Linking Providers Via Health Information Networks

ALLIANCE FOR HEALTH REFORM

As many as 98,000 Americans die each year due to preventable medical mistakes. Research suggests that medication errors alone cause approximately 20 percent of adverse events in health care. Faced with such statistics, policy makers, providers and insurers are looking to health information technology (IT) as a powerful method of improving a health care system marked by persistent quality deficiencies and high costs.

For example, some practitioners record patient information in electronic health records (EHRs) instead of paper forms. Increasing numbers of providers are entering orders for medications, diagnostic tests, and ancillary services by computer rather than by hand. "Back office" computer systems are widely available for automating claims and billing.

These technologies are already improving safety and efficiency, as well as data collection and reporting, in some health care settings. For instance, research has shown that computerized physician order entry (CPOE) systems for prescriptions can reduce preventable medication errors by as much as 55 percent because they ensure, at a minimum, that orders are complete, standardized and legible.

But despite the obvious advantages of health information technology, adoption has been slow. Most hospitals are not yet using electronic health records. (See box, "And the survey says…") And even where hospitals and physicians have purchased such technology, its quality can be low or the system can be poorly integrated into the clinical setting. As a result, much clinical information is still on paper.

At the national level, funding for the Office of the National Coordinator of Health Information Technology (ONC, formerly ONCHIT), the federal body responsible for promoting health IT in the U.S., lags well behind spending for counterpart agencies in other developed countries.

To make significant gains in patient safety through the adoption of health IT, providers will need to adopt IT systems that can "speak the same language" to each other. In computer terms, they should be "interoperable."

But interoperability isn't enough. To communicate, different health IT systems must also be linked in some way. This is "connectivity." One model of connectivity, in a national health IT context, would be a nonproprietary "network of networks."

Challenges for Policy Makers

To this end, policy makers and health industry experts are grappling with whether and how to create such an information network that can facilitate information sharing throughout the health system. Consensus does not yet exist about how to structure such a network, or even whether it is needed at all, although there has been much public discussion.

ONC, in the Department of Health and Human Services (HHS), has produced a strategic framework for a nationwide health information network. Among other goals, the framework calls for the integration of electronic health records with clinical practice, and the ability for clinicians to exchange health information using advanced and secure electronic communication.

To move forward with interoperable clinical IT adoption and health information exchange, a host of questions will need to be answered, including:

▲ What parts of health IT should remain at the regional or local level, and what parts should be integrated at the national level?

▲ What is the appropriate structure for health IT at the regional and national level? Who will decide this?

Fast Facts

▲ Health information technology (IT) involves creating and sharing information about patients digitally, rather than on a paper record.

▲ Health IT holds out the promise of improvement in quality and efficiency, data collection and reporting, and may help restrain cost increases.

▲ One type of health IT, computerized physician order entry (CPOE) systems for prescriptions, can reduce preventable medication errors by as much as 55 percent. Only a small minority of hospitals have fully implemented CPOE systems.

▲ An important challenge for health IT is protecting patient privacy—ensuring that individually identifiable patient information is accessible only by those with a legitimate need to know.

▲ Another challenge: Who should pay for IT? Providers are expected to bear most of the health IT system costs, while most of the benefits of such systems accrue to others—insurers, patients and governments.

▲ How can competing needs of different stakeholders be reconciled?
▲ Who will pay for clinical IT systems? Who will pay for health information exchange?
▲ How will patient privacy be protected?
▲ How will standards be developed?
▲ How will individual health information technologies be evaluated?

Considerations for a Health Information Network

Several issues must be addressed if different health information systems are to communicate. Standards for capturing and transmitting data will need to be further developed. In addition, decisions need to be made about which data must be collected in a uniform manner, as well as how and where the data will be synthesized into useable information.

Also, data storage issues remain. Will there be a central repository or will the data remain local? Will individual providers maintain control of their data? If so, will their systems be reliable enough to make the data available at all times?" Decisions regarding data storage may differ from region to region.

Some suggest that there should be one uniform national system with one central repository. This approach presents challenges: the sheer volume of data that would need to be handled, significant concerns about privacy and security threats, and likely disputes about governing and paying for a centralized system.

Another option is a series of regional networks, as advocated by ONC. ONC's strategic framework suggests that a national network should be structured around regional health information organizations (RHIOs). RHIOs would store, organize and exchange patient health information within a defined geographic region, under local rather than national governance. These regional organizations would form a "network of networks" across the nation.

Stakeholder Concerns

Key stakeholders in a nationwide network will include consumers, health care providers, insurers, large employers and federal and state government. To be complete, a network will need to bring in health care providers practicing in a variety of settings including office practices, pharmacies, hospitals, home health agencies and skilled nursing facilities.

At an Alliance for Health Reform briefing on IT issues, both former House Speaker Newt Gingrich and the Markle Foundation's Zoe Baird strongly advocated that the network center on consumers. Both said that consumers should have access to and control of their own health information, including controlling access to their information by others. Among key stakeholders, many health care providers are skeptical about information technology. Many find some features of health IT disruptive and are not convinced that it improves quality of care.

For example, computerized physician order entry systems fundamentally restructure the way in which providers write prescriptions. Such a system can at first greatly increase the amount of time required to generate prescriptions, until providers become comfortable with it. Reluctant providers need to be persuaded that these systems improve quality of care enough to justify their added time. Although some early studies in academic institutions have demonstrated impressive reductions in error rates, actual implementation of these systems has been difficult, with few documented quality benefits.

