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Evidence-Based Practice Mentors: Taking Information Literacy to the Units in a Teaching Hospital

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This article describes Evidence-Based Mentors, an integrated strategy with librarian participation, aimed to motivate and assist nurses in the search and use of literature and evidence-based information for nursing practice in a teaching hospital. The librarian's role goes beyond searching the literature to involvement in teaching critical appraisal of information. It details the evidence-based process, including the use of the PICO model, the categorization of resources, and the synthesizing that lead to the change of nursing practices that impact on outcomes directly related to patient recovery, organizational effectiveness, and nursing competency. 10
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KEYWORDS *evidence-based practice, information literacy, librarians, literature searching, mentors, nursing practice, organizational effectiveness, patient outcomes* 20

INTRODUCTION

Over the last 30 years, studies conducted by nurses identified barriers that make it difficult to access evidence-based information and use it to impact patient care outcomes. Librarians have used many approaches to try to

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overcome these barriers and motivate health providers, especially nurses, 25
to use the information available. Recognizing some new trends in health
care, some studies have recommended the use of facilitators, especially on
a hospital level where scores are important and there is a direct incidence in
determining the success of an institution. In this pilot study, librarians devel- 30
oped a strategy working on the clinical floors, making personal contact with
nurses, and considering the different structures in a health system through
which nurses support their decision making process. Press Ganey indicators
such as: "Nurse kept you informed, friendliness/courtesy of nurses, the like-
lihood to recommend the hospital" were considered when developing the 35
strategy (1). These give new meaning to the nurse's role and motivate the
staff to work continuously to improve procedures and care with the use and
analysis of the literature, and its integration to best nursing practices.

BARRIERS TO USING INFORMATION IN NURSING PRACTICE: A REVIEW OF THE LITERATURE

There has been a gap between the production of new knowledge through 40
research and the use of findings to improve nursing practice. An early 1973
Delphi survey indicated the most important priority was to increase uti-
lization of research among nurses. To increase usage and improve nursing
practice, the study proposed the need for easy access to information (2).

In a study done by Miller and Messenger in 1978, the absence of elec- 45
tronic resources and limiting the search for information to experts in the field
of Information Science was the barrier cited most frequently (3). Another
barrier for the nurses was the way statistical analysis was presented in the
literature. Nurses found it very difficult to interpret and apply to nursing
practice, and because of this difficulty many concluded that the findings 50
could not apply to a nursing setting.

Overall, during the 1970s, nurses had a sense of isolation and were
concerned that their research skills were inadequate. It was during this time
that the National Commission on Libraries and Information Science defined 55
information literacy as a focus on the retrieval and application of information
to problem-solving and decision-making. This initiative developed programs
to enhance the research skills of nurses in order to assure that they would
be able to find information to support changes in their practice.

Hefferin reported a survey that established barriers related to research
utilization (4). In this study nurses concluded that their workload was a factor 60
for not doing or using research. Again the access to information and the
nurses' skills in obtaining research findings were among the most important
barriers.

In 1991, Funk et al. used the Barriers Scale and requested informa- 65
tion from 924 nurses in clinical positions. Their main goal was to determine

why research was not being utilized by nurses in practice. The most frequently cited barriers were lack of awareness of the research, not feeling capable of evaluating the quality of the research, unwillingness to change /try new ideas, insufficient time to read research, and the thought that research reports/articles are not readily available (5). The analysis suggested facilitators to help overcome some of the barriers. One of the most important was the creation of an environment to make nurses more comfortable evaluating and questioning their practice and seeking research-based solutions. It was suggested that this obstacle could be overcome by journal clubs and research committees, and be supported by library services. Such support would help nurses enhance skills to access and use research results.

Pettengil identified three barriers for nurses' use of research findings in practice. These were "time, lack of support and lack of interest in the nursing staff" (6).

In 1998 Cheek and Doskatsch researched the concept of information literacy and lifelong learning with an emphasis on nurses and the nursing literature (7). Three obstacles were identified: (1) using the library to meet information needs which focuses on reading the professional literature and the use of the libraries; (2) using computer technology to meet information needs focusing on the advances in communication that have produced an excess of nursing literature and the need to use CD-ROM products and the Internet to locate information; and (3) developing information-literate lifelong learners—an attempt to respond to the need for having information literate nursing professionals.

