

Project Overview

Objectives

Currently, Nursing and Allied Health programs provide some use and exposure to information technology as part of their curriculum. However, given the rapid changes occurring in healthcare, including adoption of electronic medical records (EMR), graduates will require increased knowledge and experience in this area. As they enter the workforce, their comfort level with both technology itself and informatics concepts will become increasingly essential.

The Technology Informatics Guiding Education Reform (TIGER) initiative has identified key competencies for nursing professionals. These would in most cases be applicable for Allied Health professionals as well. Following an extensive review of the literature and survey of nursing informatics education, research, and practice groups, the TIGER competency model consists of three parts, including 1) Basic Computer Competencies, 2) Information Literacy and 3) Information Management.

Information Literacy could be considered one of the most overlooked for practicing professionals, and includes:

- Determine the nature and extent of the information needed
- Access needed information effectively and efficiently
- Evaluate information and its sources critically and incorporates selected information into his or her knowledge base and value system
- Individually or as a member of a group, use information effectively to accomplish a specific purpose
- Evaluate outcomes of the use of information

This analysis focused on the current state of technology and informatics integration within the existing college Nursing and Allied Health curriculum and how to conduct a self-assessment to identify areas for improvement. The main objectives for this initiative were:

- Based on previous work, create an online self-study instrument for nursing and allied health programs to assess readiness for infusion of health IT into a particular program. Self-study will be constructed to require assembly of information and clarification of resources and will of program principals to implement.
- Pilot the online assessment and revise as needed
- Provide targeted virtual consulting time (as requested by any consortium college)
- Identify options to further incorporate technology into learning experiences (in the skills lab, classes, clinical rotations, projects and other ways)
- Identify opportunities for further integration of informatics concepts into coursework

Assumptions

The following assumptions guided the development of this self-assessment, along with the plan to implement it and analyze the results:

- The self-assessment will be applicable to both Nursing and various Allied Health programs
- Specific program results will not be shared with other colleges. However, best practices and trends will be extracted and shared broadly across the consortium members.
- Access to the online assessment tool will be limited to the consortium Executive Director, consultant, program leads, Project Managers and those building/maintaining the online tool. Other program faculty, students and outside stakeholders will not be expected to access the assessment directly.
- The self-assessment will still be available after June 30, 2013. However, colleges are highly encouraged to complete it beforehand so they can take advantage of consulting opportunities and leveraging best practices from other consortium colleges.
- This self-assessment will include consideration of the following types of technology:
 - Domain specific technology (e.g. electronic medical records, linear accelerators, diagnostic imaging machines, use of laboratory equipment, point-of-care technologies and others). Each program completing the self-assessment will define what that includes for their domain.
 - Personal technology (e.g. use of personal technology such as laptops and iPhones, iPad, Blackberry, other devices, use of social media)
 - Classroom and other instructional technology (e.g. Learning Management Systems – LMS, Blackboard, online animations, videotaping capabilities, games and simulations, self-graded testing functionality and others)
- Informatics references and questions in this self-assessment refer to the topics outlined below.

Informatics (as defined by the American Medical Informatics Association):

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2649328/>

“Clinical informaticians transform health care by analyzing, designing, implementing, and evaluating information and communication systems that enhance individual and population health outcomes, improve patient care, and strengthen the clinician-patient relationship.

Clinical informaticians use their knowledge of patient care combined with their understanding of informatics concepts, methods, and tools to:

- *Assess information and knowledge needs of health care professionals and patients,*
- *Characterize, evaluate, and refine clinical processes,*
- *Develop, implement, and refine clinical decision support systems, and*

- *Lead or participate in the procurement, customization, development, implementation, management, evaluation, and continuous improvement of clinical information systems.”*

These topics could expand the student’s knowledge about the bigger picture regarding data integrity and data usage at all points from direct patient care to downstream activities.

