

Hot Off the Press: The 2007 Scope and Standards for the Informatics Nurse Specialist



Nancy Staggers, PhD,
RN, FAAN

This work was done in under the guise of
The American Nurses Association

Presenter Affiliations

- Nancy - Associate Professor, Informatics, University of Utah, Salt Lake City, Utah
 - nancy.staggers@hsc.utah.edu

Current Work

- 27 panel members across industry and academe
 - Increased participation by INs from vendors
- Essentially retained the 2001 definition and goal
- Expanded metastructures, included a new concept
- Moved away from roles to functional areas
- Reconceptualized “boundaries” to integration of NI
- Created a matrix for NI competencies to integrate numerous publications
- Greatly expanded discussion about the future of NI
- Expanded the ethics discussion

Panel Chair and Section Leaders

- **Nancy Staggers, NI panel chair**
- **Carol Bickford, ANA Representative**
- **Section Leaders**

	Area
– Paulette Fraser	Metastructures
– Tina Dieckhaus	Integration of NI, tenets
– Sheryl LaCoursiere	Functional areas
– Seth Wolpin	NI Competencies
– Nancy Staggers	
– Josette Jones	
– Sharon Sweeney-Fee	Ethics
– Nancy Staggers	The Future of NI
– Rosemary Kennedy	Standards
– Dawn Weathersby	

ANA NI Panel Members

- Michele Calogero, MSN, RN
- Margaret F. Budnik, DM, RN
- Diane Castelli
- Melissa Christensen
- Mary F. Clarke, PhD, RN, BC
- Tina Dieckhaus, BSN, RN, BC
- Josette Jones, PhD, RN, BC
- Sally Kellum, MSN, RN-C
- Kathleen Krichbaum, RN, PhD
- Angela Lewis, BSN, RN, BC
- Teresa McCasky, MBA, BSN, RN
- Ramona Nelson, RN, PhD, FAAN
- Agnes Padernal, RN, PhD
- Amy Peck, RN
- Mollie R. Poynton PhD, APRN
- Loretta Schlachta-Fairchild, RN, PhD
- Norma Street, RN, MSN
- Lisa Wynn, MA, RN, BC

Overview of the Process

- Group began work in Dec 2005
- Draft available to the public early April until Mid-May 2007
- Large number of comments collated
 - Divided into general and actionable comments
 - Metastructures and functional areas received the most comments
 - Document being edited now based upon comments


Purpose of the Document

- Clarified the focus on the Informatics Nurse Specialist
 - The RN prepared at the graduate level in an informatics-related field
 - Scope, practice, standards for this level
- Informatics nurse
 - A generalist with informatics experience or interest
 - Mentioned in the document

Overview of the Presentation

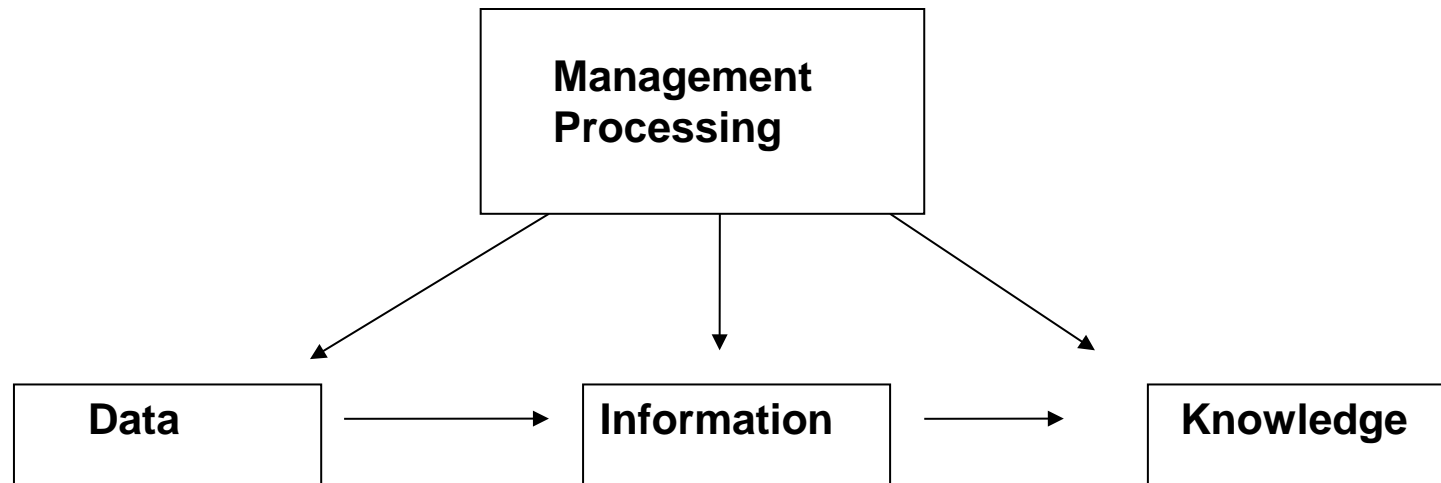
- Metastructures
- Definition and Goal of NI
- Tenets, integrated nature of NI
- Functional areas (formerly NI roles)
- NI Competencies
- Ethics
- The Future of NI

