Guest Editorial

USE OF EVIDENCE TO REDUCE CHILD HEALTH DISPARITIES IN THE U.S.: AN INTRODUCTION TO THIS ISSUE OF *PUBLIC HEALTH REPORTS*

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This issue of *Public Health Reports* makes significant contributions to the available evidence used to support decisions addressing disparities in U.S. child health and health care. Per capita spending for health care in the U.S. in 2001 was $4,887, nearly twice that for Japan ($2,627) and more than 2.5 times that for the United Kingdom ($1,835).[1] This relatively large and growing investment of public and private U.S. dollars does not necessarily result in commensurate returns in health: the U.S. ranks in the third decile for many measures of population health for children and adults. In 2000, infant mortality in the U.S., roughly 7 infant deaths for every 1,000 live births, was no better than that observed either in the UK or in Japan, which reported an infant mortality rate of 3 per 1,000 births.[2] This paradox exists in a disconcerting context. The health of U.S. residents overall and the health of many U.S. subgroups has improved remarkably by nearly all measures over recent decades. Many individuals enjoy better health, yet large disparities persist among racial/ethnic, socioeconomic, and geographic subgroups. It is these disparities that in large part explain the persistently low U.S. ranking in international comparisons. For example, if the U.S. infant mortality rate for African Americans (14.4 deaths for every 1,000 live births in 2002) was similar to that for whites (5.8 deaths for every 1,000 live births), the U.S. ranking among reporting United Nations member countries would rise from 24th to approximately 7th.

In economic terms, the primary output of the U.S. health care system is the health of its citizens. In the broadest sense, health care is supported by both public and private sources of funding and encompasses both preventive and treatment services. Health, as a public good, returns to society as improved productivity and reduced downstream expenditures for care. Because health is also subject to influences that are independent of health care, it is difficult sometimes to identify the sources of suboptimal health. Moreover, those responsible for specific health-related inputs may find opportunity to attribute poor health to inputs other than those for which they are responsible. For example, those with poor health sometimes blame the health care delivery system. The delivery system tends to blame harmful behaviors and social inequities related to poverty and discrimination. Some health inputs depend neither on individual behavior nor the functioning of the health care system. These include community structures and policies that influence health, environmental, and workplace hazards and external barriers to care access.

Complicating the independent influences of individual decision-making, socio-environmental context, and health care delivery are important but poorly understood interactions among these sets of effects. Distinctly, but also importantly, health status impacts personal decision-making and may even influence the behavior of the delivery system to the extent that systems perceive themselves as relevant only to narrowly defined disease states (Figure 1).

Interactions between preventive services that might be available in the largely government-funded U.S. public health arena and health services provided outside the public health system may be particularly important determinants of the apparent discrepancy between spending for health services and health. National investments in public health services, which are largely preventive, vary greatly in international comparisons as a proportion of total health care spending, and perhaps carry a stronger association with overall population health (Table 1).

Funding decisions for public health services in the U.S. tend to be made independently from such decisions for other health services. Moreover, public health practitioners tend to be segregated both professionally and geographically from other health care providers. In response to criticism that they pay insufficient attention to prevention, non-public health physicians and the organizations with which they are associated sometimes offer suboptimal training and associated inefficiencies in busy practices as explanations. These separations between public health providers and other health care providers in the U.S. offer opportunities to partition care and thus responsibility. Poor use of preventive services, high prevalence of potentially preventable conditions, and suboptimal access to care become public health issues—while poor response to treatment, errors in care, unsafe care delivery, and high costs of cure are outside the responsibility of public health officials. Consumer decisions are sandwiched between, and as perceived by some, layered

