



## CHAPTER 2

# Health and Economic Growth: Policy Reports and the Making of Policy

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I have been involved in health policy for a large part of my working life, and in this chapter my main concern is with how reports on health policy issues can persuade policy makers to take action. In particular, how is public policy made in the health area? What are its ingredients? And what convinces policy makers to focus on health rather than on some other national concern?

I often recall a conversation with a cabinet minister. When he and his colleagues would discuss the allocation of resources, the minister of agriculture would say, “If we buy this much fertilizer and plant this much acreage, we can produce this much, and if the world market price is this much, our income will be this much.” And the minister of transport would say, “But we can’t get our products to the port because the roads are in terrible condition, and if we invest in roads our export earnings will go up by this much.” Then the minister of health would speak up and say, “Health is a human right.” And in the councils and budgets of his government, like many other governments, the health sector would normally get short shrift. Ministers in other sectors know that, when budgets are discussed, health ministers are usually not much good at persuading finance ministers to spend money.

Clearly health is important. The largest poll in the world found that, across the world, health is what people value most—more than a happy

family life, more than employment, and more than living in peace.<sup>1</sup> The intrinsic, or constitutive, value of health is an important topic that has engaged the minds of many people. Those who would argue for the use of some metric like Jeremy Bentham's Felicific Calculus (Bentham 1780) would say, "We should be involved in promoting health, because health in itself is a good thing."

But we can also look at health as an instrument for human development. From the point of view of practical policy making and budgeting, this is much the more promising approach. Here I briefly offer what I consider to be four phases of the development of interest in the instrumental aspect of health, before discussing some current concerns in the application of policy analysis to policy making.

## **The Instrumental Aspect of Health: Four Phases of Evolution**

Initially, the relationship between health and economic growth was perceived in terms of the *effect of disease on labor productivity*, especially at the individual level. Thus the implications for policy centered on disease reduction. Next to evolve was the *historical retrospective* approach, drawing associations between health status and economic progress over time at the country or regional level. The *human capital* approach emerged in the 1990s, treating health, like education, as a productive asset contributing to growth. The relationship between *macroeconomics and health* was the subject of an influential commission, chaired by Jeffrey Sachs, which reported to the World Health Organization in 2001 (Commission on Macroeconomics and Health 2001b). The commission identified channels through which health affects economic growth and some of the policy levers that governments can use for improving health and, thereby, a country's broader development prospects (Lewis 1955).

### **Disease and Individual Productivity**

Some of the early literature on the relationship between health and economic growth in this country concerned hookworm. In the Southern United States in the 1930s, hookworm was called "the germ of laziness," because the Southerners were seen as lazy and their productivity was low until hookworm was eliminated (Ettling 1981). When Arthur Lewis wrote about illness and development, he spoke about hookworm as a cause of anemia and thus as a drain on productivity (Lewis 1955).

A very early example of this literature comes from a bauxite mine in Guyana. In 1924 Dr. Giglioli, who was probably one of the greatest

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1 Gallup International Millennium Survey, <http://www.gallup-international.com/>. At the turn of the millennium, 50,000 people in 60 countries were asked to rate "the most important things in life." "Good health" topped the list for 44 percent of the respondents, followed by "happy family life" (38 percent), "employment" (27 percent), and "live in a country without war" (17 percent).

scientists to live in the Caribbean, received this letter from his manager (Giglioli 2006):

Dr. G. Giglioli

11.2.1924

Relative to our conversation in regards to the benefits derived from the elimination of hookworm at Akyma, I would like to call your attention to the following facts: In the beginning of 1923, ninety-six miners on the ore face were mining 342 tons of bauxite per working day, whereas on the 1st of February 1924, 76 miners at the ore face are mining 540 tons of bauxite per working day. In September 1923, you tried the carbon-tetrachloride treatment on these miners.

Carbon-tetracloride is now known to be toxic to the liver, but at that time Dr. Giglioli gave the miners carbon-tetrachloride to eliminate the hookworm and then measured their output afterward. It is obvious that the amount of ore they mined per worker went up (see figure 2.1).