Metastructures in Nursing Informatics

- Data, Information, Knowledge, Wisdom
 - Sciences underpinning NI
 - Tools & Taxonomies
 - Concepts from Information and Computer Sciences
 - Human-computer interaction
 - Phenomena from Nursing
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NI Metastructures – Data, Information and Knowledge

- Initial work by Graves & Corcoran (1989)



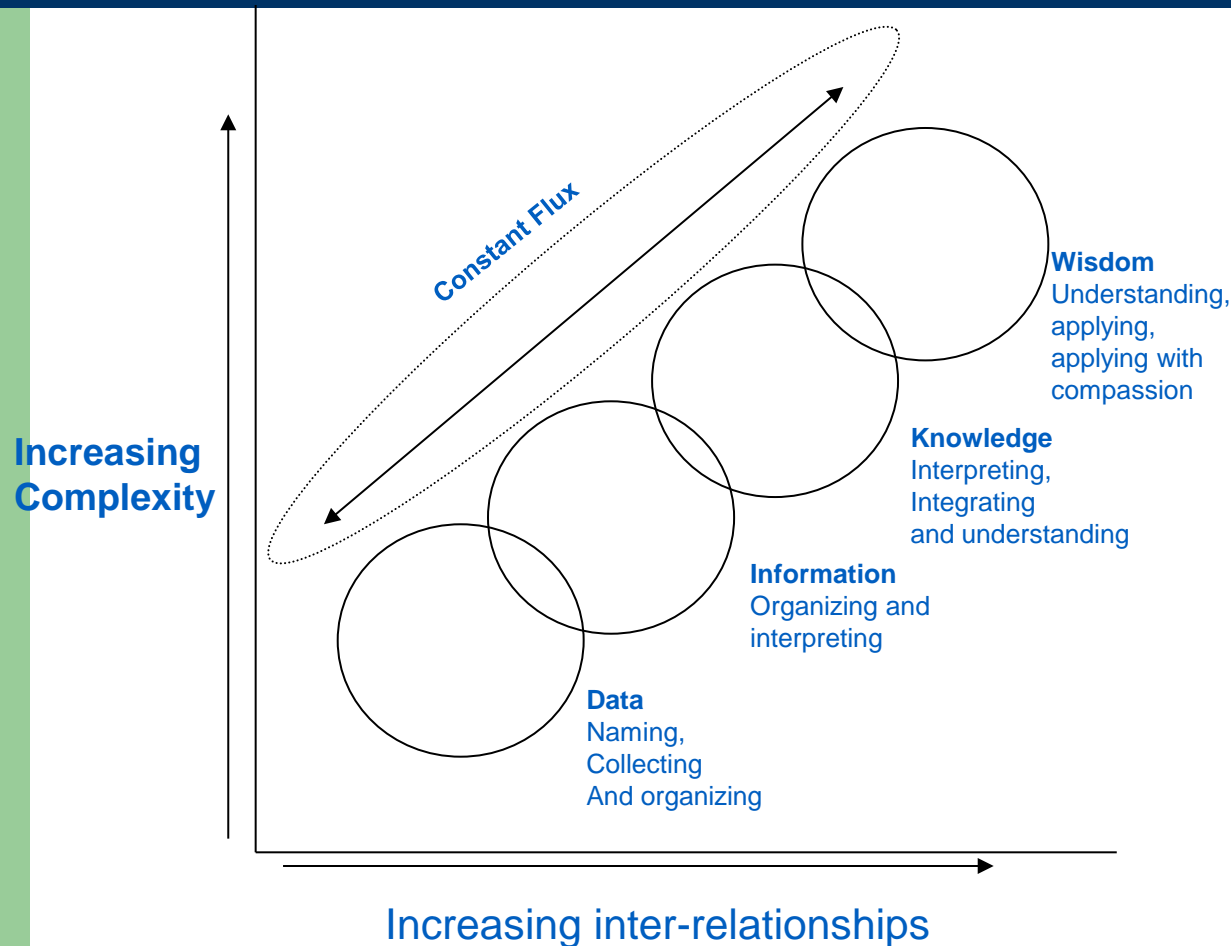
Wisdom – A New Construct for NI

- Blum introduced data, information and knowledge in the mid-1980s
- Wisdom added since then (information science)
 - Use of knowledge and experience to manage and solve human problems
 - When and how to apply knowledge to complex problems
 - Knowledge focuses on what is known; wisdom focuses on appropriate application of knowledge

Wisdom – A New Construct for NI

- Why include wisdom?
 - Initial work limited to objects processed in the 1980s
 - Wisdom expands the model away from a technology-constrained model to interaction of humans and computers
 - Allows for a new domain of questions and issues
 - The design of DSS to support human-information processing
- Comments from readers were positive about this new concept

Wisdom – A New Construct for NI



Public Comments about Wisdom

- “It’s about time! What took so long?”
- “I’m delighted wisdom is included.”
- “Wisdom is a money-maker for NI.”
- It’s good (to include wisdom).
 - How can it be measured?
 - How is it differentiated from professional judgment?

Sciences Underpinning NI

- Nursing science
- Information science
- Computer science
- Others?
 - Cognitive (Turley, 1996)
 - Psychology, social-psychology
 - Organizational, political
 - Decision science
