

ASSESSING HEALTH EFFECTS OF COMMUNITY DEVELOPMENT

Nancy E. Adler

University of California, San Francisco

Although health is a major topic of U.S. policy debates, the focus has not been on *health* policy but rather on *health care* policy. The emphasis in such discussions on the organization and financing of health care is understandable given that health care consumes 17.6 percent of our gross domestic product, and projections are that it could constitute almost 20 percent within eight years.¹ This single-minded perspective ignores the fact that health care is only one input to health, and among the various determinants, it accounts for a relatively small proportion of differences in overall health and longevity. Access to and quality of health care has been estimated to account for only about 10–20 percent of premature

¹ Centers for Medicare and Medicaid Services. National Health Expenditure Data (2012). Available at http://cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/index.html?redirect=/NationalHealthExpendData/25_NHE_Fact_Sheet.asp.

mortality in the United States. Genetic vulnerabilities account for another 30–40 percent. The remaining determinants, accounting for the largest proportion of lost years of life, involve behavioral and social factors and environmental exposures.²

Our lack of attention to determinants of health other than health care may be one reason that we incur the highest per capita health care costs of any nation by far, but have relatively poor health status. The Organization for Economic Co-operation and Development (OECD) is a helpful source of cross-national health and spending comparisons. It provides evidence-based analysis and data on a wide range of the social and economic characteristics of its 34 member nations. According to the OECD, U.S. per capita spending on health care (over \$8,000) is more than one-third higher than that of the next highest spending country. Despite this, of the 34 OECD nations, the United States ranked 31st in infant mortality, 25th in male life expectancy, and 27th in female life expectancy.³ These international comparisons illustrate that we are not getting as much health benefit per dollar spent on health care as are other countries.

Even setting aside problems of inefficient, unnecessary, and/or poor quality services, investing solely in health care as our vehicle for assuring health is unlikely to succeed. A recent study of 30 OECD countries examined the association of five different health indicators with expenditures on both health care and social services (including housing). Higher per capita expenditures on both health services and social services were related to longer life expectancy, but, independent of the level of health expenditures in a country, the greater the ratio of its spending on social services relative to health services, the better the country's health outcomes.⁴ Compared with other OECD countries, our

2 J.M. McGinnis, P. Williams-Russo, and J.R. Knickman, "The Case for More Active Policy Attention to Health Promotion." *Health Affairs* 21 (2) (2002): 78–93.

3 OECD. "Statistics from A to Z." Available at http://oecd.org/document/0,3746,en_2649_201185_46462759_1_1_1_1,00.html.

4 E.H. Bradley, B.R. Elkins, J. Herrin, & B. Ibel, "Health and Social Services Expenditures: Associations with Health Outcomes," *BMJ Quality and Safety* 20 (10) (2011): 826–831.

relatively greater investment in health care services is accompanied by relatively poorer investment in social services. Given the comparatively greater contribution to health of behavioral and social conditions than of health care, it is not surprising that expenditures on social programs appear to yield better health returns than do equivalent expenditures on medical care.

WHY SHOULD THIS BE OF INTEREST TO THE COMMUNITY DEVELOPMENT INDUSTRY?

The analysis of spending by OECD countries suggests that investments in housing along with other social spending are associated with improvements in health. This interpretation is consistent with findings from a number of U.S. studies linking specific aspects of housing and other community factors with health outcomes. However, although it follows that community development investments should yield health benefits, this has not yet been well established.

Empirical demonstrations of the health impact of community development would be helpful for a number of reasons. Such demonstrations could provide added impetus for future projects and garner greater public and governmental support. In addition to these indirect benefits, empirical evidence of health care savings resulting from community development could potentially help fund these projects. Given the unsustainability of today's health care costs, as well as anticipated cost increases, both public and private payers are looking for creative ways to reward interventions that will reduce health expenditures.

In new payment arrangements such as Accountable Care Organizations (ACOs), a group of health care providers agrees to share risk for the health care costs incurred by a designated population for which they have taken responsibility. In return, they are offered a chance to share in the savings on expected costs for that population. Health systems operating as ACOs benefit financially if their designated populations stay healthier and require fewer services. If a developer can show that some of an ACO's cost savings are the result of a community development project, there

would be a legitimate call on the profits enjoyed by the ACO as a result of the population's changed health care use.

HOW SHOULD HEALTH EFFECTS BE QUANTIFIED?

The ability to reward community developers for savings in health care costs will depend on the ability to quantify such savings. It is too early to provide an explicit formula for doing this, but not too early to begin the conversation on how to do so.

