



# A Model for Integrating Nursing Practice and Technology

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## Introduction

Nurses are continuously challenged to incorporate new technologies into their practice. While technology has always had a significant impact on nursing practice, nursing practice has not always been able to drive technological transformation within hospital environments. At SickKids, nursing involvement in technology planning and implementation has been formalized as Clinical Informatics and Technology (CIT) within the Centre for Nursing. Working from the premise that evidence-based practice should drive the process of acquiring, implementing, maintaining and upgrading technologies, CIT provides leadership, expertise and practical support to ensure the optimal integration of technology with nursing practice.



## The Model

The model that defines the integration of nursing practice and technology at SickKids includes the following:

- comprehensive hospital-wide practice reviews
- literature reviews
- surveys of other paediatric institutions in Canada, the U.S. and other parts of the world with comparable levels of health care
- development of evidence-based standards
- acquisition of the technology that best supports the desired practice
- simultaneous implementation of the new evidence-based standards and technology

## COMPLETED PROJECTS

### Patient Monitoring & Electronic Monitors

- Patient Monitoring Task Force and Patient Monitoring Practices Project Team
- Development of comprehensive Criteria, Policies, Guidelines and Procedures related to Patient Observation, Vital Sign Monitoring and Continuous Electronic Monitoring
- Purchase and deployment of 245 electronic, multiparameter monitors, central network and paging system across 13 patient care units and many ambulatory areas.

### Temperature Monitoring & Thermometers

- Temperature Monitoring Task Force
- Development of Temperature Monitoring Guidelines to provide standards for appropriate route and temperature measurement procedures
- Purchase and deployment of 515 thermometers across all areas of hospital with one thermometer per patient bedspot in all patient care areas

### Patient Safety & Equipment

- Prevention of Entanglement Task Force
- Development of two policy documents:
  - Prevention of Entanglement, Strangulation, Entrapment and Falls Related to Medical and Non-Medical Equipment
  - Inpatient Safety Checklist
- Purchase of foam bed-gap reduction devices
- Use of Medical Line Stabilizer (or modified corrugated oxygen tubing) to stabilize tubings and cords for at-risk patients

### Patient Care Refrigerators

- Refrigerator/Freezer Task Force – recommendations for safe storage of critical nutrition and medication products
- Assessment of patient care refrigerator and freezer requirements throughout hospital
- Policy, Guidelines and Procedures for Patient Care Refrigerators including guidelines for locking of expressed breast milk
- Purchase and installation of 165 patient care refrigerators and freezers in all inpatient and ambulatory areas

## CURRENT PROJECTS

### IV Therapy & Infusion Pumps

- IV Project Advisory Group and Core Project Team
- Mandate:
  - Review and revise IV Therapy Policies, Guidelines and Procedures
  - Purchase new IV pumps with Drug Error Reduction capabilities
- Underway: literature review, practice review, surveys of other hospitals
- Next Steps: Hospital site visits, RFI, RFP, clinical evaluation

### Beds & Therapeutic Surfaces

- Beds & Therapeutic Surfaces Committee and Core Project Team
- Mandate: to develop and maintain a bed and therapeutic surface strategy, including a management/replacement program; identification of patient needs and staff safety requirements
- Underway: literature search, practice review
- Next steps: surveys of other paediatric centres, bed demos

### Enteral Feeding & Feeding Pumps

- Research into feeding pumps which are suitable for all paediatric patients (from birth to 18 years )
- Next steps:
  - Development of working group to review current enteral feeding practices, conduct literature review and surveys of other hospitals
  - Revise current Policies, Guidelines and Procedures to reflect best practice
  - Clinical evaluation of new pumps

### Project Consultation

CIT is frequently approached to act as consultants on other hospital projects which involve introducing new technologies to nursing staff. Examples include:

- Chest Drainage System: met with vendors, conducted clinical evaluation, developed procedure guidelines, arranged implementation and education of new system for all hospital staff
- New Stock Replenishment System: work closely with Materials Management, vendor and Nursing staff to ensure smooth implementation

## Implementation & Education Strategies

- When new technologies are implemented, the emphasis is placed on the new or revised standards of practice and the technology is identified as a tool to support the practice
- Super User classes: to foster practice/technology experts in all patient care areas
- Nurse Educators: present practice changes to nursing staff in formats which work best in their areas
- Computer Based Training: available on the Nursing website
- Inservices and staff meetings: to share information about the projects and provide education
- Vendor clinical support: contracts include specific details about the expected support from the vendor during implementation to ensure night and weekend coverage

## Project Evaluation

- Project evaluations focus on staff compliance with new practice standards and the appropriate use of the new technologies to support desired practice
- Evaluations may include:
  - bedside audits
  - chart and flowsheet reviews
  - equipment audits
  - surveys of nursing and other staff
  - review of cost impact
  - review of implementation strategies to determine if changes are required for future projects

## Key Success Factors

- Executive support for projects
- Understanding of hospital culture to ensure implementation strategies are aligned
- Positive and collaborative relationship with personnel from a wide variety of departments
- Practice review and development of standards precedes technology acquisition
- Identification and consultation with all stakeholders in the development of new standards and acquisition of new technologies
- Comprehensive support for nursing staff during and after implementation of new practice guidelines and technologies
- Clear and mutual understanding of vendor responsibilities in all project phases