In 2003, the health care system was facing a crisis and needed to improve quality and patient safety in the hospital environment. McNeil et al.'s online survey concluded that nursing programs were emphasizing computer literacy rather than the information literacy skills that nurses should use to obtain better outcomes in patient care (8). Additionally, since the need for data management was increasing, nursing curricula should include information technology skills and literacy skills to close the gap between education and nursing practice.

In almost all studies, evidence-based practice is considered the best approach to problem solving in order to assure the best quality of care for patients. Pravikoff et al. published a study that examines nurses points of view in relation to the use of tools to access and obtain evidence and the level of skills needed to do so (9). Two barriers were identified as important. Lack of time was a major barrier, as was the need for the appropriate skills needed to use electronic resources effectively. Also mentioned was the unavailability of information resources at the point of care.

Nurses considered scholarly-level literature an important source for changes in nursing practice. In response to a survey item, "*When you need*

nursing information, how do you find it?", 67% said they always or frequently ask a colleague or peer. Only 9.7% frequently access a database and 3.8% frequently seek assistance from a librarian. Another significant finding was that 82% never use the hospital library when seeking information. 110

Nurses responding to the Privikoff et al. study noted that barriers can be individual or institutional. Individual barriers identified were the failure to value research findings in decision-making, difficulty accessing and synthesizing information, and lack of search and computer skills. Institutional barriers were the "presence of other goals with higher priority, organizational budgets for acquiring information resources, and organization perceives that nursing staff is not eager or prepared to incorporate EBP or that EBP use as not achievable in the real world" (9). The conclusion of the study was that registered nurses in the United States were not ready for evidence-based practice (EBP). 115 120

Leasure et al. point out several barriers that limit the use of EBP by nurses to improve health care outcomes (10). The instrument used in this study was designed by Pettingil et al. and described in their paper "Factors Encouraging and Discouraging the Use of Research Findings" (6). They identified access barriers to journals that publish original nursing research articles, not knowing what resources the institution has available, and the lack of access to literature search programs. 125 130

A large percentage of nurses (83%) has access to the Internet; however, only 69% use PubMed and 17% CINAHL as their literature search programs. Thirty-four percent did not know what literature-searching capabilities were available to them.

The nurses in the Leasure et al. study believed that the institution provided resources and services to meet their knowledge-based information needs, but they didn't know how to use them, or believed they were not available at convenient times. They believed that a literature search was an activity that occurred only in a library setting. In relation to their participation in research or EBP implementation studies, nurses felt that their job descriptions did not include a research component, their institution did not encourage research studies or EBP, and research committees were not available to help staff prepare and conduct studies with an EBP component. 135 140

Since the 1990s, there has been a major interest and demand for the use of evidence-based knowledge. Studies have been conducted and have identified as major barriers the lack of time, the difficulty in successfully conducting a literature search, and the access to current knowledge. Nurses and allied health professionals agree that EBP is necessary and useful for their practices and that it improves patient care and supports decision making. Leasure et al. assert, "the continued use of health care interventions without an evidence-base increases health care cost without positively impacting patient care outcomes" (10). 145 150

Q1

KNOWLEDGE-BASED INFORMATION

One major barrier identified was the difficulty of accessing the resources available in print and in a library setting; this discouraged nurses from using the literature. If they needed a particular resource, they would have to go to the library and locate the information on their own or request assistance from a librarian and either make a copy or borrow the material. 155

As the world of information rapidly began to change from hard copies to electronic, and databases became available online, the whole universe of how to access information changed dramatically. Now nurses (and health professionals in general) have more resources and opportunities to access information through an Internet connection. Libraries have moved very quickly to provide online services, making them available around the clock. 160 165

In the last 5 years many efforts have been made to overcome some of the barriers. The experience of the Long Island Jewish Medical Center, part of the North Shore Long Island Jewish Health System (NSLIJHS), began in 2003 when the hospital library first designed a Web site to disseminate online resources; however, this type of Web site on the public domain didn't offer access to resources off campus thereby limiting its use. Access on all the units/clinical floors was not available and computers were scarce. 170