 - Depends upon the issue at hand

Tools Used by NI - Taxonomies

Data Element Sets		
1. NMDS Nursing Minimum Data Set Currently Recognized	All Nursing	Clinical Data Elements
2. NMMDS Nursing Management Minimum Data Set Currently Recognized	All Settings	Nursing Administrative Data Elements
Interface Terminologies		
3. CCC Clinical Care Classification Currently Recognized	Home Care	Diagnoses, Interventions, and Outcomes
4. ICNP® International Classification of Nursing Practice Currently Recognized	All Nursing	Diagnoses, Interventions, and Outcomes
5. NANDA NANDA International Currently Recognized	All Nursing	Diagnoses

Tools Used by NI – Taxonomies

Interface Terminologies, cont.	Setting Where Developed	Content
<u>6. NIC</u> Nursing Intervention Classification Currently Recognized	All Nursing	Interventions
<u>7. NOC</u> Nursing Outcome Classification Currently Recognized	All Nursing	Outcomes
<u>8. OMAHA SYSTEM</u> Omaha System Currently Recognized	Home Care, Public Health, and Community	Diagnoses, Interventions, and Outcomes
<u>9. PCDS</u> Patient Care Data Set Retired	Acute Care	Diagnoses, Interventions, and Outcomes
<u>10. PNDS</u> Perioperative Nursing Data Set Currently Recognized	Perioperative	Diagnoses, Interventions and Outcomes

Tools Used by NI – Taxonomies

Multidisciplinary Terminologies		
<u>11. ABC</u> Alternative Billing Codes Currently Recognized	Nursing and Other	Interventions
<u>12. LOINC®</u> Logical Observation Identifiers Names and Codes Currently Recognized	Nursing and Other	Outcome and Assessments
<u>13. SNOMED CT</u> Systematic Nomenclature of Medicine Clinical Terms Currently Recognized	Nursing and Other	Diagnoses, Interventions, and Outcomes

