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Position Statement

on Transforming Nursing Practice through Technology & Informatics

(Approved by the HIMSS Board of Directors June 17, 2011)

Together, nurses and nursing informatics must lead, and be visible, vocal and present at the table to achieve healthcare delivery transformation.

Background:

The landmark Institute of Medicine (IOM) report, "The Future of Nursing: Leading Change, Advancing Health,"[i] emphasizes the importance of recognizing the vital role of nurses in transforming healthcare in our country and presents recommendations for how to promote that role in the future. The report highlights that "The United States (U.S.) has the opportunity to transform its healthcare system, and nurses can and should play a fundamental role in this transformation. However, the power to improve the current regulatory, business, and organizational conditions does not rest solely with nurses; academia, government, businesses, healthcare organizations, professional associations, consumers and the insurance industry all must play a role." HIMSS concurs with this statement. We identify below specific actions that should be taken by each of these entities.

The Patient Protection and Affordable Care Act (Affordable Care Act)[ii] also provides an opportunity for transforming U.S. healthcare in the 21st Century. As noted by the IOM in The Future of Nursing report, working on the front lines of patient care, nurses play a vital role in helping realize the objectives set forth in the 2010 Affordable Care Act, a law representing the broadest healthcare overhaul since the 1965 creation of the Medicare and Medicaid programs. Nurses will also have the critical role of ensuring expected quality and financial metrics in Accountable Care Organizations (ACOs). However, a number of barriers prevent nurses from being able to respond effectively to rapidly-changing healthcare settings and an evolving healthcare system. These barriers need to be overcome to ensure that nurses are well positioned to lead change and advance healthcare. Along with the Affordable Care Act, the American Recovery and Reinvestment Act of 2009 (ARRA),[iii] includes Medicare and Medicaid incentive payments to eligible providers and hospitals for the meaningful use of certified health information technology (IT) products. As meaningful use criteria evolve, it is essential that nurses be involved as key stakeholders in the implementation of electronic health records (EHRs), especially in leading the planning, design, evaluation and optimization of health IT.

In alignment with the America Nurses Association (ANA) and the Alliance for Nursing Informatics (ANI), this HIMSS Position Statement provides background on key related issues and identifies specific recommendations for eliminating barriers and addressing nursing's role in transforming healthcare through the use of IT, particularly in regard to the role of nursing informatics. This statement was developed by the HIMSS Nursing Informatics Committee, representing more than 2,900 nurse informaticists, and is supported by HIMSS multidisciplinary stakeholder membership.

The Value of Nursing Informatics:

At the crossroads of technology and patient care stand the nurses who have chosen nursing informatics (NI) as their specialty. Nursing Informatics is a well established specialty within nursing, which today has evolved to be an integral part of healthcare delivery and a differentiating factor in the selection, implementation, and evaluation of health IT that supports safe, high quality, patient-centric care. ANA has published three expanding editions of NI *Scope and Standards of Nursing Informatics Practice* (1994, 2001, 2008), with the most recent edition defining nursing informatics as "a specialty that integrates nursing science, computer science, and information science to manage and communicate data, information, knowledge, and wisdom in nursing practice."[iv]

The IOM report on The Future of Nursing asserts the U.S. healthcare system has the opportunity to transform itself. Nurses are active leaders in this transformation. Nurses have already taken a leadership role in embracing technology as a necessary tool to innovate the delivery of healthcare. Nurses must take on this leadership role to improve safety and efficiency, bring evidence for decision making to the point of care, and empower patients to be involved partners.

Data collected in the 2011 HIMSS Nursing Informatics Workforce Survey[v] show that nurses who serve in informatics roles are experienced clinical experts, with half of the respondents indicating they have at least 16 years of clinical experience. Nurse informaticists use their depth of knowledge and understanding of the patient care process, combined with the power of technology, to contribute to the care of the individual and to the transformation of healthcare.

Connecting the Consumer:

Care teams are no longer bound by physical space, encouraging use of electronic connectivity and virtual strategies to support the care delivery of the future. According to the eHealth Initiative's "Top Trends for 2011," the combining of the national dialogue on healthcare, the Meaningful Use criteria that incent providers toward patient engagement, and the number of digital patient engagement tools now available – from smart devices, to patient portals – "should mark 2011 as a tipping point year for patient engagement."[vi] Patients and their families are increasingly taking their rightful place at the center of the healthcare delivery model. According to statistics compiled during a Pew Research Center survey (February 1, 2011), 59% of adults, including older adults, use technology to access healthcare information. Internet-savvy patients can access extensive details about their health problems, treatment options, and the history of others who have similar diagnoses.[vii] In turn, these consumers have high expectations about their decision-making rights and are becoming vocal about their rights.[viii]

When patient-centric processes encourage patient engagement, nurses and other healthcare team members across care settings can work in partnership to enhance the well-being of consumers. Nurses working in community settings have typically used this approach because they provide care in consumers' homes, work places, community clinics and schools. Now it is possible for others to make similar visits virtually and use technology to engage with patients in a completely different way. Using a patient-centric approach, nurses and other providers in acute and residential care facilities can help drive the industry toward a seamless approach across the care continuum that stays focused on the patient. It is expected that consumer demands for accurate, timely, and complete health-related information and partnership with healthcare professionals will only increase.

