

# Identifying Requisite Informatics Competencies for Entry-level Practice

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# Brief background.....

- evolution of nursing informatics along with the definition evolution
- environmental scan
- competency frameworks
- nursing bodies & associations
- educational approaches
- recommendations and applied measurable outcomes

# Objectives

- To provide a definition of informatics competence.
- To do an environmental scan and identify relevant competencies.
- To make recommendations.

# Competence Defined

- “knowledge and skills to maintain the minimum standards required to perform at a designated level of practice” (CNA, 2003)
- ethical and appropriate performance (RNABC, 2003)
- practise safely and effectively
- ongoing process
- attitude and judgment

# Informatics Competence

- having the knowledge and the ability to interact effectively with computer technology and the skills to manage information for safe and effective practice
- judgment, relevant to nursing informatics, is represented by safe and appropriate use of information and communication technologies in practice
- a positive attitude towards information and communication technologies is critical for the successful adoption of such technology into the practice environment (Hebert, 2000)

# Informatics Competencies

- develop a positive culture
- integrated with general competencies include critical thinking, effective organizational skills, accountability for clinical outcomes and quality of care (Bellack & O'Neill, 2000)
- awareness of opportunities
- obligation it imposes.....

# Informatics Competencies

- Staggers, Gassert & Curran (2001) framework:
  - computer skills
  - informatics skills
  - informatics knowledge
- proposed fourth dimension
  - computer knowledge

# Clinical information systems (CIS):

- began use in the 1960's
- forces outside of nursing lead to their development
- failure to fulfill promises
- lack of nursing involvement
- require integrated systems



# CIS Competencies

- access systems, perform data entry and retrieve relevant data and information for patient care
- effective and influential in the design and development of future clinical-information systems, they need to appreciate how systems function and to understand their limitations (Hannah, Ball, & Edwards, 1999)
- informatics knowledge should be developed to enable interactive interfacing with systems
- informatics skills to plan care, identify trends.....

# Clinical decision support systems

## – CDSS:

- early as the 1950s interest in developing systems that could offer decision support
- medically focused
- limited in their application
- sophisticated computer applications that can support clinical practice

# CDSS Competencies

- require knowledge of the concepts of computerized decision support: data, information, how knowledge is inferred and how new knowledge is developed
- basic principles logic reasoning
- clinical-decision making integral
- positive attitude toward CDSS

# Database Technology

- considerable progress over last two decades
- support the processes of clinical research
- support the processes of outcome measurement and management
- leads to the development of nursing knowledge

# Database Technology Competencies

- skills that would allow them to access and retrieve data
- skill to develop a simple database or table
- pattern recognition in data
- aware of the sources of data
- aware that there are techniques, software and experts available to perform analyses

# Electronic Health Record

- primary concern of nursing is the representation of nursing needs and phenomena
  - ICNP®
  - ISO 18104
- security, privacy & confidentiality
- lack of widespread acceptance

# EHR Competencies

- appreciate the role and necessity of using standardized languages
- being able to use such terminologies
- appreciate issues of privacy and confidentiality
- digital data security issues
- understand the capabilities and uses of networks and wireless technologies and electronic data access and security
- knowledge and engagement will lead to acceptance

# Evidence-based Practice

- informatics competencies is one of the building blocks of an informatics infrastructure that could support evidence-based practice (Bakken, 2001)
- World Wide Web provides plethora of alternative sources of information
- effective use of research evidence and other information requires information retrieval and information management or literacy
- discern quality and to use the information effectively for optimal clinical decision making



# EBP Competencies

- the acquisition and development of skills to access a variety of electronic sources of information
  - appreciation of searchable terms and indexing
  - critical appraisal skills
- these skills are critical to promote development of nursing knowledge and lifelong learning

# Recommendations

- provide rules
- provide opportunities
- prepare practice environments
- provide mentors
- *prepare entry-level practitioners as active and capable users of health information technologies*

# Conclusions

- iterative process
- skills & knowledge of entry-level nurses
- attitude & judgment are key
- embody these skills and knowledge to support their development and acquisition of nursing knowledge
- paves the path for lifelong learning.....

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