INFORMATICS: INTEGRATING THE ESSENTIALS INTO EDUCATION AND PRACTICE

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OBJECTIVES

▸ Describe the AACN informatics essentials for BSN, MSN and DNP students.

▸ Conceptualize integration of the essentials into nursing curricula.

▸ Understand the concepts of informatics tools and practice.

▸ Evaluate informatics tools for use in practice related research.
“THE BIGGEST WASTE IN THE HEALTHCARE SYSTEM IS NOT UNNECESSARY TREATMENT OR DUPLICATED TEST RESULTS; IT IS THAT WE COLLECT DATA AND NEVER USE IT AGAIN”

Chris Lehmann
THE WHY
https://www.ted.com/talks/lucien_engelen_crowdsources_your_health

https://www.ted.com/talks/max_little_a_test_for_parkinson_s_with_a_phone_call
BARRIERS
PROBLEMS TEACHING INFORMATICS

▸ Integration
▸ Focus on the surface
▸ Lack of connection between nurses and informatics
▸ Disjointed understanding of informatics vs active learning
FACULTY DEVELOPMENT

Help faculty distinguish between using instructional technologies to teach vs. using informatics to guide, document, analyze, and inform nursing practice.

Translate state-of-the-art practices in technology and informatics that need to be integrated into the curriculum.
FACULTY DEVELOPMENT

Partner with clinicians and informatics specialists at clinical agencies to help faculty and students develop competence in informatics.
THE ESSENTIALS
BSN ESSENTIALS

▸ Demonstrate skills in using patient care technologies, information systems, and communication devices that support safe nursing practice.

▸ Use telecommunication technologies to assist in effective communication in a variety of healthcare settings.

▸ Apply safeguards and decision-making support tools embedded in patient care technologies and information systems to support a safe practice environment for both patients and healthcare workers.

▸ Understand the use of CIS systems to document interventions related to achieving nurse sensitive outcomes.
BSN ESSENTIALS

Demonstrate skills in devices that support nursing practice

Use technologies to assist in effective communication

Apply decision-making support tools

Understand CIS systems to document interventions
BSN ESSENTIALS

▸ Use standardized terminology in a care environment that reflects nursing’s unique contribution to patient outcomes.

▸ Evaluate data from all relevant sources, including technology, to inform the delivery of care.

▸ Recognize the role of information technology in improving patient care outcomes and creating a safe care environment.

▸ Uphold ethical standards related to data security, regulatory requirements, confidentiality, and clients’ right to privacy.
BSN ESSENTIALS

Use standardized terminology

Evaluate data to inform the delivery of care

Recognize the role of information technology in improving patient care outcomes

Uphold ethical standards
BSN ESSENTIALS

▸ Apply patient care technologies as appropriate to address the needs of a diverse patient population.

▸ Advocate for the use of new patient care technologies for safe, quality care.

▸ Recognize that redesign of workflow and care processes should precede implementation of care technology to facilitate nursing practice.

▸ Participate in evaluation of information systems in practice settings through policy and procedure development.
BSN ESSENTIALS

- Apply patient care technologies
- Advocate for the use of new patient care technologies
- Recognize that redesign of workflow should precede implementation of care technology
- Participate in evaluation of information systems
BSN ESSENTIALS

Apply
Advocate
Recognize
Participate

Apply
Understand
Demonstrate

Uphold
Participate
Use
Evaluate
MSN ESSENTIALS

▸ Analyze current and emerging technologies to support safe practice environments, and to optimize patient safety, cost-effectiveness, and health outcomes.

▸ Evaluate outcome data using current communication technologies, information systems, and statistical principles to develop strategies to reduce risks and improve health outcomes.

▸ Promote policies that incorporate ethical principles and standards for the use of health and information technologies.
MSN ESSENTIALS

Analyze current and emerging technologies

Evaluate outcome data using current communication technologies

Promote policies that incorporate ethical principles and standards for the use
MSN ESSENTIALS

▸ Provide oversight and guidance in the integration of technologies to document patient care and improve patient outcomes.

▸ Use information and communication technologies, resources, and principles of learning to teach patients and others.

▸ Use current and emerging technologies in the care environment to support lifelong learning for self and others.
Provide oversight and guidance in the integration of technologies

Use information technologies to teach patients

Use current and emerging technologies to support lifelong learning for self
MSN ESSENTIALS

Provide
Use
Analyze
Evaluate
Promote
DNP ESSENTIALS

▸ Design, select, use, and evaluate programs that evaluate and monitor outcomes of care, care systems, and quality improvement including consumer use of health care information systems.

▸ Analyze and communicate critical elements necessary to the selection, use and evaluation of health care information systems and patient care technology.

▸ Demonstrate the conceptual ability and technical skills to develop and execute an evaluation plan involving data extraction from practice information systems and databases.
DNP ESSENTIALS

Design, select, use, and evaluate programs that evaluate and monitor outcomes

Analyze and communicate critical elements necessary to the selection, use and evaluation information systems

Demonstrate the conceptual ability and technical skills execute data extraction
DNP ESSENTIALS

▸ Provide leadership in the evaluation and resolution of ethical and legal issues within healthcare systems relating to the use of information, information technology, communication networks, and patient care technology.