Personal health information is a valuable resource to individuals, their families, and the doctors, nurses, and other healthcare professionals who provide treatment and care. In its Quality Chasm report, the IOM[ix] outlined several dimensions of patient-centered care, including respect for patient's values, preferences and needs; coordination of care; physical comfort and emotional support; involvement of family and friends; and information, communication, and education. The goal is to "customize care to the specific needs and circumstances of each individual," making care respond to the person, not the person to the care.[x] And who better than nurses to work with patients to help patients see the value of their contribution to their care and participate using electronic tools?

Implications for Time & Place of Care:

Technology is revolutionizing the way that healthcare is delivered with a steady infusion of new solutions into clinical environments. At the same time, outside of healthcare, both clinicians and consumers are learning to incorporate technological solutions into their daily lives with tools like high-speed data networks, smart phones, handheld devices, and various forms of patient engagement in social media exchanges. Bringing these types of technologies into the healthcare marketplace will transform the time and place for how care is provided. Having individuals who understand the unique complexities of healthcare practices along with how to best develop technological tools that positively affect safe patient care is essential. Nurses integrating informatics solutions into clinical encounters are critical for the transition to an automated healthcare environment that promotes the continuum of care across time and place, in addition to wellness and health maintenance activities.

The physical location for the delivery of care is changing. Healthcare environments have begun incorporating an abundance of technology such as wireless solutions, mobile computers, and automated exchanges between clinicians and patients. Adapting to these new environments requires a shift in expectations for how care is delivered and communicated. This shift also necessitates a greater understanding of the constant evolution of new solutions being introduced into care settings as technology evolves. Nurses are at the core of this evolution as the care providers with the greatest amount of direct patient contact. These changes provide both opportunities and barriers to moving beyond the four walls of a clinician's office, outpatient department or hospital room to provide care.

Healthcare has become a global environment, offering care solutions that are delivered remotely. The technology of today allows the healthcare team to connect with patients absent the barriers of time or physical proximity. Virtual office visits, online appointment scheduling, mobile laboratories, electronic medication prescribing, and patient portals connected with electronic medical records are changing the way in which care is provided. Nurses also play a critical role by helping patients set up their own personal health records (PHRs), or explaining to patients how to use a patient portal. The initial work can be formidable, especially for those patients with healthcare literacy barriers. Telehealth exchanges are increasing in number, especially in underserved rural populations. New technologies offer opportunities to provide quality care to patients in remote settings, improving the access to specialized resources. The challenge for this type of care is ensuring that the automated solutions fully interact with one another, as well as with the clinicians using them.

The need for system integration and interoperability is now the most important factor for the success of technology in healthcare. As noted in the responses of 660 nurse informaticists participating in the 2011 HIMSS Nursing Informatics Workforce survey,[xi] almost one-third of the respondents rated lack of integration/interoperability as a top barrier to their success. A standalone solution cannot survive without consideration for the upstream and downstream impact on other technologies in place. Being able to share and compare data between healthcare organizations and across time is the right thing to do for patients – both for the individual patient's quality of care and for the secondary use of analyzing the data across patients to study the efficacy of our practice, and how we contribute to patient outcomes. Systems must be able to exchange data with one another to achieve these objectives. Having skilled individuals in place to help drive the direction of these electronic interchanges is as important as the technology itself.

HIMSS Position:

Nurses are key leaders in developing the infrastructure for effective and efficient health information technology that transforms the delivery of care. Nurse informaticists play a crucial role in advocating both for patients and fellow nurses who are often the key stakeholders and recipients of these evolving solutions. Nursing informatics professionals are the liaisons to successful interactions with technology in healthcare. As clinicians who focus on transforming information into knowledge, nurse informaticists cultivate a new time and place of care through their facilitation efforts to integrate technology with patient care. Technology will continue to be a fundamental enabler of future care delivery models and nursing informatics leaders will be essential to transforming nursing practice through technology.

