



Statement to the Robert Wood Johnson Foundation Initiative  
Future of Nursing: Acute Care, focusing on the area of Technology  
October 19, 2009

**Alliance for Nursing Informatics (ANI)**

*Sponsored by AMIA & HIMSS*

**ANI Member Organizations**

- American Medical Informatics Association (AMIA)
- American Nursing Informatics Association (ANIA)
- Association of periOperative Registered Nurses (AORN)
- Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN)
  - CARING
- Center for Nursing Classification and Clinical Effectiveness (CNC)
- Central Savannah River Area Clinical Informatics Network (CSRA - CIN)
  - Cerner Nursing Advisory Board
- Connecticut Healthcare Informatics Network (CHIN)
  - Croatia Nursing Informatics Association (CroNIA)
- Delaware Valley Nursing Computer Network (DVNCN)
  - Health Informatics of New Jersey (HINJ)
- Healthcare Information and Management Systems Society (HIMSS)
  - Informatics Nurses From Ohio (INFO)
  - MEDITECH Nurse Informatics program
- Midwest Nursing Research Society - NI Research Section (MNRS)
  - Minnesota Nursing Informatics Group (MINING)
    - NANDA International
- New England Nursing Informatics Consortium (NENIC)
- North Carolina State Nurses Association Council on NI (NCNA CONI)
  - Puget Sound Nursing Informatics (PSNI)
    - SNOMED CT Nursing Working Group
- South Carolina Informatics Nursing Network (SCINN)
  - Utah Nursing Informatics Network (UNIN)

*Affiliated with the American Nurses Association (ANA) &  
American Nurses Credentialing Center (ANCC)*

ANI Co-chairs: Joyce Sensmeier MS, RN-BC, CPHIMS, FHIMSS  
[jsensmeier@himss.org](mailto:jsensmeier@himss.org) & Bonnie Westra, PhD, RN [westr006@umn.edu](mailto:westr006@umn.edu)



**T**he Alliance for Nursing Informatics (ANI) is a collaboration of organizations that enables a unified voice for nursing informatics. ANI represents more than 5,000 nurse informaticists and brings together 24 distinct nursing informatics groups in the United States. ANI crosses academia, practice, industry, and nursing specialty boundaries and works in collaboration with the nearly 3 million nurses in practice today.

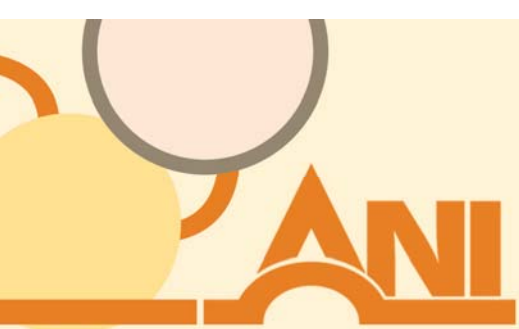
Nurses constitute the largest single group of healthcare professionals, including experts who serve on national committees and interoperability initiatives focused on policy, standards and terminology development, standards harmonization, and electronic health record (EHR) adoption. In their front-line roles, nurses have a profound impact on the quality and effectiveness of healthcare and thus must be adequately supported in their knowledge work by EHR systems. Nurses are key leaders in the effective use of information technology to impact the quality and efficiency of healthcare services.

Nurses advocate for patient-centric care and promote healthcare environments that understand the need for inclusion and engagement of patients, families and care providers. Further, nurses are active in research, education, implementation, integration and optimization of information systems throughout the healthcare system. In that spirit ANI offers the following statement to the Robert Wood Johnson Foundation Initiative: Future of Nursing: Acute Care, focusing on the area of Technology.

### **Recommendations:**

ANI's position is that "meaningful use" of health information technology (HIT), when combined with best practice and evidence-based care delivery, will improve healthcare for all Americans. This is an essential foundation for the future of nursing and informatics nurses must be engaged as leaders in the effective use of information technology to impact the quality and efficiency of healthcare services. Thus, 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 Information
- ✓ Full Partners in Decision Making
- ✓ Care Coordinators Across Disciplines
- ✓ Experts to Improve Quality, Safety, Efficiency and Reduce Health Disparities
- ✓ Advocates for Engaging Patients and Families
- ✓ Contributors to Standardize Infrastructure within the EHR
- ✓ Researchers for Safe Patient Care
- ✓ Educators for Preparing the Workforce



The membership organizations of ANI are well positioned to assist with future development efforts to support the future of nursing, and we welcome the opportunity to collaborate with you on this important endeavor.

