

Summary

I would summarize the foregoing discussion by asserting, first, that the superiority of the live oral attenuated poliovirus vaccines over the inactivated vaccines now in use remains to be demonstrated, except for convenience of administration. Second, the proposal to introduce live oral poliovirus vaccine by means of country-wide mass immunization programs is irresponsible in the sense that such a procedure would eliminate the possibility of a definitive evaluation of either vaccine in this country, and moreover is unlikely to accomplish more than can be accomplished by a more conservative approach. Third, even after licensing, a new vaccine product must be considered to be on trial, since new variables enter the scene when large-scale manufacture and large-scale use begin. In this connection it is of importance that the margin of safety of live-attenuated-

poliovirus lots now in production is not large, as measured by the only laboratory test available—neurovirulence in monkeys. In comparison with unacceptable trial strains, about which questions of safety have been raised after field use, the acceptable strains have measurably less neurovirulence, but the differences are not great, and approval of each lot will require careful scrutiny for evidence of even slight degrees of reversion in neurovirulence during production.

Finally, there is a place for both types of vaccine in the control of poliomyelitis throughout the world. How and where each type should be used is a scientific problem which can best be resolved with careful assessment of all the available evidence concerning vaccine characteristics in relation to the ecology of poliomyelitis. From the point of view of a scientific evaluation of the results of the present vaccination program in this country, it

appears that a quip I made in 1960 (13)—we may now have too many poliomyelitis vaccines!—has come home to roost.

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Science and the News

Congress Presses Funds on National Institutes of Health

Congress has been force-feeding medical research through the National Institutes of Health for a decade with funds that now make up fully half of all dollars supporting biomedical studies in this country. The practice continued last week as the Senate and House compromised by appropriating \$738 million for NIH for fiscal 1962, 26 percent more than the Administration asked and 34 percent more than NIH had last year (see Table 1). The money bill was typical of congressional action since 1953, when Congress appropriated \$59 million; since then it has provided an average of 25 percent above Administration requests, and 33 percent above its previous year's appropriation.

This generosity—congressional health

champions justify it as an "investment" rather than "expenditure"—has caused considerable uneasiness, largely on two grounds: some regurgitation in the medical field itself, as heard in sporadic reports that NIH officials are "out beating the bushes" for ways to spend their "embarrassing riches," and the alarming casualness with which Congress opens the federal purse strings. This year two more factors made its actions rather striking: the apparent failure of the new Democratic Administration to recapture control of the NIH budget by anticipating and heading off the predictable congressional increases pushed by Representative John Fogarty and Senator Lister Hill, both Democrats; and the expected \$5 to \$6 billion national deficit which caused President Kennedy to explicitly ask Congress "to refrain from adding funds or pro-

grams, desirable as they may be," in order to preserve fiscal integrity.

Congress begins action on NIH budgets in the House health subcommittee headed by Fogarty, a former bricklayer from Rhode Island. The House usually raises the request a few millions or tens of millions. Then the Senate, through a subcommittee chaired by Senator Hill, son of a small-town doctor from Alabama, adds a whopping hundred million or so. Both bills pass their respective bodies after considerable debate. A compromise between bills is reached in conference, and now with cursory debate, both houses adopt it. The numbers this year were as follows: Kennedy asked \$583 million (up \$35 million from fiscal 1961 appropriations); the House gave \$641 million; the Senate gave \$835 million; the 50-50 compromise was \$738 million.

That the increases were planned before Congress held extensive hearings (2000 pages of testimony came fourth) is seen in an exchange on the first day that Fogarty's committee considered the NIH budget. Lead-off witness was the surgeon general of the Public Health Service, Luther L. Terry (named, incidentally, after Senator Hill's father). NIH is part of the health service.

Fogarty: "If the committee decided to increase the appropriation by \$100

million, do you think you could use it?"

Terry: "\$100 million above the figure that we recommended?"

Assured he had the question correct, Terry then said:

"That is a very difficult question to answer."

Again assured by Fogarty, who pointed out that Abraham Ribicoff, Secretary of Health, Education, and Welfare and Terry's chief, "gave everyone carte blanche authority to give this committee any information it asked for," Terry then responded:

"Of course we could use it, sir, and use it to advantage, to the advantage of the programs and the American people, I think."

Debates in House and Senate

The debates in the House and Senate lasted a day each. Senator William Proxmire (D.-Wis.), tried to get the Senate bill reduced to the Kennedy figure. Similar moves were made in the House. But nothing was changed. Even the \$6 million rise in the \$15 million asked for training grants passed, despite the expressed opinion of NIH director James Shannon that a "moratorium" on the increases was desirable so the institutes could evaluate the effects of the program.