The Future of Nursing report includes eight key recommendations organized around three broad categories of Leadership, Education and Practice. Nursing informatics professionals support all nurses regardless of practice setting. As such, the implications of the IOM report for healthcare are far reaching. The table below describes HIMSS' recommendations, prepared in collaboration with ANA and ANI.

Category	IOM/RWJ Recommendation	HIMSS Recommendations for Nursing Informatics
Leadership	1. Incorporate information literacy and informatics competencies into the performance expectations for all nursing students. 2. Incorporate information literacy and informatics competencies into the job expectations for all nursing faculty.	• Partner with nurse executives to lead technology changes that advance health and the delivery of healthcare. • Support the development of informatics departments. • Foster the evolution of the Chief Nursing Informatics Officer role.
Education	3. Increase the proportion of nurses with a baccalaureate degree to 80 percent by 2020. 4. Double the number of nurses with a doctorate by 2020. 5. Ensure that nurses engage in lifelong learning.	• Transform nursing education to include informatics competencies and demonstrable behaviors at all levels of academic preparation. • Promote the continuing education of all levels of nursing, particularly in the areas of EHRs and health IT.
Practice	6. Remove scope of practice barriers. 7. Implement nurse residency programs. 8. Build an infrastructure for the collection and analysis of interprofessional healthcare workforce data.	• 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.

The transformation of nursing practice that results from the IOM's Future of Nursing report recommendations will have a profound, long-term effect on the profession of nursing. Nursing informatics professionals are uniquely positioned to aide in this transformation, as the management of individual and organizational change is core to its practice.

Nursing Informatics Leadership:

The Future of Nursing report is not only about nursing but the future of healthcare in the U.S. Nurses are an integral part of successfully achieving improved outcomes, optimal wellness and overall population health management. Because of the breadth and depth of nursing engagement in all aspects of healthcare, nurse leaders are in a key position to influence healthcare reform and the multidimensional needs across all care settings. As a result, a new type of nurse leader role is emerging: the "Nursing Informatics Executive." HIMSS expects a growing demand for this strategic and operational role to permeate the majority of healthcare organizations to support not only nursing practice, but the entire care delivery team in anticipating and adapting to changes in the healthcare environment. Emerging nursing informatics leadership roles are critical to engage in the necessary transformational activities and bridge the new care delivery models into clinical practice with the right technology solutions.

The movement towards ACOs emphasizes the drive toward population health management, also providing opportunities for expanded nursing roles including a greater need for nurse informaticists to support the ACO framework for an organization. Nursing informatics leaders are needed to engage in ACO strategy development, implementation and execution. It is critical for nursing informatics leaders to lead change management efforts to shape behavior and thinking beyond current models. These models are frequently physician centric and/or acute care centric and should evolve to a more coordinated care approach that includes all appropriate care team members.

In ACOs, care coordination is not only focused on improving quality, patient safety and outcomes, but also on managing costs. Technologies must integrate both clinical and business solutions to monitor and inform outcomes. Nursing informatics leaders are essential stakeholders who orchestrate what information must be provided, how it is captured and documented to support patient care, as well as monitoring the associated financial and business indicators to track and report on outcomes management. Technology will continue to be a fundamental enabler to the future care delivery models and nursing informatics leaders are essential to transforming nursing practice through technology.

Additionally, preparing the workforce for the 21st century is essential and will include an ever-increasing focus on education and usability of technology. Nursing informatics leaders must lead by establishing the strategy and plan for their respective organizations, resulting in technology and informatics that become a natural interwoven component of care delivery and workflow. Academia and research settings must not only train the future workforce, but foster innovations in nursing practice leveraging research-based evidence. Nursing informatics leadership roles are in a prime position to bridge research, education and practice settings to achieve innovations for nursing practice and prepare the workforce for the future.

The Demand for Technology Infrastructure:

Since 1977, the nursing profession has relied on workforce data from the Health Resources and Services Administration (HRSA). Part of the Department of Health and Human Services, HRSA is the primary federal agency providing policy leadership and grant support for health professions workforce development, "helping to ensure the United States has the right clinicians, with the right skills, working where they are needed."[xii] Published every four years by HRSA's Bureau of Health Professions, the *National Sample Survey of Registered Nurses* is the primary source of statistics on trends over time for the nursing profession, which is the nation's largest health profession. This report, *The Registered Nurse Population: Initial Findings from the 2008 National Sample Survey of Registered Nurses*,[xiii] includes comparisons from eight recurring surveys, 1980 through 2008. Data in the survey cover educational background, practice specialty areas, employment settings, position levels, job satisfaction and salaries, geographic distribution, and personal demographics such as gender, racial/ethnic background, age and family status.