The mine manager was impressed and continued:

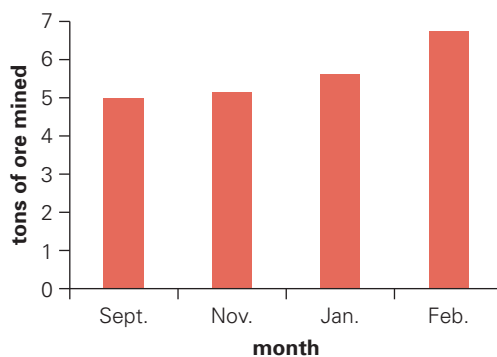
I cannot say I attribute this increase in the output of ore per man per day entirely to the treatment which you gave for hookworm, but I do think that, to a great extent, the elimination of this disease has had something to do with our increased output and our reduction of costs. For the five months previous to September 1923, the increase in tonnage per man per day was nil, whereas during the five months following September 1923, our increase in tonnage has amounted to 1 3/4 tons per man per day.

(Signed) B. Barnes, Manager

Although nowadays we have a better hookworm treatment than carbon-tetrachloride, the thesis is still the same: eliminating infectious disease can raise labor productivity.

For a long time we have known of studies on the economic effects of malaria. Gladys Conly (1975) was one of the first to point out, in Paraguay, that productivity would rise if malaria were eradicated. Ram and Schultz (1979) showed that improvement in health led to increased output growth and that agricultural productivity was higher in those areas of India in which the prevalence of malaria was low. And in St. Lucia, the economist Burton Weisbrod and his colleagues (1973) looked at what would happen to the economy if schistosomiasis could be eradicated.

**Figure 2.1 Tons of Ore Mined per Worker per Day, 1923**



Source: Giglioli 2006.

## Historical Retrospective Approach

By the 1940s and 1950s, it was broadly recognized that disease impairs a country's economic growth because it decreases the expectancy of a healthy life, because it has demographic effects—keeping fertility high in response to high child mortality—and because it lowers the returns to economic activity.

I attribute much of the development of the historical retrospective approach to Robert W. Fogel (1986), several of whose works have shown how much of a country's or region's economic growth would depend on the extent to which there was proper nutrition and improved health.

Suchit Arora (2001) took the same approach, looking back over almost 100 years to see whether health had improved and whether, because of improved health, countries' economies had grown.

## Human Capital

The 1960s saw the emergence of the human capital approach. In 1962 Selma Mushkin wrote in a landmark article in the *Journal of Political Economy*, "Health is an investment" (Mushkin 1962). This was the first time that I understood clearly the extent to which improving health could be an investment.

At the time that Selma Mushkin was writing, there was still a certain amount of debate as to whether improvement in human capital, as contributed by investment in health, was important for economic growth. A purple passage by one pair of authors said, "Once one leaves the *terra firma* of material capital and branches out in the upper ether of human capital, there is endless difficulty in finding a resting place" (Bauer and Yamey 1957).

But by the 1990s, the effects of health on wealth were being clearly documented. Smith (1999), for example, pointed out that individual households who had better health tended to be richer 5 and 10 years down the road. Those households who had excellent health had a tremendous increase in median wealth (see table 2.1). And Jere Behrman (1996) showed that the returns to investment in health were even greater than the returns to education, overturning the dogma of that time.

Several publications in the 1990s had a critical influence on thinking in the health policy field. The United Nations Development Programme's

**Table 2.1 Median Wealth by Self-Reported 1984 Health Status**  
1996 US\$ (thousands)

All households	1984	1989	1994
Excellent	68.3	99.3	127.9
Very good	66.3	81.9	90.9
Good	51.8	59.6	64.9
Poor	39.2	36.0	34.7

Source: Smith 1999.

*Human Development Report 1990*, conceived and coordinated by Mahbub ul Haq, included health as one of the indicators of human development (UNDP 1990). Haq's writings have been absolutely fundamental to how we understand the social factors that influence health. If Haq had not died, perhaps he would have received a Nobel Prize. Two other seminal publications had Dean Jamison as their lead author: the World Bank's *World Development Report 1993: Investing in Health* and a companion volume, *Disease Control Priorities in Developing Countries*.<sup>2</sup>

These publications gave, for the first time, a clear exposition of why it is necessary for countries to invest in health. They pointed out the channels through which investments in health would produce returns. And they posed the question, What kinds of interventions should one apply in order to improve health in the developing world?