Figure 1. Health status model

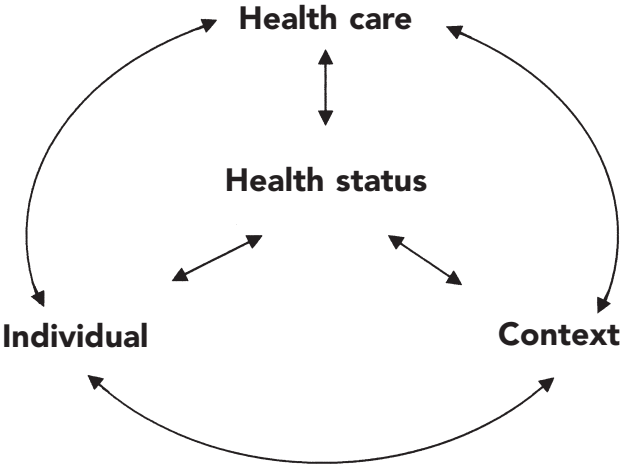

Table 1. Infant mortality and national expenditures for public health

Country	*Infant mortality 2000*[a] *(deaths/1000 births)*	*GDP per capita 1992*[b] *(1985 U.S. dollars)*	*Health expenditures 2001*[a] *(Percent of GDP)*	*Public health expenditures 1995*[b] *(Percent total health dollars)*
Japan	3	15,105	8.0	78
Germany	4	—	10.8	78
UK	6	12,724	7.6	84
USA	7	17,945	13.9	47

[a]World Health Organization. The World Health Report 2004. Statistical Annex [cited 2005 Apr 14]. Available from: URL: http://www.who.int/whr/2004/annex/en/

[b]World Health Organization. The World Health Report 1999. Statistical Annex [cited 2005 Apr 14]. Available from: URL: http://www.who.int/whr/1999/en/whr99_annex_en.pdf

GDP = gross domestic product

over these nearly independent public health and non-public health sources of services available to promote health. These decisions are "sandwiched between" in several ways—with consumers sometimes receiving mixed messages from different sets of providers in different locations and being asked to pay for one type of service and not pay for another. The decisions are "layered over" because public health providers and traditional health care providers can each claim that the individual must also take some responsibility; the corollary of which, in the absence of clear evidence, is that poor health outcomes can, and often are, attributed to inappropriate consumer behavior rather than suboptimal service delivery systems.

This U.S. health triangle, comprised of the consumer, the public health provider, and the traditional health care provider (offices, clinics, and hospitals), may reflect a society in which health is viewed as a commodity to be self-built or purchased rather than a public good for which all three sides of the triangle are mutually and interactively responsible. The existence of these poorly functioning interrelationships may engender uncertainty among all parties. Working independently, the public health delivery system makes assumptions about the responsibilities and capabilities of consumers to improve their own health and the appropriateness of spending in the traditional health care delivery system. Traditional providers, also largely operating independently, may make similar assumptions about the responsibilities and capabilities of their patients to come to them when care is needed and to comply with the care recommended. Traditional providers may view the public health system as responsible for those who cannot afford highly reimbursed care and often ineffective in the preventive health domain. Consumers may view the public health system as a care provider of last resort. Individuals must build their own relative value scales for preventive recommendations coming from the public health system in the context of other perceived health needs. For the U.S. health care delivery system, this triangle reveals glaringly apparent disparities, such as the lack of similarity between urban clinics and suburban offices, the maldistribution of ambulatory-sensitive conditions between emergency rooms and primary care offices, and the differences in hospitalization rates and care between the rich and poor and the rural and urban, and among different racial/ethnic groups.

In addition to measurable differences in health status, the word "disparities" carries various connotations and denotations and has been used to refer to both explained and unexplained differences in individual health status, differences in group health status, and differences in health care provided to individuals and groups. For U.S. children, health status disparities and health care disparities are easier to describe than they are to explain. The difficulty derives, in part, from identified and suspected interactions among risks that may contribute to disparities. For example, suboptimal health status among rural, African American, or poor children likely results from a complex interplay among individual and family behaviors, social and environmental risk, access to health care, and quality of care. In this context, Paul Wise (who is also a co-author in this issue) discusses the concept of "transformation," in which social structures and personal interactions open and facilitate unjust pathways to poor health.[3] For the child with asthma, for example, exposure to environmental tobacco smoke, lack of school-based health care, poor air quality, preferential use of the emergency department for primary care, and stereotypical decision-making by clinicians may interact in complex ways that result in poor asthma control.

