

Financing Public Health: Diminished Funding for Core Needs and State-by-State Variation in Support

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This article documents the instability and variation in public financing of public health functions at the federal and state levels. Trust for America's Health has charted federal funding for the Centers of Disease Control and Prevention, which in turn provides a major portion of financing for state and local public health departments, and has compiled information about state-generated revenue commitments to public health activities nationwide. The federal-level analysis shows that funding has been marked by diminished support for "core" public health functions. The state-level analysis shows tremendous variation in use of state revenues to support public health functions. The combination of these factors results in very different public health capacities across the country, potentially leaving some states more vulnerable, while simultaneously posing a general threat to the nation since public health problems do not honor state borders. On the basis of this analysis, the authors suggest changes in the financing arrangements for public health, designed to assure a more stable funding stream for core public health functions and a more consistent approach to financing public health activities across the country.

KEY WORDS: core funding and functions, federal funding, public health funding, state funding

In the last century, American life expectancy has increased 25 years because of advances made in safeguarding the public's health.¹ Despite this progress, the public health system in the United States is now more than ever faced with a myriad of responsibilities, ranging from bioterrorism preparedness to infectious disease control to chronic disease management. Unfortunately, at such a critical time, there are little data to comprehensively examine state-level spending of state

and federal public health dollars. The following analysis is the first step in such an examination.

The United States also faces the challenge of maintaining the health of a growing and aging population. Between 2000 and 2050, the population is projected to increase by nearly 50 percent.² In addition, over this same time period life expectancy is projected to increase 10 years. In 2030, 19.6 percent of Americans will be aged 65 or older, compared to 12.4 percent in 2000.³ The larger and older US population will face many of the same risks that have been the focus of public health initiatives throughout the past century. Infectious diseases such as HIV will persist as grave public health threats, yet chronic disease will continue to be the leading cause of morbidity and mortality.

Public health achievements played a large role in this demographic shift, but now this shift poses new challenges for public health. The emergence of chronic disease as the leading cause of mortality will be amplified as the American population continues to age, straining a healthcare system already weakened by high rates of inflation and increased demand associated with these chronic diseases. Indeed, some scholars suggest that the predicted increase in life expectancy will actually diminish over time because of an increase in chronic diseases, such as the health consequences of obesity.⁴ Public health has the potential to mitigate this effect (and its financial impact on the healthcare delivery system), if funds are directed toward health promotion and disease prevention activities.

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In addition to the enormity of these challenges, there are also *emerging* public health threats. Since September 11, 2001, the threat of bioterrorism has been a very real risk to the public's health and sense of security. Emerging infectious diseases such as mad cow disease and severe acute respiratory syndrome (SARS) threaten not only the country's health but the food supply and economy as well. Such threats demonstrate the unpredictability and wide reach of many of today's public health risks.

This unpredictability, however, should create an even greater motivation for public health preparedness. Hurricane Katrina vividly demonstrated that federal and state authorities are not prepared for 21st century public health threats. A recent poll by Greenberg Quinlan Rosner Research, Inc, commissioned by Trust for America's Health (TFAH)* shows that the public feels a great amount of uncertainty with a heightened awareness of natural disasters like tsunamis and hurricanes, the spread of the bird flu, and the continuing threat of terrorist attacks (Trust for America's Health, unpublished data, March 2006). Americans want the government to take the lead in dealing with these public health issues, but often think that money and resources are wasted through a lack of coordination and inefficiency.

The polling data also found that there is a desire for a public health system in which all levels of government are held accountable for both their spending and for health outcomes. Although state borders affect levels of risk in a community, the ramifications of multifaceted public health threats simply do not adhere to such borders. Thus, it is necessary to understand how finances are distributed on a state-by-state basis, how variation in the use of federal and state revenues may influence core public health functions, and how minimum state health standards can improve the health of the nation. We, therefore, ask three key questions:

1. Has federal and/or state financing kept pace with the demand for an improved public health system, allowing for adequate preparation for continued and emerging threats?
2. Given the decentralized nature of the United States' public health system, is there geographic consistency in the deployment of resources so that where one lives does not determine the level of protection from the public health system?
3. Are public health officials at any or all levels of government able to report to the public in a consistent and comprehensible manner about how tax dollars were spent and to what result?

*With which the authors are affiliated.

We set out to answer these questions through an analysis of public health dollars at the state and federal levels. Currently, there is neither a standardized approach for ensuring a minimum level of public health protection for all Americans nor a standardized approach that considers whether the money spent on public health programs is being used in the most effective way to reduce and prevent disease and injuries. We suggest that differences in public health capacity across the country leave certain states more vulnerable and threaten the health of the nation as a whole.

