

The TIGER Initiative



Evidence and Informatics Transforming Nursing: 3-Year Action Steps toward a 10-Year Vision



Technology Informatics Guiding Education Reform (TIGER) www.tigersummit.com

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Executive Summary

As the health care industry works toward the widespread adoption of electronic health records by 2014, nursing must transform itself as a profession in order to make full use of the capabilities electronic records will provide. This will require changes in nursing education and nursing practice to make informatics competencies part of every nurse's skill set. It will require nursing organizations to work toward a shared vision. Above all, it will demand that the profession be actively involved in advancing the national health care information technology (IT) agenda and the vision of patient-centered, knowledgebased care targeted by that agenda.

These requirements all involve integrating informatics seamlessly into nursing, making IT the stethoscope of the 21st century. As the Institute of Medicine (IOM) has emphasized in its guality reports, utilizing informatics is a core competency required of all health care professions. Yet today the majority of nurses lack the skills they need as professionals to integrate IT seamlessly into their practice. Core informatics competencies have been identified and defined. Now they must be incorporated into education at every level and into daily practice through such means as accreditation standards and performance appraisals. This will require multidisciplinary collaboration and commitment across nursing. In the words of the IOM, "it is high time to embrace a collaborative approach to educational reform. The professions and, most important, patients will be the beneficiaries."

Nurses in education and practice settings need the access to evidence-based knowledge that IT can provide. As the IOM acknowledges, such access is often not available, resulting in the chasm "between the health care we have and the care we could have." As electronic health records become the national standard, IT-savvy nurses will have the tools they need to collect evidence at the bedside and apply the knowledge based on that evidence at the bedside, the classroom, and in research.

The Technology Informatics Guiding Education Reform (TIGER) Initiative aims to enable practicing nurses and nursing students to fully engage in the unfolding digital era of health care. Through its agenda and action plans, TIGER is working to ensure that all nurses are educated in using informatics and thereby empowered to deliver safer, higher-quality patient care. The challenge is clear: To support ITenabled nursing practice in the future, nursing education must be redesigned to keep up with the rapidly changing technology environment.

"We must teach for the future. This means teaching to find rather than to know, question rather than answer, achieve rather than accomplish, inspire rather than inform." Patricia Flatley Brennan

Nursing Matters

More nursing care means fewer complications, lower mortality rates, and shorter hospital stays.

Increased nursing staffing could avert over 6,700 patient deaths and four million hospital days a year. "Whether or not staffing should be increased depends on the value patients and payers assign to avoided deaths and complications." (Health Affairs)

Documenting care consumes from 13% to 28% of a nurse's time, taking valuable time away from patient care.

Sources: Aiken, Clarke, Sloane et al. JAMA 2002 Oct 23-30;288(16):1987-93. Needleman, Buerhaus, Mattke et al. NEJM 2002 May 30;346(22):1715-22. Seago. In: Making Health Care Safer. AHRQ 2001. Needleman, Buerhaus, Stewart et al. Health Aff (Millwood) 2006 Jan-Feb;25(1):204-11. Clancy, Delaney, Morrison et al. JONA 2006 Sept:36(9):426-34.



The TIGER Initiative was officially launched at a highly interactive two-day invitation-only TIGER Summit. The recommendations from that summit, "*Evidence and Informatics Transforming Nursing*," come at a time when the nation is working full-speed to realize the 10year goal of electronic health records for its citizens. This is a critical juncture for the nation's three million nurses who make up 55 percent of the health care work force. They must become more involved at every level, or the informatics revolution will pass the nursing profession by, to the detriment of health care consumers.

The summit gathered over 100 leaders from the nation's nursing administration, practice, education, informatics, technology organizations, government agencies, and other key stakeholders to create a vision for the future of nursing that bridges the quality chasm with information technology, enabling nurses to use informatics in practice and education to provide safer, higher-quality patient care. While many of the statements may have resonance for a range of interdisciplinary health professions, the intention is to initially move forward the agenda specifically for nurses and the nursing profession.

The vision focuses on seven critical components defined and ranked by the summit attendees using a wireless audience response system. Attendees concurred that essential components are interdependent and that culture is essential to all other six areas. Together, all seven components act as pillars for the TIGER vision and provide the framework for TIGER action plan.

