Published in final edited form as:

Perspect Biol Med. 2008 ; 51(3): 479–483. doi:10.1353/pbm.0.0037.

WHEN LESS IS MORE IN PUBLIC HEALTH*

Christopher Masi

Section of General Internal Medicine, University of Chicago, Room B-208, 5841 S. Maryland Avenue, Chicago, IL 60637.

Christopher Masi: cmasi@medicine.bsd.uchicago.edu

Abstract

With obesity, diabetes, and cardiovascular disease reaching epidemic proportions and health-care cost costs spiraling out of control, policy experts in the United States are taking a closer look at alternatives to the medical model of health care. James C. Riley demonstrates that the public health model, with its emphasis on education, disease prevention, and skill development, effectively controlled infectious diseases in many poor countries during the 20th century. The countries Riley profiles have yet to attain economic success, yet each now boasts relatively low chronic disease rates and life expectancies that are at or near those in the United States. Riley's book provides evidence that demand for high-cost interventions can be controlled when populations have the knowledge, skills, and motivation they need to stay healthy.

American ingenuity is often defined as the ability of Americans, individually or as a group, to solve complex problems. Placing a man on the moon is an example of American ingenuity, as is decoding the human genome. In both cases, challenges were overcome not by making do with limited resources, but by combining dedication, brainpower, and not a few resources until breakthroughs were achieved. American ingenuity originated from the term "Yankee ingenuity," which has a wholly different meaning. First used to describe New England settlers, "Yankee ingenuity" refers to the ability to improvise or succeed with limited resources. The transformation of Yankee ingenuity into American ingenuity is a metaphor for the evolution of health care in the United States.

While the population-based public health model was dominant in the 19th and early 20th centuries, the more resource-intensive medical model gained currency in the 1950s and has held sway ever since. Today's health-care system spares little expense in its battle against acute and chronic illnesses. This approach has led to numerous scientific advances, and the United States has become a world leader in diagnostic, pharmacologic, and surgical innovation. Unfortunately, advances in the treatment of many common diseases, including diabetes and hypertension, have not led to reductions in their prevalence. As is well documented, the United States is facing an epidemic of obesity and its complications. This trend, combined with rising health care costs, has led some to question whether the medical model is best suited to address America's health-care needs.

Consider U.S. life expectancy in the 20th century. From 1900 to 1950, before the medical model became popular, life expectancy increased 44%, from 47 years to 68 years. As the medical model gained hegemony (1950–2000), life expectancy increased from 68 years to 77 years, a mere 13% (Freid et al. 2003). Should the medical model be blamed for the slowdown

*James C. Riley. *Low Income, Social Growth, and Good Health: A History of Twelve Countries*. Berkeley: Univ. of California Press (Milbank Memorial Fund), 2007. Pp. xvi + 229. \$45.

in life expectancy gains? Not necessarily, because infectious disease mortality had largely been tamed by 1950, and it is more difficult to extend life when chronic diseases are the leading causes of death. Nevertheless, it is fair to ask whether life expectancy gains after 1950 would have been the same or better if the medical model had not become so dominant. If the public health model, with its emphasis on disease prevention, had remained the basis of U.S. health-care policy, would per capita health-care expenditures have increased from \$679 to \$6,697 between 1960 and 2005 (Becker 2006; Catlin et al. 2007)? Would the United States have spent \$1.98 trillion, or 16% of its GDP, on medical care in 2005? Would America be facing its current epidemics of obesity, diabetes, and hypertension?

By analyzing life-expectancy gains in countries that did not have the luxury of mimicking America's pursuit of the medical model, James C. Riley's latest book, *Low Income, Social Growth, and Good Health*, offers insight into these important questions. At the turn of the 20th century, pneumonia, tuberculosis, and dysentery were prevalent worldwide. Combined with faltering economies and political instability, life expectancy in developing countries was often lower than that in the United States: 28 years in Mexico, 30 years in China, 35 years in Costa Rica and Sri Lanka, and 38 years in Cuba, Jamaica, and Panama. Incredibly, by the year 2000, life expectancy in each of these countries nearly matched that in the United States. How these (and five other) developing nations achieved such impressive gains despite persistent poverty is the subject of Riley's book.

While each of the countries Riley profiles faced unique political, economic, and public health challenges, certain elements were common to their success: an emphasis on literacy and basic health-care services; a focus on health education; and grassroots support for low-cost but effective disease control strategies. Riley calls this approach "social growth," which he contrasts with economic growth. He argues that the World Bank and other international organizations have been misguided in emphasizing economic growth as the primary goal for developing nations. While the United States, Canada, and Western Europe achieved economic success prior to rapid gains in life expectancy, Riley believes that economic development is not a prerequisite for public health success.

Sri Lanka is an excellent example. At the turn of the 20th century, Ceylon (its name at the time) was a British colony with high mortality rates due to malaria, hookworm, and diarrheal diseases. These diseases came under control after key programs were developed in the 1910s and 1920s. The first was a hookworm campaign, which persuaded householders to build latrines and reduce their exposure to human waste. In later years, the colonial government built regional health centers, which increased accessibility to maternal and child health and reduced infant mortality. With the popular vote becoming universal in 1931, political engagement increased. This led to enhanced government services, including free education, free health care for pregnant women, infants, and young children, as well as school meals and food subsidies. Life expectancy increased from approximately 35 years in 1925 to approximately 45 years in 1948, the year Sri Lanka gained independence. Life expectancy continued to increase as control of mosquitoes and malarial disease improved and as maternal mortality declined due to family planning education. By 2000, infants born in Sri Lanka could expect to live almost as long as infants born in the United States (73 years vs. 77 years), even though Sri Lanka's GDP per capita (\$3,645) remained a fraction of that in the United States (\$28,129).

