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EP1

Professional Practice Model

EP1: Clinical Nurses are involved in the development, implementation, and evaluation of the professional practice model.

- Redesignating applicants: Provide a description, with supporting evidence, of the ongoing evaluation of the nursing professional practice model and how clinical nurses are involved.

Ongoing Evaluation of the Nursing Professional Practice Model and How Clinical Nurses are Involved

There is ongoing evaluation of Vanderbilt Nursing's Professional Practice Model (PPM) of patient/family centered care both at the organizational level and at all entity levels. The current schematic of the PPM and its description are included in Organizational Overview 8.

One of the more formal approaches to the evaluation of the PPM is the annual review of the model along with the Nursing Strategic Plan (in Organizational Overview 3) across the organization. The Nursing Strategic Plan and the PPM are reviewed annually by several committees and groups throughout the organization. These reviews occur prior to the beginning of budget preparation to support changes in the budget related to staffing models, etc. Included in this November 2015 review were the four entity specific nursing staff councils (NSC), which are chaired by clinical nurses; Vanderbilt University Hospital (VUH), Monroe Carell Jr. Children's Hospital at Vanderbilt (MCJCHV), Vanderbilt Psychiatric Hospital (VPH) and The Clinics. In addition, Marilyn Dubree, MSN, RN, NE-BC, Executive Chief Nursing Officer, hosts a monthly "Coffee with Marilyn" group. The most recent group (November 2015) was comprised of clinical staff and the topic was the evaluation of the PPM.

In each of these evaluations and discussions we used the same format for clinical staff involvement and feedback. As the clinical staff discussed the PPM based on their current practice in their respective areas, they expressed confidence that the model continues to depict and support their clinical practice. The VPH nursing staff council did however make suggestions for changes to the "wording" that accompanies the PPM, meant as a concise explanation. Below is the identified information that will be evaluated and potentially re-worded.

The Nursing Professional Practice Model has 4 Primary Components

1. *Our interdisciplinary team surrounds the patient/family to provide evidence based care. Our commitment extends to those in the community through support and outreach programs.*
2. *Our focus is to provide safe, quality care based on evidence from all disciplines and the measure of outcomes.*

3. *We bring professionalism to our work through VPNPP and certification and continuing education. Our shared governance structure gives nurses a voice at the local and organizational level through our committees/councils.*
4. *Integrated technology helps us provide coordinated care and communicate with each other as well as our patients.*

Our PPM is congruent with and supported by the 5 Pillars of Vanderbilt as an organization. These pillars serve as the foundation for our nursing strategic goals.

The VPH NSC believes that the information is not comprehensive and does not express the full measure of our PPM. EP1-1 VPH NSC November 2015 Minutes & Attendance Agreement with the VPH NSC for next steps on this concern included: continue gathering feedback from the designated groups and after completed, VPH staff council clinical staff will take a lead with organization wide representation in updating the PPM explanation based on all the feedback. This will also coincide with the review and subsequent updating of the Nursing Strategic Plan. EP1-2 VUH NSC November 2015 Minutes & Attendance; EP1-3 VMG NSC November 2015 Minutes & Attendance; EP1-4 Copy of MCJCHV NSC November 2015 Minutes/attendance

Shared Governance and Nursing Bylaws Convention

Our nursing bylaws are an important part of the professional practice of nursing at Vanderbilt and the heart of our Shared Governance structure. Our biannual Nursing Bylaws conventions have representation from across the Medical Center with all levels of nursing staff serving as delegates. The largest contingency is comprised of our clinical staff. At the last Bylaws Convention in November of 2014, we had approximately 100 clinical nurses present. In addition, several clinical staff nurses serve on the Bylaws committee. The committee works throughout the year in careful review of the bylaws and take suggestions and motions for changes to the Nursing Bylaws. Examples of the changes the nurses voted on at the Nursing Bylaws convention are listed below. These changes serve to strengthen our Shared Governance structure which serves as a foundation for nursing practice at VUMC. EP1-5 November 2014 Nursing Bylaws Convention PowerPoint

- The role of the administrative directors for participation in individual unit/clinic boards was clarified. The administrative directors support and participate in the process and may attend meetings. Due to the number of meetings, the administrative directors cannot attend every meeting, however, do attend key meetings for key topics.
- The composition of the various boards and councils were reviewed and changes made to reflect current practices and title changes.
- The new role of Clinical Staff Leader was added to several boards and councils to reflect a new level of representation.
- Updated processes for appointments, re-appointments and credentialing of our growing number of advanced practice nurses were adopted.

Patient Family as the Center of PPM

Throughout the year, various committees and councils address issues related to patient/family centered care. For example, VUH, MCJCHV and The Clinics each had

Patient/Family Advisory Councils. In response to strengthening the provision of patient/family centered care in the Psychiatric Hospital, a Patient/Family Advisory Council was established in the Psychiatric Hospital; the first of its kind in a psychiatric environment. Utilizing feedback from the VUH Patient/Family Council, we initiated quiet times in the adult hospital to better support sleep patterns. These are just a couple of examples.

EP2EO

Professional Practice Model

EP2EO: Clinical nurses are involved in the development, implementation, and evaluation of the professional practice model.

- Provide one example, with supporting evidence, of an improvement resulting from a change in clinical practice that occurred because of clinical nurses' involvement in the implementation or evaluation of the professional practice model. Supporting evidence must be submitted in the form of a graph with a data table that clearly displays the data.

Background

Clinical nurses have ongoing opportunities to evaluate our Professional Practice Model (PPM) including unit board meetings, nursing staff council meetings, and several others. Another important time they look at the PPM is when they evaluate quality data and redesign care delivery. The following is an example by which Vanderbilt University Hospital (VUH) unit staff were able to focus on evidence to redesign care and keep the patient/family central to their work.

By July 2014, VUH falls with harm had been increasing for several months. A three-unit fall prevention improvement pilot project kicked off that same month with the top three units that had opportunity for improvement.

After excellent results from the pilot project, staff and managers from other hospital units began asking to be part of this improvement work and the fall prevention improvement project became a house-wide initiative in May 2015.

Goal Statement

Decrease the rate of falls with harm per 1,000 patient days in the adult hospital (VUH).

Description of the Intervention

July 2014: In response to the evidence of having some form of leadership “close” to the clinical staff, the Clinical Staff Leader (CSL) model was added to the care delivery system and was initiated in several units in VUH. In addition to the evidence domain part of our PPM, the CSL model was also based on the Professional Development/Leader Domain to help develop clinical staff into future leaders and again providing role models for the clinical staff on leadership at the bedside. As these new CSLs began their roles on the units they were also overseeing many of the unit based quality initiatives. In addition to becoming the unit experts on fall prevention, pressure ulcer prevention, etc., they also became one of the unit resources for reinforcing and supporting safe, evidence based prevention practices at the bedside. In conjunction with clinical nurse input, the CSL revised unit practice patterns to create a safer delivery of care for their patients.

July – December 2014: Three unit fall prevention improvement pilot projects, that included the following interventions, researched and developed by clinical nurses and shift leaders, were implemented:

- Purposeful rounding/targeted toileting on all patients as appropriate
- Environmental safety/use of bed/chair alarms
- Initiating shift safety huddles
- Keeping doors open
- Moving patients closer to nursing station with more regularity
- Revising patient/family education and engagement
- Visual cues of high fall risk patients with yellow socks, yellow armband, and door sign
- Shift leader rounding
- Weekly fall prevention audit rounds with real-time coaching, mentoring, and recognition
- Celebrating success as a team and with individual recognition

With the pilots completed, the PPM shared governance structure approved the policy and plans for house wide implementation.

House-wide implementation included each unit following the same pattern as the first three units. They conducted a review of their data, performed gap analysis between policy and practice, and took these results to their unit board meetings, staff meetings, and quality committees to develop plans for improvement in their practice model with their bedside staff.

- February 2015: Units installed performance boards in public areas for quality data tracking.
- March 2015: Staff nurse fall prevention leaders requested to increase the availability and usage of bed alarms for patients at highest risk of falling.
- May 2015: House-wide rollout of updated fall prevention practices with 100% of unit leadership teams attending a day long Quality, Safety, and Fall Prevention workshop with the entire day focused on principles of quality improvement and fall prevention, specifically. Stemming from this kick-off, unit staff began:
    - Implementing the evidence based practices from the pilot project.
    - Participating in presenting fall event case reviews to peers.
    - Re-education on the use of the Morse scale for fall risk assessment and planning patient specific interventions.
    - Education for multidiscipline partners in care on how to scan a patient's room before exiting to leave them with a safe environment.
        - Staff developed a 'Take 2 to Leave" campaign that was presented to more than twenty groups that included more than 250 multidiscipline team members. The VUH Fall Prevention Policy was updated to include these evidence based practices, and top performers are acting as peer experts to help continue improvement throughout VUH. All VUH inpatient units created a fall prevention action plan and provide updates on progress

regularly to their peers and leaders in the monthly nursing leadership board meetings.

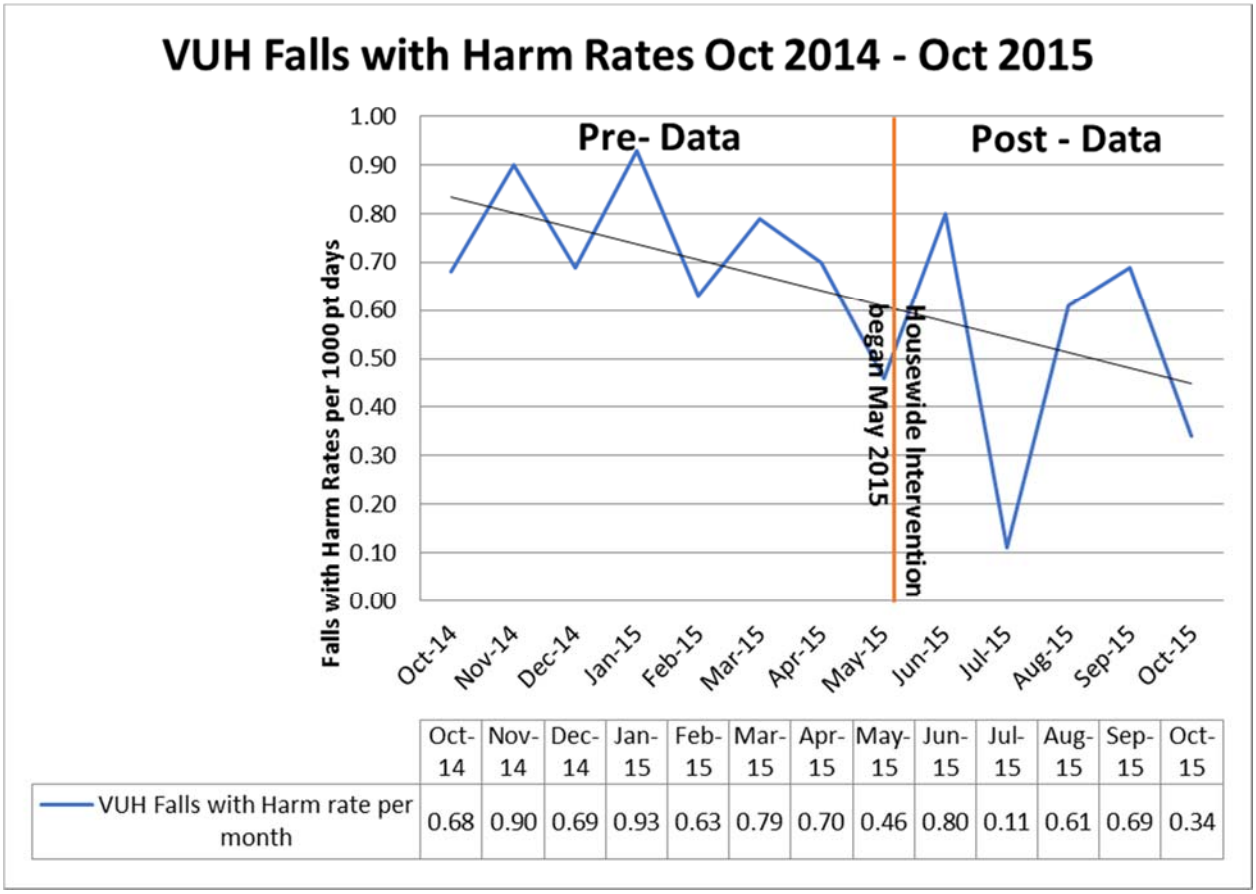
Participants

Name	Credentials	Role in organization	Practice Area	Role
Sonya Moore	MSN, RN, CPPS	Manager, Nursing Quality VUH	VUH	Facilitator
Amanda Matthaei	BSN, RN	Clinical Nurse	6N Neuro Med-Surg	6N Falls Committee Chair
Jennifer Reaves	RN	Clinical Nurse	6N Neuro Med-Surg	6N Falls Committee Co-Chair
Kelly Allison Farris	BSN, RN	Clinical Staff Leader	6N Neuro Med-Surg	Falls Champion
Patricia Brownell	RN	Clinical Staff Leader	6N Neuro Med-Surg	Member
Catherine E. Garber	RN	Clinical Staff Leader	6N Neuro Med-Surg	Member
Nicole Muoio	RN	Clinical Staff Leader	6N Neuro Med-Surg	Member
Ali Grubbs	MSN, RN	Nurse Manager	6N Neuro Med-Surg	Sponsor
Emily Hartman	BSN, RN	Clinical Nurse	7RW –Geriatrics	Fall Committee Chair
Christina Paulson	BSN,RN	Clinical Staff Leader	7RW – Geriatrics	Member
Diane DiCarlo	RN	Clinical Nurse	7RW – Geriatrics	Member
Joy Fidel	BSN, RN	Clinical Nurse	7RW – Geriatrics	Member
Christine Anderson	LPN	Clinical Nurse	7RW – Geriatrics	Member
Michele Hasselblad	MSN, RN, NE-BC	Associate Chief Nursing Officer, Medicine PCC	Nursing Administration	Sponsor
Chelsie Dunn	PT, DPT	Physical Therapist	Rehab Services	Member
Debbie Harrell	MS, DPh	Pharmacist	Pharmacy	Member
Julia Jones	MS/OTRL	Occupational Therapist	Rehab Services	Member
Nancy Rudge	BSN, RN	Associate Director,	Health IT	Member

		Patient Care Products		
Erin Matthews	BSN, RN	Clinical Nurse	8T3 MICU	Member

Outcomes

Following the change in standards of care house-wide throughout VUH in May 2015, the falls with harm rate per 1,000 patient days has continued to decrease.



Note

The activities preceding May 2015 were in preparation for the roll-out of the house-wide changes based on evidence that would lead to the decrease of the house wide pressure ulcer rate. May 2015 was the 100% house-wide roll out of the new fall prevention practices (a fall prevention bundle based on evidence). No house-wide activities occurred before May 2015.

The following interventions were implemented house wide:

- Installment of performance boards in public areas for quality data tracking on each unit.
- Increased availability of bed alarms for patients at highest risk of falling, as requested by staff nurse fall prevention leaders.

- House-wide rollout of updated fall prevention practices with 100% of unit leadership teams attending a day long Quality, Safety, and Fall Prevention workshop with the entire day focused on principles of quality improvement and fall prevention, specifically. Stemming from this kick-off, unit staff began:
    - Implementing the evidence based practices from the pilot project.
    - Participating in presenting fall event case reviews to peers.
    - Re-education on the use of the Morse scale for fall risk assessment and planning patient specific interventions.
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        - Staff developed a 'Take 2 to Leave" campaign that was presented to more than twenty groups that included more than 250 multidiscipline team members. The VUH Fall Prevention Policy was updated to include these evidence based practices, and top performers are acting as peer experts to help continue improvement throughout VUH. All VUH inpatient units created a fall prevention action plan and provide updates on progress regularly to their peers and leaders in the monthly nursing leadership board meetings.

EP4

Care Delivery System(s)

EP4: Nurses create partnerships with patients and families to establish goals and plans for delivery of patient-centered care.

- Provide one example, with supporting evidence, of nurses partnering with patients and families to develop and individualized plan of care based on the unique needs of the patient.
  AND
- Provide one example, with supporting evidence, of nurses partnering with patients and families to improve systems of care at the unit, service line, or organizational level.

Example a

Monroe Carell Jr. Children's Hospital at Vanderbilt (MCJCHV) developed an individualized plan of care based on a family's cultural/religious beliefs

In the spring of 2014, the health care team faced a challenging situation in regards to the provision of care to "Miss L." and her mother. In addition to a clinical picture that perplexed an impressive group of physicians and nurses, Miss L. also had a complex social situation involving her mother, who was non-English speaking and her cultural/religious extremism. For quite a few weeks, it was unknown what the eventual outcome would be for this young lady. In the meantime, the entire team needed to pull together in order to meet both the patient's physical needs and the mother's spiritual needs.

