

# **Making the Case for Public Health Finance Policy**

# **Making the Case for Using Financial Indicators in Local Public Health Agencies**

Virginia Suarez, MPH, Cheryll Lesneski, DrPH, and Dwight Denison, PhD

The strength of the public health infrastructure determines the ability of local public health agencies to respond to emergencies and provide essential services. Organizational and systems capacity measures and assessments are important components of the public health infrastructure.

Hospitals and governments have a long tradition of using financial indicators to assess fiscal and operational activities. We reviewed the literature on how hospitals use financial indicators to monitor financial risk, promote organizational sustainability, and improve organizational capacity.

Given that financial indicators have not generally been employed by public health practitioners, we discuss how these measures can be applied to local public health agencies to improve their organizational capacity. (Am J Public Health. 2011;101:419-425. doi:10.2105/ AJPH.2010.194555)

#### THREATS TO OUR POPULATION'S

health are mounting, including new emerging viruses such as H1N1 and avian flu, natural

disasters, and bioterrorism. The challenge faced by our public health system, specifically governmental public health agencies, is to address these threats in an atmosphere of dwindling budgets and intense public scrutiny. Public health agencies in the United States are built on an infrastructure composed of workforce, information systems, financial, and organizational resources. The ability of local public health agencies (LPHAs) to respond to public health emergencies and perform ongoing essential public health services relies on sustained, consistent investment and cooperation from all levels of government.

With federal and state governments struggling with revenue shortfalls, public health practitioners, as well as lawmakers, encounter challenges associated with "the adequacy and predictability of financial resources, their costeffective allocation, efficient management, and accountability for the use of funds."2(p381) Uniform or standardized financial data facilitate the analysis of revenue and expenditure trends and help align financial revenues and expenditures with priority community health outcomes. The collection and use of standardized financial

data not only serves as an internal management tool but also provides information to negotiate for more funding and generates a public relations opportunity with respect to the beneficial use of public

Credit rating agencies and bond traders have a long tradition of using financial indicators to assess the fiscal and operational activities of organizations such as hospitals. In addition, financial indicators have been widely applied with local governments, as evidenced by the 42 financial ratios proposed by the International City/ County Management Association.4 LPHAs do not typically issue bonds or borrow large amounts, so creditors have not fueled the demand for LPHA financial ratios to the extent that they are used in the hospital sector.<sup>5</sup> To gain insight on how financial indicators can be applied to LPHAs, we describe their use by hospitals and local governments for strategic planning and improvements in organizational capacity.

Another important issue for LPHAs is the ability to be transparent about their management and use of public resources. Without an operational framework for basic levels of financial analysis

and research, public health is unable to conduct quantitative analyses and consequently provide transparent accountability.6 In public health, financial transparency is "clouded by the absence of verifiable, reliable, and timely data that would be useful to decision makers."6(p121) In an examination of best practices of systems partners (e.g., hospitals, school systems), Honoré et al.<sup>6</sup> proposed 5 exemplary practices conducive to financial transparency in public health:

- · Uniform classifications for expenses and revenues;
- Infrastructures for electronic data reporting;
- · Standardized system-wide financial analysis practices, including development of indicators based on revenue streams and standard expense object categories;
- · Extensive reporting of financial results; and
- · Professional associations for the workforce.

LPHAs accrue several benefits from implementing these exemplary practices. First, they can monitor alignment of revenues and expenditures with their



mission, goals, and priority health outcomes. Second, they can benchmark with peer agencies to compare and learn about acquisition and use of financial resources (e.g., revenues, expenditures, key public health services). Finally, they can deflect political scrutiny by being transparent to stakeholders about the acquisition, use, and management of agency resources.<sup>6</sup>

Financial indicators can serve as a means of improving the organizational capacity of vital service organizations. Although financial performance is not the primary indicator of success in local public health agencies, these organizations are not able to meet their mission and objectives unless they are financially viable. To achieve financial viability, organizations require sound financial management practices, including monitoring their financial condition so that they can take preemptive actions and efficiently and effectively reach their goals.