### **Macroeconomics and Health**

Perhaps the major recent contribution to thinking in the health policy field has come from the World Health Organization's Commission on Macroeconomics and Health. I happened to be the co-chair of the commission's Working Group I, which analyzed issues in health, economic growth, and poverty reduction and provided the commission with macroeconomic analysis justifying societal investments in health.

As outlined in the commission's overall report (Commission on Macroeconomics and Health 2001a), health inputs contribute to economic growth through three channels:

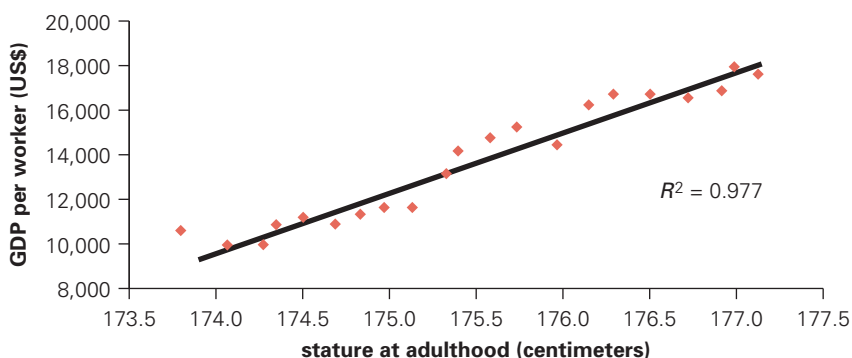
- Returns to individual health, through labor market outcomes, a demographic dividend, and increased savings
- The net value of increased income from household investment in human capital
- Societal returns to health, through economic activity such as the tourism industry or agriculture.

Among the relationships that are detailed in the Working Group I report (Commission on Macroeconomics and Health 2001b), three fascinated me. One is the relationship between output per worker and nutritional status, as measured by workers' stature. The data in figure 2.2 are for Denmark, but the relationship is universal: taller adults have higher earnings than shorter adults. And I always ask, Is this because of early nutrition, or for some other reason? Data from the same source show that the relationship goes in the same direction for both Brazil and the United States, but the slope of the curve is steeper in the case of Brazil. This could be interpreted to mean that the impact on height and

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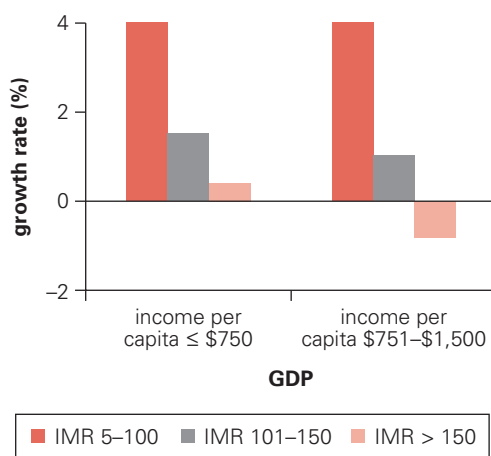
2 Much of the work for the *World Development Report* was based on *Disease Control Priorities in Developing Countries*, which assessed which diseases posed the biggest obstacles to improvement in population health (Jamison and others 2006; World Bank 1993).

**Figure 2.2 Relationship between Output per Worker and Nutritional Status in Denmark**



Source: Commission on Macroeconomics and Health 2001b.

**Figure 2.3 Growth Rate of Income per Capita, 1965–94**



Source: Commission on Macroeconomics and Health 2001a.

nutritional status was stronger in Brazil because more of the work that produced wealth depended on physical capacity.

The second relationship that fascinates me is the association between income growth per capita and the infant mortality rate. Figure 2.3 illustrates that, regardless of a country’s initial income level, income growth is faster where infant mortality rates are low.

