Health care today relies on communication among providers to maintain and improve patient safety and provide care. The emphasis on communication has created a growing need for nurses who are skilled in information management. Using technology for information management can save time and money, increase productivity, and improve communication. Computer technology may be incorporated into many areas, and experienced perioperative nurses are often recruited to industry to help hospitals and agencies implement purchased software that will facilitate patient data management, resource management, and interdisciplinary communication.

The standards for nursing informatics have been published by the American Nurses Association. Roles are expanding in hospitals and in the corporate environment. In the hospital, informatics nurses serve as system administrators, project managers, superusers, and trainers. The corporate world offers informatics nurses opportunities as chief nursing officer, product specialist, implementation specialist, project manager, or consultant (see the sidebar “Nursing in the Corporate World”).

Nurses interested in the field of informatics should begin with the basics. Computer classes using Windows Office products such as Word, Excel, Access, PowerPoint, and Outlook will benefit all nurses communicating in today’s technical environment, and knowledge of them is essential to work in industry. Involvement in an interdisciplinary or departmental system selection committee will provide education and experience not only for information system selection, but also for the process improvement that can be accomplished in conjunction with implementation.

The purpose of this article is twofold. First, it will offer an introduction to the challenges for the nursing informatics professional assisting with the implementation of an OR information system (ORIS). Second, it will provide suggestions for the nurse who is interested in pursuing a career in this dynamic and expanding field.

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**NEED FOR STANDARDIZED LANGUAGE**

Over the years nursing professionals have highlighted the ubiquity of variation in practice and have urged clinicians to move toward evidence-based practice; however, a number of barriers have been identified. These include the rapid rate of medical knowledge development, inadequate access to clinically relevant information at the point of need, increased workload and patient complexity, and difficulty translating the evidence for use with a particular patient.

Perioperative nurses increasingly find themselves in the position of having to demonstrate that the RN has a positive impact on patient outcomes. The language used in nursing care documentation plays a crucial role in validating the effect nursing interventions have on patient outcomes. A standardized nursing language has become essential to ensure that the RN remains the patient advocate and care provider in the perioperative environment.

The PNDS, developed by AORN, can be used to measure and compare outcomes sensitive to nursing care. The usefulness, accuracy, and reliability of this standardized language will be used to plan interventions, measure outcomes, and report indicators that may be variable at any point on a continuum from most negative to most positive over time. Three points of data should be collected and reported to make evidence-based nursing practice usable. Those data points are patient problems (nursing diagnoses), nursing interventions, and outcome achievement.

The database of an information system provides the ability to query all of the data points to analyze intervention leading to positive and negative outcomes. Comparisons can be made over time for individual patients or groups of patients. Standardized
language facilitates the ability for benchmarking, thereby establishing best practices.

**AUTOMATING THE CARE PLAN**

Writing care plans was probably the most dreaded activity faced by nursing students. It appears to be tedious paperwork that only increases sleepless nights. The PNDS takes the basic information taught in nursing programs and expands it into today’s modern environment of perioperative services to standardize care, measure outcomes, and develop best practices using the nursing process experienced nurses learned so many years ago.

Nursing is a science performed with protocols and continual critical thinking. Planning care for surgical patients requires a unique body of knowledge that is difficult and time consuming to document. Critical thinking skills are essential for planning and delivery of care. Documentation of this care is crucial in today’s environment for nurses to maintain autonomy, to receive recognition of responsibilities, and to develop best practices for patient care.

Perioperative patients experience both actual problems and potential problems. Actual problems with documented signs and symptoms can include inability to cope, hypothermia, and pain. Potential problems with no documented signs and symptoms have risk factors involved that are controlled by the nursing staff. Potential problems include anxiety, risk for injury, and infection and breakdown of skin integrity. Both actual and potential problems should be documented, monitored, and evaluated by the RN because he or she automatically manages these tasks every day. The PNDS provides the means to document, evaluate, and report on them.

