Integrating Nursing Informatics into the Curriculum: Creative Strategies

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- Assistant Director of Biomedical Informatics, Retired
  - Heartland Institute for Clinical and Translational Research (CTSA)
Florence Nightingale, 1863

- In attempting to arrive at the truth, I have applied everywhere for information, but in scarcely an instance have I been able to obtain hospital records fit for any purposes of comparison.
- If they could be obtained they would enable us to decide many other questions besides the ones alluded to.
- They would show the subscribers how their money was being spent, what amount of good was really being done with it, or whether the money was not doing mischief rather than good.
The Challenge

In this era of Meaningful Use and the mandate of electronic health records (EHRs) for all American by 2014, it is imperative that our students learn about EHRs in the classroom and in the clinical venue.
Institute of Medicine (IOM)

- Landmark reports
  - Computer-base Patient Record
    - Now known as Electronic Health Record
  - To Err Is Human and the series of Patient Safety and Quality reports
  - The Learning Health System
  - Health IT and Patient Safety: Building Safer Systems for Better Care
  - Race, Ethnicity, and Language Data

http://iom.edu
Challenges from the Institute of Medicine

- Reveals error in our health system and recommends health information technology as a solution.
- Explores the issues of quality in health care and recommends the use of patient information systems and technology.
Health Professions Education: A Bridge to Quality

“All health professional should be educated to deliver patient-centered care as member of an interdisciplinary team, emphasizing evidence-based practice, quality improvement approaches, and informatics.”

http://books.nap.edu/catalog/10681.html
Vision Of Health IT And Impact On Health Care
# Mainframe to Widespread Technology

## 50 years/5 Decades of Evolution (highlights)

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Introduced to healthcare</td>
<td>Computers in healthcare studied</td>
<td>Computer-based Information Systems (CIS) developed within hospitals</td>
<td>Field of Informatics emerged</td>
<td>Computer vendors became more focused on point of care</td>
<td>Embedded clinical decision support for nursing &amp; interdisciplinary practice</td>
</tr>
<tr>
<td>Office and financial accounting</td>
<td>Critical care units emerged with technology used by nurses (mechanical ventilators, cardiac monitors, etc)</td>
<td>Primarily focused on medical practice</td>
<td>Nursing Professional Practice grew and desire to represent practice within the computerized patient record</td>
<td>Healthcare systems recognized need for technology to standardize care</td>
<td>2004 – “Decade of Health Technology” and start of Office of the National Coordinator (ONC)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nurses began engaging with implementations and national workshops to explore the role of computers</td>
<td>Personal computer (PC) emerged</td>
<td>1992 – ANA recognized nursing informatics as a specialty</td>
<td>Increased activity of nursing informatics communities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NIH – CIS for nursing practice</td>
<td>ANA formed the Council of Computer Applications in Nursing (CCAN)</td>
<td>Nursing terminologies</td>
<td>2009- ARRA and HITECH funding for “meaningful use” of EHRs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Internet enhances information and data exchange</td>
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</tbody>
</table>
Nursing Informatics: ANA Scope and Standards of Practice

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

- ANA Scope and Practice of Nursing Informatics (2008, new edition being reviewed)

- The systems development life cycle (SDLC), or software development life cycle in information systems, is a process of creating or altering information systems, and the models and methodologies that people use to develop these systems.
Impact of Current Trends and Emerging Technology on Curriculum Design
Understanding the HIT Landscape

The breadth of the HIT landscape
- EHRs to social networking
- Research to patient care
- Human cognition to usability

How do you “keep up”

Then there is federal stimulus and regulation
With the Help of Health IT, Clinicians Will Have:

- Accurate and complete information about a patient's health.
- Ability to better coordinate the care they give.
- Securely share information with patients and their family caregivers electronically.
- Patients and their families can take part in decisions about their health care.
- Information to help:
  - Diagnose health problems
  - Reduce medical errors
  - Support quality and research projects.
A Learning System for the U.S.
“Health and health care are going digital. ...Progress in computational science, information technology, and biomedical and health research methods have made it possible to foresee the emergence of a learning health system which enables both the seamless and efficient delivery of best care practices and the real-time generation and application of new knowledge.”

