Nurses: Are You Ready for Your New Role in Health Information Technology?

A 4-Part Educational Series
Sponsored by TNA and TONE

Acknowledgement: Contribution by TNA/TONE HIT Task Force members
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TNA/TONE Health IT Task Force

• Charge: Determine implications of health care informatics for nursing practice and education in Texas

• Include nationally-based Technology Informatics Guiding Education Reform (TIGER) initiative

TNA = Texas Nurses Association
TONE = Texas Organization of Nurse Executives
HIT Taskforce Membership

Composed of TNA and TONE Members from practice and academia

Task Force Members

– David Burnett
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– Mary Anne Hanley
– Susan McBride
– Molly McNamara
– Mary Beth Mitchell
– Elizabeth Sjoberg
– Mari Tietze

TNA

– Clair Jordan
– Joyce Cunningham
– Laura Lerma
Why Does HIT Matter Deep in the Heart of Texas?

Environmental Forces:
- Health Care Reform/ARRA
- Advanced Practice Nurse Roles
- EHR Incentives
- IOM/RWJF Report Advancing Health Care
- Informatics Nurse Standards by ANA

CNE for Practicing Nurses
Educational Content Dissemination
Awareness Campaign
Nursing HIT Curriculum Development

Embrace the Technology
Preserve the Art
For 300,000 Texas Nurses

Advisory Committee: Practice, Administration, Education and Vendors/Suppliers
Today’s Objectives

Discuss the role of nursing informatics within professional nursing practice models
• Review definition of nursing informatics
• Trends within nursing informatics

Describe opportunities for nursing practice within the scope of Health IT
• Electronic health record
• Practice settings
• Other systems
• Standardization of nursing processes
• Access to resources and information

Define ways for nurses to promote professional practice within nursing informatics
• Training and support
• Formal education opportunities
• Integrating clinical practice with technology
NURSING INFORMATICS ROLE
Definition: Technology

Example: cardiac monitor, hemodialysis machine, surgical lasers, laparoscopies, computer order entry system, etc.

Definition: Information Technology

information technology

n. (Abbr. IT)

The development, installation, and implementation of computer systems and applications.

Information technology (IT) or information and communication technology (ICT) is the technology required for information processing. In particular the use of electronic computers and computer software to convert, store, protect, process, transmit, and retrieve information from anywhere, anytime.

Example: computer order entry systems, computer documentation system, electronic data interchange [insurance billing], scheduling system, etc.

Definition: Nursing Informatics

The integration of nursing science, computer and information science, and cognitive science to manage communication and expand the data, information, knowledge and wisdom of nursing practice

Informatics Nurse’s Roles

- Project manager
- Educator
- Product developer
- Decision support/outcomes manager
- Systems analyst
- Consultant

- Programmer
- Web developer
- CIO, CEO, CNO
- Entrepreneur
- Researcher
- Sales and marketing
- Consumer advocate
- Advocate/policy developer
# Why Nursing Informatics

<table>
<thead>
<tr>
<th>Informaticist</th>
<th>Nurse Informaticist</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Medical – computer science and medical science for optimization of a medical electronic system, e.g., SNOMED</td>
<td>• Insure the nursing care delivery terms are adequately represented; click to information ratio mgt.</td>
</tr>
<tr>
<td>• Health – artificial intelligence applied to patient care</td>
<td>• Insure accurate representation of nursing content; alert fatigue mgt.</td>
</tr>
<tr>
<td>• EHR certified specialist – six month training toward EHR implementation</td>
<td>• Management of nursing modules and workflow</td>
</tr>
</tbody>
</table>

SNOMED = Systematized Nomenclature of Medicine -- Clinical Terms

Nursing Informatics is Nursing!

- NI is was recognized as a specialty by the ANA in 1992
  - 1st Scope and Standards of Nursing Informatics Practice published

- Meets Panniers and Gassert's (1996) attributes of a specialty in nursing
  - A differentiated practice
  - A defined research program
  - Organizational representation
  - Educational programs
  - A credentialing mechanism

The NLN recently released a critical position statement "in support for reform of nursing education to promote quality education that prepares a workforce capable of practicing in a healthcare environment where technology continues to increase in amount and sophistication."

Source: [www.nln.org](http://www.nln.org), (2008)

The Task Group on Faculty Development Related to Informatics Competencies goal was to create a web resource with information and links to materials that would assist faculty to develop competency.