● Data and Methodology

TFAH conducted an analysis of state spending on public health for fiscal years 2003–2004 and 2004–2005; for states that only report their budgets in biennium cycles, the 2003–2005 period was used. This analysis was conducted from June to September 2005 using publicly available budget documents found on state government's Web sites. The documents were either executive budget documents that listed actual expenditures, estimated expenditures, or final appropriations; appropriation bills enacted by the state's legislature; or documents from legislative analysis offices.

TFAH defined "public health" to broadly include all health spending with the exception of Medicaid, State Children's Health Insurance Program, or comparable health coverage programs for low-income residents. Mental health funds, services related to developmental disabilities or severely disabled persons, or state-sponsored pharmaceutical programs were also not included.[†] In addition, New York and Louisiana report their funds in such a way that federal funds could not be disaggregated from state funds for all or part of the budget; these states were therefore omitted from the analysis. Further details on data sources can be found in TFAH's *Shortchanging America's Health* 2006.⁵

The Centers for Disease Control and Prevention (CDC) federal funding figures used in this analysis were provided by the agency. Based on data made available to TFAH, per capita amounts of funding to the states for fiscal year (FY) 2005 were computed. While this is an imperfect measure, it was used to control for differences in population across the states. Percentage change figures are also based on CDC budget tables provided by the agency.

[†]Since each state allocates and reports its budget in a unique way, comparisons across states are difficult at best—which is, in itself, a finding of our research. Our methodology may or may not include certain services that the state considers a public health function, but the methodology used was selected to maximize consistency across states.

TABLE 1 ● Selected CDC Expenditures—FY 2001 and FY 2006

Program	FY 2001 Spending actual, \$	FY 2001 Spending adjusted,* \$	FY 2006 Spending actual, \$	Difference Adjusted 2001 and actual 2006, \$	Percent change FY 2001 to 2006
Strategic National Stockpile	52,000,000	63,492,000	530,000,000	466,508,000	734.8
Terrorism (less Strategic National Stockpile)	128,919,000	157,410,099	1,156,057,000	998,646,901	634.4
Chronic disease	675,236,000	824,463,156	845,135,000	20,671,844	2.5
Injury	125,727,000	153,512,667	140,440,000	−13,072,667	−8.5
Infectious disease	191,254,000	233,521,134	229,059,000	−4,462,134	−1.9
HIV (domestic)	749,700,000	915,383,700	719,700,000	−195,683,700	−21.4

*Adjustments made using the Biomedical Research and Development Price Index during a 5-year period.

● Results

Federal funding

The United States has made a major commitment to biomedical research, as evidenced by the \$28 billion budget for the National Institutes of Health, but has not yet made a similar commitment to public health.⁶ While CDC funds have increased from just under \$4 billion in 2000, to \$7.7 billion in 2003, and to \$8.4 billion in 2006, much of this can be attributed to post-9/11 terrorism preparedness activities, rather than core public health functions. For example, CDC's Strategic National Stockpile and terrorism expenditures have increased 735 percent and 634 percent, respectively, since 2001 when adjusted for the Biomedical Research and Development Price Index over a 5-year period (Table 1).^{*} Core public health functions have not seen the same support: chronic disease funding has increased just 2.5 percent, funding for infectious disease control has decreased 1.9 percent, and funding for injury prevention has decreased 8.5 percent since 2001 (again numbers are adjusted using the Biomedical Research and Development Price Index). Despite an ongoing domestic epidemic, funding for HIV has *decreased* 21 percent since 2001.

Approximately 80 percent of CDC's appropriated funds are redistributed to the states and to private partners to support a variety of services and programs. Most of this funding is distributed through "categorical grants" that are program focused, restricted to specific program use, and do not go to support broader or core public health responsibilities. The basis for the distribution of categorical funds varies from program to program; some funds are awarded on a population basis, some on a demonstration of need, and others on a competitive basis. When taken together, funding is not necessarily determined by population or by disease burden. This results in great variation in the amount

that states receive. According to the data provided by CDC, the amount redistributed to the states was on average \$20.99 per person in FY 2005. State per capita figures ranged from a high of \$53.36 in Alaska to a low of \$11.38 in Florida.

State funding

There is also wide variation in per capita public health spending across the states, ranging from \$3.76 (Nevada) to \$123.10 (Hawaii) for FY 2004–2005. (Different states' public health budgets are presented in the Appendix.) The national per capita average is \$35, with nearly 30 states spending under this mark. This figure only considers spending from state revenues; it does not include local funding or federal funding. According to a 2002 *Health Affairs* article by US Senate majority leader Bill Frist, MD, state and local funding support was approximately 2.5 times the federal level, accounting for 70 percent of public health expenditures.⁷ [This did not include the approximately \$1.3 billion additional annual allocation of bioterrorism and public health preparedness grants appropriated to states since September 11, 2001.]

