THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

Integrating Informatics And Information Technology Best Practices Into Nursing Curricula

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1

Objectives

1. **Analyze the AACN Essential Domain 8 highlighting alignment with other Domains and content taught in courses in Entry to Practice and Advanced Curricula.**
2. **Appraise resources to use in both teaching and personal professional development.**
3. **Evaluate teaching and assessment strategies for Domain 8 focusing on competency demonstration and applicable vignettes.**

2

The Essential Domains

- Domain 1: *Knowledge for Nursing Practice*
- Domain 2: *Person-Centered Care*
- Domain 3: *Population Health*
- Domain 4: *Scholarship for the Nursing Discipline*
- Domain 5: *Quality and Safety*
- Domain 6: *Interprofessional Partnerships*
- Domain 7: *Systems-Based Practice*
- Domain 8: *Informatics and Healthcare Technologies*
- Domain 9: *Professionalism*
- Domain 10: *Personal, Professional, and Development Leadership*

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Weaving Threads to EPAs

- Stand Alone or Integrated
- Essential Domains support and reinforce one another.
- Informatics and Information Technology support all we do.
- Work as a team.
- Use the expertise of each other.
- Consider Entrustable Professional Activities (EPAs)
  - (Hoyt, Ramirez & Proehl, 2017)
  - https://youtu.be/AzQZ0DgiMWk

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The Domains Interweave – Create No Siloes

- Each supports and underpins the other
- Examples:
  - Person Centered Care and Informatics and Healthcare Technologies
  - Population Health and Informatics and Healthcare Technologies
  - Scholarship for Nursing Practice and Informatics and Healthcare Technologies
  - Interprofessional Partnerships and Informatics and Healthcare Technologies

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What is Informatics?

- When you hear Informatics, what comes to mind first?
- Informatics is a PROCESS
  - Using Information and Technologies
  - Gather and document data
  - Align data to form information
  - Join sources of information to form knowledge
  - Layer on experience for wisdom
  - Ex:
    - DIKW with BP

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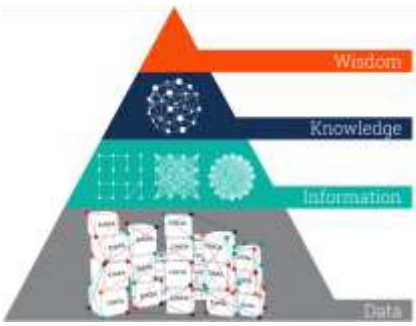
Data, Information, Knowledge and Wisdom

- Data: Individual, unconnected
- Information: Data connected to Data, providing context
- Knowledge: Information connected to information, providing a deeper and broader understand
- Wisdom: Using experience + knowledge = informed clinical decision



Each step up the pyramid answers questions about and adds value to the initial data.

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How is Domain 8 Described?

- Information and communication technologies and informatics processes are used to provide care, gather data, form information to drive decision making, and support professionals as they expand knowledge and wisdom for practice. Informatics processes and technologies are used to manage and improve the delivery of safe, high-quality, and efficient healthcare services in accordance with best practice and professional and regulatory standards.

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The Health Information Technology Landscape

- •Electronic Health Records
- •Personal Health Records
- •Artificial Intelligence
- •Robotics/Drones
- •Assistive Living
- •Mobile Apps
- •Social Media
- •Personalized/Precision Care
- •Telehealth/Telepsych/Tele***
- •Virtual/Augmented Reality

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The Technology Landscape

- Eight Digital Health Technologies Transforming the Future of Nursing
  - https://medicalfuturist.com/the-future-of-nurses-superheros-aided-by-technology/
- Digital Health
  - https://youtu.be/P6rQEv3TRL4
- Moxie – Robotics
  - https://youtu.be/JM1vUmrjOHI
- Wearable Sensors
  - https://youtu.be/O8-DMIaUxFo
- Social Media and Patients/Consumers
  - https://youtu.be/58NukFzVz84
- Artificial Intelligence
  - https://youtu.be/ad79nYk2keg

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The Future is Here Now

- Example – Mercy Virtual
- https://youtu.be/d-Fu2mpK5iE

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How do we prepare nurses at all levels?

- This will require:
  - Exposure to the broad variety of technology infusing the health care space
  - The movement from nursing care to digital health
  - Innovative thinking
  - Broad systems understanding
  - Reflecting on a health care consumers journey

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What is Digital Health?

- Digital health, or digital healthcare, is a broad, multidisciplinary concept that includes concepts from an intersection between technology and healthcare.
- Digital health applies digital transformation to the healthcare field, incorporating software, hardware and services.
- Digital health includes mobile health (mHealth) apps, electronic health records (EHRs), electronic medical records (EMRs), wearable devices, telehealth and telemedicine, as well as personalized medicine.
- Stakeholders in the digital health field include patients, practitioners, researchers, application developers, and medical device manufacturers and distributors. Digital healthcare plays an increasingly important role in healthcare today.

