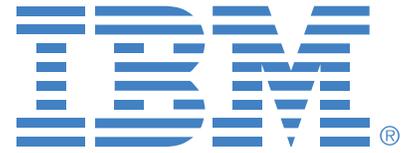


IHE SUCCESS STORY

CareSpark: Collaboration Builds Healthier Communities for 1,950,000 residents of central Appalachia



SUCCESS SNAPSHOT

CareSpark
Kingsport, TN

CHALLENGE:

- Predominantly rural area with geographic challenges
- Multistate jurisdiction: 2/3 of patients in TN, and 1/3 of patients in VA
- 1,950,000 residents, central Appalachian region
- Legacy and heterogeneous disbursed data systems

SOLUTION:

IBM Initiate Patient—EMPI and Interoperability

STANDARDS-BASED PROFILES

IMPLEMENTED:

PIX, PDQ, CT, ATNA, XDS

RESULTS:

- 1.3 million patients in its master patient index(MPI)
- More than one million clinical documents being exchanged daily
- More informed decision making for 250 clinicians
- 35 participating organizations



BACKGROUND:

CareSpark: A model HIE at state and national levels

CareSpark Health Information Exchange

CareSpark is a regional health information exchange (HIE) working to improve health in a 17county area of northeast Tennessee and southwest Virginia through the collaborative sharing of health information exchange. Since its inception in 2005, CareSpark has partnered with local healthcare providers, purchasers, technology companies and policy-makers at federal and state levels to develop a sustainable system and secure network that supports patient care delivery, public health research and population health improvement. Recognized as a model at state and national levels, CareSpark has promoted the adoption and use of health information technology to improve patient care and overall regional health status for the 1,950,000 residents of this central Appalachian region. CareSpark is currently assisting to develop and demonstrate a standards-based system for regional and national exchange in the Nationwide Health Information Network Trial Implementation of the U.S. Department of Health and Human Services. CareSpark has been recognized by the Tennessee Center for Performance Excellence with "Commitment to Quality Awards" in 2006 and 2007, and as a 2008 Laureate by Computerworld.

CareSpark develops and operates a secure network that allows physician offices, hospitals, public health departments, pharmacies, laboratories, and imaging centers to communicate electronically in order to improve patient care and safety and reduce costs. The network is being designed to promote programs for medication management, diagnostic services, preventative medicine, and disease management, supported by technology, training, clinical process improvement, and incentives.

CareSpark's mission is to improve the health of people in the region through the collaborative use of health information, enabling patients and health professionals to be better-informed and more engaged in decisions affecting personal health and wellness.



IHE SUCCESS STORY

CHALLENGE:

Fragmented information from different data sources, spanning multiple states and jurisdictions

Care Spark's leaders faced challenges typical of a widely-dispersed delivery system: fragmented healthcare information drawn from different data sources, spanning multiple states and jurisdictions.

The region has high rates of premature mortality from chronic disease including diabetes, cardiovascular disease, hypertension, lung disease and cancer -- more than 10% above the national average. And per capita healthcare costs are \$2,400 higher than the national average.

Without the technical infrastructure to assure cost-effective security, reliability, timeliness, and functionality, clinicians in the CareSpark region would be making medical decisions with incomplete health records. Incomplete health information comprises the continuity of care placing the patient at risk for safety, privacy protection, and even life-threatening occurrences.

Leaders in CareSpark's 17-county area realized something had to be done to improve overall community health and to use healthcare resources more efficiently. CareSpark brought together local physicians, hospitals, health insurance providers, government representatives, employers, academic leaders and patient advocates to design a secure network that allows public and private healthcare providers to communicate electronically to deliver cost-effective services that improve patient safety and outcomes. Alignment with state and federal governments and evolving standards and policies has been difficult, but as pioneers in HIE, CareSpark stakeholders understood and embraced this dynamic environment.

