Improving Documentation, Efficiency and Communication via Clinical Information System

Maria Luisa M. Medina, RN
A/Clinical Director of Nursing for Special Care
Riyadh Military Hospital
Healthcare Informatics

• Is a blend of clinical science, computer technology, and information management;

• It involves the collection, storage, retrieval, and use of information for the purpose of providing care, solving problems, and making decisions (American Nurses Association, 2006; Thede, 2003)

• When functioning optimally, this potent combination of resources can make input easier and access readily available to other members of the healthcare team.
Implementing Clinical Information System in Critical Care

- Healthcare organizations continue to strive for solutions that can help them improve patient safety and reduce errors.

- Help nursing staff work more efficiently by reducing non-essential task, improving multidisciplinary communication, and increasing time spent with patients.

- Ensuring the success of a clinical information system in critical care requires careful selection of the right system to address the unique needs of the area.
Selecting the Right Clinical Information System

Important Components:

• Integrated patient data
• Point-of-care capabilities
• Medication Safety
• Automated alerts and reminders
• Integration with medical devices
• Streamlined workflow
• Ability to address standards of care and regulatory requirements
IntelliVue Clinical Information Portfolio (ICIP)

- Brings clarity to hectic workday with fast, flexible access to relevant patient information.
- Can view a patient’s entire chart anywhere
  - On PC
  - Wireless tablet
  - IntelliVue patient monitor (computer on wheels)
- Easy-to-use Windows-based interface makes it easier to access information using customized flowsheets, forms, automated transfer reports, and standard reports.
IntelliVue Clinical Information Portfolio (ICIP)
Patient Administration

- Gives details of active and discharge pts
- Search patients, admit, transfer and discharge
- Can be triggered externally using ADT interface
IntelliVue Clinical Information Portfolio (ICIP)

Flowsheet

- Combines clinical documentation of V/S, observations and interventions
- Tables and icons correlate the data chronologically
- Highlights values outside the limits defined for the pt
Lab Overview

• Clarifies/shows patient development by grouping and charting lab results graphically and numerically
Orders

• Facilitates orders for infusions, IV drips, and medications, as well as interventions, including diagnostics exams, physiotherapy, and nursing activities.

• Displays list of existing orders and guides the physician through the mandatory fields.
Order Overview

• Shows the orders already prescribed and those planned for the next 7 to 28 days.
IntelliVue Clinical Information Portfolio (ICIP)

Worklist

- Provides clinicians with a patient-by-patient task schedule.
- Shows orders, including meds and therapies, to be administered over the coming 12 hrs.
- Overdue orders are highlighted
Infusion Management

- Allows to assign pumps for prescribed orders using a drag-and-drop interface.
- Medication names from pumps support the match to orders.
- Icon associated w/ infusion orders on the flowsheet provide a quick indication of the pump status.
Notes and Forms

- Are documents for single or multiple use, and can supplement or replace paper-based forms
- Patient data available from other forms or flowsheets can be imported automatically
- Typical applications are admission forms, admission status, doctor’s exam, nursing notes, care planning and discharging pts.
Phrase Builder

• Speeds up the input of structured observations in free-text fields, such as notes and forms.
• A cascading hierarchy shows only relevant choices
• The structured observations can be edited freely
Diagnosis and Procedure Lists with Coding

- Document patient-specific diagnosis and procedures using free text, selecting from standard coding catalogues (ICD-9, ICD-10, ICPM) or from house catalogs in XML format
IntelliVue Clinical Information Portfolio (ICIP)

Patient Summary

- “Homepage” for the patient.
- Clinicians can get a good overview of the patient’s condition on a single screen.
Scores

- For quality management and controlling purposes
- Supports scores such as SAPS II, TISS 28, Norton, Braden and Glasgow Coma Scale.
- Scores are calculated automatically from parameters in the routine documentation.
Application Bundles

• Supports the adoption of evidence-based care guidelines.
• A structured set of practices that has been proven to improve patient outcomes.
• Provides a quick overview of incidences and compliance
• VAP, CLABSI, glucose mgt., sepsis resus & mgt
Calculation Engine

- Tool that can configure the calculations quickly and flexibly.
- i.e., hemodynamic calculations, calculations with intake/output volumes and results, length of stay, duration of mechanical ventilation, catheter day, clinic-specific scores, etc.
Decision Support