(p. 1)

Available at: www.iom.edu/vsrt
Learning Healthcare System Requirements

- Trusted and valued by the public
- Economically sustainable
- Stable, certifiable, adaptable, and self-improving
- Capable of generating valid knowledge

From: Toward a Science of Learning Systems: The Research Challenges Underlying a National-Scale Learning Health System (NSF)
HIPAA
- Transaction and Code Set Standards
  - X12
  - NC PDP
  - Other terminologies
- Privacy

- National Provider Identifier

https://nppes.cms.hhs.gov/NPPES/Welcome.do
ARRA, HITECH and Meaningful Use

ACA and Health Reform
Federally Required Terminology

- SNOMED CT
- LOINC
- ICD-10-CM
- RxNORM
- CPT
Meeting Meaningful Use—Nursing’s Perspective

- Nursing influence on Meaningful Use implementation
  - Understanding the power of health IT
- The key to successful influence lies in three powerful principles:
  - Identify a handful of high-leverage behaviors that lead to rapid and profound change.
  - Use personal and vicarious experience to change thoughts and actions.
  - Marshall multiple sources of influence to make change inevitable.

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Meaningful Use Is.....

- An incentive program rewarding deployment of EHRs and their effective use for patient benefit
- A national infrastructure to support deployment and use of EHRs
- 2014 goal
- An information-powered leap in the quality, safety, and effectiveness of our health care system

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MU—Implications for Nursing

- CPOE affects verbal orders
- Be sure your electronic Medication Administration Record also has access to interaction checks of drugs and allergies.
- Regulations require a patient problem list, not medical diagnosis list. This is your opportunity to shine and show your contribution to patient care.
  - Lobby your organization to have nursing diagnoses on the patient problem list as it is a tool to coordinate multidisciplinary care.
Nursing Problem List Subset of SNOMED CT

<table>
<thead>
<tr>
<th>Nursing Problem List Subset File</th>
<th>Derived from SNOMED CT version</th>
<th>Derived from UMLS Metathesaurus version</th>
</tr>
</thead>
<tbody>
<tr>
<td>NursingProblemListSubset_20110408.zip</td>
<td>July 2010 International Release</td>
<td>2010AB</td>
</tr>
</tbody>
</table>

Introduction

The SNOMED CT® encoded Nursing Problem List Subset, intended for use in patients’ problem lists, is an output of the Unified Medical Language System® (UMLS®) Metathesaurus® that is based on nursing diagnosis concepts found within the Metathesaurus.

Purpose and use of subset

The main purpose of the Nursing Problem List Subset of SNOMED CT is to facilitate the use of SNOMED CT as the primary coding terminology for nursing problems used in care planning, problem lists or other summary level clinical documentation.

The use of a common list of SNOMED CT concepts will maximize data interoperability among institutions. Local problem list vocabularies often need to expand to satisfy specific user needs. Institutions that are using their own nursing problem list vocabularies are encouraged to map them to SNOMED CT with a focus on these nursing diagnosis concepts to facilitate data interoperability. The UMLS Terminology Services (UTS) includes a SNOMED CT browser that may be used for this purpose. The SNOMED CT Browser is available through the SNOMED CT menu of the UTS.

Choice of SNOMED CT concepts

To find the most appropriate SNOMED CT concepts for each problem list term, the following guidelines are used:

- Only current SNOMED CT concepts are included (concept status = 0)
- Concepts belonging to the Non-Human Subset are excluded
- Most concepts are chosen from the SNOMED CT clinical finding hierarchy.

