



James A. Haley
Veterans' Hospital
Tampa, FL

James A. Haley VA Hospital Nursing Research News

Summer 2007

Grading Evidence

*Patricia Quigley, PhD, ARNP, CRRN, FAAN
Chair, Nursing Research*

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Last October, the Nursing Research Committee sponsored another mini-workshop: [Evidence-based Nursing: Evaluating the Strength of the Evidence](#). During this workshop, we reviewed the rationale for evidence-based practice, two rating scales (one for scientific study design and the second for strength of the evidence), and study designs. We then broke into hands-on workgroups, during which facilitators guided workshop participants in analysis of selected articles using these rating scales. Each workgroup reported their findings and response to using the rating scales. We had a great time learning together! We find the hands-on workshops are so dynamic! Thank you to all who participated and our group facilitators!

This workshop was such a hit, that we repeated this on 5/11/07, as the Nursing Research Committee's contribution to Nurses Week. Primarily, we want to provide my nurses with hands-on experience rating the literature and grading the evidence. In March, 2007, Ms. Janzen was listening to our Practice Council Co-Chairs discuss changes made to nursing practice policies, as they reported at the Shared Governance Coordinating Council. Ms. Janzen then asked, "What was the level of evidence for the changes to the practice

policies?". This question from Ms. Janzen underscores the how our organization is moving towards a consistent approach to grading evidence. As a direct result of Ms. Janzen's question, the Research Committee has been asked to work directly with the Practice Council to educate Council Members about the rating scales, after which the rating scales will be used for analysis of the literature reviews for practice and guideline changes.

As professional nurses, we have an increased awareness of the necessity to ensure quality of clinical care that is based on current evidence. To meet this need, we have responsibility as decision-makers, to learn how to grade evidence and recommendations, or know the evidence-status of given clinical guidelines. As you learned in my October, 2006, message, the U.S. Preventive Services Task Force (USPSTF) as a rating scale for strength of evidence, and the Agency for Healthcare Research and Quality (AHRQ) has a rating scale for type of research study design. While other rating scales exist, these are the two rating scales that our Nursing Research Committee has been using for over a year. These rating scales are provided below for you.

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From the Editor

Lucille Raia, RN, MSN



Lucille V. Raia

Merriam-Webster's (Merriam-Webster Online, 2007) defines research as "a careful or diligent search; studious inquiry or examination especially investigation or experimentation aimed at the discovery and interpretation of facts, revision of accepted theories or laws in the light of new facts, or practical application of such new or revised theories or laws".

Whew!

Our growth as a profession certainly took a circuitous route; from Florence Nightingale's first research that led to changes in the "sick" environment to nursing practice that was controlled and molded by Medicine and Hospitals to Centers of Nursing Research and Excellence.

Whew again!

Although the process of research appears formidable, nurses engage in inquiry every day with each patient encounter, as they assess, diagnose, plan, implement, and evaluate.

More formal research initiatives such as investigating groups of individuals for certain characteristics or for changes in status or testing theories are other types of queries in which nurses engage.

Whichever path of inquiry we employ, our life-long *re-searching, re-looking* at our patients is the imperative from which we develop evidence-based knowledge, shape our practice, and effect positive patient outcomes.

As nurses we have an ethical mandate to care for our patients with the best knowledge and skill in a positive safe nurturing environment. Through our continued inquiry on why phenomena occur, on what works, and more importantly what causes harm, we meet this mandate.

Research is an important vehicle by which we continue to develop our profession and establish and sustain ourselves as partners in the Healthcare System. As we continue to add to the scientific body of knowledge that drives our practice, our inquiries and research endeavors will provide us new evidence to care for our patients in a holistic, comprehensive and safe manner.



Nursing Research News

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Grading Evidence

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While evidence can be a moving target, we want to know the level of evidence on which our practice is based. For example, let's talk about unit rounds for patient care. We could look at our current policy, and rate the references that were used to support the practices we are telling nurses to follow. This practice is not currently occurring. However, we are moving in this direction. In 2005, we knew based on expert opinion (Level V, AHRQ) that unit rounds were important to patient care based on level of benefit (Level B, USPSTF). We could add these rating levels to our policy.