# ORGANIZATIONAL CAPACITY AND PERFORMANCE

Organizational capacity is the ability of an organization to use its resources to perform work. A more detailed definition is "the stock of resources" available to an organization and the actions that transform those resources into performance. In the context of the public sector, organizational capacity is defined as "government's intrinsic ability to marshal, develop, direct, and control its financial, human, physical, and information resources." In the same

context, Polidano defines the term as "the ability of an organization to act effectively on a sustained basis in pursuit of its objectives." <sup>11(p808)</sup> In the nonprofit sector, it is described as the wide range of capabilities, knowledge, and resources an organization needs to be effective in fulfilling its mission. <sup>12–14</sup>

Similarly in the business world, the resources and organizational tools that make up organizational capacity are viewed and valued as a primary means to fulfill a company's mission to succeed in the marketplace. The difference is that the for-profit sector's main mission is to earn more profits by improving and expanding services and products.<sup>14</sup> However, we underscore that even if profits or surplus are not part of a nonprofit organization's mission, they are still "an essential element to accomplish that mission."15(p137)

Although definitions of organizational capacity vary somewhat according to type of sector, they all have one element in common: maximizing the potential of an organization to provide services through efficiently and effectively acquiring and using its resources. With this definition in place, we can then state that capacity is the facilitator or precondition that enables organizational performance.<sup>9</sup>

Figure 1 depicts steps in a continuous quality improvement process that local public health agencies can undertake to improve organizational capacity. Some key elements of continuous quality improvement include a strategic focus, data-driven analysis, optimization of agency processes,

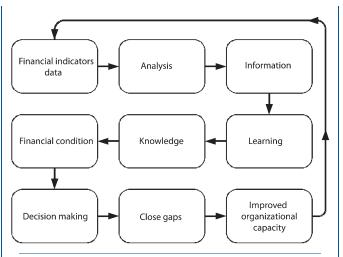


FIGURE 1—Use of financial indicators with continuous quality improvement to improve organizational capacity.

measurement, and benchmarking.<sup>16</sup> Information derived from financial indicators builds knowledge about the organization's financial condition and performance, guides decisions to make needed changes that optimize agency processes, and helps to close financial performance gaps. The cycle is repeated, using feedback from earlier improvement efforts, until the organization reaches its desired capacity goals.

When an organization's financial performance and condition are measured, key information necessary for monitoring the efficient and effective use of resources, as well as accountability and control, is obtained. If actual performance falls short of the preset target, decision makers can determine needed corrective actions, close the gap, assess results, and gain insights that they can use in future applications. This process enables organizational learning, which is

crucial for organizational improvement.

# IMPORTANCE OF FINANCIAL INDICATORS

Financial indicators are frequently expressed as financial ratios. Ratios are a strategic management tool that provides key stakeholders with a concise and systematic way to organize the voluminous data contained in financial statements (e.g., balance sheets, income statements, and statements of cash flows) into meaningful information.<sup>17</sup> Financial ratios refer to the numerical or quantitative relationship between 2 items or variables. This relationship can be expressed in various terms such as percentages or fractions.

The usefulness of conducting ratio analysis is that it makes related information comparable because standardized formats are used over time and among



organizations. Using a single number by itself has little meaning without a relevant comparison or context. Thus, computed ratio values need to be compared with historical ratios to identify trends over a period of time or to make comparisons with industry standards to assess whether goals and standards have been achieved. This information is then used to analyze, plan, and make decisions to improve an organization's performance as well as to determine its historical and current financial condition. Moreover, when used systematically, financial ratio analysis allows organizations to make projections about their operations, providing valuable insight into their future.

Financial ratio analysis typically considers 4 broad aspects of the organization: liquidity, profitability, leverage, and operations. Liquidity addresses whether the organization has sufficient cash or short-term assets to meet the liabilities that will be payable within a year. Profitability measures whether day-to-day operations generate sufficient revenues to cover expenses and promote

reinvestment in the organization's mission. Leverage ratios address the sources of financing of the firm's assets, with a particular focus on the amount of long-term debt. Operations ratios vary among organizations and are used to assess efficiency and effectiveness. Bed occupancy rates and mortality rates are examples of hospital operations ratios. Table 1 provides examples of financial ratios used to measure liquidity, profitability, and leverage.

As illustrated in Figure 1, such financial ratios may help decision makers identify financial strengths and weaknesses and take appropriate action to help the organization reach its mission. For example, a decreasing trend in the current ratio signals that fewer short-term resources are on hand to cover the bills payable in the coming year. A director might then take action to secure additional credit lines to forestall a potential default.

