

# A Health Dividend for America

## The Opportunity Cost of Excess Medical Expenditures

Jeffrey C. McCullough, MPH, Frederick J. Zimmerman, PhD,  
Jonathan E. Fielding, MD, MPH, MA, MBA, Steven M. Teutsch, MD, MPH

**A**s of 2010, health care–related expenditures in the U.S. totaled some \$2.6 trillion (17.9% of the gross domestic product [GDP]). Year after year, healthcare spending rises at double the rate of overall GDP growth, and total healthcare spending growth consistently outpaces overall inflation. This exuberant growth would be welcome if health care were thriving because of its efficiency. Instead, it is among the least-efficient parts of the economy, and much of the healthcare spending does not improve health outcomes substantially.<sup>1</sup> Indeed, the IOM recently conservatively estimated that some \$750–\$765 billion spent on health care in the U.S. is in excess<sup>a</sup> of what should be spent to achieve the observed health outcomes.<sup>1</sup> Others have estimated the excess to be between \$700 billion<sup>2</sup> to upward of \$1.2 trillion.<sup>3</sup>

Despite spending almost 50% more per capita on health care than the Organisation for Economic Co-operation and Development (OECD) country with the next-highest expenditure and 2.5 times the average of all OECD countries,<sup>4</sup> U.S. outcomes are much worse than other developed countries. The U.S. ranks 26th among 34 developed countries in life expectancy, and 30th in infant mortality.<sup>4</sup>

Many analyses of the relatively poor health of the American population and the large disparities in health among various subgroups of the population point to two underlying determinants: social environment and physical environment. Babies born to mothers who did not

graduate from high school are twice as likely to die in the first year of life as those born to mothers with 16 or more years of education.<sup>5</sup> Adult men with less than a high school education can expect to live 7 years less than those with 16 or more years of education; for women the difference is 5 years.<sup>5</sup>

Thirty-one percent of those living below the federal poverty line (FPL) are in fair or poor health compared with less than 7% of those over 400% of FPL.<sup>5</sup> Rates of diabetes are twice as high among those below the poverty line as those above it.<sup>5</sup> The physical environment, too, has profound effects on population health, through the walkability of neighborhoods, the safety of streets, the viability of infrastructure (e.g., transportation and water supply), and the abatement of environmental toxins.

Poor health outcomes matter not only for equity, but also for efficiency. Although the U.S. has slipped to fifth on the Global Competitiveness Index, it has fallen even further to 42nd on the health and primary education component, suggesting a bleak economic future if it does not change course. Because so much of U.S. health care is federally financed, a poorly performing healthcare sector contributes substantially to a federal debt that has ballooned from less than 40% of GDP in 1980 to close to 100% of GDP today.

Although economists disagree on how urgently this debt level should be addressed, all agree that, left untreated, this debt will sooner or later adversely affect employment, further erode essential infrastructure, and reduce the U.S. standard of living. States, required by law to balance their budgets, must make agonizing tradeoffs between exploding healthcare budgets and priorities such as education and infrastructure. In 2011, Medicaid alone consumed 23.6% of total state spending, an increase of 10.1% over 2010,<sup>6</sup> and states incur additional expenditures for current and former employee health benefits and for prison health care.

Healthcare-related spending at this level has been shown to crowd out other expenditures on social goods including primary, secondary, and higher education; economic development; and maintenance of critical infrastructure.<sup>7</sup> The IOM recently concluded that spending on

---

From the Department of Health Policy and Management (McCullough, Zimmerman, Fielding), Fielding School of Public Health, Geffen School of Medicine (Fielding), University of California Los Angeles, and Los Angeles County Department of Public Health (Fielding, Teutsch), Los Angeles, California

Address correspondence to: Frederick J. Zimmerman, PhD, Box 951772; 31-269 CHS-Public Health, Los Angeles, CA 90095. E-mail: fredzimmerman@ucla.edu.

