The Crisis in Clinical Research: Encouraging Youth to Pursue Clinical Research by Publicizing the “Public Good”

Darrell G. Kirch, MD

Key Words: clinical research, public good

Whereas the private sector in general is focused on product research, basic discovery research—whether it involves the laboratory or patients—is a public good. Quite simply, society must invest in basic discovery research because no one else will. Fragile and requiring constant attention, this research becomes a public good in part because it requires so much time and patience. A recent summary of clinical advances reported that the research process—from fundamental initial discovery to routine application in clinical practice—takes an average of 17 years. The private sector does not have such a long time frame. Therefore, we rely on the public sector to support research, especially in its early stages.

I have experienced this in my own career. I was dean of the Pennsylvania State University College of Medicine where, in the 1980s, virologists were intrigued by the human papillomavirus, an entity not of great interest at that time. Now, in 2009, the early work of those scientists allows my daughters to be vaccinated against certain forms of cervical cancer. There was a chain of discovery spanning decades, supported by public funds.

How do we know that the field of clinical research is endangered? First, consider the “graying of investigators” and the shrinking bottom band in Figure 1. Our future pool of experienced clinical researchers is becoming dangerously small. Second, we must consider how long the process takes to obtain an initial research grant. It is difficult to convince bright young people to enter a career in which they will be in their mid-40s before they clear their first professional hurdle and obtain their initial research award (Fig. 2). A third issue we must consider is how difficult it has become for physician-scientists to obtain protected time in which to conduct their research. For example, there is growing pressure on faculty physicians to be in the clinic, seeing more patients rather than conducting their studies.

Second, we must consider how long the process takes to obtain an initial research grant. It is difficult to convince bright young people to enter a career in which they will be in their mid-40s before they clear their first professional hurdle and obtain their initial research award (Fig. 2). A third issue we must consider is how difficult it has become for physician-scientists to obtain protected time in which to conduct their research. For example, there is growing pressure on faculty physicians to be in the clinic, seeing more patients rather than conducting their studies.

These combined factors are a major warning sign for the future of physician-scientists. Not surprisingly, the Association of American Medical Colleges (AAMC), which collects data from clinical departments, reports that it is struggling to recruit physicians to fill research-oriented positions (Fig. 3). We also must understand that research has become incredibly complex. A recent study, which tracked journal searches

WHAT IS ENDANGERING CLINICAL RESEARCH?

Yet even if we are willing to invest in clinical research, and we find that trained scientists are not available to conduct the studies, nothing is gained. When I initially prepared this presentation, I thought of the term “endangered species” to refer to the clinical investigator population. I thought this perhaps was hyperbolic, but then found an article in Academic Medicine that uses the same term. The article describes a program that Harvard University designed to stimulate physicians to pursue careers in clinical research. However, within the last few weeks, an exchange in Nature magazine—in a commentary as well as letters—also points to the danger that research careers for physicians have become an untenable choice. There is growing concern that multiple forces are discouraging physicians from pursuing careers as physician-scientists.

How do we know that the field of clinical research is endangered? First, consider the “graying of investigators” and the shrinking bottom band in Figure 1. Our future pool of experienced clinical researchers is becoming dangerously small. Second, we must consider how long the process takes to obtain an initial research grant. It is difficult to convince bright young people to enter a career in which they will be in their mid-40s before they clear their first professional hurdle and obtain their initial research award (Fig. 2). A third issue we must consider is how difficult it has become for physician-scientists to obtain protected time in which to conduct their research. For example, there is growing pressure on faculty physicians to be in the clinic, seeing more patients rather than conducting their studies.

These combined factors are a major warning sign for the future of physician-scientists. Not surprisingly, the Association of American Medical Colleges (AAMC), which collects data from clinical departments, reports that it is struggling to recruit physicians to fill research-oriented positions (Fig. 3).

We also must understand that research has become incredibly complex. A recent study, which tracked journal searches
and citations, showed how research, especially clinical research, has become exceedingly intricate and interconnected. In fact, the intricate web of science and research has become so complicated that the interdisciplinary challenges may seem too overwhelming for individuals considering research careers.

We can consider several strategies to encourage physicians to pursue research. One strategy used by the AAMC is to inform college and medical students as well as young professionals that clinical research continues to be a gratifying career. In addition, the AAMC acknowledges that although more minority college students are graduating in the sciences—biology, in particular—fewer are pursuing careers in medicine. Underrepresented minorities, many of whom are potential physician-scientists, are instead pursuing other careers. In response, the AAMC has established AspiringDocs.org, a program that uses a variety of tools, including Facebook, to reach out to college students (with an emphasis on minority students) and encourages them to pursue careers in medicine and especially careers as physician-scientists. Research centers around the United States are developing programs in which young investigators can obtain the mentorship and encouragement they need to overcome these obstacles.

Even if more individuals pursue research careers, however, the degree of public funding remains a key issue. The reality for several years has been that government funding through the NIH has remained essentially flat (Fig. 4). (NIH funding has been the main source for discovery research, especially in the clinical arena.) Although the federal government dedicated $10 billion of stimulus money to research, that funding is severely limited and extends for only 2 years. This short-term federal recovery package will not solve the crisis in clinical research.

HOW CAN WE SUSTAIN CLINICAL RESEARCH?

We need to think about sustainability. I recently wrote a piece for The Washington Times in which I stated that, as welcomed as stimulus funding was for medical research—until funding for research starts growing again consistently—we are going to struggle to convince young physicians to enter careers in research. We need to address these issues in Washington, while we simultaneously improve our recruitment of potential researchers around the country.

The AAMC is now working in several US areas to help nonresearchers understand the power of research as a public good. Through our advocacy efforts, we learned that citizens are not particularly responsive to researchers or medical school leaders. Rather, they find the personal stories of patients and their families to be most compelling. Just as the AAMC is using its advocacy campaign to increase and sustain research funding, we all must educate the public regarding the ways NIH-funded research is helping to protect against cervical cancer, find cures for breast cancer and for diabetes, and treat Alzheimer...
disease. By making Americans aware of the potential good of clinical research—through communications highlighting patients who have benefited from those efforts—we can attract medicine’s best and brightest to future careers in research.

REFERENCES


