

## **FEDERAL FINANCING FOR MEDICAL RESEARCH THROUGH TRUST FUNDS AND ENTITLEMENTS**

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### INTRODUCTION

Most federal funding for medical research is provided through the annual appropriations process, which is commonly known as “discretionary” spending. This paper analyzes how discretionary federal funding for medical research could be converted into two forms of “mandatory” spending: trust funds and entitlements. Mandatory spending is enabled by laws other than annual appropriations acts; that status is generally perceived as providing greater funding stability.<sup>1</sup>

Converting medical research from discretionary to mandatory funding would be a very difficult task. Most members of the appropriations committees would be reluctant, at best, to cede their authority over this area of the budget. Members of the budget committees would be concerned that mandatory status for medical research funding would decrease their flexibility to manage the aggregate budget. And budget analysts might be skeptical that mandatory status is well-suited to the allocation and management of medical research grants.

This paper begins by comparing the impressive record of medical research funding with the risk that this record will not be matched in the future. Next it describes some essential characteristics of trust funds and entitlements. The paper then analyzes some complexities of using trust funds and entitlements to finance medical research.

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<sup>1</sup> Useful guides to federal budget concepts and process include Schick, 1995; OMB, 1998a.

## THE IMPRESSIVE PAST AND PRESENT OF MEDICAL RESEARCH FUNDING

In its statement of objectives, Funding First argues that medical research is “a national treasure which may be jeopardized by current funding practices” (Funding First, 1997). Given the life-saving and enhancing impacts of U.S. medical research, it certainly deserves its description as a “national treasure.” It is also clear that this treasure was bought with sustained and enduring support from the federal government, beginning with the 1945 Bush report’s call for national investment in science. Of course, there were a few years when federal funding for medical research either failed to grow or was cut, most recently in 1982 and 1996 (OMB, 1998b). But in comparison to most other categories of domestic discretionary spending which were reduced significantly from 1990 to 1997, medical research did very well.<sup>2</sup>

President Clinton’s pledge in the fiscal year 1999 budget to increase the National Institutes of Health (NIH) budget by 50% over a multiyear period, symbolized by NIH Director Varmus’s gallery seat of honor for the 1998 State of the Union Address, indicates that this funding success is likely to continue. There is bipartisan Congressional support for reaching this goal and even going beyond it, which is the historical Congressional reaction to Presidential requests for medical research funding.

The reasons for the generous funding of medical research are numerous. Most importantly, the average American is confident that investments in medical science will be productive, an assumption that is fully justified by the remarkable advances of the past century. Those investments have been enabled by effective administration within NIH. An essential element of this administration is the strong scientific norm in favor of peer review, which allows appropriators to be generally confident that funds will be spent efficiently. The medical research establishment has advocated skillfully for federal support. That quest has been aided by the design of NIH’s extramural program, which grants funds to more than 25,000 recipients, broadly distributed across the country, who are well-respected members of major institutions, and who are not shy. Consequently, most Members of Congress know that medical research is politically popular, and they often proclaim their support of funding for local institutions or targeted diseases.<sup>3</sup> (Strickland, 1972; Weston, 1994)

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<sup>2</sup> Data from the 1980s and 1990s on economy-wide spending for health research and development also show impressive growth; see Neumann and Sandberg, 1998.

<sup>3</sup> Note also that investments in medical research are consistent with the American fascination with technological advances and are much less threatening politically than some other types of medical spending. Consider the recent opposition to funding for research on cost-inefficient clinical practices, or to the expansion of health care access that would reduce the market shares of insurers.

## THE UNCERTAIN FUTURE FOR MEDICAL RESEARCH FUNDING

Despite the impressive growth of discretionary appropriations for medical research, another of Funding First's objectives is taking "funding for research beyond the annual appropriations process"(Funding First, 1997).

A skeptic might compare such concern about future appropriations to the fear of a patient who is scheduled for an operation at world-famous Johns Hopkins Hospital, but who wants to transfer to the world-famous Mayo Clinic on the grounds that he heard the jello served at Hopkins wasn't very good. On the other hand, one could come up with a more frightening analogy—a patient who might need an emergency operation within the year, but who is scheduled to travel through the developing countries during that period. Prudence might dictate changing plans.

Fear about the future of medical research is very reasonable given the recent changes in the health sector (Barfield and Smith, 1997). For example, the widespread adoption of managed care has reduced important cross-subsidies for teaching and research—will this continue? Might the likely return to higher rates of health care cost growth reduce money available for research? Will technological advances further increase the cost of the research process?