0749-3797/\$36.00

<http://dx.doi.org/10.1016/j.amepre.2012.08.013>

<sup>a</sup>The IOM calculated “excess” costs in six domains: unnecessary services, services inefficiently delivered, prices that are too high, excess administrative costs, missed prevention opportunities, and medical fraud. Total excess costs were calculated through three separate methods: extrapolation from geographic variation healthcare expenditures (estimated at \$750 billion); comparison of U.S. expenditures with other OECD nations’ (estimated at \$760 billion); and consensus estimates from IOM workshops (estimated at \$765 billion).

population-based prevention efforts is unstable and insufficient, largely a result of a disproportionate attention to clinical care.<sup>8</sup> The report called for a transformation in the way the U.S. invests in health; the authors believe this transformation could come from reducing excess health-care costs.

Using the IOM's estimates of excess costs and the CMS breakdown of health spending, approximately 55% (\$412.5 billion using the IOM's estimate<sup>1</sup> or between \$385<sup>2</sup> and \$660<sup>3</sup> billion using the full range of estimates) of excess healthcare cost accrues to the private sector and is functionally a tax that limits the international competitiveness of the U.S. and reduces the economic welfare of the population. The current paper, however, focuses on the public sector, which pays the remaining 45% or \$337 billion<sup>1</sup> (between \$315<sup>2</sup> and \$540<sup>3</sup> billion using other estimates) per annum of the excess healthcare costs and the question of what the public opportunity costs are of unnecessary healthcare spending. If it were possible to extract the amount of unnecessary and frequently unhealthy healthcare costs and services from U.S. oversized healthcare expenditures, the nation could benefit from what is referred to here as the "health dividend," a sizeable stream of resources that would come at no net cost to people's health, and that could be invested in achieving two important objectives: stabilizing the nation's fiscal health and improving well-being.

As an illustrative exercise, the authors propose allocating this windfall across several uses of fiscal stability, social investments, and infrastructural investments. Of course, a health dividend could in fact be allocated in an infinite number of ways, but providing one set of possibilities demonstrates the magnitude of the health dividend. Estimating the potential causal outcomes of these new investment allocations is a process fraught with methodologic challenges. However, given that excess healthcare expenditures necessarily provide no additional health benefit, *any* additional health benefits that accrue as a result of these programs would be greater than those currently enjoyed by the U.S. public. Instead of quibbling over the point-estimate in these cases, the authors thought it more prudent to present the less-controversial cost and "output" estimates for each investment and allow readers to gauge how instrumental that outlay would be in shaping a society that makes better use of the \$337 billion in excess health spending.

### Fiscal Stability

If half of the government's share of the health dividend (i.e., \$168 billion per year in perpetuity) were applied just to federal debt reduction, it would amount to substantially more than the \$1.5 trillion debt reduction over 10 years the U.S. Congressional Joint Select Committee on Deficit Reduc-

tion ("Supercommittee") sought—and failed—to achieve in late 2011.

### Social Investments

Investments in social programs, such as Job Corps, home visitation for single pregnant teenagers and their infants, and preschool programs in low-income neighborhoods have also demonstrated good health, quality of life, and economic outcomes, such as lower teenage rates of pregnancy, drug use, and violence, as well as improved educational outcomes. Because such programs tend to be more labor-intensive than the unnecessary component of healthcare spending that they would be replacing, there also would be a net positive effect on job growth.

Approximately \$104 billion per year could fund all of the educational initiatives reported below along with some of their projected health benefits (all cost estimates are in 2012 dollars). All of these proposals have substantial support in the literature, and many have been endorsed by national bodies that systematically review evidence for best practices. (Because of space limitations, references are not provided for all calculations below. Additional details are available on request from the authors.)

