



## **Build it [right] and They Will Come**

### **Clinical Portal Technology**

by

Elizabeth M. Nemeth, RN, BScN, MN

Since about 1997, portal technology and products have become one of the most visible information technology requisites in education and various business industries. Early portal development had a single purpose: to provide information and services to multiple providers (BEA Systems, 2006). The term portal quickly earned status and yet caused confusion at the same time. “Portal” was often interchanged as both a noun: to describe the technology, and, as a verb: the technology that created the experience. As defined by IBM, a portal is “a single integrated, ubiquitous, and useful access to information (data), applications, and people (IBM, 2000). Portal technology for the clinician, can offer a new platform for integrating a variety of separate, disparate systems (components) into an integrated view.

#### **Defining the Need:**

With budgets tight and service realignments due to government pressure, organizations are being forced to look at the type of service provided within and outside their ‘walls’ and how

best to integrate services and specialties to meet consumer needs. They are looking for integration solutions to meet the consumer and provider needs. Portals are playing a larger role in sharing patient information, sharing of clinical expertise and specialty services. Patient care is complex, time consuming and data intensive and yet, healthcare organizations remain one of the few industries that is still largely paper drive. For those organizations that have made the transition to adopt technology, portal development may be the next big investment.

A clinical portal, in fact, can empower health care providers to communicate and collaborate more effectively and will enable the provider to make informed decisions about the patients they support (Jiwani & Boone, 2004). In today's healthcare arena, clinicians must have the right data at the right time whether it's at the patient's bedside, a physician's office, or at home. The reality is most data is spread across many disparate systems with limited integration. Within the last few years, portal technology is finding a new role in healthcare organizations.

Organizations are developing strategic plans for Service-Oriented Architecture (SOA) and portals are becoming the framework for these applications. Portals have the ability to pull information together from different systems and at the same time answer specific business problems by automating processes that span those various systems. In essence, portals can become the first step towards SOA implementation (Phifer & Gartner, 2005).

According to providers, the most important aspect portal use is for reviewing lab results, and for reviewing and signing transcriptions. Portals can provide tailored content to health care providers such as lab alerts, consult requests, and change in patient status as well as other news pertaining to particular health topics or disease management.

### **Addressing the Challenges:**

Implementing a clinical portal solution can be a challenging process and obstacles will be encountered along the way. Clinicians want immediate and seamless connectivity to save time and money and improve patient care. Fiscal restraints, tight budgets, and competing demands for dollars in healthcare are a reality. Clinicians want choice and have individual preferences in accessing information in a most efficient and task-appropriate way.

Healthcare providers aren't sure where or how to begin portal development and many vendor solutions can be confusing, costly and take a lot of time to implement. Successful portals need more than just technology. There needs to be intimate knowledge of the business of healthcare and as a result, a new interdisciplinary model for care begins to emerge where IT and clinical expertise work together.

### **Implementing Clinical Portals:**

Building and implementing a clinical portal requires several phases before successful implementation. Defining requirements are one of the core aspects in building a portal. A team approach (technology expertise along with clinical expertise) together determines which documents would be viewable and how they will be viewed.

Metrics and report metrics need to be established and the team needs to identify how and what clinical data should be displayed. The metrics component is often most cumbersome since displaying of metrics requires the integration of several data sources, both internal and external to the organization. Defining appropriate contacts who understand the data base fields and structure is essential (Prashker & Goldberg, 2002). Determining how updates will be managed is also fundamental at this stage so that when the portal is live it will provide correct and timely

information. While identifying requirements it is important to set a date for final requirements for initial portal release in order to avoid delays.

Establishing clean data policies is essential for successful portal implementation. Portals raise data management issues. The old saying ‘garbage in/garbage out’ can be a well rehearsed phrase but unless clean metrics are established early in the design phase, the portal runs the risk of providing useless information. Decisions in this phase need to be made regarding what level of ‘clean’ data is acceptable and who should monitor its quality.

After careful review of the requirements, the next phase involves the technical team building a framework or ‘shell’ for the requirements. In this phase, several key elements are achieved. It allows the organization to view the visual impact that the portal has; it provides confidence in the implementation team’s ability to develop a portal within a set timeframe; and, it helps sponsors feel ownership of the portal. It is not necessary to create the entire site immediately. Portal development can be modular and new applications/systems can be phased into the portal architecture over time.

Soliciting feedback is vital to the success of implementing and future enhancements to the portal. Regular follow up with end-users to find out what is working and what needs improvement drives successful adoption and use of the portal. Seeking feedback is important from users and non-users alike. In fact, non-user feedback can provide designers a better understanding of why some clinicians aren’t using the portal. Gaining the support of these ‘non-users’ often turns them into the strongest advocates. (Prashker & Goldberg, 2002).

#### **Benefits Achieved with Clinical Portals:**

Clinical portals can enhance communication, improve access to real-time information, and improve decision making capabilities by identifying and controlling risk, making it possible

to reach earlier decisions. Earlier decisions minimize costs and shorten timelines (Prashker & Goldberg, 2002).

Other benefits of clinical portals include:

- Integrated and accessible information – portals can search and report information as well as display integrated information from many disparate healthcare and financial systems.
- Secure access – only authorized users can access real-time clinical data.
- Collaborative tools – being a secure environment, portals provide a venue for collaboration over the internet with clinicians at different sites and other organizations (regardless of the geographic location) to work together. It also provides an integrated view of the patient care continuum to all sectors.
- Data encryption – communication through clinical portals can be more secure than through e-mail as most e-mail is not secure. Portals have the ability to use data encryption and other security measures which is essential as healthcare becomes more vigilant in ensuring that patient data complies with privacy legislation.
- Internet access worldwide – clinicians can easily access patient information from all over the world and disparate offices that do not have access to internal network drives can access information through the web.
- Single Sign-on (SSO) – there should be SSO for each individual. The sign-on should be designed so that the clinician can access whatever information he or she is permitted to have. As more portals embrace SOA, it sets the stage for a modular approach towards SSO of these other systems (Katz & Associates, 2004).

