

Offering incentives for future scientists

Medical research is the backbone of medicine and a vital component in medical advancement. Medical research has a significant impact on patient treatment, physician standards of practice, public health initiatives, student education, the pharmaceutical industry, biotechnology companies, and private investments. In order to build and sustain funding for medical research that is both sufficient and equitable, tax credits should be implemented for the purposes of recruiting students to medical research and reducing the financial barriers for medical researchers.

In order to sustain organic growth of intellectual property, as opposed to growth through acquisition and recruitment of foreign talent, early investment into students is paramount. Offering government funded scholarships or educational tax credits to high-school, university, and graduate students to work in medical research will not only help researchers utilize skilled and motivated student-researchers, but will provide an opportunity for students with an interest in medical research to develop their academic interests.

For example, students with a minimum grade point average of 3.0, could apply for a scholarship or tax credit of 2,500 dollars for working as a summer, student-researcher at a university or a research group conducting medical research. If 100,000 students (33,333 high school, 33,333 college, and 33,334 graduate) enroll in this government-funded summer research program, a total of 250 million dollars will be spent in scholarship, or tax credits, per annum. Students and research groups will directly benefit from an educational and productivity perspective. Students will develop their research skills, focus on their areas of interest, and gain knowledge. Research groups will be able to receive skilled support and benefit from motivated, student researchers. Of the 100,000 students who engage in research, 2.5% (2,500 students) may produce results that may lead to significant advancement in their field of research. Out of these 2,500 students, 1%

(25 students) may lead to scientific discoveries that can be developed into clinical treatment. In this hypothetical case, the financial reward or healthcare savings from a blockbuster drug, an innovative medical technology, or an improvement of health outcomes for patients will provide a net positive return to taxpayers in the long-run. There is minimal risk since this government investment (in the form of tax credits or scholarship) is in the education of motivated students during the formative years of their science education.

Second, to reduce the financial barriers for medical researchers as a group, a tiered tax credit for medical research would encourage greater investment. An initial tax credit of up to 50 percent per year that decreases with advancing stages of research development could increase the diversity of research initiatives from research groups. For example, a clinical trial for the treatment of sickle cell disease in phase I by a pharmaceutical company may receive a tax credit of 50 percent. If the clinical trial is approved for phase II, then the tax credit would be reduced to 25 percent. Each successive advancement in clinical trial phase would result in a decreased tax credit. In addition to decreasing the initial barrier to entry, the decreasing tax credit would gradually shift financial accountability from the government to the pharmaceutical company.

The United States has the legal infrastructure and academic system to support equitable changes in investment into medical research. The most important way to ensure sustainable funding for medical research is not to focus on raising money through tax revenue or private fundraising, but to create intellectual growth opportunities for students in the educational system. This type of educational investment in motivated students who have a future interest in the health sciences can result in long-term economic productivity. Investing in the medical-research interests of students not only advances the education of students but may also create a higher demand from students to enter medical research as a career. This organic growth will benefit many different groups who are impacted by medical research, and ultimately benefit society. In the situations that student research leads to a marketable and valuable outcome, the US legal system is

designed to protect intellectual property rights for the group conducting the research. In addition, creating relatively higher tax credits (up to 50%) for early stage research will influence a more diverse range of research topics.

The build and support of this idea comes from a commitment from the government to financially support student-summer research and, concomitantly, reduce barriers to entry for medical research groups through tax credits. This government support will yield net positive gains for tax payers by future job growth in the medical sciences, improved health practices, and improved medical technology. These long-term economic gains justify the cost-benefit and sustainability of this program.