

**Taking a Clinical Byte Out of Paper: Launching a Change/Leadership  
Management Model to Facilitate Migration from Paper-based to  
Electronic Readiness in an Academic Health Science Centre**

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### *Introduction*

Enterprise-wide information and communication technology (ICT) implementations across the healthcare system are challenged by slow and less than successful organizational adoption (Berg, 2001). In order to mitigate IT-lead electronic patient record (EPR) objectives that differ from the clinical users' objectives, St. Michael's Hospital (SMH) determined that an interdisciplinary user engagement strategy was required to improve involvement from key stakeholder groups with upcoming EPR projects. This undertaking was assumed under the guidance of the clinical informatics program in 2006 to facilitate the introduction of a Non-Medication Order Entry (NMOE) project across all inpatient and select outpatient areas. This paper will provide an overview of: early EPR implementation and adoption challenges at SMH; the role of Values-based Leadership/Management in user adoption; the Interdisciplinary User Engagement Strategy developed for SMH; and lessons learned through the application of the engagement strategy to SMH's recent EPR projects.

### *Background*

SMH is a Catholic, academic acute-care health science centre deeply rooted by a strong set of organization values dating back to its early 1900s beginnings of "respect, compassion and dignity". Today, SMH's branding of "Leading with Innovation. Serving with Compassion." is a strong reminder of these founding values and organizational culture. In 2004, the first implementation of the EPR system and its clinical repository for results and images from multiple information systems highlighted some implementation and adoption challenges. Some of the key challenges included: low user adoption, poor communication and EPR strategy development, and limited number of leaders dedicated to guide the organization through change. It was later identified through an evaluation of the projects that

minimal time was spent on corporate stakeholder engagement to support changes to current technology, practices and processes which was believed to have impacted clinical user adoption. After assessing these challenges, in order to proceed with introducing new clinical system applications and tools, it was imperative a user engagement strategy be developed.

A literature review was conducted which focused on health information systems/electronic patient records adoption and implementation strategies (Beck, 1993; Drucker, 1999; Handy, 1995; Heifetz & Laurie, 1997; Kotter & Cohen, 2002; Wheatley, 1994; Youngblood, 1997). Based on this review, a change leadership/change management model was identified that would address the challenges posed by the rapid pace of innovation and complexity of EPR activities at SMH. This model would also encompass SMH's vision, mission and values to align ICT initiatives with the corporate goals and objectives.

#### *Values-based Leadership & Change Leadership/Management Model*

Success and failures of ICT initiatives have been noted as primarily associated to organizational factors rather than technological (e.g. hardware, software) or external (e.g. vendors, suppliers) in nature (Shore, 2005). Leadership has often been mentioned as a primary organizational factor that affects corporate culture, ICT strategy and staff commitment (Day & Norris, 2006). Specifically, relationship-oriented leadership is a leadership style that is required to successfully move through all project phases (Shore, 2005). From the various leadership styles and types, Values-based Leadership (O'Toole, 1996) was considered to best facilitate transformative changes in SMH because of the establishment and demonstration of key values by its leaders: *respect, trust, and collaboration*. Selecting a model that emulates the stated values of the SMH organization would assist stakeholders with finding relevance of EPR initiatives with other high-priority

corporate goals. Values-based leadership sets the stage between diverse clinical leadership groups and the project team to develop a shared vision by which all parties are co-invested and inspired by common goals that are further communicated and demonstrated to the remainder of the organization.

In order to gauge the level of change needed for the current Non-Medication Order Entry project, change leadership tools and readiness assessments by Frank, Martineau & Pascal (2005a, 2005b, 2005c) were used based on its ease of use and provision of a clear direction. Frank, Martineau & Pascal's model of IT complexities with respect to increasing changes to technology, processes and people was used to model SMH's ICT initiatives in terms of change strategies (Fig. 1). It was identified through this model that both change management and change leadership would be required to attain user adoption for the NMOE project.

Using only change management strategies to implement new technology in clinician workflows and practices will not likely achieve success because of the disparity of using change techniques that are based on managing processes that are highly structured, sequential and predictable, while clinicians and management stakeholders are consistently working within a complex adaptive systems that are non-linear and often unpredictable (Gill, 2003; Wilson, Holt & Greenhalgh, 2001). These stakeholders are likely to be at various levels of readiness and acceptance of the technology. However, change leadership is concerned with setting mutual strategic directions, leading, and inspiring all stakeholders to a common vision (Frank, Martineau & Pascal, 2005a). With the NMOE project, users had multifaceted concerns, such as fear and resistance with changing processes and roles, or skepticism around the capabilities of the EPR system. Applying change leadership in this situation was seen as beneficial as it would help assist people to strive for new innovation in SMH's EPR, heighten

clinical professional competencies, and create new working relationships through the collaboration of multiple clinical programs with various clinical service departments.