More specifically, discretionary appropriations for medical research are threatened by uncertainty at both the macrobudgetary and microbudgetary levels. At the macrobudgetary level, discretionary spending caps loom. From 1990 to 1997, these caps greatly limited increases above a nominal dollar base for total discretionary spending (in other words, there was far less money than necessary to cover the costs of inflation, resulting in a real funding decrease). The caps have been a major factor in eliminating federal deficits. If applied in the future, they could force even those who have vocally pledged to increase medical research funding to do the opposite when budgets are requested or appropriations bills are written.

The assumption that the caps will continue is a major contributor to the large surpluses that are now projected. Yet in 1998, the Congress and the President used loopholes and gimmicks to exceed the caps by over \$20 billion. Complying with the caps in 1999 will be very difficult, and given the large surplus projections, it is possible to envision a benign scenario in which the caps would be increased significantly.

On the other hand, domestic discretionary appropriations are not the only claimants to the projected surpluses. Alternative major uses include tax cuts (the Republicans' top agenda item), defense spending (the current consensus is that some increase is needed), and Social Security, Medicare, and Medicaid (it will be extremely difficult to reach agreements, but any agreement will be very costly). In addition, the longest peacetime expansion of the economy will eventually end—perhaps sooner than later—converting surpluses into deficits. The resultant unbalanced budget would disturb most Americans (though, in many cases, without much thought about why), and an easy (though counterproductive) policy would be to enforce strict discretionary caps.

Which of these macrobudgetary scenarios will occur? I don't have the foggiest idea. A common feature of budgetary politics is that many participants make assumptions about the course of the American economy, and about the balance of power in American politics, which become incorrect in just a year or two. But a defensible precautionary approach might consider the macrobudgetary risk significant enough to justify a strategy of escape from discretionary appropriations.

A secondary risk associated with discretionary funding is at the microbudgetary level. The dysfunctions of the appropriations process are widely known: bills are often enacted long after the beginning of the fiscal year, there is usually turfing between committees, and bills are often loaded down with micromanagement directives—especially earmarks to favored programs, organizations, and locations.

Compared to the experiences of many other programs, such flaws have been relatively minor for the NIH, but nothing guarantees that will continue. Perhaps the most significant fear is that public pressure for disease-specific projects could lead the Congress to write very detailed appropriations that would imperil funding for more-productive basic science. So a reasonable precautionary approach here might be to seek autonomy from the annual appropriations process. Protecting the current level of flexibility could be worth the cost of less funding.

## ESSENTIAL CHARACTERISTICS OF TRUST FUNDS AND ENTITLEMENTS

There is no technical guidebook or overarching law on mandatory funding in general, and on trust funds and entitlements in specific. Rather, the details of funding for each mandatory program is governed by the specific law that creates that program. Consequently, the characteristics of mandatory spending designs vary significantly, and they are usually quite complex. For example, many (but not all) trust funds earn interest on their fund balances, but at different rates.<sup>4</sup>

The essence of both trust funds and entitlements is that, by law, either the receipt of funds by a program or the obligation of those funds becomes automatic. For example, the typical trust fund law requires that specific revenues be reserved in a fund for a particular purpose. But note that labeling a fund a “trust” does not, as implied by the name, create the kind of stability created by a bequest from a will. In this private trust case, a fiduciary must gain the permission of a court to legally ignore the conditions of the bequest, and such permission is granted only in extraordinary circumstances. In the federal trust case, the Congress and the President need only rewrite the law to recapture or shift the funds, and they often do just that. Also note that placing

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<sup>4</sup> “Special funds” do not earn such interest, even though they resemble trust funds by receiving dedicated receipts for restricted purposes. For more details on prototypical complex accounting and spending designs, see Meyers, 1994, chapters 4-6; GAO, 1991, 1992, 1994b. On trust funds, see Patashnik, 1997; on entitlements, see White, 1998, 1999; CBO, 1994; GAO, 1994a.

receipts into a trust fund does not automatically make them available for obligation; the governing law must be written to require that. For some important trust funds, the appropriations committees have retained their ability to appropriate moneys out of these funds (meaning that spending remains discretionary), and the appropriators' reluctance to appropriate all available receipts and interest earnings have created large balances in the funds.

