

Research

Source of Evidence 2

Describe and Demonstrate consistent membership and involvement by at least one (1) nurse, in the governing body responsible for the protection of human subjects in research and that a nurse votes on nursing- related protocols.

The Institutional Review Board (IRB) at Vanderbilt is responsible for assuring that the rights of human subjects are protected when patients are involved in research. The IRB follows the federal guidelines for the protection of human subjects required in research-intensive institutions. *(The institution’s policies, procedures and processes (including the IRB) that protect the rights of participants in research are provided in Organizational Overview Question 27.)*

The IRB has protocol analysts, many of whom are nurses, who complete a pre-review of each application submitted. The protocol analysts provide explicit feedback to investigators on content in the application that requires modification. This service is invaluable as an application that has been revised based upon protocol analyst’s recommendations typically is approved with the first review by the IRB committee.

The Vanderbilt IRB is composed of 4 committees, 3 for Health Science and 1 for Behavioral Science. Each committee meets weekly for approximately 2 hours and has nursing representation, who are voting members. IRB applications are reviewed by member(s) of the committee with expertise in the content of the proposed research. Therefore, applications directly related to nursing research and/or nursing issues will have a nurse reviewer from the IRB. Exhibit NK 2.1 below lists the IRB membership for each of the committees with their areas of expertise. Nurse members are highlighted.

Table NK 2 – 1: Behavioral Sciences Committee Members

**Behavioral Sciences Committee - Institutional Review Board
OHRP Registration Identification - IRB00000477
Federal-wide Assurance - 00005756**

VOTING MEMBERS (10)	SPECIALTY
Chair - Todd Ricketts, Ph.D.	Hearing and Speech
Vice-Chair - David Schlundt, Ph.D.	Behavior Medicine, Health Psychology, Diabetes, Obesity, Eating Disorders
Lee G. Bissinger, B.S.	Geology/Geography, Community Member (NS)

Juanita Buford, Ed.D.	Medical Education
Karen D'Apolita, Ph.D., A.P.R.N.	Nursing, Maternal and Child Health
Benjamin W. Hornsby, Ph.D.	Hearing and Speech
Daniel F. Kearns, Psy.D.	Clinical Psychology
Ryan J. Kettler, Ph.D.	Educational Psychology
Kathleen Lane, Ph.D.	Special Education
Thomas Lawrence	Community Member (NS)

Table NK 2 – 2: Health Sciences Committee 1 Members

**Health Sciences Committee 1 - Institutional Review Board
OHRP Registration Identification - IRB00000475
Federal-wide Assurance - 00005756**

VOTING MEMBERS (10)	SPECIALTY
Chair - G. Kyle Rybczyk, R.N.C., F.N.P.	Infectious Diseases, Nursing
Vice-Chair - James B. Atkinson, M.D., Ph.D.	Surgical Pathology/Oncology
Vandana G. Abramson, M.D.	Hematology/Oncology
James L. Blair, D.O.	Clinical Anesthesiology
Jennifer A. Bounds	Homemaker, Community Member (NS)
Elliot M. Fielstein, Ph.D.	Clinical Neuropsychology
Jennifer Fordham, B.S.	Education, Community Member (NS)
Rebecca N. Jerome, MLIS, MPH	Library Science/Public Health
Lori Ann F. Kehler, O.D.	Pediatric Ophthalmology
Neeraja Peterson, M.D.	Internal Medicine

Table NK 2 – 3: Health Sciences Committee 2 Members

**Health Sciences Committee 2 - Institutional Review Board
OHRP Registration Identification - IRB00000476
Federal-wide Assurance - 00005756**

VOTING MEMBERS (10)	SPECIALTY
Chair - Steven L. Goudy, M.D.	Otolaryngology Surgery
Vice-Chair - Lani A. Kajihara-Liehr, M.S.N., F.N.P	Pediatric Nursing
Emily Chan, M.D., Ph.D.	Hematology/Oncology
Rick A. Flores	Management, Community Member (NS)

Timothy D. Girard, M.D., MSCI	Pulmonary/Critical Care
James C. Jackson, Psy.D.	Clinical Psychology/Health Services Research
Geraldine Miller, M.D.	Infectious Diseases
James A.S. Muldowney, M.D.	Cardiovascular Medicine
Willie A. Sinkfield, M.Div	Ministry, Community Member (NS)
Mary B. Taylor, M.D.	Pediatric Critical Care/Anesthesiology

Table NK 2 – 4: Health Sciences Committee 3 Members

**Health Sciences Committee 3 - Institutional Review Board
OHRP Registration Identification - IRB00002125
Federal-wide Assurance - 00005756**

VOTING MEMBERS (10)	SPECIALTY
Chair - James T. Forbes, Ph.D.	Medical Oncology/Immunology
Vice-Chair - John F. Kuttesch, Ph.D., M.D.	Pediatric Oncology, Oncology, Neuro-Oncology
Kristin Archer, Ph.D.	Orthopedics and Rehabilitation
William V. Bobo, M.D., Ph.D.	Psychiatry
William E. Crowder, D.Min.	Ministry, Community Member (NS)
Allison Dehart, F.N.P	Psychiatry/Nursing
Roger R. Dmochowski, M.D.	Urology
Burl Johnson, B.S.	Law Enforcement, Community Member (NS)
Paulette M. Johnson, M.D.	Pediatric Critical Care
Saralyn Williams, M.D.	Toxicology

[NK2-Exhibit A-1-IRB Minutes HS1 Nursing Chair, NK2-Exhibit A-2-IRB Minutes HS2] **

****NOTE: IRB Minutes are Privileged and Confidential; these samples indicate nursing membership/attendance at these meetings.**

Research

Source of Evidence 4

Describe and demonstrate the structure(s) and process (es) used by the organization to develop, expand, and/or advance nursing research.

The mission of VUMC encompasses patient care, research, and education. Nursing research is supported to meet our research mission for the delivery of quality nursing care. In 2009, the Nursing Executive Board (NEB) identified 3 strategic goals for nursing. One of the 3 strategic goals is to support evidence-based practice and development of research by nurses across the Medical Center.

To support this strategic goal, nursing administration has resources in place to assist nurses to engage in scholarly activities. This infrastructure that is available to nurses who would like to conduct research, evaluate current practice or translate recent evidence into practice includes: (1) a nursing research office staffed by a Director and a program coordinator, (2) the Nursing Research Committee, (3) the EBP & Nursing Research website, and (4) the Evidence-based Nursing Practice (EBNP) fellowship program. To support dissemination of findings, an annual poster session is held during Research Day and a series of Writing for Publication workshops are offered every year.

Nursing Administration Resources

Nursing Research Office

Central to the structure of the nursing research office is the role of the Director of Nursing Research. A program coordinator also provides support to nurses conducting and disseminating research. This office provides consultation to staff on:

- Designing research studies
- Identifying potential sources of funding
- Identifying data collection methods
- Developing spreadsheets for data entry
- Providing preliminary statistical advice
- Disseminating results through internal and external presentations and publications

The Director, Nancy Wells, is a doctorally-prepared nurse scientist, who provides consultation on all aspects of the research process: problem identification, research design, protection of human subjects, data collection procedures, data entry, analysis and integration into current literature. One of the most important roles of the Director of Nursing Research is to identify and refer staff to internal research resources. The program coordinator, Troy Simpkins, assists nursing staff in use of the Eskind Biomedical Library, database development, on-line survey preparation, marketing for projects and surveys, and poster preparation.

Nurses at all levels of the organization access the services of the Nursing Research Office at any phase of the process; some come at the beginning with just an idea or a question; some come for assistance in data entry and management, and others at the end of the project to prepare abstracts and/or posters for presentation.

Nursing Research Committee (NRC)

This committee was formed in January 2008 and approved as a standing committee in the Nursing Bylaws at the November 2008 convention. [NK4-Exhibit A-1-Research Committee Charter] The committee consists of nurses from all levels of the organization, VUSN faculty, and representatives from the EBM program. [NK4-Exhibit A-2-NRC Membership] The purposes of the committee are listed.

- Our primary purpose is to facilitate the integration of evidence-based nursing practice to improve patient outcomes
- A secondary purpose is to facilitate research activities that generate nursing knowledge

This committee has accomplished much in its first 2 years of operation. [NK4-Exhibit A-3-NRC Minutes] In May-June of 2008, the committee conducted an initial survey on EBP (see results below). Results from this survey guided the committee in developing our website.

The NRC also hosts an annual Research Day during our week-long Oktoberfest. Research Day provides nurses at Vanderbilt an opportunity to showcase the work they have done to improve nursing practice. Following a keynote address, concurrent sessions are held and nurses who have completed present them to their colleagues. Research Day also hosts a poster session, where presenters submit abstracts that are reviewed by a sub-committee of NRC members. [NK4-Exhibit A-4-Research Day Program, NK4-Exhibit A-5-Poster Presenters] Research Day provides learning opportunities for the presenter and audience. Three posters of the 33 presented in 2009 have been disseminated externally – 2 at national conferences and 1 through publication.

Table NK 4 – 1: Nurse Posters/Presentations External

Nurse Posters and Podium Presentations - External					
	Name	Conference/Meeting	Title	Poster	Podium
1	Wendi R. Mason, RN, MSN, ACNP-BC	American Thoracic Society Annual meeting, May 2009	Obstructive sleep apnea is common in idiopathic pulmonary fibrosis.	√	
2	Wendi R. Mason, RN, MSN, ACNP-BC	American Thoracic Society Annual meeting, May 2010	Exertional walk studies and six-minute walk tests: a retrospective study in idiopathic pulmonary fibrosis patients.	√	
3	Debbie Arnow, RN, MSN	Society of Pediatric Nurse Annual Conference, April 2009	Embracing the Future of Pediatric Nursing: Impacting the Turnover of New Graduate Nurses	√	
4	Valerie Kibler, RN, NP	UHC Quality Conference; San Diego, CA, Oct 2010	Post Operative Ambulation of Colorectal and Urology Patients	√	
5	Merewyn Chambers, RN	Western Kentucky University, Nursing Research Day, Dec 2009	Positioning the Pediatric Surgical Patient	√	
6	Deonna Moore, MSN, ACNP-BC	American Transplant Congress, San Diego, May 2010	Living kidney donor evaluation: a characterization of the factors associated with non-donation among Caucasians and African Americans.	√	√
7	Sarah Meeneghan, RN, MSN	Clinical Leadership Project Presentations, UVA School of Nursing, Charlottesville, VA; July 2009	Bundling Up Clostridium Difficile: Infection Control and Prevention in the Surgical, Trauma, Burn ICU	√	√

New Knowledge, Innovations and Improvements
Research (4)

8	Alaina Knight, RN	TNA Convention, Chattanooga, TN; Nov 2009	New Nurse Resident Buddy System	√	
9	Shelley Moore, RN, MSN	TNA Convention, Chattanooga, TN; Nov 2009	Relationship of Perceptions of Structural Empowerment to Number of Years Spent at an Academic Medical Center: A Significant Difference in Means	√	
10	Karin League, RN, MSN	Joanna Briggs International Colloquium, Chicago, Sept 2010	Evaluation of a Web Based Resource for Support of Evidence – Based Practice	√	
11	Nancy Wells, RN, DNSc, FAAN	Sigma Theta Tau 20th International Nursing Research Congress, Vancouver, BC; July 2009	Examining the Effect of Healing Touch on Radiotherapy Symptoms	√	
12	Laurie Matravers, RN	Center for American Nurses - LEAD Summit 2009, Orlando, FL; June 2009	Launching Staff Nursing Councils and Measuring Effects on Empowerment and Commitment	√	
13	Nancy Wells, RN, DNSc, FAAN	Center for American Nurses - LEAD Summit 2009, Orlando, FL; June 2009	Safe Patient Handling: Impact on Work-related Injury and Retention	√	
14	Nancy Wells, RN, DNSc, FAAN	ONS Fall Oncology Nursing Symposium, Nashville, TN; October, 2009	Putting Evidence into Practice		√
15	Nancy Wells, RN, DNSc, FAAN	Evidence-Based Practice ToolKit for Bedside Nurses, Kennesaw, GA; September 2009	Evidence-based Practice: What Does it Mean for Nursing		√
16	Pamela K. Hoffner, RN, MSN	Association of Contingency Planners- Nashville Chapter June 2009	Step-By-Step Approach to Emergency Planning		√

New Knowledge, Innovations and Improvements
Research (4)

17	Pamela K. Hoffner, RN, MSN	Association of Contingency Planners- Nashville Chapter , August 2009	Pandemic Tabletop Exercise		√
18	James Barnett, RN, CNRN, PhD©	International Seminar to Develop Practitioners for Holistic Cancer Care; Ytsonomiya, Japan, Sep 2010	1. Professional Nursing Development and Advancement at Vanderbilt Medical Center 2. Student Nurse Internship Program and New Nurse Graduate Programs at Vanderbilt Medical Center. 3. Significance of Continued Professional Development for the Nurse, the Profession, and Society		√
19	Sheryl Redlin-Frazier, RN, MSN	MTONS Fall Symposium. October, 2008, Nashville TN & AWHONN 2009 Fall Mini-Conference, Nashville TN	Gynecologic Malignancies.		√
20	Sheryl Redlin-Frazier RN, MSN	RADIO SHOW - The Voice of America™ Talk Radio Network The Wellness Community® Episode 14: January , 2009	National Cervical Cancer Awareness Month: Guests include Marilyn Uccardi, cervical cancer patient and participant at TWC-Central New Jersey; Patty Kingsley, cervical cancer patient and participant at TWC-Southwest Florida; and Sheryl Redlin-Frazier, RN, OCN, Clinical Learning Consultant, Nursing		√

New Knowledge, Innovations and Improvements
Research (4)

			Education & Development, Vanderbilt Medical Center.		
21	Sheryl Redlin-Frazier RN, MSN	Nursing Education and Development	PCA- Twenty-five years in the making: Where are we now?		√
22	Donna Ruth, RN, MSN	National AWHONN convention, Nashville, TN, Sept. 2010	She's Hemorrhaging - Now What?		√
23	Nina Collins, RN, ACNP-BC	American College of Nurse Practitioners 2008 National Clinical Conference, Nashville, TN, Nov 2008	Ileus: diagnosis and management		√
24	Marcia Spear, RN, DNP, AVNP-BC	TN AB Chapter of the American Society of Plastic Surgical Nurses, Nashville, TN, August 2010	What Are the Necessary Competencies for Providers of Dermal Fillers and Botulinum Toxin Type A Injections?		√
25	Janice Lynn Malone, RN, BSN, CPN	Leadership Class at Belmont University School of Nursing, Nashville, TN, December 2009	Pilot Mentorship Program		√
26	Patricia Neel Scott, RN, DNP, PNP	American Public Health Association Annual Conference. November, 2009	Validating Public Health Nursing Proficiency in Doctoral Education using Public Health Nursing Core Competencies and Performance Measures.		√
27	Sharon Holley, RN, CNM, DNP	American College of Nursing Midwives Annual Meeting, Washington, DC, June 2010	Assessment of male partner needs and experiences during labor and birth		√

EBP survey

In 2008 the NRC conducted an on-line survey of direct care nurse attitudes about EBP and the resources they used to find evidence. The results of this survey gave us baseline data on EBP for nursing staff and provided us with knowledge deficits that were used to plan our website and education programs. The survey was repeated in June 2010, to allow the NRC to evaluate the effects of their work. Table 4.1 shows the results from 2008 and 2010.

Table NK 4 – 2: Direct Care Nurses Attitudes Toward EBP 2008 and 2010 Comparison

Selected Survey Items	2008 N = 744 M (SD)	2010 N = 1164 M (SD)	p
I am willing to change practice based on evidence.	3.40 (0.63)	3.57 (0.51)	<.001
I use research to guide my practice.	2.92 (0.58)	3.04 (0.58)	<.001
Using evidence is not practical.	1.91 (0.63)	1.76 (0.63)	<.001
I have access to evidence for practice.	2.97 (0.67)	3.11 (0.66)	<.001
I have time to read evidence.	2.38 (0.68)	2.46 (0.67)	.01
My supervisor encourages me to use evidence.	2.69 (0.77)	2.81 (0.76)	.001
There are limited resources for EBP.	2.38 (0.71)	2.32 (0.72)	.06 NS
I do not have the authority to make changes based on evidence.	2.30 (0.73)	2.19 (0.74)	.001

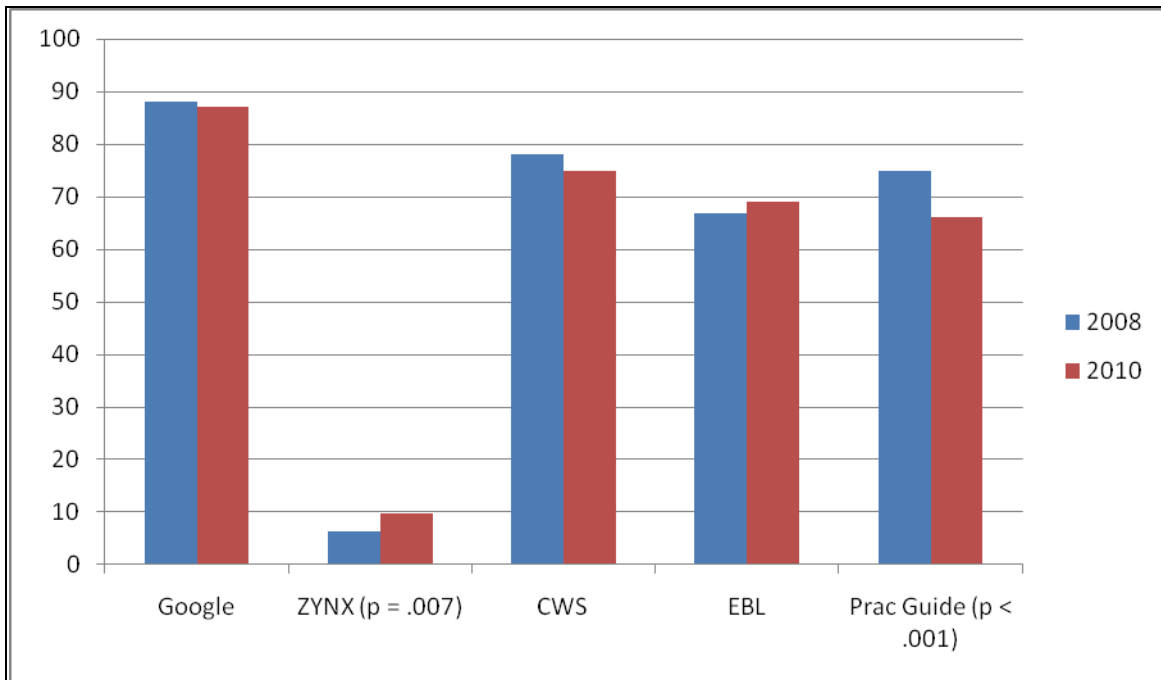
Note: Possible range for each item 1 – 4

These data suggest that the direct care nurses at Vanderbilt have positive attitudes toward EBP and research. Areas for improvement include: access to EBP resources, time, supervisor support and perceiving you have the authority to make changes in practice. Each one of these items except limited resources showed a statistically significant improvement from 2008 to 2010

Graph NK 4-1 below shows the percent of respondents who used the resources (weekly, 2-3 times a month, monthly) and those who had never used the EBP resource. Following the 2008 survey, we discussed the low use of the EBL with the librarians. We also developed a

Search Tips and Tools tab on the website to assist nurses in using EBP resources. In working with ZYNX, we launched a campaign to improve the use of this resource that included distribution of small pocket cards on how to access and use ZYNX.

Graph NK 4 – 1: EBP Resource Use 2008 – 2010



There was a statistically significant improvement in the use of ZYNX over time, but the actual percent change is small (from 6.4 to 9.7%). The only other significant change in resource use was in the opposite direction indicating a decrease in the use of practice guidelines from 2008 to 2010. One possible explanation for this decline is the higher proportion of nurses employed for less than a year in 2010 when compared to 2008.

To further evaluate the impact of our website, respondents in 2010 were divided into never used the website to used the website (weekly, 2-3 times/month, < once a month). There were significant differences in attitudes and resource use between the two groups. In all instances, nurses who used the website had more favorable attitudes and used the resources for EBP.

Thus, the EBP survey has allowed us to evaluate our progress toward the primary goal of the Nursing Research Committee, which is to facilitate the integration of evidence-based nursing practice to improve patient outcomes. One of the most striking aspects of this survey is

the high level of participation of direct care nurses in 2010. We interpret this as an indication of the value and/or interest of the direct care nurses in EBP.

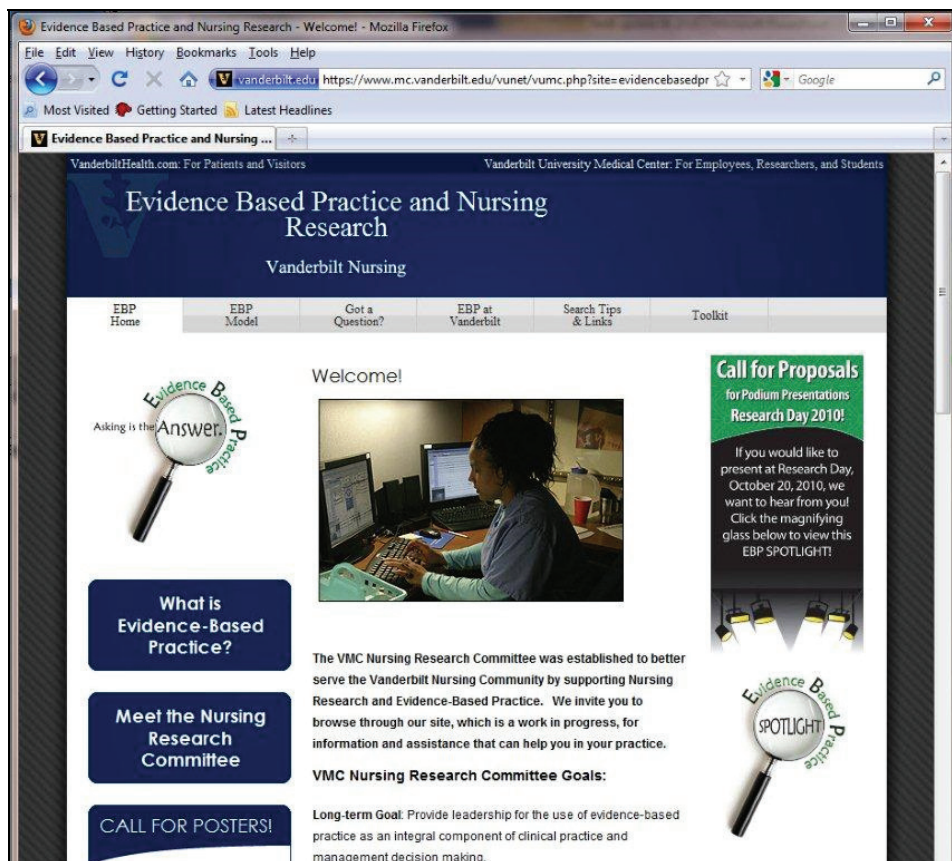
In addition to internal dissemination of these findings, the results of the 2008 survey were presented at the Tennessee Hospital Association (THA) annual meeting in the fall of 2009. In the fall of 2010, these data will be presented at the 7th Biennial Joanna Briggs International Colloquium. [NK4-Exhibit B-1-THA EBP Abstract, NK4-Exhibit B-2-Abstract for Atlanta EBP Conference]

EBP & Nursing Research Website

The Vanderbilt Nursing EBP & Nursing Research website was developed to improve knowledge deficits uncovered with the 2008 EBP survey. The website has 6 major tabs that address resources and activities at Vanderbilt related to EBP.

<http://www.mc.vanderbilt.edu/root/vumc.php?site=vanderbiltnursing&doc=9019>

Table NK 4 – 3: EBP & Nursing Research Web Site Home Page



There are 3 areas particularly relevant to research. The first is the “got a question” tab, which is an on-line PICO form to be filed out by the nurse. The question posed is researched by an EBM specialist or an EBL librarian, depending on the complexity of the question. These questions may form the basis for research projects when little or no evidence is found about the topic. Since the website opened in August 2009, 52 questions have been posted. (*See Table of EBP Questions in OO28, folder EBP Questions-NK4*)

The second area relevant to research is the “search tips and tools” tab. This includes links to many synthesized sites, such as ZYNX. This site also has “cheat sheets” to help the nurse use the database.

The third area relevant to conducting research is the “Toolkit”. This tab contains education modules to increase knowledge and understanding of EBP and research. To date, we have 3 programs available to Vanderbilt staff: (1) EBP in Nursing, (2) The PICO Process, and (3) Is it Quantitative or Qualitative?

