

more time to create the local institutions needed to support HIT implementation.

Second, much will depend on the federal government's skill in defining two critical terms: "certified EHR" and "meaningful use." ONCHIT currently contracts with a private organization, the Certification Commission for Health Information Technology, to certify EHRs as having the basic capabilities the federal government believes they need. But many certified EHRs are neither user-friendly nor designed to meet HITECH's ambitious goal of improving quality and efficiency in the health care system. Tightening the certification process is a critical early challenge for ONCHIT. Similarly, if EHRs are to catalyze quality improvement and cost control, physicians and hospitals will have to use them effectively. That means taking advantage of embedded

clinical decision supports that help physicians take better care of their patients. By tying Medicare and Medicaid financial incentives to "meaningful use," Congress has given the administration an important tool for motivating providers to take full advantage of EHRs, but if the requirements are set too high, many physicians and hospitals may rebel — petitioning Congress to change the law or just resigning themselves to forgoing incentives and accepting penalties. Finally, realizing the full potential of HIT depends in no small measure on changing the health care system's overall payment incentives so that providers benefit from improving the quality and efficiency of the services they provide. Only then will they be motivated to take full advantage of the power of EHRs.

The nation's economic woes have given birth to an unprece-

dent federal effort to modernize the information systems of a troubled health care system. It is now up to the government and the nation's health care professionals and facilities to turn this opportunity into real improvements in the health and health care of Americans.

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The NIH Stimulus — The Recovery Act and Biomedical Research

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After years of relatively flat funding, the National Institutes of Health (NIH) is poised for rapid growth (see Fig. 1). In February 2009, under the American Recovery and Reinvestment Act, the NIH received \$10.4 billion in new funding. The funds are meant to stimulate the economy as well as to support research and are for expenditure between now and fiscal year 2010, which ends in September of next year.¹ In March 2009, Congress finally set the institutes' annual budget for fiscal year 2009 at \$30.3 billion, an increase of about 3% from fiscal year 2008. And although details of the Obama administration's fiscal

2010 budget are forthcoming, the spending plan is expected to include more than \$6 billion within the NIH as part of a multiyear doubling of funding for cancer research.

NIH funding under the recovery act has several components. The largest is \$8.2 billion that will support research, including \$7.4 billion that will be transferred to the 27 institutes and centers and the common fund (which supports high-priority trans-NIH projects) in amounts that are proportionate to their budgets (meaning that the National Heart, Lung, and Blood Institute, the National Cancer Institute, and other larger in-

stitutes will receive more money than smaller institutes and centers) and \$800 million that will be allocated by the office of the director. An additional \$1.8 billion is for buildings and equipment, including \$1 billion for extramural construction, repairs, and alterations; \$500 million for NIH buildings and facilities; and \$300 million for shared instrumentation and other capital equipment. Finally, \$400 million will support comparative-effectiveness research; in total, \$1.1 billion is available for such research, including \$300 million that will be administered by the Agency for Healthcare Research and Quality and \$400 mil-

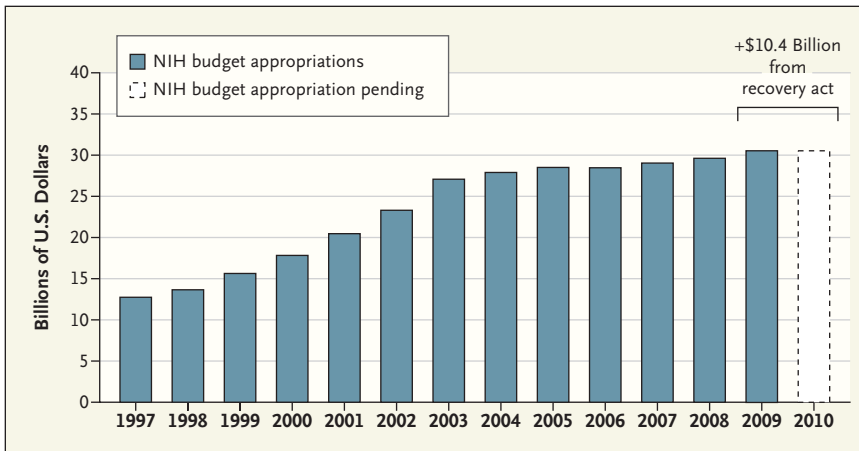


Figure 1. Growth of the NIH Budget, 1997–2010.