Concepts and Tools from Information and Computer Science

- Information technology
- Information structures
- Information management
- Information communication

Human-Computer Interaction Concepts

- HCI deals with people, software applications, (information) computer technology and the ways they influence each other

Dix, Finlay, Abowd, & Beale et al., 2004

Human Factors

**Human-Computer
Interaction**

Ergonomics

Usability

Human-Computer Interaction


- Critical to the successful design, implementation and use of systems in health
- Virtually ignored in healthcare until the early 2000s
- Now receiving due attention
 - Usability labs
 - Research streams
 - Human factors being touted as an area to help solve errors in health

Phenomena from Nursing

- Metaparadigm of nursing
 - Nurse
 - Person
 - Health
 - Environment
 - Decision-making – retained from 2001 document

Definition for Nursing Informatics

Includes metastructures, info and computer science concepts as well as phenomena of interest to nursing



Definition for Nursing Informatics – Not Substantially Changed from 2001

- Nursing informatics is a specialty that integrates nursing science, computer science, and information science to manage and communicate data, information, knowledge and *wisdom* in nursing practice.
- Nursing informatics supports patients, nurses, and other providers in their decision-making in all roles and settings. This support is accomplished through the use of information structures, information processes, and information technology.

Goal of Nursing Informatics

- The goal of nursing informatics (NI) is to improve the health of populations, communities, families, and individuals by optimizing information management and communication. This includes the design and use of informatics solutions and/or technology to support all areas of nursing.

Public Comments

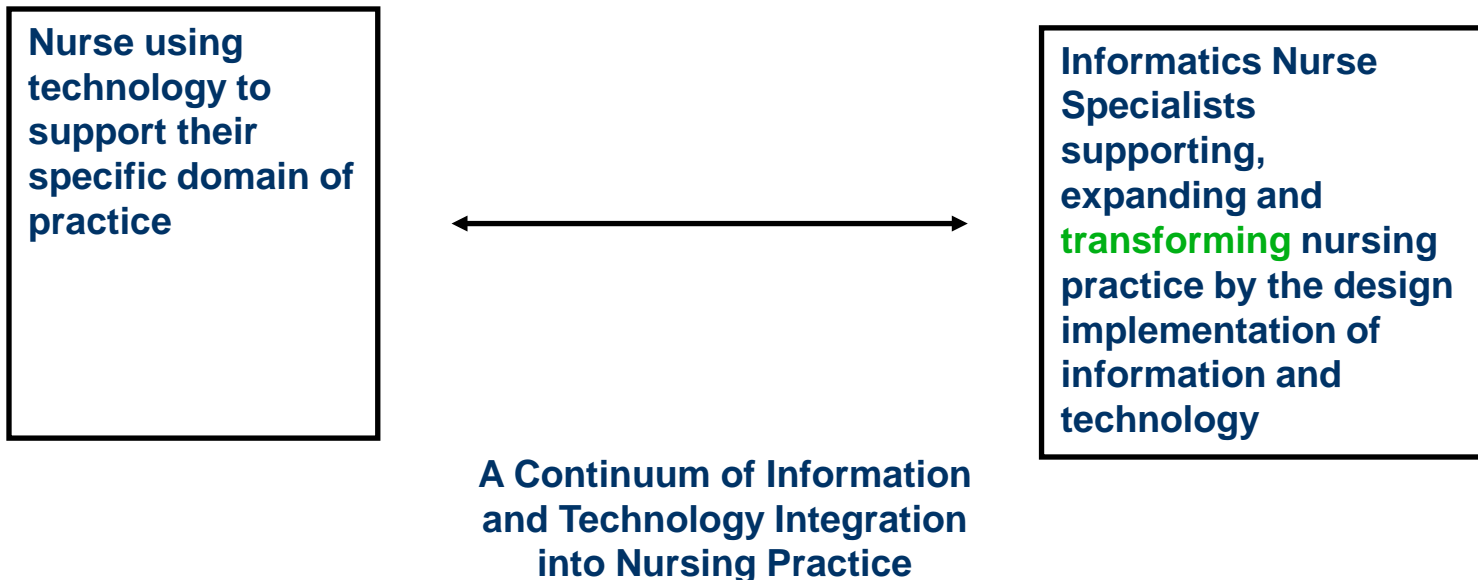
- Change “patients” to “consumers.” We are concerned that the document has a focus on illness versus wellness
 - The term patients was retained and an explanation was included about the use of the term
- Change “interdisciplinary” to “multidisciplinary”
- Change “multidisciplinary” to “interdisciplinary”
- Change both to “inter-professional”
- We used a new term “cross-disciplinary” before it accrues terminology baggage

