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Strengthening the Use of Economics in Informing U.S. Public Health Policy

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Policy levers are among the most powerful tools of public health. From Congressional legislation to corporate action, Americans are surrounded by policy decisions that can profoundly affect the most important determinants of health. They shape the social and physical environments, people's behaviors, and the clinical care system.

Economics can assess the value and effectiveness of policy choices to inform better decisions. Credible evidence on the costs and consequences of proposed policies is often key to their adoption. The Congressional Budget Office and the Office of Management and Budget rely on estimates from the published economic literature in "scoring" proposed legislative policies and assessing benefits and costs of potential regulatory action, respectively. In public health, economic evaluation, primarily cost and cost-effectiveness analysis, has been widely used to demonstrate the economic burden of health-related conditions and the value of proposed programs and policies.

As the number of economists working in public health within academia and with the government has grown over the past several decades, they have begun to apply their tools in many new ways, broadening the scope of both disciplines, and thereby carving a permanent space for public health economics as a legitimate subfield within health economics and policy. As recently as the early 1990s, the number of economists at the Centers for Disease Control and Prevention (CDC) could be counted on one hand, with many on loan from universities. Since then, CDC's Steven M. Teutsch Prevention Effectiveness Fellowship Program (www.cdc.gov/pef/) has trained more than 150 fellows, the majority of whom

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continue to work at CDC, vastly increasing agency capacity as well as helping build the field of public health economics more broadly.

This integration of economics and public health has resulted in other major milestones; the guidelines formalized by the Panel on Cost-Effectiveness in Health and Medicine, almost two decades ago, stimulated the number and quality of rigorous economic evaluation studies covering a host of public health issues and interventions.[1] More recently, the provisions in the Affordable Care Act to cover preventive care with no cost sharing were informed by several publications from the health economics literature.[2–5] However, despite the wealth of evidence on the value of public health and prevention, rigorous evidence specific to the policy question is often not available within the tight time window for informing the policy process. Clancy et al.[6] suggest that one possibility for mitigating this challenge is to anticipate and conduct complete and up-to-date research on potential costs and benefits of current policy options as the Congressional Budget Office routinely does in its policy options documents,[7] so that the evidence is ready when the policy window opens up or decision making takes center stage.

Given this backdrop, the goal of this *American Journal of Preventive Medicine* supplement on "The Use of Economics in Informing U.S. Public Health Policy" is to influence policy researchers to identify and undertake economic research that generates the key evidence needed to inform policy. The Supplement covers a broad range of issues and methodologic approaches to illustrate the many ways that economics has been used in public health while also suggesting additional opportunities for using economics to better inform and accelerate public health's impact.

The opening commentary provides a broad context on the traditional ways in which economic analysis has been used in policymaking as well as additional ways in which these analyses could better inform the policy process, particularly by identifying incentives for specific players, designing financial and behavioral rewards to improve policy effectiveness, and using experimental and historic data for rigorous evaluation on policy effects to strengthen the empirical basis for decision making.[8] The article by Russell and Sinha[9] traces the methodologic development and discusses ongoing challenges of cost-effectiveness analysis in public health, particularly in valuing costs and benefits of interventions that occur outside the health sector.

The next set of articles examines more-recent advances in economic methods in terms of their policy applicability. The article by Matjasko and colleagues[10] explains how incorporating insights from behavioral economics can be applied to "nudge" people into healthful behaviors, thereby improving effectiveness and efficiency of public health policy; the article also provides illustrative examples from the recent literature. Cutler et al.[11] discuss four possible methodologic approaches for evaluating changes in consumer surplus that may result from policies to curb the consumption of habitual or addictive products with high health risks; they identify the "rational consumer" approach as most feasible, given current data limitations, for benefit–cost analysis of proposed regulatory action.

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As the Affordable Care Act extends health insurance to millions previously uninsured with multiple provisions that improve coverage of preventive services, Wallace and Sommers[12] provide a timely review of experimental and quasi-experimental methods and their applications in assessing how health insurance affects prevention, with recommendations for future research in using the data emerging from these and other natural experiments to rigorously evaluate the effect of policy changes on use of preventive care and population health.

The long-term sustainability of these unprecedented health system changes will eventually depend on their ability to rein in healthcare costs through innovations that transform the clinical care system from a volume-based to a value-based system that improves population health. These transformations, including wide-spread payment reform, and testing and scaling of new healthcare delivery models, have renewed interest in integrating clinical care and public health systems as discussed in the papers concerning team-based care for hypertension, how investments in prevention can offset future medical costs, and how pay for performance systems can affect delivery of clinical preventive services.[13–15]

Specifically, the article by Dehmer and colleagues[13] uses a microsimulation model to predict 10-year health and budgetary impacts of scaling up a team-based care intervention for people with uncontrolled hypertension. Findings indicate sizable health impacts and potential cost savings for all payers if intervention costs are low; even with higher intervention costs, the cost savings to Medicare would more than offset the expected cost borne by Medicaid and private insurers. Goldman et al.[14] provide a broad perspective on chronic disease prevention by proposing a shift in the U.S. approach to biomedical research from a focus on treating individual diseases in isolation to studying aging as a modifiable risk factor, which can be slowed to compress disease and disability toward the end of life. They simulate two scenarios using the RAND Future Elderly Model to demonstrate the sizeable health and economic dividends that can be generated from innovations that delay aging and the increased adoption of physical activity guidelines in the U.S. Hu and colleagues[15] apply quasi-experimental methods to prior surveys to evaluate the policy effects of implementing Medicaid pay for performance programs on the immunization rates for six vaccines among Medicaid-eligible children.

The next section comprises articles that illustrate how standard economic evaluation can be adapted to inform practical programs and policies. Nelson et al.[16] conduct parallel cost-effectiveness and budgetary impact analyses to assess impacts of the Veterans Affairs' initiative to reduce methicillin-resistant staphylococcal infections. Scharff and colleagues[17] exploit the staggered adoption of a foodborne disease surveillance program across states as a natural experiment to evaluate its effectiveness in reducing reported illnesses, and then estimate attributable medical costs and productivity losses averted from these reduced illnesses. Grosse at al.[18] show that cost savings from mandatory folic acid fortification of cereal grain products may be larger than previously believed, by updating estimates from a prospective analyses with a retrospective assessment that uses actual data on reductions in neural tube defects after the policy was implemented.

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The concluding commentary by Teutsch and Fielding[19] describe important ways that economic tools can be used by local public health departments in prioritizing among competing choices, informing policy adoption, aligning stakeholder incentives, and managing deployed resources. The authors argue that given the scarcity of economic expertise at the local level, availability of regional or state economic analytic resources to support all health departments could be beneficial.

Glied and Miller[20] have shown that health economic research has been absolutely essential in informing health policy, particularly the Affordable Care Act. To achieve similar success, the next generation of economic studies in public health must also strengthen the empirical basis for decision making to better inform policy.

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