Evidence-Based Health Services Management
for Nurse Leaders:
An Intra-campus Partnership and Curriculum

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• Locating the Evidence for Health Management
  (“Locating Evidence”) 2 credit points (7 class sessions, 100
  minutes/week) embedded as an elective course in: Master of
  Science in Management: Concentration for Nurse Leaders,
  inaugurated in 2007
• Library subject specialists recruited to partner as adjunct faculty
to develop and teach course
MS in Management: Concentration for Nurse Leaders

- B.S.-prepared RN’s who are either already in leadership and management roles or looking for advancement.
- Attend part-time over 2 years
- Year 2: required: Capstone, “Advanced Projects for Nurse Managers.” Experiential/integrated learning component: students collaborate with an external client (health care organization) to plan a course of action, write/present a mgt report, work w/ a team to assist managers to resolve a problem or take advantage of an opportunity. [Link](http://wagner.es.its.nyu.edu/capstone/files/CapstoneProjects0809.pdf)
- In architecture, the capstone is the “crowning piece”; Capstone is an end event that bridges the academic curriculum and the world of practice.
- In preparation for Capstone, students may take elective, “Locating Evidence”: Students frame answerable research questions, select specialized databases, develop effective search strategies and are introduced to critical appraisal of the literature of healthcare management. The course illuminates the hierarchical nature of scholarly literature and introduces major U.S. health statistics sources.
Locating Evidence: Course Learning Objectives:

1. Demonstrate an understanding of information architecture, the scholarly process, and the context of information in the hierarchy of research evidence.

2. Use the evidence-based paradigm to select databases, frame an answerable research question, develop an effective search strategy, locate, retrieve, and critically appraise the literature of healthcare management.

3. Demonstrate competence in organizing, effectively communicating, and citing the published and non-published evidence.

4. Demonstrate an understanding of the social issues and ethical concerns related to the provision, dissemination, and sharing of information.

5. Demonstrate an understanding of a conceptual framework of evidence and information seeking that can be applied to a variety of research questions and environments.
The Locating Evidence curriculum is shaped by our experience integrating information literacy competency into both undergraduate and graduate programs at the NYU College of Nursing:

- **Curriculum-embedded** approach to both locating and appraising evidence is the foundation for moving toward the goal of creating nurses who are good “consumers” of research (4, 16, 17), (not necessarily researchers or expert searchers!)

- **Dispel misperceptions** about locating research; federated searching and point of care tools may mask hierarchy of evidence, particularly for naïve users

- **Depict evidence in a hierarchy**
Who are our students?

- B.S. prepared RN’s who are either already in leadership and management roles or looking for advancement
- Generation X or baby boomers
- Average time since graduation: ten or more years.
- Working full time

Roles include:
- Clinical manager of a hemodialysis unit
- Manager of an institute for clinical and translational research
- Quality management specialist
- Patient care directors … inpatient surgery, PICU, colorectal/bariatric surgery, infectious disease
- Diabetes educator/charge nurse…
James Skelly, Program Director of Care Coordination
Joelle Coq, Patient Care Director, Infectious Diseases

NY Presbyterian Hospital
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James Skelly

- Born in Waltham, Massachusetts, just outside of Boston.
- Graduated from the Memorial Hospital School of Nursing, Worcester, Massachusetts
- Completed an undergraduate degree at Emmanuel College, Boston.
- As a nurse, worked in CCU, Psychiatry, Family Practice, General Med-Surg, OR. Later worked in areas of Utilization Review, Quality, Patient Advocacy, Risk Management, and for the last 17 years Case Management and Care Coordination.
- Interests include old home renovation, landscape gardening, furniture refinishing, and long vacations on Cape Cod.
Working Definitions, Context

- Sackett, EBM: “integration of best research evidence with clinical expertise and patient values” (7)

- Cullum, EB Nursing: “the application of valid, relevant, research-based information in nurse decision-making...used alongside our knowledge of our patients (their symptoms, diagnoses, and expressed preferences) and the context in which the decision is taking place (including the care setting and available resources), and in processing this information we use our expertise and judgement.” (Cullum, 2008).

- Kovner and Rundall: evidence based health services management, "systematic application of the best available evidence to the evaluation of managerial strategies for improving the performance of health services organizations" (10).

- Stetler distinguishes internal evidence (local data, circumstances, resources, experience of clinicians, patient preferences) from external evidence (research findings, consensus of experts) (12).