Without this quadrennial report, nursing would not be able to assess whether there is an adequate supply of nurses in order to more easily identify an impending shortage. The survey's findings also make evident the current trends in nursing practice, including specialty and educational preparation—data which are essential for being able to optimally respond to the needs of our rapidly evolving healthcare system. However, in today's high-tech world where we can obtain and distribute information globally in a matter of seconds, a quadrennial, static report seems woefully insufficient. Immediate access to real-time data on the nursing workforce requires an information infrastructure that supports the timely collection and analysis of the information needed to inform and predict changes in nursing practice and education to meet future healthcare needs.

The 2010 Affordable Care Act mandates the creation of both a National Healthcare Workforce Commission to help gauge the demand for heathcare workers and a National Center Workforce Analysis to support workforce data collection and analysis. It is essential that once implemented, these programs place a priority on accurate predictions of the healthcare workforce needs.[xiv] Some key questions include how many primary care providers does the nation require to be able to provide more accessible, quality healthcare? How can nurse practitioners and other advanced practice nurses leverage their own practice as well as develop partnerships to relieve the current shortages in primary care providers? How can technology and patient participation in a patient-centric record impact the resource requirements for healthcare delivery? An improved information infrastructure will support systematic monitoring of healthcare workforce shortages and surpluses, and allow coordination of the collection of data across federal surveys and in the private sector.

Call to Action:

- **Vendor organizations that develop electronic systems for clinician** use should employ nurse informaticists in analyst, leadership and officer roles in order to:
  - *Design systems that are interoperable, patient-centric, and user friendly.*
  - *Educate engineers, systems analysts, and other non-clinical positions on healthcare operations and clinical processes so safe, patient-centric, and user friendly systems can be designed.*
  - *Develop educational support for care organization users.*
  - *Actively engage in care delivery model changes and understand how nursing roles can operationalize these new models.*
  - *Take a broader view in developing technology solutions that support the care delivery team and all role types across the ACO.*
  - *Replace outdated, ineffective quality models with transformational outcome, information-driven paradigms. Nurse informaticists are critical at the forefront of these efforts.*
  - *Assist in the testing process of systems to ensure user expectations are met.*

- **Provider organizations** should develop informatics departments that include nurse informaticists in order to:
  - *Implement systems that are interoperable, patient-centric, and user friendly.*
  - *Educate IT and non-clinical staff on healthcare operations and clinical processes so safe, patient centric, and user friendly systems can be designed.*
  - *Develop educational resources that include workflow and care process changes and not just use of the health IT software.*
  - *Actively engage in clinical practice and care delivery model changes and understand how health IT facilitates or augments these new models.*
  - *Manage EHR and health IT implementations like clinical practice change projects and not as IT implementations.*

- **Provider organizations** should employ nurse informaticists in leadership roles such as a Nursing Informatics Executive, Chief Nursing Informatics Officer (CNIO), Chief Clinical Information Officer or Vice President of Nursing Informatics in order to:
  - *Partner with the CNO and other executive leaders to lead the healthcare transformation in embracing technology that is interoperable, patient-centric, user friendly and focused on quality outcomes.*
  - *Lead efforts to increase information literacy and use of evidence in the delivery of healthcare.*
  - *Champion the redesign of clinical workflow and processes essential for the adoption of new technology.*
  - *Guide EHR and health IT implementations from system selection through the project lifecycle, including implementation, evaluation, optimization and practice transformation.*
  - *Incorporate information literacy and informatics competencies into the job descriptions and job standards for all nursing staff.*

- **Nursing informatics leaders** should be knowledgeable and current in public policy initiatives in order to:
  - *Translate the impact of public policy initiatives into practice and care delivery while having a voice in the planning, implementation and execution of EHR systems to achieve the requirements of the industry changes.*
  - *Articulate the organization's vision and strategy for clinical transformation, actively engaged in managing change and measure success through established metrics.*

- **Government agencies** should recognize that regulations and reimbursement policies that remain exclusively physician-focused will not achieve the goals of healthcare transformation in the U.S. Recommendations include:
  - *Public policies and regulation language should reflect all provider roles, allowing all clinicians, particularly nurses, to practice to the full extent of their education and licensure.*
  - *Accreditation standards should be developed that require nurse informaticists to be involved in all clinical technology implementations.*
  - *Nursing informatics leaders should be engaged in all levels of health IT policy and strategy-setting committees and initiatives.*
  - *Nursing informatics leaders must be knowledgeable and well-versed in current public policy initiatives and participate in advocacy and educational efforts directed to policy makers.*

