Biomedical Research: Would Special Presidential Advisers Help?

What biomedical research needs is direct access to the President, according to senators Edward M. Kennedy (D–Mass.) and Jacob Javits (R–N.Y.), who have introduced a bill to create a "President's Biomedical Research Panel." In form, the biomedical panel would mimic the triumvirate that watches over the cancer crusade for the President and that brings its problems straight to him or one of his personal aides, bypassing the Secretary of Health, Education, and Welfare (HEW) and other officials who are part of the chain of command for other, less favored, areas of research.

There is no doubt that the President's Cancer Panel, chaired by financier Benno C. Schmidt,* is effective, but it is not quite as all-powerful as some persons imagine it to be. Like any advisory body, its influence is directly related to its ability to persuade the person it is advising of its point of view. Schmidt is a talented persuader, but, as President Nixon has often shown, he is not always an easy man to persuade. Whether he would be influenced by, or even make himself available to, special advisers forced on him by Congress is dubious.

Schmidt opposes the idea of a special biomedical panel, primarily because he thinks it could not be effective, although he believes that more money for research and training are mandatory and has said so repeatedly. (At a meeting of the American Cancer Society last week, Schmidt declared that, if his efforts to convince the Office of Management and Budget to increase the budget of the National Institute of General Medical Sciences and other institutes fail, he will petition the President directly.) Secretary of HEW Caspar Weinberger is against the scheme to create a panel. So, reportedly, are White House aides. The biomedical community is, apparently, all for it.

The provision that would establish a biomedical panel reporting to the President is contained in legislation now before the Senate to amend the National Cancer Act of 1971.† In all likelihood, the bill will be sent within a week or two to the Senate floor, where it is expected to be passed. At present, a cancer bill before the House does not contain the controversial provision, and there are reports that the White House, which has remained quiet over the Senate bill, will lobby against attempts to include the provision in the House version. Nevertheless, there is speculation that when a final bill emerges from Senate-House conference weeks from now, the amendment establishing the biomedical panel will be there.

Weinberger is said to have warned the Senate that, if the amendment is not dropped, he will urge the President to veto the bill. However, Nixon would find himself in a bind if he vetoed a cancer bill, and it is silly to try to predict what the outcome will be.

The amendment is the handiwork of the staff of the Senate's subcommittee on health, of which Kennedy is chairman and Javits a member. It was tacked on to the cancer bill after hearings on other proposed amendments were concluded and came as something of a surprise to people at the National Cancer Institute.

The motive behind the Kennedy-Javits proposal is clear enough. While funds for research in cancer and, to a lesser extent, in heart disease are increasing, thanks to special legislative and Administrative initiatives, support for work in other biomedical fields is withering. The senators have depicted their amendment as a last-ditch effort to rescue biomedical research. "I wish it were not necessary to take this step," said Kennedy when he introduced the bill. "However, this nation's biomedical research effort is now severely jeopardized."

The Kennedy-Javits bill would require the President himself to appoint the biomedical panel, which would have as one of its three members the chairman of the cancer panel. Of the three, at least two would have to be scientists. The charge to the panel is comprehensive. As Kennedy and Javits and their staff envision it, the panel would "monitor the development and execution of the biomedical research programs of the National Institutes of Health" and report "immediately" to the President and to various designated House and Senate committees "any delays or blockages in rapid execution." That ought to keep any three men pretty busy, certainly busy enough to warrant their having to meet at least once a month, as the proposed bill requires. The President's Cancer Panel is required by law to meet that often.

Lack of a White Knight

"The cancer panel has been remarkably effective in assuring that the cancer program go forward in the most effective way possible," Kennedy declared on the Senate floor, ignoring the fact that not everyone agrees it is going anywhere at all. "To a remarkable extent, the success of this panel is directly attributable to the efforts of its chairman, Mr. Benno Schmidt." Presumably, if all of biomedical research had a white knight like Schmidt, things would be better.

Schmidt, managing partner of J. H. Whitney and Company, a venture capital firm in New York, is well regarded by the White House. His relationship with the President, which is good but not intimate, and with members of his staff, including James Cavanaugh of the domestic council, is certainly a significant factor in his ability to get things done. Most of the time he does business with Cavanaugh, but he can reach the President when he wants to. He states his case succinctly in quarter-page memos that always make it through to the Oval Office.

Schmidt now has easy access to the White House, but it is naive to think that it could not be shut off at the President's bidding, law or no law. Schmidt is sensible, straightforward, and sees the issues of biomedical research with the dispassionate eye of a businessman. White House officials are known to have accused scientists as a

* The other members of the panel are scientists, as is required by law. They are R. Lee Clark, president of the M. D. Anderson Hospital and Tumor Institute at the University of Texas in Houston, and Ray D. Owen, professor of biology at the California Institute of Technology in Pasadena.