As a second example, consider the operating margin ratio. Government agencies are discouraged from maximizing profits. However, the agency must break even

at a minimum and generate surpluses over time to remain financially viable, improve infrastructure, and expand services. LPHAs using financial ratios can compare their performance on key ratios, such as revenues and expenditures per capita, and learn from each other how to increase their capacity to achieve priority health goals. Agencies can also detect trends over time that reveal diminishing revenues or increasing expenditures, allowing time to plan for actions to address potential problems.

### **LIMITATIONS OF FINANCIAL RATIO ANALYSIS**

Although ratio analysis can reveal much about an organization and its operations and can help improve forecasting and decision making, this tool has its limitations. For instance, conclusions drawn from ratios should not be taken in isolation but should be combined with other knowledge about an organization's management and economic circumstances. Furthermore, we must point out the

importance of the proper context for ratio analysis; the value of financial ratios relies on the accuracy and validity of the data

Additional limitations of ratio analysis relate to the difficulty in comparing different organizations (as a result of differing accounting procedures and accounting periods), the effects of inflation (price-level changes as assets can occur at different times), and conceptual diversity (the meaning of ratios can vary in different organizations or within an organization over time). Therefore, it is important to take these factors into account when using ratio analysis to ensure that the data are comparable. Despite the aforementioned issues, ratio analysis offers many positive benefits and as such is a critical component of effective financial management, one that is applied by many organizations to measure, compare, forecast, and improve decisions that "affect the wealth of the organization."18(p2) We reviewed the literature to assess and document the use and value of financial ratios in health care organizations.

TABLE 1-Selected Financial Ratios Used by Hospitals and Governments

| Financial Indicator              | Calculation  | Purpose/Use  |  |  |  |  |
|----------------------------------|--|--|--|--|--|--|
| Operating margin                 | Profit from operations divided by total revenue            | Measure organization's ability to generate surplus to sustain and expand future services |  |  |  |  |
| Current ratio                    | Current (short-term) assets divided by current liabilities | Determine availability of liquid assets to cover short-term liabilities                  |  |  |  |  |
| Debt to equity                   | Total long-term debt divided by total equity               | Measure amount of hospital debt outstanding for each dollar invested in the firm         |  |  |  |  |
| Debt per capita <sup>a</sup>     | Total long-term debt divided by total population           | Monitor changes in debt outstanding over time or relative to other governments           |  |  |  |  |
| Revenue per client               | Total revenues divided by total clients                    | Assess the revenue capacity of the hospital over time or relative to other hospitals     |  |  |  |  |
| Revenues per capita <sup>a</sup> | Total revenues divided by total population                 | Compare tax and fee revenues over time or relative to other governments                  |  |  |  |  |

<sup>&</sup>lt;sup>a</sup>Government financial indicator.



#### **METHODS**

In January 2009, we searched 3 databases (PUBMED, CINAHL, and Business Source Premier) to identify examples of organizations such as health care agencies and local city governments linking the use of financial indicators to improved organizational capacity. We used the following keywords in our search: "financial indicators," "ratio analysis," "financial statement analysis," "financial condition" and "hospitals," "healthcare," "local city government" and "organizational capacity," and "performance." We excluded articles published before 1998 to ensure inclusion of the most up-to-date and relevant data. We also reviewed books on financial management identified from a small non-random sample of syllabi of financial courses in

relevant masters programs. We completed the search by identifying relevant citations in the reference lists of the articles retrieved.

We developed an 8-item grid to identify, select, and categorize articles into 3 tiers (Table 2). Articles meeting criteria for Tier 3 included examples of organizations clearly using financial indicators to monitor finances, predict bankruptcy, or declare insolvency (in the case of public agencies). Tier 2 included articles that provided examples of using ratios to improve efficiency or enhance the bottom line. Tier 1 included articles that identified hospitals or local governments using financial indicators to monitor service delivery, invest capital for future growth, or meet the organization's mission and vision. The

characteristics of organizational capacity linked to these 3 tiers were monitoring finances (tier 3), increasing surplus (tier 2), and improving and expanding services or products (tier 1).

