

Informatics and Quality Improvement/ Assurance

Leanne M. Currie, RN, DNSc
Associate Professor, UBC School of Nursing
Vancouver, BC

At a recent informatics meeting, one of the relative newcomers to informatics stated: “Informatics is QI on steroids!” Those of us well ensconced in the field say, “Well, yes, it *can* be.” However, the work that goes into harnessing the potential power of informatics is often time consuming and complex, and requires planning with the help of skilled informaticians.

Ideally, clinical information systems should provide a method to collect data as a by-product of care, verify them if necessary, and then reuse these data for decision support, administrative purposes (local, provincial/territorial and national reporting) and research, as well as for uncovering new evidence (data mining). After a clinical information system has been implemented, administrators are often surprised to find that “getting the data out” requires much more work than anticipated. I believe that this situation arises because the effort required to develop and tailor clinical information systems is monumental, and thus there is an assumption that QI/QA will flow easily after the system is in place, just *because* the system is in place.

Many early-generation clinical information systems did not build the infrastructure for reporting, so obtaining data for reporting was a challenge. Unfortunately, lack of infrastructure results in trapping vast vaults of data inside databases, making access as difficult as it was when paper records were stored in the medical records office in the hospital basement. Those of you who’ve lived through trying to “get the data out” are likely nodding your heads by now, but for those who haven’t yet selected or deployed your system, here are some tips to ensure that the data can be accessed in a useful manner.

Tip 1: Ensure that your system uses a standardized terminology

A standardized terminology system is a set of terms that have been assigned computer codes, which make the terms readable by computers. Clinicians still see the words, but the computer “sees” a numeric code. Standardized terminologies permit more efficient reuse of data, and they provide a method by which organizations can be compared against one another. The Canadian Health Outcomes for Better Information and Care (C-HOBIC) project is a standardized set of nursing-related measures including functional status, readiness for discharge, symptom management, patient safety and patient satisfaction (C-HOBIC Steering Committee 2010). This system, which has been described in this journal before, was developed to ensure that nursing activities are captured and measured. C-HOBIC is now being cross-mapped into the International Classification for Nursing Practice (ICNP®).

Nurses use the C-HOBIC terms to document patient factors, and these terms have been assigned codes that can be read by a computer system. The C-HOBIC system is similar to the National Database of Nursing Quality Indicators (NDNQI), a US collaboration that permits organizations to compare their own performance over time and against other organizations via national benchmarks. In addition to the outcomes present in the NDNQI, C-HOBIC also captures process measures. To date, C-HOBIC has been used in both computer-based and paper-based formats. The paper-based formats provide infrastructure, which can then be translated into computer systems when your organization is ready.

Another standardized terminology important for your clinical information system is SNOMED CT® (International Health Terminology Standards Development Organization 2011). This system was developed by the College of American Pathologists and was originally used to categorize pathology concepts. Over the years, this terminology system has been extended to include clinical terms from the UK Read Codes and most nursing terminologies. SNOMED CT® is now considered the most robust system available for healthcare. Recently, SNOMED CT® transferred rights to the International Health Terminology Standards Development Organization (IHTSDO), which now provides access to the terminology for a small fee or free of charge. Canada is a member of IHTSDO, and thus a growing number of information system developers in Canada are using SNOMED CT® (Canada Health Infoway 2011). C-HOBIC and SNOMED CT® should be indispensable in your administrator’s toolbox.

Tip 2: Hire trained informaticians and promote formal training for your team

A growing number of formally trained nurse informaticians are available, and several programs are present or in development across Canada. Organizations often outsource informatics expertise because there is a perception that all work will be done once the system has been deployed. This is partially true. A large

amount of work will be done, but system maintenance and enhancements require the skills of informaticians.

Furthermore, nurse informaticians often function as the bridge between nursing and the information technology (IT) team. Much like a telephone translation service, or in-house translators whom we might use to communicate with ethnic communities, nurse informaticians can translate nurses' needs into the sub-language of the IT team. A recent HIMSS (Healthcare Information and Management Systems Society) nursing informatics workforce survey in the United States identified that 52% of nurses report to IT, 32% to nursing and 22% to administration (HIMSS NI Task Force 2011). Indeed, a growing number of agencies have nursing informatics leaders at the manager (and even the director) level. And some agencies, albeit very few so far, are hiring doctoral-prepared nursing informaticians at the senior executive level. As the field of informatics grows from a branch of nursing administration into its own specialty, an increasing number of informaticians have the skills required for managing informatics at the organizational level. Every organization should hire at least one nurse informatician into a leadership role.

Tip 3: Ensure that your system development team has a plan to get the data out – and make sure you look at that plan

Many organizations have “point people” whose job is to crunch data and put them into a digestible format. Others use database querying systems that provide reports in PDF format. Although both these methods are effective at providing data to leaders, they do not fully harness the power of information systems. Furthermore, many reports tend to be lists of numbers, which can be difficult to interpret at a glance. Increasingly, clinical information system vendors, organizations and other companies are developing real-time, Web-based nursing administrative dashboards.

Visual analytics, a growing field increasingly used by a variety of businesses, uses tools to convert data from numbers into images such as bar charts, pie charts and regional charts with different colour densities designating different categories. Visual analytics proponents posit that the use of clearly represented visual information facilitates identification of relationships and trends.

If your data cruncher has created visual documents that you find useful, show them to your clinical information system development team and say, “I want this.” Providing concrete examples can facilitate communicating with systems analysts. After all, one picture is worth a thousand words.

Correspondence may be directed to: Leanne M. Currie, RN, DNSc, Associate Professor, UBC School of Nursing, T201 – 2211 Wesbrook Mall, Vancouver, BC V6T 2B5; Email: leanne.currie@nursing.ubc.ca.

References

C-HOBIC Steering Committee. 2010 (January). "About C-HOBIC." Retrieved March 8, 2011. <http://www.cna-aiic.ca/c-hobic/about/default_e.aspx>.

Canada Health Infoway. 2011. "SNOMED CT® in Use." Retrieved March 8, 2011. <<https://www.infoway-inforoute.ca/lang-en/standards-collaborative/snomed-ctr/snomed-ct-in-use>>.

HIMSS NI Task Force. 2011. *2011 HIMSS Nursing Informatics Workforce Survey*. Chicago: Author.

International Health Terminology Standards Development Organization (IHTSDO). 2011. "SNOMED CT®." Retrieved March 8, 2011. <<http://www.ihtsdo.org/snomed-ct/>>.

PHILIPS
sense and simplicity

www.healthcare.philips.com