The third relationship is illustrated in table 2.2. These data are from a study in Guatemala, in which children were fed supplements early in life and their earnings were observed as adults (Fuentes, Hernández, and Pascual 2001). The researchers found that if children received supplements of up to 32,000 calories in their first three years of life, then those children, grown up to be adults, would earn more than those who received fewer supplemental calories. This is the only study I know of that has looked at children’s early nutrition and compared it with their earnings later on. The researchers also

**Table 2.2 Early Nutrition and Future Earnings***Q (10 millions)*

Calorie supplements	Earnings	Remittances
0–32,000 (206)	3,614	327
32,000 + (237)	7,656	769

Source: Fuentes, Hernández, and Pascual 2001.

Note: Guatemala’s currency is the quetzal. Numbers in parentheses are the number of persons receiving the supplement.

found that, among individuals who had migrated, those who had been better fed as children sent back more money as remittances and were less likely to be receiving welfare payments. The findings emphasize that one of the best things you can do is to stimulate early childhood development. The data from those villages and families have been analyzed in more detail recently with the same result (Victora and others 2008; Behrman, this volume). Early childhood nutrition results in more productive adults.

The overall recommendation of the Commission on Macroeconomics and Health was that the world’s low- and middle-income countries, in partnership with high-income countries, should scale up the access of the world’s poor to essential health services, including through specific interventions.

## Current Concerns

My three biggest concerns are the lack of a vulgar metric for health, the failure to use evidence to induce policy change, and the shortage of tools to justify health interventions and expenditures.

### Lack of a Vulgar Metric for Health

I am concerned that we lack what I call an appropriate “vulgar metric” for health. In education, there is a vulgar metric—years of schooling—that is easy to use for advocating policy reforms. You can focus a prime minister’s attention on years of schooling and tell him, “This is what you can do to change the situation.” In health, I worry that too little attention is being paid to developing a comparably useful metric.

### Failure to Use Evidence to Induce Policy Change

What concerns me even more is that, although we assemble masses of evidence in our reports, we often make poor use of this evidence to induce policy change. Jeffrey Sachs once said to me, “The problem with macroeconomists is that they don’t understand why or how the output of their work can be important.” What Sachs did in the commission’s report (Commission on Macroeconomics and Health 2001a) was to take as given the macroeconomic arguments that explain the returns to the general economy that justify investing in health and then to say, “Now, *given* that

there is macroeconomic evidence of the returns to investment in health, *then* policy makers should take these and these measures.”

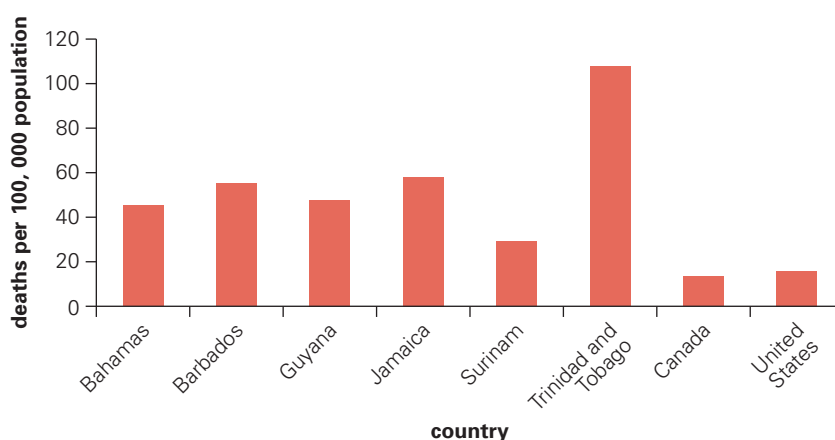
So how does one translate the information arising from macroeconomic analysis into the kinds of messages that will allow—or even galvanize—heads of government to take action?

I recall an exercise in which Dwight Venner and I were involved, looking at how you get policy makers to pay attention to health issues. In 2001 the 15 heads of Caribbean governments met in Nassau and said, “The health of the region is the wealth of the region.”<sup>3</sup> They declared their cognizance of “the critical role of health in the economic development of our people,” and they mandated a taskforce or commission, whose job was to “review health and propel health to the center of the development process.” I had the honor of chairing that task force, and Dwight Venner was one of our commissioners.

For our report to the heads of government, we had excellent data on the macroeconomic returns to investment in public health, in terms of the effects on tourism and inflows of foreign direct investment (CARICOM Secretariat 2006). I went to every capital and presented our good data to the prime minister and his or her cabinet.