### *SMH's User Engagement Strategy*

To address the pace of innovation and complexity of competing demands within SMH while undertaking any ICT initiative, a hybrid of Values-based Leadership (O'Toole, 1996) and Change Leadership/Change Management (Frank, Marineau & Pascall, 2005a) was used as the theoretical underpinning of SMH's User Engagement Strategy. This strategy endorses a framework that is scalable, flexible and customizable to support a variety of clinical applications and multiple clinical users. When applied iteratively, strong partnerships between IT professionals, multidisciplinary clinicians and operational leaders are formed to plan collectively a phased implementation approach to guide the roll-out of project activities aimed at engaging and mobilizing all clinical users.

The primary components of SMH's user engagement strategy, consists of four main activities. *Determine the level of integration of technology/transformation/team* involves the project team to first assess the level of change required for implementing specific types of ICT initiatives/projects (e.g. system upgrades, eDocumentation, CPOE, etc.) using the Change Leadership tool of Frank, Martineau & Pascal (2005b) and identifying the appropriate change strategies required for success (e.g. project management, change management, change leadership). Once defined, the appropriate key stakeholder groups can be identified and targeted.

*Engage stakeholders* entails the need to create "Buy-in" by engaging and assigning work to the stakeholders. This was accomplished by holding structured face-to-face

sequential meetings that included diverse representation of stakeholders and assigning specific project tasks and responsibilities to individuals or work groups to create accountabilities. By engaging stakeholders immediately in the planning phases, we observed a greater sense of commitment to the project and closer relationships with the project team in those stakeholders who agreed to take on more involved project work than those who were not actively involved.

*Invest time* requires that the project team is committed to working with stakeholders throughout the planning and implementation phases to gain an understanding of their needs. *Invest time* requires spending upfront time and resources with stakeholders to apprise them of fundamental ICT concepts and rationales of the impact of clinical system changes with their current work processes and practices. Examples of these types of activities include setting initial project expectations with the stakeholders and project team to clearly communicate project deliverables, timelines and activities.

*Create a shared vision* is derived from clarifying the direction of change and aligning the needs and aspirations of the stakeholders with those of the project team to lead a corporate transformation (Kotter, 1997). An example is affirming the needs of the stakeholders and project team and identifying clear roles and responsibilities of the group, and setting participatory rules of engagement.

With every cycle of the activities outlined in the SMH engagement strategy, key leadership values of respect, trust, and collaboration was reinforced as evidence by the creation of new matrix-like working structures (e.g. IT, Project Management, Nursing, Medicine, Health Disciplines, Professional Practice, operational leaders, etc.) for current clinical application-type initiatives at SMH . User adoption can then be facilitated by the

strengthening of these leadership values as it sets the stage for which the vision of the users, stakeholders and project team can be realized within the SMH organization.

### *SMH Lessons Learned*

1. After the NMOE project and a concurrent project of phasing out the legacy results viewer, it was obvious to the project that there is no such thing as “too much communication” to users. Repeatedly throughout the projects, new user groups were being identified of being “unaware” of the existence and the related impacts of the projects.
2. Opportunities were created throughout the phases of the NMOE project to challenge “sacred cows”. More time, than initially anticipated, was required to partner with clinical stakeholders and to combat resistance to the new workflows and process changes aimed at integrating organizational structures to become more patient- focused and less fragmented by departments (e.g. silos).
3. During the pre-implementation phases, it was vital to set realistic expectations regarding the EPR functionality to the users. For example, users need to be aware that certain functionality enhancements to the EPR may or may not be possible currently or with future upgrade plans. It was imperative that education included outlining the five-year EPR plan and vision in order to create an understanding that electronic order entry is one of many elements towards the completion of the EPR vision.

*Conclusion*

The SMH engagement strategy was an integral component to the success of the NMOE project and the sun-setting of the legacy results viewer, as a result of engaging diverse stakeholder groups and by carrying out leadership values that are aligned to SMH's corporate values. Iterations of the use of this engagement strategy with other ICT projects will provide further information on the impact made to user adoption at SMH. With current ICT initiatives being more increasingly complex with integrating and introducing changes to technology, processes and people, a change leadership strategy can augment other types of traditional change and project management strategies.