At Monroe Carell Jr. Children's Hospital at Vanderbilt, our culture is defined by our FOCUS values – **F**amily centered care, **O**ne team, **C**ontinuous improvement, **U**nique environment and **S**ervice excellence. During the months of Miss L.'s hospitalization, and thanks to the organization's commitment to shared decision-making, her health care team was both inspired and empowered to create the environment which allowed this patient and her mother to receive the care and support exactly as stated in our FOCUS values.

Relatively early in Miss L.'s hospitalization her mother independently, and unbeknownst to unit staff, planned a spiritual event in which family and friends came to the patient's room and engaged in a prayer service for her. The prayer service was like nothing the staff had ever witnessed before, including loud chanting, cries for healing, anointing the patient with unknown substance(s) and the prevention of staff entering the patient room. It was disruptive to other patients/families on the unit and extremely concerning to members of the health care team.

Healthcare Team

When reports of the event reached the nursing unit's leadership team and other health care team members, it became clearly evident that we had an unusual situation

developing and it would be important to come together to share information and combine strategies for care. We initiated weekly care team meetings and invited all disciplines involved in Miss L.'s care, including physicians from multiple specialty services, nursing staff, chaplain, child life, legal counsel, ethics committee, care team and interpretive services. At these meetings, the complexities of Miss L.'s physical care as well as the psychosocial needs of patient and mother were discussed. Coming together allowed each discipline to share their observations, conversations with the patient's mother and research of the family's spiritual beliefs and practices.

The Plan

One specific request, stated by the patient's mother to a chaplain intern, was that she would like to be able to "pray with authority" for her child – to pray in a manner that is consistent with her faith and beliefs. When relayed to the health care team, the initial reaction was one of doubt that this could occur. Knowing the circumstances of the mother's first attempt of "prayer with authority," the group wasn't sure that this was a request we could approve. Still, it was agreed that the chaplain and nursing manager would utilize interpretive services and have a detailed discussion with the patient's mother to see what "praying with authority" would require. The discussion took place on the same day and the mother's wishes were made known to the health care team – a place where 5-8 friends could gather around the patient for 3-4 hours and pray in loud voices. Ideally, the mother would like for this to happen every 1-2 days.

The nurse manager shared this information with the hospital's Chief Nursing Officer, Chief of Staff and attending physician. Permission was granted for the "prayer with authority" service, with some modifications to the mother's request. During a second meeting with the patient's mother, the guidelines for the prayer service were agreed upon: one service per week (1½ - 2 hours duration) including up to five participants and the patient could be moved from her room to a location that was separate from other inpatient rooms as long as there was a nurse present to monitor the patient and intervene if the patient's physical status changed. All members of the health care team were informed that we would proceed with planning a prayer service for the family.

Preparation for the service included consulting with a scheduler for a day and time in which space was available for the service, notification of the emergency department in the event the patient's condition deteriorated during the service and assistance was needed, notification of the police department and request for assistance to keep the space clear of visitors, gathering of supplies/equipment that may be needed for the patient during time spent out of her room, identification of nursing staff who would be in the room to quietly and unobtrusively monitor the patient, identification of physician staff who would be in house and readily available if needed for change in physical status, and the development of distribution/call list to keep all stakeholders informed before, during and after the prayer service.

The day arrived. The patient's mother had her friends arrive at the designated time, the nursing staff bathed the patient and washed and styled her hair, and the nurse manager gathered the supplies and coordinated movement of friends to the designated location

and movement of the patient to location. The nurse manager also confirmation the plan for the prayer service (i.e. duration, # of participants, nurse's role) with the patient's mother. The nurse manager and the monitoring nurse stepped aside and the prayer service commenced. The patient tolerated the service without a change in status. The patient's mother and friends were able to pray in the manner in which they believed and no other patients or visitors were disturbed.

A service was conducted the following week, in the same location but for a bit longer than the original service. Additional supplies were added based on needs identified during the previous service. Again, the service was completed without changes in patient condition or disruption of services to others. A third service was scheduled the following week and was then cancelled per the mother's request. Her daughter had begun to show signs of improvement and the health care team had made arrangements for someone to sit with the patient while her mother returned to her home church for prayer.

Though this part of Miss L.'s story is told within only two pages, the entire story evolved over many weeks on an acute care pod at MCJCHV, with many, many members of the health care team engaged in this young lady's care and recovery. It was a fabulous demonstration of multiple disciplines putting the pieces of a puzzle together and making the plan come together.

Happily, Miss L.'s story has a very happy ending. EP4a-1 Medical Record Notes- Planning and Progress; EP4a-2 Email re: Prayer Service 3.15.14- Nurse Mgr and Chief of Staff; EP4a-3 Email of Agreement re: Prayer Service Plan 4.3.14; EP4a-4 Email re: Police Support 4.4.14- Nurse Mgr and VUPD; EP4a-5 Email re Team Notice of 3rd Prayer Service

Example b

Vanderbilt Psychiatric Hospital (VPH) successfully partners with the Patient/Family Advisory Council to meet an organizational goal of Developing a Family Handbook that addresses patient/family need

Concern about information and communication becomes an organizational goal for VPH

A recurring concern expressed by the patients/families in all areas of the psychiatric hospital was the lack of information and communication that families received regarding the care of their loved ones. This was showing up on their patient satisfaction information and in conversation with the clinical staff and nursing leadership on the units. In addition, this feedback was also coming from the Vanderbilt Behavioral Health Patient and Family Advisor Board (VBH-PFAB). VPH determined to partner with them in the development of an information and communication tool in the form of a notebook.

The Vanderbilt Behavioral Health Patient and Family Advisory Board developed as one of its priority goals in August 2013 to work on a family handbook. The VBH-PFAB

communicated that one of the concerns was the communication that families received in regards to the care of their loved ones. They felt that they did not understand the process of hospitalization and thus were not prepared to work with the treatment team during the patients' hospital stay. There was also concern that they felt ill prepared at times after the patient was discharged to ensure that they could support their loved one after they left the hospital. They set a goal for the creation of a handbook that would provide families with information about the hospitalization process, contact information on how to get in touch with the treatment team, a list of questions that they could ask the providers taking care of their loved one, and note pages were they can document critical information so it would not get lost.

The Vanderbilt Behavioral Health Patient and Family Advisory Board actively partnered with the nursing staff in the development of the handbook. The Chief Nursing Officer (CNO) is an active member on the VBH-PFAB. The CNO served as the liaison between the VBH-PFAB and the clinical nursing staff in the development of the handbook. The CNO facilitated nursing staff and other disciplines attending the VBH-PFAB meetings to hear family members' concerns and assist in providing feedback about the handbook. The CNO also gave the Nursing Professional Practice Board at Vanderbilt Behavioral Health (VBH) a copy of the handbook for review and to allow feedback on recommendations for change. These recommendations were brought back to the VBH-PFAB and discussed and incorporated into the final edit. The VBH-PFAB family handbook was finalized in August 2015 and copies are distributed to every family on all inpatient units. EP4b-1 Copy of the Family Handbook; EP4b-2 Meeting Minutes VBH-PFAB 8.22.13; EP4b-3 Meeting Minutes VBH-PFAB 9.18.14; EP4b-4 Meeting Minutes VBH-PFAB 1.27.15; EP4b-5 Meeting Minutes VBH-PFAB 4.28.15

The Chief Nursing Officer for Vanderbilt Behavioral Health (VBH) during the development of the Patient/Family Handbook was Avni Cirpili, DNS, RN, NEA-BC. Avni left Vanderbilt in January 2016 and during a short overlap, beginning December 7, 2015, Jennifer Barut, PhD(c), RN-BC assumed the interim CNO role and remains in that role to date.

In the original submission of the minutes for the Patient Family Advisory Board (VBH-PFAB), Avni is in attendance as shown on supporting documents: *(Refer to Original Evidence EP4b-2 Meeting Minutes VBH-PFAB 8.22.2013; Refer to Original Evidence EP4b-3 Meeting Minutes VBH-PFAB 9.18.2014; Refer to Original Evidence EP4b-4 Meeting Minutes VBH-PFAB 1.27.2015 [attending this meeting is also Renee Boggs MSN, RN Quality Consultant for VBH]; Refer to Original Evidence EPb-5 Meeting Minutes VBH-PFAB 4.28.2015)*.

New Evidence- Nurse Partnership with Patient/Families

New evidence being submitted: Meeting Minutes from VBH-PFAB March 23, 2013 showing Avni (CNO) and Deborah Evans, RN2 Clinical Nurse Vanderbilt Psychiatric Hospital in attendance. *(New Evidence EP4b-1 Meeting Minutes VBH-PFAB 3.28.2013)* Additional new evidence: Meeting Minutes from the January 14, 2014 Vanderbilt

Psychiatric Hospital Nursing Staff Council where Avni addressed the plan for the development of the new Family Handbook. *(New Evidence EP4b-2 VPH NSC Meeting Minutes January 2014)*

See request from September 19, 2014 for clinical nurse volunteers to work on this project. *(New Evidence EP4b-3 Email Request to Clinical Nurses)*

Improvement in System of Care at the Service Line Level (Vanderbilt Behavioral Health)

The improvement in the entirety of the Psychiatric Hospital is the actual use of the newly developed comprehensive patient/family handbook for admission, hospitalization and discharge. *(Refer to Original Evidence EP4b-1 Copy of the Family Handbook)* As stated before, patients/families expressed their frustration at the gap in information provided to them about the hospital experience. Having this new booklet prepared the patients/families in a different way and set them up to have a positive experience which promotes wellness. Prior to this new booklet, the units used a two-page copied sheet that was hard to read and provided limited information. *(New Evidence EP4b-4 Former VPH Orientation Sheets)*

The CNO (Avni) served as the conduit for the work on the revision of the Patient/Family Handbook with the patients/families and the clinical staff. This idea was driven by the patients/families due to their reported lack of comfort in the information they received about the hospitalization process. This lack of comfort created anxiety. This partnership gave both groups the opportunity to address any concerns and clarify the admission, treatment and discharge processes, which would decrease anxiety and lead to a better hospitalization and treatment process.

EP5

Care Delivery System(s)

EP5: Nurses are involved in interprofessional collaborative practice within the care delivery system to ensure care coordination and continuity of care

- Provide two examples, with supporting evidence, of nurses' involvement in interprofessional collaborative practice that ensures care coordination and continuity of care.

Example a

Homeward Bound

Monroe Carell Jr. Children's Hospital at Vanderbilt's (MCJCHV) Homeward Bound is a program that provides discharge teaching to parents of children who have complicated medical issues or will be discharged with medical devices. The classes currently offered are the *American Heart Association's Family and Friends CPR*, *Care After Heart Surgery*, *Tracheostomy Care, G-tube Care* and *Central Line Care*. The classes are scheduled regularly during the week and are held in the MCJCHV's Junior League Family Resource Center classroom.

The model for the Homeward Bound classes was originally developed on the pediatric cardiology unit. The clinical nurses identified challenges in providing discharge information to families in an effective, consistent manner. Obstacles such as patient acuity, caregiver availability, environmental distractions, and a lack of content experts would cause delays or inconsistent education being provided. On the day of discharge families may even receive a majority of their education in a hurried fashion to meet the compliance standards. Working with the bedside staff members to outline material, the nurse educator began a weekly class on the unit to cover information such as cardiopulmonary resuscitation (CPR), congestive heart failure, wound care, activity restrictions, pain management, and medication safety.

In September 2013, MCJCHV determined a need for a more comprehensive hospital-wide program and developed a plan for high risk patients who required significant education before being discharged. One specific patient population identified was patients with tracheostomies. Initially, nurses were going to educate families at the bedside. Notebooks and protocols were developed, and videos were made available to staff. However with an average of fifty newly placed tracheostomies each year, it was apparent that consistent education was going to be hard to achieve and this approach might not be in the best interest of the patient.

In October 2013, an interdisciplinary team comprised of nurses, educators, managers, respiratory therapists, and representatives from the Family Resource Center met. During that meeting the idea of developing a class for the tracheostomy population, modeled after the current cardiology classes, was discussed.

Nursing education took the lead and met with key stakeholders, such as physicians, to create standard guidelines for home care. Nursing leaders were then asked to support the program by taking on the cost of printing materials and providing educational supplies. Respiratory therapists were able to partner with the program to reinforce teaching at the bedside. In addition, home health nurses were surveyed to determine what knowledge gap was most consistently addressed after hospital discharge. The supply companies were contacted to ensure materials given to the families were similar to those used to teach skills in class. Finally, the Family Resource Center was able to determine ways to provide a protected educational environment and support the siblings while caregivers were in class.

Nursing education collected the resources being used to teach families about tracheostomy care and worked with the Patient Education Committee to incorporate the information gleaned from interdisciplinary meetings to create materials for the class. A booklet was developed to standardize the information given to all families of children with tracheostomies and to provide a methodical approach to learning. A "Journey Board" was also developed to help families track their progress in practicing skills and anticipating discharge. The materials were reviewed by the Patient Education Committee and the Family Advisory Committee to verify appropriate reading levels, content, and language translations. EP5a-1 Example of Journey Board

After the materials were developed, nursing education went on a "road show" to introduce this program to the hospital staff. Over several weeks, we met with eleven interprofessional teams to explain the purpose of Homeward Bound and familiarize them with the content and registration process for classes. EP5a-2 Roadshow Information

Working with the Family Resource Center, we were able to schedule a weekly tracheostomy class. Offering classes to families in this location on a regular basis would address several needs:

1. Families would be taught the concepts for each class in a consistent manner.
2. Families would be able to learn and practice skills on manikins before having to perform the skill on their child.
3. Classes could be offered at a consistent time and space away from patient room distractions.
4. Nurses would be able to plan ahead with the family to attend classes.
5. Nurses would be able to reinforce concepts at the bedside during the regular care of the patient.

In addition to the family benefits, the benefit for the nursing staff was significant as well. Instead of having to piece together which concepts families had already been taught to ensure information was covered, they now knew that all of the concepts had been introduced to the family. Nurses also knew families had some hands on experience by first practicing with a manikin and now could reinforce concepts at the bedside. Once a patient was discharged, the Vanderbilt Home Health team could then continue to

reinforce the concepts introduced to the families and use the same patient education resources for additional questions.

Additional benefits have included a reduction in manpower to provide high quality educational experiences. Multiple families can now attend the class offered weekly. We have also been able to coordinate with interpreter services to provide an interpreter for each class if necessary or host an additional class with several families who speak a common language. This opportunity has also provided families with a peer support component, which allowed families to share common stories, questions, and concerns during the class. EP5a-3 Meeting Minutes

Since *Tracheostomy Care* class began in June 2014, forty families have attended the class. Having a successful model, a similar process was used to develop materials for the cardiac discharge class, g-tube care class, and central line class. All of these classes are held in the Family Resource Center and provide a comfortable place for families preparing for discharge with a child with complex medical conditions.

Homeward Bound – Patient Application

A patient was born at 38 weeks gestation by C-section. Born with a large mass in the floor of her mouth, she had an obstructed airway at birth. Her airway was further compromised when the large mass began to bleed upon delivery, so she was immediately intubated at the outside hospital and transported to MCJCH at Vanderbilt. To maintain her airway, she required an emergency tracheostomy and was admitted to the neonatal intensive care unit (NICU).

The NICU nurses began interacting with this family very soon after admission to keep them updated on their baby's condition. Updates from the healthcare team allowed the patient's parents to understand the need for a tracheostomy and the important role they would play in caring for their baby. The NICU nurse scheduled the mother for the *Homeward Bound Tracheostomy Care* class when the baby was just eleven days old. The mom also participated in the *Homeward Bound CPR* class. The patient's mother was eager to learn and very engaged in the class.

After class, the Homeward Bound instructor consulted with the patient's nurse and gave her a progress sheet known as a *Journey Board.* This tool was used to communicate with the entire healthcare team including bedside nurses, respiratory therapists, case managers, social workers, and physicians to track the patient's mother's progress in learning the new skills necessary to care for the patient at home. Although the patient's father was not able to attend the traditional class due to work commitments, he was able to learn the skills necessary to care for the patient at the bedside. Utilizing class materials and hands on opportunities, the NICU nurses and respiratory therapists worked with the family to reinforce concepts taught in class.