Financing

An important barrier to a national health information network is the large up-front capital cost associated with acquiring and maintaining many health information technologies. Health care providers shoulder most of the costs for these technologies, while the benefits accrue to many who may not share in the costs. For example, hospitals often spend tens of millions of dollars on computerized order entry systems, providing benefits for other stakeholders—insurers, purchasers and patients. Emerging data suggest that it will cost more than $100 billion to develop a nationally interoperable system, including equipping physicians with standardized IT systems. (The FY 2006 appropriations bill for the Department of Health and Human Services allocated about $62 million to ONC.)

Patient Identification, Privacy and Civil Liberties

Both Zoe Baird and Markle's Carol Diamond emphasized at the Alliance briefing that privacy and security must be assured in the development of a nationally compatible network, so that patients' information remains confidential and is accessed only by those with a legitimate need. If patients are to provide truthful information on such sensitive topics as alcohol and drug use, they must be convinced that this information will not be shared inappropriately.

Diamond said there is general consensus that such a complex system will require multiple ways to identify personal health information, although some advocate using a single identifier, (e.g., a Social Security number.) These identifiers could be voluntary, as suggested by Gingrich, or may be required.

Former Speaker Gingrich, who is also the founder of the Center for Health Care Transformation, predicted that nearly everyone will voluntarily provide personally identifiable information once the benefits in improved efficiency and safety are properly explained. He cited banking as an industry that has successfully adopted information technology, such as automated teller machines, and has secured the trust of consumers to guard their sensitive financial information.

Standards

Development and adoption of standards, in conjunction with regulation, will be another important component of efforts to create an interoperable national network. For example, the Health Insurance Portability and Accountability Act of 1996 (HIPAA) rapidly transformed the insurance claim submission system from paper-based to electronic by mandating standards for submission.

The medical community and health IT vendors are working to define electronic standards for communicating and interpreting health care data. Mike Leavitt, secretary of Health and Human Services, in September 2006 convened a public-private advisory group, including representatives of the medical community and IT vendors, to develop standards for communicating and interpreting health care data.

In October 2006, that panel, known as the American Health Information Community, announced agreement on the first group of such standards, for personal health data and other areas. Having such standards in place will accelerate stakeholders' adoption of information technology by ensuring that adopted technologies will eventually be compatible.

Baird suggested that health care may be able to draw on the experience of intelligence reform legislation in Congress, which created guiding principles for standards. Another panelist at the briefing, Micky Tripathi of the Massachusetts eHealth Collaborative, suggested that the federal government should provide broad guidelines but not be overly prescriptive or hamper innovation. Panelists agreed that private-public partnerships will be the most effective way to develop such standards. As the largest purchaser of health care, the federal government can rapidly promote adoption of these standards through Medicaid and Medicare or through direct mandates.

Evaluating Health Information Systems

A critical step toward a national network will be some way to evaluate IT systems and ensure that they will not quickly become obsolete. Smaller stakeholders, such as small physician office practices or skilled nursing facilities, often do not have the financial resources, expertise or time to perform extensive evaluations of IT systems. This hinders the rate of adoption of new technologies across providers and leads to the purchase of systems that are not interoperable.

The American Academy of Family Physicians is currently performing these types of evaluations for electronic health record software. Academy members who are using such software in their offices rate the products on their quality, price, support, ease of use, and impact on productivity. The Massachusetts Medical Society also offers guidelines to its members for selecting vendors of information technology software.

Health Information Technology in Use Today

There are several working examples of interoperable health information technologies with different structures and origins. Regional health information organizations sponsored by academic institutions, such as the Indiana Network for Patient Care, have been particularly successful. The Indiana network encompasses 95 percent of the metropolitan Indianapolis area and connects five health care systems.

The Department of Veterans Affairs greatly improved the quality of care at its facilities with a new health IT system. Regional information organizations are developing across the nation, including, at the state-wide level, such groups as the Massachusetts eHealth Collaborative. This collaborative is physician-led, with funding from a major insurer and representation from other key

stakeholders. The group's goal is to incorporate the most appropriate health IT systems into clinical practice to improve care and create a sustainable model.

In addition, the business sector has been extremely active. General Electric and Verizon have spearheaded the Bridges to Excellence program, which provides physicians' offices with a bonus of up to $50 per patient per year if they have certain systems in place to improve quality of care. The Leapfrog Group, a consortium of Fortune 500 companies, has mandated computerized physician order entry as one of three initiatives for hospitals that care for Leapfrog Group member employees.

Conclusion

Strong bipartisan support and leadership at the federal level, as well as intense private sector interest, may push the creation of a national network forward over the next few years. But the issues of stakeholder participation, structure, financing and privacy will be central to the debate about how to successfully integrate health information technology into our health care system.

Expert Sources

▲ **Zoe Baird,** The Markle Foundation — 212/713-7600
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▲ **Carolyn Clancy,** Agency for Healthcare Research and Quality — 301/427-1200
▲ **Janet Corrigan,** National Committee for Quality Health Care — 202/331-7535
▲ **Carol Diamond,** The Markle Foundation — 212/713-7600
▲ **Stephen Downs,** The Robert Wood Johnson Foundation — 609/627-7636
▲ **Newt Gingrich,** Center for Health Transformation — 202/375-2001
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Websites

▲ **Amer. Academy of Family Physicians, Center for Health Information Technology** — www.centerforhit.org
▲ **Bridges to Excellence** — www.bridgestoexcellence.org
▲ **eHealth Initiative** — http://www.ehealthinitiative.org/
▲ **JCAHO** — www.jcaho.org
▲ **The LeapFrog Group** — www.leapfroggroup.org
▲ **The Markle Foundation** — www.markle.org
▲ **National Alliance for the Health Information Technology** — www.nahit.org
▲ **RAND Corporation** — www.rand.org
▲ **The Robert Wood Johnson Foundation** — www.rwjf.org

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