In the typical entitlement program, the government guarantees payment of funds to any eligible beneficiary who meets specified criteria, and it does so by formula. This usually means that when the number of those entitled beneficiaries increases unexpectedly from what was anticipated in the budget, the government must spend more. Again, however, it should be noted that on a few occasions (for example, with food stamps), laws gave the appropriations committees authority to refuse to appropriate all the moneys necessary to finance expected entitlement benefits. If they appropriated less than the full amount, the administering agency would be expected to ration access. In contrast, most entitlement formulas automatically direct varying amounts of benefits to different beneficiaries, thus reducing or eliminating the amount of discretion that might otherwise be exercised by appropriators and administrators.

## COMPLEXITIES OF MANDATORY SPENDING DESIGNS FOR MEDICAL RESEARCH

This section discusses two major complexities of designing trust funds and entitlements. The first part considers the implications of some alternative revenue sources for a trust fund—asking “who would pay how much into the fund and why?” The second part addresses how the allocation and management of funds could be affected by these mandatory designs—asking “who would get how much and for what?,” and “what would guarantee that they spend efficiently what they get?”

### Trust Fund Revenues

Three of the alternative revenue sources for a trust fund for medical research are: a specified amount of general revenues; taxes on health insurance premia; and taxes and/or royalties on sales from medical products.

The general revenues source has the significant advantage of consistency with the widely-accepted “public good” justification for federal funding of medical research. That is, federal funding is thought necessary because:

the potential benefits of medical research are so large that relying on a limited flow of charitable giving would delay progress (Harden, 1996),

the private sector should underinvest in basic medical research because of the uncertain rate of scientific advance and because of its inability to capture all benefits flowing from these investments, and

patients with rare diseases will not provide a sufficiently large market for private research investments to be profitable, and the result is that these patients are unfairly neglected.

Yet a general revenue set-aside into a trust fund presents the same difficult question currently faced in the annual appropriations process: how much should be set-aside for each year? The only difference is that this question would be answered for a multiyear period—for example, a specified amount of funds for the base year with scheduled increases for each of the following years (or “outyears”). In other words, the “trust fund” would provide advance appropriations over a series of years.<sup>5</sup>

The second revenue alternative listed above is a tax on health insurance premia. (A similar mechanism was discussed for financing medical education during the 1993-4 health care reform debate.) As with the previous alternative, a policy decision would be required to determine what rate(s) to impose. But once this choice was made, the tax on insurance premia would “solve” the problem of having to set funding levels for each outyear; that would be determined by the amount of health insurance in force.

This would not guarantee rising or stable funding levels from year to year, however. What if, the trust fund tax rate were set as a percentage of the health insurance premium paid? Premium increases would reduce the number of insurance policies in force, but produce higher payments from the insurance policies remaining in force. The balance of these effects would be uncertain from year to year because of the complexity of the health insurance market, which would complicate budget forecasts.<sup>6</sup> Receipt instability could also be caused by the imperfect collection and accounting abilities of the government (GAO, 1998) Similar problems have resulted from the per-gallon tax on gasoline that finances the Highway Trust Fund.

A final effect of a premium tax is that the burden of financing medical research would shift. How it would shift would be very sensitive to the tax rate(s) that would be applied, to the

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<sup>5</sup> Some “trust funds” have been financed by set-aside general revenues--General Revenue Sharing and the Violent Crime Reduction Trust Fund. The practical effect of these provisions was to “fence” off, or protect, these parts of the discretionary appropriations total from reduction. A symbolic effort towards this result was the Specter amendment (#2254) to Congressional Budget Resolution for FY 1999 (considered in the Senate April 2, 1998), which would have “dedicated” \$2 billion to medical research. The quotes reflect the fact that such budget resolution directives are only advisory to appropriators. The source of the assumed funding was originally to be from proceeds of the then-expected tobacco settlement, but was changed to a cut in all other discretionary appropriations by .4%.

<sup>6</sup> An example of this difficulty was the Harkin amendment (#579) to Revenue Reconciliation Act of 1997 (considered in the Senate June 27, 1997). It would have dedicated to medical research one-half of projected increased revenues resulting from a cut in capital gains tax rate—an especially difficult to predict and probably ephemeral amount.

types of insurance covered (would Medicare and Medicaid pay?), and to the responses to the tax. Clearly, the tax would be avoided--at least in the first-order--by those who did not have health insurance. Since access to health insurance is positively correlated with higher income, a premium tax should be roughly progressive in incidence. However, it is likely to be less progressive than the current tax system from which federal medical research is now financed.

