



## Case Study:

# Catholic Healthcare West Achieves System-Wide Interoperability, Improves Patient Care

## *DirectConnect Blends Single-Vendor and Best-of Breed Approaches*

Catholic Healthcare West (CHW) has achieved system-wide interoperability by facilitating a comfortable co-existence of single vendor and best-of-breed approaches. Implemented in 2007, DirectConnect blends simplified user login, a clinical portal, and streamlined clinician access to aggregated patient information. The solution has already helped CHW improve access to patient information by cutting time to data to less than 10 seconds, while enhancing patient confidentiality, data portability, HIPAA compliance, and easy log-in and data access from multiple workstations.

### The Setting

One of the nation's largest not-for-profit healthcare systems and the largest Catholic healthcare system in the western United States, CHW is composed of 43 hospitals and medical centers in California, Arizona and Nevada. With more than 8,500 physicians and approximately 45,000 employees, CHW delivers healthcare services to more than four million people annually.

### The Challenge

Working with more than 500 applications and 40,000 users, CHW faced many issues with its clinical information workflow. Clinicians suffered through extended log-in times, multiple IDs and passwords and resistance from physicians and nurses. Physician offices and clinics generated and received their own e-mail, schedules, lab results, images, radiology reports, operative notes, messaging and collaboration and faxes. They also received communications from multiple hospitals, which transmitted their own e-mail, schedules, lab results, procedure notes, discharge summaries, transcriptions and images. Specialists such as cardiologists sent physicians consult and cath lab reports, echocardiograms, angiograms and EKGs, while imaging centers shared images and radiology reports and laboratories communicated lab results.

### The Vision

Working with Scottsdale, Arizona-based Carefx Corporation, CHW developed a solution that would help clinicians streamline workflow and tackle the tidal wave of patient information coming from disparate sources. Through the resulting solution that CHW dubbed "DirectConnect," clinicians gained secure, intuitive and rapid access to patient information through a single sign-on and content management within a portal environment.

CHW launched DirectConnect with multiple goals and objectives. It sought to reduce multiple log-ins and passwords to a single set of credentials, slash time-to-data from one to two minutes to fewer than 10 seconds, cut down on the steps needed to access data in multiple systems and deliver interoperable, optimized workflows across applications. At the same time, CHW hoped that DirectConnect would deliver contextual information sharing for patient, encounter and other HL7 Context Management Architecture (CMA) subjects; reduce dependence on traditional HL-7 point-to-point interfaces; enhance the ability to audit access to patient health information (PHI) and improve regulatory compliance.

### The Solution

A best-of-breed solution, CHW's DirectConnect system is anchored by three components. SecureLogin, eDirectory, and Identity Manager from Novel provide DirectConnect with provisioning and a simplified login and logoff process on both the desktop and Web. WebSphere from IBM delivers a clinical portal, while Fusionfx from Carefx offers simplified access to aggregated patient information at the desktop and within the portal.

DirectConnect is powered by an enterprise-wide integration platform that incorporates patient information aggregation on the desktop and within the clinical portal. Using industry open standards, service-oriented architecture (SOA) and a simple

object access protocol (SOAP) data access layer, Direct Connect seamlessly aggregates embedded data from core clinical systems into a browser-based clinical dashboard.

## Results Achieved

The 22,000 CHW clinicians who now depend on DirectConnect have benefited from secure, intuitive, rapid access to patient information through a single sign-in, as well as the ability to manage clinical content through a portal.

Enthusiastically adopted by nurses and physicians, Direct Connect has helped CHW clinicians simplify and streamline their workflow and access to aggregated patient information. Clinicians who previously contended with four views of patient information now experience information in a single, unified view. Moreover, they can easily and quickly log on from multiple workstations using a single user-name and password.

Overall, CHW clinicians spend less time navigating health IT infrastructure and more time making treatment decisions and caring for patients. The reason resides in DirectConnect's ability to present data that closely relates to the processes clinicians follow and to customize patient information views to fit the unique roles of physicians, nurses and managers.

CHW has also benefited from DirectConnect ability to reduce security risk, enhance HIPAA compliance, achieve data portability without paper and improve patient confidentiality through superior access-logging tools. Specifically, CHW has achieved the following results:

- 1 Reduced the number of logins and passwords required by more than 80 percent
- 2 Slashed time to data from one to two minutes to less than 10 seconds—a five to 10 fold improvement in data access speeds.
- 3 Cut down the number of steps needed to access data in multiple systems from 30 steps to 10 steps
- 4 Provided hospitalists with an extra two-to-four hours per day through improved workflow
- 5 Delivered interoperable, optimized workflows across multiple applications
- 6 Provided context sharing for patient, encounter and other HL7 Context Management Architecture (CMA) subjects
- 7 Reduced dependence on traditional HL-7 point-to-point interfaces

- 8 Enhanced CHW's ability to audit access to patient health information (PHI)
- 9 Improved regulatory compliance

Anecdotal evidence on the effectiveness of DirectConnect is equally powerful:

- 1 A CHW hospitalist reported saving two to three hours per day, increasing time spent with patients and patient satisfaction.
- 2 A second hospitalist said he had abandoned paper charts in favor of DirectConnect's electronic flow sheets.
- 3 Nursing directors reported similar positive results due to DirectConnect's ability to give physicians rapid access to information without the help of nurses.
- 4 Within perioperative areas of CHW, nurses have replaced printouts with real-time information access.

## Lessons Learned

Following are some recommendations, based on CHW's experience that you will want to keep in mind when moving forward:

**Identify physician and nurse champions early on.** Choose those who have earned the respect of their colleagues, support the project's vision, goals and benefits, understand health IT launch and implementation and can answer questions and troubleshoot concerns. The nurse champion could include a chief nursing officer (CNO), chief nurse executive (CNE) or nursing informaticist, while the physician champion might come from the ranks of clinical informaticists or CMIOs.

**Spend adequate time collecting information and identifying features.** Choose a vendor with prototyping capabilities and a demonstration solution that can be customized to your organization's needs and preferences. Working with a prototype is indispensable in helping clinicians experiment with workflow, grasp a system's eventual functionality and edit out nonessential or nonbeneficial features.

**Insist on a client site visit.** Only through face-to-face interaction with a vendor's former or existing clients can you truly evaluate an organization's comfort and satisfaction with a solution. Taking part in a site visit lets you converse with physicians and nurses with unique insights into a system's limitations and benefits, as well as typical barriers to be overcome. Never rely exclusively on a Web-based demonstration or oral presentation to make a decision for or against a health IT system.

**Work with your vendor to create use case scenarios.** It's important to document how users would prefer to work with the system. Doing so will assure proper workflow and access, provide the vendor with a realistic blueprint and create a foundation for unit and integration test scripts and sign off. You may want to develop separate use cases for physicians and nurses, as well as other core user groups such as quality managers or community physicians. If executed properly, use cases can turn into specifications for the health IT solution.

**Focus on time to data as a key metric.** More than anything, clinicians want rapid access to a patient's information. Reducing the number of steps required to access data and cutting the investment of time from a few minutes to a few seconds will go a long way in accelerating clinical decision making and problem solving while improving care quality.

**Consider a "big-bang" deployment.** Implementing a system hospital-wide allows clinicians to use solutions in multiple departments and short-circuits potential frustration and resistance.

**Involve community physicians early.** Providing physicians with full and complete access to new IT systems will minimize feelings of resentment and ease the transition from paper-based to electronic processes.

**Track user habits and preferences.** Place computers in places where clinicians want them to be placed and with the greatest potential for acceptance and use. Consider locations such as the physicians' or nurses' lounge.