In the NICU, the nurses participate in interprofessional team rounds. This was very important for this patient because of the nature of the mass in her mouth. One major goal during this time was to maintain the child's airway and control the bleeding from the

mass. These rounds included physicians, nutrition, speech therapy, social work, case management, respiratory therapy and the family.

During her hospitalization, it was determined that the mass also interfered with her ability to suck effectively and maintain sufficient oral intake. When the care team made the plan to place a gastrostomy tube, the nurses again referred the parents to the Homeward Bound program. This time they were registered for the *Gastrostomy Tube Care* class to learn how to meet their child's nutritional needs. The NICU nurses worked with the patient's case manager to set up a visit from the medical equipment company to teach them how to use the feeding pump and work with the family at the bedside to reinforce all of the concepts taught in class.

The mass was diagnosed as a fibrosarcoma; therefore, it would be necessary for the patient to have a Broviac placed and undergo chemotherapy and radiation therapy. The NICU nurses prepared the mother and baby for a transfer to a different level of care in the pediatric intensive care unit (PICU) where she could begin these therapies. The nurses in the PICU participated in interdisciplinary bedside rounds with the physicians, social work, case managers, respiratory therapy, and speech therapy. Reviewing documentation, the PICU was able to determine the educational information already given to the families and begin reinforcing that material.

The nurses also reached out to the Pediatric Oncology team to educate the mother about the chemotherapy regimen. As the baby stabilized, she was eventually transferred to the Pediatric Oncology unit where the parents received education based on the Infectious Disease team's protocol regarding the care of a Broviac catheter. The nursing team reinforced the techniques learned in Homeward Bound as the parents continued to practice caring for the child's tracheostomy and gastrostomy tubes. A collaborative approach was used as multiple medical teams addressed issues with the tracheostomy, gastrostomy tube and chemotherapy regimens.

As the child became more stable, the discharge plans, which began at admission, were activated. Arrangements were made for a home health nurse to visit and assess the child's status, reinforce teaching, and determine the patient's progress. The home health nurses, who collaborated on the development of the Homeward Bound material, were able to reiterate concepts the parents had learned in class. The baby was also followed by other members of the home health team including speech therapy and physical and occupational therapists. The patient was discharged at three months old. Since her first discharge, the patient has been followed by the Home Health team and Oncology Clinic staff. She has been readmitted for her chemotherapy each month, and at seven months old, she had the tumor resected from the floor of her mouth. On each admission, the nursing admission history generated referrals to nutrition, social work and child life for continuity of care and family support.

At this time the patient is nine months old and has finished her chemotherapy. She is growing and developing well. She is still followed by the home health agency for feeding and speech development and is being evaluated for possible decannulation of

the Broviac catheter. EP5a- 4 Interdisciplinary Medical Record shows tracking & team communication

Interdisciplinary Team Meetings
In order to coordinate the care of patients with new tracheostomies, a "super-user" team was developed. This team consists of physicians, nurse practitioners, nurse educators, nurse managers, respiratory therapists, case managers, social work and quality improvement. In the bi-weekly meetings, the nurse practitioner summarizes the status of each patient and then leads the discussion around clinical progress, need for education and coordination of services for each patient. In this patient's circumstance, there were several discussions regarding treatment and care due to the nature of the tumor in the floor of her mouth. EP5a-5 Tracheostomy Care Booklet

Continuity of Care
Vanderbilt is an extremely strong organization when it comes to interprofessional teamwork. As told in the story above, all team members were essential to the success of this child. In addition, the early interdisciplinary work of Homeward Bound and the use of the Journey Board support successful inpatient management and discharge follow-up. However, nursing case management is a key role that is critical to care coordination as children change services within the hospital and transition to home care and back to the clinics. As defined above, case management was critical in the management of this child. They helped coordinate with the bedside nurses to schedule the family for appropriate Homeward Bound classes and helped reinforce teaching with the family. There was also coordination between the multiple health care team members, including physicians from at least four different services, social work, nutrition, rehab services, etc., that was facilitated by the case manager. As the patient became more stable and approached discharge, the case manager coordinated services with Vanderbilt Home Care Services and a home medical equipment company to assure a smooth transition home and appropriate further reinforcement of the education the family had received in the hospital.

Refer to Original Submission and Evidence

- In October 2013 an interdisciplinary team comprised of nurses, educators, managers, respiratory therapists, and representatives from the Family Resource Center met. (Family Resource Center is comprised of non-nurse Child Life Specialists and program coordinators). ……. Physicians participated in establishing the guidelines for home care.

- *EP5a-1 Example of Journey Board* assisted families and staff to ensure that each family received the same standard process for learning to care for their child at home.

- *EP5a-2 Roadshow Information* was presented to 11 interprofessional groups in order to have the processes be seamless for the patients and families which

supports continuity of care.

- *EP5a-4 Interdisciplinary Medical Record* shows tracking and interdisciplinary team communication.

- *EP5a-5 Tracheostomy Care Booklet* supports a methodical approach to teaching/learning which supports continuity of care in that all members of the interdisciplinary team deliver the same content.

New Evidence

- *EP5a-1 Home Health Chart Note* that reflects the return demonstration that was requested at the time of discharge – continuity of care – as return demonstration to follow care booklet.

- *EP5a-2 APRN Documentation re: D/C* that reflects progress to discharge based upon Homeward Bound class participation and follow-up on educational milestones that were met prior to discharge.

- *EP5a-3 Case Manager Progress Note* that reflects the communication with Home Health regarding discharge follow-up needs. Part of this communication is the request for Home Health to provide support during the first tracheostomy change at home.

- *EP5a-4 APRN Charted Request* for the parents to attend the homeward bound classes. In addition the documentation shows that the attending physician signed off on the note.

- *EP5a-5 Physician Assessment and Plan* shows the attending physician's plan that is follow up to the education that was provided by the nurses with Homeward Bound.

Example b

Coordinated Community Care Prevents Readmissions
Background
As a tertiary referral center, Vanderbilt University Medical Center (VUMC) is well-known for its cutting-edge care for complicated disease processes. Vanderbilt's Comprehensive Care Center (VCCC) has treated over eight thousand patients and has

developed an environment where patients obtain quality, effective care in a safe, supportive, and compassionate setting. Collectively, VCCC's interprofessional team has decades of experience caring for HIV positive individuals. Current care is collaboratively delivered by a team of five infectious disease, human immunodeficiency virus (HIV) certified physicians, four nurse practitioners, a psychiatrist, a psychiatric mental health nurse practitioner, dietitian, registered nurses (RN) and RN case managers, licensed practical nurses (LPN), social workers, intake coordinators, referral specialist, and education and administrative staff.

RN case managers noted that many complex HIV patients were experiencing frequent hospital readmissions. For this unique population, common barriers post-hospitalization that predisposed patients to the frequent use of acute care services were noted. Contributing factors and barriers complicating care included: complex treatment regimens, multiple medications, timely acquisition of medications and access to services, adherence, transportation, housing barriers, and financial challenges. Consequently, nurse case managers, social workers and other VCCC team members identified several critical interventions. Beginning at the time of hospital admission, continuous communication, care coordination, and individualized discharge planning were pivotal to reducing hospital readmissions and potential enhancement of a patient's quality of life. The overall goal was to ensure and deliver ongoing care that was comprehensive yet individualized to each patient's needs.

Example

A patient with HIV/AIDS and multiple other co-morbidities was seen and evaluated at the VCCC with progressive worsening of lower extremity weakness. Although he had Medicare coverage, he did not have Part D and could not afford the co-pay associated with his medications. This resulted in the discontinuation of his anti-retroviral therapy medications for four months contributing to his progressive physical decline. Consequently, his seriously compromised physical state necessitated admission to VUMC in August 2014.

Immediately upon admission, a VUMC social worker partnered with VCCC nursing team members, Beverly Woodward, RN, and Lori Taylor, LPN, Patient Assistance Program (PAP) Coordinator, to plan and coordinate the patient's discharge strategy which would include an inpatient rehabilitation stay. EP5b-1 Admission Discharge Planning Other interdisciplinary team members, including the inpatient physician partners, were also included and contributed to the personalization of the patient's hospital discharge care plan. Coordination of efforts to assure uninterrupted continuance of the patient's prescribed medication regimen during his inpatient rehabilitation at Skyline Rehab, a non-VUMC facility, was also evident through documentation

VCCC's PAP continued to assist RNs, Beverly Woodward and Leslie Reese, in resolving issues regarding the patient's enrollment in Medicare Part D prescription coverage. As adequate financial support was essential to assure his timely receipt of medications and adherence to his treatment regimen, VCCC RNs maintained frequent two-way communication regarding his PAP status. Additionally, PAP and case

management continued to explore this patient's eligibility for Insurance Assistance Program (IAP) or Medicare to obtain additional financial support to cover medication co-pays. EP5b-2 Communication Re DC Coord, Med Cont, and PAP Status

Continuity, coordination, and care support by VCCC's RN case manager, Leslie Reese, was noted at the beginning and extended throughout the duration of the patient's inpatient stay at Skyline Rehabilitation. Documentation verifies the benefits of a detailed follow-up post hospitalization, with the rehab entity as a discrepancy in the patient's medication regimen promptly noted and corrected.

Leslie maintained contact and made herself readily available to the patient and the rehab staff to address issues, resolve problems, and prepare for eventual discharge home. To assure safe and timely transportation home from the rehab facility, Leslie worked with Skyline and community-based Nashville CARES to arrange the patient's transportation to VUMC's One Hundred Oaks (OHO) pharmacy to obtain his anti-viral medications.

To assure that medications were approved and would be available for dispensing post rehab-discharge, Leslie also communicated and coordinated medication prescriptions and pick-up with the physician, pharmacists, and transportation provider. Cognizant that transportation would pose a continual challenge for the patient, Leslie continued work with CARES to assure ongoing and uninterrupted transportation to future clinic visits. EP5b-3 Coordination of Transportation

Active continuation of planning and coordination after the patient's rehab discharge was also pivotal to assure continued adherence, timely assessment, and intervention. Communication channels continue to be open and easily accessible for the patient, as Leslie continues frequent follow-up through phone calls, face-to-face clinic visits, and patient portal, "*My Health at Vanderbilt*".

Recognizing that the patient's home safety and sense of independence was essential, Leslie also worked with his physician, Dr. Katie White, and durable medical equipment provider to secure a motorized scooter and obtain a disability letter to facilitate reduced public transportation fairs EP5b-4 Coordination of DME

Today, the patient is physically and mentally stable, functionally independent within accepted disease limitations, actively engaged in his self-care, and verbalizes an appreciated improvement in quality of life.

Finally, as a result of Leslie's cumulative case management experience in the inpatient and outpatient settings, she wanted to devise a tool to standardize post-hospital discharge follow-up phone calls. A team physician enthusiastically supported Leslie's work and also agreed that a directed, post-acute care follow-up would reduce readmissions and acute care usage by addressing patients' questions, concerns, and minimizing or removing barriers in an expeditious, consistent manner.

Consequently, the *“Case Management Follow-Up Phone Call Guide”* EP5b-5 Case Management Follow-Up Phone Call Guide was created and contains sections which sequentially direct a nurse case manager to prepare for the call by reviewing relevant documentation, assess specific elements with the patient during the call, complete post-call documentation using a standardized template, promptly identify additional needs and appropriately refer to or utilize internal or external resources.

In summary, purposeful care coordination combined with ongoing assessment of patient needs across the care continuum can render both humanistic and financial benefits. This is evident as the patient has not experienced or necessitated further utilization of acute care services since fall 2014.

EP6

Care Delivery System(s)

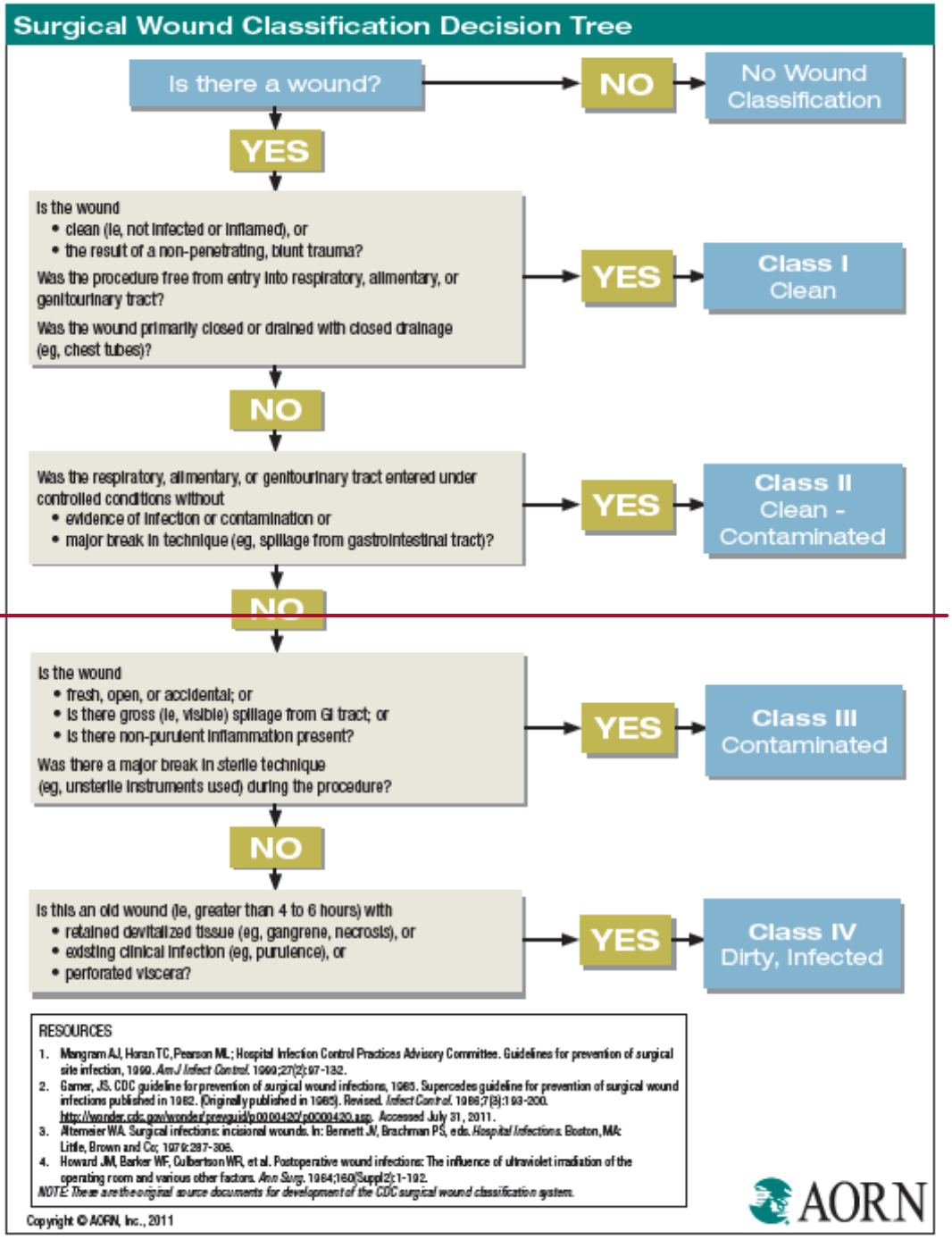
EP6: Nurses incorporate regulatory and specialty standards/guidelines into the development and implementation of the care delivery system.

- *Provide one example, with supporting evidence, of nurses incorporating specialty standards/guidelines into the delivery of care.*

Association of Operating Room Nurses, Inc. (AORN) guidelines for surgical incision wound classification

The Rascal Flatts Pediatric Surgery Center at the Monroe Carell Jr. Children's Hospital at Vanderbilt (MCJCHV) has 18 operating rooms where an array of procedures are performed, including minimally invasive and robot assisted surgeries, in 11 specialties. The Association of Operating Room Nurses, Inc. (AORN) is a non-profit organization involved in perioperative research and distributes guidelines that are evidenced based. In keeping with the PPM and care delivery, along with MCJCHV's FOCUS values (Family Centered Care, One Team, Continuous Improvement, Unique Environment for Children, and Safety), Vanderbilt surgical nurses continuously look to AORN for standards and recommendations as a foundation for policies and to guide surgical nursing practice.

The Surgical Wound Classification Decision Tree published by AORN was adopted by the operating room (OR) team. The decision-tree is based on evidence and was created by The Centers for Disease Control and Prevention (CDC) to provide a clinical estimate of microbial contamination of a surgical wound postoperatively and serves as a gauge of how likely a patient will develop an infection at the surgical site. The documentation of wound classification and agreement by nurses and surgeons is important because it supports the comparison of wound infection/surgical site infection rates associated with surgical techniques, surgeons, and facilities. By analyzing the infection rate data, trends can be detected on wounds that are at an increased risk for infection and allow applicable monitoring and preventative measures to be implemented. Concern was expressed by both the OR nursing staff and surgeons of discrepancies in the matching of wound classifications between the two groups. The AORN Surgical Wound Classification Decision Tree is below.



