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Public Health: The Forgotten Variable in the Health Care Equation

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While there are deep political divides in the United States on the topic of health care reform, most individuals and institutions share the goals of broadening access to quality care, improving the affordability of health care services for all and attaining better population health outcomes (increased life expectancy, lower infant mortality rates, reduced chronic illness burden and so on).

How to achieve these goals is the big question and one with which the work of health actuaries is becoming more and more intertwined. Our roles are expanding into more strategic and big-picture thinking about how the tools at our disposal can be leveraged to *impact* the health care system, not just to measure the financial effects of stakeholder decisions.

We look to adjust benefits, incentive programs, contracts and regulations to incentivize the various players to align their behavior with these goals. We consider payers, hospital systems, providers, pharmaceutical companies, government, employers and individuals as key parts of the equation. But what about public health? Public health rarely earns a mention in the health care reform debate or the inner workings of our various actuarial activities, but it plays a critical role in supporting health and well-being in the United States.

This article offers a brief introduction to the broad roles and responsibilities of public health, how it touches all of us and influences the U.S. population health. We also take a closer look at how public health operations are funded in the United States and who determines how that money is spent. From there, we consider how actuaries can contribute to public health in order to improve the reach and effectiveness of its programs.

ROLES, RESPONSIBILITIES AND IMPACTS OF PUBLIC HEALTH

Before we can begin to understand the complicated web of funding and determination of public health priorities, we need to grasp its goals and span of services. Fundamentally, public health seeks to promote and protect the health of people and their communities. While most of the U.S. health care system is devoted to treating people who are already sick, public health focuses on keeping people healthy.[1] Three primary ways in which public health systems influence our lives are as follows:

- Development of community programs
- Research and advocacy of health- and safety-promoting policies
- Dissemination of evidence-based information

Span of Services

When we think about keeping people healthy, we often focus on diet, exercise and drug use; we tend to overlook social and environmental factors that have a significant impact on both our health and our ability to make healthy choices. Some of these factors include income, education, race, family/support networks, working conditions, living conditions, community safety and stress levels. Public health organizations consider and influence all of these elements. Here are a few examples of the broad array of public health activities:

- Protecting communities from the spread of infectious disease through vaccinations, education and medical research/advancements
- Creating and monitoring standards around environmental contaminants (lead exposure, safe drinking water, air pollution and so on)

- Educating the public about the harmful effects of drug, alcohol and tobacco use and developing support programs for those struggling with substance abuse

- Researching and advocating programs that reduce violence and provide safe walking/bicycling in our communities

- Promoting policies that make healthy choices accessible and affordable (such as school lunch programs)[2]

Impacts on Population Health

Once you understand that our health status is influenced by all aspects of our lives, you begin to realize that the health care system only plays a small part in what contributes to overall population health. Yet in the United States, almost all of our health care expenditures fund the treatment of conditions, not prevention: less than 5 percent of total health care expenditures are spent on public health.[3]

According to one study, the United States could save a significant amount of money ($16.5 billion annually over five years, in 2004 dollars) on health care costs if it were to invest as little as $10 per person per year in "evidence-based programs that improve physical activity and nutrition and lower smoking rates in communities."[4] Those savings would come from preventing and/or managing the development and progression of costly chronic illnesses. Another study shows that, over a 13-year period, each 10 percent increase in strategic local public health spending resulted in a 7 percent drop in infant mortality rates and a 3 percent drop in deaths due to cancer, diabetes and cardiovascular disease.[5]

While a handful of studies show the potential financial benefits of spending more on public health, the lack of clear information on the return on investment of specific preventive and health-promoting activities makes it difficult to make decisions about how much to invest in public health and what programs should be the focus of those investments.

STRUCTURE, FUNDING AND SPENDING OF PUBLIC HEALTH

The public health system in our country is, in the simplest terms, complicated and inconsistent. There are various levels and many branches of public health, but for a basic overview let's break it up into federal, state and local (community) programs and funding.