Additional resources from the UMLS

For each SNOMED CT concept in the subset, the corresponding UMLS CUI (concept unique identifier) is listed. By using these identifiers, users can access resources available in the UMLS e.g., additional synonyms (beyond those present in SNOMED CT itself), text definitions for many terms, corresponding codes in other terminologies, etc.

File description

The SNOMED CT Nursing Problem List Subset data file has the following fields:

- **SNOMED_CONCEPT_ID** – conceptId of the SNOMED CT concept


SNOMED CT in an application, such as synonyms that may include more clinical terminology than the SNOMED CT fully-specified name. The identifiers in the file can be used to extract more complete information for these concepts from either the UMLS release files or the SNOMED CT native format files.
Welcome to the UTS https://uts.nlm.nih.gov/home.html

The UMLS Terminology Services (UTS) allows you to:

- Request a UMLS Metathesaurus License and create a UTS account
- Search and display content from UTS Applications including:
  - Metathesaurus Browser
  - Semantic Network Browser
  - SNOMED CT Browser
- Download data files including:
  - UMLS Knowledge Sources
  - RxNorm weekly and monthly updates
  - SNOMED CT
  - CORE Problem List and Route of Administration Subsets of SNOMED CT
- Query data remotely via Web Services (see API Documentation)
- Complete UMLS Annual Report and SNOMED CT® Affiliate Reports

UMLS Terminology Services (UTS) provide both web interfaces as well as Web Services to search and retrieve UMLS data.
Welcome to the NLM Value Set Authority Center (VSAC)

For VSAC announcements, please subscribe to the VSAC Updates listerv.

The Value Set Authority Center (VSAC) is provided by the National Library of Medicine (NLM), in collaboration with the Office of the National Coordinator for Health Information Technology and the Centers for Medicare & Medicaid Services.

The VSAC has published the annual update for the 2014 Eligible Hospital Clinical Quality Measure (CQM) Value Sets. The update includes revised value sets to address deleted and remapped codes in the latest terminology versions, as well as new codes for addressing CQM logic corrections and clarifications.

The VSAC provides downloadable access to all official versions of vocabulary value sets contained in the 2014 Clinical Quality Measures (CQMs). The value sets in the VSAC describe the specific populations included and excluded in order to properly calculate each 2014 CQM. Each value set consists of the numerical values and human-readable names, drawn from standard vocabularies such as SNOMED CT© and ICD-10-CM, which are used to define clinical concepts used in clinical quality measures (e.g., patients with diabetes, clinical visit).

The content of the VSAC will gradually expand to incorporate value sets for other use cases, as well as for new measures and updates to existing measures. Viewing and/or downloading value sets requires a free Unified Medical Language System® Metathesaurus License, due to usage restrictions on some of the codes included in the value sets.

The Data Element Catalog contains the complete list of 2014 CQMs and value set names.

MU—Implications for Nursing

- Nurses are on the front line for maintenance of medication lists.
  - We are most in the know about what medications the patient is on and whether medications are being held for procedures and when they should be reactivated.
- Nurses are responsible for checking on allergies.
- While some of the demographic information is collected in the admissions department; it is verified by the nurse.
- Vital sign information is collected and documented by nurses.
- Smoking status is part of a nursing admission history.
MU—Implications for Nursing

- Quality measures are from a list from which your agency selects.
- Be sure you know what quality measures are being targeted for Meaningful Use.
- Document the information needed to capture quality measures as a by-product of care.
- Know where and how automated clinical decision support is being used.
- Ask for it to enhance your workflow and patient safety.
- Even if it doesn’t affect you, you may get questions about it from other clinicians.

