Short Communication

Cancer Prevention and Control Investigators: The Need for High Quality Training Programs

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Abstract

There are increasing numbers of cancer prevention and control investigator trainees. On the basis of experience as research proposal reviewers and on reviews of a large number of current trainees, we offer some perspectives on the discipline and important aspects of optimal training programs. The historical importance of public health activities, the significant differences between prevention and treatment, and the breadth and public interest in prevention all have significant implications for trainees. In training, the need to focus efforts and to have active mentoring are critical. More attention to data analysis and complete development of a specific research proposal are also key elements of high-quality training. Although the need for cancer prevention and control investigators is great, more attention to the quality of their training is warranted.

Introduction

The mandate for more cancer prevention and control activities in National Cancer Institute-designated comprehensive cancer centers and the development of investigator training programs at the National Cancer Institute and in many institutions have produced a significant increase in the numbers of new investigators. From positions as observers of the presented work of these colleagues at national meetings, as grant reviewers of research activities in this area, and recently, and most importantly, as reviewers of summary detailed descriptions of the activities of 44 current trainees, we perceive some issues that bear comments, hopefully to the benefit of trainees and their mentors or program or position superiors.

On the one hand, it is challenging to be enthusiastic about developing investigative careers in cancer when health care reform forces are provoking profound changes in how academic centers operate, and major research funding sources have shrinking budgets. However, at the same time, the reform forces new funding sources, the knowledge explosion, and global networking are providing exciting opportunities. Our thoughts are structured as broad perspectives and specific caveats about investigator activities.

Some Broad Perspectives and Their Implications

From the current marketing efforts of institutions and cancer-associated businesses (e.g., at large national meetings), it is easy to feel that public health activities are hardly fashionable or important. Recently, in an editorial on “The evolving picture of cancer in America,” Cole and Sateren (1) reminded us again that “in the long term prevention will play the major role in controlling cancer as it has for many of mankind’s plagues.” The major academic society for cancer prevention, the American Society of Preventive Oncology, may be small, but public health and prevention are critical fields of endeavor.

We must never ignore the major differences of prevention from treatment. In prevention the intervention affects well people who accept any toxicity, inconvenience, or burdens poorly. Treatment of cancer affects individuals with perceived life-threatening disease for whom large costs of all kinds are often acceptable. The implications of these differences are that our preventive interventions need to be simple, practical (i.e., very acceptable), and inexpensive if, when they are proven effective, translation to large populations may be achieved.

The range of possible investigative activities in cancer prevention and control is broad and spans biological and social scientific disciplines. This is occasionally perceived to be an inhibiting factor in productive efforts. However, what is also clear is that treatment activities are becoming similarly broad and complex. Witness the growth of multidisciplinary clinics and treatment outcome evaluations that focus not only on responses and survival but also on economic and quality-of-life costs. Our discipline encompasses translational research that applies basic science observations and social scientific models, pharmacological insights, and molecular epidemiology to prevention and cancer control broadly.

Public perceptions and expectations about cancer prevention and control are playing an increasingly important role in defining the research agenda. Although quality of care, costs, and efficiency can be defended as appropriate areas of concern, the public often recognizes and is concerned about attainment of the broad goal: “decreasing incidence, morbidity, and mortality in populations.” As researchers we need to be able to easily show how our efforts are addressing this goal.

The explosive growth of knowledge in cancer biology offers the challenges and opportunities that make our field significantly exciting: how should this information and the associated capabilities it provides us be managed and translated to benefit all of us? We are truly becoming a global village through greater possibilities for personal travel and the networking of the computer age. The study of cancer control problems outside our own country is now more possible and potentially worthwhile to all of us more than it was before. The clinical laboratory for cancer prevention and control is not just a hospital case group in the United States, but it may be an
Some Caveats or Mechanisms for Greater Success

Given the opportunities and challenges, it is important to recognize circumstances that allow cancer prevention and control investigators to be increasingly productive as their careers develop. Although here we make several suggestions, our first two are probably the most important, and indeed, our observations about the apparent lack of sufficient attention to these ideas in the activities of 44 current prevention trainees have prompted this commentary.

A major challenge for developing cancer control investigators is to focus their efforts. This advice cannot be overemphasized. The management sage Peter Drucker calls attention to this issue by urging us all to answer the question “what do you want to be remembered for?” Undeniably, this is a difficult matter for new investigators, and often it seems like only by broadening one’s interests can they be as rich. One key to addressing the political and other pressures to not be focussed, is to have a mentor and, if in a faculty position in particular, to have a mentorship committee of senior faculty. In our review and discussions with current prevention trainees, mentorship was often lacking. Mentors are “wise and trusted counselors” who should provide help in four critical ways: training, knowledge of the informal system, challenging job assignments, and visibility (2). Briefly, the training is one-on-one, which addresses individual weaknesses. Sharing knowledge of the informal system is critical to doing things the “right,” efficient way. The assistance with the job or position is to assure that the work will be both productive and satisfying. Finally, mentors increase the visibility of their colleagues, often by securing for them opportunities for presentations. In their book titled Novations, Dalton and Thompson (2) have a detailed discussion about apprentices and mentors, which should be required reading for cancer investigators. In summary, focus and mentorship are critical issues in career development (2).

Some other mechanisms for success include greater attention and time devoted to data analysis. The complex data developed in many cancer control studies often deserve very rigorous examinations, which we perceive rarely occur. An implication from the earlier comments about the breadth of cancer control research is that good work will often involve collaboration with colleagues of multiple disciplines; team building, mentorship, and leadership will often be essential. Here, again, good mentorship can be very helpful. (Team building isn’t a part of courses in medical or other professional training!) Major funding for cancer prevention and control research has often been only from the NIH. There are many other sources, foundation to industrial as well as the American Cancer Society, which should be explored.

What other features should characterize ideal postdoctoral programs in cancer prevention and control research? Clearly, a central component should be participation in focused investigator-initiated research. A formal seminar or colloquium activity with multidisciplinary presenters allows exposure to the breadth of theory, designs, and analytic strategies that characterize research in this field. A product of such postdoctoral training should probably be an application for funding for a new research project. In general, 2-year training periods seem more meaningful.

A Final Caveat: Careers Are Long

To run the race most successfully requires balance in attention to our personal and professional lives. Among medical professionals, burnout is all too common, broken lives appear the rule, and suicide rates are high. The chances are that toward the end of our careers all of us will feel that we should have spent more time smelling the daisies. The best prevention is probably that which we do for ourselves.

References

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