Federal

Federal public health agencies, such as the Centers for Disease Control and Prevention (CDC), are financed by federal discretionary funding, which essentially means that federal spending on public health requires congressional approval. Direct federal spending on public health is typically focused on disaster relief or mitigation (as in the cases of Hurricane Katrina or the H1N1 flu pandemic).[6] Most of the federal money set aside for public health is allocated categorically to states and localities—either through prescriptive funding or specific grants—which means the federal government prescribes how that money must be spent (such as $X for Women, Infants and Children [WIC] and $Y for infectious disease). The rest is allocated down through block grants, where states and localities have more flexibility with how to spend the money. While the latter is critical to public health department operations (filling in funding holes, allowing for flexibility in spending, creating efficiency in staffing and so on), these funding streams are often at more risk due to their not having clear advocates like the categorical funding does.[7]

> While public health funding decisions are not only about the numbers (nothing political ever is), effecting change starts with well-informed decision making.

State

State health departments (SHDs) are financed through a combination of federal funds (grants and categorical allocations, as already explained), general state funds, Medicare/Medicaid, and public health fees/fines. The proportions of funding that come from these four areas vary widely, but federal funding provides the majority in most states,[8] and public health entities must compete with other state services (such as education and law enforcement) for "general funds." Receiving a significant portion of funding through federal categorical allocation often results in SHDs developing programs based on what is funded, not what is needed.[9]

Local

Local health departments (LHDs) get some money from federal- and state-allocated funds, but, though it varies widely, most funding for LHDs usually comes from the locality itself, meaning general funds, local taxes and property taxes. Local health departments often have more flexibility in how they spend their money than SHDs do,[10] although local programs are still at risk of funding swings at the higher level. Some CDC moneys pass through to LHDs using formulas. For example, HIV prevention money is based on HIV prevalence in a specific community. This means that if a community has a low prevalence of HIV thanks to a strong preventive program, this low prevalence can translate to lower funding, which puts that effective program at risk.[11]

Funding is a real challenge for public health systems at all levels. Funding streams are unpredictable, in competition with other public services and often predetermined as to how they must be spent. There is very little consistency across states and localities as to how revenue is allocated to various initiatives, and due to the complex nature of the funding, there is little transparency to the public regarding how public health dollars are spent. These complexities, in addition to heavy administrative and reporting burdens, contribute to the difficulty of performing accurate analyses of program outcomes.

A ROLE FOR ACTUARIES

Public health institutions would greatly benefit if policymakers and other key stakeholders in the health care industry better understood how long-term costs could be curbed by expanding health-promoting programs. Until there is clear evidence that public health programs move us toward our common health goals, there will be no improvement in the funding and prioritization of these initiatives.

There is an opportunity here for health actuaries to make a difference in society by quantifying the financial value of public health initiatives. Actuarial evaluations could influence the public health debate in several ways:

- Informing public health entities how best to prioritize existing funds through the identification of programs that are (or are not) working as intended, and how much value is created per dollar invested
- Developing and disseminating unbiased information on the financial value that public health programs create in order to garner public support and secure additional funding
- Encouraging partnerships with payers and/or providers that have the ability to broaden the impact of local programs with high returns on investment

CONCLUSION

From its goals and basic structure to its key challenges, public health is a fascinating, complex and far-reaching topic, and health actuaries could play an important role in filling a major information gap both within the field and for policymakers. While public health funding decisions are not only about the numbers (nothing political ever is), effecting change starts with well-informed decision making. Actuaries have the knowledge and skills to delve into this challenging area and shed some unbiased light on what is and is not working to move us toward our population health goals.

U.S. health care costs continue to rise unabated, yet public health, which is vital to realizing the larger goal of better health outcomes at lower costs, has been largely overlooked in health care reform discussions. Without doubt, public health will be an important part of any effective U.S. health care system, and actuaries who venture into this field will truly be able to make a difference in the health of the nation. ■

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ENDNOTES

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3 Mays, G. P., and S. A. Smith. 2011. Evidence Links Increases in Public Health Spending to Declines in Preventable Deaths. *Health Affairs (Millwood)* 30, no. 8: 1585.

4 Levi, Jeffrey, Laura M. Segal, and Chrissie Juliano. 2009. *Prevention for a Healthier America: Investments in Disease Prevention Yield Significant Savings, Stronger Communities*, 3. Washington, D.C.: Trust for America's Health.

5 Mays and Smith, 1589.

6 Meit, M., A. Knudson, I. Dickman et al. 2013. *An Examination of Public Health Financing in the United States*, 15. (Prepared by NORC at the University of Chicago.) Washington, D.C.: The Office of the Assistant Secretary for Planning and Evaluation.

7 Ibid, 66–67.

8 Ibid, 21–25.

9 Ibid, 66–67.

10 Ibid, 39–41.

11 Ibid, 47.