Data/Problem Identification

In late April 2012, an analysis of patient records did reveal discrepancies between how the OR nursing staff and the surgeons classified wounds. After data analysis was completed, this information was presented to the OR staff in their morning meeting in August 2012. Through September, suggestions for wound classification documentation were generated by the OR staff. Vanderbilt Perioperative Information Management System (VPIMS) is the electronic documentation tool for perioperative services and was

determined to be the most viable location for wound classification. This would require changes in the current VPIMs documentation structure. These changes received final approval and were completed in July 2013.

Assessment of Knowledge of OR Staff

In an effort to understand the problem and where staff needed to focus on education, staff began by identifying the barriers to correct identification for wound classification. There was a verbal survey of the OR nurses completed by Dana Williams, MSN, RN2 (Quality Improvement Analyst, OR and Procedural Services) to verify the initial educational training the staff had received on wound classification. Some received in-depth training, others had brief training, while others had no training at all. There was also a quiz (Wound Classification Pre-Test) given by Maria Sullivan, MSN, RN, CNOR (Perioperative & Procedural Services Nurse Educator) to the OR nurses to verify their current understanding of wound classification. This quiz was administered via Survey Monkey and included 10 questions that asked the nurses to identify the correct wound classification based on the procedure that was presented. From this work, education was identified as a primary barrier based on both the verbal survey and the pre-test.

Education utilizing the Surgical Wound Classification Decision Tree from AORN

While waiting for the VPIMS changes to be initiated, the first step was to ensure that all staff had the correct and same training. In February 2013, a wound classification Learning Management System (LMS) module was assigned to all the OR nurses by Maria Sullivan, MSN, RN, CNOR. Over the next several months, several opportunities were taken to repeat the data to the staff and outline the plan for correction during staff meetings and quality updates. EP6-1- LMS Learning Module for Periop Wound Classification; EP6-2- QIA Update for Staff- February 2013

To further assist perioperative nursing staff with decision making for wound classification, Misty Jones, BSN, RN, CNOR posted the Decision Tree in each operating room along with the wound classification definitions. Staff nurses were encouraged to use this tool as they discussed the wound classification with the surgeon.

In addition, a badge buddy was created by Dana Williams, MSN, RN, QIA and Daniel Gates, MS, CPC (Perioperative Coding Specialist). This badge buddy was designed as a quick reference tool for the OR nurses. It was patterned after a wound classification card created by the CDC. Nursing staff were again encouraged to debrief with surgeons to discuss the correct wound classification. The badge buddy serves as a quick access reference tool.

In August 2013, after the VPIMS changes were initiated, an interactive bulletin board was created and placed in the hallway between the staff lounge and locker rooms. Staff members reviewed and completed a quiz. This bulletin board served as education reinforcement. EP6-3- QIA Update- August 2013

Verification of Educational Initiative

After the educational initiatives, a post test was distributed to staff nurses by Dana Williams, MSN, RN (Quality Improvement Analyst, OR and Procedural Services). This quiz was administered via Survey Monkey and included the same 10 questions that were on the pre-test. Results are provided below. The post education showed an improvement in nurses correctly identifying appropriate wound classification. EP6-4- November 11 Education Update- A Final Reminder; EP6-5- November AM Staff Meeting- Final Reminder

Procedure	Pre-Test (% correct)	Post- Test (% correct)
appendectomy for acute appendicitis (non-perforated)	27.27	33.33
circumcision (urinary tract not entered)	81.82	94.44
inguinal hernia repair	100	94.44
tonsillectomy & adenoidectomy (non-infected)	81.82	77.78
hypospadias repair	68.18	72.22
compound (open) ulnar fracture	63.64	72.22
appendectomy for ruptured (perforated) appendicitis	63.64	83.33
incision & drainage of left gluteal abscess	90.91	94.44
tympanoplasty (non-infected)	50	55.56
central line removal for an infected line	77.27	88.89

EP7EO

Care Delivery System(s)

EP7EO: Nurses systematically evaluate professional organizations' standards of practice, incorporating them into the organization's professional practice model and care delivery system.

- *Provide one example, with supporting evidence, of an improvement resulting from a change in clinical practice due to the application of professional organization's standards of nursing practice. The example provided may be at the unit, division, or organizational level. Supporting evidence must be submitted in the form of a graph with a data table that clearly displays the data.*

Background

In the Vanderbilt outpatient adult operating arena, (VOS) traditionally, there is a "battle of sorts" for the room temperature that ensues between the needs of the patient and the needs of the staff and equipment. During the actual procedure, the personnel dressed in paper gowns and under the intense lights, find themselves getting hot and may start perspiring. The need to be more comfortable and reduce the risk of contaminating the sterile field with perspiration propels staff to reduce the temperature in the operating room.

The issue that was observed was that the staff would be scrubbed for the day, and then automatically lower the operating room (OR) temperature prior to the start of the day's surgeries for their comfort. While this is an issue that can affect the patient adversely, it is done more by habit than by conscientious thought.

Evidenced based practice shows that maintaining the patient's core temperature between 36.5°C (97.7°F) and 37.5°C (99.5°F) reduces the risk of hypothermia-related complications which can include increased blood loss, decreased blood supply to the wound, surgical site infection, myocardial damage, and increased length of stay. Vanderbilt perioperative services monitors and follows practice guidelines from the Association of Perioperative Registered Nurses (AORN), and the American Society of PeriAnesthesia Nurses (ASPAN). The practice guidelines are to maintain patients' temperatures within the thermoneutral zone as listed above. Critical is having the patient properly warmed in the preoperative area before they enter the OR suite.

Goal Statement

To have eighty-five percent or greater of preoperative patients warmed consistently.

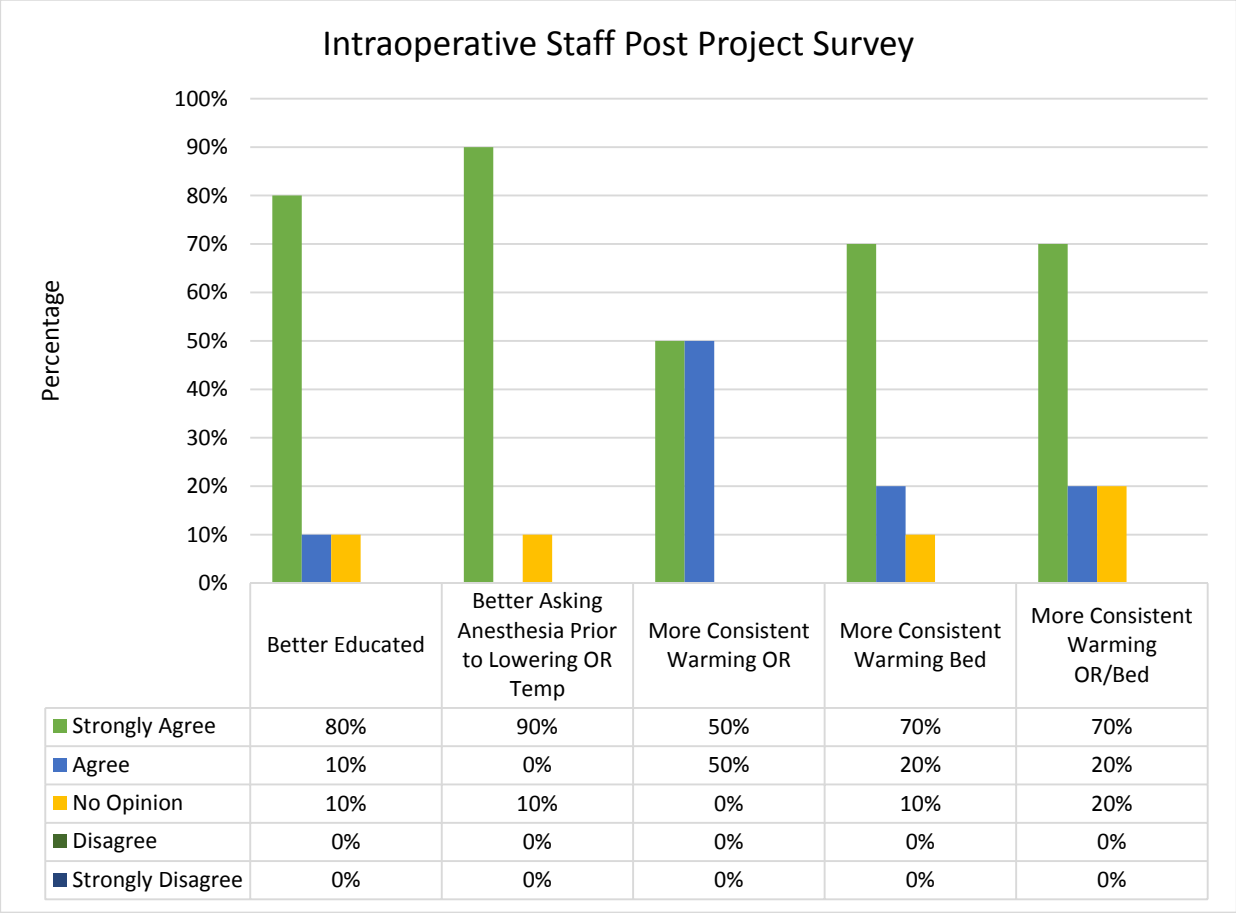
Description of Interventions

Education

Starting in March 2014, the first step was to provide education for the perioperative personnel on the importance of thermoregulation across the perioperative arena, particularly beginning in pre-op holding. The perioperative personnel were defined as the nurses, surgical technologists, physicians, including residents, nurse anesthetists,

and anesthesiologists. This education included information on the AORN and ASPAN standards and recommended practices, as well as VUMC policies and procedures on thermoregulation in the perioperative arena. The education also covered the different methods of heat loss, the effects of hypothermia on a patient and evidenced-based ways to warm the surgical patient pre-op and intraoperatively.

The intraoperative staff post project survey shows that the majority of the staff felt they were better educated about thermoregulation. The staff understood the need for more consistent warming of the patient and the operative suite and more aware of the patient's temperature prior to asking for the OR temperature to be reduced.



	Better Educated	Better Asking Anesthesia Prior to Lowering OR Temp	More Consistent Warming OR	More Consistent Warming Bed	More Consistent Warming OR/Bed
Strongly Agree	80%	90%	50%	70%	70%
Agree	10%	0%	50%	20%	20%
No Opinion	10%	10%	0%	10%	20%
Disagree	0%	0%	0%	0%	0%
Strongly Disagree	0%	0%	0%	0%	0%

Peer Review

In March 2014, starting in pre-op and in the OR, the patient's temperature as well as the room temperature were measured every 60 minutes from beginning to end. Using a data sheet that followed the patient from pre-op to the post-anesthesia care unit (PACU) to track the patient's temperature, the staff could see the temperature across the continuum. This data provided the perioperative personnel the ability to actually see how patient warming or not warming can affect the patient from start to finish getting immediate results of improvements in patient care. Recording the data required the

personnel to stop and think about performing the task and thereby improve the care in real time.

During the education period in March 2014, the improvement in pre-warming the patients was at a high of 92%, believed to be in part due to the tracking sheets that the staff were required to complete. According to research it generally takes 66 days of repeating an action to form a habit. Therefore, after the March education and tracking period, there was some variation in the percentage of patients that were pre-warmed; however, stayed consistently higher than before the education was provided and well above the goal of 85%.

Agreed upon Action

- Connect and turn on forced air warmer on all patients preoperatively unless the patient refuses.
- Place the forced air warmer under the sheets on the operating bed prior to patient entrance into the OR.
- Connect and turn on the forced air warmer on all patients in the OR unless anesthesia reports the core temperature to be above AORN guidelines.
- Connect and turn on the forced air warmer on all patients upon arrival to PACU unless core temperature is above ASPAN guidelines.

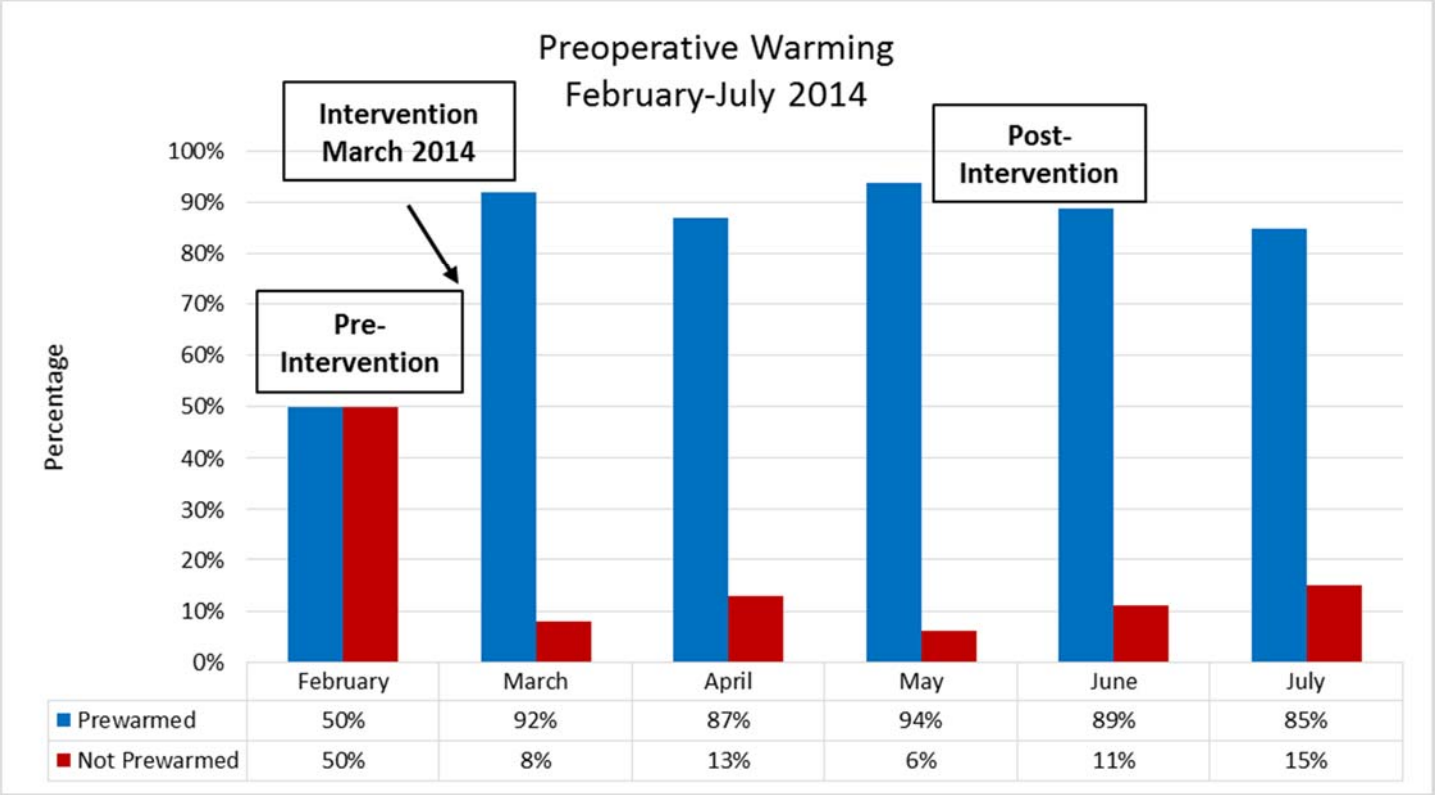
Participants

Name	Credentials	Role	Practice Area	Role on Project
Charlotte Chavous	BSN, RN CSFA, CST	RN 4-CC Clinical Nurse	Vanderbilt Outpatient Surgery (V0S)	Project lead, Developed educational materials, Developed data tools, Analyzed data
Julie Donovan	RN, CNOR	RN 4-CC Clinical Nurse	VOS	Data sheet development, Post survey development
Fran Hammond	BS, RN, CNOR	RN2-CC Clinical Nurse	VOS	Consultant
Cathy Lee	BSN, RN, CPAN, CAPA, CCRN	RN 4-CC Clinical Nurse	VOS Perianesthesia Nursing	Consultant
Michael Higgins	MD, MPH	Clinical Practice & Professor of Anesthesiology, Surgery, and Biomedical Informatics	Anesthesiology	Consultant
Kelly McQueen	MD, MPH	Clinical Practice & Associate	Anesthesiology	Consultant

		Professor, Department of Anesthesiology		

Outcome

The goal was met. Preoperatively eighty-five percent or greater of patients were warmed consistently.