Research Design

The debate will likely be about what evidence is sufficient to conclude that there has been a health benefit from a given project. Among health researchers, the gold standard for demonstrating causality is the randomized clinical trial (RCT), but many feel that reliance on RCTs is too limiting.

In an RCT, volunteers are randomly assigned to an experimental condition in which they receive a “treatment” designed to effect change, or to a control condition that is identical to the experimental group but with no intervention. When individuals are assigned at random to an experimental or control condition, there is less worry that the differences following treatment are due to preexisting differences among individuals or to aspects of the research experience unrelated to the treatment itself. The most rigorous RCTs are “double-blind,” meaning that neither the participants nor those providing treatment know which group an individual is in until the end of the study period.

RCTs are expensive and challenging. A double-blind RCT at the social level is impossible; even randomization to group has formidable barriers. Despite this, randomized trials of social programs have been done. One example is Oportunidades, which involved the most impoverished segment of the entire Mexican population. Families below an income cut-off were randomized by community to participate in an income supplement program tied to incentives for health-promoting behaviors or to a control

condition that delayed the start of the program.⁵ An evaluation of the program found that children in families that received the cash transfers achieved greater height and showed better motor, cognitive, and language development than did controls.

Another example is Moving to Opportunity, which randomly assigned residents of housing projects in several U.S. communities to one of three conditions: residents received vouchers to move to another community of their choice; residents were given vouchers that restricted their move to a community with low poverty rates; and the control group.⁶ The program resulted in significant health benefits for those in the treated condition versus controls up to 10 years later. Specifically, moving to a better neighborhood led to lower rates of extreme obesity and diabetes, psychological distress, and major depression.

When randomization is impossible, researchers rely on “quasi-experimental” designs. The strongest quasi-experimental designs use a well-matched comparison group, measured along with the treated group before and after a treatment. This design helps rule out preexisting differences in the treatment and comparison groups as a reason for different outcomes following the intervention. Weaker designs examine change from pre- to post-intervention only in the treated group or obtain measures on both groups only after the intervention. There are obvious trade-offs in the difficulty and cost of implementing these designs versus the value of the resulting data.

Health Measures

Beyond the designs for evaluation, it is critical to consider when and how health effects should be measured. Unless the outcome measures are well matched to the expected benefits, evaluators may fail to detect positive results. A community development

5 L.C. Fernald, P.J. Gertler, and L.M. Neufeld, “10-year Effect of Oportunidades, Mexico’s Conditional Cash Transfer Programme, on Child Growth, Cognition, Language, and Behavior: A Longitudinal Follow-up Study.” *The Lancet* 374 (9706) (2009): 1997–2005.

6 J.R. Kling, J. Ludwig, and L.F. Katz, “Neighborhood Effects on Crime for Female and Male Youth: Evidence from a Randomized Housing Voucher Experiment.” *Quarterly Journal of Economics* 120 (2005): 87–130.

project could, for example, help delay or prevent the onset of cancer, cardiovascular disease, or diabetes, but these conditions take a number of years to develop, and benefits of the project may not be immediately measureable. This may lead to an erroneous conclusion that the project had no effect on health. Several strategies can address this problem. One is to focus on conditions (e.g., injury, birth outcomes, depression, or asthma) that are more immediately sensitive to current environmental conditions. A second strategy is to look at subpopulations that already have a condition and compare the disease course and complications of those in the “exposed” and “control” populations. A third option is to look for risk factors that may appear before actual disease emerges and that can capture effects within a more reasonable time frame.

In addition to considering how a project may affect a specific disease or condition, global assessment of health status may provide a more sensitive indicator of benefits and better capture cumulative effects of community improvement. Community development projects are likely to affect a range of health problems, whereas their effects on any one disease may be relatively rare in a given time period and hard to detect. Therefore an overall measure of health will be more informative.

One of the simplest measures of global health status is the question, “How would you rate your health relative to others your age?” Responses to this question predict future mortality even when controlling for objective measures of health.⁷ Other self-report questions can be used to assess functional status, ability to perform activities of daily living, or depression. Each of these conditions not only has implications for health care costs but also translates into costs associated with lack of productivity in the workplace and with need for care at home.

Data Sources

Although some measures of the health effects of community development will require new, targeted data collection, evidence

7 E.L. Idler and Y. Benyamini, “Self-rated Health and Mortality: A Review of Twenty-seven Community studies.” *Journal of Health and Social Behavior* 38 (1) (1997): 21–37.

of health impact may also be found in existing data. Many surveys include self-reported health status, including ongoing national and state-level health surveys. Some local public health departments also conduct surveys of their communities. Linking to such publicly available data may reduce the need for additional data collection.

