

The following three sections contain health information technology (HIT) from the IOM Report on the Future of Nursing:

7 Recommendations and Research Priorities (227-242)

C Highlights from the Forums on the Future of Nursing (267-272)

F Health Care System Reform and the Nursing Workforce: Matching Nursing Practice and Skills to Future Needs, Not Past Demands (323-346)

Page 231 **BOX 7-1: Research Priorities for Transforming Nursing Practice**

Technology

- Identification and testing of new and existing technologies intended to support nursing decision-making and care delivery.
- Capture of the costs and benefits of a range of care technologies intended to support nursing decision-making and care delivery.
- Identification of the contributions various health care professionals make to the design and development, purchase, implementation and evaluation of devices and information technology products.
- Development of a measure of “meaningful use” of IT by nurses

Currently there is a workgroup recently formed which includes OIT nurse consultants, MU lead coordinator and to include IPC: Responsible for leading the care model transformation process and nursing workflow redesign and aligning with (a) Health Information Technology principles, practices and techniques and (b) Meaningful Use final rule objectives and measures.

Page 261 **Key Themes**

The Initiative on the Future of Nursing held its first forum on October 19, 2009. The discussion at the forum provided the committee with an opportunity to consider how rapidly advancing technology, interdisciplinary relationships, and changes in the way acute care is delivered will affect the nursing profession and how nurses will need to be educated to be adequately prepared for their varying roles and responsibilities. A number of important points emerged at the forum:

- The knowledge of frontline nurses that they gather from their interactions with patients is critical to reducing medical errors and improving patient outcomes.

- Involving nurses at a variety of levels across the acute care setting in decision making and leadership benefits the patient, improves the organizations in which nurses practice, and strengthens the health care system in general.
- Increasing the time that nurse can spend at the bedside is an essential component of achieving the goal of patient-centered care.
- High-quality acute care settings require integrated systems that use technology effectively while increasing the efficiency of nurses and affording them increased time to spend with patients.
- Multidisciplinary care teams characterized by extensive and respectful collaboration among team members improve the quality, safety, and effectiveness of care.

A JCAHO recommendation to one IHS site was to consider multidisciplinary care plans as this is the direction that hospitals are headed to improve quality of care. Currently many sites are requesting if there are any multidisciplinary care plan templates, document note titles and other suggestions to address this need. Collaboration with Area Nurse Consultants is crucial to address potential gaps.

Having a nurse on the core EHR team at a healthcare facility is critical and essential. A nurse is part of the team (CAC, HIM, Pharmacy, Nurse, Lab) that attend the "EHR for Inpatient" deployment and training activity. Purpose is to prepare EHR Inpatient Teams for completing "Stage 1 Meaningful Use" criteria within their Inpatient setting.

Page 279- **Key Themes continued.** As a result of the forum, the committee was given an opportunity to consider how changing health needs in the community will affect the future of the nursing profession in terms of the way care is delivered, the settings in which care provided and the education requirements from the necessary skills and competency to provide the quality care.

- Budgets for the public health and community health programs are being cut at a time when these programs are needed most to care for aging populations and when greater emphasis is being placed on prevention, wellness, chronic disease management, and moving care into the community. It is transforming commerce, education, communications, and community for care for aging populations

- Nursing in the community occurs through partnerships with many other individuals and organizations, and nurses need to take a leadership role in establishing these vital partnerships. Fostering this type of collaboration could improve the continuum of care between acute and community care settings.
- Technology has the potential to transform the lives of nurses providing care in the community, as well as their patients, just as it is transforming commerce, education, communications, and entertainment for the public.
- Varying scopes of practice across states have, in some cases, prevented nurses from providing care to the fullest extent possible at the community level.
- Nurse-managed health clinics offer opportunities to expand access; provide quality, evidence-based care; and improve outcomes for individuals who may not otherwise receive needed care. These clinics also provide the necessary support to engage individuals in wellness and prevention activities.
- Nursing students need to have greater exposure to principles of community care, leadership and care provision through changes in nursing school curricula and increased opportunities to gain experience in community care settings.
- The delivery of quality nursing care has the potential to provide value across community settings and can be achieved through effective leadership, policy, and accountability.

