

Medical and Biological Engineering in the Future of Health Care

Edited by J. D. Andrade

Medical and Biological Engineering in the Future of Health Care critically examines a number of underdiscussed facets of the current health care debate, with specific emphasis on the impact of medical technology and bioengineering. A variety of perspectives on medical technology and health care are presented, including such issues as prioritization of technology development, technology assessment, the effect of public policy on technological innovation, and the dissemination and availability of new devices and techniques.

From the coming importance of information and communication technologies to a discussion of cost versus quality, *Medical and Biological Engineering in the Future of Health Care* tackles the toughest of today's difficult issues.

Contributors include a unique mix of health care providers, economists, managers, and biomedical engineers. This timely and important volume will be of interest to all health care professionals, as well as anyone concerned about the future of technology and engineering in medicine.

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Contributors

J. D. Andrade
George Bugliarello
Charles L. Cooney
C. Forbes Dewey
David Durenberger
Susan Bartlett Foote
Pierre M. Galletti
Bernadine Healy
Susan D. Horn
Robert P. Huefner
John G. Hunter
Dov Jaron
Martha Brizendine Jeckinson
Isao Karube
Kenneth Keller
Kerry E. Kilpatrick
Richard I. Kitney
Donald A.B. Lindberg
C. Douglas Maynard
Clement McDonald
Michael R. Nelson
Robert M. Nerem
William P. Pierskalla
Walter L. Robb
Richard Satava
Samuel Thier
Burton Weisbrod
John E. Wennberg
Gail Wilensky

From *Medical and Biological Engineering in the Future of Health Care*:

Everything about the way we have arranged health care now encourages people to want more, provide more, consume more, and spend more on health care.... Our tax system encourages people to take a lot of health insurance rather than higher wages.

The real potential for the future is in bioengineering.

It is time engineers—and bioengineers in particular—began to lead.

Many of the inadequacies in the prevention of disease occur today for lack of political will. Bioengineers should not stand idly by any longer. We need to help generate that political will.... We can and we must do more to change the system.

Health care cost containment will cap revenues; at the same time there is an increased cost of drug development.

Are we smart enough to achieve both improvements in performance and lower costs simultaneously? That may well determine who wins and loses among companies in the next decade.

Our strategy was "technology push" rather than "societal pull"—what we developed and marketed was whatever engineering ingenuity could create.

What the system should be doing is providing the proper balance of screening, prevention, diagnosis, treatment and rehabilitation.

This strategy of bringing the patient into the equation may actually lead to a reduction in the use of care.

Information and communication technology is one area in radiology where you can actually improve the care of the patient and at the same time actually reduce the cost.

The large regional or national utilization of medical patient records certainly requires a national information superstructure.

It is clear that being alive can get you sued.

There has been little or no attention given to the cost implications... of new medical technologies.... Those days are clearly over.

A sense of geological time scales ... is very useful in dealing with Congress.

Public policy is now in search of a "basic package" of health care services to be guaranteed to our entire population.... What is "basic" today depends very much on what is possible today, not on what was possible in the past.

Keep listening to the public, and keep talking with them about what we are doing, about the outcomes we are hoping for, about the cost and — by far the most urgent — about the *benefits* that they and their children will see from all we spend and do.

We have no mechanisms for making cost effectiveness trade-offs.

There will be an emphasis on prevention, cost reduction, and continuous quality improvement.

The support structure for basic science and technology must relate and correlate to social needs.... We have used payment policy as the implicit technology policy.

Technology is not simply a cost problem. It is a health care quality issue.