



INSTITUTE FOR ALTERNATIVE FUTURES

Health Care Innovation in the 21st Century
IAF Scenarios for 2010
For The Belmont Vision Project by the Institute for Alternative Futures

A V I S I O N F O R T H E 2 1 S T C E N T U R Y

By the year 2020, we will be a nation in which there is broad public understanding, and expectations for and participation in the innovation process. This understanding and expectation, and the efforts of the innovation community, will support the evolution of creative, efficient and ethical environments for developing, applying and evaluating scientific and societal innovation for the advancement of health.

Our vision of innovation includes both expanding the frontiers of knowledge in search of dramatic scientific breakthroughs and committing to continuously improve how health care providers operate. These parallel approaches of dramatic discoveries and incremental advances will lead to significantly better health and health care systems.

By 2020, breakthroughs to prevent or definitively cure major diseases such as cancer, AIDS and Alzheimer's have been achieved. Simultaneously, the cumulative effect of both large and small improvements has transformed health care delivery into cost-effective, caring, integrated systems that respond to the needs of individuals. In addition to biomedical advances, effective health care management techniques and bio-psycho-social approaches have yielded a broader spectrum of techniques to improve health. As a result, health care providers are discovering how they can work in their communities to help reduce the root causes of poor health, such as poverty and violence. These approaches also inform the targeting of resources to areas most likely to produce long-term health gains.

A diverse range of therapeutic and preventive approaches — including behavioral and alternative therapies that prove effective — are tailored to the culture, heritage and social settings of those served. Advances in genetics enable a more complete understanding of the biochemical uniqueness of each individual — and, consequently, a more precise targeting of therapeutic interventions.

Dramatically enhanced information and communication technologies allow health knowledge to be collected, shared and used in a safe and secure fashion, while fostering robust and creative research endeavors across traditionally isolated industries and fields. In the digital environment, intelligent agents, expert systems and health knowledge bases interlink our growing information gathering and storage capacity.

The public is engaged actively in the improvement of its own health. Public participation in direction-setting for innovation underscores a recognition that innovation represents long-term investments in the type of society we wish to achieve. The public helps set research priorities for public funds and for the research done by their health care providers. And, in a variety of forums — from health care systems to children's schools — the public assumes an ongoing role in discussing research agendas and the resulting new knowledge.

More sophisticated modeling techniques, simulations and learning tools reduce the need for some aspects of animal and human testing. Patients and their families are aware of the research horizons pursued by their health care providers and can easily choose to participate in trials for diseases from which they suffer, or trials for new health enhancement options. Biomonitoring capacity and knowledgeable participation of

patients reduce the cost of clinical trials on new medicines, technologies and therapeutics and revolutionize the regulatory approval process.

The integration of clinical trials into normal medical practice is an example of how portions of the R&D infrastructure have merged into the systems they serve. While most basic research and discovery is still housed in separate environments that receive the support necessary to stimulate creativity, seamless and pervasive information networks spread the latest in new discoveries and best practices around the world. Electronic recordkeeping, large databases and data interchange have increased the speed and efficiency of many research endeavors — and have reduced some of their attendant costs. The ethical and legal principles underlying the uses of medical and information technologies are well understood and guide behavior and practice.

A sustained commitment of public and private funds to innovative activities, particularly to basic research, has been maintained. A variety of sources and types of funding exist, including continued government and industry funding for basic research; private sector investment in specific therapies and preventive approaches; and active involvement of health care provider organizations in activities like clinical trials. A percentage of the health care premium is devoted to R&D, particularly development. The marketplace supports innovation, providing rewards in proportion to the resulting health gains. Accountability through rigorous outcome measures has provided the justification for continuing the diverse and stable funding of preventive, therapeutic and public health advances with high potential.

Wiser decisions on therapies can be made in and by the marketplace. While government remains the “final protector” of public health and safety, an advanced post-marketing information infrastructure and sophisticated adverse event reporting — coupled with new epidemiological methodologies for inferring causation — allow continuous improvement.. This environment gives the government new options for regulating the development of new therapies. As a result, the time frame from innovative discovery to consumer availability has been markedly compressed.

Innovation is not an isolated component of our organizations, but rather is woven into ongoing processes. Not only do we strive for technological, clinical and public health advances, but parallel and ongoing innovations are evident in how we carry out policies, structure organizations and educate our citizens. The imagination and creativity of our people and organizations — supported by the willingness of society to learn and to invest — enables health care innovation in the 21st century to play an important part in creating healthier people in healthier communities, in a healthier society.