“Care management” comprises a broad and evolving range of strategies to effectively intervene and improve the care for primarily chronically ill individuals—those whose care spans multiple providers and requires continuous, long term management.

Out of DM programs came case management and care coordination strategies that target persons with multi-morbidity chronic illnesses and complex care needs in addition to one or more significant interdisciplinary clinical management to achieve quality outcomes to improve patient adherence to treatment plans.

iCare version 2.0 (BQI) was released nationally June 18, 2009 in IHS. iCare is a Population Management software tool that helps with management of the care of patients. The ability to create multiple panels of patients with common characteristics (e.g., age, diagnosis, community) allows one to personalize the way he/she views patient data. Any provider who needs to identify a group of patients for either long-term management or simply to create a temporary list should think about using iCare. (i.e. DM Nurse case managers, PHNs).

Within the first few months in office President Obama signed economic stimulus legislation that included a significant investment to expand the HIT infrastructure for the nation. This investment is intended to nourish the seeds of digital health care that are well-rounded though not widespread. Today only 15-20 percent of hospital RNs practice within a minimally functional HIT infrastructure and well under five percent practice within a fully wired context. However, a full array of HIT is expected to diffuse rapidly over the coming decade with significant implications for future training staffing modes, and workforce policies for RNs. HIT is anticipated to lead to (1) profound changes in the content and process of clinical practice; (2) a redesign of the roles and skill –mix of the health care workforce and the ways in which multi-disciplinary teams will work with one another; (3) new paradigm for how time and place will influence the delivery of care; and (4) increased care efficiency and better outcomes.

Changing Clinical Practice

HIT will fundamentally change the ways that RNs plan, deliver, document, and review clinical care. The process of obtaining and reviewing diagnostic information, making clinical decisions, communicating with patients and families, and carrying out clinical interventions will radically depart from how these activities occur today. Moreover, the relative proportion of time RNs spend on various tasks is likely to change appreciably over the coming decades. While arguably HIT will have its greatest influence over how RNs plan and document their care, all facets of care will be mediated increasingly by digital workflow, computerized knowledge management and decision support.

An example is the Personal Health Record in the RPMS/EHR:

The second health outcomes policy priority identified by the HIT Policy Committee is to engage patients and families in their healthcare. The following care goal for meaningful use addresses this priority: Provide patients and families with timely access to data, knowledge, and tools to make informed decisions and to manage their health. ARRA funded I H S to adopt Personal Health Record technology to provide patients with tools to view and manage their health information and promote self-management activities.

Additionally, The Improving Patient Care program supports putting the patient and family at the center of care, providing great customer service and supporting them as they strive toward wellness.

I see nursing as a big part of this change in clinical practice/process in meeting this goal

Page 332: *Changing Clinical Practice, cont.*

In the future virtually every facet of nursing practice in each setting where it is rendered will have a significant digital dimension around a core electronic health record. Biometric data collection will be increasingly be automated and diagnostic tests, medications and some therapies will be computer generated, managed and delivered with computer support. Patient histories and examination data will increasingly be collected by devices that interface directly with the patient and automatically stream into the EHR. Automated blood pressure cuffs, PDA-based functional status, and patient history surveys are examples of this.

Page 333: *Changing Clinical Practice, cont.*

In HIT supported organizations a broader array and higher proportion of services of all types will be provided within the context of computer templates and workflows. Care and its documentation will less frequently be “free-hand”. As routine aspects of care become digitally mediated and increasingly rote, RNS and other clinicians can be expected to shift and expand their focus to more complex and nuanced “high touch” tasks that these technologies can not readily or appropriately accomplish. This would include communication, guidance and support of the patient/consumer and their families. There will likely be greater opportunity for interventions such as counseling, behavior change, and social and emotional support—interventions that lie squarely within the province of nursing practice.