After the merger of the North Shore and Long Island Jewish Medical Center to North Shore- Long Island Jewish Health System (NSLIJHS) a Portal, called HealthPort, was launched. This portal was available system-wide and designed to be the only point of entry to all NSLIJHS information. 175

After several years, the library's Web site migrated to the portal and the access to resources was broadened with every e-resource made available on and off-campus. The system set up a single platform called EMIL, which is the acronym for the North Shore-Long Island Jewish Health System Electronic Medical Information Library. EMIL is accessible through HealthPort, and enables staff throughout the health system to access a comprehensive suite of databases, e-journals, e-textbooks, and reference services. 180

This migration created the need for increasing the number of databases and full text journals online to facilitate access and enhance the user's experience on the library's Web site. The library's online resourced increased from 40% to about 85%. 185

The library at LIJ promoted different types of resources: benchmarking data, guidelines and protocols developed by associations on national and international levels, evidence-based literature, standards, and others. 190

The professional role of librarians, which traditionally involved identifying and selecting resources, now includes the evaluation and synthesizing of literature. Evidence-based practice offers the opportunity to be involved fully in the information process, to engage in new roles, and to acquire new skills. The librarians' participation is considered vital to the success of 195

an EBP approach to education and practice. The process of selecting the appropriate resources and the identification of relevant ones, and also providing evidence-based, current, and authoritative answers when needed are important components for the mitigation of barriers. 200

It is clear that access to information does not necessarily improve the clinical decision process or have an impact on patient care. It does change the way librarians approach and support the needs for information and how they deal with the barriers identified by the different studies—especially those related to the access of information resources and the use of evidence-based in nursing practice. 205

Librarians must be creative and innovative to assure the use of available resources, and participate as mentors in order to motivate and teach the process of searching, using databases, and analyzing the literature.

Policies in health care have changed in the last 5 years and have made the need for nurses to use information in the decision making process more crucial. The NSLIJHS has developed several strategies to involve nurses in problem solving and to participate with other professionals as a group to improve the quality of patient care. Librarians in this setting must consider all these opportunities, take advantage of these strategies, and work to get the message directly to the users in order to promote and increase the use of information resources. 210 215

NSLIJHS has developed models with the idea of empowering nurses at all levels to participate in the decision-making process. This is being done by structuring several entities to ensure vertical, horizontal, and diagonal communication at the bedside and throughout the hospital setting. Several of these structures are described. 220

The Collaborative Caring Model

The collaborative caring model is a “professional practice model of care delivery” with the philosophy that patients come first (11). The goal is to provide quality patient care, enhance patient experience, and meet financial targets. This organizational model gives nurses control of their practices and provides an opportunity to influence administrators by participating on policy and procedure-producing committees. It assures standardization of the nursing procedures, opens space for critical thinking, and directs nursing care to the highest level of quality, patient satisfaction, and cost-consciousness. 225 230

Shared Governance Councils

Strategies on unit initiatives are a forum for dialogue and communication between interdisciplinary staff and the place where they identify and 235

resolve clinical practice and patient/family care issues. In this environment, participation leads to shared decision-making.

The decision making process on units/clinical floors should be based on the most relevant and up-to-date information (EBP) available in the health system and should be readily accessed by nurses at their workstations. 240

The units/clinical floors "led by direct care nurses, are long-standing committees designed to work on continuous quality improvement projects, share decision-making about unit practice, and research and adopt national standards and guidelines of care based upon evidence to support unit nursing practices" (11). 245

Magnet Status

Another trend in hospitals is the achievement of awards for excellence and quality of nursing practice. Qualified nurses need a lifelong learning process to maintain a high degree of access to different information sources. Magnet Status emphasizes the level of recollecting data and the process of decision making in delivering patient care. The need to focus on nursing research and the use of EBP in the decision-making process provides credible and valid data. Magnet Status improves patient care outcomes and it results in higher retention of qualified nurses and improved job satisfaction (12). 250

