



Advancing the Field of Public Health Finance

Developing a public health financial database system to provide information for research, practice and education

SUMMARY

From 2007 to 2010, a team of researchers at the University of Mississippi led by Peggy A. Honoré, D.H.A., increased knowledge and disseminated information about state and local public health financing through training and research projects. The projects involved collaborations with researchers at Louisiana State University, the University of North Carolina at Chapel Hill and public health practitioners representing state and local health departments.

Training

The project team also trained public health practitioners in the basics of financial management and provided them with networking opportunities and access to Web-based information to conduct ratio and trend analysis. According to Honoré, public health professionals urgently need to understand the composition, utilization and impacts of public health finance because costs are a vital component of the quality improvement process.

Key Results

- The project team held 16 workshops to train more than 1,000 public health professionals in the use of standard financial management tools.
- Two states (Florida and Ohio) conducted pilot studies using standard financial management tools and techniques to examine the operational strengths and weaknesses of local health departments; this enabled them to take corrective action.
- Knowledge gained from the pilots generated corrective actions to improve agency financial and operational performance.
- The introduction of these financial management concepts was instrumental in creating a public health culture receptive to routine financial analysis.
- The team created a [public health finance page](#) on the [Center for Public Health Systems & Services](#) Web site. The Robert Wood Johnson Foundation (RWJF) funds

the center. Reconfigurations to the site hindered easy access by users, and RWJF is funding a new site the center is developing.

Research

The team advanced the field of public health finance by studying the impact of property taxation dedicated to public health, and organizational and operational issues in the public health system and its impact on population health. The researchers examined:

- The impact of property taxes dedicated to public health on population health in the eight states of the Mississippi Delta Region (Alabama, Arkansas, Illinois, Kentucky, Louisiana, Missouri, Mississippi and Tennessee)
- The use of decision analysis to identify funding priorities of a public health department
- Options for funding allocations within local public health practices in Georgia
- Organizational networks of state offices of minority health and their impact on health disparities

Key Findings

Impact of Dedicated Public Health Taxes on Population Health

The researchers reported their findings in an article published in *BMC Public Health* on June 14, 2011.¹

- For counties with per capita income above \$28,000, levying a property tax dedicated to public health is associated with improved health outcomes when compared to counties without a dedicated property tax for public health.
- Alternatively, levying a property tax dedicated to public health in counties with low per-capita income is associated with poor health outcomes, possibly because poor health status is exacerbated by levels of taxation on people with low incomes.
- Of the eight Mississippi Delta Region States studied, counties in Arkansas and Tennessee did not have authority to levy and collect a property tax dedicated to public health. And while Mississippi has authority to levy and collect such a tax, counties in that state do not exercise that authority.

Use of Decision Analysis Software to Identify Public Health Funding Priorities

The researchers reported findings from the budgeting practices in Spokane Regional Health District in an article in the *Journal of Public Health Management and Practice*.²

¹ Honoré PA , Fox PJ, Wang X, and Moonesinghe R. "The Effects on Population Health Status of Using Dedicated Property Taxes to Fund Local Public Health Agencies." *BMC Public Health*, 11: 471, 2011. Available [online](#).

Decision analysis is a scientific method that applies statistical tools to mathematical models of real-world problems to discover the most advantageous alternatives under the circumstances.

- As a result of using decision analysis software, the Spokane (Wash.) Regional Health District instituted changes that brought its service delivery models into closer alignment with its strategic plan.
- The use of decision analysis software resulted in effective consensus building around the values used in the budgeting process, as well as a greater understanding of the selection and relationship of goals, measures and values within the agency and its governing Board of Health.

Funding

RWJF supported this project through two grants totaling \$669,038.

CONTEXT

Public health finance is a field of study that examines the acquisition, utilization and management of resources for the delivery of public health services and the impact of these resources on population health and the public health system. According to Principal Investigator Honoré, the field is advancing out of an urgent need to understand how public health systems are funded and how the funding is utilized to achieve outcomes. The urgency stems from a range of challenges:

- While dedicated property taxes are a common financing mechanism for community services such as schools, hospitals, fire and police, most states have no counties with authority to levy a dedicated property tax for public health. Counties without dedicated property tax funding are subjected to annual fluctuating allocations from the jurisdiction's general fund.