However, in 2006, the results of a quasi-experimental study (Meade, Bursell, & Ketelsen, 2006) were reported on this exact topic, reporting on specific timeframes for rounds that resulted in improved patient care. As a result of this article, the Practice Council may choose to review our current policy on patient care rounds, and consider changes based on new evidence. Thus, if a change was made to require hourly to 2-hour rounds, that addition would be graded as quasi-experimental design (Level III, AHRQ), and good evidence, recommended for patient care (still Grade B, USPSTF, as we need to see the results consistently reported in more than one study).

Adopting a taxonomy to rate the quality of study design and level of evidence allows us to ensure that our practice policies and guidelines keep up-to-date with the nursing and healthcare literature. While a number of rating tools exist, we want to ensure that you are clear about two terms: a) level of evidence rates the quality of an individual study and b) strength of the recommendation for clinical practice is based on the body of evidence (typically more than one study) (Ebell, et al., 2004).

Our committee has also recommended the use of two rating scales for our purposes.

This form is located on the S Drive. The rating scales are:

1) the Agency for Healthcare Research and Quality (AHRQ) Types of Research: Evidence Hierarchies to rate the level of the study design, from lowest (a case study) to highest (a meta analysis)

Types of Research: Evidence Hierarchies	
Agency for Healthcare Research and Quality (AHRQ)	
Level I	Meta-Analysis (Combination of data from many studies)
Level II	Experimental Designs (Randomized Control Trials)
Level III	Well designed Quasi Experimental Designs (Not randomized or no control group)
Level IV	Well designed Non-Experimental Designs (Descriptive-can include qualitative)
Level V	Case reports/clinical expertise

and,

2) The US Preventive Services Task Force Rating Scale Grading Scale

Strength of Evidence	
United States Preventive Services Task Force (USPSTF) Grading	
A	Strongly recommended; Good evidence
B	Recommended; At least fair evidence
C	No recommendation; Balance of benefits and harms too close to justify a recommendation
D	Recommend against; Fair evidence is ineffective or harm outweighs the benefit
E	Insufficient evidence; Evidence is lacking or of poor quality, benefit and harms cannot be determined

To rate the strength of the evidence, from E (poor evidence, do not recommend to patients or for change in practice) to A (good evidence, recommend to patients and for

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Grading Research

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change in practice).

We are expecting that all our staff who lead journal clubs will use this template and these rating scales, after appropriate education, to more than read an article, and begin to evaluate the design and findings. This higher level of analysis moves us closer to being informed consumers of the evidence. As an informed consumer, we are better positioned to review a series of articles and based on the overall analysis, make decisions about recommending changes in practice based on the strength of the evidence. Remember, we want to avoid changing a practice or a policy based on one descriptive study with a small sample size and no statistical significance to the findings. In other words, we want to change practices based on studies that adhere to scientific rigor, sound methods, and good evidence.

We are very excited about increasing our staff's knowledge and use of these rating scales. Thus, we are repeating the same workshop on May 11th, as mentioned. We hope that you will join us. In the next issues of Nursing Research News, we will be reporting on the analysis of the two articles selected for this workshop, so demonstrate how these rating scales guide critical thinking and decisions about changes in practice. We will also be reporting on a very exciting program being launched by the Nursing Research Committee with support of the Clinical Practice Council: Evidence-Based Practice Fellowships.

Each strategic action is moving us closer and closer to expanded knowledge among our nursing staff about how to determine if the results of research studies support a change in practice.

Evaluation of the literature takes time, the time for critical thinking. It's really fun to have two or more read the same article and review its strengths, limitations, and findings.

Thank you to all the members of the Nursing Research Committee who planned and coordinated every aspect of this workshop. While we learn, we laugh and share our knowledge, always complimenting each other – Expanding Knowledge.