Is it Qualitative or Quantitative, which provides basic information about both research approaches, is the starting point for a series of short educational videos on how to critique research studies. The initial video provides the learner with tips on how to determine what type of research was conducted. We have identified 6 research designs and are currently selecting articles for critique. The designs include:

- Qualitative research – grounded theory
- Single group descriptive design
- Cohort design
- Quasi-experimental design
- Randomized clinical trial
- Meta-analysis

This work will lay the foundation for the development of journal clubs. There are several journal clubs currently in place (*see example in NK 7*), and the NRC is working with a perioperative area to start a journal club. This initial work will provide a template for other units/clinics who wish to begin a journal club. There are also tools and support that support the staff in learning how to critically evaluate research literature, as well as begin to design research.

Evidence-based Nursing Practice (EBNP) Fellowship

This year-long program provides 25 nurses (fellows) an opportunity to identify practice problems and search for the best evidence available to solve the problem. When little evidence exists to guide practice, the nurse may conduct a study to (1) describe current practice or (2) investigate potential solutions that have not been published in the literature.

The majority of fellows select problems where evidence may be applied to practice; implementation of the new practice typically is evaluated using a pre-post test design. The EBNP Roadmap displays the content and learning activities included in this program. [*NK4-Exhibit D-1-EBNP Road Map*] Additional description of the EBNP Fellowship program is provided in *NK 7.0*. Examples of EBNP fellow projects are described below and in *NK 4.0* and *NK 7.0 EO* and are listed on the Research Table.

Medical Center and University Resources

Vanderbilt received a Clinical and Translational Science Award (CTSA) award. This award has supported the Medical Center to develop a number of core facilities and resources to assist investigators conducting research. Resources funded completely or partially by the CTSA include Vanderbilt Institute for Clinical and Translational Research (VICTR), and Research Support Services (RSS). Nurses also have access to consultation services from the IRB, Vanderbilt School of Nursing, and the wide variety of content-specific experts who work at Vanderbilt University.

Vanderbilt Institute for Clinical and Translational Research (VICTR)

VICTR was developed with funding from the CTSA. This Center provides consultation on research design, statistics, IRB application preparation, poster development and publications. Small grants (< \$2,000.00) are available and can be reviewed and processed within 2 days. Larger grants require peer review before a funding decision is made. These funds will pay for supplies, participant payment, and other research-related expenses. They will not, however, pay salary. A new program was launched in May 2010 to provide research assistant support for behavioral research projects. This is jointly funded by the CTSA grant and the Vanderbilt University School of Nursing. The following table provides examples of the support nurses have received from VICTR in the past 12 months.

Table NK 4 – 4: Examples of Support

Name	Project	VCTR Resource Used	Funding (if applicable)
Virginia Turner, RN; Case Manager Palliative Care Stephen Nelson, RN; Case Manager Burn Center	Identifying “triggers” that initiate a palliative care consult for burn patients	Consulted with quality improvement specialist (Ted Speroff, PhD) Bioinformatics support to examine current case load and practice	N/A
Wendi Mason, RN, MSN; Research Nurse in Pulmonary Diseases	Exertional Walks, Six-Minute Walks, and 24-Hour Ambulatory Oxygen Monitoring in patients with Idiopathic Pulmonary Fibrosis: A Comparison Study of the various studies to determine the best tool to determine supplemental oxygen requirement.	Design studio	N/A
Bette Moore, RN, PhD Katherine Bennett Child Life Specialist	The effects of medical play on young children’s pain and distress during burn wound care	Research nurse support	\$4,900

Research Support Services (RSS)

RSS supports Vanderbilt investigators and study personnel by providing assistance throughout the research process. RSS programs assist researchers with protocol development, IRB navigation and study organization. RSS staffs coordinate research staff training, and contribute to the identification and development of tools and resources to assist research

processes. Through the VICTR, RSS has assisted nurse researchers in receiving priority status for VICTR funding support, staffing for unfunded research, and expert consultations. Currently, at least 13 nursing projects have received support through RSS/VICTR programs; examples below:

Table NK 4 – 5: Examples of Nurses Using RSS

Name	Project	VCTR Resource Used	Funding (if applicable)
Roxy Baumgartner, RN,MSN, ACNP Jerita Payne, RN, MSN, ACNP	Survey of Transplant Nurse Coordinator Practices: Talking with patients about sexual functioning	Funds for mailed survey using national distribution list	\$2000.00
Terri Cesar, RN, MSN; VUSN PhD student	Renal Salt Handling in Postural Tachycardia Syndrome Following Dietary and Pharmacological Dopa Administration	Use of CRC resources	\$61.624
Vanessa Briscoe, RN, NP	Diabetes/Endocrinology – project in development	Consultation of evaluation component for proposed project	\$200.00

IRB Consultation Service

IRB Consultation Service assists any Vanderbilt investigator in preparing the IRB application. In addition, every application that is submitted for review receives a pre-review by one of the protocol analysts. This pre-review is invaluable as the analysts pick up many of the problems or issues the committee would identify in a full review. With the feedback from the analysts, full review IRB applications typically are approved on the first review by the IRB committee.

VUSN Research/Grants office

VUSN Research/Grants office provides assistance to nurse investigators from the Medical Center who are submitting for external funding. The grants manager helps in grant preparation, budget preparation and justification, and grant funds disbursement. In addition to the grants manager, nursing staff in the Medical Center have access to a statistician (5% time and effort) who can assist with file manipulation, statistical analysis and interpretation of data. The statistician (Dr. Dietrich) has assisted with the analysis in 3 studies conducted by nurse investigators in the past 12 months.

Projects Using VUSN Statistical Consultation:

- Sandy McGill, RN, MSN, MBA – Up for Meals; consulted Dr. Dietrich on number of subjects needed for replication (*NK 7.0 EO*)
- JoAnn Jones, RN, MSN – Use of the Smith and Nephew silver dressing to reduce wound infections following cesarean section (C-section); Dr. Dietrich converted data from Excel to SPSS and completed analysis
- Debbie King, RN – Reducing IV Placement Pain; Dr. Dietrich consulted with Director of Nursing Research on analysis (*NK 4 EO*)
- Bette Moore, RN, PhD - The effects of medical play on young children's pain and distress during burn wound care; Dr. Dietrich wrote the statistical plan for the VCTR grant application and will conduct the analysis when we have completed the study.

Content-specific consultation

As a Research 1 academic Medical Center, we have faculty in many departments and disciplines who are content experts. One particularly rich source of expertise is the Owen Graduate School of Management. In addition, investigators focusing on children have the opportunity to consult with experts on child development at Peabody College and the Kennedy Center for Human Development.

The Process of Conducting a Nursing Research Study

The following brief description of research projects provides examples of research that is currently under way at Vanderbilt.

- Georgette Smiley, RN2 and Theresa Holmes, RN2, who work in the Otolaryngology Clinic, examined the pain experienced after tonsillectomy and adenoidectomy (T & A) in adults and children. A structured telephone interview format was developed to identify

the preparation patients' receive to manage their pain at home and their actual experiences. Twenty-three telephone interviews have been conducted and data are currently being analyzed. These data will be used to revise pre- and post-operative patient education to manage pain after T & A. This project was developed during the EBNP Fellowship program, with mentor Kyle Rybczyk, RN, FNP.

- The impetus for this study came from the Case Manager's observations of wound infections following C-section. JoAnn Jones, RN, MSN is the case manager in obstetrics and gynecology. With the assistance of the infection control department, she noted that obese women (Body Mass Index ≥ 30) seemed to have more wound infections than non-obese women. She was also becoming familiar with a new type of wound dressing, the Smith and Nephew silver dressing, through consultation with WOCN Sheree Lee RN, BSN. Use of this type of dressing seemed to reduce the number of wound infections in chronic wound management studies. In collaboration with Elizabeth Fritz Banks, RN, MSN and the obstetricians, the team decided to change standard care so that women with BMI ≥ 30 would routinely receive a S&N silver dressing following C-section. After consultation with the Director of Nursing Research, the 2 investigators developed a spreadsheet with the relevant variables and collected data from the patient record. The outcome of interest was presence of a wound infection within 30 days post op (CDC criteria). Once the data were collected, the Excel spreadsheets were sent to the VUSN statistician (Mary Dietrich, PhD) for file conversion and analysis. Preliminary data analysis indicates no significant difference in wound infection rates between women with and without the S & N silver dressing. Data are currently being analyzed. Results will be presented at a national conference (AWHON) in the fall of 2010. [NK4-Exhibit E-1-AWHONN Abstract]
- Appropriate age-specific preparation for painful and anxiety-provoking procedures has short- as well as long-term benefits for children and their parents. This IRB-approved study will test the effects of medical play provided by a Child Life Specialist versus standard preparation by a clinic nurse in children aged 3 – 7 receiving their 1st burn wound care in the outpatient clinic.

Outcomes include child self-reported pain, observed pain behaviors, and parent stated anxiety and satisfaction with burn wound care. A sample of 50 dyads (parent and child) will be enrolled. This project is a collaborative effort between the PI (Bette Moore, RN, PhD, a faculty member from VUSN), co-PI (Katherine Bennett, MEd, CCLS, Child Life Specialist, and co-investigators Angela Baker, RN (burn clinic nurse) and Nancy Wells (Director of Nursing Research). Support for a research nurse from the Research Support Services Clinical Trials

Center was obtained in July 2010. This study will begin enrollment in Sept. 2010 and should accrue the sample population within a year's time. [*NK4-Exhibit F-1-Protocol for Medical Play*]

- The literature describes patients' perception that the health care team fails to discuss sexual functioning before or after organ transplantation. To more fully understand this phenomenon, a national survey was constructed by Jerita Payne, RN, MSN, ANP-BC and Roxy Baumgartner, RN, MSN, ANP-BC. A statistician from the Transplant Center, Irene Feurer, PhD, is also working on this project.

Survey items were piloted and converted to electronic form and include: 1) basic demographic data; 2) transplant subspecialty and practice volume; 3) practices related to conversations with patients about sexual functioning; and 4) whether health-related quality of life survey data are routinely collected. An initial announcement card was sent to all transplant nurse coordinators in the UNOS mailing list. Preliminary results were reported at the national UNOS conference. [*NK4-Exhibit G-1-UNOS Abstract*] This study is currently in the data collection phase. A small grant (\$2,000.00) was obtained through the VICTR funding mechanism to offset the cost of printing and mailing the introductory cards.

Research
Source of Evidence 4 EO

Describe and demonstrate nursing research studies from the past 2 years, ongoing or completed, generated from the structure(s) and process(es) in NK4. Provide a table including: study title; study status; principal investigator name(s); principal investigator credential(s); role(s) of nurses in the study; study scope (internal to a single organization, multiple organizations within a system, independent organizations collaboratively); study type (replication – yes or no; qualitative, quantitative, or both).

(Table provided at the end of this information)

Select one (1) completed research study and respond to the four (4) criteria listed in the EO guidelines provided. We provide four (4).

Reducing IV Placement Pain

Purpose/Background

The Clinical Research Center (CRC) provides nursing care to patients and healthy volunteers who participate in research. Intravenous (IV) access is typically required of any participant who receives outpatient or inpatient care on the CRC. This means at least one and sometime more, peripheral IVs must be inserted. Minimizing pain associated with IV insertion is a goal of the direct care nurses in the CRC. The literature suggests that IV insertion pain may be minimized by use of (1) a saline bleb adjacent to the IV insertion site, or (2) a local anesthetic spray. The purpose of this study was to compare the effectiveness of a saline bleb versus *Pain Ease* spray in reducing IV placement discomfort.

Methods/Approach

A randomized cross-over design was used to determine if one method of pain control was more effective than the other. This study was an add-on to one of 2 VICTR-CRC studies using healthy volunteers who required multiple CRC visits. Participants were randomized to receive the bleb or spray for their first IV placement. Upon their return to the CRC, the other method of pain reduction was used. Participants reported pain on a standard 0 – 10 Visual Analog Scale (VAS). Upon completion of the second IV placement, participants completed a brief questionnaire to determine their preference. The initial development of this project took place while Debbie King RN3 was an EBNP fellow. This study was approved by the IRB.

Table NK 4 EO – 1: Participants

Personnel	Title	Role
Debbie King, RN	RN 3	PI; completed research design and IRB application in consultation with mentor, IRB protocol analyst; consented all participants; performed IV placement using both methods on all patients
Christa Hedstrom, RN, EdD, CCRP	Nursing Director, VICTR-CRC	Mentor, access to resources
Lana Howard, RN, BSN, CCRP	Assistant Nursing Director, VICTR-CRC	Supported PI in project; ensured time to complete project-related activities
Barbara Gibson, RN, BSN	Protocol Analyst 4, IRB	Assisted in the preparation of the IRB application
Daniel Byrne, MS	Senior Biostatistician, VICTR-CRC	Consultation on design, statistics, development of randomization table

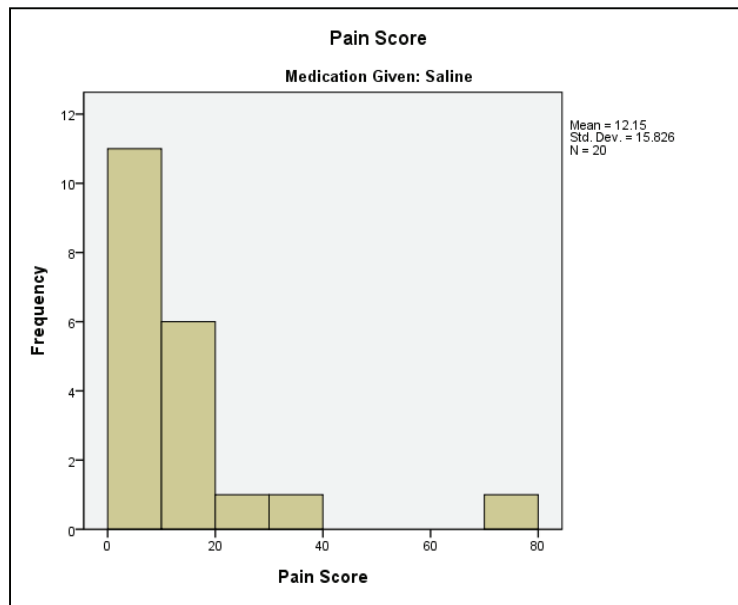
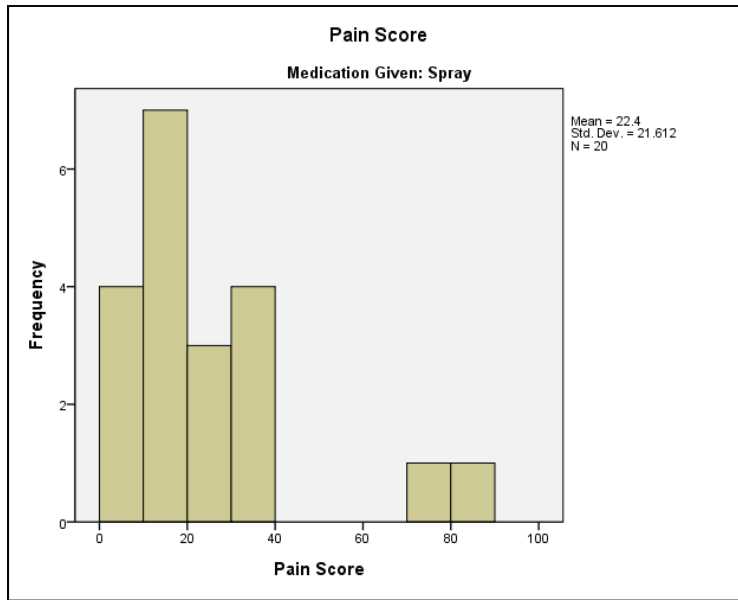
Outcome/Impact

Twenty healthy volunteers were included in the sample. The mean age of the sample was 34.8 years (S.D = 8.98). 10 men and 10 women participated. Seventy-five percent (15/20) of the sample were Caucasian. Each participant had the IV placed using a saline bleb and *Pain Ease* spray. The majority of participants had a #20 catheter (65%; 13/20) in the antecubital space (75%;15/20) had peripheral IV. The same nurse (the PI) performed all 40 IV insertions.

The grouping variable was order of intervention, which was randomly assigned. Groups were evenly matched on gender, age, catheter gauge and placement of IV. Data were not normally distributed (see below) and therefore were transformed into ranks for data analysis.

See Graphs below.

Graphs NK 4 EO – 1 & 2: Distribution of pain scores by intervention



There was no main effect for order or interaction between order and intervention. There was a significant main effect for intervention ($p = .02$). Participants reported less pain when receiving the saline bleb than the *Pain Ease* spray (Table NK 4 EO – 1). Sixty-five percent (13/20) preferred the saline bleb; 35% preferred the *Pain Ease* spray.

Table NK 4 EO – 2: Differences in Pain by Intervention

Intervention	Pain Scores (0 – 100 mm.)			Pain Scores @ Percentile		
	Mean	S.D.	Median	25	50	75
Saline	12.15	15.6	8.5	4.0	8.50	14.75
Pain Ease Spray	22.4	21.6	18.0	10.0	18.0	30.0

Taken together, these data suggest that using a saline bleb, which is less costly, results in less pain than the *Pain Ease* spray during IV placement in healthy volunteers. This study also supports the current practice of using a saline bleb to reduce pain during IV placement.

E-mail to the PI from David Robertson, MD; Medical Director of VICTR-CRC.

“Debbie,

This is a wonderful outcome, and perhaps an unanticipated one.

This kind of creation of practical knowledge about care is a crucial part of our mission.

Congratulations!

David”

[NK4EO-Exhibit A-1-IV Place Protocol, NK4EO-Exhibit A-2-IV Place IRB Approval]

Back to Basics: A Focus on Post-operative Ambulation

Purpose/Background

Ambulation after surgery is a basic requirement to support recovery and return to daily life. As nursing becomes more technologically driven, these basic nursing care practices have become lost. The case managers on two of our general surgical units, in collaboration with a nurse in systems support, developed this IRB approved project to increase post-operative ambulation for their colorectal and urology surgery patients.

Methods/Approach

Several strategies were implemented to re-focus nurses on the importance and need of early and frequent ambulation during the post-operative period. These included:

- Review and revision of the medical order sets for the patient populations to make sure ambulation orders were present, clear and specific
- Measure and post distances for accurate documentation of ambulation
- Agreement upon 1 section of the EMR where ambulation and the distance walked is charted
- Staff education at unit board and in 1-1 communication on the changes in ambulation documentation
- Create a dashboard for ambulation on the clinical work station screensaver
- Collaborated with a Bioinformatics nurse to evaluate the effectiveness of the intervention

Documentation of ambulation, complications, length of stay and cost were examined for all patients hospitalized on these 4 general surgery units for 6 months before implementation (7/0/08 – 12/31/08). The intervention was launched in Jan. 2009. Post-intervention data were examined from 7/1/09 to 12/31/09.

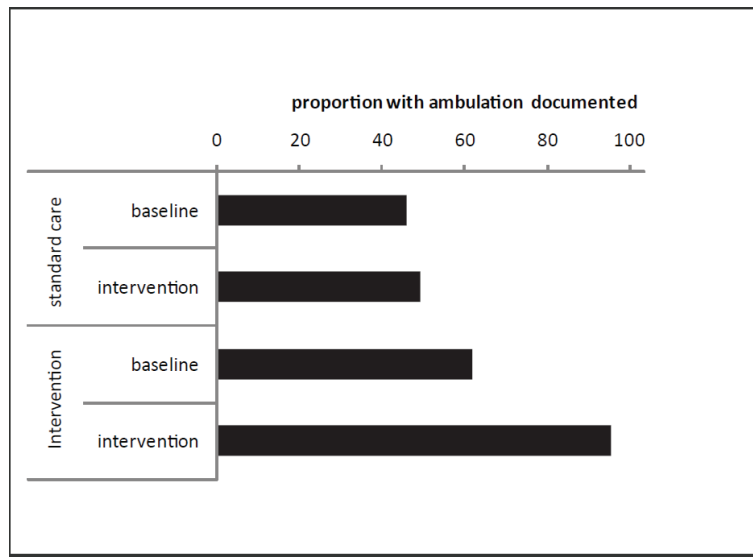
Table NK 4 EO – 3: Participants

Personnel	Title	Role
Dana Johnson, RN, BSN	Case manager, colorectal surgery	Co-PI; implemented intervention on ¾ RW
Laura Anderson, RN	Case manger, urology surgery	Co-PI; implemented intervention on 5/6 RW
Val Kibler, RN, APN- BC	CAPS, Systems Support	Project leader; led changes in EMR; oversaw progress on project
Rachel Hayes, RN, PhD	Bioinformatics Specialist	Conducted evaluation analyses
Nancy Wells, RN, DNSc	Director of Nursing Research	Consultant, evaluation design * interpretation

Outcomes/Impact

Ambulation was documented, and assumed to be done, more frequently in the post-intervention period.

Graph NK 4 EO – 3: Ambulation Documentation Pre- Post Intervention



Patients had a higher acuity level (using UHC acuity scores) in the post-intervention period. Despite the increased acuity, complication rates and rate of paralytic ileus were reduced in the post-intervention period (figure). Length of stay and cost of hospitalization were similar from pre- to post-intervention. Most importantly, the nurses on these units felt empowered to provide good, basic nursing care, including ambulation. A cost analysis showed that each paralytic ileus cost the institution \$5,780 per case. Given the reduction in ileus post-intervention, we estimate a cost savings (avoidance) of **\$829,430** annually.

Table NK 4 EO – 4: Count and Prevalence of Complications by Care Unit and Time Period

Complication	Standard Care		Intervention	
	Baseline N = 1,125	Intervention N = 1,047	Baseline N = 753	Intervention N = 701
Any	216 (19.2)	184 (17.6)	62 (8.2)	43 (6.1)
Paralytic Ileus*	148 (13.2)	111 (10.6)	55 (7.3)	32 (4.6)
Surgical digestive complication	108(9.6)	95 (9.1)	41 (5.4)	29 (4.1)
Any digestive complication	172 (15.3)	144 (13.7)	59 (7.8)	38 (5.4)

* p < 0.05

The ambulation project reflects innovation in that it re-focused awareness on basic nursing care, which changed routines and work flow for the nurses on these surgical units. The project was beneficial to both patient outcome and nurse empowerment, and it now being implemented in other areas of the medical center.

This project will be presented at the fall 2010 UHC Quality conference in San Diego. It has been submitted for peer review to AJN. [NK4EO-Exhibit B-1-UHC Abstract]

Pain during Arterial Sheath Pulls Following Invasive Cardiac Procedures

Purpose/Background

Pain control during the removal of femoral sheaths is a primary nursing concern. There are a number of interventions that may be used to reduce pain during sheath pulls following invasive cardiac procedures. A short-acting local anesthetic injection, such as lidocaine, is one method that may reduce the pain during the sheath pull. However, the lidocaine injection procedure itself may cause pain. A literature review revealed no “best practice” for pain control during femoral sheath pulls. Since our physicians varied on the use of lidocaine to control pain, we were able to evaluate the effectiveness of lidocaine injection around the arterial sheath site to control pain during sheath pulls following invasive cardiac procedures in adult patients.

Methods/Approach

An IRB approved nonrandom 2- group design was used to determine the effectiveness of lidocaine injection to control pain. Patients were allocated to group based upon the physician’s prescription. Patients reported their pain on a 1-10 point numeric rating scale (NRS) before the sheath pull, 5 minutes after the pull was started, and at the end of the procedure. Type of analgesic was recorded as well as any complications. This project was conducted while the Co-PIs were enrolled in the Evidence-based Nursing Practice Fellowship.

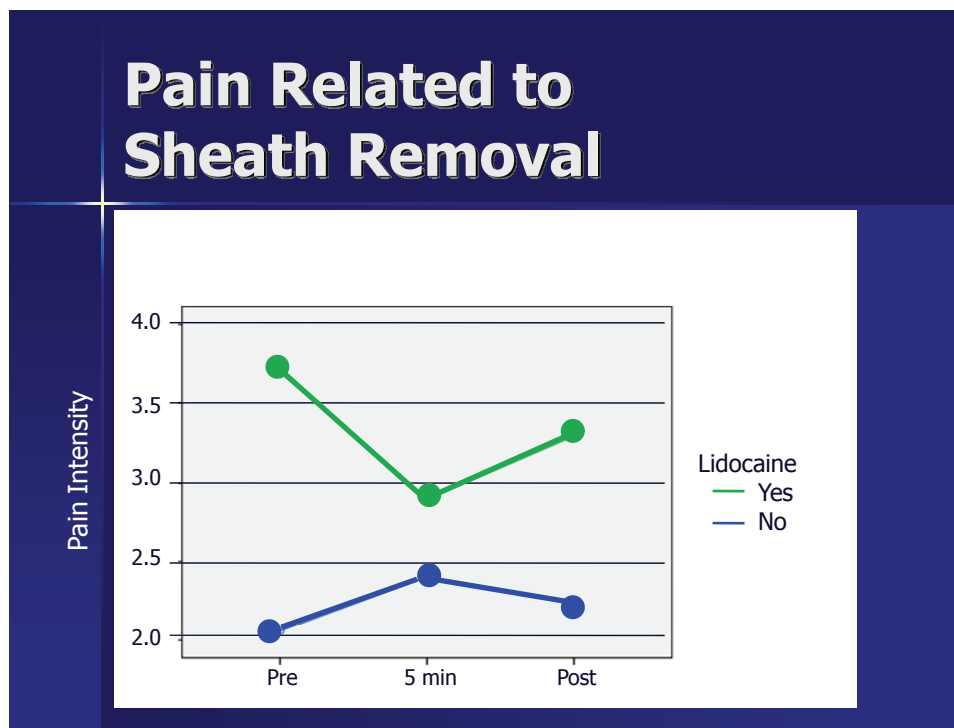
Table NK 4 EO – 5: Participants

Personnel	Title	Role
Brenda White, RN, BSN	RN 2; Electrophysiology Lab	Co-PI; developed proposal, oriented nurses in Cardiac Cath and EP to study, collected data, interpreted data
Sharon Paschall, RN	RN 4, Critical Care Cardiac Cath Lab	Co-PI (same as B. White above)
Maura Tyler, RN, AD	RN 4 – CC: Cardiac Cath Lab	Examined financial implications

Outcomes/Impact

The sample consisted of 49 patients undergoing femoral sheath pull after an invasive procedure. Forty-two percent (42%) of the patients received opioids alone to control pain, 47% received lidocaine injection alone, and 11% received both opioids and lidocaine. Complications during the sheath pull occurred equally in the opioid and lidocaine groups. Patients who received lidocaine with or without opioids reported greater pain at all 3 data collection points. The pattern differed, with lidocaine injection increasing pain prior to the procedure but decreasing it at 5 minutes; whereas patients receiving opioids had an increase in pain from pre= to 5 minutes into the sheath pull (Figure 4.4).