As an example of how the lack of dedicated taxation for public health can affect funding levels, previous research conducted by Honoré found that while casino tax revenues used for schools and law enforcement increased significantly between 1995 and 2007, casino tax revenues were not dedicated for public health.³

- Efforts to collect and analyze public health financial data are limited, and there are no comprehensive national reports on health agency funding or financial performance.

² Honoré et al. "Decision Science: A Scientific Approach to Enhance Public Health Budgeting." *Journal of Public Health Management and Practice*, 16(2): 98–103, 2010.

³ Honoré PA et al. "Evaluating the Ecological Association of Casino Industry Economic Development on Community Health Status: A Natural Experiment in the Mississippi Delta Region." *Journal of Public Health Management Practice*, 13(2): 214–222, 2007. Available [online](#).

Information on public health funding formulas, which describe how funds are allocated, is also scarce.

- Scarce evidence exists on the most efficient models for financing and structuring state and local offices of minority health, which play a key role in serving vulnerable populations and eliminating disparities.
- Finance concepts have not been adequately applied to the field of public health, causing a lag behind system partners such as schools and police of nearly 100 years, according to Honoré. For policy-makers, researchers and practitioners in this field, there is neither a professional home nor any venue for information sharing, problem solving or professional networking.
- Another gap is that finance courses in Master of Public Health (MPH) programs, focus on the application of finance concepts to healthcare organizations and not on those with a public health mission.

RWJF's Interest in This Area

RWJF started a national program, *Public Health Services and Systems Research* to help establish the field of public health services and systems research as a needed resource that will improve performance of governmental health agencies. Some of its projects focus on financing.

THE PROJECT

Under the grants described in this report, Honoré's team increased knowledge and disseminated information about state and local public health financing through training and research projects.

Training Practitioners in the Basics of Public Health Finance

The team held a series of training sessions for public health staff, management, board members and officials at key national public health conferences and at state and local meetings.

Training focused on ratio and trend analysis, a fundamental financial management tool that uses data from organizational financial records and relevant demographic datasets to calculate and compare key performance ratios. Organizations can use the current and historical trends of these ratios to make inferences about their financial condition, cost of operations, operational performance, and to measure financial health and prospects of program and agency sustainability.

Training Results

The principal investigator reported the following results to RWJF:

- **The team examined the operational strengths and weaknesses of local health departments using ratio and trend analysis.** The team collaborated with local stakeholders on pilot projects that used ratio and trend analysis to examine financial and operational strengths and weaknesses of health departments in two states. The teams examined some 55 financial, program and demographic indicators over a three-year period (2006–2008).
 - When the Mahoning Health District in Ohio analyzed its financial ratios in 2007, it saw "warning signs" as documented by a negative total margin and decreasing fund balance. This prompted it to take cost-cutting measures in 2008 that restored an operating surplus by eliminating operating deficits in some of its programs. Ratio and trend analysis provided data that isolated costs overruns and prompted action to reverse shortfalls in those programs that were causing a drain on the agency's resources. Mahoning's "turnaround" led several other districts to begin tracking financial data in 2009.⁴
 - The Florida Department of Health assessed the state's 67 local health departments. The department used the ratio values obtained in their pilot project to identify inconsistencies in funding allocations and operational inefficiencies. The research findings were also beneficial to the State Health Department for identifying agencies experiencing financial exigencies and with assisting local health departments in examining practices to eliminate financial and operational challenges. The data are also used periodically to address questions posed by state legislators.
 - Health department stakeholders from both states made multiple presentations on their case studies at national conferences, as well as at subsequent trainings. This stakeholder involvement was key to the project's success, according to Honoré. (See [Lessons Learned](#).)
- **Using the results from Florida and Ohio, the research team held a series of 16 workshops that trained more than 1,000 public health professionals in the use of standard tools of financial management, primarily ratio and trend analysis.** The project was the first to educate public health professionals on uniform financial management concepts, according to Honoré, who added that the trainings also attracted new scholars to the field. Venues included:
 - Four presentations at the annual American Public Health Association

⁴ Matthew Stefanak , "Financial Performance Indicators Tracking at the Mahoning County District Board of Health," at the 2010 Keeneland Conference, April 21, 2010, Lexington, KY. Proceedings available [online](#).

