EDITORIAL

President's Introduction

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In this continuing series of invited opinion on the opportunities and challenges facing clinical research and medical school teaching, Dr. Steven A. Schroeder calls attention to a form of invesitgation directed at major self-destructive ills of society. The behavioral research he recommends coupled with sound pathophysiological endpoints in a collaborative design as he suggests could contribute greatly to scientific progress and behavioral betterment. No matter what the biases of our readership may be, researchers should note that Dr. Schroeder has made the Robert Wood Johnson Foundation a major contemporary force in health-care research.

Understanding Human Behavior Is Central to Improving Health (44498)

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These are exciting times for biomolecular research. New advances in molecular biology and genetics have opened up wonderful new possibilities for the prevention of disease as well as for treatment. Not surprisingly, the general public, as well as the biomedical scientific community, has responded to this excitement. Recently Congress has voted major increases in the National Institutes of Health (NIH) budget, despite a prevailing political sentiment to reduce the role of government. The combination of productive science and increased federal generosity is good news for laboratory scientists in the United States.

Nevertheless, in two recent publications I have argued that in order for America to achieve meaningful improvements in its health status, it will need to expand the domain of health-related research (1, 2). Don't get me wrong. We should celebrate the new advances in molecular biology and genetics and rejoice in the knowledge that even more exciting developments are on the way. But expansion of research on behavior should accompany the new resources devoted to biomedical research.

The sad fact remains that we know precious little about how to impact the behavioral and social factors that are so critical to individual health outcomes. Consider the case of smoking. It is responsible for over 430,000 preventable deaths each year in the United States (3). The dangers of smoking have been well known for decades. Yet, for the most educated cohort of our nation—college students—smoking prevalence is up to 28%, about the same as for the rest of the adult population. Imagine how much healthier our nation would be if smoking prevalence were at the level of physicians—less than 5%! Oncologist Vince DeVita has estimated that if we became a smoke-free nation, we would have 40% fewer cancer deaths, not to mention the additional benefits from improved cardiovascular and cerebrovascular health.

The problems of substance abuse are not the only behavioral factors impacting national health status. We are currently in the midst of twin epidemics of obesity and physical inactivity. The consequences of these two epidemics endanger our nation's health. Inappropriate diet and inadequate physical inactivity are almost as important as substance abuse as preventable causes of mortality (3).

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We know very little about why young people experiment with tobacco, why some quickly become addicted and others do not, or why smoking rates differ by class, occupation, gender, race, or nation. Why has binge drinking become an epidemic on college campuses? Why does experimentation with illegal drugs lead to devastating results for some but not for others? How can we explain the recent epidemic of obesity? What strategies would reverse that trend? How can people be motivated to increase their levels of physical activity? What factors favor a sedentary lifestyle? To answer these questions we must draw upon multiple disciplines: genetics, cognitive neuroscience, adolescent psychology, epidemiology, and behavioral research, both independently and in collaboration.

Despite evidence of the importance of behavioral risk factors, only about 7% of the research budget of the NIH is devoted to behavioral aspects of health. A recent poll of the deans of American medical schools revealed that most thought that percentage insufficient (2). Almost 90% felt that the amount spent on research for behavioral aspects of health is too low, 10% felt that it is about right, and only 1% felt it is too high. Fully three-quarters of the deans agreed that the NIH should spend more than 10% of its budget on behavioral research, and almost 40% felt that the proportion should be 20% or higher. Virtually all deans estimated that their medical schools would be devoting a greater proportion of research to behavioral issues 10 years from now.

Fortunately, we are beginning to see signs of increased interest in research about behavioral determinants of health. For example, both the National Institutes of Health and the Institute of Medicine, National Academy of Sciences, have begun to explore the links between behavior and health. At The Robert Wood Johnson Foundation, we are supporting a variety of programs to examine behavioral influences on substance use and abuse, and we are beginning work on the subject of physical activity and how to promote it. Investigators in academic health centers are now collaborating with behavioral science experts on their own campuses. Innumerable creative research opportunities exist for scientists who are willing and able to span disciplinary boundaries. Funding agencies need to be more receptive to such boundary-scanning proposals, and to resist their natural temptations to concentrate only within narrow disciplinary limits.

In addition to cross-disciplinary work, progress is needed in two important areas. First, the science base of prevention needs to be expanded. Though impressive gains have already been made in knowledge about the determinants of human behavior, much more needs to be done. Compared with the allure and disciplinary clarity of basic science, too often behavioral research is seen as a stepchild when contesting for financial support and for the best intellectual talent. Second, there is a great need to apply principles learned in social marketing, as well as from successful citizen action campaigns, to improve the health of the public. One could argue that the campaigns by antismoking activists, Mothers Against Drunk Driving (MADD), and Students Against Drunk Driving (SADD), have done more to reduce death rates in the last 20 years than all of the magnificent research that has come out of biomedical laboratories during that period.

Only by improving our science base of prevention as well as our understanding of how to apply that science can we achieve meaningful improvements in the health of the population. The potential health advances embedded in new knowledge about biomedicine and genetics are truly breathtaking, but by themselves they are not sufficient. We also need to learn how to translate that new knowledge into changes in human behavior. Unless we understand better how to change unhealthy behaviors, even if we triple the amount of money that we spend for basic biomedical research, we will be disappointed by the discrepancy between improvements in science and the national health status.

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2. Schroeder SA. Understanding health behavior and speaking out on the uninsured: Two leadership opportunities. Acad Med **74**:1–9, 1999.
3. McGinnis JM, Foege WH. Actual causes of death in the United States. JAMA **270**:2207–2212, 1993.