

Collecting Outcomes In Spite of Our Systems

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A Canadian provincially funded initiative to capture a consistent set of outcome measures related to nursing practice in acute care, long-term care, complex continuing care, and home care has achieved success with a group of early adopter organizations. Given the intent to capture this information electronically, the implementation team has been challenged by a number of people, process, and technology issues. This paper will describe the strategies employed to address the major hurdles in achieving success. This early success has set the stage to move forward with province-wide implementation and created a model for future implementations in other Canadian jurisdictions.

Background

During the late 1990's in the province of Ontario, Canada, the Ministry of Health and Long-Term Care (MOHLTC) was interested in developing a methodology to capture the costs associated with nursing care. However, early in the process of reviewing potential methods, it became apparent that a focus on outcomes of nursing practice would potentially provide more meaningful information to understand nurses' contributions to clinical care. To this end, the Nursing and Health Outcomes Project initiative emerged. An Expert Panel was created to inform the directions of this work and included representation from acute care, long-term care, complex continuing care, and home care.

In 2001, a study was undertaken to identify a core set of outcome measures related to nursing practice for which there was published evidence. An extensive literature review was conducted to accrue the evidence and substantiate the choice of measures. (Doran, 2003). Consequently, a suite of measures was identified to have potential relevance across the four care sectors of interest.

Following this work, a feasibility study was commissioned to:

- 1) determine the capacity to collect these measures within the four sectors reliably;
- 2) identify the issues and costs associated with the collection of these measures;
- 3) determine the value and usefulness of the information to nurses and nurse administrators; and
- 4) ascertain the feasibility of moving forward with the collection of these outcome measures provincially.

After a 6 month trial in 16 sites province-wide, the findings supported the capacity and feasibility of

collecting these measures. (Doran, 2003b). Moreover, the nurses and organizations participating in this study, determined that the collection and monitoring of these measures brought value and support to their clinical practice. The final set of outcome measures was refined to include those identified in Table 1.

Table 1. Health Outcome Measures.

Outcome	Measure
Functional Status Including continence	8 items
Therapeutic Self-Care ³	12 items
Symptom Management	Pain Nausea Dyspnea Fatigue
Safety	Falls Skin Breakdown

As a result of these findings, the MOHLTC directed funding to create a program to support the implementation of systems infrastructure for the collection of these measures by nurses within all health-care provider organizations in the identified sectors. This implementation is to be completed throughout the province within a 3 year period. Depending upon the sector, these measures will be collected overtime (e.g., admission, discharge, or quarterly) and will provide nurses with a comparative basis of clinical outcomes, limited to medical-surgical cases at this time.

In 2005, a second phase of the work was launched to extend the work beyond nursing to include

pharmacists, occupational therapy, and physiotherapy. A further extension of the work will incorporate the collection of outcome measures in the sectors of primary care, public health, mental health, and rehabilitation. In the interest of identifying additional evidence-based outcomes, this work is currently replicating the literature review process within the additional health disciplines.

As this work evolved from project status to a program within the MOHLTC, it was renamed to reflect the emerging multidisciplinary nature of the outcomes focus. The program is now known as HOBIC or “Health Outcomes for Better Information and Care.” Additional details of the background and processes related to the launch of this program have been described elsewhere.(Sidani, 2003).

The Program Implementation Structure

The Executive Lead and Program Manager are providing overall direction for the program activities, facilitating decision making with stakeholders, and liaising with various MOHLTC entities to secure approvals and assure that HOBIC is in full compliance with all ministerial legislative and policy requirements. The implementation process has been supported initially by the following structure:

- a) Implementation Steering Committee
- b) Learning and Development Sub-Committee and the
- c) Information System Management Sub-Committee.

The Implementation Steering Committee (ISC) makes strategic decisions and provides the broad oversight of the processes, the two subcommittees and program staff. The Learning and Development subcommittee has had the responsibility for developing the educational strategy and tools for nurses in practice as well as assuring relevant outcomes content is embedded in the core curricula of all nursing schools. Initially identified as the Data Collection Sub-Committee, this group was renamed the Information System Management Committee (ISMC). This was a purposeful designation in the interest of assuring that this initiative is not viewed by nurses as yet another data gathering activity. It is the work of this Committee and the associated program staff recruited to support the implementation that will be the primary focus of the remaining discussion.

The People

The ISMC was constituted by representatives of the various sectors, HOBIC program staff, MOHLTC information management personnel, and representatives from the Canadian Institute for Health Information (CIHI). At the outset, the ISMC met monthly in order to identify the potential challenges and issues to be addressed with each sector. These issues were catalogued and formed the basis of a site assessment tool that has been used to determine the specific considerations within each of the targeted early adopters. The key areas of assessment included: a) information and communication technologies currently in use or planned; b) clinical application use by nurses; c) current documentation of some or all of the proposed indicators; d) number of users, individuals to be trained; and e) potential competing issues within each organization.

A few key decisions were made early on by the ISC set the direction for the implementation planning. In particular:

1. sites would be targeted within two clearly delineated geographic regions of the province;
2. those with expressed interest and enthusiasm would be considered for early adoption;
3. where ever possible the use of tools already in use that include the outcomes of interest (e.g., inter RAI, pain scales, Braden skin assessment) would be leveraged; and
4. only sites able to collect the measures electronically would be included. Early discussions had contemplated the possibility of a hybrid of paper and on-line data collection processes, but the complexities were rife with additional challenges. There was also a strong sentiment that the documentation of these measures on-line could provide leverage and accelerate the use of computerized clinical information management tools by nurses. Furthermore, only on-line documentation gave nurses access to real time reports comparing their current patients with similar patients admitted previously

Multiple meetings were held with the various stakeholder groups within each of the two selected

regions for initial go-live. In addition, MOHLTC personnel were engaged at a variety of levels with the primary intent of raising awareness and garnering support as necessary.

