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W H I T E P A P E R

Connected Healthcare Communities: The New Model for Health Care in the United States

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Executive Summary

Health care in the United States faces a number of challenges: systemic inefficiencies, rising costs and complex legislation.

Collaborative care models have been proposed as one potential solution. These new models, known alternately as Connected Healthcare Communities (CHCs), Regional Health Information Organizations (RHIOs) and Regional Healthcare Information Networks (RHINs), are based around a central information hub that integrates data from hundreds of different sources to create a complete electronic health record of patient care.

Collaborative care offers significant benefits to all stakeholders in the healthcare system including patients, hospitals, payers, employers and government.

The move toward collaborative care has been further helped by recent government initiatives and large-scale private sector programs that encourage providers to adopt new technologies central to this model.

In this document we will provide an understanding of the industry needs and outline the technology infrastructure required to execute a collaborative care model.

“The most remarkable feature of this 21st century medicine is that we hold it together with 19th century paperwork.”

Tommy G. Thompson
Former Secretary
Department of Health and
Human Services

The Challenge: Health Care Today in the United States

Our nation’s healthcare system is in crisis. Each year, as many as 98,000 deaths are caused by avoidable medical errors and, in 2003 alone, approximately \$510 million was spent on ineffective care.^{1,2} At the same time, costs continue to rise; in 2003 and 2004 the average insurance premium rose 13.9 percent and 11.2 percent respectively.³ And demographic trends forecast even more problems as the U.S. population lives longer, with a greater incidence of chronic disease.

Avoidable medical errors account for as many as 98,000 patient deaths each year – a more frequent cause of death than diabetes, car accidents or breast cancer.⁴

Clearly, something has to change.

At the root of the problems facing the U.S. healthcare system is a lack of coordinated care. As more and more individuals live for extended periods of time with one or more chronic disease, a coordinated care model becomes increasingly important. Seventy-five percent of all healthcare spending is spent on people who have one or more chronic diseases and these patients see an average of 4.6 physicians each year for care.⁶ If the patient population that drives 75 percent of the cost is seeing multiple care providers, a collaborative model becomes imperative. Without it, medical errors, duplicate testing and therapies, and overall costs increase while quality is driven down.

In 2003 alone, \$510 million was spent on ineffective care – money that could be better spent on immunizations, research into new treatments or disease prevention.⁵

Chronic Conditions	Mean Total Medical Costs per Year (4)	Percent Hospitalized Annually	Mean Number Physician Visits per Year	Mean Number Prescriptions per Year
None (141 M people)	1,102	3.4	1.7	2.2
One (87.8 M people)	4,107	7.6	4.6	11.0
Three or More (22.3 M people)	7,195	17.3	9.4	28.3

Adapted from: Anderson, G. & Knickman J.R., *Changing the chronic care system to meet people’s needs. Health Aff.* 2001;20(6):146-160

Our current system where information is kept in separate silos and there is only minimal coordination of care has real economic and quality of care costs throughout the system. Technology offers a solution to this looming healthcare crisis by dramatically increasing the ability to coordinate care through a shared medical record.

Up until now, health care has invested significantly less in information technology than other industries, but a recent report from the National Institute of Health Policy recommended that hospitals and health system administrators reverse this trend and urged them to “implement information and communications technology to ensure



consistent and real-time sharing of medical information among providers and delivery organizations to reduce duplication of service and create a seamless system of care.”⁸

Technology can dramatically increase an organization’s ability to coordinate care through a shared medical record.

People living with a chronic disease typically see more than four physicians each year for care, accounting for 75 percent of all healthcare spending.⁷

The Solution: Connected Healthcare Communities

The good news is that the healthcare industry has heard the wakeup call.

The White House recently called for development of an interoperable national electronic health record (EHR) within the next 10 years, and this has resulted in increased government and community focus on the industry and significantly increased funding.⁹

In response, regional healthcare consortiums and large healthcare delivery systems have begun to plan for and invest aggressively in products and solutions to help reduce the cost and, more importantly, increase the quality of care across regional markets.

This increased emphasis on collaboration and sharing of medical information points toward the establishment of Connected Healthcare Communities.

Initiatives like the Taconic IPA program in New York, which the *Wall Street Journal* called “The most ambitious effort yet in a growing movement to establish large regional health-information networks around the country,”¹⁰ lead in the way in utilizing technology to create a truly connected healthcare community.