Fogarty defended the House's \$641 million as the actual budget submitted by NIH to the Administration's Budget Bureau; his group was simply restoring cuts made by the budgeteers. Hill said the Senate's \$835 million was based on the testimony of "eminent scientists and other witnesses well qualified to judge our national research needs"; these persons had urged a "citizens budget" for NIH of more than \$900 million. The "citizens" were representatives of voluntary health organizations, private citizens who push medical research, and researchers who were themselves usually recipients of NIH money. NIH personnel, even before Secretary Ribicoff gave them "carte blanche," never were too reluctant to cooperate in one way or another with the sympathetic Congress, although they seemed "pressed" for information at times. (In fairness on these points, it should be noted that "citizens" who do not actively back medical research would not know enough about the field to be called as witnesses. And NIH cooperation with Congress raises the conun-

Table 1. Funds for the National Institutes of Health.

Fiscal year	Budget request (millions)	Appropriation (millions)	Increase (%)	
			Over previous appropriation	Over request
1953	\$ 55.0	\$ 59.0		7
1954	56.3	71.1	20	26
1955	71.1	81.2	14	14
1956	90.0	98.4	21	9
1957	126.7	183.0	86	43
1958	190.2	211.2	15	11
1959	211.8	294.4	39	39
1960	294.2	400.0	36	35
1961	400.0	548.0	37	37
1962	583.0	738.3	34	26

drum on the loyalty of government scientists: Should it be to their profession, or to their own beliefs, or to their political bosses?)

Congressional Openhandedness

The bases of congressional openhandedness for medical research are probably several, but two stand out. One is Congress' belief that the American people support their position. Another is that the Congressmen are sincerely motivated through personal experience with illness and concern for the well-being of their countrymen.

"The American people want no armistice or let-up in the vigorous battle against disease and disability," said Hill in the Senate debate. "There is abundant evidence that this investment is paying off, first and most important, in better health and better medical care for the American people," said Fogarty in the House, "but also in dollars and cents of steadily reducing economic losses due to illness and premature death." A special committee of consultants set up by the Senate following the fiscal 1960 appropriations estimated that \$35 billion a year is lost through disease and disability, that 1,800,000 American lives were saved in the past 15 years due to medical advances, and that these citizens contribute \$623 million annually in taxes. Such estimates have been termed "shaky computations" by critics.

The consultants committee, which endorsed the rate of NIH support and foresaw even more, was largely picked by Senator Hill. It was headed by Boissieuillet Jones, then Emory University vice president and health service administrator and now special assistant for health to Secretary Ribicoff. The objectivity of the committee has been questioned by, among others, Robert P. Clark in a paper on "Federal Appropriations for Medical Research" (Har-

vard University Seminar on Science and Public Policy, 1960-61, unpublished). "Not only were all the consultants except one—[Brig. Gen. David] Sarnoff [head of RCA]—members of NIH study sections or advisory councils (either at the time of their study or in the past). Six of the twelve were also recipients of NIH research grants in Fiscal 1960, the year in which they were called upon to pass judgment on NIH for the Senate" (his emphasis).

If Congress does have the backing of the people on medical research—and it is not hard to accept this point, difficult as it may be to prove—then the congressional health boosters say the legislators have to lead in the fight for bigger NIH budgets. The administrations, particularly under Mr. Eisenhower, have abdicated this responsibility; witness their niggardly budget requests. It is up to Congress to provide "realistically" for NIH. "Only once in the past nine years—and that was five years ago—has the Administration come forward with a budget which requested any substantial increase for NIH programs," Fogarty said, "and even then the proposed amount was inadequate."

Quite inadequate, it would seem. For 5 years ago, in fiscal 1957, the Administration asked \$126.7 million, up \$28.3 million from the previous year; but Congress gave \$183 million, or 86 percent more than the previous year. This year Fogarty is "disappointed" that the Kennedy Administration apparently doesn't attach the same importance as Congress does to medical research, saying that doctors should be listened to, not budgeteers. As a matter of fact, high officials in the Administration were similarly disappointed. But one is forced to wonder, in view of the 1957 experience, if any administration can in fact satisfy the Congress short of freeing NIH of all budgetary control, and even then, if Congress won't feel

the need to maintain its franchise of increasing administration requests at will.

When all was said and done, the Senate and House bills were adjusted, and the \$738-million compromise was adopted. In defending the compromise figure on the House floor last week, Fogarty said it is "only \$19 million less than the professional judgment figure of the Institutes." Thus, in addition to the Administration's budget, the NIH budget request, and the "citizens budget," a fourth kind—the "professional judgment budget"—was introduced. This is the total of all the individual budgets of each of the institutes comprising NIH (which had been pared down to meet the NIH leadership's request, which, in turn, suffered from the Budget Bureau's knife). In any case, the compromise is "enough to meet the demonstrable needs as seen by those directly responsible for the NIH programs," said Fogarty; at the same time, it is "no more than can be appropriately and effectively employed to further medical research as rapidly as available facilities and manpower will permit during the current fiscal year," he added.