Informatics includes the following concepts:

- Evidence-based clinical practice guidelines
- E-Health & Consumer Health Informatics
- Standard Nomenclatures & Classifications (SNOMED, NANDA, ICD-10)
- Requirements Definition
- Reporting/Data Mining
- Data Quality
- Alerts/Clinical Decision Support
- Usability/Ergonomics
- Point-of-Care Technology
- System Integration
- Privacy and Security
- Identifiers
- Change Management & Workflow
- Patient Education

The following informatics concepts could be incorporated into classroom didactic sessions, clinical rotations, project work or simulation/skills lab activities. There could be a particular emphasis on integration of informatics concepts into multidisciplinary Care Planning activities.

Note: “EMR” in this matrix refers to the electronic medical record (EMR) system being used in the patient care setting where the student is completing their clinical rotation. However, if the colleges currently have or plan to obtain student access to other training EMR systems, that system could also be utilized to incorporate informatics concepts.

Topic	Description
Evidence-based clinical practice guidelines	Identify relevant guidelines from national standards organizations, professional organizations, government agencies (e.g. AHRQ) and other professional sources.
E-Health & Consumer Health Informatics	Analyze content utilizing validity of evidence criteria

Topic	Description
Standard Nomenclatures & Classifications (SNOMED, NANDA, ICD-10)	Explore some of the leading systems: - Standardized Nomenclature of Medicine (SNOMED) - North American Nursing Diagnosis Association (NANDA) - International Classification of Diseases (ICD-10)
Requirements Definition	Define what an automated system needs to support the Nursing Process
Reporting/Data Mining	Identify some of the primary uses for electronic patient
Data Quality	Determine data quality characteristics of clinical systems
Alerts/Clinical Decision Support	Determine decision support characteristics of clinical systems
Usability/Ergonomics	Evaluate the design and ease of use for the system, input devices and related technology
Point-of-Care Technology	Explore emerging products and impact on patient care, especially with older adults.
System Integration	Analyze the handoffs internally and externally, both electronically and hybrid (part digital & part paper-based)
Privacy and Security	Consider HIPAA and other regulations aimed at safeguarding patient information.
Identifiers	Examine continuity of patient records
Change Management & Workflow	Investigate how the organization was originally affected by the EMR deployment and is currently affected by changes in availability
Patient Education	Examine potential for EMR systems and other technology to support all modes of patient education (visual, auditory, kinesthetic)

- Further incorporation of technology provides an opportunity for the program to standardize some business processes, training and policies & procedures, while reducing rework and further assisting students
- The time needed to coordinate data gathering and complete this online self-assessment will likely involve faculty release time
- The number of courses in the Nursing and Allied Health curriculum have little to no room for additional classes or credit hours. Thus, new technology and informatics content would optimally be worked into existing classes and learning activities.
- Few, if any, of the current faculty have formally taught informatics or technology classes or modules in their current role or past work.
- Faculty will need further assistance (e.g. work study assistance, mentoring, formal training) to help them become more comfortable with technology and informatics concepts.
- The time to incorporate new technology into the program (to evaluate it, deploy it and train faculty/students/staff) will likely involve faculty release time
- Implementation of technology components into the curriculum should be leveraged across Nursing and Allied Health programs whenever possible.
- There are other campus resources that could be further leveraged in the short term (e.g. Medical Informatics faculty, HIM faculty and cybrarians)
- The recommended time frame to complete the program enhancements recommended here will be within the next 2-3 academic years

Approach

A comprehensive approach was taken to gathering information to develop the self-assessment. Various stakeholders across consortium colleges were interviewed, documents reviewed and other activities completed. These included:

Interviews

The following key stakeholders and managers at the two largest consortium members were interviewed regarding current technology integration at their organization, issues they encounter in this area and perspectives on the self-assessment.

