

# The Practice of Informatics

# JAMIA

*Position Paper* ■

## A Proposal to Improve Quality, Increase Efficiency, and Expand Access in the U.S. Health Care System

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Board of Directors of the American Medical Informatics Association

*"Applications such as automated claims and payment transactions, telemedicine, computer-based patient records, and on-line access to the latest treatment and prevention information will help improve quality, expand access, and contain costs."*

—Vice President Albert Gore

While some progress has been made, our nation has yet to realize the full potential of revolutionary advances in telecommunications and computing technologies for the provision of health care. A focused Federal initiative should foster and co-ordinate private and state section efforts that will make a national health information infrastructure a reality by the year 2005. Such a national strategy will ensure that all Americans receive the benefits of developments in information sciences and telecommunications for health care, medical education, and research. A significant by-product of this initiative can be increased efficiency, improved outcomes, and reduced cost of health care.

A national health information strategy should focus on the following objectives:

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**Universal access:** health information resources must be accessible to all Americans. Like schools and libraries, Americans need access to health resources via the Internet and Intranets. Funding should be provided and where needed regulations changed for a major initiative to link health care institutions, providers, nursing homes, and personal residencies both among themselves and with regional academic health centers. The centers will then link through the national highspeed backbone, the "next generation" Internet.

**Telemedicine and Tele-education:** Telemedicine (care at a distance) and tele-education must extend the reach of health professionals (teleradiology, teledermatology, etc.), and improve the health of citizens (self-care, health promotion, prevention, and health education). The expansion of telemedicine services has enormous potential to improve the health status of the homebound chronically ill and frail elderly in both rural and underserved urban areas.

**Computer-based health records:** There are four types of computer-based health records (CHRs). First are CHRs for health care institutions (such as hospitals) and delivery systems. These are under rapid development and are approaching maturity. Second are rec-

ords and systems for primary care and a variety of ambulatory care uses. Third are personal health records for individual use, including assessment of health status. Fourth are computer-based population records for monitoring public health and the outcomes of care. Without co-ordination, these developments will neither develop nor diffuse in a timely fashion. Federal agencies and private sector organizations need to develop a coordinated strategy to assure the development and dissemination of computer-based health records.

**Decision-support systems:** New medical knowledge is exploding onto a worldwide web with universal access and open distribution of information. Professionals and ordinary citizens must have access to a continually updated repository of current knowledge, which meets "best evidence" criteria for accuracy and reliability. A recent editorial in the *Journal of the American Medical Association* stated that "the Internet too often represents a cocktail conversation rather than a tool for effective health care communication and decision making." In addition to the currency of information, other types of decision support systems are needed to help clinicians make better decisions where a more perfect process of care is known to create consistently better health outcomes. This area is rich for research, education, and development.

**Standards development:** The potential of computer and communications technologies cannot be realized for health care unless a universal language or vocabulary is developed, kept updated, and made accessi-

ble at minimal cost. This requires international co-ordination and funding.

**Confidentiality and security:** Pervasive use of computer and communications technologies for health care cannot reach its potential until reasonable safeguards to protect confidentiality of patient information are in place.

**Research, education, and development:** Expanded research and development activities will keep the national health information infrastructure current into the 21st century. This process must include efforts to disseminate research findings and promote the use of innovative approaches to the management and communication of health information. Significant educational challenges are involved, including a variety of workforce dimensions from high level research personnel to enhanced skills of both new and older health professionals.

**International collaboration:** A program is needed for the United States to participate in international developments to ensure that globalization includes health. This will enable the United State to both benefit from innovations tested and implemented in other nations and vice versa.

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The American Medical Informatics Association is a non-profit association of 3,800 multidisciplinary members bound by a common interest in the use of computers and communications technologies to improve medical care.