But what galvanized the prime ministers was not so much our macroeconomic evidence on the economic benefits of investment in public health, but the data we showed them on specific diseases. Showing them that the death rates from diabetes in Trinidad and Tobago were almost 10 times greater than those in Canada and the United States got their attention (see figure 2.4). Offering them specific comparative numbers helped them to see that their countries had a major problem.

**Figure 2.4 Age-Adjusted Death Rate per 100,000 Population from Diabetes in Caribbean and North American Countries, 2000**



Source: CARICOM Secretariat 2006.

<sup>3</sup> Nassau declaration on health 2001. [http://www.caricom.org/jsp/communications/meetings\\_statements/nassau\\_declaration\\_on\\_health.jsp?menu=communications](http://www.caricom.org/jsp/communications/meetings_statements/nassau_declaration_on_health.jsp?menu=communications).



**Table 2.3 Possible Economic Burden from Diabetes and Hypertension in Caribbean Countries**

2001 US\$ (millions)

Condition	Bahamas	Barbados	Jamaica	Trinidad and Tobago
Diabetes	27.3	37.8	208.8	494.4
Hypertension	46.4	72.7	251.6	259.5
Total	76.7	110.5	460.4	753.9

Source: CARICOM Secretariat 2006.

What engaged them further was the evidence we showed them that the cost of treating two major chronic diseases could consume up to 7 percent of the GDP in their countries (see table 2.3). That information got their attention.

They were so taken by the possible economic impact of these diseases—and by the possibility of reducing this economic burden by preventing them—that 15 of them came together in a Summit on Chronic Noncommunicable Diseases. Perhaps this was the first time in the world that a group of heads of government got together uniquely to discuss health. And they were so convinced of the need that they set up programs to prevent these diseases.

My point is that the heads of Caribbean governments agree that poor health is a problem not only because they understand its impact on economic growth down the road, but also because they *recognize that it constitutes a current economic burden* for their countries and also because they *see that there are levers they can pull* to dramatically reduce the problem.

We as writers of policy reports might agonize over producing the right data and the right analysis—say, on how investments in health relate to the speed of long-term growth—but we need to go a step further. We need to ask ourselves, How can we translate that knowledge into some specific commitment that heads of governments can make. Is there some specific instrument they can use or some lever they can pull?

### **Tools to Justify Health Interventions and Expenditures**

My third concern relates to the shortage of tools to enable the health sector to make the case for (a) appropriate interventions within the sector and (b) spending on health vis-à-vis other sectors. Like convenient metrics, such tools are in short supply.

One of the new ideas that has come forward for measuring the impact of health on wealth is to measure the welfare cost of changes in mortality, rather than using GDP alone—an idea first raised to me by Markus Haacker in relation to HIV/AIDS (Haacker 2004). I still have philosophical difficulty with this concept, but obviously, distinguished economists such as William Nordhaus believe in its validity. Nordhaus (2003) points out that, in the first half of the past century, more than half of the growth in the

United States, if measured in terms of full income, was due to health inputs and that, in the second half, almost as much growth in full income was due to health improvements. These numbers are significant. If you look at decreased mortality from AIDS in developing countries, it is a calculation of full income that gives you a more credible idea of what the impact of the disease will be.

William Petty, who lived from 1623 to 1687, wrote something along similar lines that I have always remembered and often quoted. He computed “above 80 pounds to be the value of each Head of Man, Woman, and child, and of adult persons twice as much; from whence we may learn to compute the loss we have sustained by the plague, by the slaughter of men in war, and by sending them abroad into the service of foreign princes” (Petty 1711).

My last point, also discussed in Jamison and others (2006), is about weighing investment priorities. When a minister of health has, say, a million dollars to spend, economists are very good at telling her which are the most cost-effective health interventions and what, given her million dollars, she should choose to do within the sector. But what do you say when the minister asks, “That is fine, but how do I get the president to invest in improving health systems rather than building a metro? How do I convince the president that one is more productive than the other?”

I believe we have served the health sector poorly by not having politicians understand the relevance of cost-benefit analysis and how it can be applied in their presentations and debates on priorities for the allocation of budgets and the evolution of the national product.

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