Bellevue College (BC):

Kevin McCarthy – Health Sciences, Education & Wellness Institute (Dean)

Kristine Miller – Radiation & Imaging Sciences (Chair)

Lisa Tedeschi – Associate Degree in Nursing (Chair)/Continuing Nursing Ed. (Chair)

Joselyn Anderson – Nursing Faculty

Pam Charney -- Healthcare Technology Management Program Chair

Northern Virginia Community College (NOVA):

Andy Cornell -- Allied Health (Director)

David Falkenstein – Health Information Services Center of Excellence (Director)

Willie Pomeroy – Associate Degree program

Tony Mariani – Project Manager

Mandy Milot – Nursing (Dean)

Note: those listed in red font will be interviewed in early January 2013

Member College Surveys

The following Health eWorkforce Program Managers were surveyed as part of developing the self-assessment. Some also included feedback from Nursing and Allied Health staff at their college.

Colleges responding to the initial planning survey (with their Project Manager listed):

Bellingham Technical College -- Lynnette Bennett)

Clover Park Technical College -- Greg Sapp

Pierce College -- Donna Moran

Renton Technical College -- Maria Anastario

Whatcom Community College -- Cindy Burman-Woods

Colleges *not* able to respond to the initial planning survey (with their Project Manager listed):

Spokane Community College -- Robert Foley
Clark College -- Rachele Bakic

They had approximately 10 days to complete the short survey. The intent was to identify all programs that could be included in the self-assessment and any unique characteristics of their organization. The survey is included in the next section of this document.

Document Review

The following documents and resources were examined to guide development of the self-assessment:

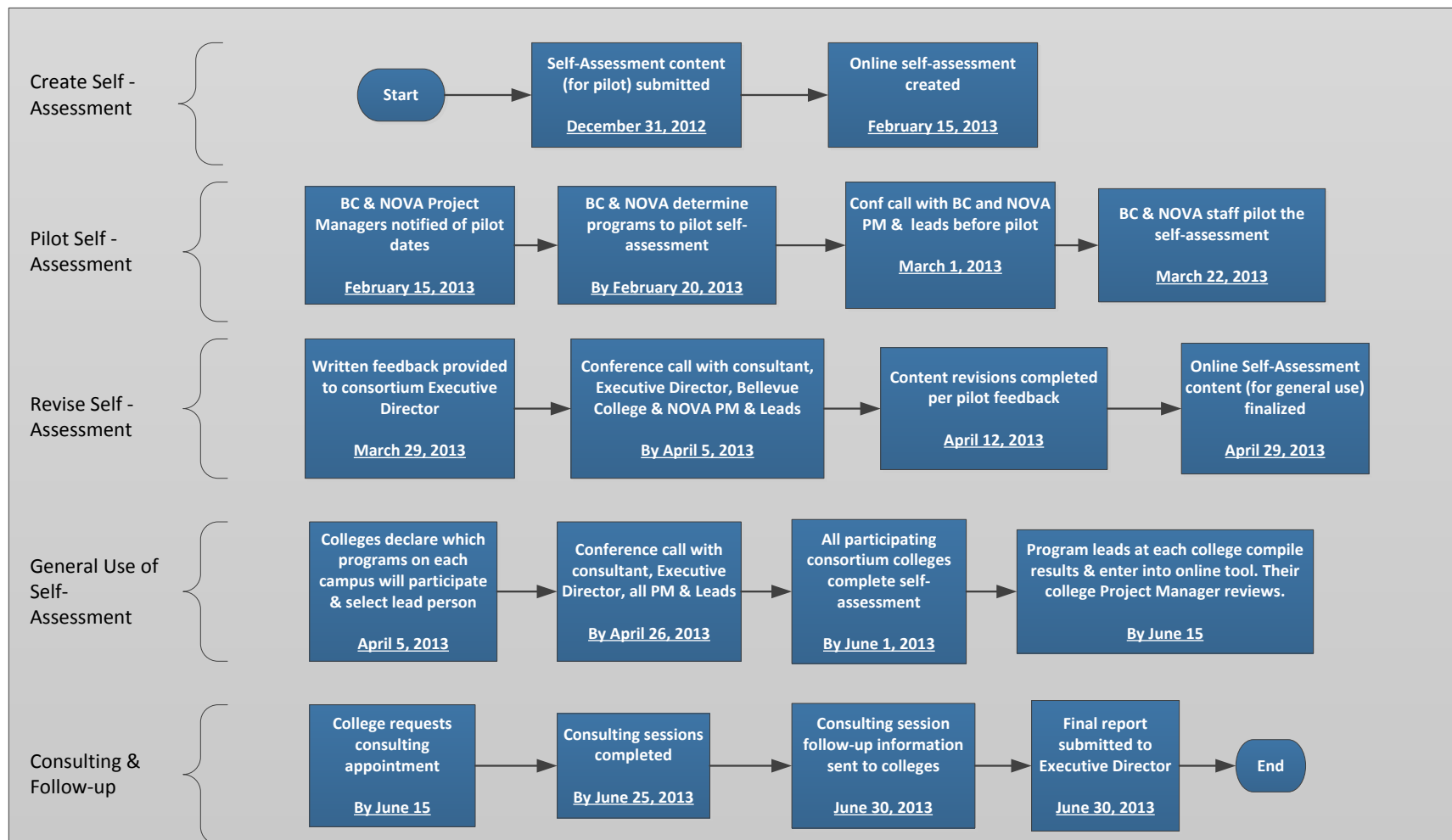
- Bellevue College Associate Degree in Nursing Technology and Informatics Integration Analysis and Plan from September 24, 2007
- Technology Informatics Guiding Education Reform (TIGER) initiative materials:
<http://www.thetigerinitiative.org/resources.aspx>
- Various reference documents from the Healthcare Information and Management Society (HIMSS) and the American Medical Informatics Association (AMIA)

