educated patients have better outcomes than those with less education.

THE EDUCATION AND HEALTH INITIATIVE

This issue brief is a product of the Education and Health Initiative (EHI), a program of the Virginia Commonwealth University Center on Society and Health, supported by the Robert Wood Johnson Foundation.

- Launched in September 2012, the aim of the EHI is to raise awareness about the important connections between education and health.
- We “connect the dots” between distinct education and health policy spaces.
- We meet with leaders in government and the private sector—at the national, state, and local level—to explore the ties between education and better health.
- We produce online media and issue briefs to explore specific themes and stimulate discussion.

THE CENTER ON SOCIETY AND HEALTH

The VCU Center on Society and Health is an academic research center that studies the health implications of social factors—such as education, income, neighborhood and community environmental conditions, and public policy. Its mission is to answer relevant questions that can “move the needle” to improve the health of Americans. We present our work in formats and venues that are useful to decision-makers and change agents. The Center pursues these goals through collaboration with scholars in different disciplines at VCU and other institutions, and by nurturing partnerships with community, government, and private-sector stakeholders.

830 East Main Street, Suite 5035
P.O. Box 980212
Richmond, Virginia 23298-0212

Phone: (804) 628-2462
Email: societyhealth@vcu.edu
Web: www.societyhealth.vcu.edu

References

1. Sigritz B, Cummings L, Mazer S, Streepey M, White KV. State Expenditure Report: Examining Fiscal 2012-2014 State Spending. National Association of State Budget Officers. 2014. Available at <http://www.nasbo.org/sites/default/files/State%20Expenditure%20Report%20%28Fiscal%202012-2014%29S.pdf>. Accessed December 10, 2014.
2. Truffer CJ, Klemm JD, Wolfe CJ, Rennie KE, Shuff JF. 2013 Actuarial Report on the Financial Outlook for Medicaid. Centers for Medicare and Medicaid Services, US Department of Health and Human Services. 2013. Available at <http://medicaid.gov/medicaid-chip-program-information/by-topics/financing-and-reimbursement/downloads/medicaid-actuarial-report-2013.pdf>. Accessed December 10, 2014.
3. Streepey M, Cummings L, Mazer S, Sigritz B, White KV. The Fiscal Survey of the States—Spring 2014. National Association of State Budget Officers. 2014. Available at http://www.nasbo.org/sites/default/files/NASBO%20Fiscal%20Survey_July_17_2014.pdf. Accessed November 11, 2014.
4. Anderson G. Chronic Care: Making the Case for Ongoing Care. Robert Wood Johnson Foundation. 2010. Available at <http://www.rwjf.org/en/research-publications/find-rwjf-research/2010/01/chronic-care.html>. Accessed December 11, 2014.
5. Manrique-Garcia E, Sidorchuk A, Hallqvist J, Moradi T. Socioeconomic position and incidence of acute myocardial infarction: A meta-analysis. *J Epidemiol Community Health*. 2011;65(4):301-309.
6. Borrell LN, Dallo FJ, White K. Education and diabetes in a racially and ethnically diverse population. *Am J Public Health*. 2006;96(9):1637-1642.
7. Liu SY, Buka SL, Kubzansky LD, Kawachi I, Gilman SE, Loucks EB. Sheepskin effects of education in the 10-year Framingham risk of coronary heart disease. *Soc Sci Med*. 2013;80:31-36.
8. Geiss LS, Wang J, Cheng Y, et al. Prevalence and Incidence Trends for Diagnosed Diabetes Among Adults Aged 20 to 79 Years, United States, 1980-2012. *JAMA*. 2014;312:1218-26.
9. American Diabetes Association. Economic costs of diabetes in the U.S. in 2012. *Diabetes Care*. 2013;36(4):1033-1046.
10. Lleras-Muney A. The relationship between education and adult mortality in the United States. *Rev Econ Stud*. 2005;72(1):189-221.
11. Arkes J. Does Schooling Improve Adult Health? RAND Corporation. 2003;DRU-3051. Available at <http://www.rand.org/pubs/drafts/DRU3051.html>. Accessed October 28, 2014.
12. Adams SJ. Educational attainment and health: Evidence from a sample of older adults. *Education Economics*. 2002;10(1):97-109.
13. Ross CE. Walking, exercising, and smoking: Does neighborhood matter? *Soc Sci Med*. 2000;51(2):265-274.
14. Campbell F, Conti G, Heckman JJ, et al. Early childhood investments substantially boost adult health. *Science*. 2014;343(6178):1478-1485.
15. Gilman SE, Breslau J, Conron KJ, Koenen KC, Subramanian SV, Zaslavsky AM. Education and race-ethnicity differences in the lifetime risk of alcohol dependence. *J Epidemiol Community Health*. 2008;62(3):224-230.
16. Goldman D, Smith JP. The increasing value of education to health. *Soc Sci Med*. 2011;72(10):1728-1737.
17. Muennig P, Schweinhart L, Montie J, Neidell M. Effects of a prekindergarten educational intervention on adult health: 37-year follow-up results of a randomized controlled trial. *Am J Public Health*. 2009;99(8):1431-1437.
18. Schoeni RF, Dow WH, Miller WD, Pamuk ER. The economic value of improving the health of disadvantaged Americans. *Am J Prev Med*. 2011;40(1, Suppl. 1):S67-S72.
19. Levin HM, Belfield C, Muennig P, Rouse C. The public returns to public educational investments in African-American males. *Economics of Education Review*. 2007;26(6):699-708.
20. National Center for Education Statistics. Digest of Education Statistics. Table 219.71. US Department of Education. 2014. Available at http://nces.ed.gov/programs/digest/d13/tables/dt13_219.71.asp. Accessed November 12, 2014.
21. Levin H, Belfield C, Muennig P, Rouse C. *The costs and benefits of an excellent education for all of America's children*. Vol 9. Teachers College, Columbia University New York; 2007.
22. Bradley EH, Elkins BR, Herrin J, Elbel B. Health and social services expenditures: Associations with health outcomes. *BMJ Qual Saf*. 2011;20(10):826-831.
23. Reynolds AJ, Richardson BA, Hayakawa M, et al. Association of a full-day vs part-day preschool intervention with school readiness, attendance, and parent involvement. *JAMA*. 2014;312(20):2126-2134.