From Boundaries to Integration

- Previous documents focused on distinguishing NI from:
 - Other nursing specialties
 - Other informatics specialties
- Focus now on:
 - Integration of technology and information needs in all aspects of nursing
 - Multidisciplinary nature of informatics teams

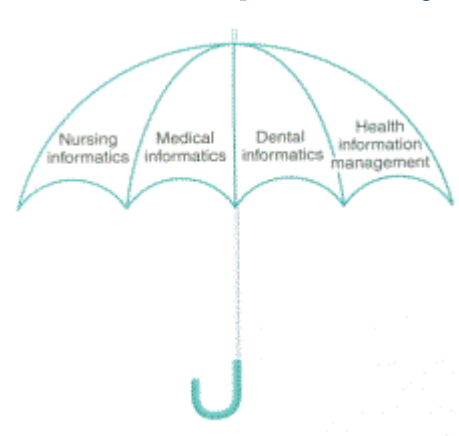
Integration of Informatics in Nursing

- Propose the concept of a Continuum of Information and Technology in Nursing Practice

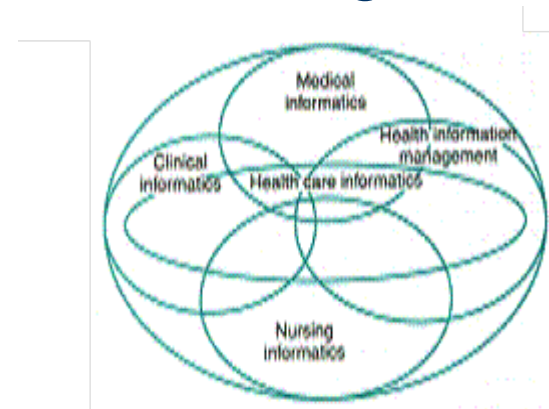


Integration of NI in Health Care Informatics

- Explored different conceptual models of interdisciplinary nature of Nursing Informatics



**Health Care Informatics
Specialist: Umbrella Model**



**Health Care Informatics
Specialist: Overlapping
Model**

NI Functional Areas

Changed approach from NI roles to NI functional areas, common to NI specialists to cross multiple roles

Variety of Roles in Nursing Informatics

- HIMSS, 2004 – categorizes the work of informatics nurses by job responsibilities
- Nursing Informatics Job titles database (Newbold, 2006)
 - Contains >6000 job titles.
 - The top 30% contained 50 unique titles
- Expanding numbers of job titles, responsibilities
- Job responsibilities overlap
- Section now organized related to functional areas versus formal job titles or roles

Functional Areas

- Examples of functional areas:
 - Administration
 - Analysis
 - Compliance and Integrity Management
 - Consultation
 - Coordination, Facilitation and Integration
 - Development
 - Education and Professional Development
 - Policy Development and Advocacy
 - Research and Evaluation

Public Comments

- You should include the role of implementing learning management system, NI web developer, patients' uses of blogs...
 - We emphasized information, processes and overall functions of the INS
 - Little emphasis on technologies, especially current technologies

Associating with Telehealth

- Spirited discussion related to the inclusion of Telehealth in Nursing Informatics
 - Continuum of nursing functions associated with Telehealth ranging from purely informatics role to purely clinical practice
- Telehealth is an example of an integrated position
- More of these positions will occur in the future

Informatics Competencies

- Intersection of informatics competencies and NI functional areas
- New matrix
- Competencies and metastructures

Informatics Competencies

- Need large lists to define informatics competencies for nurses in all settings
- Substantial work on defining competencies completed in the early 2000s
 - Staggers, Gassert & Curran (2000, 2001, 2002)