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MU—Implications for Nursing

- The use of the EHR in automatically organizing data, through queries, will fundamentally change the way clinical research is conducted.
- Nurse researchers will be able to query EHRs to examine patient data to define diagnostic criteria for nursing diagnoses, analyze the patient responses to nursing interventions, and determine appropriate quality measures.
- The EHR can help nursing become more visible in our contributions to quality patient care.
MU—Implications for Nursing

- Handoffs or reports at transition of care are part of the Summary of Care Record.
- Insure that your facility’s record includes the nursing content in this summary that is important to patient outcomes.
  - Nausea and Fatigue
  - Mobility and Functional status
  - Patient and family understanding of treatment
  - How the patient and family needs to integrate the management of their condition into their daily lives and home situation.
<table>
<thead>
<tr>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2011-2012</strong></td>
<td><strong>2014</strong></td>
<td><strong>2016</strong></td>
</tr>
<tr>
<td>Data capture and sharing</td>
<td>Advance clinical processes</td>
<td>Improved outcomes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stage 1: Meaningful use criteria focus on:</th>
<th>Stage 2: Meaningful use criteria focus on:</th>
<th>Stage 3: Meaningful use criteria focus on:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronically capturing health information in a standardized format</td>
<td>More rigorous health information exchange (HIE)</td>
<td>Improving quality, safety, and efficiency, leading to improved health outcomes</td>
</tr>
<tr>
<td>Using that information to track key clinical conditions</td>
<td>Increased requirements for e-prescribing and incorporating lab results</td>
<td>Decision support for national high-priority conditions</td>
</tr>
<tr>
<td>Communicating that information for care coordination processes</td>
<td>Electronic transmission of patient care summaries across multiple settings</td>
<td>Patient access to self-management tools</td>
</tr>
<tr>
<td>Initiating the reporting of clinical quality measures and public health information</td>
<td>More patient-controlled data</td>
<td>Access to comprehensive patient data through patient-centered HIE</td>
</tr>
<tr>
<td>Using information to engage patients and their families in their care</td>
<td></td>
<td>Improving population health</td>
</tr>
</tbody>
</table>
ONC Releases MU Stage 3 Recommendations

- Build on the foundation to improve patient outcomes.
  - Using electronic Clinical Quality Measures (eCQMs) to measure identified care outcomes
- Specific stage 3 objectives recommended
  - Tracking more than 50 percent of medication orders electronically
  - Providing the ability to electronically submit patient-generated data
  - Ensuring EHRs can assist with follow-up orders and identify potentially appropriate clinical trials
  - Sending electronic notifications to a patient's primary care provider or other member of the care team following a significant healthcare event
- These recommendations are not finalized
### Step 3: Add Data Required by the 2014 Edition EHR Certification Criteria

#### Patient Engagement 170.314(e)

**Cert. Category**

**Criterion**

View/Download/Transmit 170.314(e)(1)

**Description**

patients must be able to view & download their own medical info & also be able to transmit that info to a 3rd party

**Summary Type**

Ambulatory or Inpatient Summary

---

**Common MU Data Set**

- Care plan
- Care team member(s)
- Date of birth
- Ethnicity**
- Laboratory test(s) **
- Laboratory value(s)/result(s)
- Medications **
- Medication Allergies **
- Patient name
- Preferred language
- Problems **
- Procedures **
- Race **
- Sex
- Smoking status **
- Vital signs

**Criterion-Specific Data Requirements**

- Admission & Discharge Dates (Inpatient Only)
- Admission & Discharge Locations (Inpatient Only)
- Discharge Instructions (Inpatient Only)
- Provider Name & Office Contact Information (Ambulatory Only)
- Reason(s) for Hospitalization (Inpatient Only)

**NOTE:** Data requirements marked with a double asterisk (**) also have a defined vocabulary which must be used.
### Step 3: Add Data Required by the 2014 Edition EHR Certification Criteria

**Cert. Category:** Care Coordination 170.314(b)

**Objective:** Transition of Care 170.314(b)(1)&(2) when transitioning a patient to another care setting, the EP or EH/CAH should provide a summary care record