The third revenue alternative would be to capture and dedicate taxes and/or royalties on sales from medical products. For example, some manufacturers of proprietary pharmaceuticals recently proposed that if they were granted up to ten years of additional market exclusivity for certain drugs and antibiotics, they would make royalty payments to the government--but only 3% of net U.S. sales--to be used for medical research. The Congressional Budget Office (CBO) found that much of the new revenue would be offset by increased federal health care payments for these non-generics, and that private costs would also increase (1997; see also U.S. Congress, Senate Subcommittee on Labor-HHS, 1998).

To the extent that private profits result from federal investments in basic research, the private sector might owe a duty to pay, and the federal government might deserve to capture some of these profits. This alternative, like the previous one, raises positive and normative questions that are too complicated to answer in detail here. Some relevant questions:

How would changes to patenting/intellectual property laws affect trust fund receipts?

To what degree and how should the prices of taxed medical products be regulated?

What would be the incidence of the tax--what shares would be borne by shareholders, by employees, and by customers of taxed firms?

If almost all of the burden was borne by customers--by and large, by the sick and disabled--would this be fair?

Assume for the sake of argument that the assumption in the first part of the last question was accurate. That the sick and disabled would pay for medical research might be considered fair because it is consistent, at face value, with the "benefit principle"--those who benefit should pay. This principle often justifies the dedication of funds. On the other hand, sickness and disability is often due to bad luck. Healthy people--many of whom are healthy because of previous medical research--may have a greater moral obligation to finance medical research.

Targeted taxes are often politically attractive because they are perceived as falling on only a small group of taxpayers. This perception of the burden is often inaccurate because of tax shifting; for example, much the burden of the corporate income tax is shifted to consumers. Similarly, a tax on medical products may be perceived--largely incorrectly--as falling primarily on the shareholders of manufacturing firms.

On occasion, the initial payers of targeted taxes accede to their “burdens” in return for the dedication of receipts to specified purposes. That is, the benefit principle has a common political corollary: those who pay should have a special say on the allocation of these funds. Again, the complications of this approach for medical research require more space than available here. But here’s one question to consider—if taxes on medical products were dedicated to medical research, would the manufacturers have an incentive to suggest that less research be done on preventative health?

The related budgetary issue affects whether the tax/royalty payments would be on- or off-budget. If payments were paid voluntarily (as in a royalty agreement) and allocated by an institution not under the direct control of the federal government (that is, not by NIH), OMB and CBO might decide to treat them as off-budget (budget concepts and practices on this issue are in flux). A contrasting case was the health alliances proposed by the Clinton administration in 1993. The quasi-mandatory nature of payments and extensive indirect government controls led CBO to classify the health alliances as on-budget, a decision that was disputed by the Office of Management and Budget.

That conception of the budget’s proper scope could become dated if health policy-making ever leaves the incrementalist torpor in which it now appears trapped. America’s health care system offers great quality, but at an indefensibly high cost and to too few people. Reforming the system will never be easy, but it should not be impossible. If an ambitious and skillful political leader ever takes the risk of proposing major institutional reforms, adoption might be more likely if there is a simultaneous redefinition of “the budget” on the order of the global (or sectoral) budgeting of the type proposed by Herb Stein (1989).

### The Allocation and Management of Funds

Mandatory status often does reduce annual conflicts over the allocation of funds. Because of benefit schedules, our society does not debate how much individual Social Security beneficiaries should receive each year. Could mandatory status for medical research have a similar effect?

Probably not. Begin with entitlement status. Most entitlements enjoy this status because of a mix of political commitments and the necessities of program design. There may be a legal or quasi-legal “right” (Indian trust funds, employee pensions), or a “moral” one because of repeated government promises (Social Security). It is difficult to imagine how some entitlement programs could work without relative stability; for example, long-term planning for retirement is aided by confidence that Social Security benefits will provide an income base.<sup>7</sup>

Do the necessities of program design suggest that medical research funding should be an

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<sup>7</sup> In contrast, one of the traditional justifications for entitlement status—that the federal government has a counter-cyclical responsibility to provide a safety net for the unemployed—was not reflected in the fine details of the 1996 welfare reform law.

entitlement? Assuming the accuracy of the common description of medical research as a public good, Joseph White implies the answer is no.