References:

- Meade, C.M., Bursell, A.L., & Ketelsen, L. (2006). Effects of nursing rounds on patients' call light use, satisfaction and safety. *AJN*, 106(9), 58–70.
- Ebell, M.H., Siwek, J., Weiss, B.D., Woolf, S.H., Susman, J., Ewigman, B., & Bowman, M. (2004). Strength of recommendation taxonomy (SORT): A patient-centered approach to grading evidence in the medical literature. *American Family Physicians*, 69(3), 548–556. Retrieved April 11, 2007, from www.aafp.org/afp/20040201/548.html.

Congratulations to Patricia Quigley, PhD, ARNP, CRRN, FAAN

Named one of the 30 finalists for the 2007 Nursing Spectrum Excellence Awards for the State of Florida in the "Advancing and Leading the Profession" Category!!

From the August 27, 2007 issue of Nursing Spectrum... *With a passion for nursing and patient safety, Quigley has built the science of nursing related to fall prevention and generated a program of research that has changed practice. She works with local and national agencies to spread best practices and reduce injuries due to falls in med/surg settings. Quigley is a state and national leader of organizational and excellence programs, preparing professional papers and presentations and educating consumers through TV and newspaper features. She is a wonderful spokesperson for nursing because of her expertise and enthusiasm for the profession.*



Journal Club

Presenter: Diana Weinel, MS, RN

Location: SCI

Article: Aston, J., Lodolce, A., & Shapiro, N. (2006). Interaction between warfarin and cranberry juice. *Pharmacotherapy*, 27(9), 1314-1319.

Rate type of research: Level I
(see Table 1: Evidence Hierarchies)

Rate strength of evidence: B
(see Table 2: Strength of Evidence)

Comments: Since patients with SCI often drink cranberry juice to reduce UTI incidence, the nurse needs to ask patients about this when warfarin is prescribed.

Table 1. Types of Research: Evidence Hierarchies

Agency for Healthcare Research and Quality (AHRQ)

Level I	Meta-Analysis (Combination of data from many studies)
Level II	Experimental Designs (Randomized Control Trials)
Level III	Well designed Quasi Experimental Designs (Not randomized or no control group)
Level IV	Well designed Non-Experimental Designs (Descriptive-can include qualitative)
Level V	Case reports/clinical expertise

Source: US Preventive Services Task Force

Table 2. Strength of Evidence

United States Preventive Services Task Force (USPSTF) Grading

A	Strongly recommended; Good evidence.
B	Recommended; At least fair evidence.
C	No recommendation; Balance of benefits and harms too close to justify a recommendation.
D	Recommend against; Fair evidence is ineffective or harm outweighs the benefit.
E	Insufficient evidence; Evidence is lacking or of poor quality, benefit and harms cannot be determined.

Source: US Preventive Services Task Force

Author: Robin D. Dennison DNP, RN, CCNS

Presenter: Rachel Matthews, RN

Submitted by: Daniel O'Neal APRN,BC

Location: 5 South

Article: Strategies for Save IV Infusions

Evidence Based:

- Summed critical incident reports to the Joint Commission reveal that 80% of deaths from medication errors are due to 20 drugs – the so-called “High Alert Drugs”
- From the same database, about 60% of life-threatening errors occur with IV medications
- Nurses intercept about 80% of med errors initiated by pharmacists, physicians or nurses

5 South Nurse Discussion:

The high alert drugs are:

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Journal Club

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Table A. High Risk Drugs:

Adrenergic agonists: epinephrine, norepinephrine, dopamine, dobutamine	adrenergic antagonists: esmolol
Anesthetics: propofol	Antiarrhythmics: amiodarone, lidocaine
Antineoplastics (chemotherapy)	Dextrose hypertonic: 20% or more
Anticoagulants	Electrolyte solutions: potassium chloride, potassium phosphate, magnesium sulfate, hypertonic sodium chloride
Fibrinolytics: streptokinase, alteplase	Insulins: all types
Liposomal forms of drugs	Moderate sedatives: lorazepam, diazepam
Neuromuscular blockers: mercuronium, atracurium, pancuronium	Opiates
TPN	Vasodilators: nitroglyceride, nesiritide

Strategies to avoid error with this, or other, high alert drugs include:

- Ask a pharmacist ANY question before you administer it
- Use standard equipment and concentrations of drugs
- Get well trained on IV pumps and PCAs, or other devices
- Control the environment: Reduce clutter, have good lighting, label tubings
- Giving the drug is only one part of the equation; systematic observation for both the therapeutic (intended) effects and the possible untoward side effects is KEY!