† One of the amendments, many of which are rather technical in nature, is of particular interest to the scientific community at large. It requires that peer review be applied to the awarding of research contracts, as it now is to research grants.

class of being whiners and of talking in philosophical abstractions that, in their view, have nothing to do with making fiscal decisions. Schmidt, a 6-foot Texan, does not whine, does not talk in abstractions, and is not easily dismissed. Furthermore, he is chairman of the cancer panel because the President *wanted* him to be, and part of his effectiveness is related to the fact that the President was basically behind the idea of a cancer crusade in the first place. To duplicate these circumstances for another cause would not be easy.

Biomedical Research Is Good for the Economy

Basic biomedical research saves taxpayers' money. It is ultimately practical, a sound financial investment. Contrary to popular misconception, biomedical research is not an intellectual luxury, the expensive private property of an elite corps of scientists.

The theme that biomedical research is good for the economy is the rallying cry of a loose federation of scientists who are trying to make a case for federal support of biomedical research that will be convincing to the people who allocate money. The scientists are calling themselves the Committee on Impact of Biomedical Research. The leader and founder of the committee is H. Hugh Fudenberg, an immunologist at the University of California Medical Center in San Francisco, who for several years has been lobbying his fellow scientists to lobby Congress on behalf of fundamental science.

Many of them, leery of the idea of getting involved in politics, were consistently unresponsive to his prodding. When he stood up at a meeting of the American Society for Clinical Investigation a couple of years ago and suggested that biomedical scientists establish a Washington office, he got a cool reaction (*Science*, 19 May 1972). Today, there are signs that support for his idea is gradually growing.

Fudenberg is convinced that the way to make the government understand the value of biomedical research is to talk to congressmen and members of the Administration in terms of saving money. "Data on the cost benefits from basic and applied biomedical research indicate that benefits have exceeded the cost twentyfold," he says. "Hence, cutbacks in funds for biomedical research represent fiscal irresponsibility, to say nothing of throwing away chances to save lives, end misery, and so forth. Since the latter apparently no longer seems important in the minds of the Administration, we should confine ourselves to talking about tangible benefits, like dollars."

Fudenberg has compiled data on the fiscal returns of biomedical research with regard to several diseases, beginning with the now-familiar example of polio (better to develop a vaccine than to build iron lungs) and including measles, Parkinson's disease, and Rh disease. In the latter case, he points out, basic studies of antibody led to development of a vaccine enabling Rh-negative women to give birth to healthy babies. It has, he says, eliminated about 7500 cases of Rh-related diseases annually, thereby saving an estimated $11 million that would otherwise have been necessary for the care of sick infants.

This concept of looking at research in fiscal terms can also be applied to anticipated savings. Fudenberg chooses amniocentesis as an example. "Enzymes and chromosomes used to be considered the best examples of 'ivory tower' research," he recalls. "Now we know of a whole host of enzyme and chromosomal abnormalities which can be detected in utero by amniocentesis. Down's syndrome, or mongolism, is among them, and in utero detection and abortion saves literally millions in institutional costs. In 1968 in Massachusetts alone, all women over 35 who had a risk of mongolism were studied by amniocentesis. Detection of the disease resulted in estimated savings of $2.5 million. This would not be possible had research not been supported."

Fudenberg has written about the economics of research in publications such as the *Journal of Investigative Dermatology* and the *Journal of Laboratory and Clinical Medicine*. Understandably, he is seeking a wider audience. Hence, the committee and the attempt to gain the support of virtually every biomedical researcher in the United States.

The Committee on Impact of Biomedical Research had its first meeting last December in Chicago and outlined its goal in a letter it intends to circulate throughout the biomedical community. "Its purpose is to generate and analyze information on the dollar benefits derived from biomedical research," with the analysis to be done by a Washington-based economist. Then stories about how research saves money will be disseminated to scientists, the public (through the media), and to members of the legislative and executive branches of the government, all "in the hope that the information . . . will have an impact on future funding. . . ."

To handle all of this, the committee, which has a "founding" group of 100 prominent scientists, is thinking about setting up a Washington office, which, it estimates, would cost about $80,000 a year to operate. The money has to come from individuals. "Funds for this effort cannot come directly from established organizations, at least at this time: Most of these are tax-exempt and prohibited from efforts of this sort," the letter says. So, the committee will solicit individuals, asking them to send $10—not tax-deductible—to the cause.

There is still some skepticism about the scheme, however, even among scientists who generally support what Fudenberg is trying to do. There is concern that the economic analysis of data could be less than scholarly, and that an overemphasis on the fiscal aspects of basic research could backfire. Not everyone is persuaded of the wisdom of the committee's plan. Nevertheless, early indications are that it will get off the ground.

As yet, no organized, formal campaign to solicit funds has been undertaken. However, copies of the committee letter have gone out to many individuals, and already the money is coming in. According to Nathaniel Polster, a Washington publicist who has volunteered to be the committee's mail drop until an office is set up, there is about $32,000 in the treasury. For an organization that has yet to get started, that is not a bad beginning.—B.J.C.