STRATEGY USED IN THE EBP PILOT 255

EBP is the integration of valid patient reported, nurse observed and research derived information (13). Sackett defines EBP as "the integration of best evidence with clinical expertise and patient values and circumstances" (14). The Long Island Jewish Medical Center (part of the NSLIJHS) supports a Research Committee comprised of members of the Collaborative Care Council, nurse educators, and librarians who meet monthly with a goal to promote research and the use of evidence-based practice. It is well known that the use of EBP can significantly impact patient care outcomes. For this reason, the Research Committee emphasized the need to develop a strategy that would make evidence-base information resources available at the actual workplace, i.e., the units/clinical floors. 260 265

The challenge identified by the committee was the lack of skills exhibited by nurses searching for and critiquing information. It was evident that the health team (nurses) on the clinical floors or units of the hospital, had questions related to their clinical practice or day-to-day operations which were not resolved due to diverse barriers. Nurses seemed to need a different approach, a solution that would have an impact on patient care and improve the Press Ganey Scores of the hospital. 270

The overall approach selected was to “Bring the mountain to Mohammed” as a way of motivating the use of information by the health care team, in particular by nurses. In order to accomplish this goal, the Committee created a strategy using traveling EBP mentors who would assist and coach nurses through the evidence-based process. 275

PILOT STUDY

The EBP mentors group was created by the Research Committee to assist and coach nurses in the process of EBP: to identify, analyze, and use information. 280
The mentors group was integrated by members of the Committee, including Nurse Educators and Librarians who contacted the Shared Governance Council on each clinical floor or unit to explain the EBP Mentors’ goal, recommending the structure of a work group who would be interested in following the EBP methodology and who could identify a question/problem that would motivate changes in nursing practice at the patient level. 285

The group would base their study on the an evidence-based practice model proposal with the following steps:

1. Formulate a question—Formulate an answerable question 290
2. Gather information—Gather research evidence for best nursing practice (Do an adequate literature review and critique to extract best practices)
3. Appraise the evidence to determine the validity and applicability to nursing practice, resources, and client preferences
4. Design/select an action plan 295
5. Implement the evidence-based action/intervention
6. Evaluate the outcomes of the implementation
7. Disseminate evidence/document evidence in database; publish for NSLIJHS and external use; incorporate the SPP manuals as appropriate (15) 300

Each step in the process would be explained to the work group of the Council in order to organize the process, ensuring that the team would be able to formulate a question according to the evidence-based practice model.

Pilot Group

The 4th floor North Oncology unit was selected to pilot the study because of their interest in learning EBP and enhancing their skills in searching for literature in databases. This Pilot Group would follow the three phases of the EBP process: identify the question, synthesize the evidence, and translate the evidence into nursing practice. 305

Once the workgroup was established, the librarians organized an information literacy workshop introducing the nurses to the different resources available, showing them how to retrieve information specific to a precise question or need. This process was conducted on the 4th floor unit/clinical floor using their computers with Internet access. 310

The EBP process "Finding the Evidence" was the next step. For this, we identified four categories of information sources according to Guyatt et al.'s manual for evidence-based practice (16): 315

1. Systems: Information resources that provide regularly updated evidence and provide guidance or recommendations for patient management.
2. Synopses: Journal and other products preappraised that include guides and advice from experts. 320
3. Summaries: Systematic reviews and practice guidelines that collect evidence on a topic.
4. Studies: Original primary articles and the information need to be evaluated before it can be apply. 325

In their paper "Finding the Evidence" McKibbon and colleagues established criteria for evaluating information resources: soundness of evidence-based approach, comprehensiveness, and specificity, ease of use, and availability (16).

Table 1 shows a categorization based on McKibbon et al.'s criteria done by the LIJ librarians as a first step to identify resources. Availability was not included because all the resources analyzed are available at the LIJ Hospital Library (Table 1). 330

The categorization gave the Pilot Group information about the different resources available and how they relate to evidence-based practice. Table 1 was the primary source for deciding which resource was best suited for use in the search process to obtain on-target results. The categories chosen were guidelines and primary studies due to the characteristics of the question and because it relates to the process of patient satisfaction and not so much to clinical practice. 335 340

Resources selected were key for the next library session: research and reviews of published journals that can be identified using databases such as CINAHL (Cumulative Index to Nursing and Allied Health Literature), Nursing Consult, PubMed, and published consensus guidelines in Web sites such as National Guidelines Clearinghouse, Joanna Briggs Institute for Evidence-Based Nursing and Midwifery, and the Clinical Practice Model (CPM) Resource Center. Searching these databases for information would give nurses the necessary skills to effectively search EBP literature for decision-making. 345