The data are not adjusted for inflation.

lion by the secretary of the Department of Health and Human Services (DHHS).

Support for research will include the awarding of additional peer-reviewed grants for projects that are deemed likely to make substantial progress within 2 years, targeted supplements to current grants, and new types of activities, such as a challenge-grant program. In March 2009, about \$1 billion was made available for revisions of existing competitive grant applications and administrative supplements, including \$21 million for those used to fund summer research experiences for students and science educators. The NIH also announced that it had designated “at least” \$200 million of the stimulus money to fund 200 or more grants in specific challenge areas (comparative-effectiveness research, clinical research, genomics, information technology for processing health care data, regenerative medicine, stem-cell research, and nine others) that “focus on specific knowledge gaps, scientific opportunities, new technologies, data generation, or research methods that would benefit from an influx of funds.”²² Applications are due in late April;

the “earliest anticipated start date” is the end of September. About \$60 million is to be made available to fund between 40 and 50 grants addressing the heterogeneity of autism spectrum disorders, and another \$200 million will support research and research infrastructure “grand opportunities” with the expectation of continued NIH funding beyond 2 years. With regard to research involving human stem cells, on March 9, 2009, President Barack Obama issued an executive order that reversed Bush administration policies limiting the funding and conduct of such research. The NIH has until early July to finalize new guidelines, after which recovery-act funds should become available.

The NIH’s research-project grant, more commonly known as “R01,” is the agency’s original grant mechanism and the largest category of funding as measured by the number of grants and their value; such grants can be initiated by investigators or submitted in response to a program or request for applications. The number of new and continuing R01 grants was 7211 in 2003 but has subsequently decreased; in 2008, 5886 such grants were awarded

(see Fig. 2A). The total amount awarded has remained under \$2.5 billion a year (see Fig. 2B). In 2008, the success rate for new R01 grants, defined as the number of applications awarded as a percentage of those reviewed, was 19%, as compared with 25.5% in 1999 and a low of 16.3% in 2006. Although the NIH has yet to state how many additional R01 grants it will fund with stimulus money, the number should be substantial.

Recovery-act funds differ from routine NIH appropriations. They are targeted for job creation and other economic benefits as well as the usual scientific purposes. Stimulus funds are to be awarded and spent promptly and are subject to various additional measures to prevent fraud and waste and to ensure “transparency and accountability” to the public. Detailed information related to NIH activities and expenditures, including their economic effects, is to be available on many federal Web sites, including those at the institutes (www.nih.gov/recovery and www.grants.nih.gov/recovery), the DHHS (www.hhs.gov/recovery), and government-wide sites (www.recovery.gov and www.grants.gov). In March, the NIH and other federal agencies began reporting on the use of the funds. In May, agencies will make available performance plans, detailed financial reports, and information about competitive grants and contracts. In July, recipients of federal funding will begin reporting on their use of funds.

The recovery-act timetable raises practical issues, and more are likely to emerge in the months ahead. For example, it is often not feasible to design, fund, conduct, and complete certain types of research within 2 years — such as a clinical trial comparing the effec-