● Discussion

A greater investment in public health is needed

While total dollars allocated to the CDC have been increasing, funding has not kept pace with core public health demands. Furthermore, it is estimated that 95 percent of US health spending goes toward medical interventions, and only 5 percent to population-based health interventions and various research activities.⁶ TFAH estimates that an additional annual investment of \$2.6 billion would be required to bring public health spending to the level that would address funding disparities for public health programs among the states over the past decade. Additional funding will also be required to support new and future responsibilities

^{*}Based on CDC budget tables provided by the agency.

being placed on public health with regard to chronic diseases, pandemic flu preparedness, information technology, and other activities.

TFAH arrived at the estimate of \$2.6 billion by examining two data sources: state spending for public health (as described earlier) and public health spending as a percentage of national health expenditures. First, to bring the 30 states spending less than \$35 per resident up to the national average would require a targeted annual investment of \$2.6 billion, assuming no other significant change in public health spending at the state level. It is important to remember, however, that the \$35 figure is only a benchmark based on current spending levels. For states with particularly large vulnerable populations or in those states that are more prone to natural or terrorist disasters, there are different funding needs that must be taken into account.

National Health Expenditure (NHE) data suggest an annual investment of \$4.3 billion to achieve a steady, sustained level of support for public health activities. Had spending for public health activities as a percentage of the NHE been equal to the 20-year high of 3.2 percent in 2002, an additional \$4.3 billion dollars in federal, state, and local funding would have been available for public health programs in 2004, the most recent year of data available. However, the NHE uses a very broad definition of public health services, and when personal healthcare services and prescription drugs are taken into account, a downward adjustment to the \$2 to \$3 billion for population health services is both appropriate and consistent.

Experts have had difficulty reaching a consensus view of how much it would take to build a modernized public health system, with some estimates suggesting an increased investment of \$60 per person, which would total \$18 billion* annually across the country.⁸

The federal government needs to help level the playing field

The federal government should ensure the capacity of all levels of government to provide essential public health services, either through funding or technical assistance or both. It should also play a key role in the formulation of public health goals and a minimum standard of public health in collaboration with state and local governments. In addition, the federal government

should act when a public health threat spans multiple states, poses a solution beyond local jurisdictions, or when it simply exceeds the capacity of state resources and expertise.

Better accounting systems are needed

The federal government should demonstrate leadership in implementing state-of-the-art accounting systems for federal public health grant programs. The distribution of CDC funds should be transparent, and results should be presented in such a way that the public can judge the progress of the nation and the states' health goals. Funds should also allow state and local evaluations to show, within reason, how their programs have met local health needs and standards. The federal government also has a responsibility to ensure that residents in poorly performing jurisdictions do not suffer ill consequences because of local funding limitations.

There also needs to be more clarity and transparency in how funds are spent on public health programs at the local and state levels. It is extremely difficult to pinpoint spending numbers due to the lack of a systematic, state-by-state accounting mechanism for both state and federal funding, which limits the ability to make comparisons among states. States should adopt systematic budget practices that allow for useful state-by-state comparisons and lead to better-informed policies. The current approach to accounting makes it difficult for public health professionals and federal, state, tribal, and local leaders to be held accountable for public health expenditures. Thus, it is nearly impossible for taxpayers to determine how their tax dollars are being spent and to what result regarding their health.

The federal government should require more detailed accounting of states' use of federal dollars and make it publicly available. In addition, health statistics should be standardized and integrated to allow more useful analyses and more meaningful comparisons among the states. By studying the connection between spending and health, the public health system can be improved within and across states, strengthening the health of the nation.

● Limitations

This study had several limitations that should be noted. At the time of analysis, no county data were available. This limited the ability to analyze health spending and health outcomes at a more local level. Furthermore, state accounting systems were inconsistent with one another, hampering state-to-state comparisons. Significant efforts were made to maintain the consistency of the data at every possible level. However, states report and use their funding in different ways; "public health

*The report concludes that an investment of \$400 million is needed "for all health jurisdictions [in the state] to achieve 95 [percent] performance according to the Washington Public Health Standards." TFAH did not include personal healthcare and divided the new total (\$360 million) by Washington's population, resulting in a figure of \$60 per Washington resident. Extrapolating this to the entire nation (multiplying \$60 by 300 million people) suggests an investment of about \$18 billion.

activities” are defined in many ways, and this analysis tried to account for that. Such inconsistencies are exactly the problem that we suggest should be alleviated, and it is our hope that this analysis can be done again using better data when they become available.

Also, the CDC grant processes do not necessarily fit the per capita analysis. Grants are sometimes awarded, as we suggest they should be, based on prevalence of a given disease. However, a more consistent and clearly articulated rationale for funding allocations is needed based on prevalence, risk factors, and population. The per capita index is, however, a way of showing that funding clearly follows neither disease prevalence nor population as a means for distribution.