Author: Joni Hentzen Daniels, MSN, RN, CEN, CCRN

Facilitator: Christine Tipanero MSN, RN

Submitted By: Kathy Barry RN



Location: Emergency Department

Article: Outcomes of Emergency Severity Index Five-Level Triage Implementation

Evidence Based:

Emergency Nurses Association (ENA) and the American College of Emergency Physicians (ACEP) support the migration to a uniform national five-level triage system.

Benefits of conversion to five-level triage system required measuring the following categories:

Clinical Indicator

- Triage Acuity
- Patient disposition (admission, transfer, or discharge)

Quality Indicator

- Left without treatment (LWOT)- the national average was 1.9% in 2004

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Journal Club

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- Combined AMA/LWOT – rate of 3% or less of the monthly ED volume.

Operational Measures

- ED length of stay (LOS)

Financial Indicator

- Level of service charge (nursing charges)
- Service Level charges – inversely related to five-level triage assignments. (e.g. Level 5 (lower acuity) would receive level 1 charge and high acuity patient such Level 1-2-3 would be expected to have high ED charge of level 4 or 5 on the basis of nursing time, interventions, monitoring, and etc).

Patient Satisfaction – many variables not related to the triage process such as registration, physician, ancillary services, facility, cleanliness, etc).

Nursing Discussion:

Standardized five-level triage system was implemented in 14 pilot facilities in October 2004. The ED were largely rural, community based facilities with average monthly patient volumes between 900 and 3200 patient visits, **therefore, the outcomes mentioned justifies that this article was a strong evidenced based researched practice.**

Tampa VA ED started the five-level triage system specifically Canadian triage And Acuity Scale (CTAS) last December 2006.

Comments:

It was a process changed for ED staff, resistance to change was eminent but there was constant support and education from ED and Nursing Administrations, the five-level triage was fully implemented, patients were appropriately triaged according to preceding complaints, and quality of care and patient safety were improved.



Congratulations to Heather Weckman

Selected by the Florida Nurses Association Awards Committee as the recipient of the **FNA Nurse Practice Award!**

Heather's nomination showcases her leadership and impact to nursing practice and innovation through technology integration, practice redesign, and shared decision-making in our organization.

Her ability to engage us in her passion for nursing, safe patient care, informatics, and technology customization has influenced us all.

Heather will be recognized at the 2007 FNA Convention's Award Dinner September 27, 2007 in Daytona Beach.



Upcoming Conferences

4th Annual Polytrauma Blast Injury Conference

December 14, 2007

Tampa Marriott Waterside Hotel, Tampa, FL

Contact Valerie Kelleher to register

329-3948; 813-558-3948 (from outside the VA)

Valerie.Kelleher@va.gov

5th Annual Florida Magnet Nursing Research Conference

February 28-29, 2008

Hilton Clearwater Beach, Clearwater Beach, FL

<http://www.cme.hsc.usf.edu/magnet/>

813-974-4296 or 800-852-5362

8th Annual Safe Patient Handling & Movement Conference

March 10-14, 2008

Buena Vista Palace Hotel & Spa, Orlando, FL

<http://www.cme.hsc.usf.edu/sphm/>

813-974-4296 or 800-852-5362

7th Annual Transforming Fall Prevention and Fall Protection Practices Conference

April 21-25, 2008

Hilton Clearwater Beach Resort, Clearwater Beach, FL

<http://www.cme.hsc.usf.edu/falls/>

813-974-4296 or 800-852-5362