- Annual conferences of organizations such as the National Association of Local Health Boards, National Association of County and City Health Officials and the Association of State and Territorial Health Officials
- Meetings of local health departments associations for Kansas, Florida, West Virginia, Kentucky and Ohio
- **The team created a public health finance page on the RWJF-funded Center for Public Health Systems & Services Web site.** The page provides links to PowerPoint presentations from the training sessions, as well as state-by-state data on budgets, dedicated public health property taxes and funding formulas.

Public Health Finance Research and Its Findings

The investigators conducted the following studies:

Impact of Dedicated Public Health Taxes on Population Health

Researchers collected demographic and health data from 720 counties of the eight states in the Mississippi Delta region, comparing health outcomes of the 338 counties that had a dedicated public health property tax to the 382 that did not. For more information on the study methodology, see the [Appendix](#).

Findings

The research team reported the following findings in an article published in *BMC Public Health*:⁵

- **For counties with per capita income above \$28,000, levying a dedicated public health property tax is associated with improved health outcomes when compared to counties without a dedicated public health tax.**
- **The difference in death rates between counties with a dedicated public health tax and without a dedicated public health tax decreased as per capita income increased.**
 - This applied to deaths attributed to lung and bronchus cancer, all-sites cancer, unintentional injury, chronic lower respiratory disease and diabetes. In addition, considering "years of potential life lost" as an indicator, the rate before age 75 was higher in counties with a public health tax and lower per capita income.
- **Alternatively, levying a dedicated public health tax in counties with low per-capita income is associated with poor health outcomes...**It is possible that counties

⁵ Honoré PA , Fox PJ, Wang X, and Moonesinghe R. "The Effects on Population Health Status of Using Dedicated Property Taxes to Fund Local Public Health Agencies." *BMC Public Health*, 11: 471, 2011. Available [online](#).

with low per capita income have higher mortality rates, because the underlying causes of death are exacerbated by levels of taxation on the poor.

Use of Decision Analysis to Identify Public Health Funding Priorities

Over a three-year period (2005–2008), the Spokane (Wash.) Regional Health District used a decision analysis software package to rank its programs and facilitate the budgeting process. (Decision analysis is a scientific method that applies statistical tools to mathematical models of real world problems to discover the most advantageous alternatives under the circumstances.)

Findings

The research team reported the following findings in the *Journal of Public Health Management and Practice* in 2010:⁶

- **As a result of using decision analysis software, the agency made changes that aligned its service delivery model more closely to its strategic plan.**

For example, the agency transferred clinical services, once provided by the agency, to community-based health centers. Instead of providing home visits, nurses focus on policy change, working within communities to influence underlying social determinants of health such as transportation, access to care, income and disability.

- **The use of decision analysis software resulted in effective consensus building around the values used in the budgeting process, along with a growth in understanding across the agency and within its governing board of health, about the selection and relationship of goals, measures and values.**

Historical Analysis of Georgia's State Grant-in-Aid Funding for Local Public Health

The team worked with a health economist at Georgia State University to complete a historical analysis of the Georgia State Grant-in-Aid funding formula for local public health.

Findings

- **Preliminary findings, presented at the 2009 conference of the Public Health Systems and Services indicated that general grant-in-aid dollars had no effect on**

⁶ Honoré PA, Fos PJ, Smith T, Riley M and Kramarz K. "Decision Science: A Scientific Approach to Enhance Public Health Budgeting." *Journal of Public Health Management and Practice*, 16(2): 98–103, 2010.

selected health outcomes (infant deaths, cancer deaths, influenza deaths and diabetes deaths per capita).⁷

- **The research team also evaluated the funding and policy implications of various alternative options for public health funding formulas in Georgia.** These formulas determine the percentage of funds to be allocated to different local jurisdictions, based on such elements as population size, poverty levels, land area and measure of need.