	February	March	April	May	June	July
Prewarmed	50%	92%	87%	94%	89%	85%
Not Prewarmed	50%	8%	13%	6%	11%	15%

EP8EO

Care Delivery System(s)

EP8EO: Nurses use internal and external experts to improve the clinical practice setting

- Provide one example, with supporting evidence, of an improvement that occurred due to a change in clinical practice setting resulting from the use of internal experts. Supporting evidence must be submitted in the form of a graph with a data table that clearly displays the data.

VPH uses internal consultants to decrease falls with harm

Background/Problem

Psychiatric patients are predisposed to falls for a number of reasons (i.e., psychotropic medications, metabolic changes due to medications, disturbances in balance, etc.) and require special attention with regard to prevention. At Vanderbilt Psychiatric Hospital (VPH), standardized processes were lacking across the hospital with regard to best practice for falls prevention directly related to psychiatric patients.

At Vanderbilt the staff of the Quality, Safety and Risk Prevention (QSRP) department serve as internal consultants for quality, safety and risk prevention issues. Staffed with nursing quality consultants, data analysts, study design experts, and statisticians, QSRP is an excellent internal resource. In June of 2015, VPH partnered with QSRP to implement changes in clinical practice that would decrease the number of falls with harm. Quality consultants Renee Boggs MSN, RN, CPN and Sonya Moore MSN, RN, CPPS worked with VPH.

Goal

Decrease the incidence rate of falls with harm per 1,000 patient days in the Psychiatric Hospital.

Description of the Interventions

Historically, patients at VPH were placed on standard falls risk precautions for psychiatric patients upon admission. Moderate and high falls risk categories were also assigned to those VPH patients that met the criteria. A falls risk assessment is completed upon admission, and once on day and evening shifts. A literature review showed that the precautions currently in place were considered the best practices for fall prevention for this patient population.

After an analysis was conducted of the past falls with harm at VPH, a plan was developed. One of the first actions was the implementation of safety rounding and post-fall huddles. This work was monitored by VPH's quality committee which is comprised of clinical nurses in the clinical staff leadership role. The CSLs, along with the quality consultants, collaboratively designed the concept and practice of weekly safety

rounding on each unit to identify high fall risk patients, as well as to ensure that best practices were in place for those at risk patients. These initiatives included:

- proximity to nurse's station
- identification fall armbands
- bedside call system in place
- the use of safety non-skid footwear
- patient education

The group also initiated a post-fall huddle process within one hour of the fall with the staff involved and a quality consultant. The purpose was to identify predisposing factors leading to the fall, as well as to ensure that all appropriate preventive measures were in place, prior to the fall.

In an effort to assist staff with ensuring that all appropriate falls prevention practices were in place for each patient, a post-fall reference chart was created and shared with all units within VPH. This chart serves to ensure that all safety measures, reporting, and documentation are consistent throughout the hospital. The safety rounding, post-fall huddle, and post-fall reference chart were all instituted in September of 2015. Performance boards were placed in each patient care area to reflect current quality metrics and the related data. The boards were strategically placed on each unit to be in view of patients, their families, and staff in order to reflect ongoing quality initiative performance, including falls.

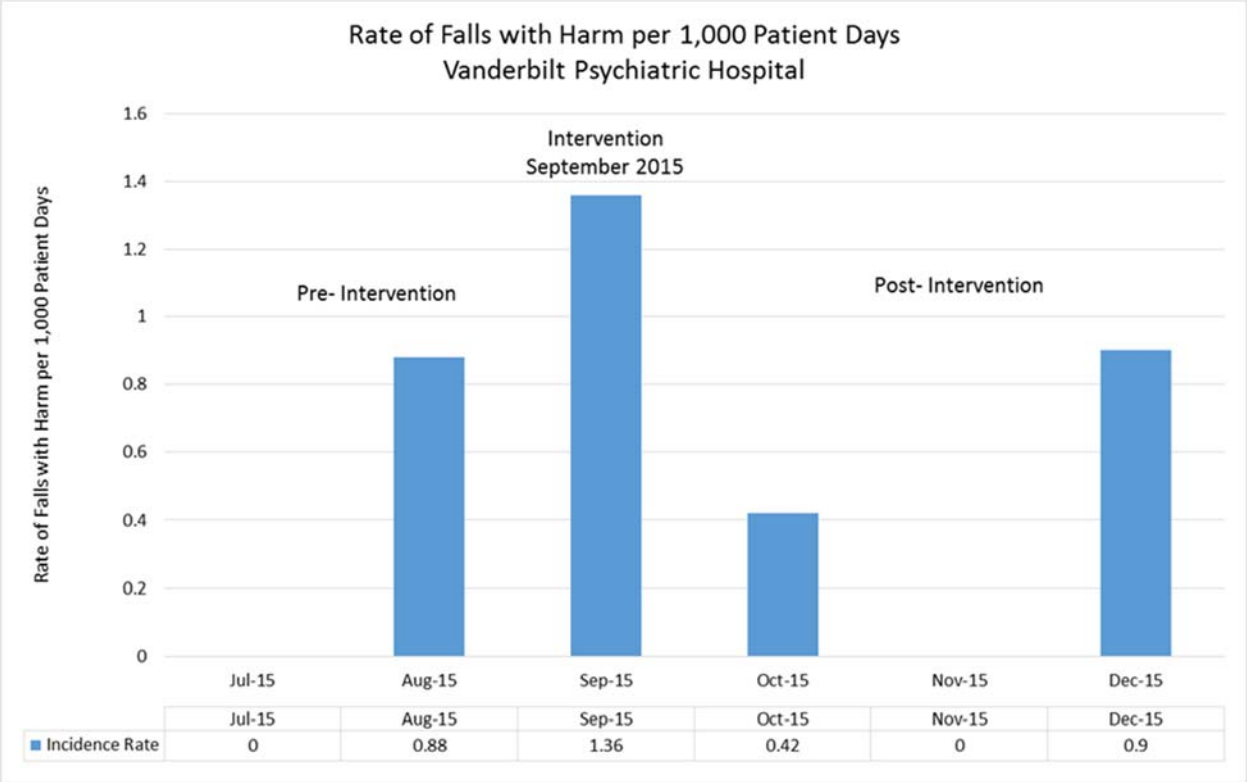
Participants

Name	Credentials	Role in Organization	Practice Area	Role
Renee Boggs	MSN, RN, CPN	Quality Consultant	Nursing	Facilitator
Sonya Moore	MSN, RN, CPPS	Quality Consultant	Nursing	Consultant
Alyssa Woodling	BSN, RN-BC	Clinical Nurse Staff Leader	VPH	Member
Christa Paramore	BSN, RN-BC	Clinical Nurse Staff Leader	VPH	Member
Brittany Cox	BSN, RN-BC	Clinical Nurse Staff Leader	VPH	Member
Jessica Raines	BSN, RN-BC	Clinical Nurse Staff Leader	VPH	Member
Robin Elmore	BSN, RN-BC	Clinical Nurse Staff Leader	VPH	Member
Jana Briggs	BSN, RN-BC	Clinical Nurse Staff Leader	VPH	Member
Katie Vaughn	BSN, RN-BC	Clinical Nurse Staff Leader	VPH	Member
Avni Cirpili	DNP, RN, NEA-BC	Chief Nursing Officer	VPH	Sponsor

Johnny Woodard	BSN, RN-BC	Manager/Educator	VPH	Member
Jennifer Barut	MSN, RN-BC	Director Nursing Education & Professional Development	VPH	Member
Laura Webb	BSN, RN-BC	Nursing Manager	VPH	Member
Lori Harris	BSN, RN-BC	Nursing Manager	VPH	Member
Nancy Moore	MSN, RN-BC	Administrative Coordinator	VPH	Member

Outcome

With the initiation of the improved quality falls prevention initiatives, falls with injury have significantly decreased. For the three months prior to initiation, VPH experienced five falls with injury. After implementation of the new practices, two falls with injury have occurred.



EP9

Staffing, Scheduling, and Budgeting Processes

EP9: Nurses are involved in staffing and scheduling based on established guidelines, such as ANA's *Principles for Nurse Staffing,* to ensure that RN assignments meet the needs of the patient population.

- *Provide two examples, with supporting evidence, from different practice settings when input from clinical nurses was used to modify RN staffing assignments and/or adjust the schedule to compensate for a change in patient acuity, patient population, resources or redesign of care.*

Example a

Changes implemented with clinical nurse input to meet the needs of a specific patient population at Monroe Carell Jr. Children's Hospital at Vanderbilt (MCJCHV)

The eighth floor of MCJCHV houses pediatric inpatient surgery, trauma and adolescent medicine services. It also serves as an overflow unit for pediatric medical patients and oncology patients. The clinical nurses and care partners are educated, trained and equipped to provide high quality nursing care for these patient populations. The unit is physically equipped for these patients and the staffing model is created around this population and supports staff to provide patients with the appropriate level of care and monitoring needed.

Historically, the eighth floor has also admitted suicidal ideation patients and added staff training on the protocols and guidelines around the management of these patients. However, in the past three years, 2013 – 2015, there has been a rapid increase in the pediatric behavioral health population admitted to MCJCHV. This group of patients has been admitted, as needed, for medical or surgical treatment; however, they end up staying after their physical problems are resolved awaiting psychiatric resources to be provided by other specialized facilities.

Because of this rapid increase in admissions, nurse leaders on the unit met with clinical nurses to understand the clinical needs of these patients as well as the educational needs for the staff. EP9a-1 Staff Behavioral Survey Responses Beginning in February 2013, several changes were made and processes were put in place to better support the nursing staff and the patients. EP9a- 2 Email confirming MCJCHV staff shadowing at VPH In March 2013, ten nurses volunteered to receive training at Vanderbilt Psychiatric Hospital through shadowing nurses on their child and adolescent unit and didactic information. EP9a-3 Flyer for didactic class; EP9a- 4 Attendance of designated nurses in class The MCJCHV nurses were able to interact one on one with a varied pediatric psychiatric population under the supervision of nurses and mental health specialists as well as witness behavioral modification, de-escalation and team therapy techniques. This group of nurses has continued to serve as our partners when providing

care to this population in our children's hospital. Their feedback has led to changes needed to ensure safety of all of our behavioral health patients and clinical staff.

In addition, the hours of a house-wide clinical psychiatric liaison team were increased to help meet the growing demands for this patient population.

Cohorting patients to meet their needs

In a most recent episode, the children's hospital experienced a historically high volume in this patient population when there were almost 30 patients in house on one day. Nursing leadership came together with staff on the eighth floor to cohort these patients and provide the extra staffing resources that had been determined. One of the pods on the eighth floor has eight beds. The staff were able to remove the harmful items and secure the rooms according to our suicidal precautions policy and to the standards they had learned at the Psychiatric Hospital.

Clinical nurses provided care for eight behavioral health patients on this pod and another three across the rest of the eighth floor. Nurses came together to support them by floating across the floor to provide care to these patients if they had received the initial training and to help create processes and guidelines around the cohorting of these patients.

Within one shift, we began to see the benefits of the work completed. The aggression incidents had declined with the attention and monitoring provided by these nurses. Over the rest of the days that followed the nurses that provided care to these patients reported increased amounts of self-fulfillment and satisfaction in being able to support these patients in a more consistent and compassionate basis. Processes were developed to address the storage of items in rooms that could be harmful and included sitter belongings. Family and visitor education was implemented by staff. All of these measures were shared shift to shift in order to provide consistency of care.

Next steps include possible additional education on behavioral triggers and behavioral modification techniques. Additional staff have also requested to now receive formal mental health specialist training at our psychiatric hospital in an effort to provide care for this specific population. EP9a- 5 Email from manager about cohorting behavioral health patients.

An effort to improve the care of patients with Behavioral Health issues at Monroe Carell Jr. Children's Hospital at Vanderbilt (MCJCHV) began in 2013. At that time, a survey was sent to the clinical nurses on the eighth floor to assess their educational and experiential needs to better serve this patient population (*Refer to Original Evidence EP9a-1 Staff Behavioral Survey Responses*). With the information from that survey, several staff nurses began to formulate a plan that included didactic education, real time experience, and improving the environment of care.

In February and March 2013 clinical nurse Laura Filingo, BSN, RN, CSL suggested that nurses with an interest in caring for this population spend time “shadowing” nurses in the pediatric and adolescent units at Vanderbilt Psychiatric Hospital (VPH). She worked with Laura Zavisa, BSN, RN, PMHN, nurse manager of VPH pediatric and adolescent units, to arrange the shadowing experiences (*Refer to Original Evidence EP9a-2 Email Confirming MCJCHV staff shadowing at VPH).* Clinical nurse shadowing experiences at VPH continued through 2013.

The clinical nurses involved in these shadowing experiences requested more didactic education regarding this patient population to include common diagnoses, intervention strategies, and availability of community resources. A lecture series was offered for the interested clinical nurses. (*Refer to Original Evidence EP9a-4 Attendance of designated nurses in class)*. Sheree Burdette, BSN, RN and Laura Filingo, BSN, RN, CSL were just two examples of clinical staff nurses involved in this work. In 2015, MCJCHV saw a sharp rise in the number of patients presenting with behavioral health issues. The clinical nurses involved in earlier efforts to serve this population eagerly joined a workgroup and shared their input into the feasibility of cohorting these patients on the eighth floor and assigning the nurses who participated in the didactic education and shadowing experiences to these patients. Clinical nurse Lindsey Kevetter, BSN, RN, CPN participated as well as Laura and Sheree *(New Evidence EP9a-1 Workgroup Minutes).*

The finalized proposal, submitted to senior leadership, recommended to group (cohort) these patients in a specific area on the eighth floor as well as modify assignments to allow those with competence in caring for this patient population to be the primary group of clinical nurses (*New Evidence EPa-2 Proposal).* The cohorting on the 8th floor occurred in a previously expanded space where all the room numbers start with 87 and are 8737 through 8744. The proposal was supported by leadership and the cohorting of patients on the eighth floor began on September 26, 2015 *(New Evidence EPa-3 Patient List).* Nurse staffing was also adjusted when this occurred to ensure that nurses with the competence to care for these patients were assigned to these patients (*New Evidence EPa-4 Nursing Assignment Sheet- (September 26, 2015) showing one example of matching trained nurses with designated behavioral health patients in cohorted rooms (8740, 8741, 8744) these would be the patients that were determined to need the specialized care that shift)*. On September 28, 2015 an email from Cristina Loaiza BSN, RN, NE-BC, Nurse Manager, was sent to the entire eighth floor staff outlining the cohorting process and answering staff questions regarding this change (*Refer to Original Evidence EPa-5 Email from manager about cohorting behavioral health patients*) to improve patient care.

Example b

Vanderbilt Ingram Cancer Center (VICC) Oncology Outpatient Infusion Clinic nursing manager uses clinical nurse input to modify staffing assignments and redesign care due to a change in resources.

Due to changes in healthcare reimbursement, VUMC senior leadership, in collaboration with frontline leadership (managers), closely examined FTE distribution in the fall of 2013. Concurrently, the Vanderbilt Ingram Cancer Center's (VICC) Oncology Outpatient Infusion clinic experienced voluntary attrition of two FTE charge nurse positions. As both charge nurse positions provided less than 50% direct patient care and in light of the current internal fiscal examination, the clinic was temporarily unable to fill the positions. Subsequently, this provided clinic staff RNs in partnership with nurse manager, Leah Atwell, MSN, RN, an opportunity to redesign care and modify staffing assignments to assure continuation of the efficient, quality care patients had become accustomed to in this high volume, outpatient setting.

VICC's Oncology Outpatient Infusion Center is configured with three distinct care pods (A, B, and C) each accommodating 15 patients and staffed daily by a designated team of RNs and care partners. The clinic has over 1,900 visits per month, therefore, ready service access, patient throughput, and care efficiency throughout all three pods is critical. The daily role and tasks of the charge nurse needed to be integrated and redistributed. That work included; making nurse assignments, continuous physician collaboration and communication, reviewing and processing of new orders, providing backup, and direct patient care when needed.

Beginning in October, 2013, the clinical staff nurses led by clinical nurse Kristin McDade reviewed the literature for best practices. Spurred by collective RN input *(New Evidence EP9b-1 RN Input Pre-Pilot Functional Nsg)*, a pilot in early November, 2013, launched functional nursing as a care delivery model. Throughout this process, staff RN's provided input regarding challenges (role clarification, staffing assignments, and communication) and possible solutions *(New Evidence EP9b-2 RN Input Intra-Pilot Functional Nsg)*. Both patients and staff struggled with acclimating to one RN assuming responsibility for only one sole task/role.