REFERENCES

1. Centers of Disease Control and Prevention. Achievements in public health, 1900–1999: control of infectious diseases. *MMWR Morb Mortal Wkly Rep*. 1999;48:241–243.
2. US Census Bureau. US interim projections by age, sex, race, and Hispanic origin. Available at: <http://www.census.gov/ipc/www/usinterimproj/natprojtab01b.pdf>. Accessed June 28, 2006.
3. US Census Bureau. Interim projections: population under age 18 and 65 and older: 2000, 2010, and 2030. Available at: <http://www.census.gov/population/projections/PressTab5.xls>. Accessed June 28, 2006.
4. Olshanky SJ, Passaro DJ, Hershow RC, et al. A potential decline in life expectancy in the United States in the 21st century. *N Engl J Med*. 2005;352:1138–1145.
5. Trust for America’s Health. Shortchanging America’s health 2006: a state-by-state look at how federal public health dollars are spent. Available at: <http://healthyamericans.org/reports/shortchanging06/>. Accessed June 28, 2006.
6. Trust for America’s Health. An action plan for healthy people in healthy communities in the 21st century. Available at: <http://healthyamericans.org/policy/files/ActionPlan.pdf>. Accessed January 2, 2007.
7. Frist B. Public health & national security: the federal role. *Health Aff*. 2002;21:6.
8. Washington’s Public Health Improvement Partnership. Financing local public health in Washington state: challenges and choice. Available at: <http://www.doh.wa.gov/PHIP/documents/PHIP2002/2002PHIP7.pdf>. Accessed June 28, 2006.

Appendix

State Public Health Budgets^{*,†}

Appendix

State	FY 2004–2005	FY 04–05 Per capita
Alabama	\$309,750,247	\$68.37
Alaska ^{‡,§}	\$24,440,600	\$37.29
Arizona	\$87,947,400	\$15.31
Arkansas [‡]	\$141,082,698	\$51.25
California	\$2,318,112,000	\$64.58
Colorado	\$68,704,761	\$14.93
Connecticut	\$71,185,754	\$20.32
Delaware [§]	\$29,542,100	\$35.58
Florida	\$597,539,043	\$34.35
Georgia [‡]	\$709,400,466	\$80.35
Hawaii [§]	\$155,458,776	\$123.10
Idaho	\$103,485,100	\$74.28
Illinois	\$310,415,600	\$24.42
Indiana	\$70,394,726	\$11.29
Iowa [§]	\$23,267,142	\$7.88
Kansas [‡]	\$31,396,513	\$11.48
Kentucky	\$146,613,334	\$35.36
Maine	\$9,277,644	\$7.04
Maryland [§]	\$200,162,000	\$36.01
Massachusetts	\$126,209,229	\$19.67
Michigan [§]	\$258,028,300	\$25.52
Minnesota	\$243,993,000	\$47.83
Mississippi ^{§,}	\$29,062,469	\$10.01
Missouri	\$45,943,007	\$7.98
Montana	\$19,459,374	\$20.99
Nebraska	\$104,344,393	\$59.72
Nevada	\$8,774,904	\$3.76
New Hampshire	\$28,186,104	\$21.69
New Jersey	\$250,592,000	\$28.81
New Mexico	\$120,003,800	\$63.05
North Carolina	\$116,310,280	\$13.62
North Dakota [¶]	\$29,494,441	\$23.25
Ohio	\$124,279,084	\$10.85
Oklahoma [‡]	\$226,720,000	\$64.34
Oregon [¶]	\$65,173,871	\$9.07
Pennsylvania	\$363,108,000	\$29.27
Rhode Island	\$40,109,206	\$37.12
South Carolina	\$163,119,348	\$38.86
South Dakota	\$15,449,514	\$20.04
Tennessee	\$183,829,600	\$31.15
Texas [‡]	\$305,545,630	\$13.59
Utah [‡]	\$98,805,900	\$41.36
Vermont [‡]	\$37,555,659	\$60.44
Virginia	\$250,703,431	\$33.61
Washington [¶]	\$371,845,528	\$29.97
West Virginia [‡]	\$114,883,938	\$63.28
Wisconsin ^{§,}	\$34,356,000	\$6.24
Wyoming	\$45,408,089	\$89.65

*Data from Trust for America's Health.⁵

†New York and Louisiana have been excluded because the state share of Medicaid, Children's Health Insurance Program (CHIP), and/or other social service programs could not be disaggregated, causing the per capita spending to be disproportionately higher. District of Columbia was excluded because its funds are disproportionately higher due to its unique budgeting systems.

‡Includes some social service programs, but not Medicaid or CHIP.

§Only state's general fund used.

|| Taken from Appropriation bills rather than detailed budget documents; may include more or less detail than other states.

¶Biennium budget—FY 2003–2005 biennium displayed; per capita based on 1 year's funding only.