"Knowing is not enough; we must apply. Willing is not enough; we must do." Goethe

Seven Pillars of the TIGER Vision

1. Management & Leadership: Revolutionary leadership that drives, empowers and executes the transformation of health care.

2. Education: Collaborative learning communities that maximize the possibilities of technology toward knowledge development and dissemination, driving rapid deployment and implementation of best practices.

3. Communication & Collaboration: Standardized, person-centered, technology-enabled processes to facilitate teamwork and relationships across the continuum of care.

4. Informatics Design: Evidence-based, interoperable intelligence systems that support education and practice to foster quality care and safety.

5. Information Technology: Smart, people-centered, affordable technologies that are universal, useable, useful and standards-based.

6. Policy: Consistent, incentives-based initiatives (organizational and governmental) that support advocacy and coalition-building, achieving and resourcing an ethical culture of safety.

7. Culture: A respectful, open system that leverages technology and informatics across multiple disciplines in an environment where all stakeholders trust each other to work together towards the goal of high quality and safety.







The 3-Year Action Plan

With the seven pillars as its framework, the action plan identifies seven steps that the nursing profession must take toward the TIGER vision over the next three years. To reach the 10-year vision of evidence and informatics transforming nursing, the profession must act now to do the following:

- 1. Promote the TIGER vision of nursing as using informatics technology to provide safer, higherquality care. Use the vision to bring one voice to the profession and increase its power, influence, and presence in the national health IT initiative.
- Integrate informatics competencies into the nursing curriculum and the learning process. Foster faculty development through funding and incentives. Nurture innovation via collaborative partnerships with practice and industry.
- Share the TIGER initiative at international and national meetings in health care, informatics, and nursing. Work with nursing organizations to disseminate the vision among their membership.
 Encourage regional and local efforts and partnerships among practice, education, research, and informatics.
- Take an active role in the design and integration of informatics tools that are intuitive, affordable, useable, responsive, and evidence-based. Create tools that serve nurses and other professionals as members of multi-disciplinary care teams.
- Integrate industry standards for IT interoperability with clinical standards for practice and education. Educate practice and education communities on IT standards. Establish standards, and set hard deadlines for adoption.
- Participate visibly and vocally in the national health IT agenda. Offer congressional testimony on issues relating to the TIGER initiative. Take an active role in policy decisions at all levels to ensure ethical, safe patient care.
- 7. Launch a national marketing campaign to promote a culture that values health IT and supports its use to benefit patients and those who care for them. Integrate technology into the strategic plans, missions, and goals of nursing organizations.

Organizations participating in the TIGER Initiative believe that nursing must move forward to integrate informatics technology into education and practice. Each has pledged to incorporate the TIGER vision and action steps into their organization's strategic plans. They will be supported in their efforts by the newly formed TIGER Leadership Team which will:

- 1. Advise participating organizations as they work to incorporate the TIGER vision and action steps into their organizational plans.
- 2. Establish collaborative connections to help organizations tap resources and the support needed to meet identified organizational goals.
- 3. Work with participating organizations to benchmark, measure, and report their progress toward the TIGER vision or on their action step over the next three years.
- 4. Strengthen engagement with the TIGER Initiative via regular website updates and presentations at international, national, regional and local meetings.



Background

"There is no aspect of our profession that will be untouched by the informatics revolution in progress." Angela Barron McBride

A BRIEF HISTORY

In July 2004, Dr. David Brailer convened the first national health information technology summit and launched the initiative to give American citizens the benefits of electronic health records in 10 years' time. Immediately after the summit, a small group of nursing leaders and advocates met and resolved to **strengthen the voice of the nursing profession** in the transformation of health care for the 21st century.

In January 2005, the group held a strategy session at the Johns Hopkins School of Nursing, bringing together nurses from academia, government, and industry. They confirmed the need to transform nursing education and practice; they agreed to plan for a nursing summit focused on Technology Informatics Guiding Education Reform (TIGER).