#### **RESULTS OF ANALYSIS**

With the chosen keywords, we retrieved 89 articles electronically and 27 manually, but the actual number was lower as a result of duplicate articles among the databases. Only 14 of the articles reviewed 19–32 involved the clear use of financial indicators, thus meeting the tier 3 selection criteria. Only 2 of these articles met the criteria for tier 2, and 1 met the criteria for tier 1 (Table 2).

Twelve articles addressed the use of financial indicators for monitoring financial performance

or condition using benchmarks and for predicting financial crisis and bankruptcy. The remaining 2 articles demonstrated the clear use of financial ratios to improve an organization's efficiency and bottom line (i.e., increasing profitability through cost savings), and 1 of these articles directly linked results to advancing the organization's mission. With the exception of 2 articles focusing specifically on local city governments, all of the articles concerned hospitals or health care organizations.

Two of the articles (Butrie et al. <sup>19</sup> and Meliones et al. <sup>27</sup>) addressed processes in the second tier. Butrie et al. offered an example of a health system using financial ratios to increase productivity management capabilities. Meliones et al. also discussed situations consistent with tier 1 activities, detailing an example

TABLE 2—Tier Categorizations of Financial Indicator Use for Select Articles

| Articles                              | Tier 1                            |   |   | Tier 2                  |                                       | Tier 3                  |                         |                        |
|---------------------------------------|-----------------------------------|---|---|-------------------------|---------------------------------------|-------------------------|-------------------------|------------------------|
|                                       | Providing More<br>Needed Services | Building Capital<br>for Future<br>Investments | Achieving<br>Organizational<br>Mission and Vision | Improving<br>Efficiency | Cost Savings and<br>Improving Profits | Clear Use of Indicators | Financial<br>Monitoring | Predicting<br>Problems |
| Butrie et al. <sup>19</sup>           |                                   |   |   | Х                       | Х                                     | Х                       | Х                       |                        |
| Cleverley and Cleverley <sup>20</sup> |                                   |   |   |                         |                                       | Х                       | Χ                       | Χ                      |
| Coyne and Singh <sup>21</sup>         |                                   |   |   |                         |                                       | Х                       | Χ                       | Χ                      |
| Kloha et al. <sup>22,a</sup>          |                                   |   |   |                         |                                       | Х                       | Χ                       | Χ                      |
| Langabeer <sup>23</sup>               |                                   |   |   |                         |                                       | Х                       | Χ                       | Χ                      |
| Langabeer <sup>24</sup>               |                                   |   |   |                         |                                       | Х                       | Χ                       | Χ                      |
| Love et al. <sup>25</sup>             |                                   |   |   |                         |                                       | Х                       | Χ                       |                        |
| McCracken et al. <sup>26</sup>        |                                   |   |   |                         |                                       | Χ                       | Χ                       |                        |
| Meliones et al. <sup>27</sup>         | Χ                                 | Χ   | Χ   | Χ                       | Χ                                     | Χ                       | Χ                       |                        |
| Petro <sup>28,a</sup>                 |                                   |   |   |                         |                                       | Χ                       | Χ                       | Χ                      |
| Pink et al. <sup>29</sup>             |                                   |   |   |                         |                                       | Χ                       | Χ                       |                        |
| Pink et al. <sup>30</sup>             |                                   |   |   |                         |                                       | Χ                       | Χ                       |                        |
| Schuhmann <sup>31</sup>               |                                   |   |   |                         |                                       | Χ                       | Χ                       | Χ                      |
| Sage Policy Group <sup>32</sup>       |                                   |   |   |                         |                                       | Χ                       | Χ                       | Χ                      |

<sup>&</sup>lt;sup>a</sup>Government focus.



of a children's hospital in financial crisis that successfully increased its bottom line by implementing a balanced scorecard. The methodology used helped the hospital achieve strategic control, increase the knowledge of key stakeholders, and improve performance. This turnaround ultimately resulted in a \$30 million reduction in cost and an increased net margin of \$15 million while improving outcomes and staff satisfaction, allowing the organization to make strategic investments for its future success, and therefore advancing the organization's mission.

The lack of articles in tier 1 and 2 may be the result of underreporting of the impact on

organizational capacity of using financial indicators. The 2006 Pink et al.<sup>29</sup> article is unique in that it described a process used to develop 20 indicators for assessing the financial condition of critical access hospitals.