**Quality & Safety Education for Nurses**
http://qsen.org


Source: www.nln.org
Texas-based Nursing Program Essentials

Informatics education needs are mentioned in the DECs

Differentiated Essential Competencies (DECs)
Of Graduates of Texas Nursing Programs
Evidenced by Knowledge, Clinical Judgments, and Behaviors

Vocational (VN)
Diploma/Associate Degree (Diploma/ADN)
Baccalaureate Degree (BSN)

The Texas Board of Nursing
October 2010

Source: http://www.bon.texas.gov/
ANA Position Statement on EHRs: Overview

• December 11, 2009
• Originated by Congress on Nursing Practice and Economics
• Purpose: Identifies principles and expectations addressing the design, development, implementation, and evaluation of the EHR in meeting the needs of all persons, communities, and populations.

AONE: Assume ownership of the process roadmap

- Articulate and define a vision and strategy
- Create an effective communication plan
- Identify, name and empower a multidisciplinary team
- Do not underestimate the complexity of process work
- Support and champion cultural transformation

Source: Judy Husted, RN, MS, NEA-BC, American Organization of Nurse Executives and Melissa Fitzpatrick, RN, MSN, FAAN, Past President, American Assn. of Critical-Care Nurses, Monday, March 1, 2010, HIMSS 2010 Annual Conference & Exhibition
HIMSS NI Position Statement
Transforming Nursing Practice through Technology & Informatics

- Partner with nurse executives to lead technology changes.
- Support the development of informatics departments.
- Foster the evolution of the Chief Nursing Informatics Officer role.
- Transform nursing education to include informatics competencies and demonstrable behaviours at all levels of academic preparation.

HIMSS NI Position Statement (cont.)

- Promote the continuing education of all levels of nursing, esp. in the areas of EHRs and health IT.
- Ensure that data, information, knowledge and wisdom form the basis of 21st century nursing practice by incorporating informatics competencies into practice standards in all healthcare settings.
- Facilitate the collection and analysis of interprofessional healthcare workforce data by ensuring data can be collected from existing heath IT systems.

Nursing Informatics Certification by ANCC*

- Standard I – Problem Identification
- Standard II – Alternative Identification
- Standard III – Develop Solution
- Standard IV – Implementation
- Standard V – Evaluation

* American Nurses’ Credentialing Center
Components of Practice: Transformation of Data to Knowledge

2011 NI Workforce Survey
Training as Nurse Informaticist

- Masters/PhD: 19% (2007), 11% (2004)
- Bachelors: 3% (2007), 0% (2004)
- None: 5% (2007), 41% (2004)

Data from the 2011 HIMSS Nursing Informatics Workforce Survey © HIMSS

## Competency Model

### TIGER Nursing Informatics Competencies Model

<table>
<thead>
<tr>
<th>Component of the Model</th>
<th>Standard</th>
<th>Source (Standard-Setting Body)</th>
</tr>
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<tbody>
<tr>
<td><strong>Basic Computer Competencies</strong></td>
<td>European Computer Driving License</td>
<td>European Computer Driving License Foundation</td>
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<tr>
<td></td>
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<td><a href="http://www.ecdl.org">www.ecdl.org</a></td>
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<tr>
<td><strong>Information Literacy</strong></td>
<td>Information Literacy Competency Standards</td>
<td>American Library Association</td>
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<td><a href="http://www.ala.org">www.ala.org</a></td>
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<tr>
<td><strong>Information Management</strong></td>
<td>Electronic Health Record Functional Model – Clinical Care Components</td>
<td>Health Level Seven (HL7)</td>
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<td><a href="http://www.ecdl.org">www.ecdl.org</a></td>
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</table>


OPPORTUNITIES FOR PRACTICE
Improving Nursing Care Through Technology

- Nurses do not want to be passive consumers of technology
- Nurses want devices that are integrated, voice activated, handheld, use biometrics, provide translation, are portable, are wireless, auto populate, and are “smart”
- Greater nurse satisfaction leads to greater patient satisfaction

Source: Cipriano, P., Nurse Scholar in Residence, IOM 2011
Organizing Framework for Clinical Information Systems