<table>
<thead>
<tr>
<th>Common MU Data Set</th>
<th>Criterion-Specific Data Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Care plan</td>
<td>• Provider Name &amp; Office Contact</td>
</tr>
<tr>
<td>• Care team member(s)</td>
<td>• Information (Ambulatory Only)</td>
</tr>
<tr>
<td>• Date of birth</td>
<td>• Reason for Referral (Ambulatory Only)</td>
</tr>
<tr>
<td>• Ethnicity **</td>
<td>• Encounter Diagnoses **</td>
</tr>
<tr>
<td>• Laboratory test(s) **</td>
<td>• Cognitive Status</td>
</tr>
<tr>
<td>• Laboratory value(s)/result(s)</td>
<td>• Functional Status</td>
</tr>
<tr>
<td>• Medications **</td>
<td>• Discharge Instructions (Inpatient Only)</td>
</tr>
<tr>
<td>• Medication allergies **</td>
<td>• Immunizations **</td>
</tr>
<tr>
<td>• Patient name</td>
<td></td>
</tr>
<tr>
<td>• Preferred language</td>
<td></td>
</tr>
<tr>
<td>• Problem **</td>
<td></td>
</tr>
<tr>
<td>• Procedures **</td>
<td></td>
</tr>
<tr>
<td>• Race **</td>
<td></td>
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<tr>
<td>• Sex</td>
<td></td>
</tr>
<tr>
<td>• Smoking status **</td>
<td></td>
</tr>
<tr>
<td>• Vital signs</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** Data requirements marked with a double asterisk (**) also have a defined vocabulary which must be used.
Transitions of Care Initiative Overview

- Empowering patients, engaging the clinician, and enabling health information exchange in support of national health initiatives to increase patient safety and improve health care outcomes
- Improve the electronic exchange of core clinical information.

**Key Functions of the Initiative**
- Focus on clinical content to be exchanged in patient care transitions
- Build on existing standards to accelerate adoption
- Work with the HIT community to remove barriers to implementation

**Key Outputs of the Initiative**
- Unambiguous definition of the clinical elements that should be included in care transitions
- Guidance on the exchange of information during patient care transitions
- Agreement on a single standard (Consolidated CDA) in support of Meaningful Use requirements
Continuity of Care Document

- Required through health care reform
- Does a great job of communicating physician care and reimbursement issues
- Does a partial job of communicating nursing care and patient status on discharge
- Many patient issues that lead to readmission within 30 days are issues addressed by nursing care
- Format developed by HL7
Continuity of Care Document

- Patient Information
- Allergies, adverse reactions & alerts
- Immunizations
- Medications
- Care Plan
- Discharge medications
- Reason for referral

- Problem list
- Procedures
- Functional and cognitive status
- Results—labs, etc
- Social history
- Vital signs
- Discharge instructions

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Plan of Care

Figure 1: Structure of Patient Care Plan (ONC S&I Framework Longitudinal Coordination of Care Community)
Figure 2: Contents of Patient Care Plan (ONC S&I Framework Longitudinal Coordination of Care Community)
The Plan of Care (Conditions, Goals and Interventions), along with Risk Factors and Decision Modifiers, iteratively evolve over time.

**Health Conditions**
- Acute Problems
- Chronic Problems

**Risks/Concerns:**
- Injury (e.g. falls)
- Illness (e.g. ulcers, cancer, stroke, hypoglycemia, hepatitis, diarrhea, depression, etc.)

**Risk Factors:**
- Age, gender
- Significant Past Medical/Surgical Hx
- Family Hx, Race/ethnicity, Genetics
- Exposures/lifestyle (e.g. alcohol, smoke, radiation, diet, exercise, workplace, sexual...)
- Environment/Home Safety
- Test Result/Examination Findings

**Decision Modifiers**
- Patient values/priorities/wishes/adv dir/s/ready/expectations
- Patient status (functional, cognitive, symptoms, prognosis, etc...)
- Patient access to care/support/resources/transportation
- Patient allergies/intolerances

**Goals**
- Desired outcomes
- Barriers
- Progress
- Related Conditions
- Related Interventions

**Interventions/Actions**
(e.g. medications, wound care, exercise, diet, tests, behavior changes, support, calling MD for symptoms, consults, rehab, etc...)
- Start/Stop dates
- Frequency
- Responsible parties
- Setting of care
- Instructions/parameters
- Supplies
- Status of intervention
- Related Conditions

**Outcomes**
- Decision Support
- Decision Support
- Side effects
“Blue Button” is shorthand for a movement toward an improved healthcare system in which patients and providers use information technology to collaborate and improve health.