New Informatics Competencies

- Nurse Practitioners (Curran, 2003)
- Beginning nurse (Barton, 2005; Desjardin et al., 2005)
- Educational areas (McNeil et al., 2005; Jiang et al., 2004)
- Patient safety, expanded nursing practice (Androwich et al., 2003)
- NI knowledge, IT, organizational, others (Garde et al., 2005)
- Leadership (HIMSS, 2005)

Matrix – NI Functional Areas and Informatics Competencies

- Organized around these areas
 - Computer literacy
 - Information literacy
 - Professional development
- Defines areas of emphasis according to functional areas within an informatics roles
 - A NI consultant emphasizes informatics competencies for systems selection, systems implementation, management, training, etc.

Ethics

- Guided by Code of Ethics for Nurses (ANA, 2001)
- IMIA Code of Ethics
- Specialty specific ethical guidelines

Key Ethical Guidelines

- Guide decision making for “gathering, processing, storing, communicating, using, manipulating and accessing information.”
- International Medical Informatics Association (IMIA)
 - Privacy and disposition
 - Legitimate Infringement
- Autonomy, non-maleficence and justice

Integrated Healthcare Ethics and Business Practices

- Share business practices found in the corporate world
- Have differing ethical approaches to the same practice
 - Confidentiality of e-mail
 - Licensed staff for review of web site content

Ethics and Patient Information

- Patient access to their own health information
 - Autonomy – their information
 - Medical oversight and review
- Knowledge discovery, clinical data repositories (CDR) and data warehouses
 - Regulating data access
 - Insuring ethical use of data

The Future of Nursing Informatics

- Nursing and NI Roles
 - Technological
 - Healthcare delivery
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Trends for the Role of Nurses and Informatics

- Lines blurring for INNs and other nurses
 - Telehealth nurses
 - Other nurses may be considered NI in the future
- Levels of informatics competencies escalating
- Globalization of NI
- Boundaries less distinct between NI and other health informatics professionals

Technological Trends

- Nanotechnology – nano = 1 billionth of a meter
 - Functions – monitoring, treatments, diagnostics
 - Sensing drug levels, delivering treatments, monitoring conditions
- Tools for populations, public health
 - Identifying and tracking disease outbreaks
 - Bioterrorism threats
 - New tools available and more needed

Technological Trends

- Devices
 - Ultra-Mobile Personal Computers
 - Integrated technologies, e.g. iPhone
- Robotics
 - DaVinci example in an Operating room
- Knowledge representation for large databases
- Genomics
 - Personalized care, tailored care

Technological Trends

- New educational delivery methods
 - Simulation, expanded simulation with EHRs
 - New models for education in progress and needed
- National or even global educational delivery
 - Political barriers in place now
 - Need new incentives and models

Technological Trends

- Impact of the increased reliance on technology
 - Continuous uptime a mandate
- Implications for INSs
 - Systematic method for awareness and evaluation of new trends
 - Strategies for safe, effective incorporation
 - Advocate for ethics, uptime, eliminating the digital divide

Trends in Healthcare Delivery and Regulatory Requirements

- Widely expanded EHR, EMR installations
- Increased regulatory requirements
 - HL7 - interoperability
 - The Joint Commission – evolving requirements, e.g., med reconciliation
 - FDA – RFID and bar coding standards
 - IEEE P2407 – personal health record standards
- External partnerships
 - Quicken and PHRs

Trends in Healthcare Delivery and Regulatory Requirements

- Implications for INs
 - 18-24 month installation model not tenable
 - INs at centerstage for installations, translating new regulatory requirements
 - IN will design new tools for analytics
- Futures section well received according to comments from readers

Summary

- Broad range of comments
 - US and Canada
 - About 836 lines of actionable comments
 - Each carefully considered
- Extremely well received
 - “Wow! What a document!
 - “What an excellent and incredibly thorough document!”
 - “Major step forward.”

Next steps

- Internal ANA review (e.g., Standards Committee)
- Approval by the ANA Congress
- Publication projected for late fall 2007

Discussion, Questions