## **Leaders in the Effective Design and Use of EHR Systems**

In order to achieve our nation's healthcare reform goals, we must leverage sources of patient care technologies and information management competence to ensure that our investment in HIT and health information exchange is implemented properly and effectively over the next five years. Informatics nurses contribute working knowledge of how life cycle change and evidence-based practices designed within information systems can support and enhance clinical processes and decision-making to thereby improve patient safety and outcomes. Informatics nurses, with their combined clinical, continuous quality improvement and change management skills, and HIT experience are more likely to recognize risks and help ensure that HIT does no harm. These skills highlight the value of informatics nurses—their expertise truly translates into the adoption of more effective, higher quality applications that will help us realize the desired outcomes for patients in healthcare systems.

For decades nurses have proactively contributed resources to the development, use, and evaluation of information systems, and have assumed national leadership roles in today's rapidly changing healthcare environment. Sharing knowledge gained from these endeavors across the broader domain of nursing and healthcare will serve to advance the national health information infrastructure agenda. Broad-based nursing involvement at all levels in setting this agenda is essential if we are to achieve improved efficient and effective patient care.

### Informatics Nurse as Leader

Brings working knowledge of how Information technology can support and improve upon clinical processes and decision making to enhance clinical practices and patient outcomes

Nurses are the "glue" of the acute care system. They are also the care givers closest to the patient in acute care. As such, nurses must be supported by excellent EHRs and other technologies. It is informaticists who translate and affect EHRs in acute care. We recommend that funding be focused on the partnership between nurses and informaticists to determine the future of nursing. The use of technology and EHR systems should support decision making for nurses that integrates data capture into workflow processes and enhances ready access to information and knowledge at the point of care. Additionally, funding should focus on user-centered design principles and usability methods in any technology or information system that impacts nurses. Informatics nurses are integral to affecting these principles and methods.



In a recent study of the value and impact of informatics nurses, the Healthcare Information and Management Systems Society found that these informatics nurses greatly impact patient safety, workflow, and end user acceptance. These findings<sup>1</sup> suggest the informatics nurse is a driver for quality care and acts as an enabler of clinician adoption within their organizations. Through ANI's efforts and those of its members, nursing informatics experts are perceived as valued resources for providing expert testimony and serving on national committees and initiatives focused on HIT policy, standards harmonization, and EHR adoption and certification. Informatics nurses play a crucial role in guiding the effective use of technology and incorporating content for nurses and other clinicians within acute care and across a wide variety of settings and areas of technology innovation. It is essential to the future of nursing that this specialty is leveraged to ensure that patient care needs and those of our profession are addressed in the evolving transformation of our healthcare system.

### **Integrators of Information**

Nurses must be involved with every aspect of selecting, designing, testing, implementing, and ongoing improvement of information systems. EHRs must incorporate nursing's unique body of knowledge with the nursing process at the core. Technology must represent the clinical workflow of how nurses think and work in accordance with evidence-based practice. Additionally, nurses interface with every aspect of communicating ongoing patient care needs from admission through post-discharge across all settings. Therefore, in their role as the "central hub" of information, nurses have significant responsibility for the quality and safety of patient care. When information systems are implemented in any healthcare setting, nurses must be involved in decision making about the usefulness, efficiency, and satisfaction with information technologies to assure continuity of patient care is maintained.

Nurses must advocate for improved system functions such as integrative views of patient data that provide the "big picture" of patient care and also provide synthesis during information intense activities such as handoffs (within and between professions, among facilities and care entities), writing clinical summaries and discharge planning notes. Future systems should cull pertinent information from the patient's longitudinal record and relate it to the current condition at hand or the management of a chronic condition. Further enhanced information and knowledge at the point of care must continue to improve ways of incorporating evidence-based practice. Nurses are knowledgeable about the types of decisions and information needed to streamline care. Therefore, they must be supported to participate or lead interdisciplinary teams for improving workflow processes and include user-centered design principles into system development and tailoring.