SOLUTION:

IBM Initiate Patient, an enterprise master person index (EMPI) implemented and maintained by Lawson Healthcare

CareSpark needed to provide a flexible technology approach to enable participating organizations (some with legacy systems making it difficult and others with little technical expertise or resources) to participate. To accommodate this, CareSpark embraced the necessity for a standards-based architecture and network infrastructure that supports multiple, proprietary legacy platforms.

CareSpark's vendor partners use national best practices like Integrating Healthcare Enterprise (IHE) and standards such as HL7 to ensure true data interoperability.

A mission-critical requirement for successful HIE is an accurate, reliable and secure method for matching a patient's records across multiple organizations. Data dispersed across multiple applications is linked and matched with IBM Initiate Patient, an enterprise master person index (EMPI).

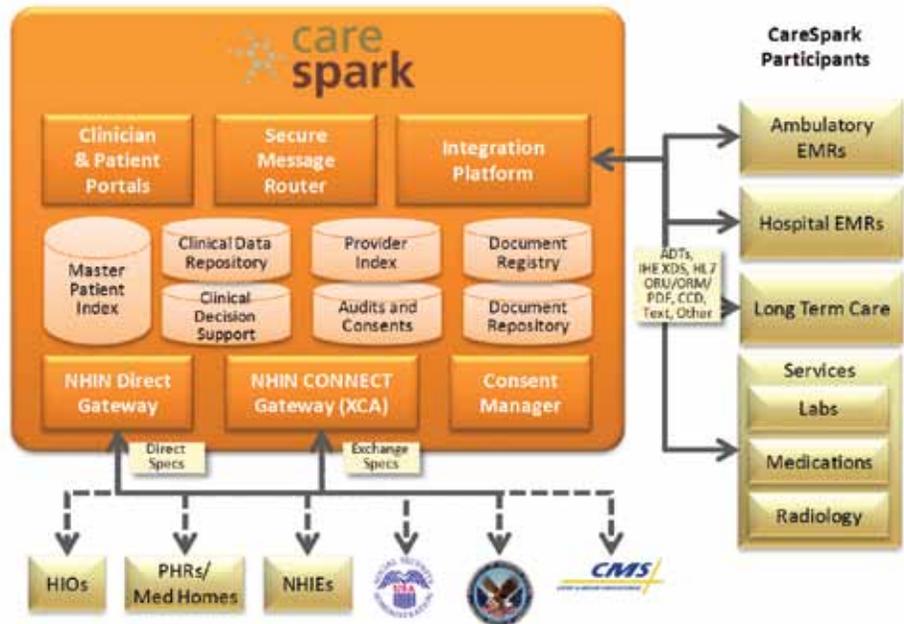
The interoperability facilitated by IBM Initiate Patient enables data to reside in CareSpark systems or to stay resident in source applications. This infrastructure supports a hybrid architecture where only patient demographics, patient consent, summary clinical documents and audit trails are centralized. IBM Initiate Patient relies on a sophisticated algorithm to analyze historical and current patient data to create a single, accurate and comprehensive view of the patient.

By enabling identification of a patient and linking the patient's records across healthcare facilities, CareSpark presents a more complete view of the medical record at the point of care. This secure sharing environment has established trust among participants, encouraging increased physician adoption and improved patient satisfaction.



INTEROPERABILITY IN ACTION: Standards and Profiles

- Patient Identifier Cross Reference (PIX): cross-references patient identification across systems
- Patient Demographic Query (PDQ): allows systems to query a central master patient index for patient demographic and visit information.
- Cross Document Sharing (XDS): retrieves a complete list of clinical documents located within the health information exchange;
- Consistent Time (CT) ensures system clocks and time stamps of computers in a network are well synchronized (median error less than 1 second).
- Audit Trail and Node Authentication (ATNA) describes authenticating systems using certificates and transmitting PHI



RESULTS & BENEFITS:

Sharing Electronic Data and Care Coordination are vital in addressing chronic diseases

Documents being exchanged consist of a complete CCD document, immunization, radiology, lab reports and medication history. CareSpark has worked on the NHIN (Nationwide Health Information Network) on multiple projects. Current national projects include a PQRI (Physician Quality Review Initiative) proof of concept project to establish a bi-directional transfer of provider data/information with the Centers for Medicare & Medicaid Services (CMS). The primary mission of this initiative is to provide proof that HIE have or could build the necessary functionality to serve as an intermediary between eligible providers and CMS for PQRI submission and feedback reporting.