Collectively, and again with RN input, it was decided that an alternative care model utilizing a "Pod Leader" model would be trialed. Staff RN's helped delineate the role and clarify expectations regarding other RN work reassignment within each pod *(New Evidence EP 9b-3 RN Input Pre-Pilot Pod Leader Model)*. Beginning in mid-November, 2013, one RN would assume the role of Pod Leader each day in Pod A, B, or C. When

compared to the original RN Charge positions where clinical oversight and involvement were more global, administrative and with lessened visibility, Pod Leaders were pod-based and present, readily available, and directly involved at the patient's bedside. Additional contributions of this evolving RN role have included:

- Complete and supervise pod staff schedules and assignments
- Provide back-up to staff and be readily available for emergencies or fluctuations causing increased/high volumes
- Assume direct patient care (patient load is decreased in comparison to regular fulltime RN staff due to other assigned Pod Leader responsibilities)
- Assist and support staff, patient, and patient's family throughout shift, as needed
- Process new admissions, initiate care and facilitate hand-over to staff RN.

Leah (Nurse Manager) utilized clinical nurse input to modify RN staffing assignments based to compensate for a change in resources. The clinical nurse input Review and revision of this new role and the implications are ongoing with continued RN input and discussion *(New Evidence EP9b-4 Meeting Minutes re RN Input Post-Pilot Pod Leader Model)*.

Participants

Name	Credentials	Role in organization	Practice Area	Role on work
Leah Atwell	MSN, RN	Nurse Manager	VICC Oncology Outpatient Infusion Center	Facilitator
Deb Swagerty	BSN, RN4, CC	Clinical Nurse	VICC Oncology Outpatient Infusion Center	Advisor & contributor
Kristen McDade	BSN, RN2 CC	Clinical Nurse	VICC Oncology Outpatient Infusion Center	Advisor & contributor
Annie Hubers	BSN, RN2 CC	Clinical Nurse	VICC Oncology Outpatient Infusion Center	Advisor & contributor
Anne Decaster	BSN, RN2 CC	Clinical Nurse	VICC Oncology Outpatient Infusion Center	Advisor & contributor

EP10

Staffing, Scheduling, and Budgeting Processes

EP10: Nurses use trended data in the budgeting process, with clinical nurse input, to redistribute existing nursing resources or obtain additional nursing resources.

Provide two examples, with supporting evidence, from different practice settings where trended data was *used during the budget process, with clinical nurse input, to assess actual-to-budget performance to redistribute existing nursing resources or to acquire additional nursing resources.* Trended data must be presented.

Example a

Vanderbilt Eskind Diabetes Clinic adds RN Certified Diabetes Educators to meet patient demand

Background

Vanderbilt Eskind Diabetes Clinic (VEDC) is certified by the American Diabetes Association (ADA) as an education recognized program (ERP) and therefore utilizes RN Certified Diabetes Educators (RN-CDE) to provide Diabetes Self-Management Education (DSME) to patients and their families. Focused on patient-centered care, RN-CDEs engage and actively partner with patients to identify individual goals. Noted in the literature as best practice, RN-CDEs are integral members of the interprofessional team and promote self-management, coach patients to achieve behavioral and treatment goals, help control disease progression, and support optimal health outcomes contributing to an enhanced quality of life. In early 2013, The Diabetes Clinic CDE staffing and service utilization was insufficient to assure timely, comprehensive service delivery to patients and referring providers.

Example

In preparation for the upcoming year's budget, VEDC's nurse manager at that time, Carolyn Howard, MSN, RN, NE-BC, noted that RN-CDEs were seeing an average of only seven patients per day. Aware of the physician's daily patient volume, the question was "how many patients are we missing" who actually need DSME? In addition, these visits are billable.

Data analysis showed that the addition of even one CDE FTE paired with a revision of the current referral process could increase access to essential education for patients and support direct referrals from internal medicine and primary care physicians, maximize RN-CDE utilization, and boost clinic revenue. At that time, RN-CDE consultations were not readily available to non-VEDC internal medicine and primary care physicians within the Vanderbilt network. A CDE referral could only be made after initial consultation by a VEDC physician. If this barrier were removed, direct CDE

referral by medicine and primary care physicians could improve the access of valuable education to more patients.

Carolyn partnered with the Eskind RN-CDEs to have them analyze the data and determine feasibility of a possible change and what that change might look like. Initially meeting weekly, and then monthly, over six months the group reviewed the following data:

- potential diabetic volume and trends associated with staffing changes
- current and potential volume of CDE encounters per VEDC provider
- actual CDE referrals by provider
- DSME patient participation
- survey responses from VDEC physicians regarding CDE referral patterns EP10a-1 E-mail Validation Mgr RN-CDE Meetings; EP10a-2 Current Data and Prediction Data Review; EP10a-3 VEDC Physician Survey Summary 8.16.2013

From the data analysis, strategies and actions identified included:

- add at least one RN-CDE FTE
- foster work relationships and closer alignment with referring physicians
- allow direct referrals from internal medicine and primary care physicians
- restructure DSME team roles and reengineer work flow
- recommend that all new diabetic patients be referred for CDE assessment

Proposals requesting budgetary support for the addition of one RN-CDE FTE, including details of potential impact on patients being missed and therefore subject to unnecessary clinic and hospital visits and the fiscal impact, were presented to senior leadership by the nurse manager and the current RN-CDEs. EP10a-4 Sr Leadership PPT Additional presentations, tailored for physician partners were provided by the VEDC nurse manager and RN-CDEs at providers' practice sites. The proposal was supported by senior leadership, nursing and medical management and the changes were made. EP10a-5 Newly Hired CDE Positions from HR System.

Clinical Nurse Input

The clinical nurses in the Eskind Diabetes Center were involved from the beginning on how to address the issue of "more CDE time" to capture all of the patients that needed education and in determining a method to appropriately capture those patients from primary care physicians. This was in preparation for budget submission which occurs at the end of the calendar year. Clinical nurse input examples below:

- The initial discussion began in January, 2014 when the manager Carolyn Howard, MSN, RN, CDE and clinical staff nurse from the Diabetes Center, Patricia Patterson, BSN, RN, CDE met with the CNO for the Clinics – Robin Steaban, MSN, RN, NE-BC. Cheryl Rhodes, AD, RN, CDE was involved in the email discussion with Carolyn regarding the need for an increased number of certified diabetes educators. *(New Evidence EP10a-1 Email re RN Input 1.2014)*

- Planning continued and in February continued feedback on the issue came from Patricia Patterson, BSN, RN, CDE and Cheryl Rhodes *(New Evidence EP10a-2 Email from Clinical Nurse 2.2014)*
- In the initial submission for the presentation to senior leadership, at the year end of 2014 Paterson and Davis (CDEs) were part of that discussion as well as King, the NP Program Coordinator. *(Refer to Original Evidence EP10a-4 Sr Leadership PPT)*

Assessment of actual to budget-to-performance to acquire new resources

- The assessment was prepared by the manager and the current CDEs and presented to the physicians and the Diabetes Center executive leadership team. *(Refer to Original Evidence EP10a-4 Sr Leadership PPT [Slides 9-14])* The assessment was based on the actual number of patients seen compared to the physician's daily volume and in addition, a potential volume of patients from referring internal medicine physicians not housed in the Diabetes Center. The budget information was around volume projections and profit margin. See below:

Shows that adding additional CDEs to the staffing model based on physician volume the growth opportunity would be 73% conservatively.

Current Staffing Configuration

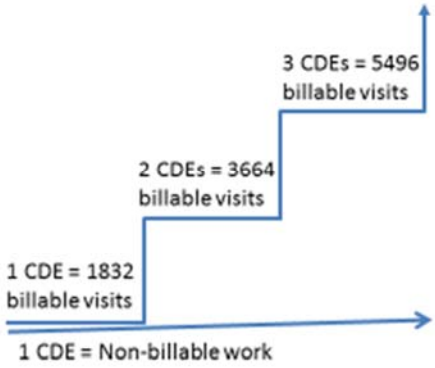
2.0 FTEs MCE

MD	Current Volume of Billable CDE Encounters	DSME Visits per New Patient Visit	Growth Potential for DSME : New PT Visits	Growth Potential Assumptions (Conservative)	Volume Opportunity
Baum	382	0.42	4.58	2.0	1749
Zaidi	550	0.60	4.40	2.0	2418
Bao	264	1.64	3.36	2.0	888
Jagasia	146	4.46	0.54	5.0	79
Fowler	27	5.30	-	5.30	-
TOTAL	1369	1.26	2.52	2.39	5134

Assumptions
- 1 group class per week
- 8 patient encounters/day
- All new-to-practice diabetes patients seen by CDE
- Other CDE handles non-billable work (glucose logs, etc.)

Shows the growth potential based on the number of new CDEs hired.

Total CDE FTEs : Volume Growth



TOTAL CDE FTEs (billable and non-billable work:

2.0 FTEs = 1832 visits

3.0 FTEs = 3664 visits

4.0 FTEs = 5496 visits

Financial projections for patient volume increases

Financial Projections

RN-CDE DSME Classes		
Individual (45% of total)		1,469
Group (55% of total)		1,796
Total RN-CDE DSME Classes		**3,265**
RN-CDE DSME Revenue		
Individual ($111 per class)		163,059
Group ($73 per class)		131,108
Total RN-CDE DSME Revenue		**294,167**
RN-CDE DSME Expenses		
RN-CDE Salary	$	213,357*
RN-CDE Fringe	$	56,326*
Total DSME Expenses	**$**	**294,683**
Overall Margin RN-CDE DSME	**$**	**24,484**

* Includes 0.2 FTE related to Charge Nurse who does fill-in work for DSME Program, as needed. Charge Nurse spends an estimated 20% of time working on DSME.

- The new hires CDES came on board in July, September and October of 2015. *(EP10a – 5 Original Evidence newly hired CDE positions from HR System.)*

- The clinical RN Staff continued to provide input to the decisions. *(New Evidence EP10a-3 Email from Clinical Nurse 6.2015; New Evidence EP10a-4 Email from Clinical Nurse 7.2014)*

Example b

Vanderbilt Psychiatric Hospital adds Mental Health Specialists and Registered Nurse in response to a higher level of patient acuity

Beginning in the middle of 2014, Vanderbilt Psychiatric Hospital (VPH) was seeing an increase in the number of patients who were requiring higher levels of supervision (within eye-sight or 1:1 monitoring). Another trend was an increase in admissions for specific populations such as geriatric patients who were being admitted and at risk for falls, child and adolescent patients with behaviors (sexual perpetrators, autistic, aggressive and self-injurious patients) that required an increased level of supervision, psychotic patients who experienced an associated aggressive symptomology. This increase in acuity was observed across the units. When the staff reviewed the NDNQI (Press Ganey) Total RN Hours per Patient Day comparison by case mix they saw that VPH was below the 50th percentile on what was needed for staffing.

Resulting discussions with staff revealed a common concern on all shifts related to the necessity of an increase in the level of monitoring required. This issue was especially noted by night shift, likely related to a shift specific decreased staffing matrix. Several occurrences with adverse outcomes supported staff concerns regarding patient safety. The CNO met with staff to conceptualize the concerns and followed with a review of staffing plans facilitated by the managers. Review of the existing staffing model and the ongoing use of sitters, Home Health data from provided sitter hours, demonstrated that additional staff was needed to monitor patients who required increased levels of supervision. The revisions to the staffing templates were presented to Medical Center leadership. The FY14 budgets were adjusted to add additional Mental Health Specialist (MHS) hours to each cost center. The total increase was 4.2 FTE's of Mental Health Specialists spread through all of the cost centers. The FTE's were not added to any specific shift and could be allocated to address the fluctuation in acuity and precaution levels throughout the hospital. After the new FTEs were added for MHS, VPH's use of number of hours for patient care assistants (sitters) from Home Health decreased significantly from July 2014 to December 2015. EP10b-1 Email from Home Health Showing Sitter Hours Decreased

A second example of staff review of data and looking at trends and requesting additional resources was the increase in volume of patients who were requiring detox on Adult 2. This resulted in an increase in the number of nursing care hours needed. A review of NDNQI (Press Ganey) Case Mix comparison for adult psychiatric units revealed that Adult 2 was below the mean for total RN hours per patient day. The original staffing matrix called for this unit to have one registered nurse assigned to night shift with supporting MHS. After review, it was determined that adding a second

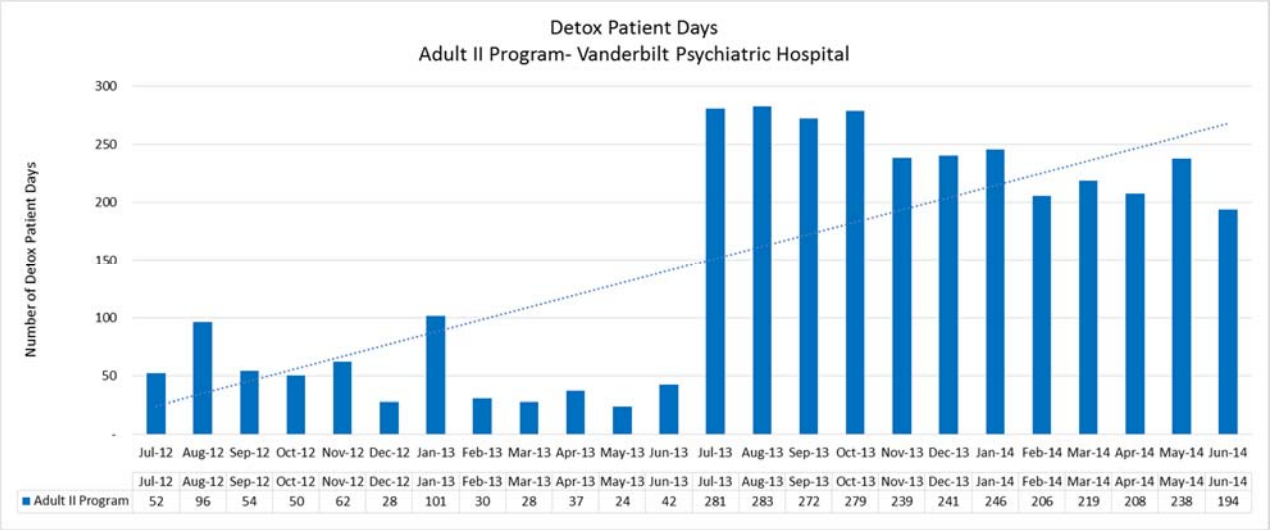
registered nurse to the shift would improve patient safety for those patients experiencing withdrawal. The FY14 budget was modified to increase Registered Nurse staffing on Adult 2 night shift from one RN to two.

After the shifts were added, the acuity (case mix index) per NDNQI showed Adult 2 to be at the 50th percentile, and the mean or above with only one low blip in quarter 2 2015. This change also increased the direct RN hours per patient day to 4.4 from 3.8. EP10b-2 NDNQI Case Mix Compare for Adult 2; EP10b-3 Adult 2 Staffing Templates FY13 and FY14 (from budget sheets; showing increase in total hours of patient care-highlighted in green); EP10b-4 Budget Sheets Showing Increase in HPPD from FY13 to FY14

The night shift clinical nurses noted an increase in the number of detox patients on Adult 2 in early 2013 and took their staffing concerns to the VPH CNO (at that time), Avni Cirpili, DNP, RN, NE-BC through the VPH monthly nightshift committee meeting. *(EP10b-1 Night Shift Board Min 1.3.2013)*. These patients required higher levels of supervision (within eye-sight or 1:1 monitoring). Higher levels of monitoring are required for patients undergoing detox as these patients are at increased risk for falls due to pharmacotherapy, need management of acute withdrawal symptoms, and have higher risks related to seizure thresholds.

With an increase in this population that requires increased monitoring, nurses expressed that they were inadequately staffed to provide safe care to this population of patients. They vocalized concerns including the need for increased staffing due to higher acuity, as well as the volume of patients who were being placed on detox protocols. At this meeting, the CNO listened to their concerns, and agreed to evaluate trended data that would support adjusting staffing models for the current budgeting cycle which was in process at this time. The original staffing plan called for the Adult 2 unit staffing matrix to have one registered nurse assigned to night shift with a supporting Mental Health Specialist.

The graph below shows the increase in the number of detox patient days in Adult 2.



