

# Nursing Informatics Clinical Rotations -- A Proposal



Let's move nursing forward!

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## An industry ripe for change

- Nursing is an underserved profession from the technology perspective.
- Nurses are heavy users of technology – especially the electronic health record (EHR) -- yet are often ill-prepared and poorly supported.
- Nursing Informatics (NI) is a nascent specialty addressing these issues.



# What Is Nursing Informatics?

## Responsibilities of Nurse Informaticists

- Systems implementation
- Systems development
- Quality initiatives
- Liaison
- Strategic planning
- Informatics education
- Vendor communication
- Clinical application support
- Process/workflow design
- Protocol analysis/design
- Clinical transformation
- Change management
- Systems integration
- Emerging technologies including wearables and AI
- User training
- Clinical champion
- Super-user
- System design
- IT security
- System evaluation
- Policy development
- Clinician training
- CMIO/CNIO/CIO



## Where is NI Practiced?

- Inpatient/hospital
- Outpatient/ambulatory
- LTC/Assisted living
- Ancillary providers (lab, radiology, etc.)
- Tertiary/specialist care
- Academic/research
- Vendor
- Government/military
- Health systems
- Public health



## What Must NI Nurses Know?

### Computer Literacy

- Tools
- Document production  
esp. Word
- Presentation esp. PPT
- Data management  
esp. Excel
- Hardware/software jargon
- Computer concepts  
esp. data structures
- Internet/web
- Security/HIPAA/PHI
- Databases
- Login
- Command line
- Infrastructure/architecture
- Communications and media:  
fiber, ethernet, wifi, cellular
- Applications: email, messaging,  
web
- Collaboration e.g. Webex
- Popular vendors
- Requirements for healthcare



## Computerized Technology Commonly Used by Clinicians

- EMR/EHR
- CPOE
- Clinical Information Systems
  - Documentation
  - Point-of-care decision support incl. AI
- eMAR/bar codes
- Quality Improvement/Risk Management
- Ancillaries e.g. imaging, labs
- Mobile Tools
- Telehealth esp. nursing
- Patient portals
- Clinical devices e.g. pumps, monitors, EKGs, wearables



## The EHR Is the Big One

- Goals and drivers
- Vendor market shares
- Sample screens
- Coding schemes: ICD-10, Snomed, LOINC, Nanda, NIC, NOC, HL7/FHIR, DICOM, ICNP, CCC, UMLS, MDS, CCR, CDA, IEEE 1073, more
- Issues
- Using a sandbox



## NI Work Often Involves Issues and Policy

- HIPAA/PHI, privacy, security, confidentiality
- Regulatory agencies: JCAHO, CMS, DHHS
- Initiatives and legislation: ACA, TIGER, HITECH
- Nurse staffing
- Nurse education levels -- OJT, LPN, ADN, Certificate, BA, BS, BSN, MSN, PhD, NP, DNP (healthcare administration, policy development), advanced practice roles (nurse practitioner, clinical nurse specialist, nurse midwife, nurse anesthetist)
- Digital patient engagement
- Patient safety
- Advocacy
- Clinician burden/documentation burden
- Barriers
  - Lack of financial support
  - Lack of staffing resources
  - Vendor inability to deliver product
  - Difficulty in end user acceptance
  - Lack of clinician time commitment
  - Lack of interoperability of systems
  - Usability
  - Workflow support problems



## Where Do Nurses Learn These Things?

- Nursing schools? Nope!
  - Most have no NI in their curricula.
- No nursing school offers on-the-job training (OJT, i.e. clinical rotations)
- NI will eventually be a standard part of nursing curricula but we're not there today.