Graph NK 4 EO - 4: Pain during and after sheath pull with & without lidocaine



The results of this project were shared with the interventional cardiologists and nursing staff in the department. This has led to a change in practice. Where lidocaine was used by some cardiologists during sheath pulls, the results of this study indicated it was not necessary to relieve pain during this procedure. The interdisciplinary team met and agreed to limit the use of lidocaine for simple sheath pulls following cardiac catheterization. This reduction in the use of lidocaine represents a \$100.00 cost savings per procedure. [NK4EO-Exhibit C-1-Sheath Pull Poster-PPT]

Nursing Ethics Survey

Purpose/Background

Nurses at Vanderbilt frequently face ethical dilemmas. There are numerous resources available to all health care providers when dealing with patient and family issues. The Ethics Department keeps some statistics, however, the history is not good and they developed a new system for tracking. A brief review of the past use of the ethics consultation services suggested lower use by nursing staff, even though they are intimately involved with patients and their families.

Nursing and the Ethics Department were interested in learning which kind of situations are ethically troubling for the nursing staff and what it is about those situations that is viewed differently by nurses as opposed to the other members of the healthcare team. The bottom line was what is needed to better support the nursing staff through the consult service and with education. The purpose of this IRB approved study was to examine direct care nurses perceptions of the types of ethical dilemmas they face, awareness and use of ethics services at Vanderbilt and other resources needed.

Methods/Approach

After an initial literature search examining other programs, potential questions and education programs; it was determined that the first step was a survey to determine the issues and needs. A 15 item survey was developed in consultation with ethicists from the Biomedical Ethics Department. This survey was developed after extensive literature determined there were no other such surveys to choose from. Items addressed ethical issues encountered in practice, need for education about ethical issues, awareness of ethics services available and use of these services. Demographic information was also included. The survey was distributed through web-based on-line to nurses who have direct contact with patients (e.g., case managers, direct care nurses, APNs) via e-mail distribution lists. Data collection opened on July 6, 2009 and closed July 31.

Table NK 4 EO – 6: Participants

Personnel	Title	Role
Sabrina Downs, RN, NE-BC, MSN, MBA	Director, Nursing Professional Practice and Magnet Recognition	Co-PI; completed survey and IRB application, directed distribution of surveys, interpreted & disseminated results

Larry Churchill, Ph D	Ann Geddes Stahlman Professor, Center for Biomedical Ethics	Co-PI; survey and IRB application, interpretation of results
Daniel Morrison, MA	Graduate student in the Department of Sociology	Administered the survey in RedCap: Provided consultation on item development, data management & analysis
Joshua Perry, JD, MTS	Graduate student in the Center for Biomedical Ethics	Provided consultation on item development

Outcomes/Impact

A total of 427 nurses completed the on-line survey. Position and area of practice for the sample are listed in Table 4.3.

Table NK 4 EO – 7: Respondents Position and Area of Practice

Position	# of Respondents	Area of Practice	# of Respondents
Educator/Case manager	65	Adult inpatient	168
Direct care nurse	267	Adult outpatient	126
APN	69	Children's inpatient	89
Research nurse	26	Children's outpatient	22
		Psychiatry	6

Table 4.4 presents the top 5 ethical issues identified by the sample. Caring for patients of different cultures, conflict among caregivers and families and end of life care were the situations most frequently encountered by nurses. Need for additional information/education about these issues was reported by 37% to 55% of the respondents.

See Table below.

Table NK 4 EO - 8: Most Common Ethical Issues Encountered and Educational Needs

Rank & Order of Ethical Issue Frequency and Need for Educational Activities				
Variable	Rank Q 1: Ethical issues that arise at VUMC (Top 5 out of 20)	% Responding "YES" to Q 1	Rank Q 2: Ethical issues where additional educational activities are needed	% Responding "YES" to Q 2
Caring for non-English speakers	1	72	1	55
Communication/conflicts among caregivers	2	61	3	45
Family disagreements	3	57	4	37
Caring for patients with different cultural or ethnic beliefs about health care	4	53	2	46
End of life	5	46	4	37

Greater than 90% of the respondents felt somewhat or fully prepared to deal with ethical issues. (If you look at the last column in the table, 22% felt fully prepared and 71% felt somewhat prepared) However, two-thirds of the sample were unaware of specific resources available at Vanderbilt to assist caregivers in dealing with ethical issues.

See Table below.

Table NK 4 EO – 9: Ethics Resources and Feeling of Preparation to Deal with Ethical Issues

Knowledge & Use of Ethics Resources by Role (N)						
Question		Nurse Leader	Staff Nurse	APN	Research Nurse	TOTAL
Able to find resources for addressing ethical challenges while at VUMC	YES	19% (12)	39% (101)	32% (21)	19% (5)	33% (139)
	NO	82% (52)	61% (160)	68% (44)	81% (21)	67% (277)
How prepared do you feel in dealing with ethical challenges you face in your daily work?	Fully	16% (10)	23% (62)	17% (12)	31% (8)	22% (92)
	Somewhat prepared	77% (49)	68% (181)	80% (55)	62% (16)	71% (301)
	Somewhat unprepared	3% (2)	8% (20)	3% (2)	4% (1)	6% (25)
	Unprepared	5% (3)	1% (2)	0	4% (1)	1% (6)

These data provide support for further work on increasing nurses’ awareness of ethical resources available at Vanderbilt and developing venues to increase nurses’ knowledge and comfort in dealing with ethical issues. *(More information on this study was provided in EP 23)*

A committee consisting of representatives from the Department of Biomedical Ethics, the Ethics Consult Service and nursing are meeting to analyze and develop plans to further analyze the data and address the immediate issues identified in this survey. *(See NK 8 for more detail).*

One of the key initiatives that came from this group was the development of the Vanderbilt Cultural and Linguistic Council. Other initiatives include: the launching of Nurse Alert! for ethics, increase in education on resources incorporated into nursing orientation, improved access to resources connection from the nursing website to ethics website, improved ethics awareness page on the nursing website and identification of other education/grand

rounds opportunities. (Supporting documents for this study were provided in EP 23 – including the survey questions and the IRB Approval Letter)

Table NK 4 EO – 10: IRB Approved Nurse Projects

IRB Approved Nurse Projects									
	Project Name	Status	PI Name	Credentials	Nurses' Role	Study Scope	Study Type	IRB	EBNP
1	ACE Inhibitor - Associated Angioedema	Completed	Libby Stone	RN MSN NP CCPR	Research nurse	Internal	Quantitative	√	
2	Exertional walk studies and six-minute walk tests: a retrospective study in idiopathic pulmonary fibrosis patients.	Completed	Wendi R. Mason	MSN, ACNP-BC	PI; clinic staff nurse assisted with data collection	Internal	Quantitative	√	
3	Comparison of Bacteriostatic Normal Saline and Pain Ease Spray used as Intra-dermal Anesthesia prior to Venous cannulation	Completed	Debbie King	RN	PI	Internal	Quantitative	√	√
4	Guidelines to identify pts at risk for chronic diseases	Completed	Jane Case	MSN	PI	Internal	Quantitative	√	
5	Inconsistent practices & adherence to policies in NICU	Completed	Marlee Crankshaw	MSN	PI	Internal	Quantitative	√	
6	Exercise program for cancer survivors to improve fatigue	Completed	Tracy Johnson	MSN	PI	Internal	Quantitative	√	
7	Health literacy in hypertension management of elderly	Completed	Tiffany Latham	DNP, MSN	PI	Internal	Quantitative	√	
8	Computer simulated learning for student nurse anesthetists	Completed	Lewis McCarver	MSN	PI	Internal	Quantitative	√	
9	Incidence of pneumonia in trauma pts taken to VUMC intubated by VU FLT nurses	Completed	Tony Smith	DNP, MSN	PI	Internal	Quantitative	√	
10	Assessment of male partner needs and experiences during labor and birth	Completed	Sharon Holley	DNP, CNM	PI	Internal	Qualitative	√	

New Knowledge, Innovations and Improvements
Research (4 EO)

11	Sibling Transmission of Vaccine-Derived Rotavirus (RotaTeq) Associated with Rotavirus Gastroenteritis	Completed	Katherine Edwards	RN, BSN, CCRP	Nurses on Project Team	Internal	Evaluation	√	
12	The Experience of Group Weight Loss Efforts Among Lesbians	Completed	Sarah Fogel	RN	Nurses on Research Team	Internal	Qualitative	√	
13	Nursing ethics survey	Completed	Sabrina Downs	RN, NE-BC, MSN, MBA	PI; staff nurses were subjects	Internal	Quantitative	√	
14	Family Matters: Assessing Education Needs in Family Caregivers of Elderly Relatives	Completed	Gail Gillis	RN2, BSN	PI	Internal	Quantitative	√	√
15	Affect of hepatitis C, obesity and diabetes on quality of life after liver transplantation	Completed	Matt Bumbalough	MSN, RN, FNP-BC	PI	Internal	Quantitative	√	
16	Admission to the Adolescent Unit of the Vanderbilt Psychiatric Hospital	Completed	Margaret C. Forrest	RN	PI	Internal	Evaluation	√	√
17	Living Kidney Donor Evaluation: A Characterization of the Factors Leading to Non-Donation	Completed	Deonna Moore	MSN, ACNP-BC	PI	Internal	Evaluation	√	
18	Propofol: Thriller or Killer	Completed	Lewis McCarver	MS, CRNA		Internal		√	
19	Pain Champs program: A pilot Test	Completed	Tia Coleman	RN	PI; staff nurses on project team	Internal	Replication	√	√
20	A Survey Study Regarding the use of Wireless Monitoring Systems	Completed	Mary Jeskey	RN, BSN, CPAN	PI	Internal	Evaluatoin	√	
21	Cardiac Uncoupling and Heart Rate Variability are Associated with Intracranial Hypertension and Mortality: A Study of 145 Trauma Patients with Continuous Monitoring.	Completed	Patrick Norris	PhD	Co-I/ Author	Internal	Quantiative	√	

New Knowledge, Innovations and Improvements
Research (4 EO)

22	Obstructive sleep apnea is common in idiopathic pulmonary fibrosis.	Completed	Wendi R. Mason	MSN, ACNP-BC	PI	Internal	Quantitative	√	
23	PREPARE Project Program Evaluation	Completed	Rene Love	DNP, PMHCNS-BC	PI	Internal	Evaluation	√	
24	What Are the Necessary Competencies for Providers of Dermal Fillers and Botulinum Toxin Type A Injections?	Completed	Marcia Spear	DNP, ACNP-BC, CWS, CPSN	PI	Internal	Qualitative	√	
25	Wireless Remote Monitoring; impact of new technologies on nurses	In Progress	Elizabeth Card	RN, CPAN	PI	Internal	Evaluation	√	
26	Exertional Walks, Six-Minute Walks, and 24-Hour Ambulatory Oxygen Monitoring in patients with Idiopathic Pulmonary Fibrosis: A Comparison Study of the various studies to determine the best tool to determine supplemental oxygen requirement.	In Progress	Wendi R. Mason	MSN, ACNP-BC	PI; clinic staff nurses on project team	Internal	Quantitative	√	
27	Parents Perceptions of Cleft Lip Taping	In Progress	Anne Willford	RN, FNP	PI	Internal	Qualitative	√	
28	Pain following T & A	In Progress	Georgette Smiley & Teresa Holmes	RN & RN	Co-PIs	Internal	Qualitative	√	√
29	Talking with patients about sexual functioning	In Progress	Jertia Payne & Roxy Baumgartner	RN, MSN, ACNP & RN, MSN, ACPN	Co-PIs	National	Quantitative	√	
30	The effects of medical play on young children's pain and distress during burn wound care.	Start up	Elizabeth Moore	RN, PhD	Clinic nurse; initial parent contact; deliver usual care	Internal	Quantitative	√	

New Knowledge, Innovations and Improvements
 Research (4 EO)

31	Enhancing Nurses' Recognition and Communication of Delirium Utilizing the Nursing Delirium Screening Scale (NuDESC) on Medical-Surgical Units	Start up	Laurence M. Solberg	MD, Chief of Geriatric Consult Service	Staff Nurses on Project Team	Internal	Quantitative and Qualitative	v	
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Evidence-Based Practice

Source of Evidence 6

Describe and demonstrate the structure(s) and process(es) used to evaluate existing nursing practice, based on evidence.

We place a high priority on evidence-based nursing practice. Resources to assist the nurse in validating and revising practice can be found through the Eskin Biomedical library staff, our Evidence-based Medicine (EBM) program, and our Evidence-based Practice Center. In 2009, the Nursing Research Committee adopted the Johns Hopkins Nursing Evidence-based Practice (JHNEBP) model. Of particular relevance to direct care nurses, this model outlines an 18-step process to translate evidence into practice. This model is used with permission from the Johns Hopkins Department of Nursing.

The Johns Hopkins Nursing Evidence-Based Practice Process

PET (Practice Question-Evidence-Translation)

PRACTICE QUESTION

- STEP 1: Identify an EBP question
- STEP 2: Define scope of practice question
- STEP 3: Assign responsibility for leadership
- STEP 4: Recruit multidisciplinary team
- STEP 5: Schedule team conference

EVIDENCE

- STEP 6: Conduct internal and external search for evidence
- STEP 7: Critique all types of evidence
- STEP 8: Summarize evidence
- STEP 9: Rate strength of evidence

STEP 10: Develop recommendations for change in processes or systems of care based on the strength of evidence

TRANSLATION

STEP 11: Determine appropriateness and feasibility of translating recommendations into the specific practice setting

STEP 12: Create action plan

STEP 13: Implement change

STEP 14: Evaluate outcomes

STEP 15: Report results of preliminary evaluation to decision makers

STEP 16: Secure support from decision makers to implement recommended change internally

STEP 17: Identify next steps

STEP 18: Communicate findings

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All Vanderbilt staffs have easy access to the PET model on the EBP and Nursing Research web site (*NK 4.0 for more detail*). The web site offers many tools to assist nurses in translating evidence into practice. The first 2 phases of the PET model, Practice Question and Evidence, address the structure and processes related to evaluating practice based upon evidence.

Practice Question

The first step is to pose an EBP question. The third tab on the web site is “*Got a Question?*” This tab is a PICO form, which requests information about population or problem, intervention, comparison and outcome to guide a literature search. If the nurse is not familiar with the PICO format, there is a short (10 min) education video on how to write a PICO question in the Toolkit tab on the web site.

In developing a practice question, the nurse also needs to begin building a team for the project. Our shared governance structure provides an excellent environment for team building. Through participation in unit/clinic board, nurses and other members of the interdisciplinary team have an opportunity to observe group facilitation, consensus building, and setting accountability for actions. Once the topic area has been defined, the team moves into the Evidence phase.

Evidence

The PICO form on the web site goes to one of our Evidence-based Medicine (EBM) specialists, who is a nurse. The EBM specialist reviews the question and determines if she/he will answer it or send it on to the EBL librarian. This decision is based primarily on the complexity of the question; EBL librarians are more adept at searching complex topics. Within 2 weeks, the nurse will receive a summary of the literature addressing the topic queried (*see NK 4.0 Exhibit 6 for questions asked and answered*).

We also have a number of resources that support nurses in searching for evidence. Mosby's, which is available from any clinical work station, is our resource for nursing practice and procedures. This on-line textbook provides evidence-based recommendation for practice, and the content is frequently updated to ensure current evidence is used. Vanderbilt also subscribes to ZYNX, a proprietary product that provides an evidence-based plan of care. ZYNX is of particular interest because there are links directly to the evidence, allowing the nurse to review the research upon which the practice is built.

The clinical work stations have icons for Up-to-Date and MD Consult, which provide evidence-based recommendations for patient care. A nurse can also link directly into the EBL from the clinical work station and search in Medline, CINAHL, and a variety of synthesis databases (e.g., Cochrane). The 5th tab on the EBP & Nursing Research web site is "Search Tips & Tools", which provides links to the various resources as well as information sheets on how to use the sites.

To make recommendations for practice, the evidence must be summarized and synthesized. While we encourage staff to search for synthesized evidence, there may be instances where the nurse will need to critically evaluate research and synthesize the findings from multiple studies. To assist in the critical evaluation of research, we have critique forms for qualitative and quantitative research available on the web site. A summary table, developed by JHNEBP, is also available on-line. [*NK6-Exhibit A-1-Evidence Rating Scale, NK6-Exhibit A-2-JHNEBP Research Evidence Appraisal Tool, NK6-Exhibit A-3-Overall Evidence Summation*] Thus, Vanderbilt has a number of tools available to any nurse to pose a practice question and obtain evidence about that practice.

Structures Supporting Evaluation of Practice based upon Evidence

The structure that supports evaluation of practice based on evidence includes practice committees and sources of clinical outcome data, such as SciHealth and the Electronic Data Warehouse (EDW).

The ***Clinical Practice Committee*** is responsible for review, revision and approval of clinical policies. The committee is chaired by Paige Conatser, RN, Director, Accreditation and Standards and composed of 70 members across the Medical Center. Committee membership includes frontline nursing staff and nursing leaders. *Clinical Practice Committee membership is provided in OO 15.*

The Children's Hospital Clinical Policy and Practice committee (see below) has representatives on the VUMC Clinical Practice committee. The committee is open to all staff that care for patients. The Clinical Practice Committee meets monthly for 90 minutes. New policies may be submitted by any nurse in the Medical Center using a standard format [NK6-Exhibit B-1-Clinical Policy Template], which includes a requirement for evidence to support the new practice. Existing policies are reviewed on a regular basis that is appropriate to the intent of the policy. [NK6-Exhibit B-2-CL 10-01, Procedures, Users Guide] Each revision requires a literature search or examination of best practices to support the practice. Most clinically-focused policies are reviewed every 3 years, which is consistent with industry practice. Examples of recent policies reviewed and revised based upon new evidence include:

- A new lab specimen labeling policy was drafted based on evidence from Centers for Medicare and Medicaid Services, Clinical Laboratory Improvements Amendments <http://www.cms.hhs.gov/clia/> , College of American Pathologist <http://www.cap.org> . This new process of specimen labeling will reduce the variability in labeling that results in specimen rejection. CL 30-08.22.
- The policy on Foley catheters was revised based on evidence-based national guidelines <http://www.shea-online.org/about/compendium.cfm>, http://www.cdc.gov/ncidod/dhqp/gl_catheter_assoc.html#, <http://app32.webinservice.com/MosbySkills/skillsMain.asp>, and data collected during improvement projects at Vanderbilt (see NK 7.0 EO for project description). The new policy identifies clear criteria for Foley catheter removal. (CL 30-15.05).

The ***Clinical Policy and Practice Committee*** is a chartered committee that reviews all clinical policies, procedures and practices within Children's Hospital. This committee meets monthly and is comprised of members of the multidisciplinary team, including nursing representatives from all areas of clinical practice. *Children's Clinical Policy & Practice Committee membership is provided in OO 15.*

Each policy and procedure is reviewed by this committee and content and processes compared with current research and evidence. When scientific evidence does not exist, this committee benchmarks with other Children's Hospitals across the country through active involvement in various national committees. Two examples of organizations with whom we benchmark include the National Association of Children's Hospitals and Related Organizations (NACHRI) and Children's Hospital Corporation of America (CHCA). All policies and procedures are reviewed every 3 years and more frequently if evidence is released that warrants a change in practice. The following example describes how a change in national guidelines resulted in local and the hospital-wide practice change.

- A policy was developed on family presence during procedures and resuscitation in the Children's Hospital based upon the FOCUS values and position statements by several national organizations (Emergency Nurses Association, American Association of Critical Care Nurses and the American Heart Association). The policy, CL 39 19.16, was approved by the Clinical Policy and Practice Committee in April 2010 and the Medical Center Medical Group in August 2010 and is currently being implemented in Children's Hospital. [NK6-Exhibit C-1-CL 30-19.16 Policy for Family Presence During an Inv Proc]

The ***Center for Clinical Improvement (CCI)*** supports SciHealth, a portal through which nursing-sensitive quality indicators data (e.g., pressure ulcers) are housed. This portal also contains administrative data (e.g., hours per patient day), thus allowing staff to examine the association between 2 variables. CCI also provides consultation on potential quality and safety issues as a first step in defining current practice (see Quality criteria for further detail). Sonya Moore, RN, MSN, Quality Consultant, has worked with VUH committees and individual units to improve performance on pressure ulcers and patient falls. She provides data from ScHealth as well as specific prevalence study information to identify potential processes that may be modified to improve quality (see Quality write up for more detail). A quality consultant also worked closely with the Pain Task Force (see example below) to identify percent of patients with a complete assessment-intervention-re-assessment cycles documented in the EMR.

At an institutional level, the ***Nursing Quality Committee*** and ***MUSIC*** (pharmacy-nursing-medicine) provide oversight for nursing quality indicators and medication safety. The ambulation study (see NK 4.0), which demonstrated positive outcomes related to post-operative complications, was presented at the Nursing Quality Committee in March 2010. A follow-up discussion in June 2010 resulted in initiating this practice change in the surgical units in VUH and VHVI (Cardiology) [NK6-Exhibit D-1-03-03-10 NQC Minutes, NK6-Exhibit D-2-06-13-10 NQC Minutes, NK6-Exhibit D-3- Post Operative Ambulation in the RW Impact]

The MUSIC committee created a sub-committee to assist the Pain Task Force (see example 2 below) in revising the epidural policy based upon current research related to duration of monitoring.

Access to Data

Vanderbilt is a data-rich environment. Data are available to monitor outcomes of nursing care delivery, such as length of stay, cost of care, patient satisfaction and infection rates. These data sources are highlighted below.

The ***Electronic Data Warehouse (EDW)*** is a repository for many of the electronic databases. For example, a bioinformatics expert used the EDW to evaluate the impact of frequent ambulation on the development of complications (*see NK 4*). In addition, the bioinformatics specialist is working with the Dept. of Finance to determine the cost saving associated with ambulation resulting in reduced ileus.

Patient satisfaction data are routinely collected by PRC through telephone interviews. Items common to the inpatient and outpatient surveys include satisfaction with teamwork among doctors, nurses and other healthcare professionals and overall quality of care. (*for more information provided in EP 35 & 35 EO*) PRC data are discussed in unit/clinic boards to celebrate excellent performance and identify areas for improvement. When nursing issues arise in patient satisfaction, the board members will identify possible solutions. These solutions are sought from best practices at high-performing institutions, research literature, and evidence-based practice guidelines. The following example shows how PRC data stimulated further investigation in the VNI clinic in Franklin.

- Key drivers for patient satisfaction in the ambulatory setting include overall quality of care and teamwork. Reviewing annual data from 2006 – 2009, it was evident that there was room for improvement. [NK6-Exhibit E-1-VHI Franklin PRC Report] In January 2009 the manager from the Franklin Clinics, Kerrie Lindberg RN, MSN engaged an internal consultant from the Center for Organizational Learning, Cindy Wedel, to help with improving the service in this off-site clinic. After reviewing the PRC data and discussing issues with the staff and medical faculty, Cindy made several recommendations to improve the clinic's service to patients. While most of the recommendations centered on the environment, one addressed the time nurses spent with patients. Strategies to increase the time nurses had to spend with patients were discussed during staff and clinic board meetings.

Over the next 12 months, changes were made in number and scheduling of administrative and clinical staff as well as the addition of a nurse practitioner for the clinic. During rounding, the charge nurse of the clinic, Debbie Abbott, RN, heard from many staff that they felt the time spent with patients had increased after the changes had been implemented. PRC data from 2009 and 2010 reflect the improvements that have been made.