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Teaching Think Tank

- Innovation Lab
  - To solve a healthcare problem
  - Get creative
- Case Study
  - Group activity during class time
  - Questions to answer
  - Summative evaluation
    - Use resources to develop objectives
- Simulation (i.e. Telehealth)
  - Debrief
  - Self-Reflection (do as a discussion/interaction on learning platform)
  - Formative Evaluation
    - Use resources to develop objectives

***Level content with student level**

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Teaching Think Tank

- Debate
  - Group into Pros vs Cons
- Annotated Bibliography
  - Summary
  - Summative Evaluation
- Paper
  - Summative evaluation
    - Use resources to develop rubrics
- Posters and/or Presentation
  - Summative evaluation
    - Use resources to develop rubrics

***Level content with student level**

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Entrustable Professional Activities

Consider EPAs and Nursing Education

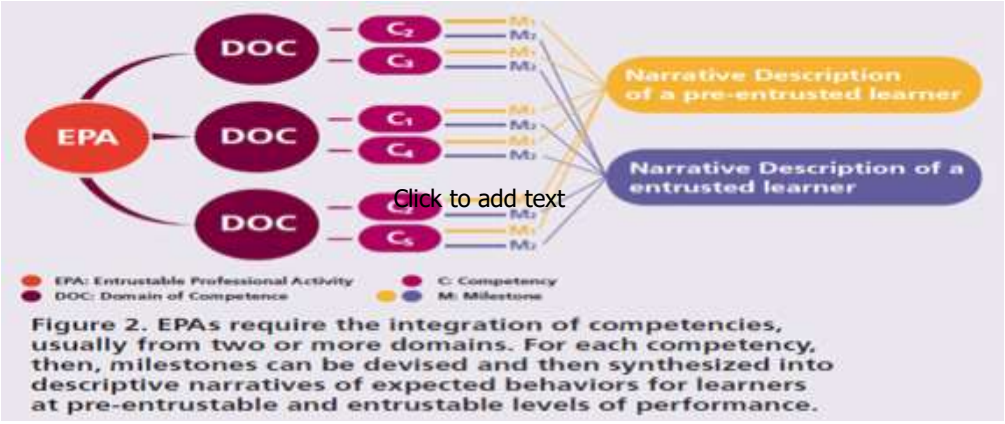

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Figure 2. EPAs require the integration of competencies, usually from two or more domains. For each competency, then, milestones can be devised and then synthesized into descriptive narratives of expected behaviors for learners at pre-entrustable and entrustable levels of performance.

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Vignette 1

A nurse is providing on going care for a group of patients residing in an active retirement community who have been diagnosed with CHF. The nurse communicates with each patient via a telecommunication device. The plan is to have patients use a wireless, Bluetooth enabled scale and BP cuff to send data.

Where do you see informatics in this vignette?

Do you see other Domains present?

- Domains: 2, 3, 5, 8

Adaptable to any course and any level.

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Vignette 2

A nurse is working in an ICU. The nurse is entering assessment and intervention data on patients who are at risk for Sepsis. The hospital's EHR uses a clinical decision support Sepsis alert system automated uses nurse assessments and lab results.

- Where do you see informatics in this vignette?
- Do you see other Domains present?
  - Domains: 5, 6, 7, 8
- What device is doing the communication and why is it a communication device?

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Vignette 3

A nurse is working a 12-hour shift on a medical floor. The nurse answers a phone call from a family member of a patient asking for detailed information about the patient's diagnosis. The nurse must consider the ethical and legal issues related to this request. During this shift, the nurse discharges 2 patients. The nurse understands that as part of the discharge education, the patient should know that they will have access to their medical information through the patient portal.

- Where do you see informatics in this vignette?
- Do you see other Domains present?
  - Domains: 1, 2, 6, 8, 9

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Just in Time Vignettes & Demonstration of EPAs

- Purpose
- Objectives
- Setting
- Role
- Domains

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Evaluation of Competency

- Explain what the nurse will need to assess in this situation and include rationale.
- Summarize the potential ethical issues related to privacy and confidentiality.
- Explain data integrity, the importance, and role in this situation.

Focused on Patient Outcomes

How would you change to fit your course or program?

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Just In Time Vignette: Advanced Practice

- An APRN is providing on going care for a group of patients residing in an active retirement community who have been diagnosed with CHF. The APRN communicates with each patient via a telecommunication device. The plan is to have patients use a wireless, Bluetooth enabled scale and BP cuff to send data.

How would you change to fit your course or program?

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Time to Evaluate

- Discuss the current acts that may affect APRN reimbursement for virtual visits.
- Identify potential issues how data is used and collected in relation to the APRN role and responsibilities. Provide rationale for each.

How would you change to fit your course or program?

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Threaded vs. Stand Alone

- What are you currently doing in your program?
- How Do You Currently Teach Informatics in your Programs?
  - Stand Alone
  - Threaded Throughout the Curriculum
  - Not at all

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Current Experience

- **Does this feel uncomfortable?**
- **How competent do you feel in creating a course, assignments, courses?**
- **Faculty: Professional Development Needs**
- **What are your challenges?**
- **Who creates the materials?**
- **What assessments do you use?**

Next Steps

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28

Select Resources

- *American Medical Informatics Association (AMIA) Nursing Informatics Working Group (NIWG)*
- *American Nursing Informatics Association*
- *Health Information and Management Systems Society (HIMSS)*
- *HIMSS Technology Informatics Guiding Education Reform*
- *National League fur Nursing Informatics*
- *National Library of Medicine. Resources for You.*
- *Nursing Knowledge Big Data Science Education Working Group*
- Office of the National Coordinator (ONC) Health IT Curriculum for Educators.
- QSEN Informatics
- Summer Institute in Nursing Informatics(SINI)
- University of Minnesota OnLine Teaching Resources

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29

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