Course focus is external evidence...
# Capstone Evidence-Based Approach, 6 steps

The Capstone syllabus uses an evidence-based approach to design and implement a management intervention (14). This includes 6 steps:

1. Framing the question
2. Finding sources of information
3. Assessing the accuracy of the information
4. Assessing the applicability of the information
5. Assessing the actionability of the information
6. Determining whether the team has adequate information
Capstone Evidence-Based Approach, 6 steps

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1. Framing the Question

Translating a management challenge (e.g., nosocomial infection) into a researchable question:

“Does hand washing among healthcare workers reduce hospital-acquired infections.”
2. Finding sources of information

Publication type: randomized controlled trial

handwashing

cross infection [Mesh] OR nosocomial infection OR hospital acquired infection OR hospital infection

AND
Efficacy of handrubbing with alcohol based solution versus standard handwashing with antiseptic soap: randomised clinical trial

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OBJECTIVE: To compare the efficacy of handrubbing with an alcohol based solution versus conventional handwashing with antiseptic soap in red patient care, DESIGN: Randomised controlled trial during daily nursing sessions of 2 to 3 hours. SETTING: Three intensive care units in a French healthcare workers, INTERVENTIONS: Handrubbing with alcohol based solution (n=12) or handwashing with antiseptic soap (n=11) when hand hygiene imprints taken of fingers after and between hand hygiene procedures. Bacterial counts quantified blindly.

MAIN results: handwashing the median percentage reduction in bacterial contamination was significantly higher than with handrubbing the percentage difference in the percentage reduction of 26% (95% confidence interval 8% to 44%). The median duration of hand hygiene was 10 sec for routine patient handrubbing with an alcohol based solution is significantly more efficient in reducing hand contamination than handwashing.

Description Types:
- Clinical Trial
- Multi-center Study
- Randomised Controlled Trial
- Research Support: N/A

MeSH Terms:
- Alcohol/administration & dosage*
- Antimicrobial Agents/Use/administration & dosage*
- Attitude of Health Personnel*
- Bacterial Contamination & prevention*
- Bacteriology/Microbial
- Bacterial contamination/prevention & control
- Hand hygiene/*
- Handwashing/*
- Hygiene/*
- Hygiene/standards
- Infection Control
- Nursing Care/*
- Nursing Staff*
- Scrubbing/scrubbing
- Surgical Infections/*
**Biggest Challenges:**

- Avoid locking into the first natural language search terms
- The complexity of database searching
- Avoiding grazing, cherry picking

<table>
<thead>
<tr>
<th>Student Question</th>
<th>Natural language term</th>
<th>False hits</th>
<th>Correct/better term; MeSH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does shared governance in nursing improve job satisfaction and retention?</td>
<td>retention</td>
<td>urinary retention; fluid retention</td>
<td>• Personnel turnover;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Nursing staff; hospital/supply &amp; distribution</td>
</tr>
<tr>
<td>Does the implementation of routine rounding increase patient satisfaction?</td>
<td>rounding</td>
<td>cellular rounding, dose rounding</td>
<td>Keyword search: hourly round* or staff round* or nurse round* or patient round* or ward round*</td>
</tr>
</tbody>
</table>
NYU Libraries Evidence Pyramid [http://tinyurl.com/nyupyramid](http://tinyurl.com/nyupyramid)

Within the context of the Evidence Pyramid, students are asked to:
- Explore filtered, pre-appraised sources, Cochrane, DARE; abstract journals (EBN...)
- Use pre-aggregated bundled resources and search tools
- Use PubMed and CINAHL clinical queries, NLM Health Services Research (HSR) Queries (2s).
- “Level” the evidence retrieved (Publication type? Methodology?)
“Does hand washing among healthcare workers reduce hospital-acquired infections.”

Returning to the sample question:

- Many management questions can be built using the PICO framework, particularly those that involve an intervention.
- Yet, many health services research questions, as well as many nursing topics, are qualitative in nature, not as easily filtered by clinical queries or standard pre-aggregated sources. Not easy to discern level of evidence e.g. attitudes, satisfaction, coping, quality of healthcare.
Additional curriculum:

- Selected readings: *How to Read a Paper, the basics of evidence based-medicine* (24)

- Class session devoted to bibliographic management software (Refworks)

- Strategies for locating major statistical sources in health services management, situating data and statistics within the EB paradigm, including two online tutorials from the U.S. National Library of Medicine (28, 29).