From an IHE perspective, success is measured by the increase in adoption electronic medical record (EMR), which has more than doubled in the past three years. This dramatic increase shows that sharing electronic data, and care coordination are vital in addressing chronic diseases.

"We are just now reaching the level that all of us envisioned initially," said John Dreyzehner, MD, MPH, director of Virginia's Cumberland Plateau Health District and past chair of the CareSpark board of directors. "Technology is the means to the end goal, which is measurable improvement in both health outcomes and cost of service delivery. We have several other projects ready to install and we're excited about the potential impact for our region."

"CareSpark has been utilizing IBM/Initiate solutions along with the support of their technology partner Lawson Healthcare who implements and maintains the solutions," said Susan Torzewski, HIE Administrator, CareSpark.

IHE SUCCESS STORY

TESTIMONIAL:

"Our clinicians recognize and invest in electronic systems, and are proactive in their commitment to collaborate and share for the good of their patients."

Jerry L. Miller, MD, Holston Medical Group, a CareSpark member



HOW CAN INTEGRATING THE HEALTHCARE ENTERPRISE (IHE) HELP YOU?

Find out more at www.ihe.net

Use of IHE-based systems is a wise choice because IHE provides a proven foundation to support a connected healthcare environment by solving the interoperability challenges faced by today's healthcare providers. Most clinical settings use a wide variety of systems and modalities from different manufacturers and as a result, exchange of patient data is a significant challenge.

IHE provides a solution via a common framework, referred to as IHE "Profiles" that enable the coordinated use of established standards such as HL7, DICOM, OASIS, and many others. IHE profiles address critical interoperability issues related to information access for care providers and patients, clinical workflow, security, administration and information infrastructure. IHE also defines a process by which these profiles are subjected to rigorous validation and conformance testing.

Together this framework and process result in health IT systems that are able to communicate with one another better, are easier to implement, and allow care providers to more effectively use information.

Why IHE?

Use of IHE helps clinical end-users resolve interoperability challenges. The ability to efficiently and securely access and exchange patient health data has long been a difficult challenge to resolve. Now with the addition of new incentives such as demonstrating "Meaningful Use" in the United States and similar mandates elsewhere in the world, IHE provides a proven solution to resolve health IT interoperability challenges. Use of IHE enables a collaborative environment between healthcare providers and industry leaders to improve the effective and secure exchange of patient health information.

Benefits of using IHE-based Systems for Hospitals and other Enterprise Clinical Settings:

- **Fewer interfaces:** It's not unusual for a 100-bed hospital to have dozens of interfaces - with IHE-based systems the need to create and maintain costly interfaces is greatly reduced.
- **Meeting reporting requirements:** Products developed using IHE can help end users more easily meet reporting requirements such as Meaningful Use in the United States and similar requirements worldwide.

Benefits of Using IHE Frameworks for Health IT Product Developers:

- **Reduce and improve product development cycles:** By implementing IHE, vendors can streamline their product development cycles by leveraging this integration capability across multiple customers, thus allowing staff to focus more attention on creating new product features and functions.

Founded in 1997 by HIMSS and RSNA, IHE is a global non-profit organization with stakeholder engagement of hundreds of volunteers representing the healthcare community worldwide.

Learn more about how IHE can help you, visit www.ihe.net or email secretary@ihe.net.