The 2006 invitational summit, Evidence and Informatics Transforming Nursing, was designed to catalyze a productive relationship between the Alliance for Nursing Informatics (ANI), representing 22 nursing informatics professional societies, and the full range of nursing organizations. The intent of the summit was to **engage all of nursing, making informatics not just for informaticians any more.**

"What can we collectively do to make sure nurses are prepared for this decade of health information technology?" Diane J. Skiba

Over 70 organizations—a diverse and comprehensive
representation of nursing, informatics, and government
agencies as well as technology vendors—participated
in the development of the TIGER vision and action plan,
aligning them with the agenda described by Dr. Karen Bell
who represented the Office of the National Coordinator for
Health Information Technology.
SEEDING THE VISION

"To help us achieve what has been our hoped-for practice, IT is not just an enabler. It's a critical component." Angela Barron McBride

The summit participants focused on creating a vision for the future of nursing that bridges the quality chasm

with IT, transforming the work environment for nurses

and enabling them to use informatics in practice and education to provide safer, higher-quality patient care.

A series of learning experiences created a shared knowledge base and "seeded the vision" for the interactive work to follow, using IT-enabled voting to define a vision of IT-enabled nursing.

Case studies and hands-on demonstrations described innovative work in practice, education, and industry that is successfully changing nursing as a profession.



SUMMIT REPRESENTATION CHART



Integrating technology within the day-to-day practice of nurses and the interdisciplinary team, noting the importance of cultural changes for nursing as a profession

A t the **Citizen's Memorial Hospital**, the 2005 Davies Award winner for its Electronic Medical Record (EMR) Implementation, "The EMR is the deciding factor. Multiple people, actions and systems all contribute to it.... Rather than a top-down structure, we interact as a network of superusers," able to respond collectively and quickly to regulatory and technology changes. A 2-minute pain management module, delivered electronically, is one example of a fast method of communicating change across multiple sites. On an average day, over 15,000 items are entered into a computer. "Across clinics, long-term care, and hospitals, there are no paper charts."

Holmes Regional Medical Center, Palm Bay Community Hospital, and Rush-Copley Medical Center are part of a 190-member consortium using the CPM Professional Practice Framework to support professional workflow, evidence-based practice, nursing standardized language, interdisciplinary integration, and outcome measurement. The focus is not on automating, but on bringing an integrated framework into every step of the day. "As a result of our standardization efforts, nursing satisfaction has increased. We have also seen tremendous increases in quality." Appersonal health record owned by each veteran, MyHealtheVet, is a web-based program that nurses—as well as patients or their designees—can access from any computer. Since 2003, it had over 8 million visits. Users can graph health readings, record individual, and family medical histories, track blood pressure and cholesterol, arrange for prescription refills, or access relevant research or summary reports. "MyHealtheVet empowers patients, because they can make decisions about their own health."

A program at **Pinnacle Health** tested the impact of an electronic health record populated with nursing knowledge and evidence. A nurse practice council with members from each department agreed that evidencebased research should be accessible in workflow to support the creation of care plans and reports. Positive effects resulted from automated practice alerts as reminders within the system; outcomes improved in smoking cessation, falls, and documentation of pain reassessment. "Users don't want just one way to get to evidence. They want to access it from everywhere throughout their day."



Innovative Work in Education: Seeding the Vision for the Future of Nursing

Teaching students from the very beginning of their education how to think in a data-driven mode and practice in an informatics-enabled, patient-centered, evidence-based health care delivery system

The Informatics for Advanced Practice Nursing program at Columbia University merges curriculum and informatics tools to foster competency

development, ultimately resulting in safe, evidencebased care. Four generations of applications support nurse practitioners in multiple roles: (1) a handheld device for student documentation of clinical encounters, (2) integration of decision-support for clinical practice guidelines for depression, obesity, and tobacco cessation, (3) hazard and near-miss reporting on a patient safety resource web site, and (4) tobacco cessation, with access to information resources at the National Cancer Institute. Key lessons learned have been the importance of organizational buy-in, user support, evolving technologies, funding, and expertise.

t the University of Kansas, the Simulated A E-health Delivery System, or SEEDS, develops critical thinking across a range of healthcare settings. The system organizes electronic forms according to practice techniques, allowing case studies to be assembled in a structured fashion. Nurses feed data to the University's Health Information Management students, who provide feedback on documentation content and quality. Guidelines are accessible from within the forms, giving information at the point of learning. Integrated protocols and literature support evidence-based practice. After leading students through protocols within a case study, the system informs them of the actual diagnosis. "We're teaching students that research guides their practice. It brings research closer to the clinical area.... We hope to make an impact not only on education, but on practice."