The ***Infectious Disease department*** monitors events such as blood stream infections (BSI), ventilator-associated pneumonia (VAP) and urinary tract infections (UTI). Infection Control nurses work with the nursing leadership and staff to monitor infection rates. On many units, a review of infection rate data is a standing agenda item for the unit board meeting. [NK6-Exhibit F-1-SICU Aug UB Agenda] Vanderbilt performance is compared to national benchmarks, such as NDNQI and CDC. When rates exceed the benchmark, particularly over several months, a search for a better way to manage central lines, catheters, or ventilators is conducted. Typically, staffs look to the literature, revisions to practice guidelines and best practices for improvement ideas. The following examples demonstrate the processes used to improve patient outcomes

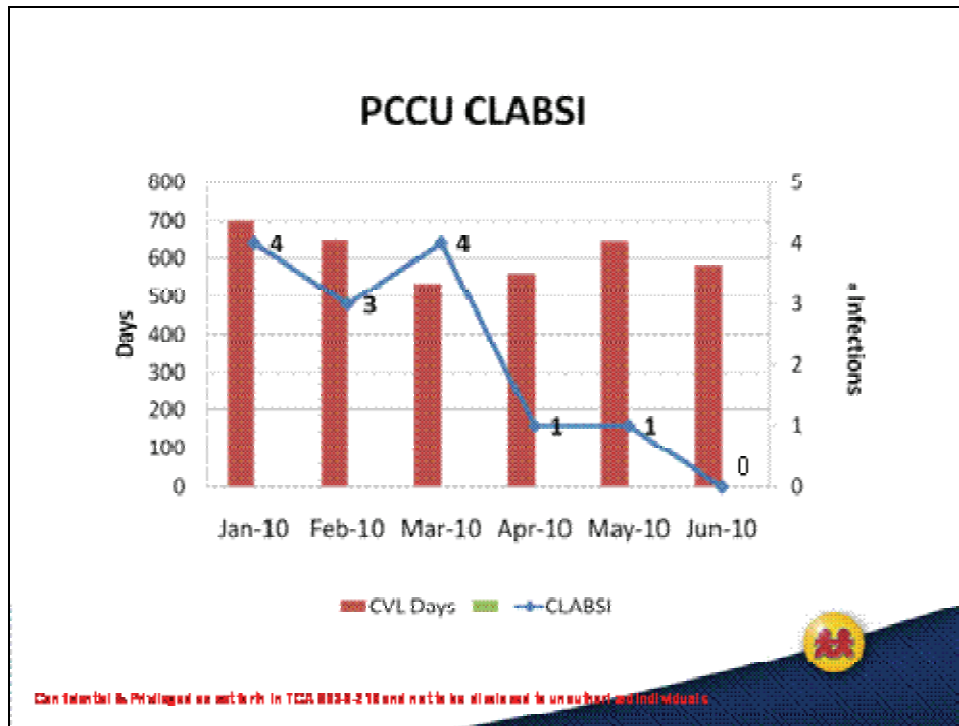
Reducing Blood Stream Infections in the PCCU

Blood stream infection (BSI) is a quality, safety and financial issue. The staff nurses in the PCCU developed an interdisciplinary Staff Infection Committee, with representatives from PCCU direct care nurses, leadership, Infection Control, Performance Improvement and medicine. In their monthly committee meetings, BSI rates were compared against a benchmark and evidence was reviewed to identify effective interventions to reduce BSI. Specific strategies were implemented after consensus was reached by the committee. These initiatives included:

- The 5 questions – a discussion about central lines in daily rounds
- CVL/Arterial line placement – created a CVL cart with a line bundle to improve sterile conditions during placement
- The dressing team – dedicated nurses responsible for CL dressing changes
- Scrub the hub – a campaign to re-educate nurse on how to clean the port before accessing it (*see NK 7.0 for detail about this program*)
- The dressing bundle – a package that has all of the supplies needed to change a CL dressing

See Graph below.

Graph NK 6 – 1: Catheter-associated Blood Stream Infections in PCCU.



These data are reported regularly to staff during the PCCU Infection committee meeting, physician teams, and recently to the Children’s Hospital Performance Management and Improvement (PM&I) committee.

This example demonstrates how a staff nurse-led initiative monitors Infection Control data to evaluate the quality of patient care in the PCCU. It also illustrates how our shared decision making philosophy and shared governance structure is critical to evaluating and improving the quality and safety of patient care. [NK6-Exhibit G-1-PCCU Infection Comm Minutes, NK6-Exhibit G-2-PCCU Ed Flyer CBL Cart]

Any work done to improve outcomes requires an examination of the processes used in the delivery of care compared to evidence based practice. Many process measures are captured in nursing documentation through our electronic medical record (EMR). An example

of process measurement in the EMR is pain assessment and re-assessment following an intervention. This example highlights the use of the EMR in gathering data on the process of care.

Pain Task Force

Acute pain management has a well-established evidence-based practice guideline (Acute Pain Guideline, AHCPR, 1992) that has been incorporated into the Joint Commission's criteria for accreditation. A Pain Task Force was formed in April 2009 to focus on pain management in the Adult and Children's Hospitals. The scope of the work of the task force was

- Policy congruence, both centralized and unit-based
- Standardized metrics used to assess and report compliance both internally and externally
- Development of strategies to drive and sustain clinical improvement

Internal and external data sources were used to determine current practice and compare to national benchmarks.

- Pain cycle data reported to NDNQI on pediatric patients (AIR cycles)
- Patient satisfaction with pain control externally reported to HCAHPS
- Re-assessment within 2 hours after pain intervention collected by CCI

NDNQI and HCAHPS provide benchmarks for performance.

Graph NK 6 – 2: Internal Metric: Pain Reassessment following Intervention

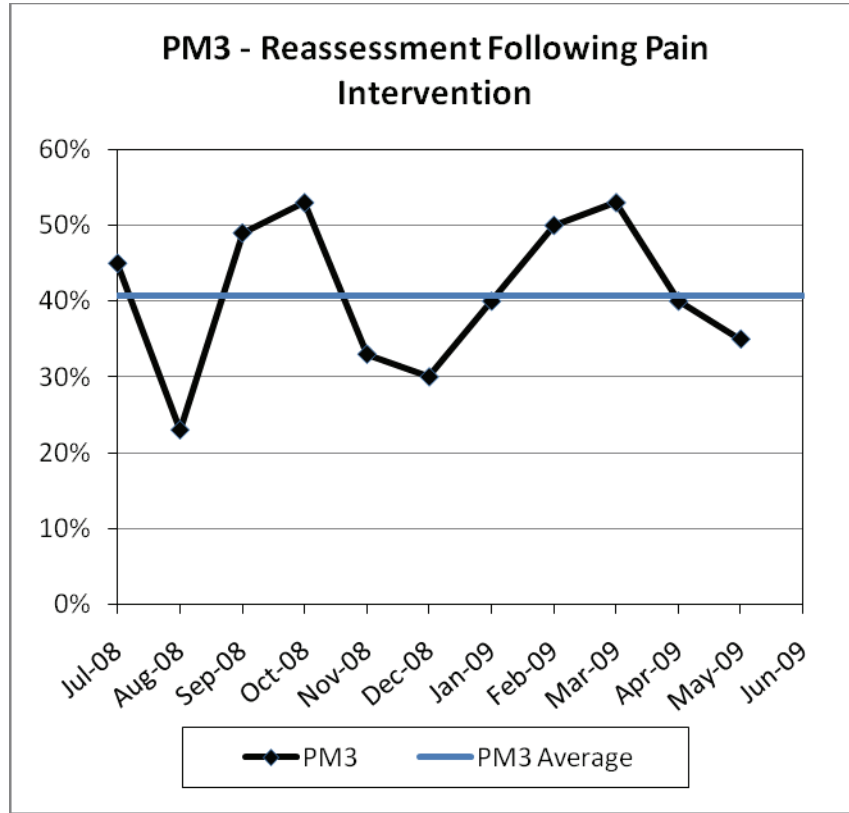
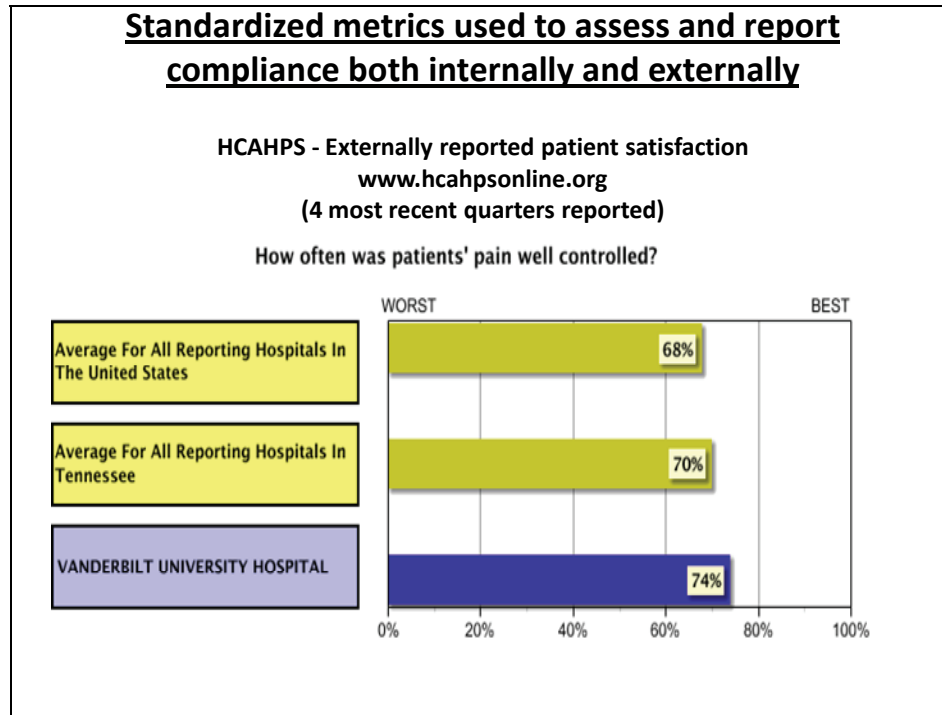


Table NK 6 – 1: Pain Reassessment by Patient Record Review (conducted by CCI)

Supplemental PM 3 Reassessment per policy/protocol based on intervention
 # Opportunities = # pain interventions documented in HED, StarPanel and paper medical records
 Sample = 10 inpatients (with/without procedures) + 10 observation/outpatients with OR procedures each hospital
 Supplemental Review by Shirley Primeau, CCI:

		Apr 2009	May 2009	Jun 2009	
All reviews	% compliance	89%	87%	86%	
	VUH & MCJCH inpatients and outpatients/ observation patients with OR procedures	# compliant	700	810	696
		# opportunities	783	928	809
VUH	% compliance	88%	79%	80%	
	inpatients and outpatients/ observation patients with OR procedures	# compliant	381	323	283
		# opportunities	432	408	352
MCJCH	% compliance	91%	94%	90%	
	inpatients and outpatients/ observation patients with OR procedures	# compliant	319	487	413
		# opportunities	351	520	457

Graph NK 6 – 3: Externally Reported Metric: Patient Satisfaction with Pain Control (HCAHPS)



The internally reported data indicated a need for improvement in pain assessment and re-assessment, which are considered the cornerstone for achieving adequate pain control.

The task force revised and consolidated the pain management policy [NK6-Exhibit H-1-CL 30-02.14 Policy for Pain Management Guidelines] and disseminated these changes to staff. An on-line survey of nurses from Adult and Children’s inpatient clinical areas identified barriers to pain documentation. The results of this survey led to changes in the location and the format of pain documentation in the EMR.

Percent compliance with pain re-assessment within 2 hours was adopted as a standard metric, and a tool to assist charge nurses in giving real-time feedback to nurses on their re-assessment performance was revised and implemented in June 2010. This “Fix it Now” report shows the patients receiving pharmacologic pain interventions and the nurse’s compliance with re-assessment documentation. This report is used by managers and charge nurses to provide feedback to the direct care nurse on his/her performance.

Table NK 6 – 2: Revised Fix it Now Report

031073083		8S 8232X						
STAFF	PERFORM TIME	PAIN_SITE	PAIN_TYPE	Score	SCALE_USED	INTV_RESP	INTERVENTION	MED_GIVEN
VFin	02/20/10 08:00:00	AbdmnBack	Acutdi	3	Numeric		Medsno	
VFin	02/20/10 10:15:00							MORPHINE IMME
VFin	02/20/10 10:17:00	AbdmnBack	Acutdi	7	Numeric		Seemar	
VFin	02/20/10 12:10:00	AbdmnBack	Acutdi	4	Numeric	ImprovSatis		
VFin	02/20/10 13:45:00							MORPHINE SULI
VFin	02/20/10 13:48:00	Abdmn	Acutdi	7	Numeric		Seemar	
VFin	02/20/10 14:50:00	AbdmnBack	Acutdi	4	Numeric	ImprovSatis		
VFin	02/20/10 16:40:00	AbdmnBack	Acutdi	7	Numeric		Seemar	
VFin	02/20/10 18:10:00	AbdmnBack		4	Numeric	ImprovSatis		
SGar	02/20/10 19:17:00							MORPHINE IMME
SGar	02/20/10 19:19:00	AbdmnBack	Acutdi	9	Numeric		Seemar	
SGar	02/20/10 21:00:00			4	Numeric	ImprovSatis		
SGar	02/20/10 23:00:00					Asleep		
SGar	02/21/10 01:10:00							MORPHINE IMME
SGar	02/21/10 01:11:00	AbdmnBack	Acutdi	9	Numeric		Seemar	
SGar	02/21/10 03:00:00					Asleep		
SGar	02/21/10 04:00:00	AbdmnBack	Acutdi	9	Numeric		Seemar	

031099385		8S 8210X						
STAFF	PERFORM TIME	PAIN_SITE	PAIN_TYPE	Score	SCALE_USED	INTV_RESP	INTERVENTION	MED_GIVEN
DCoc	02/20/10 08:02:00			Numer0				
MDor	02/20/10 20:15:00			Numer0				

The Pain Task Force used multiple sources of data to examine current pain documentation practice across the inpatient clinical areas. In addition to reviewing performance against a criterion (re-assessment within 2 hours), the task force reviewed pain management chapters in Mosby's and *Patent Safety and Quality; An Evidence-based Handbook for Nurses* (Hughes, 2008) <http://www.ahrq.gov/qual/nursesbdbk/>. The Pain Task Force also consulted with MUSIC to review current literature and recommendations before revising the policy related to epidural analgesia. [NK6-Exhibit I-1-CL 30-06.16 Policy for Epidural Anesthesia] The strategies adopted to improve documentation relied heavily on modification of information technology to better fit the staff and charge nurses work flow. [NK6-Exhibit I-2-Pain Management Task Force Update]

Using the Clinical Unit Boards

Our shared governance structure provides an excellent vehicle for monitoring current practice, benchmarking against local and national performance, and identifying possible strategies to improve outcomes. For example, Infection Control data are routinely reviewed and discussed at critical care unit boards. Many unit/clinic boards have EBP and/or quality sub-committees to focus on evaluating and improving practice in the clinical area. This evaluation of current practice has led to projects by the EBNP fellows on UTI rates in the Trauma Center (see NK 8.0 EO) and BSI in PCCU (described above). The following example demonstrates how the

unit board In the Psychiatric Hospital was used to implement a change in admission documentation.

Admission to the Adolescent Unit of the Vanderbilt Psychiatric Hospital

Admitting a patient to the psychiatric hospital can be stressful for the patient, family, and nurse. Admission includes searching the patient and personal effects for physical assessment and removal of contrabands, completing and documenting an admission history, and orienting the patient and family to unit routines.

Evidence suggests that the admission process is an important part of the hospitalization as it lays the foundation for care. Nursing staff admission performance on the Adolescent Unit was assessed by a manual chart review conducted by a direct care nurse. A manual chart review was necessary because the Psychiatric Hospital had not yet implemented the EMR.

Forty random patient records were reviewed and revealed incomplete documentation in seven out of ten selected criteria. Based upon these results, an Admission Checklist was developed for staff nurses to use during hospital admissions.

The data and the newly developed checklist were shared with the Adolescent Unit staff at a unit board meeting. A PowerPoint presentation on the admission checklist was also made available electronically to nursing staff. [NK6-Exhibit J-1-Adolescent Unit Admission Checklist]

Following the implementation of the checklist, forty more random patient records were reviewed to detect change in performance based on the criteria. Increased awareness and use of the Admission Checklist improved admission criteria compliance and documentation in seven of ten areas measured. The other three areas remained unchanged after implementation of the checklist.

Table NK 6 – 3: Completion of Psychiatric Admission Criteria Before and After Admission Checklist Implementation.

Admission Criterion	% Pre (N = 40)	% Post (N = 40)
Patient admission search with documentation	95	97.5
Handbook and orientation provided; patient worksheet completed	95	97.5
Patient identification armband provided; name label on door	90	95
Admission vital signs, height weight documented in medical record	90	97.5
Nursing admission history documented	100	100
Observation status initiated upon admission	95	95

New Knowledge, Innovations and Improvements
Evidence-Based Practice (6)

Name, viral information, summary of patient history and reason for admission documented on staff room census board	90	90
Physician's orders obtained and noted on admission	90	95
Elevate form documented, placed on front of patient chart	75	80
Medical record chart form stamped with patient ID	70	75

These findings were presented to the VPH administrative group. This resulted in a recommendation to implement and disseminate the Admission Checklist to all units in the Psychiatric Hospital.

Evidence-Based Practice

Source of Evidence 7

Describe and demonstrate the structure(s) and processes used to translate new knowledge into nursing practice.

The Practice Question-Evidence-Translation (PET) model we adopted is used to guide all nurses in the process of translating new knowledge into practice. Resources to support translation into practice have been described in NK 4 and NK 6. One method of exposing direct care nurses to new knowledge is through a journal club. The first section describes the development and operation of selected nursing journal clubs. The following section highlights the EBNP Fellowship program as a mechanism to educate staff nurses in the EBP process and support them in developing projects to translate new knowledge into their own practice. Since its inception in 1999, 76 nurses have completed the program. [NK7-Exhibit A-1-List of EBMP Fellows 08-09, NK7-Exhibit A-2-List of EBMP Fellows 09-10]

Searching for new knowledge

Journal clubs bring a team together to begin the translation process through a review of existing evidence and new knowledge. The NRC reviewed the literature on journal clubs to generate ideas on how to develop sustainable and successful journal clubs.

Perioperative Services

In 2010, a direct care nurse approached the NRC for help in starting a journal club in the peri-operative area. A small sub-committee of the NRC facilitated the development of a journal club by introducing 3 entry level discussions about EBP to this group of nurses as a pilot test. Each session was embedded within the normal meeting time of a unit board. Contact hours were given for completion of these 3 education sessions.

The perioperative services is now working to develop independent study modules that will be discussed at each unit board. The topics are selected by the nurses on unit board and the discussion led by 2 of these nurses. Contact hours have been granted for independent study as well as the unit board discussion of the content. This process was so successful it will be replicated across the organization starting with the case manager council.

Cancer Clinic Journal Club

The Quality Consultant, who serves on the NRC and the Nurse Educator in the Cancer Clinic facilitated a Journal Club for oncology-specific topics. A planning committee, which includes 4-6 direct care nurses, selects the topics and supporting articles for discussion. The

first journal club meeting was held in July 2009. Attendance has ranged from 3- 20 direct care nurses. Usually 6-8 direct care nurses attend. Topics have included:

- Novel oral chemotherapy regimens in clinical trials
- Adherence to oral chemotherapy and patient safety
- Complementary and alternative therapies
- Healthcare literacy
- Hand – foot syndrome /palmar plantar erythrodysesthesia

As a result of the second meeting, an interdisciplinary team was established with participants of the Cancer Clinic Unit Board to evaluate practices and identify plans to improve care related to patient adherence to novel oral chemotherapy regimens. The nurses, pharmacists and prescribing physicians for the most common agents will engage in plans to develop enhanced team communication, teaching methods and follow up with regard to patient adherence. Initial process and planning included agreement on the primary patient education drug information library/resource to be used by the team. This example highlights how a nursing journal club identified a gap in practice through a literature review and developed an interdisciplinary team to address the problem.

Translation

The final 7 steps of PET encompass implementing practice change based upon recommendations from the literature (*see NK 6 for PET phases*). This phase involves determining organizational interest and feasibility, developing an action plan, working the plan, and evaluating the outcomes. Dissemination of findings completes the process.

The Nursing Research office assists in finding resources for implementation and evaluation of outcomes (*see NK 6 for evaluation resources*). The most robust support for implementation, however, is available through the EBNP Fellowship program. Nurses have the opportunity to disseminate the findings from their studies at internal poster sessions, held in May and Oct (*see NK 4 Exhibit A-5 for poster session presentation list*).

These sessions are designed to provide beginners experience in writing abstracts and presenting posters, with an eye toward submission to an external conference. As a result, 2 national posters and 1 manuscript were completed on posters presented at Oktoberfest in 2009 (*Refer to Table NK 4 – 1: Nurse Posters/Presentations External*).

The Nursing Research office also holds a series of writing for publication workshops annually. [NK7-Exhibit B-1-Writing for Publication Workshops] Any staff member can attend this series of 4, 2-hour workshops spaced over an 8 month period. If the participant follows the plan and completes the homework assigned between sessions, he/she will have a manuscript ready for submission by the end of the 4th workshop. [NK7-Exhibit B-2-Nurse Publications]

EBNP fellowship program

The EBNP fellowship program provides direct care nurses with an opportunity to gain knowledge and skills needed to translate evidence into practice (*see NK 4.0 for a description of the program*). Nurses in the program follow the PET process as they develop a project designed to improve patient care. Over the year-long program, the fellows learn to:

- Use synthesized evidence databases (e.g., ZYNX)
- Perform literature searches in databases available through the EBL
- Critically evaluate research
- Make recommendations for practice change based upon the evidence
- Form a team to plan and implement the practice change
- Identify potential indicators to evaluate processes and outcomes
- Develop an action plan
- Design an on-line survey
- Create and populate a spreadsheet
- Write an abstract
- Prepare and present a poster

The fellows are encouraged to work in groups to develop and implement their projects. Some work with other fellows who may or may not practice in their clinical area. Other fellows work with colleagues in their patient care area or through their unit/clinic boards. Based upon the recommendation from the Nursing Executive Board and the NRC, fellows are encouraged to select a project in one of nursing's priority areas, including:

- Pressure ulcer prevention
- Fall prevention
- Prevention of infection

- Pain management

The structure of the EBNP fellowship program includes the Director of Nursing Research, who oversees the content and presentation of the program and 8 nurses who serve as mentors to the fellows. The mentors are assigned a small group of fellows (3 – 6/group), and work in pairs to assist the fellows in working through the PET process. Mentors are selected from a variety of areas, and receive coaching from the director during monthly planning meetings. Using this type of mentor structure, we are able to develop nurses in key positions who have an in-depth knowledge and understanding of EBP. The mentors for the 2009-10 EBNP program are:

- Debbie Arnow, RN, MSN, Director of Nursing Education & Professional Development
Children's Hospital
- Cindy Brown, RN, MSN, MCE OR Director, Perioperative Services
- Gary Howard, RN, MBA, Assistant Administrator, Emergency Services
- Kathleen Kelley, RN, MSN, NP, Nurse Educator, Operative Services
- Brent Lemonds, RN, MBA, Administrative Director, Emergency Services
- Anne Miller, RN, PhD, Faculty member, VUSN
- Kyle Rybczyk, RN, FNP, Coordinator, HIV Vaccine Program
- Gloria Wacks, RN, DNS, Nurse Educator, Outpatient Surgery

Each workshop provides 5.0 contact hours; a total of 60.0 for the 12 workshops. We evaluate each workshop in terms of content, delivery, and objectives. The ratings for content and objectives are consistently high, indicating the workshops are meeting the stated objectives. [NK7-Exhibit C-1-Workshop Evaluation]

Toward the end of the year-long program, we also do an informal evaluation and get suggestions for improvements for the next cohort. A formal evaluation of each cohort is conducted approximately 6 months after completing the program. This formal evaluation has a set of structured questions to determine the fellow's EBNP activity since leaving the program and their engagement in professional development activities. Table 7.1 present's results from the 2007-08 and 2008-09 EBNP cohorts.

See Table below.

Table NK 7 – 1: Evaluation of EBNP Fellowship Program

Evaluation Variable	2007-08 N = 9	2008-09 N = 18
Retention in program	50% (11/22)	71% (26/35)
Conducted 3 or more literature searches in past 6 months (%)	88	88
Used EBL/Pubmed in past 6 months (%)	100	94
Discussed research findings with colleagues (%)	89	94
Changed position or unit since beginning the fellowship (%)	33	39
Took a course for credit or entered a program (%)	11	39
Applied for advancement in VPNPP (%)	44	28
Member of a medical center or nursing committee (%)	33	44
Presented a poster at a national meeting (%)	0	5.5

In addition to learning the steps in the translation process, one of the goals of the program is to enhance the fellow’s professional development – during the program and upon completion. These data suggest that the fellows do continue their professional development activities after completing the program.