**Creating a Culture of Acceptance:**

Implementing the technology may be the easy part; establishing the corporate culture that will embrace the technology might be a bit more difficult (Baker, 2004). If not all the right information is put into the portal, or if the portal isn't accessible anywhere and any time, adoption will not occur. Too often, organizations assume that the portal, once established will be self-maintaining. Regular feedback from end users, scheduled upgrades and enhancements are necessary to ensure clinical adoption and acceptance is ongoing.

Clinical portals can be 'one-stop-shopping' containing all the essential information that the end user needs to manage their patient care. Since portals improve access to real time data, they can dramatically improve decision making. Having support in place for the end user, should the system not be available, is critical.

### **Lessons Learned:**

Define success appropriately. Stage the implementation of clinical portal roll out with a limited number of users and obtain feedback prior to full scale user adoption. This will help work out any bugs or deficiencies that weren't identified earlier. It will also help validate that the information available through the portal is what the end user desires.

When timely, accurate data is made available in a format that can be viewed according to user's preference; there is greater desire to access this information (Holbrook, 2006). The desire for real time information will not only increase usage for physicians, but also for other clinicians.

Portal access can be either Citrix-based or Web-based. End users are not concerned about the technology; however, being able to access to information anywhere, anytime enhances access to information when making decisions about patient care.

Philosophical decisions need to be made when an organization decides to implement a clinical portal. Organizations need to determine the solution to how data will be made available; a customized view versus a unified view of data is just one aspect that needs to be resolved.

Anticipate resistance. Adapting to new technology has its unique challenges, and the implementation of a portal is no different. Training, communication, buy-in are key components to overcoming those hurdles.

Understand the user. Portal users represent a broad spectrum of health care providers and include senior executives, project managers, analysts, technicians, and analysts. They all use the portal for different reasons. To be of value, the portal needs to offer information that satisfies all the users and their needs. Navigation needs to be minimal, information retrieval intuitive with the fewest number of clicks possible. Users need to be able to set preferences for their own ‘page’ so that the information of greatest interest is readily accessible to them.

Lastly, clinical portals seem to be the logical solution to integrating disparate hospitals and other facilities into Local Health Integrated Networks (LHINs). Portals do not require infrastructure or major implementations to share data. They encourage greater collaboration among everyone involved, enhance communication. Portal technology provides a unique opportunity for technology and clinicians to collaborate on key challenges to accessing information for better patient care and decision making.

## REFERENCES

- Baker, M.L., (2004). Health Care Industry Increases Use of Clinical Portals. *eWeek Article, April 2004, Ziff Davis Media Inc.*
- BEA Systems, (2006). The Evolving Roles of Portals in Today's Leading Businesses: An overview of Portal Technologies and Benefits for the Service-Oriented Enterprise. *White Paper: BEA Systems Inc.*
- Holbrook, S. (2006). Clinical Portals: A Win for Providers. *The HIT Report from KLAS. Electronic Healthcare, Vol 4, No 4, 2006.*
- IBM, (2000). Higher Education Portals: Presenting your Institution to the World. *September, 2000: IBM Global Education Industry.*
- Jiwani, A. & Boone C., (2004). The Clinical Portal Solution – Empowering Healthcare Professionals. *White paper: Capgemini in collaboration with Microsoft Corp.*
- Katz, R. & Associates,(2002). Web Portals and Higher Education. Technologies to Make IT personal. *Chapter 8: Portal technology Opportunities, Obstacles and Opinions: A view from the California State University. Jossey-Bass, a Wiley Company Publication.*
- Phifer, G. & Gartner Group, (2005). A Portal May be Your First Step to Leverage SOA. *Gartner Group Research Note, September 22, 2005.*
- Prashker, A. & Goldberg, M.A., 2002. Creating Clinical Portals: A Model for Success. *Pharmaceutical Executive May 2002.*

### **Author Biography**

Elizabeth Nemeth is an Electronic Health Record Assessment, Planning and Implementation Consultant for Healthtech Inc. She has over 20 years experience in health care with a particular focus in management of clinical operations, professional staff development and shared governance. Elizabeth has demonstrated strong communication and interpersonal skills, with proven leadership, management and organizational abilities. She was actively involved in building infrastructure for computerized clinical documentation and influenced and supported the development of a computerized documentation system specific for Maternal/Newborn population. Elizabeth has also been involved in device assessment inventory and readiness assessment for CPOE and eMAR and has also been involved in process mapping and standards review for SPD. More recently, she has taken on the lead role in implementing multi-site clinical portal technology and integrating multiple applications through this portal. Elizabeth is a member of the Canadian College of Health Service Executives, COACH, ONIG, and sits on the Board for the Nursing Leadership Network of Ontario; a Registered Nurse with a Master of Nursing Degree (Administration) from the University of Toronto, holds a Bachelors of Science in Nursing Degree from Ryerson Polytechnical University and is a member of the Golden Key National Honor Society.

#### Author Information:

Elizabeth M. Nemeth, RN, BScN, MN,  
Consultant, Healthtech Inc.  
210 Glencairn Avenue  
Toronto, ON M4R 1N2  
Phone: 416-483-5974 ext 46  
email: [lnemeth@healthtech.on.ca](mailto:lnemeth@healthtech.on.ca)