Page 333: *Redesigned Roles and Skill-Mix*

The new practice milieu—where much of nursing and medical care is mediated and supported within an interoperable “digital commons”—will support and potentially even require a much more effective integration of multiple disciplines into a collaborative team focused on the patients’ unique set of needs. Furthermore, Interoperable EHR’s linked with personal health records and shared support systems will influence how these teams work and share clinical activities. It will increasingly be possible for providers to work on digitally-linked teams who will collaborate with patients and their families no longer limited by “real time” contact. As the knowledge base and decision pathways that previously resided primarily in the clinicians’ brain are transferred to “clinical decision support” (CDSS) and computerized provider order entry (CPOE) modules of advance HIT systems, some types of care most commonly provided by nurses can readily shift to personnel with less training or to the patient and their families. Similarly, many types of care previously provided by physicians and other highly trained personnel can be

effectively provided by advanced practice and other specialty trained RNs. Furthermore, the performance of these fundamentally restructured teams will be monitored through the use of biometric, psychometric, and other types of process and outcomes “e-indicators” extracted from the HIT infrastructure.

Successful implementation of computerized information systems can drastically decrease the margins of error occurring in most healthcare settings. Successful implementation of CPOE requires an appreciation of the complexities and unpredictability of the physicians' and nurses' workflow. CPOE systems require diligent review of current practices and policies. This rather positive unintended consequence forces existing clinical practices to be scrutinized. In many instances I have seen sites forced to really examine their practices and policies.

Change in Time and Place of Care

Care supported by interoperable digital networks will shift in the importance time and place. The patient consumer will need not always the same location as the provider and the provider need not always interact with the patient in real time. As EHRs, CPOE systems, labs results, imaging systems, and pharmacies are all linked into the same network, many types of care can be provided without regard to location, as the “care grid” is available anywhere, anytime.

Remote patient monitoring is expanding exponentially. There is an ever growing array of biometric devices (e.g., indwelling hear of blood sugar monitors) that can collect, monitor and report information from the patient in real time wither in an institution or the home., some of these devices and can also provide direct digitally mediated care-the automated insulin pump and implantable defibrillators are the two extreme examples.

The implications of this for nursing will be considerable and as of yet not fully understood. It is not clear how much of nursing care might be “geographically untethered” when HIT is fully implemented but it will likely be as significant subset of care, possibly in the range of 15-35 percent of what nurses do today. In words, for this proportion of care, nurses need not be in the same locale (or even the same nation) as their patients. As new technologies impact the hospital and other settings for nursing services this phenomenon may increase.

Page 334: Efficiency and Outcomes

HIT adoption is expected to increase efficiency and effectiveness of clinician interactions with each patient and target population. EHRs and other HIT should lower the cost per unit of service delivered and/or improve the quality of care as measured by outcomes or achievement of other end points, such as increased adherence to optimal guidelines, HIT will lead to greater efficiency I it takes less

time for a clinician to provide the same unit of service or if a lower-cost clinician now practicing with extensive HIT support can now deliver the same type of care as higher cost non-HIT supported provider. Controlled "time and motion" studies that have compared clinicians doing the same task with and without HIT support have produced mixed findings on time efficiencies gained across clinicians and settings. One area with emerging evidence is hospital nursing time saved in documentation, with studies showing a 23-24 percent reduction in documentation time. These efficiency gains may be partially offset by the information demands of quality improvement initiatives and similar programs undertaken by a growing number of institutions.

In addition to HIT adoption, meeting Meaningful Use (MU) Measures and Improved Patient Care (IPC) sites can collectively and simultaneously build capacity for continuing improvement in quality and access, ensuring that all staff have the skills and tools for making good changes and know how to use measurement and data to improve the quality of care. Currently there is a work group that is designing user guides to address MU measures, IPC and EHR.