Perhaps the most powerful comment on the benefits of the EBNP program comes from 3 of the fellows, *“in their own words”*.

“Your class opened my eyes and mind to the value of EBP. My view on the Nursing profession has broadened my practice, and I’m excited about future of nursing. Thanks for sharing your knowledge and empowering me to seek answers.”

“Our research project kept us from changing our practice just because a physician stated it was the best way - our project and the literature that supported our project kept us on the right path as well as decreased the costs to the lab and the patient if we would have pursued these endeavors as well as we would have possibly induced unnecessary pain to our patients.”

“The EBNP program has helped me to try some things I would never have otherwise tried. I made some mistakes, but learned a great deal. I have always wanted to have tight

control of whatever I do. I have learned that I have to invite others to help and listen to what they have to say. I could write a lot more, but I think the program is about more than research (or it was for me). It is about focusing on something you want to improve, listening to others, figuring out the best way to approach the situation, learning who is there for you, being tenacious! , building others up and supporting them, laughing at yourself, etc. After the program, I tried to form a committee, but I really just wanted to be in control. Needless to say, the committee flopped. But, that is ok. I had gained confidence from EBNP and was able to reflect on why I had failed and I am not afraid to try again. I still have trouble completing projects, but I know that I can do this too. I just might need to ask for help.”

The Process of Translating New Knowledge into Practice

Direct care nurses throughout the Medical Center seek new knowledge to improve their clinical practice. The following examples describe some of these activities.

- Kara Gordon, RN, MSN, Nurse Educator in MICU organized a video conference with a representative of *Mosby’s Nursing Consult*. The goals of this video conference were to increase preceptor awareness of the online resources provided by *Mosby’s* and improve navigational skills using the site. Twelve preceptors from MICU attended the conference on July 23, 2009. In a recent communication to Kara Gordon, Holdiness, the Mosby representative, reported how many Vanderbilt nurses are using *Mosby’s Nursing Consult*, “The numbers (approximately 1500 per month) actually look great. I was definitely impressed by how well the program is used.” Usage of the companion SKILLS site track is still at only 400 -500 hits per month, but Holdiness commented that the number of Vanderbilt nurses accessing *Mosby Nursing Skills* is on the upswing and “that is a good sign.” The preceptors now use both Mosby resources during orientation of new nurses to the MICU, which serves two purposes. First, it provides an opportunity for the new nurses to use these on-line resources with guidance from the preceptor. Second, it ensures that the nursing care provided using *Mosby’s Nursing Consult and Skills* modules incorporates new knowledge translated into practice. This story was featured on the EBP & Nursing Research web site in our Spotlight feature. [NK7-Exhibit D-1-Mosbys EBP Spotlight Story]
- Edie Vaughn, RN2 is a member of ANA. As an ANA member, Edie receives the ANA publication six times per year. One of the journals included an article on caring for patients with adrenalectomies. About the same time the journal article was published, 9 South had noticed an increase in the number of patients being admitted with Pheochromocytoma resulting in adrenalectomies. The journal article contained detailed information regarding the surgical procedure and care of the patient postoperatively.

The journal article included potential complications and assessment parameters associated with complications. Edie brought the article to work, shared the article with staff through discussions and posted the article for review by all staff. Edie's willingness to share information increased awareness for all staff regarding care for patients with Pheochromocytoma undergoing adrenalectomies.

- Tanya Boswell, RN, MSN, CCRN (Evidence-Based Practice Team Nurse) collaborated with 2 infection control nurses, Tracy Louise, RN and Jackie Smith, RN, BSN , to compare catheter-related blood stream infection (CR-BSI) rates in PCCU when chlorhexadine (CHG) was used instead of alcohol to “scrub the hub.” A literature review and discussion with several other pediatric intensive care units suggested that CHG may reduce CR-BSI rates better than alcohol wipes. Following education on how to use CHG, the standard of care was changed in PCCU from a scrub with alcohol to a scrub with CHG. This trial of CHG did not show a substantial reduction in CR-BSI in the PCCU. A cost analysis indicated a substantial saving (\$617,899 per year) using the alcohol wipes. In addition to the cost of supplies, the nurses found the time needed to use the CHG scrub, which required drying the area before accessing the catheter, was greater than the traditional alcohol wipe method. Because of the lack of difference in CR-BSI between methods, the PCCU returned to the alcohol wipes to scrub the hub. [NK7-Exhibit E-1-Scrub the Hub – PCCU] This project was completed while Tanya was an EBNP fellow.
- Allison Acrey, RN, BSN joined an interdisciplinary team in the pediatric orthopedic clinic to improve care of infants being frequently casted for club foot. The casting procedure can be painful. Allison worked with the Child Life Specialist to review the literature on patient responses to casting. The literature suggested the stress may diminish the parent and child's ability to cope with the casting procedure. Based upon this evidence, the clinic implemented use of stress-reduction measures during the procedure, such as dimming the lights, playing soft music, and using warm water to prepare the plaster of paris for the cast. To evaluate this change in practice, the team is focusing on (a) increasing the level of parent satisfaction in the care of the newborn's clubfeet casting, and (b) Increasing the level of staff satisfaction as they use these new practices in patient education, infant distraction and stress reduction.
- An interdisciplinary team, led by Teresa Milan, RN, manager of the substance abuse unit (VITA) at Vanderbilt Psychiatric Hospital, reviewed the current literature on alcohol withdrawal assessment tools and withdrawal protocols. A more recent approach, outlined in the protocol [NK7-Exhibit F-1-CIWA Protocol Summary, NK7-Exhibit F-2-CIWA Algorithm, NK7-Exhibit F-3-CIWA Assessment for Alcohol], involves frequent assessment

and symptom-triggered therapy. The team composed of direct care nurses, the Nurse Educator, and attending physicians, agreed upon an evidence-based protocol. Jon Coomer, RN3, Nurse Educator for VITA, educated the staff on use of the clinical assessment tool and use of the symptom-triggered therapy protocol. One of the symptoms of withdrawal that changed substantially based upon new knowledge was the prevention of seizures. When a patient on the VITA unit had seizures, he/she was taken to the Vanderbilt ED. Since the protocol was implemented in June 2009, emergency room visits by patients on the VITA unit have decreased.

- Darlene McCormick, RN4 in MICU, led a pilot study to determine if disposable EKG lead wires would reduce central line-related blood stream infections (CL-BSI) compared to the standard of care, which was reusable EKG lead wires. The idea of using disposable lead wires came from the literature (<http://www.infectioncontroltoday.com/articles/2009/05/how-to-evaluate-and-justify-the-implementation-of.aspx>) and best practice in another institution. Following discussion and consensus at unit board, Darlene worked with Sheri Fay, RN, MSN, a Clinical Resource Nurse in the Purchasing Department, to obtain disposable lead wires from 2 companies for evaluation. In October and November 2009 each type of lead wire was evaluated in the MICU. At the end of each trial, the nurses evaluated the disposable leads, using a standard new product evaluation form tailored to reflect the product being tested. [NK7-Exhibit G-1-MEOC New Product Request] The CL-BSI rate in the MICU dropped from 12/1000 device days in June to 6/1000 device days in November. The MICU's request for purchase of disposable lead wires was presented at the January 2010 MEOC committee. The Vanderbilt vendor, Philips, is currently working with Vanderbilt on the disposable lead wire products. [NK7-Exhibit G-2-MEOC Minutes]
- Stephen Nelson, RN, MSN Case Manger for the Burn Unit and Gina Turner, RN Case Manger for Palliative Care led an initiative to identify "triggers" to refer burn patients to palliative care. The project team included an EBM Specialist, the Director of Nursing Research, a Data Analyst, and attending from the Burn Unit and Palliative Care service. While there are data available on existing systems, such as the APACHE, that may be useful in identifying patients with poor prognosis, none of the published research specially address issues of the burn patient. Through a request from VICTR, the project team consulted with Ted Speroff, PhD, and expert in quality improvement. VICTR resources also were obtained for analysis of existing burn unit data. [NK7-Exhibit H-1-Request to Load New Data] The analyst explored variables within the EMR to identify possible triggers for referral. Based upon her data analysis and an article on the SCORTEN severity of illness scale (Bastuji-Gann et al., 2000), potential triggers were

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identified. Variables included number of comorbidities, % body surface area burned, age, gender, LOS, and # of ventilator days. Before developing an electronic data capture system, we are testing a paper system to determine the appropriate triggers. Once the project is completed, staff in the Burn Unit will have a decision support system for referrals to palliative care.

Table NK 7 – 2: Nursing Projects

Nursing Projects									
	Project Name	Status	PI Name	Credentials	Nurses' Role	Study Scope	Study Type	IRB	EBNP
1	Implementation and Evaluation of a Pre-review Process	Completed	Barbara Gibson and LuEllen Davie	BSN, RN, CCRC, CIP & BSN, CIP	PI	Internal	Evaluation		
2	Implementing a protocol to reduce UTI in trauma	Completed	Teresa Hob-Bingham & Sondra Blunt	RN & RN, BSN	Co-PI	Internal	Evaluation		√
3	Does Lidocaine infiltration improve pain relief during arterial sheath removal?	Completed	Brenda W. White & Sharon Parscall	RN, BSN & RN	Co-PI	Internal	Evaluation		√
4	Preventing hemolyzed blood samples	Completed	Helena Kay Adkins	RN	PI	Internal	Evaluation		
5	See the Forest Through the Trees- Linking symptoms to causality using critical thinking "trees"	Completed	Eva Montgomery-Lewis	RN, BSN	PI	Internal	Evaluation		
6	ABC's of Staffing	Completed	Leann Grimes	RN	PI	Internal	Evaluation		
7	Implementing a Workplace Violence Prevention Program	Completed	Sarah Hutchison	RN,BSN, CCRN	PI; nurses on project team	Internal	Evaluation		
8	Embracing the Future of Pediatric Nursing: Impacting the Turnover of New Graduate Nurses	Completed	Debbie Arnow	MSN, RN, NE-BC	PI	Internal	Evaluation		
9	Ped ED/Oncology Dept Fever/Neutropenia protocol	Completed	Karen A. Haggarty	RN, CPN, CPEN	PI	Internal	Evaluation		

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10	Asthma and EBP	Completed	Donna Christensen	RN BS	PI	Internal	CQI; Evaluation		
11	Taming your bugs - efforts to reduce post operative c/s wound infections	Completed	Jo Ann Jones	RN, MSN	PI	Internal	Evaluation		
12	Pressure Ulcer Prevention Collaborative (for pediatric patients in Operating Room)	Completed	Sara Brazzale, Meriwyn Chambers, Rachel Spruilliel & Sharon Bonnett	RN & RN, BSN, CNOR, RN, RN	Co-PI; nurses on project tema	Internal	Evaluation		v
13	STEMI Cath Lab handouff	Completed	Tiffany Richmond	RN, AND	PI	Internal	CQI; Evaluation		
14	Improving Communication and Patient Safety within Post-Anesthesia Care units	Completed	Rebecca Arndt	RN, BSN, CNOR	Porject team member	Internal	Evaluation		
15	Supply and Demand: A Dilemma for 4 South and Labor and Delivery	Completed	Brooke D. Stacey	RN, BSN	PI; staf nurse co-l	Internal	Evaluation		v
16	The Nurse Resident Buddy System	Completed	Alaina Knight	Rn, BSN, PCCN	PI	Internal	Evaluation		
17	Post Operative Ambulation of Colorectal and Urology Patients	Completed	Valerie Kibler	R.N.;N.P.	Co-PI; nurses delivered intervention	Internal	Evaluation		
18	Scope and Standards of Practice for Professional Nursing Development	Completed	Chris Wilson	MSN, RN-BC	PI	Internal	Evaluation		
19	The role of interventional patient hygiene in improving clinical and economic outcomes	Completed	Devin Carr	MSN, RN, ACNS-BC	PI	Internal	Evaluation		
20	Disposable EKG lead wires	Completed	Darlene McCormick	RN, CCRN	PI	Internal	Product evaluation		
21	Chlorhexidine Bath Cloths	Completed	Darlene McCormick	RN 3, CCRN	PI	Internal	Evaluation		

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22	Reducing Adverse Drug Events: A Child Health Corporation of America (CHCA) Collaborative Project	Complete	Jenny Slayton & Stacy Hoagg	RN, MSN & BS	Co PI (primary contact) Staff nurses were team members	Multi-organization collaborative	Evaluation		
23	Identifying Pelvic Fractures in the Pre-hospital Setting	Complete	Martha Reeves	RN, MSN, CNS, CFRN, NREMT	PI	Internal	Evaluation		
24	Reducing Blood Stream Infections in the PCCU	Complete	Minden Bullock	RN BSN	Nursing staff-led team	Internal	CQI; evaluation		
25	EBP survey	Complete	Karin League	RN, MSN	PI; staff nurses subjects	Internal	Evaluation		
26	Up for Meals: Does it Improve Food Consumption?	Complete	Sandra McGill	RN, MSN, MBA	PI; nurses delivered intervention	Internal	Evaluation		
27	Scrub the Hub	Complete	Tanya Boswell	CCRN, MSN	PI; nurses delivered the intervention	Internal	Product evaluation		v
28	Revising the Alcohol Withdrawal Protocol for Psychiatry	Complete	Teresa Milan	RN	PI	Internal	Evaluation		
29	You're Not My Type: Changing the Policy for Type and Screen in the Operating Room	complete	Russell Kunic	RN, FNP	PI	Internal	Evaluation		
30	Developing more effective conceptual APN models for utilizing NPs in Otolaryngology, Head & Neck Surgery.	In Progress	Ken Watford	NP-C	PI	Internal		DNP	
31	Difficult Venous Access	In Progress	Miranda Reynolds	RN, CPN	PI; staff nurses on project team	Internal	Evaluation		

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32	Where Heart Is Headed...Patient Education for Healthy Hearts	In Progress	Debbie Abbott	RN-Charge Nurse	PI	Internal	Evaluation		
33	NSQIP-Peds National Surgical Quality Improvement Program- Pediatric	In Progress	Lisa Johnson	RN3, SCR, Quality Improvement Analyst	PI	National	CQI; Evaluation		
34	A New Approach to Early Pressure Ulcer Prevention in Pediatrics	In Progress	Elliott Douglass	BSN, RN, CWOCN	PI	Internal	CQI; Evaluation		
35	Professional Nursing Development and Advancement at Vanderbilt Medical Center	In Progress	James Barnett	PhD ©, RN, CNRN	PI	Internal	Evaluation		
36	Student Nurse Internship Program and New Nurse Graduate Programs at Vanderbilt Medical Center	In Progress	James Barnett	PhD(c), RN, CNRN	PI	Internal	Evaluation		
37	New Nurse Resident Buddy System	In Progress	Alaina Knight	RN, BSN	PI	Internal	Evaluation		
38	Development of a Mentorship Program for LifeFlight	Start Up	Jerry Kovac	RN, CEN, BSN, EMT-P	PI	Internal	Evaluation		
39	Falls assessment for the post epidural obstetric patient	Start Up	Jo Ann Jones	RN MSN	PI	Internal	Evaluation		v
40	Sexual functioning in fistulizing Crohn's patients	Start Up	Julianne H. Wagnon	APRN-BC, JD	PI	Internal	Evaluation		

Evidence-Based Practice

Source of Evidence NK 7 EO

Describe and demonstrate how translation of new knowledge into nursing practice has affected patient outcomes.

Up for Meals: Does it Improve Food Consumption?

Purpose/Background

Malnutrition is a common phenomenon among elderly patients. Decreased food intake leads to loss of fat and muscle, which increases the rate of complications, and can increase the length of stay for a hospital admission (*DiMaria-Ghalill & Amella, 2005*). The mission of an ACE Unit is to provide evidence-based nursing care for elderly patients. Studies and history suggest that getting elderly patients out of bed during meals has a positive impact on the amount of food patients consume. Anecdotally, on 7RW, we saw that most of our patients are given their meal trays while they are still in bed. In an effort to measure the unit's mealtime practices, a study was conducted to determine how many of our patients are out of bed at mealtime and if getting patients out of bed (OOB) for meals affects food consumption. [*NK7EO-Exhibit A-1-Nutrition in Older Adults Article*]

Methods/Approach

A point prevalence observation technique was used to determine the unit's practice pre and post staff intervention. A delayed post survey was conducted five weeks after the intervention to ensure the unit's reminder system for getting patients into a chair for meals was working. During each 5-day data collection period (pre-, immediately post-, delay post-intervention) observation of all patients were made a meal time. Observations included:

- Is the patient in a chair during the meal?
- If not in a chair, why?
- Percentage of meal consumed

Patients were excluded from these observations if they met the following exclusion criteria:

- Younger than 55 years of age

- Orders for strict bed rest
- Orders for tube feeding
- Orders for NPO
- Active nausea and/or vomiting

Following baseline data collection, 7RW staff was educated on the positive impact of getting patients out of bed for meals. [NK7EO-Exhibit B-1-Up for Meals Staff Education] To promote patient safety and prevent injury to staff, Smooth Moves (safe patient handling) training was provided to all staff. Also, a system was developed to remind staff to offer patients to get out of bed 30 minutes prior to each meal. Prior to each meal, the Medical Receptionists sent out a universal message on staff pagers reminding them that meals trays were arriving soon.

Table NK 7 EO - 1: Participants

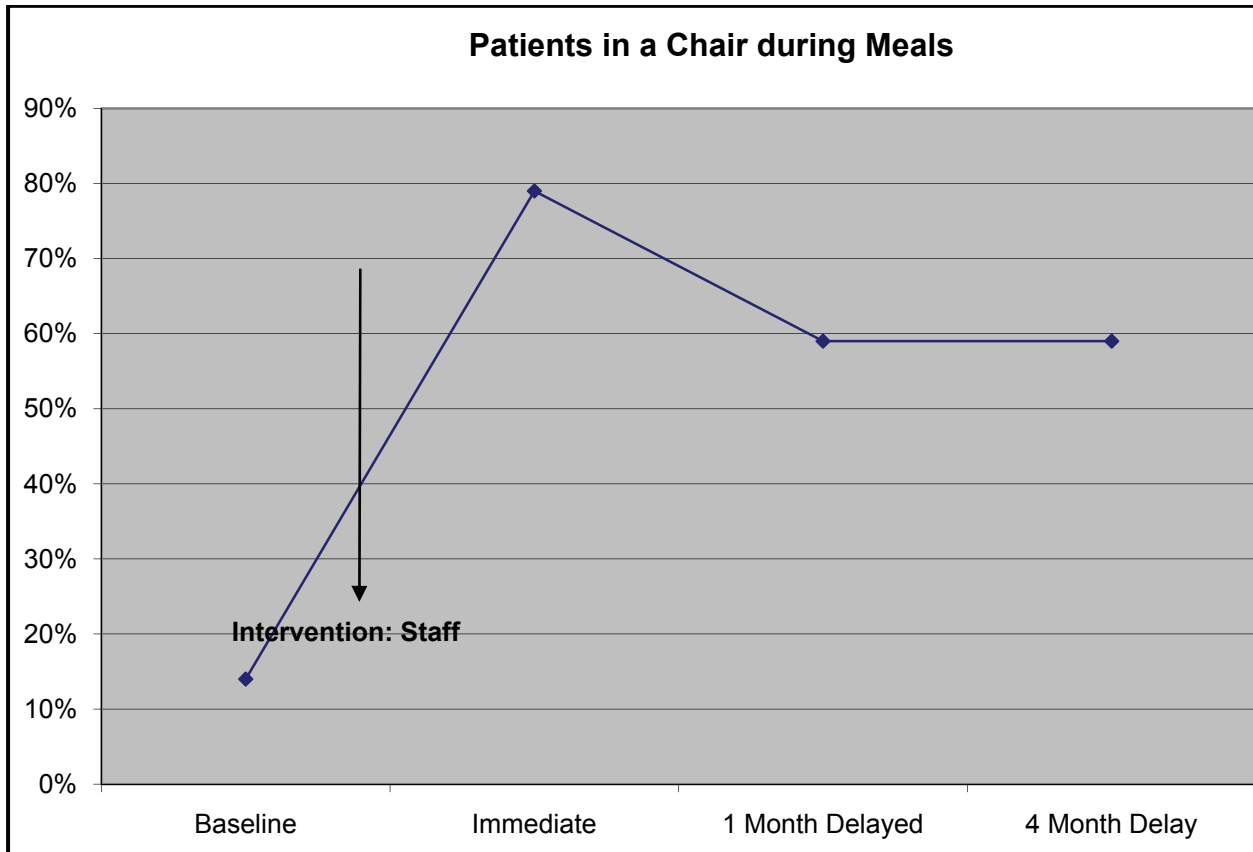
Personnel	Title	Role
Sandy McGill, RN, MSN, MBA	Nurse Educator, 7RW (ACE Unit)	PI Data collection & analysis Education intervention
Pat Galo, RN	RN 2; Smooth Movers super user	Smooth Moves trainer Staff check off
Casey Hall, RN BSN	RN 2; Smooth Movers super user	Smooth Moves trainer Staff check off
Robert Lorimer	Care partner Smooth Moves super user	Smooth Moves trainer Staff check off
Julie Curtis, RN, BSN	RN 2; Smooth Moves super user	Smooth Moves trainer Staff check off

(Note: RN 2's are direct care nurses.)

Outcomes/Impact

Only 14% of patients were in a chair for meals at baseline. There was a significant increase immediately post-intervention, with a decrease in performance at 5-weeks post-intervention.

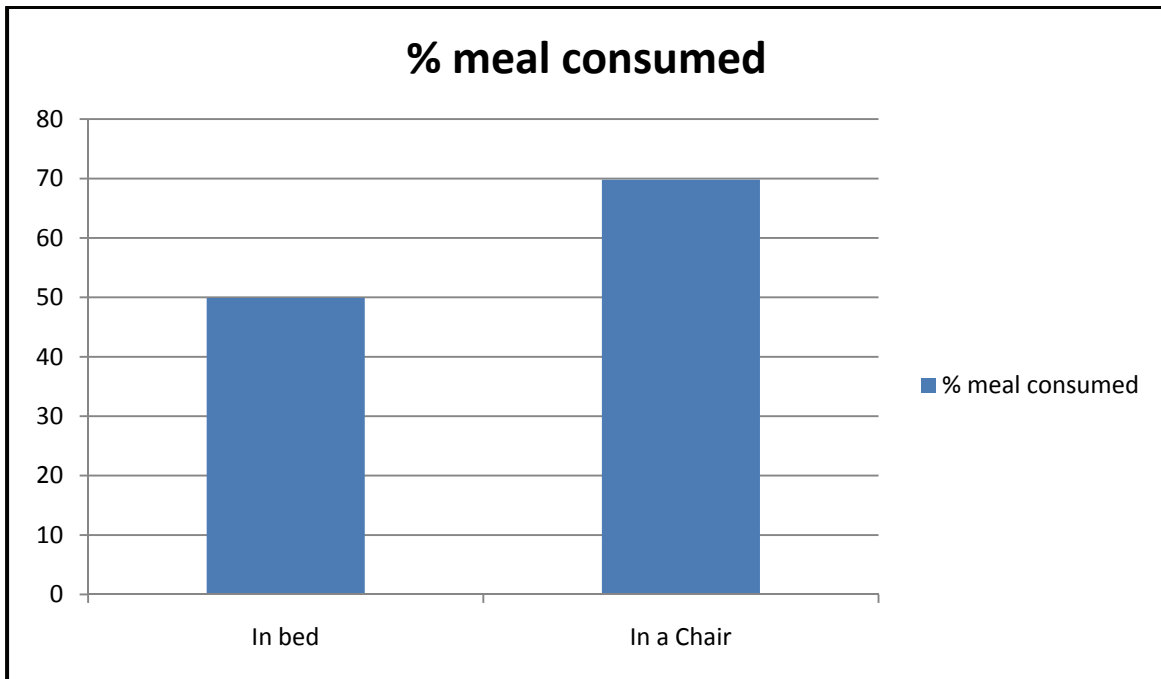
Graph NK 7 EO – 1: Percent of Patients in a Chair for Meals; Pre – Post-intervention



During the week-long observation periods, two primary barriers to getting out of bed for meals were identified: (a) general patient refusal and (b) patient refusal due to pain. . These 2 barriers accounted for 60% of the cases in which patients did not get out of bed for meals. Both of these barriers can be overcome with a few small improvements prior to each meal. To address the ‘general refusal’ issue, we developed scripting to guide conversations with patients when offering to get them out of bed. With the scripting, we hope that patients will realize the importance of consuming their meal in a chair versus in the bed. [NK7EO-Exhibit C-1-Up for Meals Scripting] To address the second barrier, education and reminders are in place to encourage nurses to assess the patient’s pain level 30-60 minutes prior to asking them to get out of bed. This should minimize the number of times patients refuse due to pain.

Data were collapsed across all 3 observations (baseline, immediate, and delayed); meal consumption was 20% higher in patients who were in a chair for the meal than those who were in bed.