The following process and timeline were ultimately developed to create, pilot, administer and follow-up on the online technology integration self-assessment.

The key dates include:

- Complete self-assessment (pilot) content: December 28, 2012
- Pilot completed: February 22, 2013
- Programs declare that they will participate and identify lead person: January 30, 2013
- Self-assessment ready for general use: March 11, 2013
- All self-assessments completed: June 15, 2013
- All consulting sessions complete: June 30, 2013

Technology Integration Online Self-Assessment Development and Administration Process



Member College Survey

Note: In December 2012, this short survey was sent to the seven (7) colleges not participating in direct faculty interviews (to obtain a list of relevant programs and some additional background before the self-assessment was developed). It is not intended for future use.

College:

Project Manager Name:

PM phone # and preferred e-mail:

Survey objective: To gather additional input to develop the technology integration self-assessment tool. Please incorporate comments from Program Directors and faculty as available.

This survey should take approximately 45-60 minutes to complete
Please return to Linda Reeder at lindareed@msn.com by Friday December 21:

List all Nursing and Allied Health programs at your college that would be impacted by the self-assessment tool:

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Instructions: Please just type your response below each question:

#	Question/Response
1	Question: What are the top 3-4 comments/concerns that Program Directors and faculty make regarding technology use (e.g. skills lab equipment, experience with electronic medical records, use of portable devices as part of clinical rotations, etc.)? Response:

2	Question: What are the top 3-4 comments/concerns that you have heard from students regarding technology issues (e.g. how well your Learning Management System worked for them, use of portable devices as part of clinical rotations, etc.)? Response:
3	Question: Please list 2-3 examples of how you incorporate “bigger picture” informatics concepts into the curriculum of your Nursing and/or Allied Health programs (e.g. such as use of data for clinical quality initiatives, management reporting, clinical decision support, downstream billing activities, coordination of care, etc.)? Response:
4	Question: What is the overall level of faculty enthusiasm around increased use of technology and informatics concepts (if level 1 is very low and level 5 is very high)? For those less enthusiastic, what are their top 2-3 concerns? Response:
5	Question: Any general suggestions/comments about what to include in this technology integration self-assessment tool? Response:

Thank you very much for your assistance with this survey !