The Technology

The site assessments provided information about the level of systems sophistication within each provider organization. On the basis of these findings, decisions were made to flow funding to: a) support the integration of the chosen measures within existing systems; b) address system interface requirements; c) create a functional specification for the integration and submission of HOBIC data elements to the central repository; and d) support the acquisition of devices in sites with limited technology available for nurse use.

Notwithstanding the fact that many health care organizations are in the midst of deploying clinical information systems and the supporting technological devices for clinician use, the lack of system maturity related to clinical documentation is profound. Few of the early adopters were found to be using fully developed on-line clinical documentation tools within which the HOBIC measures could be embedded. However, with the exception of “Therapeutic Self-Care” or readiness for discharge tool, in most instances, a majority of the HOBIC measures are not new to nursing personnel.

The solutions developed to date include a web-based tool for the documentation of HOBIC measures. This tool has been built upon the foundations established by another, (TREAT™) suite of assessment tools also being used to support other aspects of clinical documentation. Whenever possible, the team has worked with the existing clinical system vendors to develop the required ADT interfaces, adapting their documentation modules to include HOBIC. In the future, with vendor solutions that are commonly in use, these initial investments will be leveraged, easing the way for subsequent implementations.

The technical team has also focused on the opportunity for added value in organizations with no on-line documentation. Specifically, an admission assessment which incorporates the HOBIC measures has been developed for some organizations and this is being viewed very positively as a stepping-stone to the future.

Another important component of the technical development has been the design of reports for the HOBIC sites. These reports are directed primarily to management and nurse users. A fundamental principle underpinning the HOBIC implementation is that it must bring immediate value and feedback to the nurse completing the assessments. Having access to past assessments relative to a current assessment will provide nurses with clinical information to support their practice. In time, these reports will be designed to provide between sector information sharing as individuals move through the system (e.g., discharge assessments from acute care will be available to receiving nurses within long-term care or home care).

As for the technology devices to support the documentation processes, the implementation team also worked with a hardware reseller and held device showcases. Based on specific device requirements, an array of options were brought to each region and viewed by the early adopters needing to make technology decisions. These forums allowed decision-makers and end users to have hands-on device evaluation opportunities. This strategy was deemed useful by those sites with little or no technology currently in their clinical environments.

In addition to the site based technology solutions, the technical implementation team was challenged to find a secure environment to house the central data repository of HOBIC information to be submitted by each participating site. Requirements of such a site included the need to be compliant with legislative obligations related to privacy and threat and risk management.

Although the MOHLTC has stewardship over numerous data sets including ones specific to each of the sectors, concurrent transformations within the IT and information management areas precluded the convergence or co-location of the HOBIC data server with any of these. This particular challenge has not been trivial and as of this writing, although a temporary home has been found, there are complexities yet to be resolved.

The Processes

Communication

Continuity of communication and the capacity to address site-specific issues has been largely facilitated by the recruitment of regional HOBIC

Coordinators. These individuals have been invaluable in maintaining an ongoing awareness of the emerging issues within each site.

Hosting regular meetings with the nursing and information technology personnel from the early adopter sites, by sector, has also been extremely useful. Bringing sites together provided them with many opportunities for collective brainstorming and problem-solving. These sessions frequently resulted in the sharing of solutions and assured that the IT and nursing leads were aligned in their expectations related to system functionality and use.

Although information about the initiative has been available via a MOHLTC website viewable at <http://www.health.gov.on.ca/hobic> for a few years, at the outset of the implementation work, the leadership felt it important to brand the initiative and develop some marketing materials. Thus a public relations firm was engaged to develop a logo and supporting materials for HOBIC. This material is now being used in discussing the work with prospective sites for the next wave of implementation.

Cultural Change

Cultural change is often cited in the literature as a key factor in achieving successful transformation of processes associated with the management of clinical information (Nagle & Grimston, 2003; Leatt, Shea, Studer & Wang, 2006; Ash & Bates, 2007). Thus far the experience with HOBIC has demonstrated an openness to the adoption of technology solutions that truly support nursing practice. The culture of nursing practice that embraces change is one which includes benefits related to patient care. Provided with the right technology solutions, nurses are in key positions to utilize technology for improving the quality and safety of clinical care delivery. (Ball, Weaver & Abbott, 2003) The HOBIC measures inform nursing care and when embedded in electronic solutions, provide timely clinical decision support.

Education

A key success factor to the implementation process has been the educational strategy. Utilizing a combination of computer-based training and in class orientation to the site-specific methods for the collection of HOBIC measures, staff preparation for go-live has been central to the implementation. In time, the further deployment of similar solutions for documentation will support the standardization of other teaching methods.

The Future

The experience with the early adopter sites has poised the implementation team to tackle all subsequent implementations with respect to the identified issues related to people, technology, and processes. It is expected that the learnings from this initial phase will effectively support future implementations. Unknown at the time of this writing is some of the unique considerations related to the implementation within academic health science centres. We anticipate that the complexity of these organizations will pose additional issues for consideration and resolution.

In sum, the HOBIC initiative is viewed as one of the first Canadian efforts to highlight the contributions of nurses to clinical outcomes across multiple sectors.

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