Like Sri Lanka, Costa Rica struggled with poverty throughout the 20th century. However, with an increase in life expectancy from 35 years in 1900 to 77.5 years in 2000, this country represents an even greater success story. Needing a healthy populace to sustain coffee and tropical fruit exports, the Costa Rican government established a public health system in the 1920s. Contributing to this effort were foreign stakeholders, including the United Fruit Company, which developed programs against hookworm and malaria, and the Rockefeller

Foundation, which developed programs against fecal diseases. As in Sri Lanka, these programs focused on social growth by enhancing knowledge about disease and helping ordinary citizens reduce their risk of illness. Health education became a fixture in public schools, and the hookworm campaign taught adults why and how to build latrines. In the 1920s, the government developed a campaign against tuberculosis in which health workers identified and helped isolate cases while also providing education about ways to avoid the disease. With efforts such as these, life expectancy reached 60 years by 1950, and 70 years by 1975.

Riley contends that this success was due not only to campaigns against infectious diseases, but also to investments in social capital and welfare. For example, a strong Communist party, which formed in 1931 and was active in banana-growing regions, pushed for workers' rights and benefits. By 1946, Costa Rica had developed national health insurance, as well as disability and old-age pensions. As school enrollment grew, literacy among those aged 10 years and older increased from 66% in 1927 to 86% by 1963. Costa Rica also freed up resources for educational and health programs by disbanding its army in 1948. All of these efforts led to dramatic declines in infectious disease mortality. As in the United States, heart disease, cancer, and stroke became the leading causes of death by 1950. Due to limited resources, Costa Rica did not aggressively pursue the medical model. Instead, it continued to increase longevity through programs that emphasized literacy, self-care, and disease prevention.

As detailed by Riley, Mexico, Cuba, Jamaica, Panama, Russia, China, Korea, Japan, Venezuela, and Oman took similar paths to public health success. In each case, political and social factors initially prevented rapid economic development but did not prevent investment in social growth. Therefore, despite widespread poverty, each country reduced infectious disease mortality and made impressive gains in life expectancy, even after chronic diseases became the leading causes of death. Combining public health and human development, the primary strategies included childhood vaccination, separation of drinking water and waste water, free public education, school-based health curricula, readily accessible maternal and child health care, large numbers of health educators, and explicit instructions regarding disease risks and how to avoid them. With the exception of Japan and South Korea, none of these countries attained wealthy status in the 20th century, and none eschewed the public health model for the medical model. Yet all achieved impressive gains in longevity, despite per capita health-care investments that were minuscule compared to those in the United States.

What can be learned from the experiences of these geographically and politically diverse nations? Riley provides convincing evidence that economic development is not a prerequisite for public health success. This is most apparent when the leading causes of death are infectious diseases. Surprisingly, it is also true when the leading killers are chronic diseases. How else can one explain the life expectancy gains that so many poor nations achieved after infectious disease mortality had largely been quelled? While a perception exists that health success requires national wealth and expensive interventions, Riley demonstrates that this is not the case. Rather, longevity can be achieved on a national scale with wise investment of limited resources. As for how to invest those resources, Riley advocates not only the mainstays of public health, such as vaccination and sanitation, but also investment in human capital, such as literacy, employment, health insurance, and pensions. In the countries Riley profiles, these factors increased the effectiveness of public health campaigns by increasing individual ownership of health and by ensuring that the public had the tools they needed to reduce disease risk. Without social growth, Riley argues, these countries would not have attained such impressive gains in life expectancy.

For health policy experts in the United States, the primary lesson of Riley's book is that less can be more. Per capita health care spending in the United States is 18 times that in Costa Rica, yet the United States cannot boast a longer life expectancy (World Bank Group 2006). This is

a strong indictment of the medical model and its focus on treating, rather than preventing, disease. It also suggests that the current debate on health care in the United States is missing the point. Rather than arguing about ways to ensure that every American receives expensive medical care, political leaders should be discussing ways to reform the medical model, which has been good for the health-care industry but not efficient in producing health. With medical costs spiraling out of control and preventable diseases increasing in prevalence, the United States should focus more on reducing demand for services than increasing access to them. This is where social growth is important, because as Riley demonstrates, the best way to reduce demand for medical care is to ensure that as many people as possible have the knowledge, skills, and tools they need to stay healthy. Poor nations throughout the world have demonstrated that public health success does not require national wealth or expensive technology, but rather judicious use of limited resources. Can the United States achieve success by following their example? With a little Yankee ingenuity, anything is possible.

REFERENCES

- Becker GS. Health and human capital: The inaugural T.W. Schultz Lecture. *Rev Agricultural Econ* 2006;28(3):323–325.
- Catlin A, et al. National health spending in 2005: The slowdown continues. *Health Aff* 2007;26(1):142–153.
- Freid, VM., et al. Chartbook on trends in the health of Americans: Health, United States, 2003. Hyattsville, MD: National Center for Health Statistics; 2003.
- World Bank Group. World development indicators, 2006. Washington, DC: World Bank; 2006.