On the whole, an entitlement should be for a benefit that can be quantified and divided up. Protection from crime, a classic “public good,” would be hard to deliver in this way. Space exploration, the census, in short most bureau programs in the real world—do not have benefits that can be divided so neatly. A pension, however, is quite precise.(White, 1998, p. 513)

It is true that investigator grants are as precise as pensions in amounts awarded. And a common complaint is that many successfully peer-reviewed research projects go unfunded. This might suggest that all investigators who pass peer-review should be entitled to funding.

Of course, that is a totally unrealistic option. The cost would be tremendous, and the incentive effects for the peer-review process would be dangerous. Not all good projects are the best. While expectations about the probable benefits from most grants are imprecise, grant competition can reduce that uncertainty in order to direct resources towards projects that are more likely to be cost-effective.

Should entitlements be created instead at the institute level? Not if allocating funds for medical research is an inherently judgmental task that requires some year-to-year flexibility (NIH, 1997; Institute of Medicine, 1998, 1990). Arguably, allocations could be improved by permitting even more administrative flexibility than is currently allowed. Such flexibility is especially valuable to all programs that rely on human and physical capital, as is the case with medical research. A forthcoming report from the President’s Commission on Capital Budgeting is expected to propose some rules that should allow more efficient investments in labs and information technology.

Another perception of mandatory funding is that it gives program advocates absolute independence from a squalid political process. Program managers need not lobby each year—they can focus on efficiency and effectiveness—because they enjoy the trust of elected officials and a stable funding stream.

The reality is quite different, for there is simply no way to avoid political and budgetary oversight. Conversion from discretionary to mandatory status would eliminate the role of the appropriators, but would probably increase the activities of authorizers. If revenues were dedicated, this would allow the revenue-raising committees to also claim a jurisdictional right to oversight of medical research (Cogan, 1994). And the creation of new mandatory spending is controlled by the “paygo” rules of the Congressional Budget Act (as amended), which require that this spending be offset by cuts in existing mandatory spending and/or by revenue increases.

It may also be that the annual appropriations process, despite its well-known flaws, promotes responsive and economical program management. There are enough examples of

independent agency horror-stories (for example, the Synfuels Corporation) to suspect that there is merit to this argument. NIH's grants and contract management practices were criticized in the past, and the annual prospect of being blamed for similar lapses may keep administrators on their toes. More broadly, the annual appropriations process may promote the agency's legitimacy by forcing it to respond to the demands of citizens about the purposes of medical research.

Implementation of the 1993 Government Performance and Result Act (GPRA) may change these accountability procedures. GPRA requires agencies to engage in strategic planning and outcomes measurement, and to relate the products of these processes to operating procedures and to budget requests. Research agencies like NIH recognize that measuring the impact of research activities on social outcomes is a very complicated task, but this difficulty may be ignored or minimized by some influential GPRA advocates. If implementation of GPRA continues at its strong pace, research administrators and their overseers will have to negotiate what kinds and amounts of benefits are appropriately linked to budget allocations. The basic analytical challenge will be the same: how to determine the point at which a dollar spent on medical research results in diminishing benefits (Ginzberg and Dutka, 1989).

The nature of this negotiation will be affected particularly by the types of potential benefits that will be compared to each other. These vary significantly within the NIH, the executive branch, and the Congress. In the latter, the basic competition is structured by appropriations subcommittee jurisdictions, which forces comparisons of inherently incommensurable outcomes. I can only sympathize with the Members of Congress who must now choose between funding for medical research or for foster care and adoption services.

But the reality of budgetary competition is that there is no way to avoid such comparisons by shifting from discretionary to mandatory funding. In fact, the trust fund form often seems to attract competitors. For example, the Highway Trust Fund now finances bike paths, a policy successfully advocated by cyclists despite the opposition of auto and truck interests.

Imagine a "Medical Research Trust Fund" established to promote desirable health outcomes. Might it attract social science and clinical practice researchers that would portray themselves as symbionts to biomedical research, but might they be perceived by biomedical researchers as parasites? Or imagine that the trust fund form would be applied to research in general, an extension of President Clinton's "Research Fund for America" data aggregation from the 1999 budget. In this case, the intended outcome would be knowledge advances from research of all types. That trust fund would allow direct competition between NIH's medical research and the basic science funded by NSF (on which NIH's medical research is so dependent).

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