- All 24 million students in elementary school could have smaller class sizes (a reduction from 22–25 students to 13–17 students). Studies have shown that such a class-size reduction could lead to 70,000–140,000 additional high school graduates,<sup>9</sup> with each student potentially gaining as much as 1.7 additional quality-adjusted life-years,<sup>10</sup> to say nothing of the economic benefits. (cost: \$53.3 billion annually)
- The successful anti-tobacco truth<sup>®</sup> campaign currently funded by dwindling Legacy Foundation funds could be funded at a level of \$100 million annually, an amount that has been shown to prevent 300,000 students from smoking and save nearly three million life-years.<sup>11</sup> (cost: \$100 million annually)
- All 700,000 pregnant smokers and pregnant teenagers could receive regular home visits from trained nurses, which could reduce the number of low-birth weight newborns by almost 35,000 and emergency room visits by some 435,000 during the first 2 years of life.<sup>12</sup> (cost: \$4.2 billion annually)
- Half of all 3.9 million first-grade students, along with their parents and teachers, could participate in a social development program that decreases risky sexual behavior and drug use and improved work, social, and emotional functioning as adults.<sup>13</sup> (cost: \$13.6 billion annually)
- Head Start could be doubled in size to include an additional 904,153 children. Head Start enrollment has

been linked with a reduction in childhood obesity and decreased smoking prevalence later in life.<sup>14</sup> However, evidence about other long-term outcomes is mixed, with some studies showing positive behavioral impacts and decreased mortality<sup>14</sup> and others showing no benefit.<sup>15</sup> (cost: \$12.8 billion annually)

- Universal preschool education would be possible for all pre-kindergarten students in the U.S. that do not already attend a Head Start program, through an income-sensitive voucher program, leading to long-term gains in cognitive ability and socialization.<sup>16</sup> (cost: \$19.3 billion annually)
- All junior and senior high students could receive proven effective teenage pregnancy prevention education, counseling, and clinic visits, which could reduce teen pregnancies by some 45,000 per year.<sup>17</sup> (cost: \$1.0 billion annually)

### **Infrastructure Investments**

Infrastructure investments also can yield important economic and quality-of-life benefits, and even positively affect health. Many investment options would affect multiple desired outcomes including reducing economic disparities, increasing national competitiveness, reducing unemployment, and increasing wages and tax revenues. Although the direct health benefits of infrastructural investments are hard to quantify, in addressing the underlying social determinants of health, their contribution to population health promises to be substantial.

A hospitably built environment with complete streets, gardens, and affordable, safe, and accessible public transportation can have direct and meaningful benefits to the health of individuals and communities. Congested roadways and derelict infrastructure also can exact a human toll in terms of stress, pollution, and lives lost. Job opportunities and career training can maintain a well-paid competitive workforce.

Although the needs of communities vary substantially, an investment of approximately \$61 billion annually could yield a range of improvements to the U.S. built environment and communities.

- A safe routes to school program could be provided for every primary and secondary school in the country over the course of 10 years. Such initiatives have shown a gain of as much as 30% more students walking or riding bikes to school, with a concomitant reduction both in obesity and in the need for buses and vehicular congestion around schools.<sup>18</sup> (cost: \$1.2 billion annually)
- An expansion of public libraries that could reach 30.7 million beneficiaries over 10 years would be possible. An investment at this level that would enhance libraries' current positive impact on neighborhood quality of

life and provision of activities for children and teens.<sup>19</sup> (cost: \$6.9 billion annually)

- Waste and storm water treatment could be improved over 20 years, which could improve water quality and reduce waterborne gastrointestinal illness.<sup>20</sup> (cost: \$1.8 billion annually)
- Career training could be provided for one quarter of the unemployed. Successful programs have shown that 27% of people who get a vocational license or certificate after high school earn more than the average wage for those with a bachelor's degree.<sup>21</sup> (cost: \$18.0 billion annually)
- Community Facility Grant and Rural Economic Development grants would be available to every small town in U.S. over 10 years. Such grants have been shown to improve quality of life in rural areas, reduce geographic disparities, and promote healthy lifestyles and positive social interactions in historically neglected areas.<sup>22</sup> (cost: \$725 million annually)
- The Job Corps program could be doubled to serve an additional 45,000 people. Job Corps is a job-readiness program that has led to greater educational attainment, less unemployment, and higher earnings and also has been shown to decrease crime and violence among participants.<sup>23</sup> (cost: \$1.7 billion annually)
- The Supplemental Nutrition Assistance Program (SNAP) could be expanded to provide benefits to all 50 million food-insecure individuals in U.S., an increase of 11 million people. In addition to its direct effects on health, this program will alleviate the nutritional insecurity that has been linked to obesity, poor children's attention capacity, and poor mental health.<sup>24</sup> (cost: \$18.4 billion annually)
- President Obama's "Up Front" transportation system improvement program to provide investment in highway infrastructure, local bus and rail systems, high-speed rail, and new transit options to reduce traffic congestion would be fully funded. (cost: \$12.5 billion annually)

These funds would be available year in and year out and be sufficient to repay major capital investments as well as ongoing costs.