Graph NK 7 EO – 2: Percent of Meal Consumed in Bed and in a Chair



In bed M = 49.96% (n=116) (add N to chart + percent in column great

In a chair M = 69.79% (n=118)

Evaluation of the program is ongoing. The team continues to do random observations to determine how many patients are sitting up for meals. A validation study of meal consumed was completed; agreement among 4 direct care nurses on percent of meal consumed. Variability among the 40 observations (10 patients x 4 nurses) was 7%, indicating adequate inter-rater reliability for this measure.

This study clearly demonstrated that patients consume more of their meal when up in a chair than when in bed. The practice has been “hard-wired” on the ACE unit and warrants dissemination internally and externally.

Pain Champs Program

Purpose/Background

Even when a successful program from another organization is replicated, PET is used to guide the change in practice. The Pediatric Pain Champ Nurse program was piloted by 5 nurses (Pediatric Pain Specialist, nurse manager, and 3 direct care nurses) enrolled in the 2007-08

EBNP Fellowship program. Following a review of the Assessment-Intervention-Reassessment (AIR) cycles submitted to NDNQI and patient/family satisfaction data, it was apparent that there was room for improvement in the way pain was managed in pediatric patients.

A review of the literature identified the Pain Resource Nurse program, developed at the City of Hope, as a possible strategy to improve pain management in children. The project team implemented and evaluated the Pain Champs program on the 8th floor of Children’s Hospital, a surgical, trauma and adolescent unit. A pre-post test design was used to detect improvement in:

- Nurses’ knowledge about pediatric pain management
- Patient outcomes of completed AIR cycles documented in the EMR, and
- Patient/family satisfaction with pain management

Methods/Approach

Knowledge deficits were identified using the “Pediatric Nurses’ Knowledge and Attitudes Survey Regarding Pain “, developed by Ferrell and McCaffery (1999) and revised in 2005. [NK7EO-Exhibit D-1-PEDS Knowledge Survey] Eleven direct care nurses on the 8th Floor volunteered to become pain champs. These nurses attended a full day workshop and booster sessions every month for the first year. Contact hours were provided for the initial workshop; evaluation of the content, delivery and objectives was highly rated by the participants. To evaluate patient outcomes, we monitored the AIR cycle data submitted to NDNQI and the patient/family satisfaction data from PRC.

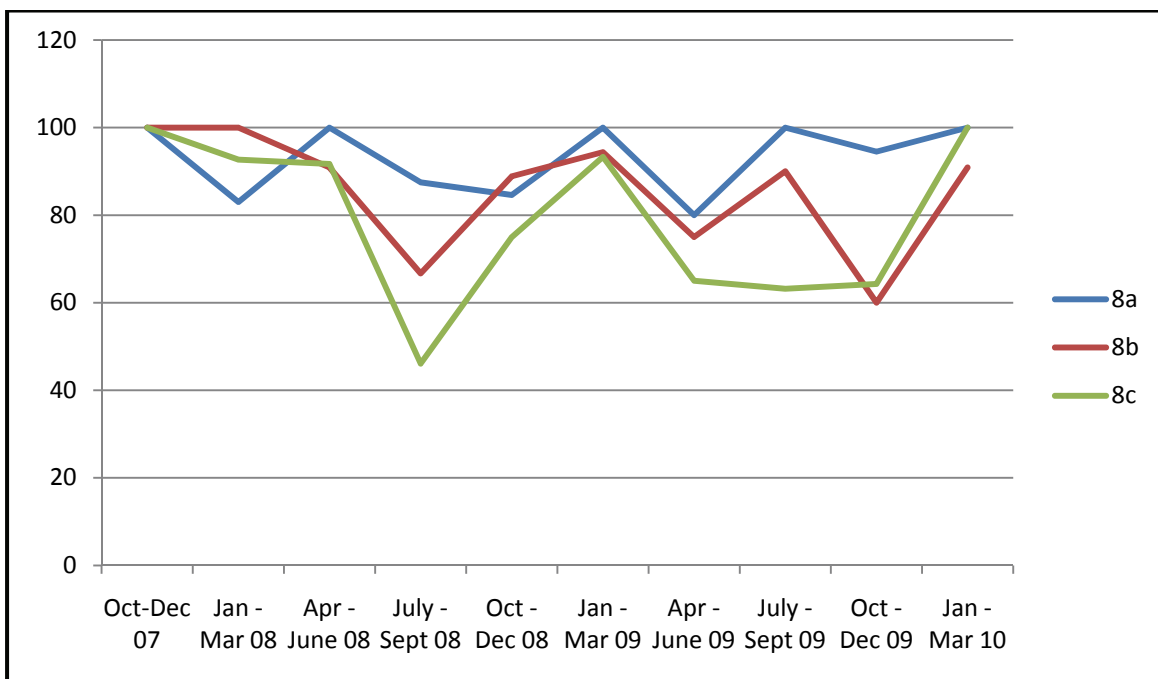
Table NK 7 EO – 2: Participants

Personnel	Title	Role
Twila Lockett, RN-BC, BSN	Acute Pain Nurse	Prepared & delivered education
Tia Coleman, RN, BSN	RN2	Team member
Brandy Dalton, RN, BSN	RN2	Team member
Brooke West, RN, BSN	RN2	Team member
Vicki Jones, RN, BSN	Manager, 8a, b, c	Team member

Outcomes/Impact

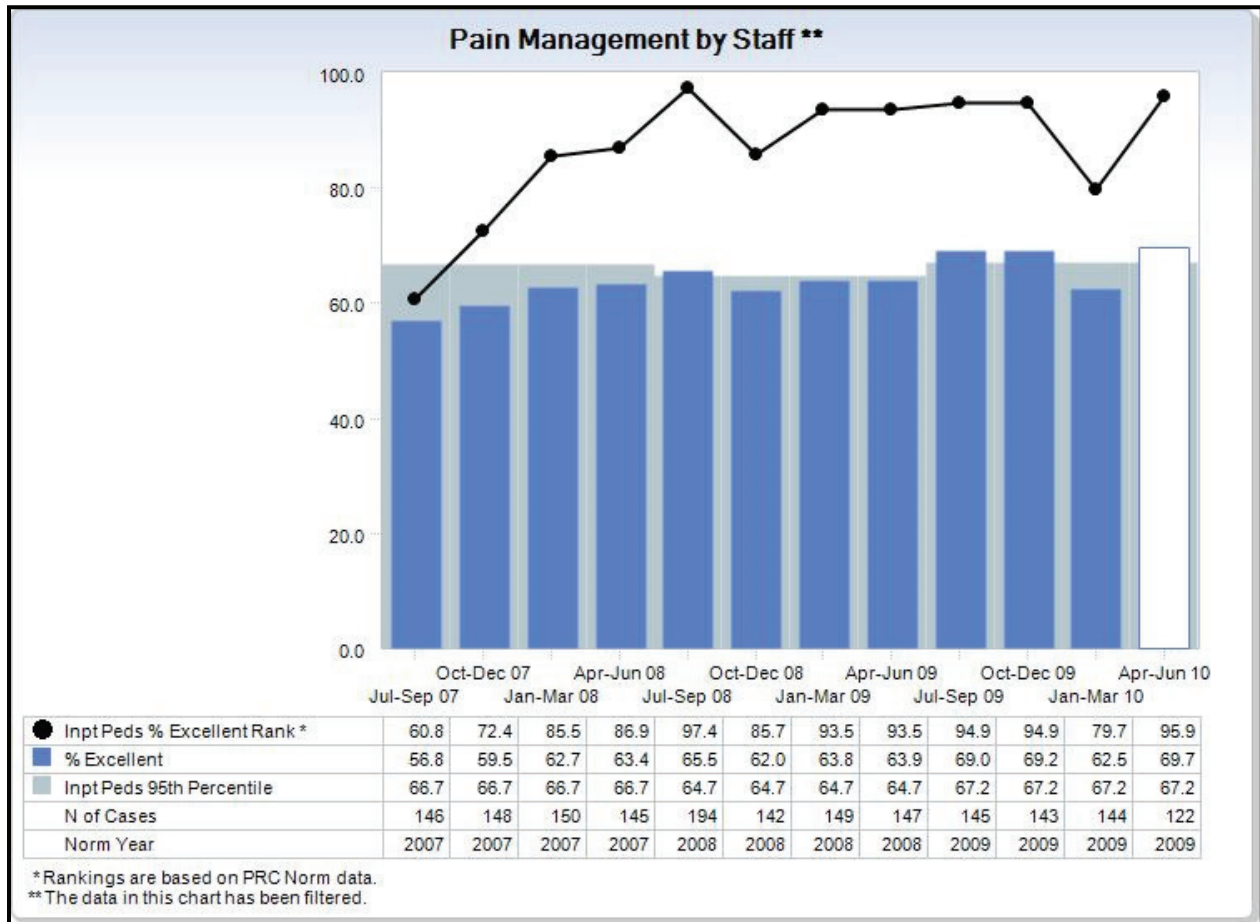
While the knowledge and attitudes of all direct care nurses on the 8th Floor did not improve substantially, the knowledge and attitudes of the Pain Champ Nurses did. Patient outcomes improved. The AIR cycles showed a decline in documentation in the quarter following implementation; however, this may be attributed to a change in personnel doing the chart abstraction rather than a decline in practice. The AIR cycles did improve in the first quarter of this year. In contrast, patient satisfaction with pain management by nursing staff did improve following implementation of the Pain Champs program. The excellent rank maintained a high level of performance until the first quarter of 2010. This dip in patient satisfaction with pain management has increased motivation to increase the focus on the Pain Champs program. [NK7EO-Exhibit-E-1-Pain Champ Poster Octoberfest]

Graph NK 7 EO – 3: Percent Completed Assessment-Intervention-Reassessment (AIR) Cycles



(Program implemented in July 2009)

Chart NK 7 EO – 4: Patient/Family Satisfaction with Pain Management



This program has been continued on the 8th Floor of Children’s Hospital and on-going education about pain management is available to 8th Floor nurses

Free the Pee: Reducing UTI Rates in the Trauma Center

Purpose/Background

Catheter associated urinary tract infections (UTIs) continue to be one of the most common nosocomial infections seen in hospitals today. According to the Center for Disease Control, CAUTIs account for more than 40% of the total nosocomial infections reported by acute-care hospitals and affect an estimated 600,000 patients per year. Since 2005, the CAUTI rate in the Trauma Center at Vanderbilt has been above the National Healthcare Safety Network (NHSN) benchmark (Table 7.1)

Table NK 7 EO- 3: UTI Rates in Trauma Center 2005 – 2007

Year	Trauma Center	NHSN Benchmark
2005	8.6	5.7
2006	7.2	5.7
2007	7.8	5.7

(Rate based on # of infections relative to # catheter days)

In January of 2008, Vanderbilt Trauma Center initiated a new quality improvement project to decrease CAUTIs in our ICU patient population.

Methods/Approach

We were using the Bard silicone closed sterile system Foley catheters. We made no plans to change the type of catheter we used, but instead altered the amount of time we allowed a Foley catheter to remain in situ. As a team we developed a plan, based on the CDC guidelines, to remove Foley catheters within 5 days of admission if possible. We used the following steps to change this practice in the Trauma ICU:

- Gain nursing leadership and physician support for the “5 day rule”
- Educate staff on importance of early indwelling catheter removal through unit board discussion and 1-1 communication
- Collaborate with informatics specialist to develop a computer-based dashboard for use by charge nurses
- Train charge nurses to use dashboard during daily rounds to alert team to length of time indwelling catheter has been in place

Table NK 7 EO – 4: Participants

Personnel	Title	Role
Teresa Hobt-Bingham, RN	Charge nurse	Project co-leader
Sondra Blount, RN, BSN	RN4	Project co-leader

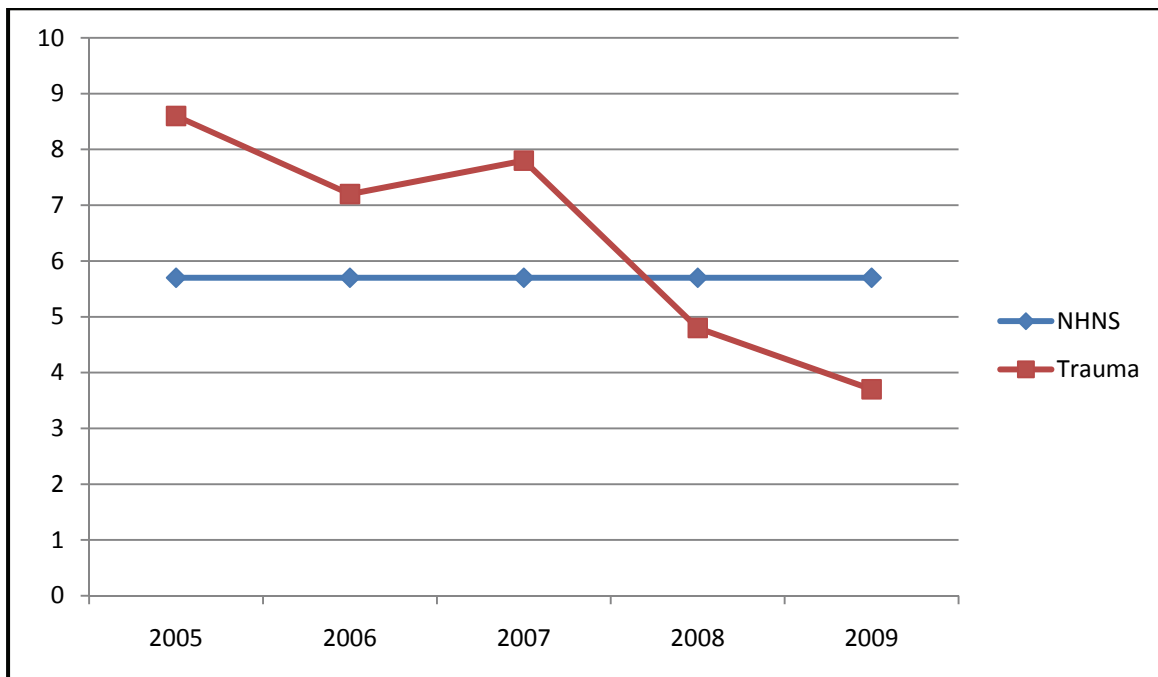
Outcomes/Impact

After implementing these changes, the UTI rate at the end of 2008 was 4.5, which was below the national benchmark of 5.7. With this success, we were encouraged to continue and develop a protocol for removal of Foley catheters in our trauma patient population. The protocol, developed during the EBNP fellowship, followed these steps:

- Establish a purpose; to decrease UTIs, overall length of stay and increase patient comfort
- Identify patients who require an indwelling catheter for more than 5 days to develop exclusion criteria for catheter removal within 5 days.
- Present protocol to unit board for peer review and feedback
- Educate staff about new Foley catheter removal protocol

The implementation of the protocol in 2009 resulted in a 3.7 UTI rate, which is well below the national benchmark.

Graph NK 7 EO – 5: UTI Rates in the Trauma Center with NHNS Benchmarks



As the Trauma Center was implementing their Foley catheter protocol, the Medical Center established an interdisciplinary team to make recommendations about best practices to reduce CAUTI rates across the enterprise. (*Details in EP 32 EO*) This nurse-led project was well underway and provided the team with valuable information about setting time limits on indwelling catheters. The policy on Foley catheters was revised based upon new guidelines and the work of Teresa and Sondra (*See NK 6 for policy*). This project was completed while Teresa and Sondra were fellows in the EBNP program.

Innovation

Source of Evidence 8

Describe and demonstrate Innovations in Nursing Practice.

In 2004, Vanderbilt launched an initiative called Elevate to move the culture of the organization to one of service. Five pillars were identified with annual institution-wide goals associated with each pillar. During the executive strategic planning process in 2009 a revision to the existing pillars was made, adding a new pillar of Innovation. Nursing followed with the nursing strategic plan by integrating innovation into the strategic goals for nursing. See *TL1 and OO 3 for the hospital and nursing strategic plans.*

Innovation in service delivery is defined as “*a novel set of behaviors, routines, and ways of working that are directed at improving healthcare outcomes, administrative efficiency, cost effectiveness, and / or the user’s experiences that are implemented by planned and coordinated actions*”. (Greenhalgh, 2004, ANCC, 2009) The structures and processes in place to support nursing research and EBP can result in innovations in nursing care. The following examples highlight changes that reflect an innovation in nursing care.

Clinic location supports patient care

Many Multiple Sclerosis patients receive IV infusions during their visit to the neurology clinic. Moving the MS and IV infusion Clinics to One Hundred Oaks presented an opportunity to design the clinics for easy access for patients and enhanced communication among providers.

When the clinics moved to One Hundred Oaks they were placed side-by-side with multiple connecting hallways so that patients and members of the healthcare team could easily go between them. This innovation provides for continuity of care for the Multiple Sclerosis patients who are receiving treatment via IV infusions. See *NK 9 EO for a description of One Hundred Oaks design development.*

Innovative Care Delivery Model

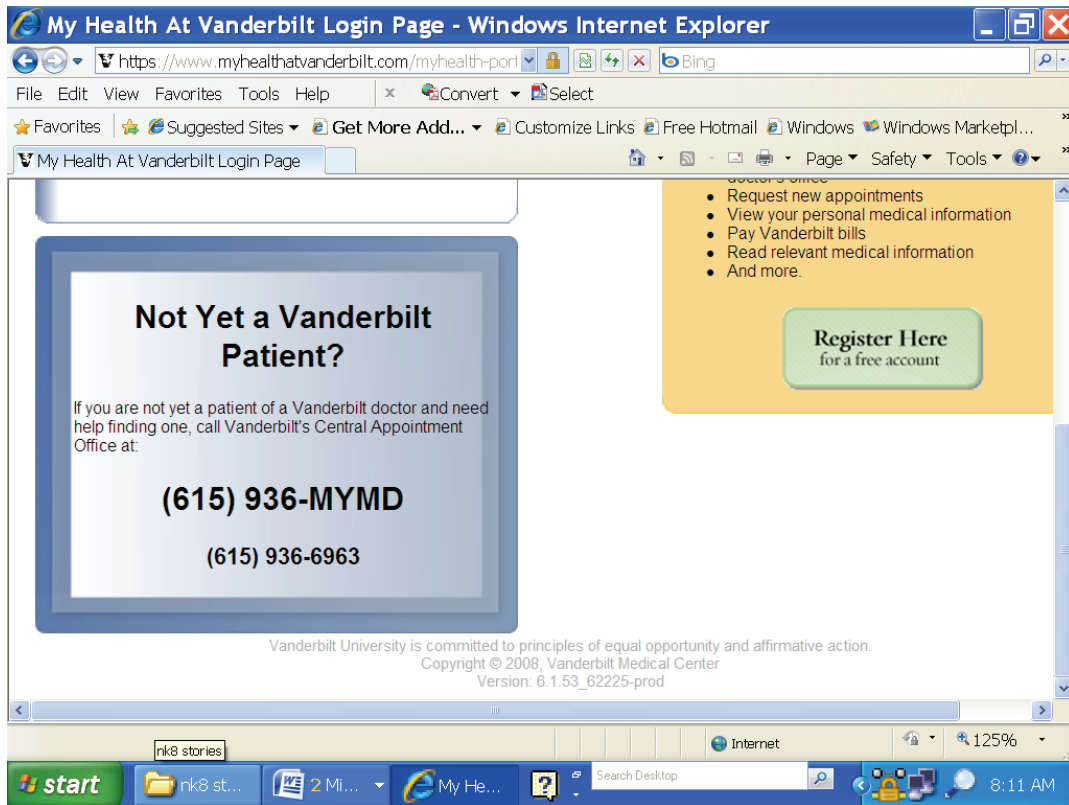
My Health Team at Vanderbilt (MHTAV), which was launched in June 2009 as an innovative care delivery model with a chronic disease management focus. This care delivery system incorporates telemedicine to improve timely communication between providers and patients as well as between primary care and specialist providers. In addition to the clinic staff, several new roles were developed for MHTAV. This includes a care coordinator (RN), a care coordinator assistant (MA), an informatics specialist, who is an analyst for outcomes and quality

reporting, a Pharmacist and a Dietician. The goals of this new model are to improve patient adherence to prevention and treatment regimens, to help control chronic conditions outcomes, and ultimately to reduce inpatient and ED utilization, ultimately improving overall quality of life for our patients. *[NK8-Exhibit A-1-MHTAV Summary and Charter]* This program explicitly places the nurse at the hub of the healthcare team in the management of selected chronic health conditions.

Health care online

My Health at Vandy is a web-based portal that allows patients to access their health records and communicate with clinic staff electronically. To ensure confidentiality, patients must request access to health records and show photo identification to access the complete system. The nursing staff at the Rheumatology Clinic in Williamson County realized that patients were not aware of the resources available through My Health at Vandy. To solve this problem, the nurses identified a computer that did not meet specifications for typical clinic use. Staff suggested that a computer be set up in a “cut out” area in the clinic hallway that would accommodate a small table and chair. Patients are now directed to sign up for MHTAV at this location while in the clinic. Staffs are available to assist and answer questions as needed. Patient response has been positive. Many more patients are now communicating with clinic via MHTAV.

Table NK 8 – 1: My Health At Vanderbilt Webpage



Performance Improvement Office – beta site clinics

The Performance Improvement Office (PIO) was created to address inconsistencies in clinic operations across the 125 clinics and over 1,000 providers in the VMG. Although many issues were uncovered during an extensive evaluation, the PIO has focused primarily on access issues since its creation in 2008. In addition to the PIO Operations Director, there are 4 nurses who work with interdisciplinary teams to identify operations inconsistencies and issues and develop strategies to improve them. Because of the size of the organization, the PIO selected 2 key clinics (Breast Center and Urology) as “learning labs”. These clinics pilot new ideas, which provide the staff in PIO with valuable information on the viability of the strategy and its implementation.

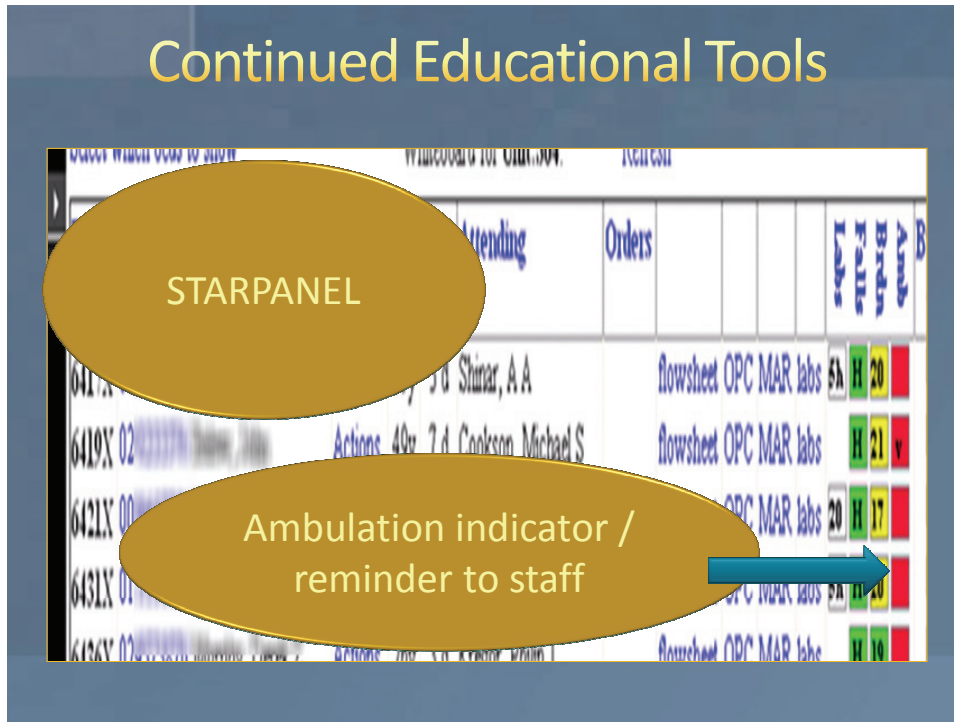
For example, the Breast Center and Urology Clinic staff identified the need for a new role – Access Team Leader. The Access Leader role was created to process critical clinical information related to scheduling and pre-appointment issues. Therefore, the Access Leaders are experienced NP’s or RN’s who provide direction to the Central Appointment Schedulers, Pre-Appointment Coordinators, RN Coordinators and Telephone Triage Nurses. Additionally, they are part of the team developing and implementing all service-specific access strategies.

Clinical Workstation Dashboards

Technology can be used to shape new behaviors in the clinical setting. For example, a dashboard on the clinical work stations serves as a reminder to the nurse that that a task needs to be done. In the process of improving ambulation in surgical patients, the direct care nurses provided input into the design of an ambulation dashboard (*see NK 4 EO*). If the nurses caring for the patient complete and document the distance ambulated on the prescribed schedule, the indicator on the dashboard turns green. If ambulation has not been completed or documented, the indicator turns red, providing a visual cue to the nurse that this task needs to be completed.

See Table below.