This change in patient population resulted in an in the number of nursing care hours needed. When the staff reviewed the NDNQI (Press Ganey) Total RN Hours per Patient Day comparison by case mix they saw that VPH Adult 2 was below the mean for total RN hours per patient day. *(EP10b-2 VPH Adult 2 Case Mix for HPPD)*
The number of patient days increased from an average of 50.3 patient days/month in FY 13 to an average of 242 patient days/month in FY 14.

The CNO reviewed the existing staffing model and also reviewed the ongoing usage of sitters being used to provide increased levels of supervision for this patient population. The data on sitter usage (sitters are brought in from Vanderbilt Home Health) demonstrated that the units consistently required additional staff to monitor and provide safe care to at risk patients. *(EP10b-3 Sitter Usage Before & After)*

By reviewing the staffing model and continued usage of sitter services, it was determined that adding a second registered nurse to the shift would improve patient safety for those patients experiencing withdrawal symptoms. After the new FTEs were added for RNs during budget preparation, VPH's use of number of hours for patient care assistants (sitters) from Home Health decreased significantly from July 2014 to December 2015. *(Refer back to EP10b-3 Sitter Usage Before & After)* After the shifts were added, the acuity (case mix index) per NDNQI showed Adult 2 to be at the 50th percentile, and at the mean, or above, with only one low blip in quarter 2 of 2015. *(Refer back to EP10b-2 HPPD graph)* This change also increased the direct RN hours per patient day to 4.4 from 3.8. *(EP10b-4 Budget Sheets re HPPD Increase in HPPD FY14 to FY15)*

EP11EO

Staffing, Scheduling, and Budgeting Processes

EP11EO: Nurses participate in recruitment and retention assessment and planning activities.

- Provide one example, with supporting evidence, of clinical nurses' participation in nursing recruitment activities and the impact on vacancy rates. Supporting evidence must be submitted in the form of a graph with a data table that clearly displays the data.

Impact on Vacancy Rates

Background

In July 2014, Vanderbilt University Hospital (VUH) was experiencing an all-time high vacancy rate. This high rate was due to several factors:

- Prior to this time, in response to a predicted $250 million decline in revenue over a period of two years due to significant reimbursement changes, Vanderbilt University Medical Center (VUMC) initiated a Project Management Office (PMO) to address cost-reduction and revenue enhancement. This was transparent to the staff and even though we stated from the beginning the clinical staff would not be affected, the process itself created extreme anxiety throughout the organization. During the following nine months to a year, 1,000 plus jobs were eliminated through layoffs, retirements and job cuts. Approximately 30 nurses retired. Other measures included a restructuring of the benefits programs that included a change to flex Paid Time Off (PTO) and no annual increases. Regardless of our efforts at transparency and protection of clinical staff, we knew that we had lost ground with both internal and external image.
- We had also experienced a sharp decline in our nursing candidate pool. Growth in specialty areas, such as cardiology and transplant programs had created a high demand for experienced nurses in an already low candidate pool. We knew from historical data that we needed approximately four candidates for one hire and we were not close to that number.
- Another issue that came during this same time frame was a large increase in our "Time to Fill" days – it was taking well over 50 days from application to hire for the small number of nursing applicants we had. This frequently prompted them to move on to another organization to avoid the long wait. Therefore, the question did we have a bigger candidate pool than we thought, just that the "Time to Fill" process needed streamlining?

Goal Statement

To decrease the total registered nurse (RN) actual vacancy rate as percentage of budgeted full time equivalents (FTE) in VUH (adult) inpatient.

Interventions

In July 2014, a Staffing Project Management office (PMO) was initiated. Led by the Director of Nursing Professional Practice and Magnet Recognition, this was a full-force effort to secure new staff by addressing issues with available candidate pool and time to fill to begin to address the vacancy factor. This work was slated to be comprehensive, therefore several smaller groups were appointed to identify solutions for specific identified problems.
One of the groups was tasked to address the issue of access to our application website and the onboarding of new hires. Issues identified included:

- Application web-site was hard to find, and then to navigate and understand what nursing roles were available and where they were located
- Nurse recruiting website was static and had not been updated in several years
- Redundant paper work that was not electronic which increased the amount of time to get a new hire into the system
- Several hand-overs between the nurse hiring manager and the nurse recruiter which could be confusing to the hiring process and the candidate and increased the amount of time to extend an offer and navigate the required paperwork

To address these issues that were termed under “Candidate Throughput”, an interdisciplinary team was appointed to address these issues through a LEAN Process. This team worked quickly over the next three months to identify the issues and design and implement new processes. Addressing the workflow itself supported this team to redesign the current process and implement the changes quickly. Below are some of the areas addressed.

- Recruitment and application website updates
- Pre-posting requirements for nursing roles
- Electronic paper work flow
- Position reviews – between hiring nurse manager and recruiter
- Candidate review and interview process
- Offer process
- Onboarding processes

One of the major issues was the recruitment and application website; even if we draw more candidates, frustration with the website would possibly deter them from applying. The clinical nursing staff members on the LEAN team had both been here less than a year and had come here from other states and were able to articulate the frustration of dealing with the application website. The VUH clinical nurse representative, Jessica Jurkovich BSN, RN2 from the Trauma Unit, took a leadership role in the advisement and design of an updated recruitment and application website.

By April 2015, this group had:

- Updated the nurse recruitment website to a more interactive dynamic site
- Added a Nurse Recruitment Hotline with a toll free number where potential candidates can talk to a “live” person and get questions answered immediately
- Added a “Chat with a Nurse Recruiter” feature

- Added a “Tell us about yourself” pre-application summary section where candidates send in a short summary and talk to a recruiter about options – starting the process –before they ever have to do the full application
- Added an easy “Search Nursing Jobs” feature which allows a potential candidate to search by role category and location (as we have clinics in outlying counties)
- Labeled each role with the location – main campus or other
- Integrated the nurse recruitment website with our Nursing Website

Participants

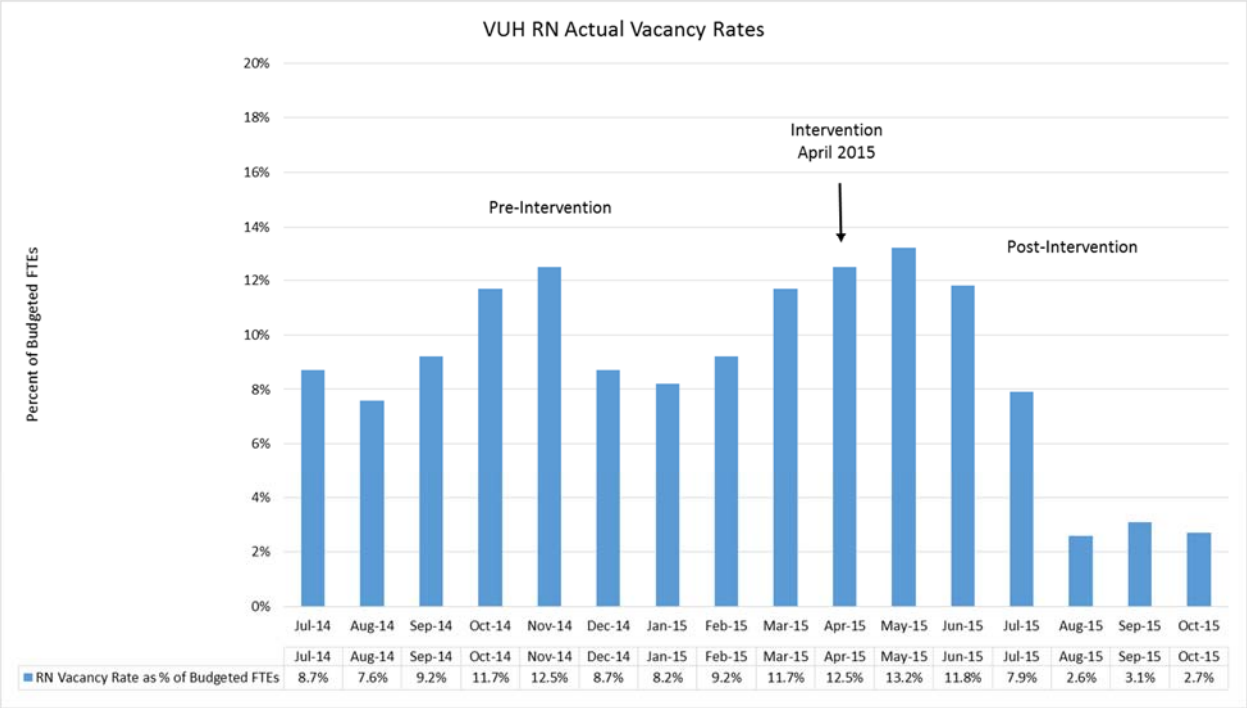
Name	Credentials	Role in organization	Practice Area	Role
Sabrina Downs	MSN, RN, NE-BC	Director, Nursing Professional Practice & Magnet Recognition	Executive Nursing Administration	Project Manager – PMO Team
Candy Lindsay	BS, RACR	Senior Director, Talent Management & Operations	Human Resources	PMO Team Member
Jason Mathisen	BS, MHM	Administrative Resident	VUH	PMO Team Member
Jannis Muscato	BS, MS	HR Director, Medical Service Delivery Teams	Human Resources	PMO Team Member
Angel Carter	BSN, RN	Nurse Manager	MCJCHV	LEAN Redesign Team
Anthony Fleming	BS, PMC, RACR, PHR, SHRM-CP	Talent Acquisition Manager	Human Resources	LEAN Redesign Team
Rachel Ingle	BSN, RN	Clinical Nurse	MCJCHV	LEAN Redesign Team
Jessica Jurkovich	BSN, RN	Clinical Nurse	Trauma Unit VUH	LEAN Redesign Team
Doug King	BS, MBA	Operations Systems Engineer	VUMC	LEAN Redesign Team
Kim Linville	MSN, RN	Nurse Manager	VUH	LEAN Redesign Team
Brandi Meacham	MSN, RN, CPN	Nurse Educator	MCJCHV	LEAN Redesign Team
Rosalyn	BS, RACR	Senior Talent	Human	LEAN Redesign Team

Norris		Acquisition Consultant	Resources	
Shelly Padgett	BSN, RN	Nurse Educator	Nursing Education & Professional Development	LEAN Redesign Team
Terri Phillips	BS	Manager, HR Systems and Reporting	Human Resources	LEAN Redesign Team
Katie Troxler	BA, MHA	Associate Director	Sr. Leadership Adult Enterprise	LEAN Redesign Team
Rick Woodroof		Payroll Specialist	Human Resources	LEAN Redesign Team
Trish Zoller	BS	Director, HR Systems	Human Resources	LEAN Redesign Team

Outcomes

A Staffing Project Management Office (PMO) was initiated in July 2014 to address the myriad issues around our vacancy rate and nurse recruitment. Due to the multiple contributing factors, a multi-faceted approach was required. Between July 2014 and April 2015, the issues were clearly identified, leadership support for potential solutions was obtained and training was planned. The “bundle” of actual interventions were implemented in April 2015.

VUH total RN inpatient actual vacancy rate as percentage of budgeted FTEs has shown a steady decrease after the interventions.


VUH RN Actual Vacancy Rates
Percent of Budgeted FTEs
20%
18%
16%
14%
12%
10%
8%
6%
4%
2%
0%
Intervention
April 2015
Pre-Intervention
Post-Intervention
Jul-14 Aug-14 Sep-14 Oct-14 Nov-14 Dec-14 Jan-15 Feb-15 Mar-15 Apr-15 May-15 Jun-15 Jul-15 Aug-15 Sep-15 Oct-15
RN Vacancy Rate as % of Budgeted FTEs
8.7% 7.6% 9.2% 11.7% 12.5% 8.7% 8.2% 9.2% 11.7% 12.5% 13.2% 11.8% 7.9% 2.6% 3.1% 2.7%

EP12

Interprofessional Care

EP12: Nurses assume leadership roles in collaborative interprofessional activities to improve the quality of care.

- *Provide one example, with supporting evidence, of a nurse-led (or nurse co-led) collaborative interprofessional quality improvement activity.*

Nurse Leader Co-Leads the Implementation of a Nurse-directed Pneumococcal Vaccination Protocol in Outpatient Clinics

The Center for Disease Control reports that every year in the United States, pneumococcal disease results in thousands of infections including pneumonia, meningitis, blood stream and ear infections. Although vaccination does not guarantee infection and illness prevention for all people, pneumococcal (PNA) vaccines are effective in averting illness requiring hospitalization and possible death. Recommended for those 65 years and older, the vaccine is also advised for adults 18 years or older with conditions that weaken the immune system, such as HIV infection, organ transplantation, leukemia, lymphoma, and severe kidney disease.

Given the CDC's guidelines, awareness of PNA vaccination as a CMS clinical quality measure, and charged with optimizing the wellness of Vanderbilt's outpatient population, the outpatient Medicine Patient Care Center (PCC) focused on implementation of a nurse-directed PNA protocol as a major initiative for fiscal year 2015. The current challenge facing the PCC was the absence of a standardized model for screening, administration, and documentation of PNA vaccination. Consequently, development and implementation of a streamlined clinical process accompanied by the ability to monitor and quantify vaccination was prioritized as a Medicine PCC quality improvement (QI) goal. Our lack of a standardized clinical process certainly contributed to having patients who need the vaccination, not receive it.

Critical stakeholders were identified and an interprofessional team (see participation grid below) began working on the protocol in early September 2014. Michelle Hasselblad, MSN, RN, NE-BC, Associate Nursing Officer of the Medicine PCC, co-led this initiative with Patty Wright, MD, Associate Professor Adult Medicine Infectious Diseases, Wendy Monaci, Associate Operating Officer of the Medicine PCC, and Jane Case, PhD, APN-NP, Director of the Medicine Advanced Practice Providers.

Michelle's initiative, collaborative leadership and direct involvement early in this project is evidenced by her drafting and distribution of foundational documents to interprofessional team members via e-mail for review and revision. *(New Evidence EP12-1 Email to Co-Leaders September 2014)*. Her sustained involvement and investment in project work is further validated by continued facilitation of team meetings for ongoing process and document review *(New Evidence EP12-2 Email re Content Map October 2014)*. Such collective interprofessional efforts resulted in the Medical

Center Medical Board's (MCNB) final approval of the protocol *(New Evidence EP12-3 MCMB Protocol Approval)* and a pilot was launched in November 2014.

Several medical specialty clinics were selected for pilot implementation (nephrology, rheumatology, hypertension, pulmonary). Michelle partnered with her PCC peers, who represented the PCC's medical, financial and advanced practice leadership, to provide rolling education and information regarding the protocol's implementation to staff, physicians and advanced practice providers within the selected clinic settings. Additionally, each individual clinic was empowered to design its own integration process based on its unique patient population, needs, and flow**.** Again, Michelle's continual presence and support of protocol sustained implementation and trouble shooting was apparent.