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<sup>1</sup> HIMSS 2009 Informatics Nurse Impact Survey Results available at :  
<http://www.himss.org/content/files/HIMSS2009NursingInformaticsImpactSurveyFullResults.pdf>



## **Full Partners in Decision Making**

The nursing profession is the largest provider of healthcare today, and the National Sample Survey of Registered Nurses<sup>2</sup> identified that the majority of nurses are employed in acute care settings. Subsequently, they are closely involved in all aspects of implementing technologies such as EHR systems. Nurses manage implementations, analyze workflow processes, build content for EHRs, analyze data, configure systems design, provide training, act as super-users, and support other disciplines in using EHRs. With their intricate role in information processing, nurses are in a position to identify what works and what doesn't work in the use of EHRs. For health information technologies to be effective, nurses must be at the table as full partners through design, implementation, and evaluation. Nurses must be included in committees within their own organizations and be supported and encouraged to participate in state and national policy committees. The future of nursing is dependent on a profession that will continue to perform an instrumental role in patient safety, change management, quality improvement and usability of systems as evidenced by quality outcomes, enhanced workflow, and user acceptance. These areas highlight the value of informatics nurses as knowledge workers and their role in the adoption of health information technologies to deliver higher quality clinical applications within and across healthcare organizations.

## **Care Coordinators Across Disciplines**

ANI recognizes that patient care invariably requires collaborative interactions among multiple clinicians from a broad array of specialties, often located in different locations. Therefore “meaningful use” of EHR systems should strive for nothing less than an integrated healthcare community that is patient-centered and promotes usable, efficient and seamless information flow. Patient-centric EHR systems that are knowledge driven can enhance cross-continuum, interprofessional communication, thereby improving safety, quality, and processes of care delivery. Nurses are instrumental in coordinating a patient's care across the continuum and as such, are often the focal point for connecting acute, ambulatory, long-term, community, home care, and public health based settings. As coordinators, nurses are central to ensuring that data and information necessary for patient care is not only shared but translated into action.

### Improve Care Coordination

ANI recommends patient-centric EHR systems that incorporate nursing and other clinical plans of care and progress notes that can be summarized at the end of each transaction of care for continuity across disciplines and healthcare settings

<sup>2</sup> National Sample Survey of Registered Nurses available at: <http://bhpr.hrsa.gov/healthworkforce/rnsurvey04/3.htm>



As we consider the future of nursing, ANI recommends taking a broad perspective utilizing documentation from all members of the clinical team; specifically, EHRs must incorporate nursing and other clinical plans of care and progress notes into a patient centered EHR. To achieve this, EHR systems should integrate data and information from the patient and all healthcare professionals into a patient summary after each transition of care that can be shared with the patient’s personal health record as well as exchanged across settings. It is vital that this summary includes patient education to enable patients and their families to manage their own healthcare. This approach sets the foundation for providing the building blocks of health information exchange between disparate HIT systems while promoting consistency and repetition of the patient care communication during transitions of care. Valid measures of continuity of care must include evidence that key information is available in the EHR that patients and members of the patient’s care team can utilize to deliver care.

### **Experts to Improve Quality, Safety, Efficiency and Reduce Health Disparities**

ANI supports the electronic capture and reporting of coded patient information for purposes of care delivery, decision support, and outcomes analysis. Nurses have a profound impact on the quality and effectiveness of healthcare and are large contributors of the patient information contained within EHRs. Standardized clinical performance measures that are adapted to consider unique complexities of various environments of care should be collected as a byproduct of care delivery, clinician documentation, and other information systems such as scheduling, acuity systems, and human resource information systems. It is our belief that adaptation and further development of real-time and concurrent measures are needed to address unique attributes of the complex environments that affect care. This will serve two important national goals: a) clinical decision support and trending in patient outcomes for real-time decision making and intervention at the point of care delivery, and b) the ability to aggregate enterprise-wide performance evaluations. ANI recommends that a subset of endorsed National Quality Forum (NQF) measures be adopted in acute and post acute care settings, including nursing- sensitive care performance measures<sup>3</sup> to enhance decision support and clinical measure reporting.