Table NK 8 – 2: StarPanel Ambulation Dashboard

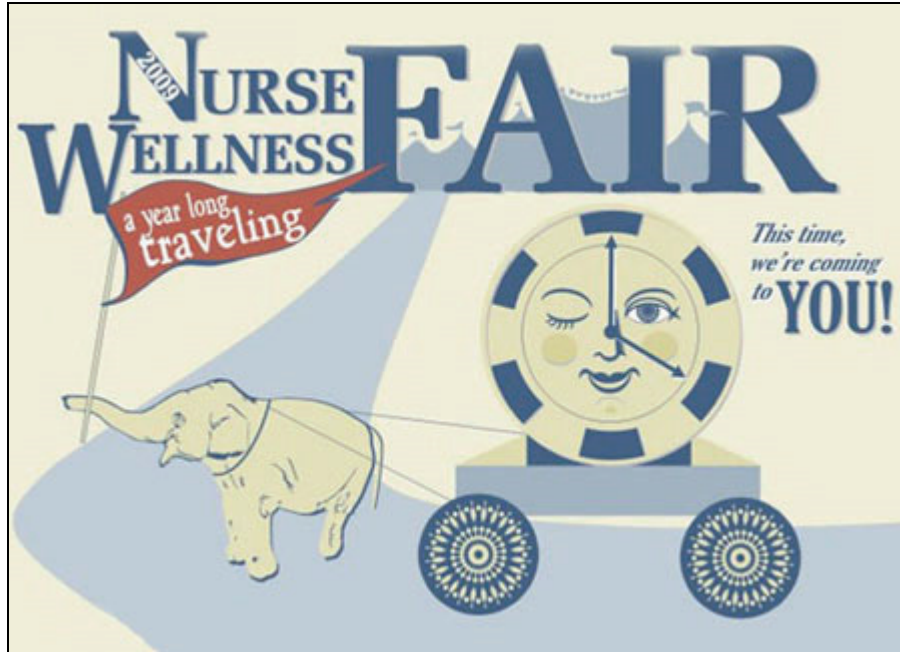


Traveling Nurse Wellness

The Nurse Wellness Program champion is intricately involved in the nurse Wellness Committee activities supporting the wellness of nurses. This year the Nurse Wellness Traveling Fair has gone to the many worksites to promote wellness efforts, increase awareness of resources and services. *(More info in EP 29)*

See Table below.

Table NK 8 – 3: Traveling Nurse Wellness Fair Announcement from Nursing Web site



This year instead of having one all day extravaganza, The Nurse Wellness Committee has decided to come to you and your work area! This is your opportunity to meet with Nurse Wellness representatives including EAP, VUPD's Victim Services Advocate, and other groups that contribute to the needs of Nurse Wellness.

When the Nurse Wellness Fair Representatives come rolling into your area, take a moment to meet with them and get acquainted with the health and wellness opportunities VMC provides that are specific to our nurses.

**The November stop for the 2009 Nurse Wellness Traveling Fair
will be
Medical Center East
North Elevator Lobby
Friday, November 20, 2009
7am to 8am**

Throughout 2009, The Nurse Wellness Traveling Fair has stopped at these past locations:

**February: Monroe Carell Jr. Children's Hospital at Vanderbilt
March: Williamson County Medical Group
April: Medical Center North
May: 100 Oaks
June/July: Vanderbilt University Hospital**

We look forward to seeing you at the Fair!

Vanderbilt is unique in that an APN with strong psychiatric background is employed to work with nurses needing help. Margie Gale, RN, MSN, CEAP works closely with Work life Connections and the Nurse Wellness Committee to provide counseling services to nurses on both professional and personal issues. [*NK8-Exhibit B-1-Job Description Nurse Wellness Specialist*]

Margie Gale, RN, MSN, CEAP, Nurse Wellness Specialist

Margie is a Mental Health Clinical Nurse Specialist with over 30 years of nursing experience. She has been a nursing instructor at the Vanderbilt School of Nursing, Meharry Medical College and at Columbia State Community College. In 1988, Margie worked for the PASS, an Employee Assistance Program for the Nashville Police Department. She is actively involved in the Tennessee Nurses Association.

Aromatherapy in the Adult ED

The Nurse Wellness committee in the Adult ED launched an innovative program to reduce stress and anxiety in the ED staff (*more info in EP 29*) This program was designed for the nursing staff in the Adult ED and involved their engagement with an alternative therapy (essential oils). The Nurse Wellness committee members identified numerous healthcare organizations using aromatherapy to support the replication of a program in the Adult ED. A pre-post survey for the Adult ED staff showed that the staff's self-reported stress and anxiety declined from aromatherapy

Cultural and Linguistic Council

The Nurse Ethics Survey (*see NK 4 EO and EP 23 for description*) was the impetus to develop an interdisciplinary committee (ethicists and nurses) to address gaps identified from the survey. One of the major issues identified in the Nurse Ethics survey was dealing with patients from different cultures and who had difficulty communicating in English. The Cultural and Linguistic Council was created to meet the needs identified from the survey. This council is in the early stages of development; currently the members are developing a charter to address their scope and mid- and long-range goals. (*More info in EP 23 & EP 26*)

Children's Safety Store

Children's Hospital received funding from the National Association of Children's Hospitals and Related Institutions to create a safety store within the hospital. Nursing staff

were involved in the design, setting hours of operation and selecting products for the store. Safety products available range from baby proofing to fire prevention to child locator equipment. Nurses' input was sought by scheduling face-face meetings, group meetings and web-based surveys. [*NK8-Exhibit-C-1-Safety Survey, NK8-Exhibit C-2-Safety Store News Feature*] Once the Safety Store opened in March 2009 nurses were one of the major referral sources to the store. Nurses are now able to recommend safety items, such as infant car seats and child safety equipment (e.g., helmets) as well as direct the parents to the Safety Store off the hospital lobby. Exhibit x describes the various child locator products available from the Safety Store.

Innovation

Source of Evidence 9

Describe and demonstrate the structure(s) and process (es) by which nurses are involved with the evaluation and allocation of technology and information systems to support practice or nurses' participation in architecture and space design to support practice.

VUMC has been listed as one of the nation's 100 "most wired" hospitals and health systems for the last 5 years. (*Most Wired Survey and Benchmarking Study is conducted by Hospitals and Health Networks Magazine, Accenture, McKesson Corp. and the College of Healthcare Information Management Executives*). [NK9-Exhibit A-1-Healthcare IT News Week] <http://www.hhnmostwired.com/hhnmostwired/images/design/coverimages/2009MWwinners.jpg> This distinction is an honor and our efforts have clearly supported us in utilizing technology to address quality and safety Issues and improve patient care outcomes. Clinical applications also bring opportunities for improvement and challenges for nursing. We have several resources in place to support the nursing staff in utilizing clinical applications to support the practice of professional nursing. We have also had multiple opportunities for nurses to be involved in the plans for new critical care units, operating rooms and off site clinics.

Nursing Structures Supporting Clinical application of Technology

System Support Services

Systems Support Services is a department within Nursing with a primary goal of enhancing nursing practice through the use of computerized clinical applications. Systems Support provides services to all nursing staff in the inpatient areas. The 19 Systems Support Specialists in the department are members of the Nursing Leadership Staff in the Nursing Bylaws. The department is led by Karen Hughart, RN, MSN_who has expertise in planning and leading organizational change and implementing clinical computer applications. The key functions of this department include:

- Project Management
- Consultation/Liaison Services
- Education
- User Support

Examples of large, hospital-wide clinical applications that required planning, implementation and on-going user support include transition from paper to electronic medical records (HED) and use of a bar code medication administration system (Admin RX). An example

of the consultation and project management functions of Systems Support are provided in NK 4 EO (ambulation project) and NK 9 EO (VUH Expansion Project: part 2).

There are 22.35 FTEs in System Support Services of which 19.35 are nurses. Work of the team consists of centralized efforts that support nurses in a global fashion (e.g. computer training provided during New Employee Orientation) and decentralized efforts that support needs at the patient care unit level (e.g. ensuring core informatics competencies achieved by the end of unit-based orientation). The centralized functions are covered by Systems Support Specialists (SSS) whereas the local functions are covered by the Clinical Application Specialists (CAPS).

- ***Systems Support Specialists (SSS)***

Registered nurses who are content experts on electronic clinical systems and nursing informatics who support the nursing staff in use of core clinical systems through education, user support, and consultation services. They also partner with other nursing leaders to lead clinical informatics projects and implement technical and workflow solutions that support the strategic goals and tactical objectives of nursing and the clinical enterprise.

- ***Clinical Application Specialists (CAPS)***

RN Systems Support Specialists who are assigned to a cluster of units (approximately 80-110 beds each) in the Medical Center and spend approximately 60% of their time is supporting end users of core clinical informatics systems. These specialists make regular weekly rounds to identify potential or actual issues they can address and also partner with units/clinics/departments to make improvements in the practice setting.

Systems Support and Innovation Team

The Systems Support and Innovation Team is the outpatient counterpart to System Support Services. This team falls under The Training and Organizational Department of VMG, and provides support and training for all outpatient clinics on and off campus. It is lead by a nurse, Laura Butler, RN, MSN, who is charged to assist in the support and advancement of EMR technology. The key functions of this team mirror that of the Clinical Application Specialists as they are assigned locally to assist specific clinics.

An example of an outpatient wide project in the works is a new tool that improves the way staff communicates with referring providers and clinic staff in the community called the Provider Communication wizard. The support staff are also assisting with the way clinics document through the use of new forms in the EMR for specialized areas such as the Anticoagulation clinic, or creating documentation tools for generalized areas of nursing such as triage. In each of these examples, clinic nurses are involved in the decisions made about the applications (e.g., form content and layout) as well as implementation.

Users groups have been developed to support direct care nurses and other providers in using technology in their practice. Two primary groups include VUH (adult hospital) and VMG (clinics) groups, led by the respective department described above. Direct care nurses also have input into the selection and implementation of clinical applications through the HED Advisory Group. (*Committees memberships lists in OO 15*)

Clinic User Group

The EMR team has monthly user group meetings in VMG. This group is composed of EMR specialists, who are nurses, assigned to the clinics. The VMG User Group meeting is a forum used to:

- Update users on new releases
- Provide users the opportunity to ask questions.
- Provides a forum for the VMG EMR Team to elicit input into new applications

The meetings, which take place in VMG on campus, are now being live streamed to One Hundred Oaks. [*NK9-Exhibit B-1-UG Flyer*] Attendance at these User meeting meetings ranges from 4 - 12, the majority of which are direct care nurses in the clinics.

Information from the User meetings is available on the EMR website. This allows staffs who are not able to attend the meeting to have access to the content presented and/or discussed. The EMR team also has a team blog, which contains up to date information about the EMR and StarPanel. This blog is accessed through the EMR Team website.

See Table below.

Table NK 9 -1: EMR Team Blog



Systems Support Services User Group

This user meeting, also known as “Computer Talk”, is held on the first Wednesday of each month. Similar to the VMG user meetings, the SSS meetings provide opportunities for two-way communication and collaboration with end users. Users bring questions and concerns that are addressed (if possible) or channeled to groups that make decisions on technical and workflow change. Minutes from these meetings are sent to all Inpatient Units and posted on the Systems Support Services website. [NK9-Exhibit C-1-Minutes from Computer Talk]

See Table below.

Table NK 9 -2: System Support Services Website

Systems Support Services
VANDERBILT UNIVERSITY MEDICAL CENTER

Search

- SSS Home
- ▶ New Employees
- ▶ Education for Staff
- ▶ Providers and Medical Students
- ▼ User Groups
 - ▼ ComputerTALK
 - Computer Talk Minutes
 - HED Advisory Group
- ▶ About Us
- Class Materials
- On Call Manual

Other Links

- Clinical Application Support (CAPS) Website
- Create an E-Password
- Department of Pharmaceutical Services
- Help Desk
- Learning Center Orientation Registration
- The Learning Management

ComputerTALK

What is TALK???

ComputerTALK is a forum designed for Nurses, Medical Receptionists, Administrative Assistants and Ancillary Department's staff. This monthly forum meets on the first Wednesday of every month from 0715 to 0800. The current location is TVC 2704 (located next to the cafeteria on the 2nd floor) and provides a convenient meeting location for VUH and VCH staff.



Topics are generally informatics related but over the years have included other system related issues that impact the entire medical center. Guests from various departments attend too.

- Share Information
- Obtain Information
- Request assistance in problem solving

ComputerTALK has been meeting since 1995 and averages around 20-25 staff in attendance.

(For more information, contact Connie Huff-Simmons, BS at Systems Support Services at 260-1766 or via email at connie.simmons@vanderbilt.edu)

HED Advisory Committee

Karen Hughart, RN, MSN and Vickie Thompson, RN, MSN co-chair the HED Advisory Committee that meets twice each month. Nurses who use our clinical computer applications submit recommendations for changes and enhancements and the HED Advisory Comm. Reviews to either approve or reject. This group also advises on training and support requirements to support various degrees of system changes. Members include a cross section of Managers, Assistant Managers, Nurse Educators, Clinical Nurses Specialists, and Staff Nurses from VUH, VCH, and VPH. The Advisory Committee, composed of staff nurses and nurse leaders, makes recommendations for design changes in the EMR payout and bring issues

related to specific clinical area needs. (See *OO 15 for membership list*). For example, Billy Cammeron, RN, a staff nurse in SICU, submitted a request through the HED Suggestion Box to add a new option for documenting activity. Angela Swinger-Lockridge, RN, a staff nurse on 4 Round Wing, requested a new option for the drop down box of choices for describing how an IV is secured. Both these suggestions were discussed by the HED Advisory group and approved. [NK9-Exhibit D-1-HED Adv Min 8-5-10, NK9-Exhibit D-2-HED Adv Min 8-19-10, NK9-Exhibit D-3-HED Adv Min 7-15-10]

Table NK9 – 3: Excerpt of Minutes from Aug 19, 2010 HED Advisory Committee

6. Billy Cammeron, SICU, issue 1318 (5 min.)	Add "Bed to chair position" in the ICU Activities of Daily Living charting section	<ul style="list-style-type: none"> Approved
7. Angela Swinger-Lockridge, S44, Issue 1341 (5 min.)	For IV Stabilization/Protective tool, add "Stat Lock"	<ul style="list-style-type: none"> Approved. Understand that Stat Lock is a brand name and don't usually use brand names but no other good description for this and this term is what RN's would recognize.

Enterprise-wide Support for Technology

Vanderbilt has created a new position, director of Nursing Informatics, to oversee clinical applications that can support and enhance nursing care. This position provides a bridge between the hospitals and clinics – that is, across the entire enterprise. Nurses participate in setting information technology priorities and have been involved in both the development of and participation in design shops.

Director of Patient Care Informatics

This new position was created to provide a place at the medical informatics table to articulate a strategy to ensure that nursing needs are met as we go forward in a highly automated environment. [NK9-Exhibit E-1-Job Description Director PC Information] The position functions include:

- Chairs/facilitates clinical advisory interdisciplinary groups to provide broad-based input into the planning, prioritization, design, and implementation of the clinical information systems that support optimal patient care and workflow. For example, the director facilitates a neuro-cognitive workgroup that is working to standardize neurological assessment documentation across the enterprise.
- Engages patient care providers with varying roles including physicians, nurse practitioners, nursing staff, ancillary dept personnel, and medical records professionals to contribute to the development and use of the CIS. Develops understanding of

physician needs and works with CMIO's to build relationships with physicians to gain support of Informatics related initiatives. Is highly responsive to customer needs, including training needs, to assure wide spread acceptance and provider use of clinical systems.

- Works across organizational boundaries to assure that Clinical customers needs for support are met by actively working with customers, their leadership and organizational resources that have learning, teach, and support resources
- Reviews Nursing Informatics trends, experiences and approaches; identifies CIS applications that support or enhance nursing practice and other clinical disciplines. Develops technical and application implementation strategies, and actively participates in the development of strategic plans for CIS. For example, developed the strategic blueprint for nursing documentation.
- Works in concert with the Informatics Center to plan, prioritize, design and implement systems supporting patient care, research and teaching missions
- Participates in the design of clinical pathway models with nursing, physician and administrative leadership, and assists in the modification of these models to gain maximum efficacy and support for patient care. For example, Deborah led a section of a design shop on education for patients with heart failure. [*NK9-Exhibit F-1-Design Shop – Patient Engagement*]
- Leads development of clinical “rules” supporting patient care and protocol as well as the design of clinical system features supporting protocol management and the use of the system to leverage the clinicians’ time and maximize provider communication. The development of a patient education plan for heart failure exemplifies the Director’s leadership and coloration with staff nurses, educators, librarians and patient/family advocates. [*NK9-Exhibit G-1-Heart Failure Teaching Record, NK9-Exhibit G-2-Heart Failure Educ Project Team*]

Swim Lanes

Medical Center Informatics initiatives, including key nursing informatics projects, are managed through an iterative planning process in which informatics and operations leaders meet jointly to agree on strategic goals requiring IT support. Based on these goals, the informatics projects are first prioritized based on available resources and then these projects are sequenced to maximize efficiency and minimize disruption to the organization. The output of this process tracks projects across a series of horizontal tracks laid out on a board that

resemble the parallel lanes in a swimming race – hence the name swim lanes. This year, the 3 swim lanes associated specifically with nursing organized around 3 themes:

- *Documentation Framework* – implementation of the Saba Clinical Care Classification model as our framework for nursing documentation, including use of this ANA approved nursing terminology.
- *Visualization, Communication, and Coordination* – development of dashboards, reports, alerts, and other tools to support better collaboration and use of data to drive patient care decision making.
- *Simplification of documentation related processes & leveraging technology to create “Smart Environments”* - Examples might include integration of smart beds, StarLight TV, and/or IV pumps with existing informatics tools to reduce data transcription and optimize capabilities of all these tools.

At any one time, this planning process encompasses a 3-5 year window with more specificity in the initial 12-18 months. For example, we started working toward the goal to have best in class Medication Safety in 2003 but did not have substantial completion until 2010 when bar code medication administration was fully implemented.

In addition to serving as the means to do major planning on an annual basis, IT reports out progress against swim lane projects on a quarterly basis. If there are organizational or environmental changes during a year that would alter priorities, the swim lanes are adjusted to reflect the new reality. Items on the swim lanes are graphically represented to provide an overview of IT activities across the Medical Center as well as the progress made towards each goal.

Design Shops

A design shop is an event or process in which informatics specialists and clinicians collaborate with the guidance of facilitators to change vague aspirations into actionable plans. Typically ½ - 2 days in length, these events are usually held at the Vanderbilt Center for Better Health. Appropriate stakeholders (which have always included direct care nurses) are brought together to tackle complex challenges. The output of these events is one or more actionable plans that clarify:

- Agreements for work process changes
- Technical support required
- Implementation processes

In the past year, some of these Design Shops have addressed issues such as:

- Design requirements for an electronic nursing “To Do List”
- Patient Education (*as part of Patient Engagement, Exhibit F-1*)
- Setting Priorities for Nursing

Examples of Nurses Involvement in Decisions around Information Systems and Architecture

Numerous improvements have been made through the use of our System Support internal experts. The following examples provide evidence of the integration of technology into staff nurses’ daily routines.

- **Adult Surgical Step down Monitoring of Nurse Sensitive Indicators**

Charge nurses receive daily electronic reports on nurse sensitive indicators detailing completion of required nursing care and documentation. Modeled after work in the Cardiovascular Intensive Care Unit where each charge nurse through the EMR and StarPanel, can view timely documentation of restraints, admission history, pre-admission medication list, falls assessment, skin/pressure ulcer prevention, pain and care related to patients on ventilators. These “charge nurse dashboards” indicate, through color coding, when nursing activities have been (green) or not been (red) documented in a timely manner. When tasks are not documented, the charge nurse follow up on reasons for the delay; in most instances there is a reasonable explanation that requires no further action. If a staff nurse is consistently late in completing and/or documenting the key nursing assessments, he/she may receive coaching from the charge nurse.

- **Capturing Admission History from ED to Inpatient Units**

Previous admission history electronic process did not capture all of the data from the Adult Emergency Department screening process into the admission history when the patient is admitted to the unit. The changes now support the continuation of the information captured in the ED.

- **Neonatal Intensive Care Downtime Flow sheet Enhancements**

Working with the nurses to enhance documents needed in the event of a clinical documentation system downtime which would meet the actual documentation needs of this unique patient population.

- **Surgical Intensive Care Unit Discharge Planning**

When the SICU opened up in the new Critical Care Tower in November of 2006, their increase in bed numbers resulted in the addition of designated “stepdown” beds, which means that the SICU nurses are increasingly discharging patients. CAPS representative partnered with the unit educator to create an education module designed specifically for discharging patients from the SICU. This included the appropriate identification of electronic tools, such as Computerized Provider Order Entry (COPE) System, and electronic tools used for discharge teaching.

- **Controlling Hypertension in Ambulatory Care**

Hypertension is a diagnosis that touches patients in many clinics and departments across the enterprise. An interdisciplinary team of physicians, nurses and IT specialists, led by a nurse, convened to develop and implement an agreed upon strategic plan of care for hypertensive patients across designated VMG clinics (Cardiology, Internal Medicine, Diabetes, Nephrology, Hypertension). The goal was to improve the percentage of patients within target BP measurement according to The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC7) Guidelines. This was accomplished with the development of a clinical algorithm that would be implemented at each clinic visit. The team reviewed current evidence and conducted a gap analysis to identify opportunities to improve the processes of care that would meet their ultimate goal (patients with blood pressure within target range). Once the plan of care was agreed upon, IT specialists developed an electronic algorithm to be used at each patient visit. Pilot testing of this algorithm started December 2009 in two cardiology clinics. The clinic recently opened and has not yet been evaluated for effectiveness in controlling hypertension.

The use of technology can enhance processes to integrate new nurses into the environment as well as improve communication between patients and their providers.

- **Redesign of Orientation Training for Electronic Documentation Systems**

Evaluations from new user orientation indicated the classes did not meet the basic needs for the nurses to be able to easily navigate the systems once they were released from orientation. Systems Support Services staff who partner with the Department of Nursing Education and Development to provide the training streamlined the classes and the focus was changed to provide increased practice and review time. Positive orientation feedback indicates these changes have been helpful to the nursing staff. This change supports the ability of the new staff and preceptors to more quickly help new nurses assimilate the use of electronic systems into their practice in the units/clinics/departments.

- **A Nursing Informatics Orientation Checklist**

A checklist was developed by the CAPS Team to help nurses better understand and utilize the clinical applications they were oriented to in the care of their patients. The orientation checklist is utilized with new staff one week prior to the new staff member's completion of unit-based orientation. This supports the staff member in utilizing the system over a 6-8 week period and helps to reinforce specific policies and processes. This format supports a more individualized learning approach but with the structure that incorporates required key competencies.

- **Improving Electronic Communication between Patients and Providers**

My Health at Vandy is a web-based portal that allows patients to access their health records and communicate with clinic staff electronically. To ensure confidentiality, patients must request access to health records and show photo identification to access the complete system. The nursing staff at the Rheumatology Clinic in Williamson County realized that patients were not aware of the resources available through My Health at Vandy. To solve this problem, the nurses identified a computer that did not meet specifications for typical clinic use. Staff suggested that computer be set up in a "cut out" in the clinic hallway that would accommodate a small table and chair. Patients are now directed to sign up for MHAV at this location while in clinic. Staffs are available to assist and answer questions as needed. Patient response has been positive. Many more patients are now communicating with clinic via My Health At Vandy. Patient satisfaction is high.

The final example describes the interface between nurses, architects and technology to design and open clinic space in an off-site building.

- **Designing Clinic Space at One Hundred Oaks**

In 2008, a nurse administrator, Janice Smith, RN, MSN, was charged with leading the design of clinics to be relocated at One Hundred Oaks. The building was originally built as an urban shopping mall. Her leadership ensured that the space was designed to facilitate patient care, taking into account nursing activities and work flow. Each clinic that moved to One Hundred Oaks had direct care nurses from their area participate in the planning and design of their space. In these design meetings, research nurses were also included to ensure their needs were adequately addressed.

For example, the MS Clinic planning team included a clinic nurse (Nora Stark), a research nurse (Jean Simmons) and the nurse leader (Dan Moreschi) [*NK9-Exhibit H-1-MS Planning*]. Working with architects, general and sub contractors, equipment planners, and decorators allowed the nurse leader (Janice Smith) to reflect direct care nurses' perspectives on each detail of the build out. In addition to the design, the nurse leader is responsible for all the non-capital equipment, furniture, and start up budgets. These budgets include the technology components associated with each practice.

Each clinic had nurses at the table as we outlined work flows to determine where computers were placed, where phones needed to be added, and where the electronic whiteboards were placed to best serve the needs of the staff. A nurse practitioner was appointed as the point person for the medical faculty in the OB/Gyn clinic transition [*NK9-Exhibit I-1-Memo from Beth Huff*] issues about the blood bank in this clinic. [*NK9-Exhibit I-2-Email from Lynn B*]

The design and build out of the first clinics to move to OHO took 7.5 months. During this time, the OHO leader also worked with transition teams from each clinic to help them prepare for the move. The first clinic started the move in February 2009. To date, we have opened approximately 400,000 sq feet of new clinical space. Each area is moved in, operational and producing as expected or better than anticipated. There has been a substantial increase in volume in many of the clinics.