t Mount Aloysius College, the Virtual Clinical Practicum integrates telehealth into the curriculum, using technology to link patients, clinical sites, students, and faculty across rural Pennsylvania. The intent is to enhance—not replace—their regular clinical experience by exposing them to situations not otherwise available. For example, one experience linked students to a burn unit, where they could speak with the medical team and patients through two-way split-screen audio/video. Some students found they were able to connect with patients in a unique way, not possible if they had been there in person. To give students hands-on experience, the Practicum added a simulation lab component using assigned roles and manneguins. Telehealth tools have also been used in the home health environment, combining video conference technology, monitoring equipment, and an Internet patient health site.

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Case Studies

Innovative Work in Industry: Seeding the Vision for the Future of Nursing

Interactive, experiential learning in small groups

Demonstrations provided a holistic and nonduplicative view of current and future technologies:

- Reference and skills assessment tools for practicebased nurses and a suite of educational products for the nursing curriculum
- Electronic health records as a teaching platform to deliver relevant data, connect with reference information, and develop informatics competencies in nursing students
- Resources for nurses and their role in bringing about changes in practice and education
- Collaborative work with federal and private partners to adopt and implement standards for documenting nursing care and providing evidence for best practices
- A virtual lab that serves as an on-line resource and training lab for healthcare information management students at colleges and universities around the United States
- Evidence-based information built into the tools nurses use on a daily basis with integrated information management solutions that streamline nurse workflows
- A maternal-child record supporting communication across the interdisciplinary team, from the first prenatal visit through delivery
- A professional practice framework for automated,

"We need to put the latest tools into the hands of those who take care of patients around the world." Marion J. Ball

evidence-based clinical practice guidelines, interdisciplinary documentation, and individualized care for each patient

- A patient's perspective who has learned first hand what is needed from healthcare professionals and technology to provide quality care
- An interdisciplinary clinical summary to streamline care and offer unified views of clinical data
- The interoperable, globally-accessible, protected, and always available EHR for sectors of the federal government employees
- A comprehensive medication safety system using mobile devices to assist nursing workflow
- A web-based patient safety reporting and datadriven management system
- A pro-active clinical surveillance tool using real-time data, pre-defined triggers, and actionable alerts
- An "Infobutton" and other tools that combine authoritative clinical knowledge with real-time patient information within the nursing workflow.



Recommendations

Enabling nurses to use information technology seamlessly to provide safer, higher-quality patient care will require action on the part of many stakeholders, including professional organizations, academic institutions, government and policy makers, vendors, healthcare delivery organizations, health information management professionals, and librarians. Based upon the summit recommendations, TIGER offers specific action plans for each stakeholder group.

Professional nursing organizations should:

- 1. Share the TIGER vision and action plan with their membership, and integrate the TIGER goals into their organizational strategic plans.
- 2. Establish dynamic relationships and liaisons to move the TIGER agenda forward, by sharing lessons learned, establishing resource banks of experts, and creating networks and special-interest groups.
- 3. Create educational resources and affordable programs that foster IT innovation and adoption.
- 4. Develop programs for nurse executives and faculty that stress the value of information technology and empower them to use IT knowledgeably, giving the leaders of the profession a strong and identifiable voice.
- 5. Highlight informatics capabilities at national conferences and workshops, and via experiential offerings, e.g., vendor cafes, demonstration sites, gallery walks, etc.
- Promote innovation via case studies and best practices in member-supported journals and publications, newsletters, websites, and national and local meetings.
- 7. Develop strategies and guidelines to ease the way for nurses making the transition to evidence-based protocols for decision making in practice.
- 8. Explore adding IT skills and knowledge to certification relative to their organization's nursing specialty focus.



Academic institutions should:

- 1. Adopt informatics competencies for all levels of nursing education (undergraduate/graduate) and practice (general/specialist).
- 2. Encourage faculty to participate in faculty development programs in informatics.
- 3. Develop a school task force/committee to examine the integration of informatics throughout the curriculum.
- 4. Encourage Health Services Resources Administration Division of Nursing to continue and expand their support for informatics specialty programs and faculty development.
- 5. Measure baseline and changes in informatics knowledge among nurse educators and nursing students and among the full range of clinicians seeking continuing education.
- 6. Collaborate with industry and service partners to support faculty creativity in the design, acceptance, and adoption of informatics technology.
- 7. Develop strategies to recruit, retain, and train current and future nurses in the areas of informatics education, practice, and research.