- Freely selectable summaries provide an overview of data relevant to decision making, i.e., hemodynamic or infection summaries.
Clinical Advisories

- Use configurable rules to sift through all the clinical data/information when predefined events occur to deliver specific clinical notifications.
- Advisories that appear in ICIP can be sent to a wireless device such as mobile phone or pager.
Event Documentation

- Can automatically display any patient monitoring event and document in the patient records.
Wound Documentation

- Support storage of digital images where it is important to document the treatment and healing.
IntelliVue Clinical Information Portfolio (ICIP)

Picture Documentation
- Integrates images from x-ray, CT, and other modalities into the pt records as a reference.
Discharge Summary

- Automatically brings together the most important information from the contents of the patient record.
- Ready to issue when the patient is transferred or discharged.
Printouts

• For medico-legal purposes a document with all of a patient’s details can be produced either as a hard copy or in electronic format (PDF file), with a patient index.
Information Access

• To enable flexible, direct and fast access to patient data during rounds and consultation, ICIP supports the use of wireless Tablet PCs, IPAD, etc.
IntelliVue Clinical Information Portfolio (ICIP)

Device Interface
Reflections on the economic efficiency of Patient Data Management Solution / CIS

• Processing Power presents the required information in easily comprehended ways at a single location to relieve stress of interpretation

Cost saving potential

Reducing the length of stay

- Pasternak A. Bedside computing: The ayes have it. Information Technology. 1991; Aug 12:30-32; LOS decrease from 3.00 to 2.72 days.
- Thompson DL. Reducing ICU costs with computerized tools. Healthcare Financial Management. 1995;49(6):66; Number of low risk patients reduced from 23% to 12%.

Reducing printing cost for flowsheets and forms


Reducing the overtime worked by nursing teams

- White and Hemby. Automating the bedside; Healthcare Informatics. 1997; 14(2); 68,70,74).
- Allan D., Davis M. A computerized CIS enhances bedside intensive care. Nursing Management 1992; 23(7); 112I-112P.
- Khal K, Ivancin L, Fuhrmann M. Identifying the savings potential of bedside terminals. Nursing Economics. 1991; 9(6); 391-400.
Cost saving potential

- Avoiding the need for manual transfer of ward statistics

- Changing processes to save cost
  - Hewlett-Packard Case Study: Deaconess Hospital.

- Improving the completeness and accuracy of clinical protocols
  - White and Hemby (Automating the bedside; Healthcare Informatics. 1997; 14(2); 68,70,74).
  - Khal K, Ivancin L, Fuhrmann M. Identifying the savings potential of bedside terminals. Nursing Economics. 1991; 9(6); 391-400.
  - Friend, T. Hospitals’ drug errors cost lives, drain resources. USA Today. 1997, Jan 23.
Cost saving potential

- Increasing efficiency
  - White and Hemby (Automating the bedside; Healthcare Informatics. 1997; 14(2); 68,70,74).
  - Church, G. Do computers really save money? TIME. 1998; Oct 12.
  - Hewlett-Packard Case Study: A pioneer in paediatric medicine.

- Increased job satisfaction among doctors and nurses
Clinical (Nursing) Information System

Benefits

1. More time spent with patient and less time at nurse station
2. Reduce paperwork/paper loss
3. Automated tools of nursing documentation
4. Uniform standards of nursing care are programmed (nursing process)
5. Cost reduction (fewer loss of charges)
6. Quality can be measured
“If there were one aspect of health care delivery an organization could work on that would have the greatest impact on patient safety, it would be improving the effectiveness of communication on all levels – written, oral, electronic.”

~ Richard K. Croteau, MD, executive director for strategic initiatives for the Joint Commission on Accreditation of Healthcare Organizations (JCAHO)
Change has a considerable psychological impact on the human mind. *To the fearful* it is threatening because it means that things may get worse. *To the hopeful* it is encouraging because things may get better. *To the confident* it is inspiring because the challenge exists to make things better.

King Whitney Jr.
Summary

• Support time-critical, complex clinical decisions,
• Improve the quality of patient treatment by better communication among the healthcare staff,
• Improve patient outcome,
• Control and improve processes continually,
• Control cost in drug- and material-intensive areas
• Save time which can be applied to improve patient care
Thank You