- 3. Assessing the Accuracy of the Information:
  - *Introduce* critical appraisal and relevant tools
  - Evaluate strength of evidence at level of metadata in db record as well as methodology

- Final assignment, group presentation and paper;
  - Develop a question, select db/search terms; what works; discussion of pitfalls; iterative process
  - Filters; categorical limits; leveling; appraisal tools
  - *Collaboration!*

- **NYU Wagner**
Research Question

Does shared governance in nursing improve job satisfaction and retention?
Example of student slide:

Question

Do discharge phone calls in the adult population have an impact on patient satisfaction?
Research Question:
Does the implementation of routine rounding increase patient satisfaction?
Eureka!

- Different databases for different purposes
- Form a relationship with frequented databases
- The question makes a difference
- Be systematic
- Be patient
- Take a break
Example of student slide:

Search Summary

Sample citations that are closer to the Research Question or related... Keep on searching!
More student research questions
(foreground and background questions: satisfaction, quality, efficiency are repeated concerns):

- What are some barriers to the adoption of electronic medical records in the United States?
- Can automated medication systems improve efficiency of hospital medication delivery?
- Does increased nurse staffing improve the quality of healthcare and patient outcomes?
- Does evidence show that level of nursing education results in better healthcare outcomes for patients?
- Can increased nurse staffing decrease patients’ falls?
- Specialty nursing certification: Does it improve the quality of patient care?
Discussion/Comments from student evaluations

- "More in-class exercises to find information."

- "This course should be a requirement for all capstone students before starting capstone. The guidance given in class was valuable as is my time. Now knowing how to do a better search as helped me in gaining new insights and ideas. Goodbye google."

- "This course is extremely valuable. There is a large amount of content that is not easily grasped in the short time the course is offered. I found the class helpful and recommend it be given over a semester. The instructors were well versed in the material and spent a great deal of time assisting the students to become better researchers."
- "Very useful course. You should push to have it as a requirement or encourage people to take it early on in their Wagner careers. It is a lot of information for those who are totally unfamiliar with searching databases, but I definitely got my course credit's worth. Both of you are extremely helpful and make yourself very available to your students. Maybe you could hand out a cheat sheet with the answers to this quiz, as a "tips for searching" document?"

- "This is a great class. I wish I had taken this class at the beginning of the program. I showed me how to navigate in different databases."

- "My main comment is that it is a necessary course in this age of evidence based practice. I think that you guys should go a little slower when explaining, the statistical assignment could have been better organized (it made a simple assignment unnecessarily complicated)."
Results:
- Nurse managers
  - Gained competence in navigating, citing, and communicating
  - Demonstrated an understanding of the evidence hierarchy and social and ethical issues related to the provision, dissemination, and sharing of information.

Conclusion:
- Nurse leaders, in their critical role in contemporary healthcare organizations, have a pressing need to locate evidence-based research.
- Information literacy embedded in a framework of evidence empowers nurse managers with strategies to retrieve research to support decision making and practice changes in the workplace.
- A credit course dedicated to an evidence-based approach to the profusion of available information provides a foundation for lifelong professional competence in the use of health services management research.
“Locating Evidence”:
next steps...

- Enhance content
  - Expand to 4 credits
  - Critical appraisal component
  - Develop online components
  - Propose Locating Evidence as a required prerequisite for Capstone.

- Expand format
  - Maximize hands on exercises in classroom; less lecture, more pre-assigned online lecture
  - Implement virtual one-on-one consultations
Take-away message:

- Information literacy and librarians are embedded in curriculum

- Students evaluate evidence in the context of a hierarchy

- Empowering nurse managers and reinforcing that EBP is an “organizational priority.” (30)*

- Contributing to cultural change to advance EBP

- Intra-campus collaboration is a model for other masters programs for health care professionals

* Pravikoff, Tanner, & Pierce. (2005). Readiness of U.S. nurses for evidence-based practice: Many don’t understand or value research and have had little or no training to help them find evidence on which to base their practice. *American Journal of Nursing*, 105(9), 40-51.

Questions?
References


30. Pravikoff DS, Tanner AB, Pierce ST. Readiness of U.S. nurses for evidence-based practice: Many don’t understand or value research and have had little or no training to help them find evidence on which to base their practice. Am J Nurs. 2005 Sep;105(9):40-52.