#### Improve Quality & Safety

Adaptation and further development of measures are needed to address unique attributes of complex care environments

We recommend that a subset of endorsed National Quality Forum (NQF) nursing-sensitive care performance measures be adopted in acute and post acute care settings to enhance decision support and clinical measure reporting.

<sup>3</sup> NQF identified nursing-sensitive measures available at: <http://www.jointcommission.org/NR/rdonlyres/75AB0653-E676-4750-AED7-4C6C2694286C/0/NursingManual.zip>



## **Advocates for Engaging Patients and Families**

In order to effectively achieve health outcome improvements, patients and families need access to their health information along with health education services delivered in a patient-appropriate learning environment and format. Nurses have an extensive knowledge base in patient education methods and tools. ANI strongly recommends that this body of knowledge be leveraged to facilitate the definition of achievable objectives in the area of health information literacy. Patients and families should be provided with access to data, knowledge, and tools to make informed decisions about their health. This requires the development of resources that address literacy, culture and language levels. EHR systems should provide an integrated view of patient/family learning needs and should provide access to condition-specific, credible education material.

## **Contributors to Standardize Infrastructure within the EHR**

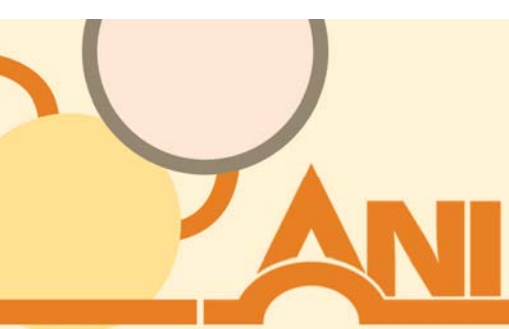
ANI endorses the use of recommended standards integrated across systems that record, transmit, collect, and share information that is clear, concise, and unambiguous in all settings of healthcare services. Health information that is usable and universally understood must be available whenever and wherever patients and clinicians need it. Nurses and other healthcare professionals as knowledge workers must have access to information and use of enabling technologies necessary for distilling the information so that it provides value in any clinical setting.

Furthermore, ANI believes that an infrastructure using standardized nursing and other health terminologies supports data sharing, aggregation, identification, use of evidenced-based practices, and development and integration of new evidence derived from clinical research. Standardized terminology is necessary and a prerequisite for decision support, discovery of disparities, outcomes reporting, improving performance, maintaining accurate lists of problems and medications, and the general use and re-use of information needed for quality, safety, and efficiency.

Systems must enable the sharing of integrated information while maintaining patient privacy and allowing for de-identification of patients involved in clinical research to generate new knowledge about health and healthcare services. Patients and providers must be certain that privacy and security concerns are strictly and appropriately handled. This will ensure confidence in the technology and reliance in the accuracy and security of the information.

## **Researchers for Safe Patient Care**

The rapid emergence of new technologies, particularly in acute care settings, provides an opportunity to improve patient quality and safety. However, the fragmentation of information can in fact, lead to deleterious effects. Nurses play a major role in the use of



technology that influences patient quality, safety practices and outcomes. For instance, safe medication administration requires patient assessment, reconciliation, medication delivery, and ongoing monitoring. Many technologies are potentially involved including IV pumps, medical devices, laboratory data, automated vital signs, barcodes or radio-frequency identification (RFID), and EHRs. Unless the information is readily available, consistent across technologies, integrated, and matches the workflow of nurses, adverse events<sup>4</sup> can result. Practicing nurses, informatics nurses, and nurse researchers must collaborate to evaluate the effect of technologies on patient quality and safety.

## **Educators for Preparing the Workforce**

Nurses are at the center of patient care and are expected to provide safe, competent, and compassionate care in an increasingly technical and digital environment. Nurses are directly engaged with information systems and technologies as the foundation for evidence-based practice, clinical-decision support tools, and the EHR. With the increasing appreciation of the importance of evidence-based practice comes the translation of research into practice. Evolution to this complexity in the healthcare environment mandates new competencies that in turn necessitate new educational strategies and curricular content to prepare the workforce. These changes are just beginning to emerge in some educational and practice settings.