The Blue Button logo signifies that you—as an individual consumer or patient—can get easy, secure access to your own health information in a format you can use.

To “Blue Button” is a verb, meaning, for a consumer, “download my health data so I can use it.”

http://www.healthit.gov/bluebutton
If you are a provider or hospital eligible for incentives under the MU incentive program, learn how implementing a Blue Button download capability may help your organization meet MU requirements by reading the paper "Markle Connecting for Health Comments on Stage 2 Meaningful Use.

http://www.markle.org/sites/default/files/20100831_dlCapability_pb_1.pdf
Nurses in Decision-making Circles—Essential to Promote Professional Practice

- Office of the National Coordinator
- National Committee on Vital and Health Statistics
- CMS Panels
- NQF committees and panels
- IOM
- S&I Framework
- HL7
- IHTSDO and LOINC
- Other committees and Task Forces
Technology Is Pervasive

- Ergonomics
- Safety
- Empowering patients

- Working with the patient
- Optimizing learning opportunities
New Team Members

I developed a "virtual nurse" that helps hospital patients understand their medications and follow-up visits.

—Laura Pfeifer, computer science major
mHealth

- A term used for the practice of medicine and public health, supported by mobile devices.

- The mHealth field has emerged as a sub-segment of eHealth, the use of information and communication technology.
Mobile Apps for Health

Mobilizing Data for Pressure Ulcer Prevention Challenge, http://www.health2con.com/devchallenge/challenges/onc-i2-challenges
http://epatientdave.com

e-Patient Dave’s
E - PATIENT
BOOT CAMP

Manhattan Premiere
January 27, 2012  10:00-4:00
Edelman PR
250 Hudson Street, New York
Future Of Health Information Technology

Dr. McCoy and Nurse Chapel  

Holographic Doctor
Educational Resources
Regional Extension Centers

RECs are working with half of all primary care NPs and 44% of all primary care PAs nationwide

Figure 2: Proportion of Primary Care Nurse Practitioners enrolled with RECs by State

SOURCE: Customer Relationship Management (CRM) Tool, maintained by OPAS at ONC. Data as of March 18, 2013. Total number of primary care NPs as estimated by SK&A survey data, 2011.

* REC enrollment ranges from 26% to 100%. 20,854 NPs are enrolled with RECs.
* More than half of all primary care NPs (58%) in rural areas are enrolled with an REC.
ONC Course Materials for Meaningful Use
Click on any of the topics below to view that topic. Please note that each topic link will take you to the first page of that topic. If you return to the menu, you will then need to navigate back to the page you were viewing.

- Interoperability Basics Introduction
- Defining Interoperability
- Interoperability Path to Meaningful Use Stage 2
- Building Blocks of Interoperability
- The Effect of Interoperability on Categories of Care
- Interoperability Basics Summary

http://www.healthit.gov/providers-professionals/interoperability-training-courses

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Interoperability Building Blocks

Interoperability is about using technology to exchange key pieces of health information securely. The goal is obtaining and sharing the right information in the right context.

The Office of the National Coordinator for Health Information Technology (ONC) defined a common Meaningful Use data set that facilitates reporting for all summary of care records, care transitions, discharges, and patient access. These data sets include everything from lab test results, vital signs, and blood pressure readings, to patient demographic information, discharge instructions for hospitals, and provider contact information. You can view the Meaningful Use Common Data Set, by selecting this link.

In order to exchange this information with providers and patients, there is an ONC-defined framework for a set of building blocks that support system interoperability.