# APPLYING FINANCIAL RATIO ANALYSIS TO PUBLIC HEALTH

Although a voluminous body of literature has discussed the techniques of financial ratios for corporations and governments, the literature on ratio analysis applied to LPHAs is scarce. Current efforts to apply financial ratios to LPHAs are gaining steam as stakeholders seek clarity about dollars spent on public health services and outcomes and agencies strive for fiscal health.

The public health finance field, in its current state, has been described as "an embryonic field that lacks basic concepts, data, measures, and practice guidelines as well as terminological, conceptual, and methodological consensus."2(p377) In an earlier article, Lesneski proposed a set of specific financial indicators relevant to LPHAs in an effort to advance the field of public health finance. The indicators, organized into 4 main categories-revenues, expenditures, mission critical, and community statistics (Table 3 )-involved 2

fundamental objectives.<sup>33</sup> First, they would facilitate measurements of financial success in the fulfillment of the public health mission. Second, the information derived from these indicators would provide the data needed for evaluating the financial condition of an agency, which is vital if the agency is to be able to provide services on a continuous basis.

With respect to the potential value of using financial ratio analysis in public health, at a minimum, benefits would include the following <sup>6(p128)</sup>:

 Examination of the alignment of expenditures with mission, goals, performance, and areas targeted for quality improvement;

| Ratio/Indicator   | Formula  | Sector  |  |  |
|---|--|---|--|--|
| Revenue ratios  |  |   |  |  |
| Revenues per capita (adjusted for inflation)  | Total revenues divided by population   | Government <sup>4,35</sup>  |  |  |
| Total medical revenues as a percentage of total revenues  | Total medical revenues divided by total revenues   | Health/hospital <sup>15,18,20</sup>                               |  |  |
| Total margin  | (Total revenues minus total expenditures) divided by total revenues  | Health/hospital <sup>15,18,20</sup>                               |  |  |
| Operating surplus (or deficit)  | Total revenues divided by total expenditures   | Government <sup>4,35</sup> and health/hospital <sup>15,18,2</sup> |  |  |
| Budgeted revenues received as a percentage of budgeted revenues in annual operating budget      | Budgeted revenues received divided by total revenues in annual operating budget                                      | Health/hospital <sup>15,18,20</sup>                               |  |  |
| Days of revenue in accounts receivable  | Accounts receivable balance divided by total customer balance/365 days   | Health/hospital <sup>15,18,20</sup>                               |  |  |
| Expenditure ratios  |  |   |  |  |
| Expenditures per capita   | Total expenditures divided by total population   | Government <sup>4,35</sup>  |  |  |
| Employees per 1000 population   | No. of full-time employees divided by population/1000  | Government <sup>4,35</sup>  |  |  |
| Fringe benefits as a percentage of salaries and wages   | Total fringe benefits divided by the sum of total salaries and wages   | Health/hospital <sup>15,18,20</sup>                               |  |  |
| Mission-critical ratios   |  |   |  |  |
| Programs with expenditures that exceed dedicated revenues combined with self-generated revenues | No. of programs with expenditures that exceed dedicated and self-generated revenues divided by total no. of programs | Public health <sup>33</sup>                                       |  |  |
| Programs with cost analysis   | No. of programs with completed cost analysis divided by total no. of programs  | Public health <sup>33</sup>                                       |  |  |
| Community statistics  |  |   |  |  |
| Population below poverty line   | Population percentage below poverty from US census   | Government <sup>4,35</sup>  |  |  |
| Residential growth  | No. of residential permits divided by population/1000  | Government <sup>4,35</sup>  |  |  |



- Benchmarking with peer agencies;
- Frameworks for financial standards of practice and financial accountability measures;
- Establishment of financial accreditation standards; and
- Ability to satisfy and minimize political scrutiny by articulating spending patterns to policymakers in a public health framework.

# CONCLUSIONS AND RECOMMENDATIONS

The effectiveness of LPHAs in responding to public health emergencies while achieving and sustaining the best health outcomes in our communities depends on their ability to use their scarce resources efficiently and effectively. Building organizational capacity is one of the most significant challenges facing LPHAs as they strive to sustain or expand successful programs that improve the population's health. Monitoring financial performance and predicting financial problems are important contributions of financial ratio analysis and have been demonstrated to help hospitals and local governments reduce costs, increase profits, and continue operations.