### **Projected Cost Savings**

For the purposes of the current paper, an illustrative range of programs has been selected for which the authors believe there to be wide-ranging support for broader implementation. Beyond the societal returns on these investments outlined above, there also will be actual cost savings that will result from these social and infrastructure investments. Some of these savings will flow

from events that will be prevented from happening altogether.

For example, an estimated 435,000 emergency room visits per year will be averted through expansion of a nurse home-visiting program for pregnant teens and smokers. With the average cost (to all payers) of such a visit estimated to be about \$700, a rough estimate for total savings (due to averted visits *alone*) is more than \$297 million annually. Extrapolating the effects of Job Corps to its expanded target population would suggest that some 900 fewer individuals would be incarcerated per year. At per capita incarceration costs of more than \$27,000, nearly \$24 million per year in direct cost savings would accrue to state and local budgets, to say nothing of the savings to the courts and police forces or to the individuals who would otherwise be incarcerated or be victims of these averted crimes.

These cost savings are the most readily estimable ones only and represent *true* cost savings to the economy as a whole, not merely shifting of public to private spending or vice versa. Projections also anticipate that high school graduations would increase and behavioral risk factors would decline.<sup>10,14,16</sup> Although it is difficult to quantify with any certainty the net impact of these transformations on the public's budget, there are sure to be additional cost savings.

## Conclusion

The excess healthcare expenditures identified by the IOM report<sup>1</sup> and others<sup>2,3</sup> do not add value to medical care delivery in the U.S. By contrast, although various observers would place somewhat different priority weights on the various alternative uses toward which the wasted expenditure could be directed, all would agree that these alternatives have inherent social value. The health and well-being of all Americans depends on the vitality of the U.S. economy. When the fastest-growing part of the economy is also the least efficient, the economy as a whole loses over time its ability to support current living standards.

The U.S. has become irrationally attached to its inefficient healthcare system. Recognizing the opportunity costs of this attachment is the first step in repairing the system. These excess expenditures will be difficult to reduce because the costs are spread across many groups and the financial beneficiaries are coordinated, clear-minded, and powerful. Overcoming their resistance will require a concerted effort at collective action on the part of many economic sectors, governmental agencies, and other organizations who are not used to seeing themselves as sharing interests with the others. Whatever one's values and preferences, eliminating excess medical care costs

provides a monumental opportunity to reallocate those resources to strengthen U.S. international competitiveness, enhance well-being, and build a healthier nation. The result of redirecting some \$750 billion per year could be transformative for Americans, and the potential uses for these funds are panoramic in both scope and possibility.

---

This research was not supported by external grants or funding.

No financial disclosures were reported by the authors of this paper.