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In addition to funding from state and national government sectors, private industry is hearing the call. From the private sector, several payers and employers have indicated a willingness to help fund information technology initiatives. For example, WellPoint, the nation’s second largest healthcare insurer, recently announced a \$440 million package to help performance programs such as Bridges to Excellence, an employer coalition including General Electric and Ford Motor Company, that is paying eligible doctors on a per-patient basis to implement technology that improves patient care.

A Technology Model for Collaborative Health Care

New technologies offer a solution to this crisis with information architecture that allows disparate IT systems to share information across an organization or even throughout an entire healthcare system. Patient data such as lab results, consultation reports, medications and complete histories can be stored in an electronic record that can be securely accessed and shared by physicians and staff at any point of care.

By replacing antiquated paper files with a central information hub that brings together hundreds of independent IT systems for a complete view of patient health, healthcare communities around the country are controlling costs, increasing efficiency and, most importantly, improving the quality of patient care.

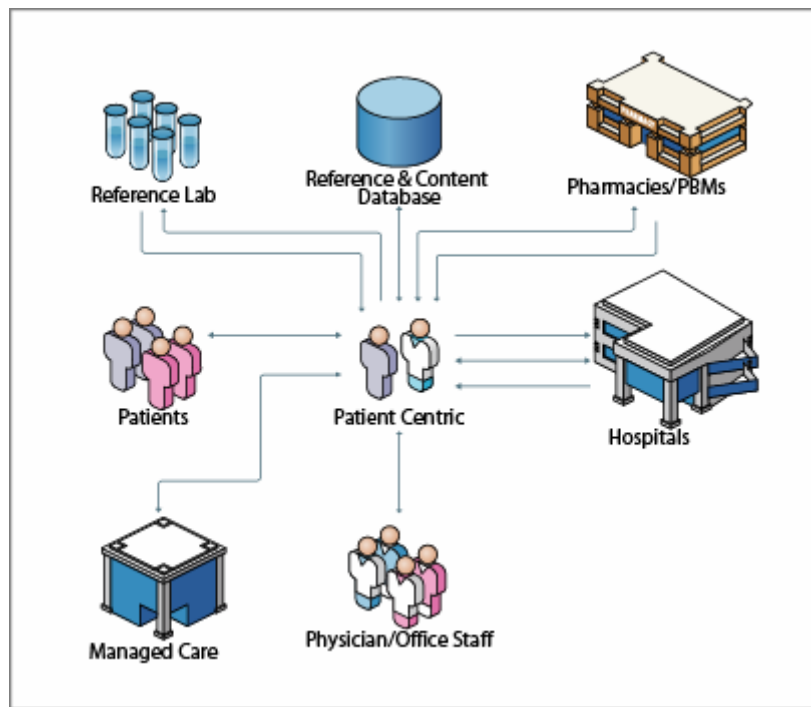
A solution that provides complete view of patient health will help control costs, increase efficiency and, most importantly, improve the quality of patient care.

This new model for collaborative care goes by a number of different names: Connected Healthcare Communities, Regional Healthcare Information Organizations and Regional Healthcare Information Networks. By any name, this new model benefits the stakeholders in care delivery including patients, providers, payers, employers and government.

The CHC model is centered on an information architecture that enables an electronic record of patient data to be stored in a central repository. This patient record can then be shared or accessed from any point in the healthcare enterprise, including reference labs, physician offices and hospitals.

Connected Healthcare Communities have been hailed by government, the private sector, patient advocates and physician groups as the new model for collaborative health care in the United States.

The centralized electronic patient record replaces paper charts that can be incomplete or become lost. This model also eliminates the problem of incompatible information systems through the implementation of an interoperability platform that ensures that all data, no matter the source, is integrated into the patient record.



The Connected Healthcare Community Model

Centralized patient data also allows healthcare systems to implement a number of solutions that can greatly impact the efficiency and quality of patient care: electronic prescribing, mobile inpatient rounding and physician portals that enable anywhere, anytime access to patient information.

But the CHC model is about more than convenience. Enabling a complete and up-to-the-minute view of patient data brings tangible benefits to the entire system. Most significant are the improvement in patient safety through the reduction of medical errors and the reduction of overall costs through the elimination of redundant tests and procedures.

Why Now: The Benefits of Connected Healthcare Communities

Using a CHC model to foster collaborative care is cost effective and dramatically improves the quality of care through the reduction in preventable medical errors. In this model, all stakeholders from patients and payers to employers, providers and governments benefit.

In the CHC model, all stakeholders including patients, payers, employers, providers and governments benefit.

Patients

Patients see the most immediate and dramatic benefits from this initiative.