Information technology vendors should:

- 1. Develop systems with interoperability capabilities and standardized terminologies to support collaborative and interdisciplinary care.
- 2. Offer tutorials on standardizing data elements, implementing electronic health records, and using nursing terminology and evidence-based practice tools.
- 3. Use nursing focus groups in the design, validation, and field testing of systems to address human interface and clinical workflow considerations.
- 4. Partner with local educational institutions to offer informatics tools as well as curricula that support and enhance the use of technology and informatics in practice.
- 5. Create interoperable systems that speed the translation of research into practice and foster the creation of new knowledge.

Government and policy makers should:

- Involve nurses in the national health IT agenda, including testimony to Congress and policy decisions at all levels on the use of technology to support safer, higher-quality health care as envisioned by the Institute of Medicine.
- 2. Engage nurses in national standards efforts essential to the creation of health records that are interoperable and interdisciplinary.
- 3. Implement standards that ease the communication of patient information across the continuum of care with multidisciplinary team members.
- 4. Strengthen and expand federal programs that provide funding for our curriculum development, research, and practice in nursing informatics and IT adoption.
- 5. Create public and private financial incentives that support the adoption of innovative technologies and evidence-based practice.
- 6. Fund efforts to demonstrate how integrated IT systems impact nurses and the quality and safety of patient care.





Recommendations

Healthcare delivery organizations should:

- 1. Support the collection, sharing, and promotion of best practices and expertise for adoption of IT, including design and delivery of improved health care.
- 2. Partner with local educational institutions to offer informatics tools and curricula that support and enhance the use of technology and informatics in practice.
- 3. Develop competency-based, cost-effective training strategies that can be used within the work setting and that address cultural issues and overcome concerns relating to new technologies.¹
- 4. Develop a scope of practice statement/career model for nurses that includes informatics education, training, career development, and competencies at all levels of the organization.
- 5. Facilitate nursing leadership to understand, promote, own, and measure the success of IT projects.
- 6. Mandate use of IT standards across their organizations.

Health information management professionals and health sciences librarians should:

- 1. Promote "information literacy" as a core competency for all nurses.
- 2. Participate in the evaluation and selection of evidence-based practice systems.
- 3. Collaborate with faculty in reforming curricula to increase information literacy and effective use of information resources.
- 4. Provide seamless access to published literature, knowledge, and systems that support the creation of new knowledge.
- 5. Establish outreach efforts to develop health information literacy with the public and healthcare consumers.



This recommendation is taken verbatim from the report by American Health Information Management Association (AHIMA) and American Medical Informatics Association (AMIA), entitled **Building the Work Force for Health Information Transformation, 2006.**

Recommendations

To support these varied stakeholder groups in meeting these action plans, the TIGER Initiative will:

- 1. Create a mechanism for sharing action plans, goals, successes, best practices, and expert resources across all stakeholder groups and the entire nursing profession.
- 2. Build a community that mentors and coaches nursing leaders in how best to integrate informatics technology into their curricula and workplaces.
- 3. Connect like-minded organizations to better leverage their expertise, skills, ideas, and practices to move forward the TIGER agenda.
- 4. Create a set of measurement tools for evaluating the attainment of TIGER goals, including the dissemination of TIGER outcomes within and across organizations.
- 5. Publish participating organizations' action plans and measure their goal attainment and diffusion of information.
- 6. Publicize the progress and success stories reported by the participating organizations.

SUPPORT FROM NATIONAL NURSING LEADERSHIP ORGANIZATIONS

Leaders from five major nursing organizations—the American Association of Colleges of Nursing, American Nurses Association, American Organization of Nurse Executives, National League for Nursing, and Sigma Theta Tau International—affirmed the need for the profession to join in the TIGER Initiative. Building on each other's successes will require web-based resources and linkages to enable their members, individually and collectively, to learn about and become part of the TIGER initiative.



Background Readings

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TIGER Team: An outstanding representation from academia, government, and industry contributed to the development of the TIGER Initiative. These individuals were called the TIGER Team throughout the planning and delivery of the TIGER Summit and deserve special recognition.

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