Opportunities for Prof Practice

Data and Information about Nursing Practice

Clinical Knowledge

System Utilization

Technology Adoption

Information System

Human Factors

Clinical Knowledge

Professional Nursing Practice

Technology

Adapted from Androwich et al. (2003). Clinical Information Systems: A Framework for Reaching the Vision.)
Conceptual Framework: Health IT Principles in Nursing Education

Health IT

Specialist
Implement
Nomenclature
Logarithms/Models
Development
System selection

Faculty/Educator
EMR, Integrated communication, Clinical equip, Med admin systems, Patient resources, IT role in healthcare, Nurse role in HCIT, Electronic grading, Online courses

Nursing Informatics
Nurse [caregiver]
EMR, Integrated communication, Clinical equip, Med Admin systems, Evidence-based practice, Patient resources, System selection feedback

Nursing/Healthcare Informatics Network

Adapted from Androwich et al. (2003). Clinical Information Systems: A Framework for Reaching the Vision.)
How do Informatics Nurses Impact the Nursing Process?

Because information management is integrated into nursing practice, there are now additional steps in the nursing process.

- Evaluation
- Assessment
- Implementation
- Planning

- Standardized Documentation
- Process Re-Engineering
- Information Management
- Research and Evidence Collection

Successful Automation

Successful implementation of Information Systems requires:

- Well designed systems that support Nursing Process within the culture of an organization and/or specific care providers
- Acceptance & integration of information systems into the regular workflow of nursing process & patient care
- Resources that can support the above

Implications for Informatics

Nurses must be supported by a healthcare environment that adequately enables their knowledge-based work as:

- Leaders in the Effective Design and Use of EHR Systems
- Integrators of Patient Information
- Full Partners in Decision Making
- Care Coordinators Across Disciplines
- Advocates for Engaging Patients and Families
- Contributors to Standardize EHR Infrastructure

Source: ANI Testimony to the October 2009 Forum on the Future of Nursing

2011 NI Workforce Survey
Top Three Job Responsibilities

- Nursing Education: N/A (2011), N/A (2007), N/A (2004)

Data from the 2011 HIMSS Nursing Informatics Workforce Survey
© HIMSS

TIGER Community: Recommendation

An example of recommendations for practitioners:
- The requirements process should be owned by clinicians, not the information technology (IT) department or the vendor.
- Complete a workflow analysis for each user/department touching an electronic health record.

Different Views of How it Works

Interfaced.

Integrated.

Source: Jim Turley, PhD, RN, University of Texas Houston School of Biomedical Informatics, Gulf Coast Regional Extension Center
Multidisciplinary

Of or relating to the study of one topic, involving several subject disciplines
(English Dictionary)
To work effectively these features need to work in tandem and be well designed by effective multi-disciplinary teams.

Multi-disciplinary teams' Role is Critical to the Success of these Systems.

Nursing’s Role is Critical to the Success of these Systems.

For this activity, what skills are needed by the NI?
1. **Regional Extension Centers (RECs)** ($667 million total for the next 2 years—62 centers. 100,000 providers)

   - To establish a collaborative consortium of Health Information Technology Regional Extension Centers (Regional Centers) facilitated by the national Health Information Technology Research Center (HITRC).

   - To offer providers across the nation technical assistance in the selection, acquisition, implementation, and meaningful use of an EHR to improve health care quality and outcomes.

2. **State Grants to Promote Health Information Technology**

   - To promote health information exchange (HIE) that will advance mechanisms for information sharing across the health care system.

   - Texas Health Services Authority (THSA) received ONC grant dollars ($28 million) to build the HIT exchange across Texas and to connect to the national hub (NHIN).

3. **Information Technology Professionals in Health Care (Workforce Program):**

   - To fund the training and development of a workforce that will meet short-term HITECH Act programmatic needs.