Our literature review showed that hospitals and local governments have been using financial ratio analysis as an essential tool to help monitor the financial condition of their organizations and to predict fiscal problems. The reviewed literature less often described improvements in organizational capacity through the use of financial indicators. Increasing organizational capacity would be evident

through the provision of more needed services, capital expansion, or achieving an organization's mission and vision. Financial indicators also help policymakers identify agencies with inadequate capacities caused by funding deficiencies.

A pair of activities associated with the use of financial indicators is apparent in the organizations that were the focus of the reviewed literature. First, most organizations were able to characterize and monitor their performance by using financial indicators to monitor financial trends or by comparing their performance to similar organizations. Second, a number of the organizations assessed their financial condition to identify financial strengths and weaknesses and to improve efficiency and profits.

One article demonstrated how an organization used financial indicators to improve performance and advance the organizational mission by expanding services and improving customer satisfaction and health outcomes. This particular case study provides 3 key observations in using financial indicators to improve organizational capacity. First, the information obtained from ratio data on mission-critical activities, resources, and expenditures increased organizational knowledge. Second, the organization took the actions required to improve its financial performance. Finally, the success in the first 2 areas occurred because processes for continuous quality improvement were embedded in the organization's culture (Figure 1).

LPHAs may achieve more of a community impact if they employ financial ratio analysis to monitor performance, increase capacity, and achieve their mission and vision. Given that the mission of public health is to ensure conditions in which people can be healthy and live longer, increasing organizational capacity in LPHAs would potentially improve the health of populations across the nation.

In this era of economic decline, LPHAs have seen their revenues shrink as the demand for services increases and expectations grow for greater stewardship of public funds. LPHAs will need sound financial management skills to sustain current services, become more transparent, and improve their organizational capacity. We offer the following specific recommendations to expand the use of financial ratios in LPHAs<sup>34</sup>:

- Funders and leaders in the public health sector should promote the development of data in uniform formats to facilitate ratio analysis. Increasing the number of agencies collecting financial data will allow comparisons among similar agencies and will help identify areas for improvement and attainable goals through the use of benchmarks.
- Financial indicators from health, government, and other sectors should be evaluated with respect to their relevance to LPHAs. Ratios unique to LPHAs will emerge as they expand the use of financial indicators.
- The use and effectiveness of financial indicators should be evaluated and tested through systematic research and pilot studies conducted in LPHA settings.
- Important findings and results from financial analyses of LPHAs

- should be disseminated across all organizations providing public health services.
- Public health schools and programs should develop and offer financial management courses, including financial ratio analysis, to their students.
- LPHA staff with financial responsibilities should receive training in the use of financial ratio analysis.

The implementation of financial ratio analysis is a viable first step in helping LPHA staff with financial duties to develop financial management skills that will aid them in their efforts to increase organizational capacity. The mutual benefits of financial ratio analysis will grow as the methodology is employed by more managers in the public health sector.

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#### **Contributors**

V. Suarez and C. Lesneski originated the study, with input from D. Denison. V. Suarez researched, analyzed, and interpreted the study data, with assistance from C. Lesneski and D. Denison. V. Suarez led the writing, and C. Lesneski and D. Denison were instrumental in



providing additional data and reviewing and contributing to the text of the article.

#### **Human Participant Protection**

Because no human participants were involved in this study, no protocol approval was needed.

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# **Advancing Public Health Obesity Policy Through State Attorneys General**

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Obesity in the United States exacts a heavy health and financial toll, requiring new approaches to address this public health crisis. State attorneys general have been underutilized in efforts to formulate and implement food and obesity policy solutions. Their authority

lies at the intersection of law and public policy, creating unique opportunities unavailable to other officials and government entities.

Attorneys general have a broad range of authority over matters specifically relevant to obesity and nutrition policy,

including parens patriae (parent of the country) authority, protecting consumer interests, enacting and supporting rules and regulations, working together across states, engaging in consumer education, and drafting opinions and amicus briefs.

Significant room exists for greater attorney general involvement in formulating and championing solutions to public health problems such as obesity. (*Am J Public Health*. 2011;101:425–431. doi:10.2105/AJPH.2010. 198697)