▸ Evaluate consumer health information sources for accuracy, timeliness, and appropriateness.
DNP ESSENTIALS

Provide leadership in the evaluation and resolution of ethical and legal issues

Evaluate consumer health information sources
DNP ESSENTIALS

Provide
Evaluate
Design
Select
Use
Analyze
Demonstrate
ESSENTIALS DISCUSSION
BRAINSTORMING
ACTIVE LEARNING EXAMPLE 1

- **Strategy:** In place of discussion board; replace with digital poster demonstrating NI v. HI
- **Technology:** powerpoint, keynote
- **Essential/Objective:** Use computer to accomplish task; Differentiate HI and NI
ACTIVE LEARNING EXAMPLE 2

- **Strategy:** Medline tutorial ([https://medlineplus.gov/webeval/webeval.html](https://medlineplus.gov/webeval/webeval.html)) on evaluating web resources; Decision making charts of one good and one bad website identified by students for patient information

- **Technology:** Pureflow, Word

- **Essential/Objective:** Use internet to locate and evaluate sites for patient information; evaluate technology, information and its sources critically
ACTIVE LEARNING EXAMPLE 3

▪ Strategy: Hands on search for information using standardized terminology

▪ Technology: library system, MeSH database

▪ Essential/Objective: use Computer technology to accomplish tasks; Use computer technology to access information relevant to nursing practice
ACTIVE LEARNING EXAMPLE 4

- Strategy: Demonstrate how CDI tools help nurses make decisions
- Technology: video, iMovie, Explain Everything
- Essential/Objective: Use decision support systems, expert systems and informatics applications designed for practice and for clinical decision making
ACTIVE LEARNING EXAMPLE 5

- Strategy: Ted talks on using data, in class discussion on concepts
  - https://www.ted.com/talks/anders_ynnerman_visualizing_the_medical_data_explosion
- Technology: TEDx
- Essential/Objective: Recognize the use and importance of data for improving practice
ACTIVE LEARNING EXAMPLE 6

- Strategy: case based exploration of patient privacy, security and ethics
- Technology: Student Created Content using cases as base
- Essential/Objective: Describe issues related to privacy, security, patient rights and ethics, as they pertain to computerized information management
ACTIVE LEARNING EXAMPLE 7

- Strategy: EMR documentation using standardized patients
- Technology: Student EMR simulations and patient care equipment
- Essential/Objective: Demonstrate skills in using patient care technologies, information systems, and communication devices that support safe nursing practice.
ACTIVE LEARNING EXAMPLE 8

- Strategy: search for emerging technologies that will improve outcomes, decrease cost or improve satisfaction; considering diverse populations; what policies would be needed for it’s use; find 1-3 articles supporting the technology

- Technology: Prezi

- Essential/Objective: Improving outcomes; Apply patient care technologies as appropriate to address the needs of a diverse patient population; emerging technologies; policy and procedure development
INFORMATICS TOOLS & PRACTICE
PRACTICE TOOLS

▸ Electronic Medical records
  ▸ 24% decreased time charting
  ▸ Perceived improvement safety
  ▸ Facilitate collaboration

(Poissant, Periera, Tamblyn and Kawasumi, 2005)
PRACTICE TOOLS

▸ Patient safety
  ▸ Medication administration (RFID, BCMA)
  ▸ Smart pump technology

▸ Clinical decision support
  ▸ Multifactorial, individualized support
  ▸ Data in, Data out

(Poissant, Periera, Tamblyn and Kawasumi, 2005)
PRACTICE TOOLS

- Telehealth
  - Accessibility
  - Specialized care
- Consumer information
  - Health literacy
  - Ehealthinitiative.org
- Web resources and accuracy
- Risk assessment tools
  - eg. Suicide Prevention Community Assessment Tool
EVALUATION OF TOOLS

Feasibility
Analysis
Design
Implementation
Test
Maintenance
SMALL DATA

BIG DATA
PRACTICE RELATED RESEARCH

▶ Databases
▶ EMRs
▶ Data mining
▶ Translational and Evidence Based Research
3185 reported taking a medication
6989 reported having a disease
48,968 users provided consent

898 contributed data for 5 days
9500 chose to share data

2,317 users filled out multiple surveys
7,593 people completed consent

177 reported seizure triggers
598 participated

48,000 app downloads
50,000 app downloads
1484 seizures tracked
**SUCCESSES**

- Large enrollment numbers
- Large scale data
- Correlation of results with existing studies
- Ease of use for consent and data gathering

**CHALLENGES**

- Drop off in engagement over time
- Self report could be a validity threat
- Study follow up variance
- Physical activity measurement inaccuracies
Potential options

- Communication with participants
- Interaction via social media sites
- Utilization of learning platforms
- Access to study resources
BRAINSTORMING
REFERENCES

- http://thetigerinitiative.org
- http://www.nursing.umn.edu/continuing-professional-development/nnideepdive/