These building blocks include:

- Vocabulary & Code Sets
- Content Structure
- Transport
- Security
- Services
The Common MU Data Set defines a standard set of data that is common across a number of the MU objectives such as the “view, download, and transmit to a 3rd party,” “clinical summary,” “transitions of care—receive, display, and incorporate transition of care/referral summaries,” “transitions of care—create and transmit transition of care/referral summaries,” and “data portability” certification criteria. Many data sets within the common MU data set also have a defined vocabulary.

The Common MU Data Set includes the following:

- Patient name
- Sex
- Date of birth
- Race
- Ethnicity
- Preferred language
- Care team member(s)
- Allergies
- Medications
- Care plan field(s)
- Problems
- Laboratory test(s)
- Laboratory value(s)/result(s)
- Procedures
- Smoking status
- Vital signs
Vocabulary & Code Sets - List of Standards

In addition to revising some of the vocabulary standards used in Stage 1, three additional data elements now require the use of standards-based vocabularies. Select each of these new standards below to learn more.

- Preferred Language
- Smoking Status
- Medication Allergies

Smoking Status Syntax

The vocabulary for Smoking Status is SNOMED-CT, which must be coded in one of the following SNOMED CT® codes:

1. Current every day smoker. 449868002
2. Current some day smoker. 428041000124106
3. Former smoker. 8517006
4. Never smoker. 266919005
5. Smoker, current status unknown. 77176002
6. Unknown if ever smoked. 266927001
7. Heavy tobacco smoker. 428071000124103
8. Light tobacco smoker. 428061000124105

Select Close to return to the main page.
http://www.healthit.gov/patients-families/video/health-it-you-giving-you-access-your-medical-records
Impact of eMeasures on Curriculum
- Quality Data Model
  - Foundation for eMeasures as required in Meaningful Use

- Appointed groups
  - Health Information Technology Advisory Committee
  - National Priorities Partnership
  - Measure Applications Partnership
  - Consensus Standards Approval Committee

- NLM’s Value Set Authority Center
New! Quality Intelligence Reports

Understand and benchmark your hospital's performance with NDNQI's interactive Quality Intelligence Reports. Discover how NDNQI can shape your performance improvement initiatives.

http://www.nursingquality.org
Indicator List

* Nursing Staff Skill Mix *
* Nursing Hours per Patient Day *
* Assault / Injury Assault Rates
* Catheter Associated Urinary Tract Infections *
* Central Line Associated Blood Stream Infections *
* Fall Rates *
* Injury Fall Rates *
* Hospital / Unit Acquired Pressure Ulcer Prevalence *

* Indicators endorsed by National Quality Forum (NQF)
Other NDNQI Indicators

- RN Surveys for satisfaction and practice environment
- RN education and certification
- Pediatric pain assessment cycle
- Pediatric IV infiltration rate
- Psychiatric patient assault rate
- Restraints prevalence
- Nurse turnover
- Ventilator associated pneumonia
Transforming NDNQI into eMeasures and Lessons Learned

Feasibility studies with partners to extract information from EHRs
The Role for Nursing Education

Teach importance of accurate data recording
Evidence-based practice is standardized content that is semantically interoperable.
Informatics Competencies
**TIGER: Advancing the integration of health informatics to transform practice, education and consumer engagement**

NEW! Vision Statement

To enable nurses and interprofessional colleagues to use informatics and emerging technologies to make healthcare safer, more effective, efficient, patient-centered, timely and equitable by interweaving evidence and technology seamlessly into practice, education and research fostering a learning healthcare system.

Approved by TIGER Board of Directors February 2012

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**What's New**

March 2012
Be sure to view the TIGER Calendar.

Missed the TIGER Competency Call? Listen to Recording.

TIGER Institute at HIMSS12 more info coming soon

Subscribe to TIGER News

Get connected on the current activities of the Virtual Learning Environment.