TABLE 1 Categorization of Information Resources Available

Resource	Soundness of EB approach	Comprehensiveness	Ease of use
Systems			
Up-to-date EBM guidelines	Moderate	Clinical	Lack of a good searching system
Preappraised Evidence-based nursing	Strong	Mostly primary care	Easy to use
Nursing Consult	Strong	Clinically relevant advances in treatment, diagnosis, etiology, and prognosis	Easy to use Needs support
Systematic reviews and guidelines	Strong	Evidence-based monographs	Needs support Easy to use
US National Guidelines Clearinghouse	Strong	Covers guidelines in United States and other countries	Easy to use Needs support
Nursing Consult	Strong	Practice guidelines	Easy to use
Cochrane Database Systematic Reviews	Strong	Covers several disciplines in therapy and prevention	Easy to use Good navigation features Needs support
Primary studies			
MEDLINE	Strong	Substantial amount of primary studies in various disciplines	Has an easy friendly portal; this database has a menu to search for clinical queries Needs support
CINAHL	Strong	Most comprehensive source for nursing and allied health journals	A very use friendly interface with a great menu of search options, such as guidelines, systematic reviews, and clinical queries Needs support

Identify the Question

350

The first step in this process was the conversion of the work group's information need into an answerable question. This was done by using the EBP methodology with the assistance of the "EBP Mentors." The process of formulating the question used the PICO format (17). This format has the following components:

355

Patient/Population/Problem/Disease—Define who or what the question is about. Is it answerable, feasible, and significant to nursing practice?

Intervention—Define which intervention you want to test/compare.

Comparison—Define the alternate intervention.

Outcomes—Define the outcomes that you want to achieve or avoid. 360

The work group then developed the following question:

“What do oncology patients want to know and what is the best way to keep them informed?”

Once the question was defined, the EBP Mentors assisted the work group in identifying the sources of evidence, such as systematic research and new knowledge, synthesized evidence review, published consensus guidelines, expert opinion, and practice-based evidence, all of which must be evaluated for relevance, currency, and quality (18). Table 2 shows a PICO model structure with the specific terms under which the search was performed. 365 370

In the next step, the search strategy was delimited and the keywords identified. The search was set up and conducted on specific databases according to the topic (CINAHL and/or PubMed were chosen). The librarian met with the workgroup for an additional session where they used the search terms on Table 2. They were encouraged to look for clinical trials, systematic reviews, guidelines, etc. Once the search results were evaluated, the documents were retrieved and analyzed under the EBP model. This process was also assisted by the EBP Mentors. 375

There are two reasons for this process: first, it is part of the training in order to reinforce the workgroup’s skills in searching databases. Secondly, it gave the nurses a sense of confidence to do a search on their own (19). 380

Synthesize the Evidence

Synthesizing the evidence is the second phase in the EBP process. Once the results were reviewed, the documents retrieved and the evidence gathered, the next step was the reading the documents to identify trends and allow the nurses to summarize and rate the literature. Table 3 shows the 385

TABLE 2 PICO Model with Search Terms

PICO	Element	Search terms
P(atient)	Oncology patients	Cancer care facilities
I(ntervention)	Want to know and way to inform	Communication
C(omparasion)	Best nursing practice	Standards
O(utcome)	Treat patient as individual	Patient satisfaction

TABLE 3 Results of the Search Process

	Database used	Keywords selected	No. of relevant hits/author/references
1st search	CINAHL	Cancer Patients Patient Satisfaction Nurse-Patient Relations Quality of Nursing Care	19 relevant hits 3 reviews Radwin L (2000)—27 ref. Bouthillete (2000)—4 ref. Quinn GP (2004)—10 ref.
2nd search	PUBMED	Oncology Inpatients Quality Nurses Years: 2000–2008	48 Relevant hits 9 Reviews Radwin LE (2008) Innes S (2008) Wilkinson S (2008) Potter P (2007) Coffey S (2006) Farquhar MC (2005) Harle I (2008)—55 ref.
3rd Search	US National Guideline Clearinghouse	Nurse Cancer Patients	

results of the search in terms of number of relevant hits. The table structure used to present the results of the search is based on Case Western EMPR format (18).

