BUILDING AN INFORMATICS CASE STUDY FOR PHN EDUCATION
Conni DeBlieck, DNP, MSN, RN, Assistant Professor, New Mexico State University, Las Cruces, NM, USA, Debra L. Eardley, DNP, RN, APHN-BC, Assistant Professor, Metropolitan State University, St. Paul, MN, USA, Linda Garner, PhD, RN, APHN-BC, CHES, Associate Professor, Southeast Missouri State University, Cape Girardeau, MO, USA, Kelly Krumwiede, PhD, MA, RN, Associate Professor, Minnesota State University Mankato, Mankato, MN, USA, Joyce Rudenick, DNP, MAHS, RN-BC, Assistant Professor, St. Catherine University, St. Paul, MN, USA

BACKGROUND
The Omaha System is utilized around the world in practice, education, and research due to high utility, e.g., interface capability, interoperability, and evidence-based practice (EBP) at the point of care. In practice, the Omaha System is used interprofessionally across multiple care environments. Although extensively researched for use in practice, additional research is encouraged to demonstrate the suitability of the Omaha System in education as an innovative teaching methodology which reinforces critical reasoning. Nurse Faculty from several universities formed a Partnership for Informatics in Nursing Education (PINE) and mapped the Omaha System using low fidelity simulation resulting in a library of peer reviewed Nursing Informatics (NI) public health nursing (PHN) case studies.

PURPOSE
The purpose is to demonstrate a unique and innovative approach bridging Health Information Technology, electronic health record and standardized terminology to teach PHN topical content, holistic assessment, EBP and outcomes evaluation.

CASE STUDY DESIGN
NI case study framework was guided by Baccalaureate Essentials and PHN Competencies, Quality Safety Education Nursing, Technology Informatics Guiding Education Reform, and International Nursing Association for Clinical Simulation and Learning.

CASE STUDY DESIGN PROCESS
1. Select a public health problem/concern
   a. Complete literature review
   b. Determine evidence-based guidelines
   c. Create a case scenario that highlights a PH problem/topic
2. Map Omaha System components to the case scenario and EB guidelines; assessment component (Problem), EB interventions (Intervention Scheme) and outcomes evaluation (KBS Outcomes Rating Scale).
3. Include an Omaha System care plan template, available on the omahasystemmn.org website.
4. Develop a pre and posttest to measure student outcomes (template available).
5. Expert peer review with each iteration
6. Include a post NI case study satisfaction survey (template available).
7. Keep it simple at a novice level.
8. Ideas or suggestions for improving these instructions can be emailed to: deblieck@nmsu.edu or Debra.eardley@metrostate.edu
9. Ongoing evaluation of student learning outcomes and satisfaction is necessary.

INTRODUCTION
The Electronic Health Record (EHR) is a longitudinal electronic record of patient health information. Included in this information are patient demographics, progress notes, problem lists, medications, allergies, laboratory results, radiology studies, vital signs, and problem lists. EHRs are valuable as a tool for students and practitioners to support patient care and research. The EHR provides the potential to standardize care and improve patient outcomes. Although extensively researched for use in practice, additional research is encouraged to demonstrate the suitability of the EHR in education as an innovative teaching methodology which reinforces critical reasoning. Nurse Faculty from several universities formed a Partnership for Informatics in Nursing Education (PINE) and mapped the Omaha System using low fidelity simulation resulting in a library of peer reviewed Nursing Informatics (NI) public health nursing (PHN) case studies.

TOPICAL CONTENT

ROLE OF PUBLIC HEALTH NURSE
- Practice of promoting and protecting the health of populations using scientific knowledge from nursing, social and public health sciences
- PHN use evidence-based interventions for TB control
- Education, surveillance, outreach, screening/initial, helps reduce TB rate and prevents TB from spreading

CLINICAL SUMMARY
- History and physical examination, TB tests (e.g. TB test, chest X-ray)
- If history and physical examination suspicious for TB, order more specific diagnostic tests
- Laboratory tests (e.g. mycobacterial culture, rapid diagnostic test)
- If laboratory tests confirm TB, initiate TB treatment
- If laboratory tests do not confirm TB, repeat diagnostic tests

INTERVENTIONS
- Directly Observed Therapy (DOT)
- DOT is when health care professional observes clients to ensure that they ingest each dose of anti-TB medication, to maximize the likelihood of completion of therapy

EVALUATION: BASELINE/OUTCOMES
- Evaluate student performance before and after case study
- Assess student understanding and knowledge of TB control

OMAHA SYSTEM CHARTING
- Problem: Communicable/Infectious Condition
  - Signs/symptoms: (select those that apply)
    - Infection
    - Infestation
    - Fever
    - Biological hazards
    - Positive screening/culture/laboratory results
    - Inadequate supplies/equipment/policies to prevent transmission
    - Does not follow infection control regimen
    - Inadequate immunity
    - Other

OMAHA SYSTEM CHARTING
- Problem: Medication Regimen
  - Signs/symptoms: (select those that apply)
    - Does not follow recommended dosage/schedule
    - Evidence of side effects/adverse reactions
    - Inadequate system for taking medications
    - Improper storage of medications
    - Fails to obtain refills appropriately
    - Fails to obtain immunizations
    - Inadequate medication regimen
    - Unable to take medications without help
    - Other

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