Administrative records are another source of existing data that may be informative. Medical claims data provide direct evidence of health care costs, reflecting use of services and expenditures. For example, relative costs incurred per capita for a population served by a community development project could be compared to those of another community (ideally both before and after the project was implemented), or benchmarked against national trends in per capita health care costs during the same period.

Biological changes that indicate risk for subsequent disease can provide earlier evidence of health effects from community development than will disease diagnosis or progression. Substantial advances in identifying “biomarkers” or surrogate end points for disease now make it possible to collect such information outside of the doctor’s office or laboratory. For example, it is possible to assay a number of biological indicators either from saliva or from a blood spot obtained from a small finger prick.⁸ Some biomarkers are disease-specific (e.g., glucose tolerance for diabetes, HDL [high-density lipoprotein] and LDL [low-density lipoprotein cholesterol] for cardiovascular disease). Others assess risk factors associated with dysregulation of metabolic function and immune function, and cellular aging. Biomarkers indicating more general risk of disease and mortality include BMI (body mass index, which is a ratio of weight to height), waist-to-hip ratio (which assesses fat deposition in the abdominal area), interleukin 6 (IL-6, a protein secreted by the body to fight infection which provides a measure of chronic inflammation), and telomere

8 T.W. McDade, S. Williams, and J.J. Snodgrass, “What a Drop Can Do: Dried Blood Spots as a Minimally Invasive Method for Integrating Biomarkers into Population-based Research.” *Demography* 44 (4) (2007): 889–925.

length (the length of the protein sequences that cap the tips of chromosomes and maintain their structural integrity).

In the coming years, more information is likely to become available through advances in remote monitoring of health status and use of biomarkers to track disease risk. Similarly, innovative approaches to measuring fitness are coming on the market. Advances in collecting and analyzing biological specimens are reducing the cost and burden of obtaining biomarkers that reflect early stages of disease or predict later onset. Increasingly, biomarkers are being added to population surveys and may provide community-wide indicators of risk that can be linked to community development efforts.

Any discussion of data collection to evaluate health effects of community development must include consideration of ethical issues. Individual privacy must be maintained and procedures must be in place to ensure that no one in the study can be individually identified.

Opportunities to Collect and Use Quality Data

Choosing the best health measure will depend on the nature of the community development project and the characteristics of the population it will serve. Special attention should be given to possible confounders that could bias the findings or random factors that add “noise” and make it harder to detect the effect of the project. The more thinking that goes into such challenges in advance, the greater the chance that the designs can guard against “false positives” (finding a health benefit of a project when, in fact, no real benefit occurred) as well as “false negatives” (failing to find a benefit that does, in fact, exist).

At this early stage in linking community development and health, it would be helpful if all projects would use a core set of common measures (e.g., self-rated health). The resulting data would allow for comparisons across projects and populations and facilitate establishment of a national database that could reduce the need for original data collection by each project.

Data collection is expensive, but it may be possible to leverage an initial investment in well-designed research to lower the demands on subsequent projects. The National Institutes of Health, the U.S. Department of Housing and Urban Development, other government agency funders, and private foundations may be willing to support an initial demonstration of the health effects and health care savings of a few community development projects. As groups collect data, the findings could be amassed in a publicly accessible archive that would allow future projects to model potential savings and collect information on targeted outcomes to confirm that national trends are reflected in their populations. Data that are being generated in the context of health impact assessments could also be entered into such an archive, and, conversely, investigators could draw on it to conduct their analyses.

CONCLUSION

Attention to the health effects of community development is consistent with a movement toward “health in all policy.” The time is ripe to move beyond a general discussion of the value of linking health and development to creating an action plan for directly testing the link and determining the magnitude of the effects. Although each development project will have unique characteristics that will affect the research design and measures needed to assess its health impacts, evaluation of any one project will be less costly and more effective if there is agreement on minimal standards for evidence, use of common measures, and development of a data archive that can be used as a basis for comparison for a given population and project. This argues for a roadmap designed collaboratively by community development and health professionals. The Federal Reserve meetings that have occurred over the past two years have set the goal and direction for such efforts. We now need to draw the map and construct the roads that will get us there.

NANCY E. ADLER, PHD, *is the vice-chair of the Department of Psychiatry, and director of the Center for Health and Community. She is also the Lisa and*

John Pritzker Professor of Medical Psychology in the Departments of Psychiatry and Pediatrics at the University of California, San Francisco. She received a bachelor's degree from Wellesley College and a PhD in Psychology from Harvard University. After serving as assistant and associate professor at University of California, Santa Cruz, she came to University of California, San Francisco, to initiate a graduate program in health psychology, and now directs two postdoctoral training programs and conducts research on socioeconomic determinants of health.