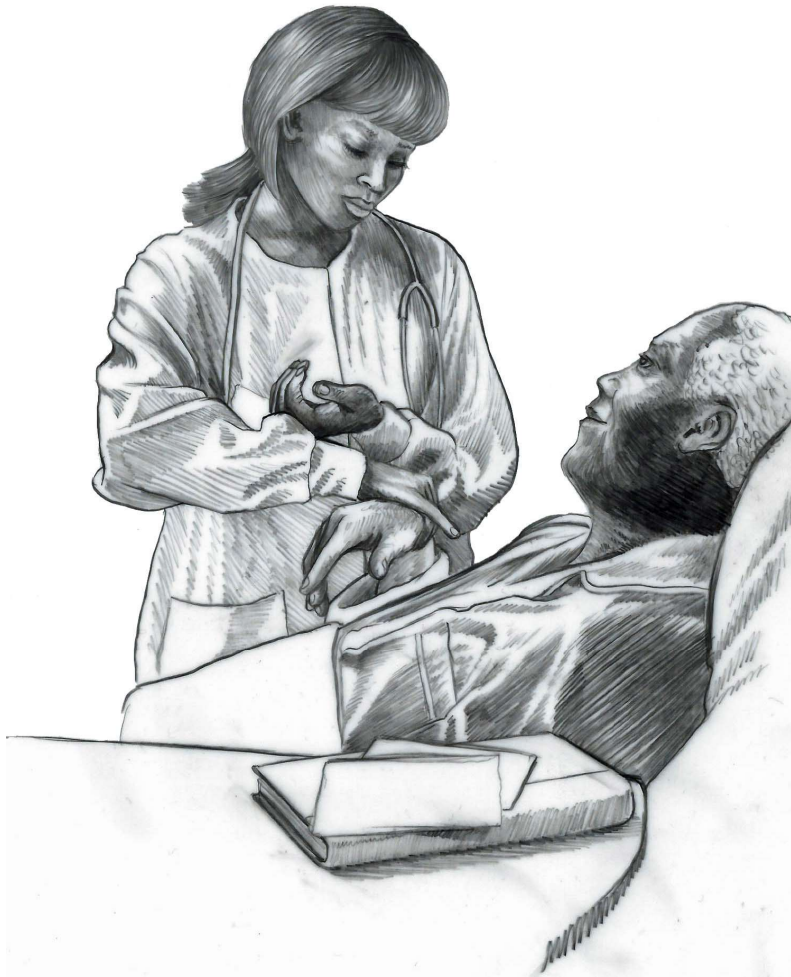
## Our Proposal

- Add a NI clinical rotation to nursing curricula.
- Clinical rotations are where – in nursing school – most learning happens.



## A NI Clinical Rotation

- Like any other clinical (4-10 weeks, 3-6 shifts/week)
- At a hospital or clinic
- Shadow a NI nurse.
- Support users, analyze workflows, lead implementation projects, solve problems.
- When possible, get vendor training, e.g. Epic (in Verona, attend super-user classes).
- Clinical instructor: choose the most tech-savvy on the faculty to supervise.
- Some students may make NI the topic of their capstone project.



## An NI Capstone

Tackle a NI project such as:

- Population Health
- Public Health
- Safety and Quality Measurement and Improvement
- Social Determinants of Health
- Data and Network Security
- Health Apps
- Health Information Exchange (HIE)
- Health IT Standards (FHIR®, etc.)
- HIT/EHR Safety
- Informatics Infrastructure
- Interoperability
- Mobile Technology
- Patient-generated Data
- Secure Communication
- Telemedicine
- Artificial Intelligence/Machine Learning
- Monitor data from wearables
- Adaptive Clinical Decision Support
- Data Sciences
- Data Visualization
- Governance
- Healthcare Big Data Analytics
- Precision Health and Genomics
- Learning Health System
- Bridging Analytics, Bedside Care, Clinical Documentation, and Education
- Generating Evidence for Care Improvement
- High Reliability Organizations (HROs)



## Action Items

Ready to get on board? Here's work for us to tackle now -- Identify and approach:

- Nursing schools for pilot projects
  - Willing to consider nursing informatics clinical rotations for their students
  - Faculty champions
- Hospitals with nursing informaticists
  - Willing to accept nursing students into rotations
  - Nursing staff and administrator champions



## The Vision

Let's bring nursing into the 21<sup>st</sup> century!

And we don't miss the hat!



Thanks for listening!

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