

Commentary

Overcoming Challenges for the Economic Evaluation of Investments in Children's Health

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Decision making with respect to investing in children's health is like decision making for any other investment. Those who use resources to promote children's health in early childhood expect a return on investment. An argument to support resource allocation to enhance children's health must compare costs incurred to and benefits received by specific stakeholders. These considerations are similar to any other economic evaluation (eg, cost-effectiveness analysis) or economic analysis of individuals' responses to changes in incentives.

Economic data about investments in alleviating threats to children's health are sparse, uneven, and not easily synthesized.¹ This is one of several challenges to performing an overarching economic evaluation and analysis comparing the value of multiple investments in children's health. Other challenges to economic studies of children's health interventions include the need to assess parents' preferences and views of the value of resources, the dynamic effects of multiple influences on a child's life (even at a young age, many stakeholders are involved in providing resources), and the fact that targeted outcomes could be related to any input.

Parents have preferences for their children's health and for their own interests, and they make decisions to allocate their resources accordingly. Even with sufficient personal resources available to make healthier choices, many parents' preferences lead them to provide a less than optimally healthy diet, or to expose their children to second-hand smoke. Although providing monetary or in-kind subsidies to promote children's health should decrease the cost of raising healthy children, there is no guarantee this will occur. Parents will likely have to allocate more of their own time, money, and effort as resources, no matter how much public financing and other resources are made available to support children's health. Thus, even if no other challenges were present, the difficulty of predicting

parental participation, particularly among those with children at higher risk, will remain.

The dynamic effects of multiple influences on a child's life are important from a scientific and policy perspective because most scientific conclusions are drawn from studies performed at a specific time in a specific place with a specific set of extenuating circumstances. Changes in any of these have the potential to modify the expected outcomes of an intervention that is being applied in a new location at a new time with a new set of extenuating circumstances. Thus, an analyst predicting the changes that will occur after an intervention must be cautious about the generalizability of the costs, the magnitude of effectiveness, and the economic value of an intervention.

For each economic evaluation, a perspective is chosen. The perspective indicates the stakeholders whose interests are represented in the inputs and outcomes that are being compared. The benefits of improving children's health are realized in a variety of ways. These can include savings in future health care expenditures, improved educational attainment and lifetime productivity, improved earnings potential, reduced dependence on public assistance programs, and reduced interaction with the criminal justice system.

One perspective from which children's health interventions are particularly important is the public finance perspective. However, the public finance perspective does not imply a singular set of costs and benefits. For example, public health care expenditures are funded by different levels of government and may even be funded by different departments at the same level of government. Public educational expenditures are funded at different levels of government. Higher educational attainment affects earnings potential, the need for public assistance, and interaction with the criminal justice systems—each of these in turn affects expenditures at multiple levels of government. The need to identify, describe, and synthesize all these effects makes an analysis from a public finance perspective complicated.

The resources used to promote children's health that are invested when the children are 0 to 5 years old may take years, decades, or a lifetime (eg, lifetime earnings potential) to fully emerge. In other words, the benefits can accrue to a large number of stakeholders over an extended time

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period. Although policy makers may be most interested in a public finance perspective, the science of economic evaluation suggests the use of a societal perspective in which all costs that occur at all times are considered and compared with all benefits that occur at all times. This approach, however, does not consider the distribution among stakeholders of the resources that are required or benefits that accrue. Even if the long-term return on investment is favorable from the perspective of the whole society, there is no guarantee that each stakeholder will benefit within a time frame of interest to those who control the resources. A case for business interests in child health care investment has been made previously, but realistically, this must be repeated for each intervention.²

Finally, in addition to the outcomes targeted by interventions to improve children's health, there may be other positive or negative changes that occur. For example, changes in health can lead to changes in behavior or changes in readiness for learning. These nontargeted outcomes will have financial impacts both in the short run (eg, changing the need to use other resources for education or counseling), and in the long run (eg, changing educational attainment and earnings). Many economic evaluations focus only on targeted, short-run outcomes. This focus creates conservative estimates of the economic impact of an intervention and makes it more difficult to conclude that investing in children's health will be an economically sound decision for the full spectrum of stakeholders.

Although the favorable economic value of investing in children's health may seem self-evident because there are many years over which the child and society can benefit, the value is not always that clear: "The extent to which averted costs offset intervention costs depends on the uptake, efficacy, and resource intensity of the intervention."³ A straightforward economic argument can be made when an intervention has low costs, targets a clearly identifiable population, and has a measurable impact on the target population. Examples include maternal smoking counseling⁴ at an individual level or enforcement of age bans⁵ or the mandatory installation of car seats for infants and toddlers⁶ at the public health level. Scientists, policy analysts, and policy makers who want to argue for

complex, multifaceted, multieffect interventions to improve children's health should be prepared for the complexities of making a convincing economic argument. For researchers, a coherent framework should guide data collection, analysis, and presentation so that the results provide information of interest to all stakeholders in a systematic fashion. The information will be of greatest use to stakeholders if those who will bear the costs and reap the benefits, both in the short run and the long run, are clearly described. Disaggregated economic impact estimates focusing on different population groups and/or government branches will help policy makers to understand the distributional implications (and likely political acceptability) of their actions. In sum, the challenges embedded in the analysis of investing in children should not be thought of as insurmountable barriers, but as strong motivation for rigorous and systematic analysis and cautious interpretation.

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REFERENCES

1. Guyer B, Ma S, Grason H, et al. Early childhood health promotion and its life-course health consequences. *Acad Pediatr*. 2009;9:142-149.
2. Homer C, Iles D, Dougherty D, et al. for the Child Health Business Case Working Group. Exploring the business case for improving the quality of health care for children. *Health Aff*. 2004;23:159-166.
3. Grosse SD, Teutsch SM, Haddix AC. Lessons from cost-effectiveness research for United States public health policy. *Annu Rev Public Health*. 2007;28:365-391.
4. Donatelle RJ, Prows SL, Champeau D, Hudson D. Randomised controlled trial using social support and financial incentives for high risk pregnant smokers: Significant Other Supporter (SOS) program. *Tob Control*. 2000;9(Suppl 3):III67-III69.
5. Levy DT, Chaloupka F, Gitchell J. The effects of tobacco control policies on smoking rates: a tobacco control scorecard. *J Public Health Manage Pract*. 2004;10:338-353.
6. Doyle JJ, Levitt SD. Evaluating the effectiveness of child safety seats and seat belts in protecting children from injury. NBER Working Paper W12519; 2006. Available at: <http://ssrn.com/abstract=930609>. Accessed February 16, 2009.