24. Frisvold DE, Lumeng JC. Expanding exposure: Can increasing the daily duration of Head Start reduce childhood obesity? *J Hum Resour.* 2011;46(2):373-402.
25. Lumeng JC, Kaciroti N, Frisvold DE. Changes in body mass index z score over the course of the academic year among children attending Head Start. *Acad Pediatr.* 2010;10(3):179-186.
26. Carneiro P, Ginja R. Long-term impacts of compensatory preschool on health and behavior: Evidence from Head Start. *CeMMAP Working Papers.* 2012;5(CWP01/12).
27. Ogden CL, Carroll MD, Curtin LR, Lamb MM, Flegal KM. Prevalence of high body mass index in U.S. children and adolescents, 2007-2008. *JAMA.* 2010;303(3):242-249.
28. Trasande L, Chatterjee S. The impact of obesity on health service utilization and costs in childhood. *Obesity.* 2009;17(9):1749-1754.
29. Geier AB, Foster GD, Womble LG, et al. The relationship between relative weight and school attendance among elementary schoolchildren. *Obesity.* 2007;15(8):2157-2161.
30. Zhuo X, Zhang P, Hoerger TJ. Lifetime direct medical costs of treating type 2 diabetes and diabetic complications. *Am J Prev Med.* 2013;45(3):253-261.
31. Centers for Disease Control and Prevention. Number (in Millions) of Civilian, Noninstitutionalized Adults with Diagnosed Diabetes, United States, 1980–2011. US Department of Health and Human Services. 2013. Available at <http://www.cdc.gov/diabetes/statistics/prev/national/figadults.htm>. Accessed November 12, 2014.
32. Tsai AG, Williamson DF, Glick HA. Direct medical cost of overweight and obesity in the USA: A quantitative systematic review. *Obesity Reviews.* 2011;12(1):50-61.
33. Trogdon JG, Finkelstein EA, Nwaise IA, Tangka FK, Orenstein D. The economic burden of chronic cardiovascular disease for major insurers. *Health Promot Pract.* 2007;8(3):234-242.
34. Kaiser Family Foundation. The Role of Medicaid for Adults with Chronic Illnesses. 2012. Available at <http://kaiserfamilyfoundation.files.wordpress.com/2013/01/8383.pdf>. Accessed November 21, 2014.
35. Saving J. Budget balancing act: Health and education stretch Texas resources. *Southwest Economy.* 2014(Q3):3-7.
36. Berger N, Fisher P. A well-educated workforce is key to state prosperity. Economic Policy Institute. 2013. Available at <http://www.epi.org/publication/states-educationproductivity-growth-foundations>. Accessed November 11, 2014.