

# EDITORIAL

As medicine continues to advance, our ability to prevent, disrupt, and alter the progression of disease is constantly improving. Many of these advances have resulted from new technologies—medical and surgical procedures, drugs, and devices that could not have been envisioned by the previous generation. Particularly in the past quarter century, the accelerating rate of progress has engendered even more extraordinary discoveries. Not surprisingly, with these accomplishments come heightened levels of expectation.

Within the health care community and among the public, these expectations create greater demands for accountability and an urgent sense that the new tools designed for improved prevention, diagnosis, or treatment should be made rapidly and universally available.

In a warning about premature application of new technology, Dr. Donald S. Fredrickson, former Director of the National Institutes of Health (NIH), observed that, “The same humanitarian and noble purpose that has prompted the development of highly successful means for prevention, cure, or treatment of disease can sometimes be responsible for introduction into widespread use of interventions which at first appear to be helpful but later may be found to be of no help or even injurious.” Not only must the efficacy, or more specifically the risk/benefit ratio be ascertained, but these considerations must be buttressed by persuasive data and coupled with economic, social, ethical, and other considerations. Only in this way can we make the kind of full evaluation appropriate to a time when health care costs are of such concern.

While the potential benefits from the introduction of powerful new measures are being balanced against their potential for harm through careless or improper use, clinicians have quickly developed respect for the power of the new approaches in diagnosis and treatment. For example, new techniques of imaging can essentially eliminate the need for exploratory surgery, with its attendant costs, discomforts, and dangers; imaging equipment, however, is quite expensive. In the context of the humanitarian and economic benefits offered by new medical advances, we cannot overlook the fact that a number of the recent discoveries have increased rather than decreased the cost of medical care. Some predict that measures such as heart and liver transplants, as well as expensive futuristic diagnostic techniques, could lead to vast additional health expenditures over the next generation.

The necessity for rapid and reliable technology assessment is made increasingly urgent by the accelerating pace of progress, while the process of assessment itself is made much more difficult by the increasing number and complexity of factors that must be considered. For these reasons it is particularly important to devote time and consideration to strategies for the advancement of technology

assessment, as well as to recognize its dynamic nature as an instrument for assuring quality in health care.

A proper technology assessment is time consuming yet must be timely; should be focused but never directed; requires definition without restriction; rests on evidence that is substantial but should not exclude data; and seeks representation and input that are broad but balanced. Clearly, this is no easy task.

Before the term "technology assessment" was reasonably well understood through usage, some thought it to be synonymous with clinical trials. Although the two processes share certain elements, clinical trials have a unique role as part of research, and occur at a much earlier stage in the evolution and application of most technologies than does assessment.

As a research institution, the NIH has naturally supported and conducted clinical trials for many years. Only recently, however, have we developed programs devoted primarily to technology assessment. The NIH is becoming increasingly involved in such assessment activities as their value and viability are demonstrated and confirmed, and for these reasons we are particularly pleased to participate in the important proceedings reported in this issue.

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# **TECHNOLOGY ASSESSMENT: POLICY, CLINICAL, AND METHODOLOGICAL ISSUES**

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