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■ The American Association for the Advancement of Science was founded in 1848 and incorporated in 1874. Its objectives are to further the work of scientists, to facilitate cooperation among them, to foster scientific freedom and responsibility, to improve the effectiveness of science in the promotion of human welfare, to advance education in science, and to increase public understanding and appreciation of the importance and promise of the methods of science in human progress.

COVER The mouth of a borehole drilled to the bottom of ice stream B, West Antarctic Ice Sheet. By means of such boreholes, about 1050 meters deep, observations of physical conditions at the base of the rapidly moving ice stream have been made (see page 57). Frost crystals have formed around the hole during overwintering. The mouth of the hole at the snow surface is defined by a circle 12.5 centimeters in diameter cut in plywood. [Photo by B. Kamb]

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Today, expenditures for health care are a massive ($600 billion, more than 11 percent of the gross national product) and rapidly increasing factor in the U.S. economy. That figure is higher than in neighboring Canada (under 9% of the GNP) or the United Kingdom, which has universal insurance (under 7%). Yet one in seven Americans has no health insurance, and the burden of costs is greatly increasing for those who have (see V. R. Fuchs, *Science*, 2 February, p. 534). It is time to take a cool, scientific look at devising a more equitable system and one that will not bankrupt the nation.

There is little doubt that a good national health insurance program would produce more equitable health coverage. A private think tank recently developed a plan that was estimated to cost $100 billion but was not politically feasible. That $100 billion is real money, but does a health insurance plan have to cost that much, and should it be discarded because it is expensive? The answers would seem to be, "No," in both cases, if we are willing to be rational instead of sentimental.

For example, we may be spending $50 to $100 billion to clean up asbestos in a form that may involve very little risk to humans. We are about to pass a Clean Air Act that, at minimum, is also expected to cost billions of dollars. A National Health Insurance Act would probably save more lives and produce better health than either of these. Manned flight to Mars, costing many more billions, is being seriously considered. It may be time to compare multibillion-dollar projects to determine national cost-effectiveness.

A national health insurance plan would lead to indirect savings. Many juries that have awarded large judgments in cases of product liability, school board liability, and medical malpractice have indicated that they thought plaintiffs were frequently to blame for their own problems. Nevertheless, they awarded money because there was no other way to provide medical care for desperate people. A system in which all were covered for actual health needs might make it possible to restrict lawsuits to cases of clear negligence, at great net savings to society.

There are also internal procedures that could be carried out to reduce costs. Recently, the government instituted an analysis of Medicare cost overruns and developed some guidelines to prevent abuses. Being tough with abuses is not very controversial, but there will be difficult ethical questions if costs are to be contained. For example, at some points prudent medicine for which all reasonable alternatives are considered becomes defensive medicine designed to protect physicians or hospitals against lawsuits. The disadvantage of defensive medicine is that the cost of even cursory checkups becomes prohibitive, and individuals simply cease to seek physicians when they should. A limitation on lawsuits would have to be a quid pro quo of a national policy.

A second ethical problem concerns access to kidney dialysis, bypass surgery, and other costly procedures that might need to be limited if costs are to be kept within reasonable boundaries. A rational conclusion might be to decide to effect "good" medicine but not "fancy" medicine. The government and insurance companies would back "good" medicine. The "fancy" additions would be paid by the insured's private money. Some will argue, of course, that this sets up a two-tier system, but unless some restraints are placed on the free availability of large and expensive procedures, the probability of enacting a system for good medicine becomes very remote.

In an affluent society there is no gift as great as good health, and most individuals will pay almost any price to get it. Unfortunately, some individuals cannot afford the basics of what an affluent society should be willing to provide. A limited national health care system can be an easy target for those who like to pretend that there should be no limits on sympathetic treatment for all. But such an attitude will prevent any plan from being enacted. The cost of health care is already rising faster than the cost of living index and providing for those not now in the system will increase costs further. Important as it is, a health care program cannot be allowed to preempt all other social programs. If society is willing to look with a sympathetic yet objective eye at the rules needed to control costs and evaluate whether some billion-dollar programs should have a higher priority than others, it may be possible to devise a health care system that is expensive but not prohibitive, one with a compassionate hardheadedness that could justify the admonition, "Society, cure thyself."

—DANIEL E. KOSHLAND, JR.