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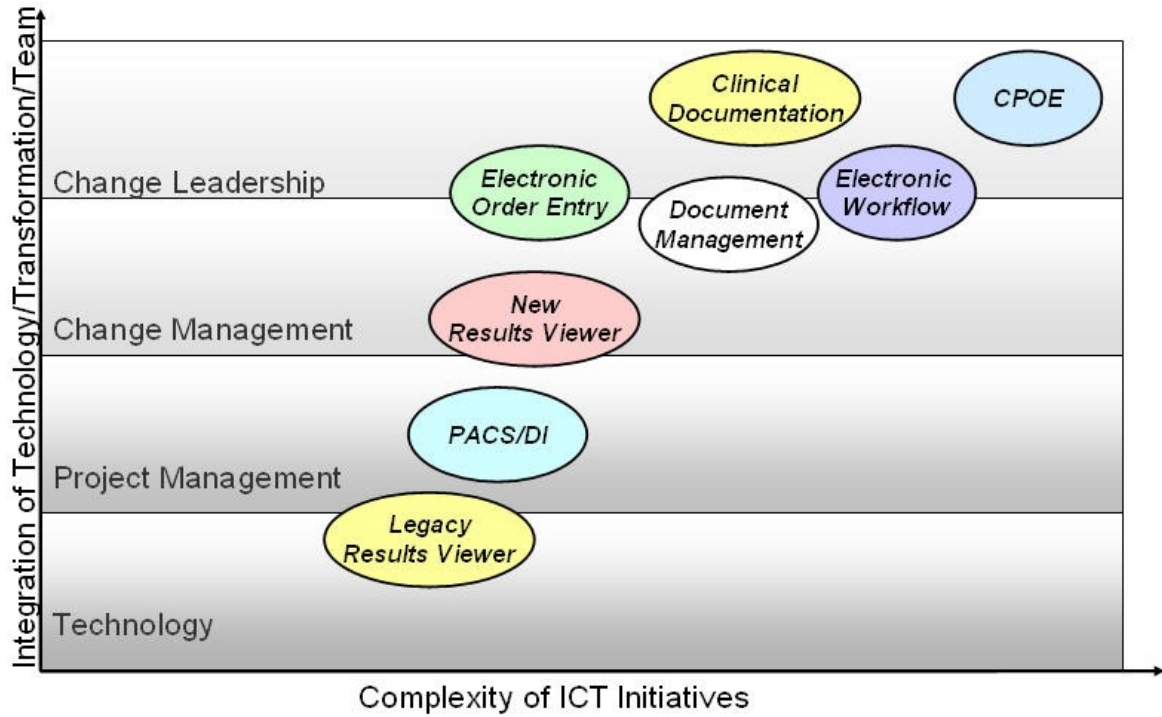
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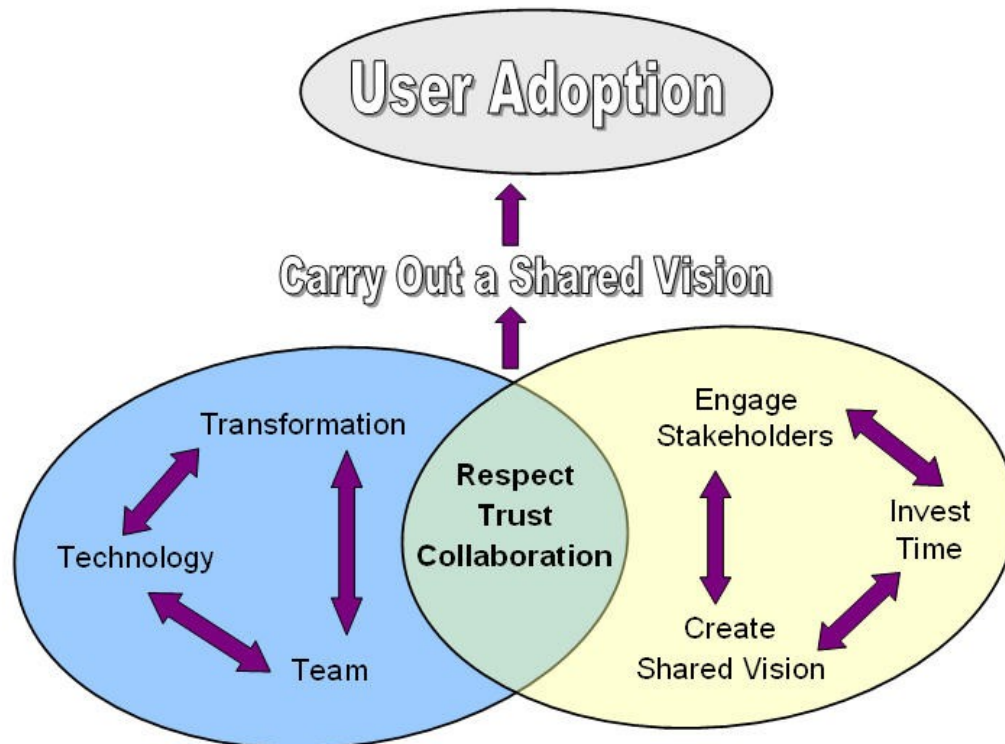
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Figure 1. SMH's EPR Implementation Plan



Adopted from Frank, Martineau & Pascal (2005b)

Figure 2. St. Michael’s Hospital’s (Toronto, ON) User Engagement Strategy



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