Sharing of clinical information between healthcare providers greatly improves medical decision-making and increases patient safety by reducing the risk of medical errors. Higher quality care and, over time, the reduced cost afforded by elimination of redundant diagnostic tests and more effective treatment will ultimately result in lower health insurance premiums.

Patients further benefit from the privacy protections resulting from a governance model with highly respected patient advocates ensuring that all medical data is private and secure.

Additionally, studies have found that patients who have a strong patient-physician relationship which revolves around the productive and efficient exchange of information, are more likely to see themselves as “living well” with their chronic condition.¹²

Payers and Employers

The business community, as the primary payer of health care, has long recognized the problems of the nation's healthcare system. These problems manifest themselves in a variety of ways. The most obvious is the dramatic rise in the cost of health insurance, for which employers bear a sizeable burden. Equally burdensome is the loss in productivity experienced by businesses whose employees experience medical errors or undergo unnecessary, repetitive diagnostic tests.

Through a Connected Healthcare Community initiative, medical errors will be reduced and the costs of providing health care in member states will decrease. Further, as the quality, cost and safety of the healthcare system improves, the overall quality of life for residents in the memberstate will improve, making it easier for employers in the state to attract employees.

Government

Government is the largest payer in health care. Rapidly rising state healthcare costs impact program funding for Head Start and WIC, as well as services such as subsidized immunizations, emergency medical care, community health clinics, community health plans, poison centers, and health care for state employees and prisoners in state institutions.

Increasingly aware of the patient safety and quality of care issues in today's healthcare system, states are searching for ways to positively impact health care within their borders.

Technology Considerations

From a technical perspective, a Connected Healthcare Community should focus primarily on the sharing of clinical information while recognizing the potential for such a system to eventually develop administrative and public health functionality. To that end, the system must:

- Permit interconnectivity to all of a community's healthcare delivery systems and provider sites
- Provide access to data that is clinically relevant
- Provide point-of-service access and timely response
- Be compatible with existing and planned information systems
- Be consistent with national IT direction and initiatives
- Be based upon and adhere to national and state data element and coding transaction standards
- Follow existing and developing national and state interconnectivity standards
- Comply with privacy and security standards
- Guarantee accuracy, validity and timeliness of data across all participating sites.

In terms of technology, the Connected Healthcare Community should focus primarily on the sharing of clinical information.

The Interoperability Imperative

The interoperability platform forms the foundation of the Connected Healthcare Community, enabling the creation of interconnected, electronic health records of both inpatient and ambulatory data from multiple source systems across the enterprise.

The interoperability platform should include:

- Standards-based open architecture that interfaces with all existing systems and databases
- Roles-, rules- and relationship-based security to protect patient data
- HIPAA-compliant security architecture.

In addition, the interoperability platform should meet standards for authentication and encryption and be designed to accept additional data elements and structures such as the Continuity of Care Record (CCR) data set, HL7 and NCPDP SCRIPT prescription drug transactions as they are developed.

The ASP Advantage

The Web-based ASP delivery model enables healthcare organizations to access powerful solutions while minimizing the overall costs involved in purchasing, implementing and maintaining the technology.

Under the ASP delivery model, organizations are charged on a per-user basis for each module used, eliminating capital start-up costs. There is no costly equipment to purchase or maintain beyond PC workstations, printers and PDA devices.

The ASP model also allows for a speedier implementation, reducing the amount of time needed for equipment installation or facilities reconfiguration. In addition, organizations are able to manage redundancy, backup and failure in a scalable manner.

In terms of technology, the Connected Healthcare Community should focus primarily on the sharing of clinical information.

Conclusion

Annual healthcare spending in the United States hit \$1.8 trillion in 2004, according to the Centers for Medicare & Medicaid Services. But less than 5 percent of that amount was spent on information technology – far short of what's found in financial institutions and most other service-oriented industries.

The most effective healthcare investments will build on a collaborative care model that includes an interoperability platform able to connect disparate systems. A successful model of collaborative care must connect all stakeholders, including hospitals, labs and ancillary services, physicians across the care continuum, and consumers and patients.

- The CHC model offers significant short- and long-term benefits for the community as it addresses the needs of chronically ill patients who use the majority of health care in the United States.
- The model must be built on an interoperability platform that connects all of the stakeholders.
- The model should recognize and leverage all existing technology infrastructures in the market place.

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About Healthvision

Visit the Healthvision Knowledge Center at www.healthvision.com/knowledge for links to resources, research and organizations related to the Connected Healthcare Community model.