The funds, after all that, will go to continue and expand present NIH programs in general; to expand the "specialized clinical centers" which were initiated last year and broaden their "disease categories"; and to create "special resource centers in which the principles, instrumentation, and techniques of the physical sciences and certain engineering specialties can be brought to bear on biomedical research," Fogarty said. The training and fellowship programs—Shannon, it will be recalled, wanted a "moratorium" on the training program fund increases—will be expanded because "strong representations" made to Congress indicated that a moratorium would "slow their momentum," Fogarty said.

Not all that the Administration wanted survived in the bill, either. Funds asked for the Food and Drug Administration, which as part of the Public Health Service has its budget considered together with NIH appropriations, were cut \$580,000. This will keep FDA from having 30 inspectors and chemists to watch over the food additive situation. Congress in effect thus denied FDA "resources to carry out responsibilities which Congress itself assigned to the agency only three years ago," a Congressman said. Moreover, Fogarty prevailed against attempts to raise the overhead allowance on NIH grants

from 15 to 25 percent; the Senate was willing to go along with the increase, which would have brought NIH overhead allowances in line with those of the National Science Foundation.

Administration of Research Grants

Inevitably, along with the affluence, has come criticism of NIH. The best-documented is that of the House Committee on Government Operations report, "Health Research and Training," released this year after 2 years in preparation. It found NIH "not adequately organized to administer" research grants "with maximum effectiveness" outside its own laboratories, stating that long-term awards were not followed up after the first year and that funds were given automatically for up to 8 years afterwards. Another criticism was that the government has "little assurance" that funds are "used economically and with concern primarily for research performance rather than private gain. The committee has found disturbing evidence of abuse of grants by commercial firms," the report said. "Extravagance and financial irregularities" were found in NIH grants in support of medical meetings. These were criticisms of administrative sloppiness for the most part; much can be excused because of the size of the NIH programs and their rate of expansion. And NIH has moved to correct them.

The fundamental question is whether the money has been pumped into medical research too fast to be used soundly. There is no proof that it has not, although, on the other side of the coin, there is really no proof that it has. Lacking that, one is forced to the conclusion that, by and large, NIH has done a good job. Yet the uneasy feeling persists that NIH supports too much research—not too much in terms of government in science but too much in comparison to the rate of support of other agencies. Voluntary health organizations may not afford a good comparison in this respect, but the National Science Foundation does. The House report cited above brought this out, and in doing so it used words that implied criticism, though the criticism was not formally stated.

"NIH has allowed grantees an exceptionally high proportion of their budget requests," it said. "For all programs combined, successful applicants were allowed 95.3 percent of the total research funds they requested in 1960." Between 1956 and 1960, the rate was 93.7 to

99.4 percent. NSF, with admittedly less money at its disposal, granted a much lower proportion of budget requests: about 50 to 60 percent asked by new applicants, 75 to 85 percent on money asked for renewals. "Moreover, NSF is able to support only about one-third of the dollar value of total research proposals. NIH, by comparison, supported nearly one-half (one year it was 68 percent) of all new applicants and 94 percent" of continuing-grant requests. To sum it up, NIH gave 95 cents on the dollar to two-thirds of all new applicants; NSF gave 60 cents on the dollar to one-third of its new applicants.

No End in Sight

With Congress feeling as it does, there is no end in sight to the accelerating rate of support of NIH. No group has taken more to heart Pasteur's words: "Take interest, I implore you, in those sacred dwellings [called] laboratories. Demand that they be multiplied, that they be adorned. These are the temples of the future, temples of well being and of happiness." Jones's committee of consultants to the Senate saw the government spending \$2 billion a year by 1970 on medical research, and increasing its share of the nation's medical research bill from the present one-half to two-thirds.

Even those who most ardently push this trend must have disquieting moments in considering how long the public, and even Congress itself, will continue the force-feeding before asking the beneficiaries to produce a golden egg or two.—ROBERT C. TOTH

While Howard Margolis is on vacation, his section will be written by guest reporters. Robert C. Toth, this week's guest, is on the staff of the New York Herald Tribune.

Disarmament Agency: It Gives Quest for Peace an Institutional Standing

The Administration last week enlisted broad congressional support for establishing a high-level agency to delve into the innumerable complexities of arms control and disarmament. A bill setting up the agency was approved by the Senate. A similar measure was sent to the House floor with the unanimous endorsement of the Foreign Affairs Committee.

Although the small disarmament