Staff, faculty, and patients all agree the space is lovely, convenient, well designed, and more than adequate for their needs. Staffs were initially overwhelmed by

the improvements in their work environment. Through rounding, we hear how much they enjoy the new space, how well it is working, and how happy they are to be a part of this endeavor.

Innovation

Source of Evidence NK 9 EO

Describe and demonstrate an improvement in practice due to nurse involvement in technology and information system decision-making or due to nurses' participations in architecture and space design.

Medication Reconciliation on Hospital Admission

Background/Purpose

Patient safety is a primary concern of all healthcare institutions. The Joint Commission National Patient Safety Goal number 8 states: "Accurately and completely reconcile medications across the continuum of care". When a patient is admitted to the hospital the healthcare team begin the processes of admission as well as initiating discharge planning. Medication reconciliation is a central part of the admission process, and sets the stage for a safe and efficient discharge process.

Tracking admission data, it was clear that the admission documentation and medication reconciliation were not being completed per policy (i.e., within 8 hours of admission) on a substantial number of patients. The purpose of this project was to develop an electronic solution to completing medication reconciliation within the 1st 8 hours of hospital admission. Vanderbilt also felt it was important to involve all the disciplines responsible for medication safety to work together for a solution that could be incorporated into the workflow of caring for patients.

Approach

A multidisciplinary workgroup was convened in the final quarter of 2008 (see Project Team). The workgroup compared "current practice" to what was desired to meet the national patient safety goal. A multidisciplinary focus group of end users, including staff nurses, was conducted to identify barriers to medication reconciliation and brainstorm strategies to improve compliance.

This group provided feedback on how each discipline could participate in the process. Nurses would continue to assist by collecting the home medication list from the patient as they were collecting an admission history. Providers would review and compare that list when

ordering medications for the patient at admission. Reporting was completed in January 2010 and our performance was less than expected. Although we noted a dramatic improvement from baseline, our plateau performance of 38% was well short of our target of 90%.

Further research and discussions with end users highlighted that the current electronic tool was not intuitive and not well placed within the workflow for nurses or physicians. Because of this feedback, the informatics programmer began prototyping a revised tool in the spring of 2010. Although the tool is in the last phases of testing, the intent is to place this tool in the CPOE system, to facilitate all discipline to contribute to the collection process, and within provider's History and Physical notes.

These improvements will assist in allowing provider to leverage the list within their notes to decrease double charting and to assist providers in ordering medications from the home medication list. The revised tool will show the medication list noted in the EMR to assist users with known medication information within our electronic systems. The infrastructure for this improvement has been completed to allow for the improvement teams to the ability to monitor improvements and provide reports to stakeholder on performance.

Table NK 9 EO – 1: Participants

Team Member	Credentials	Role on Team	Area
Jay Morrison	RN, MSN	Facilitator	Systems Support
Sara Winters	RN, BSN	Team member	System support
Sara Seaman	RN	Team member	Systems Support
Lillian McGehee	RN, MSN	Team member	Systems Support
Sylinda Littlejohn	RN, MSN	Team member	Systems Support
Jim Jirjis	MD, MPH, CMIO	Team member	Biomedical Informatics
Sherri Foster	PhD	Team member	Pharmacy
Russ Waitman	DBI	Database Architect	IT
Ash Ozdas	MBI	Project manager of	

New Knowledge, Innovations and Improvements
Innovation (9 EO)

		HED/Wiz/CPOE	
Osman Jalloh	BS	Programmer	IT
Racy Peters	RN, MSN		VMG administration

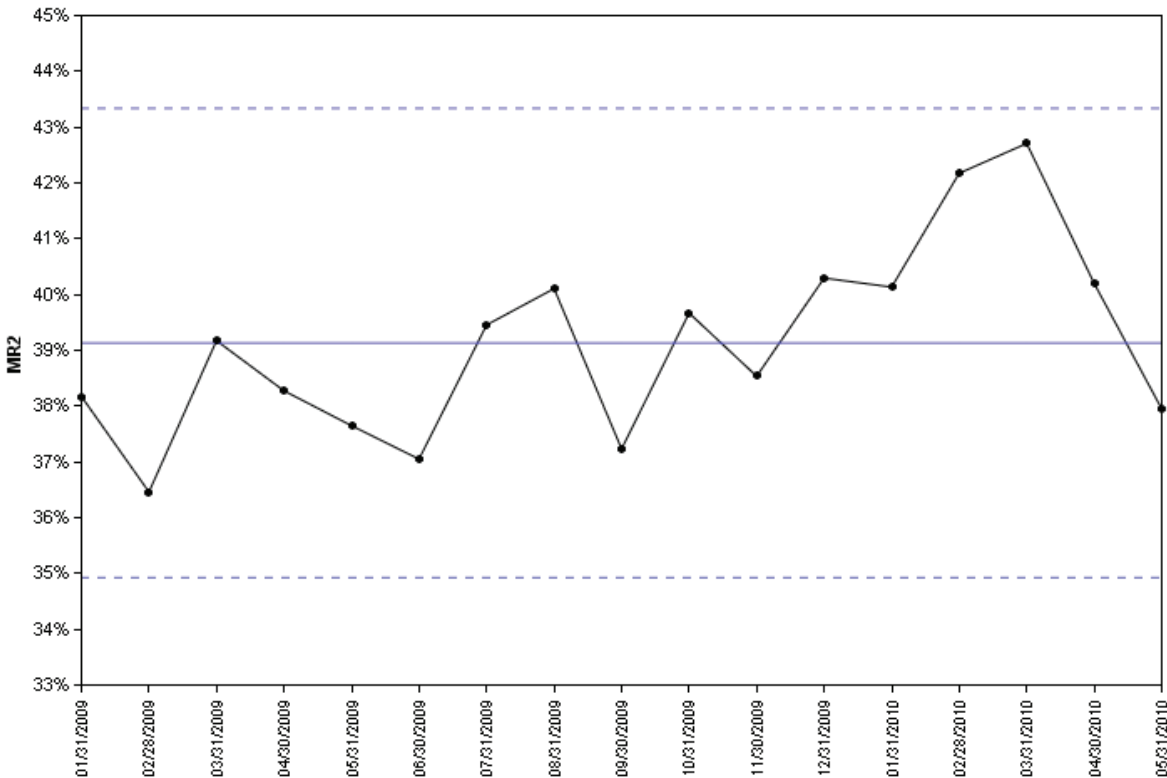
System Support Services provides all training, rounding, and support for direct care providers related to our information systems. They were able to provide feedback from the nurses doing the work based on conversations, rounding, teaching, and helping staff troubleshoot our current systems.

Outcomes/Impact

Implementation of the electronic medication reconciliation process and system has occurred in stages. The most recent addition to the process is a manager’s report, which was implemented in paper format in Oct 2009 and automated in Jan 2010. The team evaluated implementation in each practice area and made modifications to integrate this activity into the nurse’s workflow. Reports have been developed to monitor the outcome – percent of patients with medications reconciled within 8 hours after admission to the hospital (figure 9.2). These data indicate initial improvement compared to our baseline of 19.4% but show we are well short of our 90% goal. Improvement plans and integration within current workflow detailed above should help bring us closer to meeting patient safety goal 8, which will reduce the risk of discharging patients without the appropriate medications ordered. Accountability of the providers to reconcile medications throughout the continuum of care will also be a core component once our tools are integrated within the workflow.

See Graph below.

Graph NK 9 EO – 1: Percent Medications Reconciliation within 8 Hours of Admission



This statistical Process Control chart shows normal variability that is within control. We are not statistically improving or regressing. This defines the reasons for redesigning our current tools and process.

**VUH Expansion: Opening the Critical Care Tower
 Part 1: Nurses Involvement in the Architecture Planning**

Background/Purpose

For several years, Vanderbilt University Hospital has faced challenges in regard to inpatient and surgical bed capacities. The Critical Care Tower project was the response to address the capacity needs, provide facilities that would support current and future technology and provide an ideal setting for patients/families and members of the health care team.

The Tower would also need to accommodate future growth. Located along side the north and south towers of VUH, the 11 –story addition would house 12 new operating rooms,

102 patient rooms for the medical, surgical and neurological intensive care units and shell space for the potential of 68 additional beds and other future services. The Tower would also have to blend and work with current buildings and patient care space.

Approach

The VUH Expansion and Transition Team was an interdisciplinary team responsible for the coordination of a number of committees, workgroups and task forces that contributed to the success of the Critical Care Tower project. At any given time, literally hundreds of nursing staff and other team members were involved in this process. Both internal and external experts were involved in the process. These teams:

- Identified “buckets” of work
- Identified relevant “stakeholders”
- Developed a timeline for all processes and work
- Coordinated the work groups and the timeline
- Served as the oversight group for communication
- Monitored the budget vs. actual cost
- Collated and evaluated feedback to support decision-making
- Coordinated work of internal experts and outside consultants

The direct care staffs were involved in every decision that was made:

- “Testing” days were held where patient care items were brought into the Medical Center and nursing staff were able to try them out and provide feedback, such as beds, over bed tables, chairs, etc.
- Each unit picked their own colors, designs for furniture, etc.
- They picked their computer systems (see below)
- Participated with Terrell Smith, RN, MSN Director, Patient Centered Care, to design the family space in the room and the waiting areas
- Designed “day in the life” practice/education sessions
- Designed mock “move-in” day

- Many others

Table NK 9 EO – 2: Project Team: This is a sample of VUH Expansion and Transition Teams Leaders

Team Member	Credentials	Role on Team	Area
Charlotte Chaney		Leader	VUH Associate Hospital Administrator
Cynthia Facemire		Leader	Director, VUH Expansion and Transition
Barbara Meriweather	RN, MBA	Leader	Senior Associate, Expansion and Transition
Barbara Sanders	RN, BSN	Leader	Senior Associate, Expansion and Transition
Cathy Rogers Cross			Administrative Manager
Brent Lemonds	RN, MHA	Leader, Operations Planning	Adult Emergency Services
Lenys Biga	RN, MSN	Leader, Patient Move and Advocacy	VUH Hospital Administrator
Devin Carr	RN, MSN	Leader, Education and Orientation	Administrative Director
George DeLong		Leader, Occupancy Readiness	Associate Hospital Director
Nancye Feistritzer	RN, MSN	Leader, Perioperative	Associate Hospital

New Knowledge, Innovations and Improvements
Innovation (9 EO)

		Services	Director
Thomas Naslund	M.D.	Leader, Medical Staff Readiness	Surgery Chair
Terrell Smith	RN, MSN	Leader, Patient/Family input	Director, Patient/Family Centered Care
Ashley Staniewski	RN, MSN	Leader, Day in the Life	Assistant Manager, SICU
Marsha Kedigh	RN, MSN	Co-Leader, Mock move and move	VUH Admissions
Jodie Thomas	RN, MSN, CCRN	Leaders, Neuro ICU Team	VHVI Cardiology
Ferrol Thomas	RN, MSN		Neuroscience
Julie Foss	RN, MSN, NE-BC	Leaders, MICU Team	MICU
Kara Gordon	RN, MSN		
Mike Daly	RN, MSN	Leaders, SICU Team	SICU
Ashley Staniewski	RN, MSN		
Richard Benoit	RN, MSN (PhD candidate)		

Outcomes

The Critical Care Tower was opened on schedule (November, 2009) and within budget. The actual transfer of patients from the old to the new units was accomplished in less than 6 hours, which indicates the transition plans were appropriate for "move day". Below are a sample of the improvements made to the critical care environment – improvements that occurred as a result of the input from the direct care staff from the units.

- Enlarged patient rooms (320 square feet, more than 200 square feet larger than existing rooms) with full baths

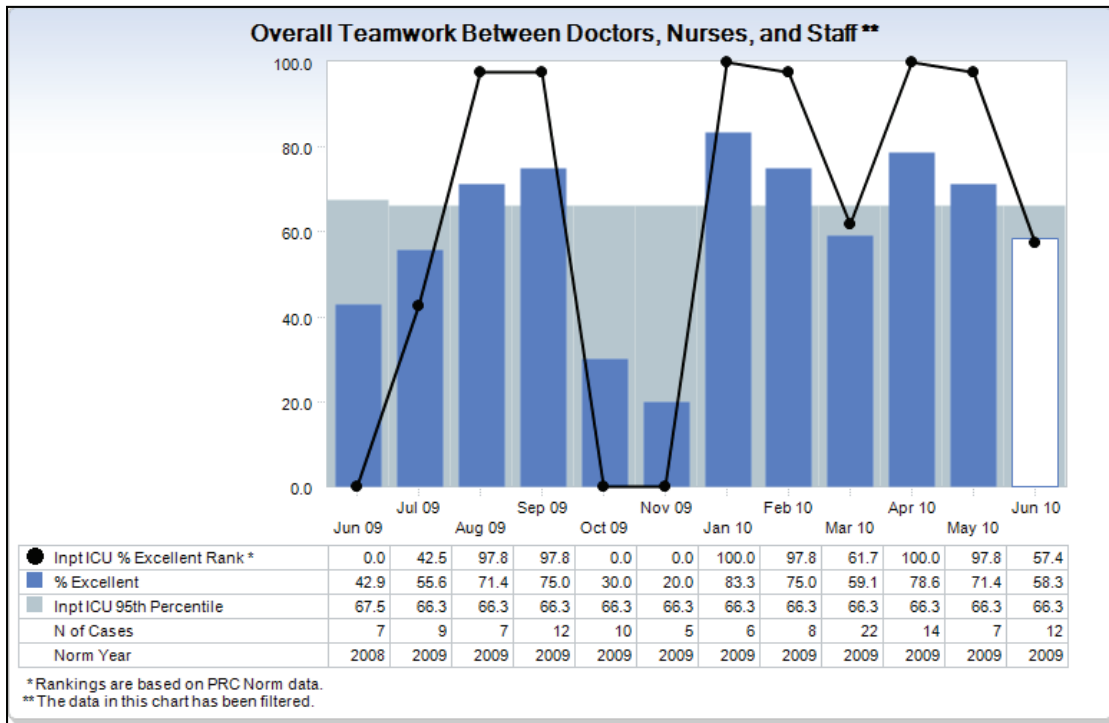
- Patient rooms have an innovative layout that supports the needs of the patient, family and healthcare team by three different zones
- Family zone has a sleeper sofa, recliner and sofa bed and internet capabilities
- Every room has a computer for documentation
- ICU Smart Beds in the patient zone with enhanced functions and safety features
- Dialysis hook-up in every room
- Blood gas lab and radiology room with digital radiography on each unit
- Alcoves between every 2 rooms for the staff with computer and physiological monitor so staff can perform documentation while observing patients through windows
- 3 rooms per floor are specially equipped for bariatric patients and each room's ceiling is capable of adding more bariatric lifts if needed
- Laundry services for families
- Two waiting areas for families on each floor, quiet and active (TV)
- Quiet rooms for staff

The new Critical Care Tower space would not be as staff and patient/family friendly had it not been for the inclusion of the direct care staff in the design of space, contents and technology.

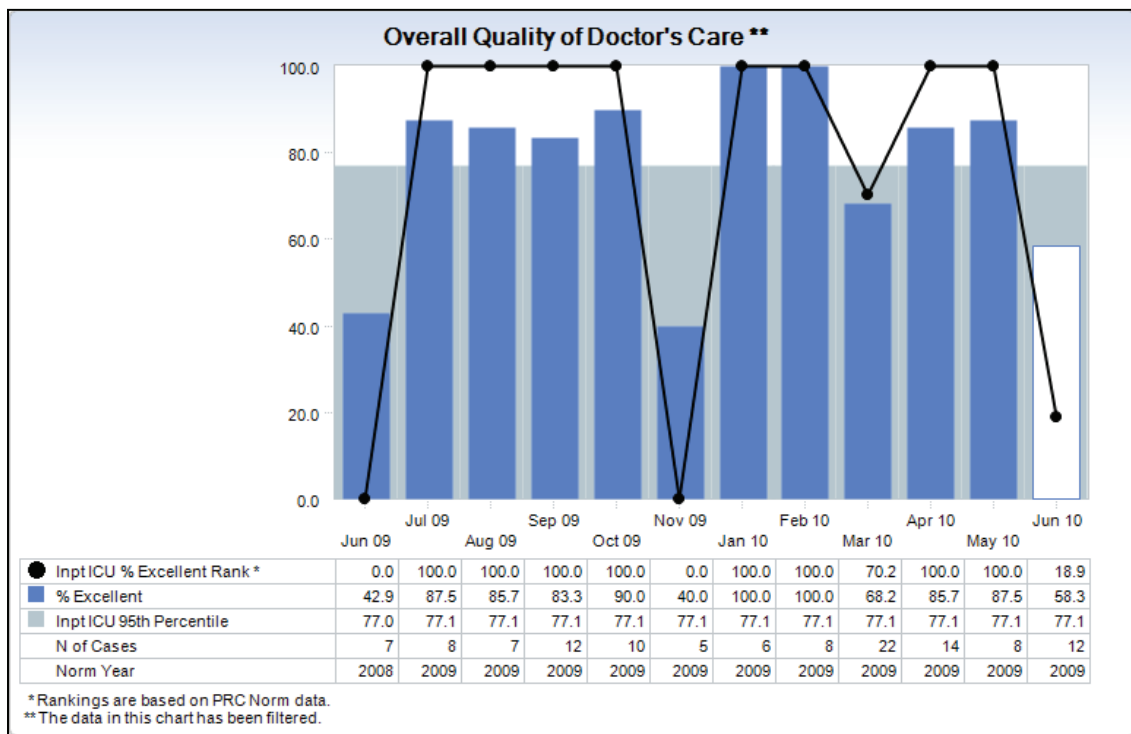
We saw patient/family satisfaction improved in the first quarter after the move to the CCT. For example, teamwork between nurses and physicians and overall quality of care in the SICU showed an upturn in the 1st quarter of 2010 after the move Nov. 11, 2009 (Graphs below)

See Graph below.

Graph NK 9 EO – 2: Satisfaction with Teamwork in SICU



Graph NK 9 EO – 3: Satisfaction with Overall Care in SICU



VUH Expansion: Opening the Critical Care Tower

Part 2: Nurses Involvement in the Selecting of Information Systems

Background/Purpose

Relocations and expansion of 3 intensive care units (MICU, SICU, and NeuroICU) created a need for an increased number of existing clinical workstations. Nursing informaticists was involved in the preparation of the 3 intensive care units to the Critical Care Tower by testing hardware, supporting practice day (“Day in the Life”), and supporting the move itself (“Move in Day”).

Approach

The technology in the Critical Care Tower required testing, planning, and support to ensure clinical applications used would support patient care. Three major initiatives were launched to prepare for the move into the Critical Care Tower.

1. Testing hardware and clinical applications

Working alongside Clinical Workstation builders and IT professionals, CAPS representatives formulated testing plans for each major clinical workstation and peripherals associated with it. Technical issues were logged through an incident management process that tracked work and resolution of technical fixes completed by appropriate informatics groups.

2. “Day in the Life”

An exercise was orchestrated by clinical staff that incorporated various departments and ancillaries that would directly or indirectly be involved in patient care. This exercise tested systems, workflows, response times of information systems and resources available. Ten scenarios were created (3 for each ICU, 1 in the main atrium) that would mimic real life emergencies. CAPS representatives for those units were involved to ensure that information systems were up and running and to help participants navigate through the designated scenarios. Issues were identified after the exercises and forwarded onto the appropriate parties for troubleshooting and evaluation.

3. “Move In Day”

On move day, embedded clinical applications specialists (CAPS) and Systems Support representatives provided on-site support during the transfer of patients to the new ICUs. An Informatics Command Center (IRC) was established to

- monitor Service Manager (Help Desk) for potential informatics related issues
- coordinate response with appropriate support groups as necessary
- liaison with VUH-Emergency Operations Center (EOC) for the Critical Care Tower
- provide and receive status updates
- follow up on issues reported by VUH Command Center and coordinate responses to these issues (see CCT IRC Subplan Activity Plan)

Measures of success for Systems Support Services included (1) having appropriate and operational clinical application systems in each ICU by the completion of the move and (2) staff encountering minimal (less than 5/day) issues related to the clinical application system.

Table NK 9 EO – 3: Participants

Team Member	Credentials	Role on Team	Area
Sara Seaman,	RN, BSN	Team member	CAPS Systems Support Neuro ICU
Lillian McGehee	RN, MSN	Team member	CAPS, system Support SICU
Tom Mack	RN. BSN	Team member	CAPS, System Support MICU
Sara Winters	RN, BSN	Team Leader	Clinical Application Specilaist, Systems Support

Outcomes

All 3 ICUs completed their transfer of all patients to the new CCT, 1 hour and 30 minutes ahead of schedule without major incidents to the clinical application systems involved. As a result, the IRC was able shorten its schedule and reallocate resources to other projects. Systems Support did maintain around the clock coverage for five days. Issues reported were minimal (less than 5/day) and were resolved or channeled to appropriate parties in 1-2 weeks. Thus, with the support from Systems Support Services and input from the nurses who would be the end users, the move to the CCT was highly successful.

Relocation of the Adolescent Medicine Clinic to One Hundred Oaks (OHO)

Background/Purpose

The Doctors' Office Tower is crowded. Adolescent Medicine was originally planned to occupy the 10th floor, but capital had not been released to build that space. Adolescent Medicine was fitted into 8th floor with Primary and Acute care originally as a temporary measure five years ago, but space has become more and more limited as services on 8th floor have grown. Strategic space planning for 10th floor now indicates that other clinics/specialties are priority for that space. Adolescent Medicine could be moved in its entirety to an off-site location. The purpose of this project was to successfully move the DOT clinic from MCJCHV to an off-site location, OHO.

Approach

An interdisciplinary committee was formed in 2007 to begin to plan for the FY2009 move. All members of the committee had a voice in the design optimal clinic space and clinic flow ideas. The architects worked with the direct care staff in all their discussions and decisions.

Four initial programming meetings were held to set direction. After the programming document was approved by all members of the committee, work began with the architects at Gresham Smith, the Vanderbilt Space and Facilities architects, Interior Design Services for furniture, and Balfour Resource Group who coordinates purchasing of all equipment. Nurses were involved in initial programming, actual layout of the clinic, and selection of furniture and equipment.

- Nursing requested a bathroom be put in the gynecology room so that the girls no longer have to clutch a gown and go down the hall

- Nursing requested a shelf to put hygiene products on in each bathroom because of hypersensitivity (age appropriate) regarding personal needs...didn't like having to ask the nurse.
- Nursing requested a window be put in the medication room which is located across from the patient check in area. They wanted the ability to be able to respond to triage needs even when they were away from the visibility at the nurse station
- Nursing requested an ice/water machine and nutrition refrigerator be placed in med room since oral meds need fluid and sometimes food in the stomach to give appropriately. This streamlined care.
- The medication room was also built big enough to accommodate preparation of medications without interruptions from other members of the HCT. This amount of space was not something available in their previous location.

Table NK 9 EO – 4: Participants

Team Member	Credentials	Role on Team	Area
Vicki Smith	Manager	Project leader	Adolescent Clinic
Cynthia Biggers	Manager	Team member	Adolescent Clinic
Janice Overall	LPN	Team member	Adolescent Clinic
Mary Carter	RN	Team member	Adolescent Clinic
Daphne Patton	Medical Assistant	Team member	Adolescent Clinic
Judith Pendergrass	RD	Team member	Adolescent Clinic
Lina Roberts	SW	Team member	Adolescent Clinic
Steve Stenhouse		Team member	Space & planning
Karin Smith	AIA	Planning	VUMC Architect
Christopher Lee		Team member	Pediatric Outpatient
David Lopez		Programming	

New Knowledge, Innovations and Improvements
Innovation (9 EO)

		coordinator	
Steve Vener		Architect	Gresham Smith

Outcomes/Impact

The new clinic opened successfully on November 9, 2009. The physicians, providers, ancillary team members, and nursing staff can work efficiently and effectively in the new space. Subjective input from patients and parents is very positive. Staff are pleased with the flow. Nurses are pleased with the improved nurses station, addition of designated medication/nourishment rooms, and efficient Point of Care testing room. There are more exam rooms and more patient counseling rooms, which improves flow. There are designated patient intake/vital sign spaces which affords more privacy for patients. Physicians are pleased with expanded in-clinic provider work space for documenting and student/resident teaching.

The Adolescent Clinic nurses tell us these primary care patients feel like this is their *own clinic...* "they are not seen in a space with small babies crying and toddlers running around". The cycle time in the clinic decreased by approximately 50% from pre- to post relocation to OHO.

Table NK 9 EO – 5: Adolescent Clinic Cycle Time

FY	Quarter	Cycle Time in hours:minutes
09	Q1	1:26
	Q2	1:20
	Q3	1:23
	Q4	1:48
10	Q1	No data
	Q2	1:28
	Q3	No data
	Q4	0"56