Although he realizes that because he is chairman of the cancer panel he may be accused of having a dog-in-the-manger attitude on the issue of the biomedical panel, Schmidt openly opposes it. "The cancer panel has been an effective tool because the President has genuinely shared the priority it was designed to implement," he said in cables to Kennedy and Javits. "As an instrument to oppose the President's priorities, the panel would not, in my opinion, be effective."

Schmidt also believes that the very uniqueness of the cancer panel has contributed substantially to whatever effectiveness it has had. As cancer chairman, he devotes a considerable amount of his time (about one-third) to the national cancer program. Anyone who assumed the chairmanship of the biomedical panel would, he says, have to treat it as a full-time job. Such a full-time person, operating outside of regular HEW-NIH channels could, he thinks, easily become a nuisance rather than an effective spokesman.

Nevertheless, Schmidt shares the senators' feeling that biomedical research needs help. "I am highly hopeful that, with a little more time, we can obtain the desired priorities with respect to other biomedical research with the present organization, without risking the loss of the momentum in the cancer program by changing the setup in midstream," he says, although the reason for his hope is not apparent.

He has spoken frequently during the last several months of his disappointment with the Administration's lack of response to the needs of biomedical research.

In recent testimony before Congress, for example, Schmidt declared:

> At the time we were urging on the Congress and the Administration a greater effort in cancer, we were very explicit in the position that the increased cancer effort should not be at the expense of other biomedical research. I am not sure that the cancer effort has been the cause of these other institutes receiving less, but it is difficult to prove to the contrary when the cuts have in fact taken place. Also, regardless of what would have been the case in other circumstances, the fact is that this country cannot afford to reduce the research efforts of these other NIH institutes. . . .

Schmidt has also been adamant in saying that the decision to eliminate training programs is wrong, and he has gone to the White House more than once in an effort to get them restored. "The panel has done its best to present the arguments for this program, and we are disappointed by our inability thus far to get this program fully reinstated," he says.

It is optimistic to think that a panel of advisers the President does not want will fare any better. And, to a President who did away with his entire Science Advisory Committee, a panel for biomedical science might seem like a mini-reincarnation.

—BARBARA J. CULLITON

Bottle-Feeding: Adverse Effects of a Western Technology

Changes in national diet, George Orwell once suggested, are probably more important events in a country's history than changes of dynasty or religion. Orwell might have regarded as particularly significant a change in diet which also represents a deep-rooted shift in social mores—the substitution in infant feeding of the bottle for the human breast.

In the United States, the breast has been gradually transmogrified from its nutritional role into a cosmetic and sexual symbol so potent that an American woman may no longer nurse her baby in public. The trend is beginning to reverse: over the last decade there has been a grass-roots movement to resume breast-feeding, a back-to-nature reaction against the unwarranted intrusion of technology into an intimate aspect of family life. Ironically, just when American mothers are putting babies back to the nipple, women in underdeveloped countries are imitating in droves the Western fad for the bottle.

The flight from nipple to nozzle may be relatively harmless for American babies. For developing countries, the practice presents some highly insidious aspects. Early abandonment of breast-feeding, especially in poor families, "can be disastrous to infants," warns the Protein Advisory Group of the United Nations. Only in the last 2 years or so have nutritionists begun to appreciate the full extent of the damage, and their concern has yet to be translated into substantial improvement of the situation.

Human milk, strange to say, is the ideal food for human infants. It usually fulfills all the child's nutritional needs for the first 4 to 6 months of life, and up to three-quarters from the 6th to the 12th month or beyond. It is, moreover, hygienic and cheap. Under the conditions common in third world countries, cow's milk is neither. A laborer in Uganda, say, may need to spend a third of his daily wage to buy milk for his baby (in Chile, 20 percent; in Tanzania, 50 percent). The packaged dried milk formulas are even more expensive. The national costs of wasting human milk are formidable. For Kenya, the yearly loss in breast milk is estimated at $11.5 million, which is one-fifth of the country's average foreign aid. In Chile, where the proportion of children being breast-fed at 13 months fell from 95 to 5 percent during the last decade, the annual loss of human milk is equivalent to that produced by 32,000 cows.

For the developing world as a whole, the cost of wasted human milk can be put at more than three-quarters of a billion dollars at the very least, and losses are "more likely in the billions," according to Alan Berg, World Bank deputy director for nutrition.*

Such estimates do not take account of medical costs, which are usually ten times greater for bottle-fed babies than for breast-fed. Women in developing countries often lack the resources and domestic skills to prepare formula food hygienically, or even to understand the instructions on the package. Because of its expense, the milk may be often diluted with unclean water. Illnesses such as diarrhea are more common among bottle-fed infants, to such an extent that their mortality rate is much higher than that of babies that are exclusively breast-fed.

As breast-feeding has passed out of vogue in the last two decades, severe forms of malnutrition have started to

* A. Berg, *The Nutrition Factor* (The Brookings Institution, Washington, D.C., 1973). $3.50. This survey is the source of most of the statistical data quoted here.