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

- Systems integration
- 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

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

- 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 Nurses

- EMR/EHR
- CPOE
- Clinical Information Systems esp. documentation
- eMAR/bar codes
- Point-of-care Decision Support
- Quality Improvement/Risk Management
- Ancillaries
- Mobile Tools
- 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
- Regulatory agencies esp. JCAHO, CMS, DHHS
- ACA, TIGER, HITECH
- Nurse staffing
- Nurse education levels (OJT, Certificate, BA, BS, BSN, MSN, PhD)
- Patient engagement
- 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

Where Do Nurses Learn These Things?

- Nursing schools? Nope!
  - E.g. at UCSF, nurses who seek NI training can attend only the (few) courses available in the Medical School. The Nursing School has none.
  - Other schools offer even less.
- No nursing school offers on-the-job training (OJT, i.e. clinical rotations)
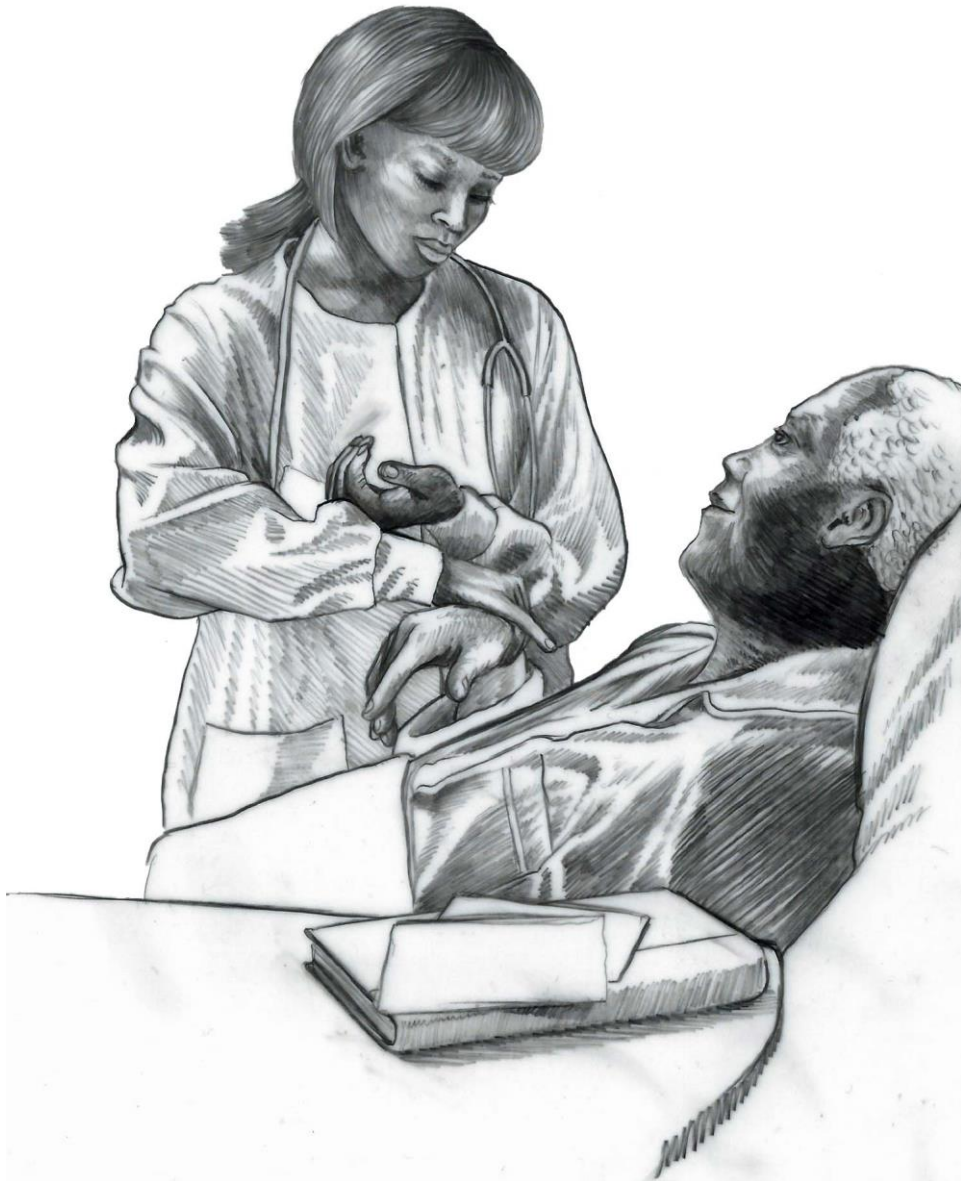- NI will eventually be a standard part of nursing curricula but we're not there today.

Our Proposal

- Add a NI clinical rotation to nursing curricula.

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.
- Apply funds raised for 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 Heath

- 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

- 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)

The Vision

Let's bring nursing into the 21st century!

And we don't miss the hat!

Thanks for listening!

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