- **Academic organizations** should integrate informatics content throughout the nursing undergraduate and graduate curriculum: [xv, xvi]
  - *Include information literacy, nursing terminologies, electronic health records, usability, clinical decision support, personal health records, human factors design, evidence-based practice, telehealth, privacy and security of electronic records.*
  - *Incorporate information literacy and informatics competencies into the performance expectations for all nursing students.*
  - *Incorporate information literacy and informatics competencies into the job expectations for all nursing faculty.*
  - *Promote and financially support faculty development in informatics and information technology.*
  - *Supplement patient care experiences with human simulation laboratories that are integrated with electronic health records.*

Closing Remarks:

The IOM Future of Nursing report has stimulated accelerated efforts among nursing organizations to collaborate and unite on behalf of nursing and future care delivery in the U.S. It is through the collective wisdom, expertise and strategizing of individuals and groups that the recommendations of the Future of Nursing Report will be achieved. Examples of collaboration include the tri-council position statement in support of The Future of Nursing report, RWJ Campaign for Action, AMIA NIWG, AONE/HIMSS joint position statement of the role of the nurse executive (in press), and Center to Champion Nursing and the Champion Nursing Coalition sponsored by AARP. HIMSS believes nurses must lead, and be visible, vocal and present at the table for all significant healthcare reform initiatives. Collaboration and unified messaging among all stakeholders are keys to success. We believe that nurses and nursing informatics specialists are vital to accomplishing the goals described in this position paper and advancing healthcare transformation through the use of health IT.

Resources

i   IOM (Institute of Medicine). 2010. *The Future of Nursing: Leading Change, Advancing Health*. Washington, DC: The National Academies Press.

ii H.R. 3590—111th Congress: Patient Protection and Affordable Care Act. (2009). In GovTrack.us (database of federal legislation). Retrieved May 1, 2011, from: *http://www.govtrack.us/congress/bill.xpd?bill=h111-3590*

iii H.R. 1—111th Congress: American Recovery and Reinvestment Act of 2009. (2009). In GovTrack.us (database of federal legislation). Retrieved May 19, 2011, from: *http://www.govtrack.us/congress/bill.xpd?bill=h111-1*

iv American Nurses Association. 2008. *Nursing Informatics: Scope and Standards of Practice*. Silver Spring. MD.

v   HIMSS. 2011. *HIMSS 2011 Nursing Informatics Workforce Survey Full Results*. Retrieved May 1, 2011, from: *http://www.himss.org/ASP/ContentRedirector.asp?ContentID=76364*

vi EHealth. 2011. *HIT Trends*. Retrieved May 1, 2011, from: *http://www.ehealthinitiative.org/reports.html*

vii PewResearchCenter. 2011 *Pew Internet*. Retrieved May 1, 2011, from: *http://www.pewinternet.org/~/media//Files/Reports/2011/PIP_Social_Life_of_Health_Info.pdf*

viii PewResearchCenter. 2011 *Pew Internet*. Retrieved May 1, 2011, from: *http://www.pewinternet.org/~/media//Files/Reports/2011/PIP_Social_Life_of_Health_Info.pdf*

ix Corrigan, J.M., Donaldson, M.S., and Kohn, L.T. (2001). *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, D.C.; National Academy Press.

x   Corrigan, J.M., Donaldson, M.S., and Kohn, L.T. (2001). *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, D.C.; National Academy Press.

xi HIMSS. 2011. *HIMSS 2011 Nursing Informatics Workforce Survey Full Results*. Retrieved May 1, 2011, from: *http://www.himss.org/ASP/ContentRedirector.asp?ContentID=76364*

xii Health Resources and Services Administration. 2008. *National Sample of Registered Nurses*. Retrieved May 1, 2011, from: *http://bhpr.hrsa.gov/healthworkforce/rnsurvey/2008/*

xiii Health Resources and Services Administration. 2008. *National Sample of Registered Nurses*. Retrieved May 1, 2011, from: *http://bhpr.hrsa.gov/healthworkforce/rnsurvey/2008*

xiv IOM (Institute of Medicine). 2010. *The Future of Nursing: Leading Change, Advancing Health*. Washington, DC: The National Academies Press.

xv National League for Nursing. 2008. *National League for Nursing Position Statement on Education Reform*. Retrieved May 1, 2011, from: *http://www.thetigerinitiative.org/docs/NationalLeagueforNursingsPositionStatementonEducationReform.pdf*

xvi American Association of Colleges of Nursing. 2008. *American Association of Colleges of Nursing Essentials of Baccalaureate Education for Professional Nursing Practice*. Retrieved May 1, 2011, from: *http://www.aacn.nche.edu/education/pdf/BaccEssentials08.pdf*