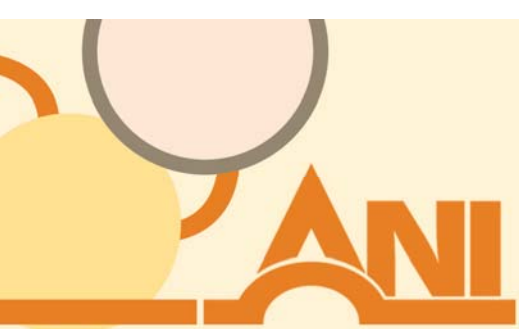
The TIGER initiative is a national collaborative of nursing organizations, educational institutions, and industry partners who synthesized recommendations to make HIT the stethoscope of the 21<sup>st</sup> century. While many nursing education programs have focused on computer literacy skills, they are just beginning to incorporate informatics competencies into their curricula. Today more than 70 professional nursing organizations, associations, vendor organizations and governmental entities collaborate through the TIGER initiative, advocating the following goals:

- Develop a U.S. nursing workforce capable of using EHRs to improve the delivery of healthcare
- Engage more nurses in the development of a nationwide health information technology infrastructure

### Preparing the Workforce

- ❖ Implement the TIGER recommendations to make HIT the stethoscope of the 21<sup>st</sup> century
- ❖ Develop a U.S. nursing workforce capable of using EHRs to improve the delivery of healthcare
- ❖ Engage more nurses in the development of a nationwide health information technology infrastructure
- ❖ Accelerate the adoption of smart, standards-based, interoperable, patient centered technology that will make healthcare delivery safer, more efficient, timely, accessible, and efficient.

<sup>4</sup> U.S. Department of Health & Human Services Adverse Events available at: <http://www.cms.hhs.gov/apps/media/press/factsheet.asp?Counter=3043>



- Accelerate the adoption of smart, standards-based, interoperable, patient centered technology that will make healthcare delivery safer, more efficient, timely, accessible, and efficient.

The TIGER Informatics Competency Collaborative developed informatics recommendations for all practicing nurses and graduating nursing students consisting of three parts: Basic computer competencies, information literacy, and information management. Hospitals and health systems can ensure that nurses are competent to practice in the technology-rich healthcare environment of the future by implementing these recommendations. As Phase 3 of the initiative unfolds, nurses in acute care settings at all levels must become involved with implementing the TIGER recommendations<sup>5</sup>.

The future of nursing must include preparation of nurses with informatics expertise. The American Medical Informatics Association asserts that the United States needs at least one physician and one nurse trained in applied health and medical informatics in every hospital in the country by 2010. According to the September 2009 HIMSS Vantage Point Survey<sup>6</sup>, two-thirds of the 352 respondents indicated there is a current lack of clinical informatics positions to handle upcoming work at their organization, also noting that their organization would need to hire clinical informatics personnel. Nurses who have direct responsibility for the design and implementation of EHRs must have appropriate educational preparation and certification to be successful leaders in the adoption of more effective, higher quality applications that will help us realize the desired outcomes in our healthcare system. Nursing leaders in acute care settings must be prepared to support ongoing education for effective use of resources for HIT.

## **Summary**

In summary, ANI is pleased to provide testimony about the important role of nurses and informatics nurses in the use of health information technology to improve patient safety, quality and efficiency of care delivery. As the largest healthcare profession, and predominately employed in acute care settings, nurses are the integrators for coordinating care and information across healthcare settings.

ANI believes that nurses are integral to achieving a vision that will require a nationwide effort to adopt and implement EHR systems in a meaningful way. This is an incredible opportunity to build upon our understanding of effectiveness research, evidence-based practice, innovation and technology to optimize patient care and health outcomes. The future of nursing will rely on this transformation, as well as on the important role of nurses in enabling this digital revolution.

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<sup>5</sup> Technology Informatics Guiding Education Reform Recommendations available at: <http://www.allianceni.org/tiger.asp>

<sup>6</sup> September 2009 HIMSS Vantage Point Survey Findings available at: [http://www.himss.org/content/files/vantagepoint/vantagepoint\\_200909.asp?pg=1](http://www.himss.org/content/files/vantagepoint/vantagepoint_200909.asp?pg=1)