One of the past problems with care plans was that they were usually documented separately in the areas of perioperative services (preoperative, intraoperative, and postoperative). An ORIS allows a plan of care initiated preoperatively to be updated and evaluated throughout the perioperative visit. Automation through an information system allows nurses to work more efficiently and managers to allocate resources more effectively while improving patient care. Automated clinical documentation can provide work lists to standardize planned nursing interventions, generate legible documentation, and automate the selection of nursing care plans for designated groups of patients.

During the implementation of an ORIS, it is crucial to meet with clinical specialists and team leaders to develop a list of potential problems and automate the process of their documentation into the clinical record. The automation of documenting potential problems will decrease documentation time, increase face time with patients, and enhance nursing staff satisfaction with the documentation process. Actual problems are added individually.

**NURSING IN THE CORPORATE WORLD**

“So you’re not a nurse anymore?” This is the question most frequently asked of the industry nurse by friends, family, and coworkers who have heard of the transition from working in the surgical environment daily to working for a perioperative software company.

The adamant answer should be that you are and will always be a registered nurse! Your professional focus, however, has now changed. The personal reward in the daily life of a perioperative nurse was the knowledge that one made a difference in someone’s life with every nursing duty performed. Now, however, the work you do will have a positive long-term effect on patient care and improve the tools that perioperative nurses have to do their jobs more efficiently and effectively.

Say goodbye to the 7-to-3 shift with call! Your day can start as early as 6 AM and last until the airlines cooperate and you arrive home. Most corporate jobs require at least 50% travel, but 80% is hardly unusual. You may find yourself leaving on Sunday evening or early Monday morning and returning home on Thursday evening. Fridays are usually spent working remotely from home.

Your reward is the opportunity for travel and the people you meet along the way. Living in or near a city with a large airport and a number of flight options is essential. Becoming a frequent flyer on the airline of choice definitely has its perks. In addition to free tickets for family trips and vacations, there are potentially shorter security lines, upgrades to first class, and the ability to change flights at no cost to get home early. Selecting one hotel chain may add benefits such as upgrades and free nights.

If you love to travel, enjoy meeting new people, and look forward to a new challenge every day, working in industry may be the career you’ve always wanted.
PROJECT MANAGEMENT AND IMPLEMENTATION

Process improvement or redesign knowledge is essential for optimal project management and implementation of an ORIS. Many hospitals and organizations offer courses in quality improvement. These classes will provide insight into outcomes-based accountability that is focused on the core goal of health care, which is patient care. Using the PNDS allows reporting of outcome data to be used in the planning and improvement of patient outcomes.

A well-implemented and fully used information system will provide hospital administrators the information they need to achieve excellence in patient care. The accuracy and distribution of collected information are components of knowledge management used to monitor and improve processes that support an organization’s strategic objectives. Organizations should integrate an ORIS into their care processes.

Working With Vendors

Vendors need to gather essential knowledge of an organization’s technological environment and strategic objectives to assist with project management. Current clinical information systems (CISs) in place will allow for discussions of possible interfaces needed to improve interdepartmental communication. What information is currently automated, such as scheduling of cases, preference card documentation, and charging, will provide the vendor with opportunities to identify processes that work and those that need improvement.

In addition, business and clinical objectives must be outlined in the beginning so they can be evaluated after implementation and afterward on an ongoing basis. Hospitals must spend time defining and outlining clinicians’ and the organization’s needs to select and design an ORIS that is compatible with desired clinical processes.

Role of the Project Manager

The project manager for perioperative services provides leadership and management of the perioperative component of the hospital-wide CIS project. The role involves assessment of current processes, planning and creating a vision for redesign, managing implementation and adoption of redesigned processes, and training and education. Communication with perioperative services and CIS team members is essential in this role.

Implementation of perioperative software is often a catalyst for process redesign. The project manager may act as the leader of the implementation team of clinical and technological experts in developing an implementation plan. An implementation plan will include goals and objectives to be accomplished within a developed time line. Technologically speaking, hardware installation must be organized, and information security and data integrity must be assured.

System preparation will focus on standardization with data definitions, integration of nursing languages, and file and table building. A successful ORIS implementation depends on the alignment of people, processes, and technology. Typical information collected includes procedures, personnel, material usage, case times, counts, diagnosis, drugs, event times, and the outcome of nursing interventions. Computerized documentation forms can be customized to offer continuity in current documentation processes in addition to developing uniform content and compliance with standardized documentation and clinical practice protocols.