After the team reviewed the literature, the original question was reformulated and oriented towards the actual situation on the unit/clinical floor. Making recommendations would follow, and they should be closely related to what the team found or identified in the literature

The question was rewritten in the following way:

“What do oncology patients on 4 North want to know?” 395

With relation to this question, five themes were identified (Table 4). The analysis of these themes showed what patients really wanted to know.

The question then became:

“What is the Plan of Care and who are the People involved in delivering my care?” 400

TABLE 4 Themes Identified (20)

- | |
|--|
| 1. Daily Routine (What time is breakfast/lunch?) |
| 2. Status (What are the results of my tests? Am I getting chemo today?) |
| 3. Treatment Outcomes (Will I be in pain? Will I be tired?) |
| 4. Caregivers (Who is my doctor? What haven't they told me what's going on with me?) |
| 5. Future/Outcome (When can I go home? Why does it take so long to get discharged?) |

TABLE 5 Translate the Evidence Into Practice (20)

Nursing practice changes
Identify preferred method for receiving information upon admission
Review point of care—POC—with every patient, daily
Review “Navigator” with every patient daily
Standardize “white boards” to include on the floor:
• Name of health care team members
• Pictures of staff
Audio/visual channel with repeating information regarding test/information
Rounding for outcomes

TRANSLATE THE EVIDENCE INTO NURSING PRACTICE

According to all the studies reviewed, translating the evidence into nursing practice is the most difficult part, which is why the EBP Mentors worked so hard to get the workgroup to draw conclusions and recommend practical solutions. Once the literature was evaluated and the nurses had acquired the necessary skills, they would be able to translate this new knowledge into nursing practice and provide evidence based care. 405

The actual results after the analysis were turned into nursing practice changes. Table 5 shows the list of changes made to improve patient care on the 4th floor oncology patients at Long Island Jewish Medical Center. 410

CONCLUSION

The famous proverb “If the mountain will not come to Mohammed, Mohammed will go to the mountain” demonstrates that librarians should not to limit contact with their users to a library environment (21). A lot of things can be learned working with users, and it is a positive approach to promote information skills. In the 21st century libraries are available around the clock because most of the resources are online and can be accessed wherever there is an Internet connection. 415

Teaching and assisting nurses in their regular working environment motivates them to enhance their skills to access information. It is not only important to have the resources available, but to promote their use. One must remember that librarians often struggle to obtain the financial resources necessary to provide knowledge-based resources, going through all sorts of budget and bureaucratic processes to be able to make the resources available. Usage is very important; therefore, it is essential that users not only have access, but also have the necessary skills to use these resources. It is vital in a hospital environment where quality and patient outcomes have a great impact and the literature has established or identified that this can be achieved through the use of information in nursing practice. 420 425

Through the last three decades, studies written by the nursing community have established the lack of skills to use information resources as one of the main reasons that the literature is not used. Librarians should encourage programs that assist nurses to acquire the necessary skills and expertise to use evidence-based resources. 430

In this pilot study not only information was made available but also nurses were assisted in the process of enhancing their skills and using information to impact nursing practice. This made a difference in the attitude nurses had to the patient's question and what information they needed to know. Nurses were able to apply the EB to their practice and have a positive change in Press Ganey Scores. This experience can be implemented across the board in any units in other areas of the hospital or in any hospital environment with the same or better results. 435 440

Librarians working with nurses in their workplaces close the gap between available information resources and use and analysis of the literature. An important part of the process is the need for librarians to study and understand evidence-based methodology, since EBP is not limited to health improvement. Establishing a collaborative relationship with nurses and other health professionals will boost the visibility of librarians and the stature and professional impact in EB processes. 445

In turn, direct contact with nurses and other health professionals enrich library practice. Librarians must apply EBP to their own practices, since similar analysis would generate new ideas to assist users, thereby motivating them to greater use of the literature. This approach calls for a "move from library services to decision support services" (22) and involves accountability because the librarian's role establishes a closer relationship with patient care requiring a higher standard for practice. 450 455

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