Organizational Network Analysis to Assess the Ability of State and Local Offices of Minority Health to Reduce Health Disparities

Organizational network analysis is a quantitative method for examining an organization's connectivity to its internal and external environments. The research team interviewed 15 leaders of state offices of minority health about their governance structure, focus on mission and inclusion of other stakeholders. The team also surveyed 224 stakeholders identified by the leaders as individuals or organizational partners with whom they worked to fulfill their mission.

- **The results of the organizational network analysis will be used to inform decisions on how to best design state and local offices with missions to eliminate health disparities, according to Honoré.**

LESSONS LEARNED

1. **Use real-world projects—and people—to energize trainings.** The research team built its trainings around their pilot study of financial and operational efficiencies in local health departments in Florida and Ohio. The team also recruited staff from those agencies to discuss their work. Both strategies sparked enthusiastic interest in the concepts and encouraged trainees to replicate the methods in their own local health departments. (Principal Investigator/Honoré)

AFTERWARD

From 2009 through 2012, RWJF has provided two grants totaling \$747,898 to the University of Southern Mississippi to fund Honoré's work in teaching public health professionals economic, finance and management concepts.⁸ Honoré is:

- Designing and building a Public Health Uniform Data System in collaboration with the National Association of County and City Health Officials. The system, designed as a Web-based portal for electronic financial, operating and demographic data entry, is fully accessible to every health department in the nation. The system will produce

⁷ Matthew Stefanak, "Financial Performance Indicators Tracking at the Mahoning County District Board of Health," at the 2010 Keeneland Conference, April 21, 2010, Lexington, KY. Proceedings available [online](#).

⁸ Grant ID#s 066024 and 068300.

data useful to health department staff, management, boards of health, researchers, policy-makers and the public. It will enhance research capacities to examine costs, funding levels and outcomes.

- Embedding financial and economic concepts into public health education
- Delivering seminars on ratio analysis to public health professionals
- Creating a public health finance Web site that will give the public health community and affiliated stakeholders access to finance tools and resources

The team's 2010 presentation to the National Association of County and City Health Officials led to planning for a ratio and trend analysis module on the association's Web site.

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APPENDIX

Methodology for Study of the Impact of Dedicated Public Health Taxes on Population Health

For their study of the differences in health outcomes of counties with and without a dedicated public health tax, the investigators collected 2003–2005 data from 720 counties of the eight states in the Mississippi Delta Region.⁹ Two-hundred and forty of these counties are considered Delta counties that share common characteristics in population health status and socioeconomic conditions and, accordingly, share a national designation as a Delta county.

Of the 720 counties, 338 had a dedicated public health property tax, and 382 did not. Some 50 percent of the 480 non-Delta counties had a dedicated public health tax during the study period whereas only 41 percent of the 240 Delta counties had a dedicated public health tax. None of the counties in Arkansas, Mississippi and Tennessee had a property tax levy dedicated to public health agencies.

The team also used national, state and local datasets to collect county-level data that are typically used as measures of community health status. These outcome measures included:

- Mortality rates for:
 - Overall population
 - Cardiovascular disease
 - Cerebrovascular Disease (stroke)
 - Heart disease
 - Chronic Lower Respiratory Disease
 - Diabetes
 - Influenza/pneumonia
 - Lung and bronchus cancer
 - All-sites cancer
 - Unintentional injury
- Incidence rates for:
 - Lung and bronchus cancer

⁹ Alabama, Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri and Tennessee.

- Colon and rectum cancer
- Prostate cancer
- Female breast cancer
- All-sites cancer
- Years of potential life lost rate before age 75

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Communications or Promotions

Grantee Web sites

www.publichealthsystems.org/phf. A site that provides tools, discussion forums, news and other resources for the field of public health finance. The site resides within the Web site of the [Center for Public Health Systems & Services Research](#). Lexington, KY: University of Kentucky College of Public Health.