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For this activity, what skills are needed by the NI?
PROMOTE PROF. PRACTICE
Computers Informatics Nursing Journal

March 2012

- Evaluating the Barriers to Point-of-Care Documentation for Nursing Staff
- Updating and Normalization of the Management Minimum Data Set Element 6: Patient/Client Accessibility
- Comparative Study of Baccalaureate Nursing Student Self-Efficacy Before and After Simulation
- Evaluation of a Hands-free Communication Device in an Acute Care Setting: A Study of Healthcare Providers’ Perceptions of Its Performance
- Healthcare Information Technology and Medical-Surgical Nurses: The Emergence of a New Care Partnership

Source: http://journals.lww.com/cinjournal/pages/default.aspx
American Nursing Informatics Association-Capital Area Roundtable in Nursing

Source: http://www.ania-caring.org/
ANIA – CARING 2012 Conference

Programmatic Tracks (Orlando Florida, April 12 – 14, 2012)

• Education and Career Development
• Adoption and Optimization Strategies/Improving Implementations
• Measuring and Monitoring for Outcome Attainment
• Innovative Achievements
• Leadership Development in Nursing Informatics

Source: http://www.ania-caring.org/
Pilot(s): Virtual Learning Environment For Partnership Entities

Integration of Nine TIGER Collaboratives Content

Competencies Collaboratives

- Education & Faculty Development
- Staff Development
- Leadership
- Usability & Clinical Design
- Standards & Interoperability
- Health IT Policy

Consumers and PHR Collaboratives

Virtual Learning Environment Pilot

Source: http://www.thetigerinitiative.org/docs/TIGERVLEOverview.pdf
Formal Nursing Informatics Education

Examples of consistent domains identified for specialty courses

- Systems Life Cycle
- Information Technology
- Information Management & Knowledge Generation
- Professional Practice Trends & Issues
- Management & Leadership
- Models and Theories
- Human Factors

Source: Dr. Susan McBride (2011)
Proposed Curriculum

(Five semesters: 39 semester credit hours)

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Clinical Hours</th>
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<tbody>
<tr>
<td>SEMESTER I</td>
<td>Graduate Statistics</td>
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<td>0</td>
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<tr>
<td></td>
<td>NURS 5330 Theories and Therapies</td>
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<td>SEMESTER II</td>
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<td>NURS 5371 Professional Nurses Issues and Public Policy</td>
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<td>NURS 5376 Best Practices for Safe Healthcare Systems</td>
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<td>NURS 53## Health Information Technology Systems Life Cycle</td>
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<td>SEMESTER V</td>
<td>NURS 53## Managing and Leading in Informatics</td>
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<td>NURS 63## Informatics Practicum</td>
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<td><strong>Total Program</strong></td>
<td></td>
<td><strong>39</strong></td>
<td><strong>522</strong></td>
</tr>
</tbody>
</table>

Source: Dr. Susan McBride (2011)
Resources and References

- Alliance for Nursing Informatics
  http://www.allianceni.org
- American Nurses Association
  http://www.nursingworld.org
- American Nurses Credentialing Center
  http://www.nursecredentialing.org/
- CPHIMS
  http://himss.org/ASP/certificationHome.asp
- HIMSS Nursing Informatics Community
  http://www.himss.org/ni
- TIGER Web Site [New]
  http://www.thetigerinitiative.org/default.aspx

NI Community Tools

- NI Toolbox & NI Knowledge Repository (website)  
  www.himss.org/ni
- NI Community (website)  
  www.himss.org/nursing
- List serv  
  NI@LIST.HIMSS.ORG
- Webex (conference calls)
- Wiki (online workstation)  
  http://himssni.pbworks.com/
- NI Facebook  
  http://www.facebook.com/profile.php?ref=name&id=100000434371377
- Twitter: #HIMSSCI

- Clinical Informatics RSS feed  
  http://www.himss.org/ASP/himssNewsRSS.asp
- Clinical Informatics Insights  
  http://www.himss.org/ASP/topics_FocusDynamic.asp?faid=305
- HIMSStv Nursing Informatics Channel  
- HIMSS Blog  
  http://blog.himss.org/
- Forum – coming soon!

HEALTH IT NETWORKING FOR NURSING
Texas Learning Consortium

Source: Image is from Office of National Coordinator for Health IT (ONC) Website
<table>
<thead>
<tr>
<th>CNE Programs</th>
<th>Survey of Nurses’ Experience Using their EHRs*</th>
<th>Packaged Nurse Informatics Content with Support of Faculty for Deployment</th>
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<td>4 Webinars</td>
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<tr>
<td>1 Face-to-Face</td>
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</tr>
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</table>

*TIGER III Initiative Content/Collaboration

* Smith et al. (2011). Developing and testing a clinical information system evaluation tool: Prioritizing modifications through end-user input. *Journal of Nursing Administration*, 41(6), 252 – 258.
Contact

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