**New Book!** Where Technology and Caring Meet 4th edition Order today>

July 1, 2011
The TIGER Initiative Foundation incorporates as a legal entity read more>???
QSEN Definition of Informatics

- Informatics is the use of information and technology to communicate, manage knowledge, mitigate error, and support decision making.
- www.qsen.org
Informatics

- **Pre-licensure**
  - Use information and technology to communicate, manage knowledge, mitigate error, and support decision making

- **Graduate**
  - Definition should remain the same
  - Must attain pre-licensure competencies
First Cluster of Pre-licensure Competencies

- **Knowledge**
  - Explain why information and technology skills are essential for safe patient care

- **Skills**
  - Seek education about how information is managed in care settings before providing care
  - Apply technology and information management tools to support safe processes of care

- **Attitudes**
  - Appreciate the necessity for all health professionals to seek lifelong, continuous learning of information technology skills

http://qsen.org/competencies/pre-licensure-ksas
Second Cluster of Pre-licensure Competencies

- **Knowledge**
  - Identify essential information that must be available in a common database to support patient care
  - Contrast benefits and limitations of different communication technologies and their impact on safety and quality

- **Skills**
  - Navigate the electronic health record
  - Document and plan patient care in an electronic health record
  - Employ communication technologies to coordinate care for patients

- **Attitudes**
  - Value technologies that support clinical decision-making, error prevention, and care coordination
  - Protect confidentiality of protected health information in electronic health records
Third Cluster of Pre-licensure Competencies

- **Knowledge**
  - Describe examples of how technology and information management are related to the quality and safety of patient care
  - Recognize the time, effort, and skill required for computers, databases and other technologies to become reliable and effective tools for patient care

- **Skills**
  - Respond appropriately to clinical decision-making supports and alerts
  - Use information management tools to monitor outcomes of care processes
  - Use high quality electronic sources of healthcare information

- **Attitudes**
  - Value nurses’ involvement in design, selection, implementation, and evaluation of information technologies to support patient care
Sample Learning Activity

QSEN Informatics Competencies for Prelicensure Nursing Students Worksheet

Name: _______________________________

QSEN defines Informatics as the use of information and technology to communicate, manage knowledge, mitigate error, and support decision making.

In the grid below, please rate the degree of your achievement of this competency. Place an X in the appropriate box.

<table>
<thead>
<tr>
<th>QSEN Competency</th>
<th>Very Competent</th>
<th>Moderately Competent</th>
<th>Somewhat Competent</th>
<th>Not Competent</th>
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Small Group Work Assignment

Developing learning activities
Small Group Work

- Create at least one learning activity for each competency
  - The activity can include more than one competency
- Link to federal initiative(s)
Approach for Selecting Courses, Assignments, and Evaluation Strategies

- Know the strengths of the faculty
- Assess needs of the community
- Evaluate accreditation criteria
- Incorporate known competencies
- Assignments reflect the real world, provide competency attainment
- Evaluation based on accreditation, graduation rates, certification rates
Pearls of Wisdom

- Be prepared for the unexpected
- Limit combinatorial complexity
  - Especially in organizational rollouts of programs and processes
- Use creative destruction
  - Systematic evaluation and elimination of nonessential activities
Combined Models for Adoption

Visibility

Tech. Trigger

Peak of Inflated Expectations

Trough of Disillusionment

Slope of Enlightenment

Plateau of Productivity

Time

Innovators

Early Adopters

Early Majority

Late Majority

Laggards

Joe Betts-LaCroix
joe@foundersresearch.com
2010-04-07
“Learning to use an EHR is more than documenting the care of a patient. It is learning to **collect and analyze information** about a patient and then **passing that information on to the next clinician** who cares for the patient. Only with quality patient information at the point of care can clinicians provide safe, effective care.”

Judith J. Warren, 2005
Ignite Your Passion for Teaching and Giving Students the Big Picture

Questions?
jjwarren@live.com