Guiding the implementation of an ORIS will include setting expectations with the project manager who will be responsible for the development of new policies and procedures related to security, downtime, work processes, training, and test procedures. Training will involve program development for managers, end users, and new employees as well as refresher courses. Collaboration with managers and staff will provide input into the continual development of up-to-date instruction and user support. Self-directed learning manuals and computer-based training modules offer convenience to busy staff members who are willing to use them to study at home.

Managing Change

New policies, new equipment, and decreasing length of stays are common changes in today’s health care environment. Nurses continue to be flexible and innovative in the face of change. Computers may push the limits of the surgical nurse’s flexibility related to varying aptitudes of computer technology. The project manager of an ORIS must be prepared for panic and rebellion while implementing the organization’s vision of automation. Recognition of that resistance to change will enable the leadership to move beyond the rebellion and consciously and constructively deal with the emotions associated with change.
**How Do I Get Started?**

The American Nurses Credentialing Center offers a certification in informatics for baccalaureate-prepared nurses. Three-day courses are available to assist in preparation for the certification exam. These courses also provide the basic information, terminology, and networking the nurse needs to begin the journey into the world of informatics. Exam topics may include:

I. System Life Cycle  
   A. System planning  
   B. System analysis  
   C. System design  
   D. System implementation and testing  
   E. System evaluation, maintenance, and support  

II. Human Factors  
   A. Ergonomics  
   B. Software and user interface  

III. Information Technology  
   A. Hardware  
   B. Software  
   C. Communications  
   D. Data representation  
   E. Security  

IV. Information Management and Knowledge Generation  
   A. Data  
   B. Information  
   C. Knowledge  

V. Professional Practice Trends and Issues  
   A. Roles  
   B. Trends and issues  
   C. Ethics  

VI. Models and Theories  
   A. Foundations of nursing informatics  
   B. Nursing and health care data sets, classification systems, and nomenclatures  
   C. Related theories and sciences  

**Resources**

American Nurses Association (ANA)  
http://nursingworld.org

American Nurses Credentialing Center (ANCC)  
http://www.nursecredentialing.org

American Nursing Informatics Association (ANIA)  
http://www.ania.org

AORN Perioperative Nursing Informatics Specialty Assembly  
http://www.aorn.org/Community/SpecialtyAssemblies/SpecialtyAssemblyGroups/PONISA

Nursing Informatics Online  
http://www.informaticsnurse.com

Online Journal of Nursing Informatics  
http://cac.psu.edu/~dxm12/OJNI.html

**Evaluation**

Evaluation of system implementation is crucial for improvement and strategic planning. Benefits related to return on investment, increased room utilization, enhanced communication, and patient safety should be documented. The benefits of implementing an ORIS are complex and extend beyond the individual patient, nurse, and perioperative unit. The CIS is part of a larger system of standardized documentation and provides a continuous flow of information. The goals of the CIS include being a repository for clinical data, providing clinical decision support, enhancing nursing practice, and validating clinical problem solving, all of which lead to improved patient care.

**Maximizing the Benefits of an ORIS**

The goals in using an ORIS are enhancing nursing practice, identifying clinical problem solving, and improving the quality of care. Additionally, a CIS is implemented to improve communication, standardize documentation, improve accuracy and accessibility of records, and increase compliance with agencies such as the Joint Commission, the US Department of Health and Human Services, and the US Food and Drug Administration.

Scheduling software allows facilities to manage their resources effectively to provide optimum patient care. The process scheduling can be standardized to improve information collection and increase room utilization. Clinical documentation minimizes documentation time while increasing face time with patients. Standardizing documentation will reduce operating costs and improve inefficiencies and inadequate communication.

Surgery software integrated with the CIS provides seamless access to complete patient information. All components of the plan of care may be standardized through the enterprise patient record. This complete record provides the nursing staff with the knowledge necessary to deliver appropriate, efficient, and cost-effective care. Incorporating PNDS into the ORIS provides the standardized data fields necessary to measure ongoing care and plan improvements and develop best practices.

**References**