---

## References

1. IOM. The healthcare imperative: lowering costs and improving outcomes. Washington DC: National Academies Press, 2009.
2. Orszag P. Behavioral economics: lessons from retirement research for health care and beyond. Proceedings of the Annual Meeting of the Retirement Research Consortium; 2008 Aug 7; Washington DC. 2008.
3. PricewaterhouseCoopers Health Research Institute. The price of excess: identifying waste in healthcare spending; 2010.
4. Organisation for Economic Co-operation and Development. Health at a glance 2011: OECD indicators; 2011.
5. Braveman P, Egerter S. Overcoming obstacles to health: report from the Robert Wood Johnson Foundation to the Commission to Build a Healthier America. Washington DC: Robert Wood Johnson Foundation Commission to Build a Healthier America, 2008.
6. National Association of State Budget Officers, National Governors' Association, Center for Policy Research. The fiscal survey of the states: an update on state fiscal conditions. Washington DC: National Association of State Budget Officers, 2011.
7. Bradley EH, Elkins BR, Herrin J, Elbel B. Health and social services expenditures: associations with health outcomes. *BMJ Qual Saf* 2011;20:826–31.
8. IOM. For the public's health: investing in a healthier future. Washington DC: National Academies Press, 2012.
9. Schweinhart LJ, Montie J, Xiang ZP, Barnett WS, Belfield CR, Nores M. Lifetime effects: the HighScope Perry Preschool Study Through Age 40. Ypsilanti MI: HighScope Press, 2005.
10. Muennig P, Woolf SH. Health and economic benefits of reducing the number of students per classroom in U.S. primary schools. *Am J Public Health* 2007;97:2020.
11. Farrelly MC, Davis KC, Haviland ML, Messeri P, Heaton CG. Evidence of a dose-response relationship between "truth" anti-smoking ads and youth smoking prevalence. *Am J Public Health* 2005;95:425.
12. Olds DL, Robinson J, Pettitt L, et al. Effects of home visits by paraprofessionals and by nurses: age-four follow-up of a randomized trial. *Pediatrics* 2004;114:560–8.
13. Lonczak HS, Abbott RD, Hawkins JD, Kosterman R, Catalano RF. Effects of the Seattle Social Development Project on sexual behavior, pregnancy, birth, and sexually transmitted disease outcomes by age 21 years. *Arch Pediatr Adolesc Med* 2002;156:438–47.
14. Ludwig J, Phillips DA. The benefits and costs of Head Start. Cambridge MA: National Bureau of Economic Research, 2007.
15. Garces E, Thomas D, Currie J. Longer term effects of Head Start. Cambridge MA: National Bureau of Economic Research, 2000.
16. Gomby DS, Larner MB, Stevenson CS, Lewit EM, Behrman RE. Long-term outcomes of early childhood programs: analysis and recommendations. *Future Child* 1995;5:6–24.

17. Zabin LS, Hirsch MB, Streett R, et al. The Baltimore Pregnancy Prevention Program for Urban Teenagers: I. How did it work? *Family Planning Perspectives* 1988;20:182–7.
18. National Center for Safe Routes to School. Spring 2011 SRTS program tracking brief. 2011. [www.saferoutesinfo.org/sites/default/files/1st\\_qrt\\_2011SRTSProgramTrackingBrief.pdf](http://www.saferoutesinfo.org/sites/default/files/1st_qrt_2011SRTSProgramTrackingBrief.pdf).
19. Agosto D, Hughes-Hassell S. *Urban teens in the library: research and practice*. Chicago IL: American Library Association, 2009.
20. Gaffield SJ, Goo RL, Richards LA, Jackson RJ. Public health effects of inadequately managed stormwater runoff. *Am J Public Health* 2003;93:1527–33.
21. Carnevale AP, Smith N, Strohl J. *Help wanted: projections of jobs and education requirements through 2018*: Georgetown University Center on Education and the Workforce, 2010.
22. U.S. Department of Agriculture Rural Development. *Community Facility Grants*. 2011. [www.rurdev.usda.gov/HAD-CF\\_Grants.html](http://www.rurdev.usda.gov/HAD-CF_Grants.html).
23. Schochet PZ, Burghardt J, McConnell S. Does Job Corps work? Impact findings from the National Job Corps Study. *Am Econ Rev* 2008; 98:1864–86.
24. Nord M, Prell M. Food security of SNAP recipients improved following the 2009 stimulus package. *Amber Waves* 2011;9:16–23.

### Supplementary data

A pubcast created by the authors of this paper can be viewed at [http://www.ajpmonline.org/content/video\\_pubcasts\\_collection](http://www.ajpmonline.org/content/video_pubcasts_collection).

#### Did you know?

According to the 2012 Journal Citation Report, published by Thomson Reuters, the 2011 impact factor for *AJPM* is 4.044, which ranks it in the top 8% of PH and OEH journals, and in the top 11% of GM and IM journals.