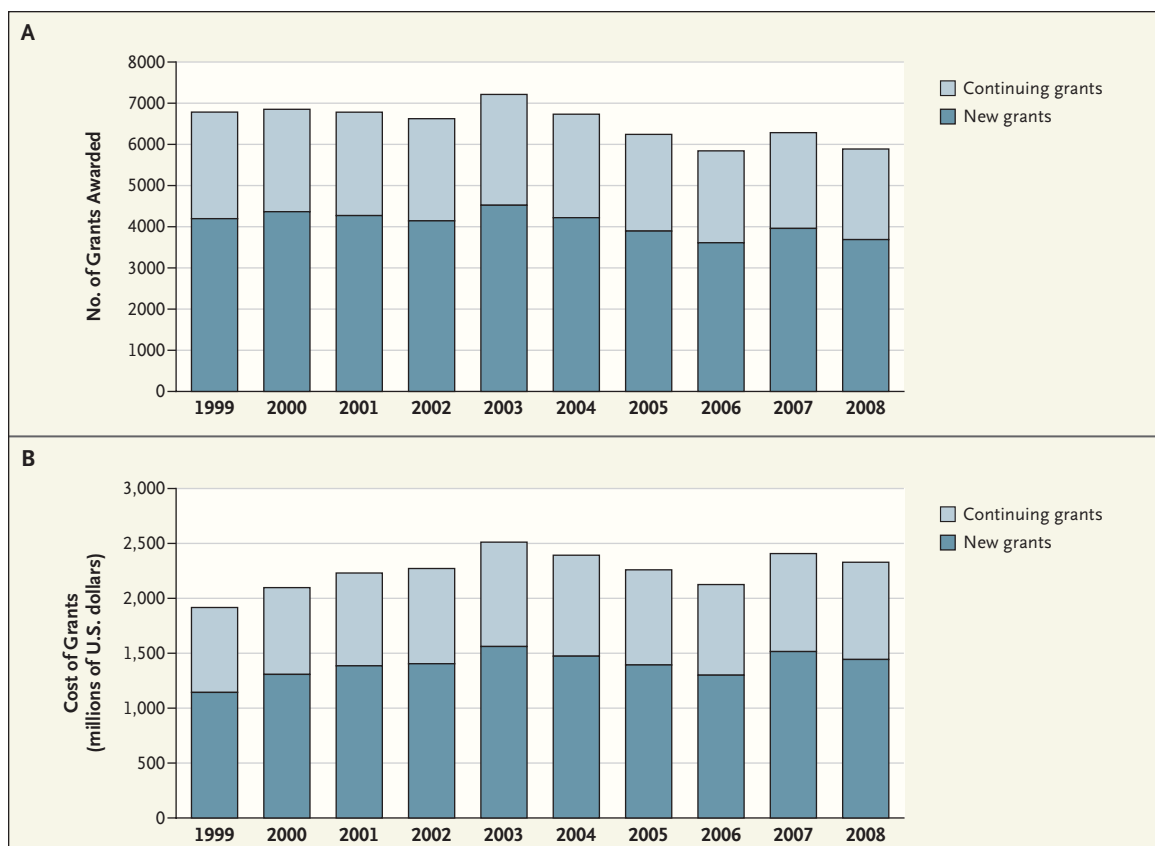


Figure 2. NIH Research-Project (R01) Grants Awarded, 1999–2008.

The number (Panel A) and total cost (Panel B) are shown. Supplements to grants are not included.

tiveness of treatments. After a grant is funded, it may take time to hire the people who are needed to carry out the work. Fellows and postdoctoral researchers often have commitments that extend through the end of the academic year in June. The challenges may be greatest for grants funded late in 2009 or in 2010. It is also uncertain how flexible the federal government will be with regard to allowances for spending stimulus money after September 2010, so that work can be completed.

Whereas the stimulus funds are a one-time infusion of money equivalent to about a third of the NIH annual budget, the extent to which the overall budget will continue to increase has yet to be confirmed. If Congress does not sub-

stantially increase the NIH budget by fiscal year 2011 — to a level closer to \$40 billion than \$30 billion per year — many investigators and others who will gain employment because of recovery-act funds may lose their funding at the end of fiscal year 2010. However, if Congress builds on recovery-act funding, allocates additional resources to the NIH, and ensures a continuing real growth rate after adjustment for inflation, biomedical research may be placed on a firmer financial footing.^{3,4}

Each week, the DHHS provides a list of “appropriations, obligations, and disbursements” under the recovery act, along with activities and planned actions (www.hhs.gov/recovery/reports/index.html). As of late March 2009, the

NIH had not obligated or disbursed any money. Already, September 2010, the end of next fiscal year, is just 18 months away. The NIH should be very busy.

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