This issue of *Public Health Reports* focuses broadly on disparities in child health and health care. Potential authors were solicited because of their specific research expertise rather than to concentrate on a narrower view of disparities. Thus, this issue focuses on a wide range of issues, including the increasing diversity of language used by children and their families (Flores et al., p. 418; Morales et al., p. 448); children's access to primary care (Shi and Stevens, p. 431); mental health (Pastor and Reuben, p. 383) and dental care (Hughes et al., p. 455); and the intergenerational and life course effects of socioeconomic disparities on child health (Howell et al., p. 409; Kahn et al., p. 399; and Malat et al., p. 442). Lastly, this issue includes two important papers that address and help prioritize a research agenda for understanding and eliminating child health disparities (Buescher et al., p. 393; Andrulis, p. 370).

From the perspective of the health care delivery system, child health disparities theoretically may be caused by several different mechanisms or a combination of these. Underlying risk may vary by subgroup, but lower disease prevalence rates and lower disease-associated mortality and

morbidity rates among some U.S. subpopulations suggest that available preventive and curative interventions are effective. Health disparities might be explained by variations in access to interventions that could prevent or improve certain conditions, variations in the efficacy of the interventions, or biased provision of the interventions by those who offer them.

Disparities in U.S. child health status have been demonstrated by a variety of methods and across a number of measures. Racial disparities in U.S. child disease prevalence rates have been observed for obesity,[4,5] asthma,[6–9] diabetes,[10,11] preterm birth,[12] infant death,[3] mental health,[13–15] birth defects,[16] physical abuse,[17] injury,[18,19] low birth weight,[20] all-cause mortality,[21] and disability.[22,23]

Disparities have also been observed across a number of measures of children's access to health services. Those without health insurance in the U.S., in general, have poorer health status than those with insurance. Some argue that improving access to insurance will improve measures of U.S. population health.[24] Disparities are reported in overall use of health services,[25–35] immunization status,[36] emergency care,[37] renal transplant,[38] use of prescription medications,[39] and pediatric emergency department wait times.[40] Disparities in environmental risk, broadly defined, have been reported for lead exposure,[41,42] nutrition,[43,44] and physical exercise.[43,45] These studies contribute to a perception of intractability of child health disparities in the U.S.

The health of U.S. children varies widely across racial, ethnic, socioeconomic, and geographic domains. These disparities are well described and their associations with cultural, interpersonal, linguistic, and health system level characteristics are increasingly understood. Yet research has not fully elucidated the causes of these disparities and they remain little changed despite targeted public investments and interventions. Studies reported in this issue of *PHR* use a variety of national, representative sample surveys such as the Medical Expenditure Panel Survey, the National Longitudinal Survey of Youth, the National Health Interview Survey, the Panel Study of Income Dynamics, and The Third National Health and Nutrition Examination Survey. Such surveys provide a valuable resource for investigators interested in identifying associations that suggest possible causes and generate testable hypotheses. Moreover, large, representative samples of U.S. children and their families permit the evaluation of broad-based efforts such as the State Children's Health Insurance Program (SCHIP) to ameliorate health disparities. Unfortunately, available, retrospective, study designs that use these data sets allow neither causal inferences nor unbiased evaluations of the effects of interventions.

Policy makers and the research community should consider the evidence available, and its quality, in evaluating future investments to improve child health. Both public and private investments to reduce child health disparities should be based on the best available evidence to determine what works. Investigators should partner with investors to prioritize relevant questions, develop a common language and understanding of valid evidence, and develop strategies for evaluating untested interventions.

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