Effectiveness of Implementation was noted by an increase in vaccination compliance rates from a baseline value of 58% in September 2014 to post implementation value of 77% by June 2015 (See graph below). Due to pilot success, PNA protocol integration was extended into Internal Medicine and Primary Care clinic sites *(New Evidence EP12-4 Email re Expansion to Internal Med 7.7.15; New Evidence EP12-5 Example Education PPT)*

Participants

Name	Credentials	Role in Organization	Practice Area	Committee Role
Michelle Hasselblad	MSN, RN, NE-BC	Associate Nursing Officer, Medicine PCC	Medicine Patient Care Center	Co-leader
Patty Wright	MD	Medical Director, Associate Professor Infectious Diseases Adult Medicine	Medicine Patient Care Center	Co-leader
Neeraja Peterson	MD	Medical Director	Internal Medicine Clinics	Internal Medicine clinic physician consultant
Phillip Cook	MMHC	PCC Quality Consultant	Medicine Patient Care Center	Quality Consultant
Wendy Monaci		Associate Operating Officer	Medicine Patient Care Center	Co-leader
Tom Ervin		Financial Officer	Medicine Patient Care Center	Financial Consultant
Jane Case	PhD, APRN, FNP-BC	Advanced Practice Nursing Leader	Medicine Patient Care Center	AP nurse leader consultant
Teresa Milan	BSN, RN	Clinic Nurse Manager	Internal Medicine clinics	Internal Medicine clinic nurse

				consultant
Holley Cully	BSN, RN	Charge Nurse	Internal Medicine clinics	Internal Medicine clinic nurse consultant
Katie Brennan	MSN, RN, NE-BC	Administrative Director, Primary Care and Internal Medicine Clinics	Medicine Patient Care Center	Internal Medicine and Primary Care nurse consultant
Michael Darden	BSN, MBA, RN	Administrative Director, Medical Specialty Clinics	Medicine Patient Care Center	Specialty Clinics nurse consultant
Lynn Christman		Business Manager	Medical Specialty Clinics (HTN, Nephrology, Renal Transplant Rheumatology, Toxicology, Pulmonary)	Business consultant
Karen Gore	RN	Interim Nurse Manager Medical Specialty Clinics: Renal Transplant Nurse manager	Medical Specialty Clinics	Specialty Clinic nurse consultant
Carla Sevin	MD	Medical Director – Pulmonology	Medicine Patient Care Center	Physician consultant
Kim Frazier	RT	Respiratory Therapist	Medicine Patient Care Center	Pulmonary consultant
Haley Rector	PharmD	Hospital Pharmacist	VUH Pharmacy	Pharmacology consultant

Project Scope

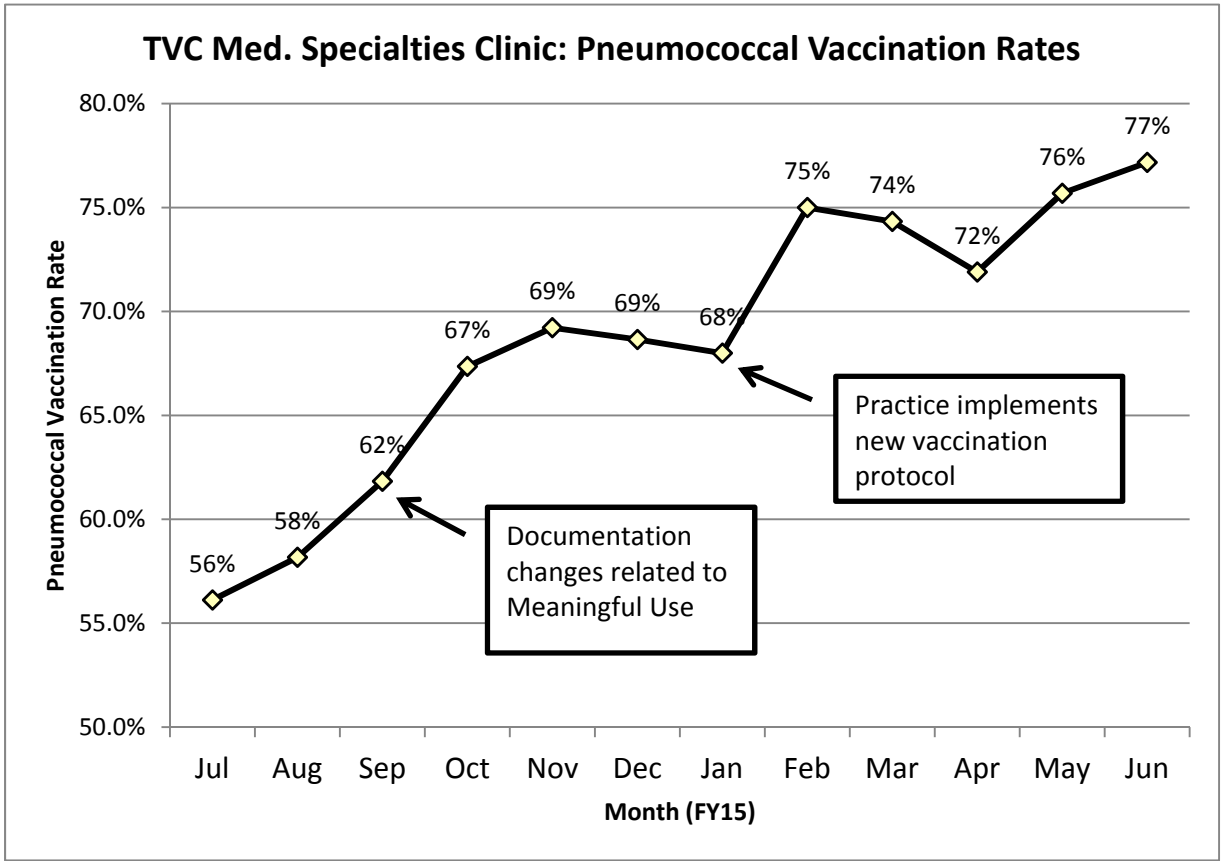
Medicine PCC Project- Pneumococcal Vaccination- September 2014

Leads: Patty Wright, Michele Hasselblad, Wendy Monaci, Jane Case

PROBLEM TO BE SOLVED: Develop a standard model for screening, administering, and documenting Pneumococcal vaccination in the outpatient setting. Develop method to determine the numerator and denominator to measure compliance.		
CONTEXT: Pneumococcal vaccination has been shown to decrease the incidence of pneumococcal disease in adults age 65 or older or age 18-64 with certain health conditions.		**CONSTRAINTS:** • Need provider/staff participation and ownership • Staff resource/workflow implications

CRITERIA FOR SUCCESS: • Develop a methodology to measure compliance • Measure baseline • Develop a process to screen, administer, & document vaccination • FY15 Metric: Implement process in 3-5 clinics • Re-measure for improvement		**STAKEHOLDERS:** • Patients • DOM physicians, staff, leaders
SCOPE OF SOLUTION SPACE: • Outpatient setting • DOM clinics (3-5 clinics TBD)		**BARRIERS TO IMPACT:** • Measurement—may need IT resource to develop measurement methodology: manual process not feasible to sustain

Outcome



EP13EO

Interprofessional Care

EP13EO: Nurses participate in inter-professional groups that implement and evaluate coordinated patient education activities.

- Provide one example, with supporting evidence, of an inter-professional patient education activity that was associated with an improved patient outcome. Supporting evidence must be submitted in the form of a graph with a data table that clearly displays the data.

Background/Problem

Traditionally, Medicare pays providers for services provided during a single episode or treatment course. This traditional fee-for-service approach resulted in poorly coordinated, fragmented care which rewarded quantity versus quality of service. The Bundled Payments for Care Improvement (BPCI) initiative, developed by the Centers for Medicare and Medicaid Services (CMS), examines alternative payment and care delivery models. Under BPCI, CMS would pay agreeing organizations for multiple services received during an episode of care. With a focus on performance and financial accountability, this initiative may result in more cost effective, coordinated quality care.

This innovative payment and care delivery model provided an opportunity for Vanderbilt nurses to actively participate and contribute to the reengineering of care delivery and outcomes as part of an inter-professional team. As direct caregivers, nurses provide care and education to patients and their families along the entire continuum of care. It was theorized that the use of inter-professional collaboration in designing and delivering education and engaging the patient/family through education from all disciplines throughout the continuum of care would show improvements in the care delivery system and render positive results on quality and patient perception of coordination of care. This ultimately would translate to affirmative and measurable human, quality and financial outcomes.

In January 2014, Vanderbilt entered into a bundled payment arrangement with Medicare for valve replacement/repair procedures from the pre to post-operative period. In preparation for the January 2014 arrangement, an inter-professional team had been assembled in early 2013 to orchestrate a multi-faceted care approach to cost effective, quality care of this unique patient population.

Due to the inter-professional preparation of education materials and timing of delivery, one of the keys was that the team members could reinforce the education, monitor patient understanding and compliance at all junctions of the care continuum. Examples include:

- Medication education and compliance
- Wound care

- Use of incentive spirometer

In further preparation for January 2014, in late 2013, Vanderbilt Heart and Vascular Institute (VHVI) began to implement several improvements in patient education and patient engagement across the continuum of care for the valve replacement/repair patients to improve coordination of care and improve quality for optimal outcomes.

Goal Statement
Decrease rate of 90 day readmissions among CMS valve bundle project patients by 10%.

Description of Intervention/Activities
A structured, evidence-based care pathway, Valve Milestone Pathway, was developed by the inter-professional team to guide the coordination and delivery of evidence-based care and education beginning at the pre-procedure evaluation and continuing through 90 days post-procedure.

Patient education and teach back were critical components of the pathway. It was hypothesized that the effectiveness of education would be enhanced by providing small amounts of instruction at strategic times along the care pathway beginning pre-operatively and continuing through the recovery phase to 90 days post discharge. By embedding structured, standardized patient education, the team could provide important, relevant information with the appropriate materials at appropriate times. In addition, that education would be followed-up and reinforced by each team member.

To support effective implementation of the pathway and all its educational components, all members of the team received focused training on the following:

- Valve Milestone Pathway – Team members were trained in pathway application and documentation through a simulation e-learning module.
- Patient Pre-Op class instructor training – Care coordinators were provided with instruction, feedback and consultation in the development of the valve patients' pre-op class. Based on the feedback, course flow, facilitation, visuals and course materials were updated.
- Patient and Family Education – Team members completed a scenario based interactive learning module to understand and apply best practices in patient education.
- Champions of Patient Education - Clinical Staff Leaders (CSLs) completed an instructor led training to improve abilities to coach and assist staff with patient education challenges.

The team developed and launched new and innovative patient education tools based on the Valve Milestone Pathway. In addition, documentation, understanding and application of the education by the patient are captured in the electronic medical record

(EMR) for all of the team members to follow, reinforce and move to the next phase/level of training. Examples of the new patient education tools included:

- Re-organized pre-op classes that utilized more visual aids and take-home materials for patient instruction
- A scenario based interactive patient education e-learning module

Below are examples of the work of this inter-professional team.

Figure EP13EO-1 Screenshot Value Milestone Pathway E-Learning Team Education

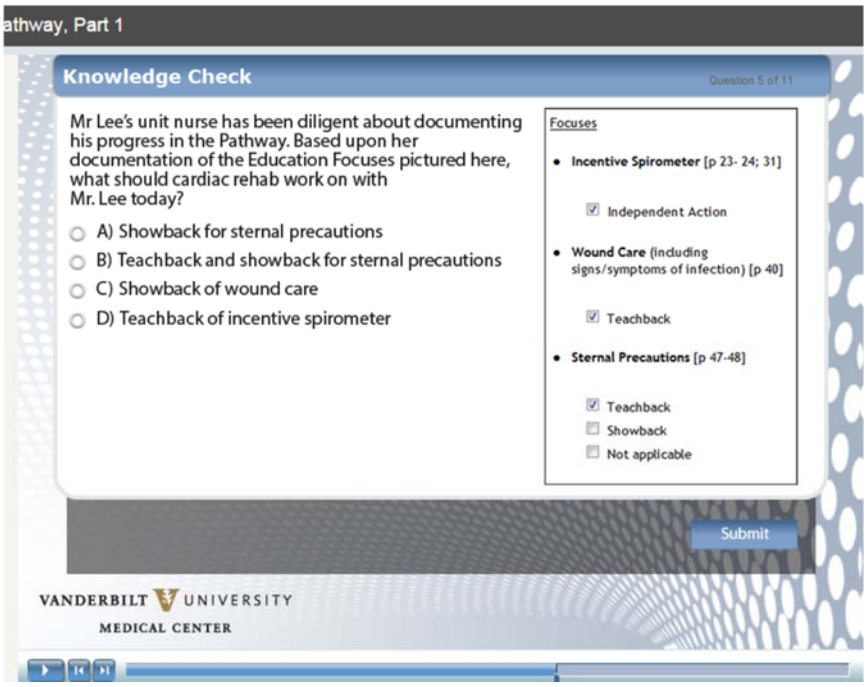


Figure EP13EO–2 Screenshot Valve Pathway E-Learning Team Education

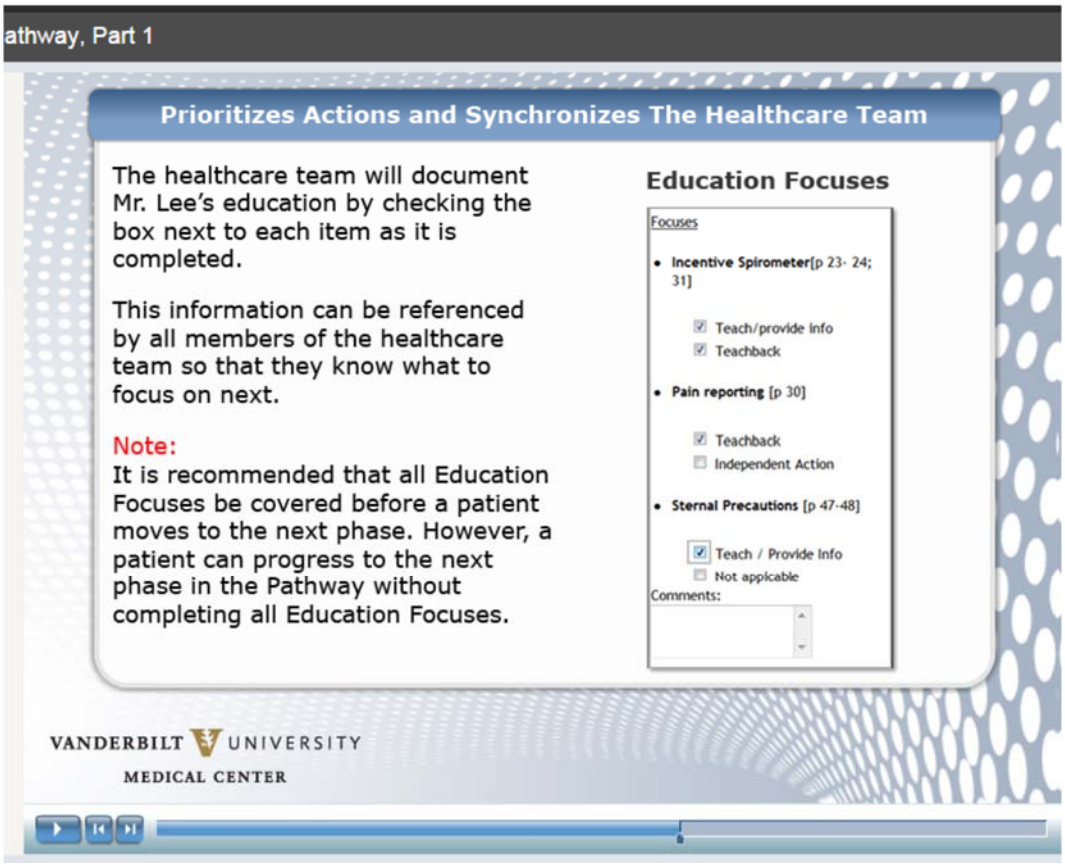
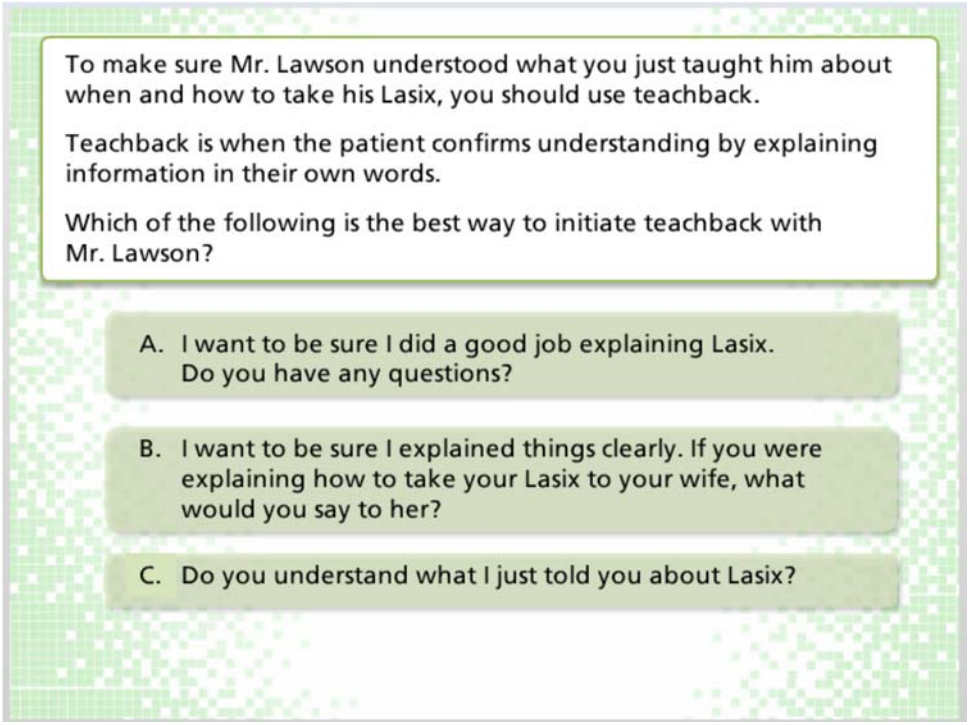
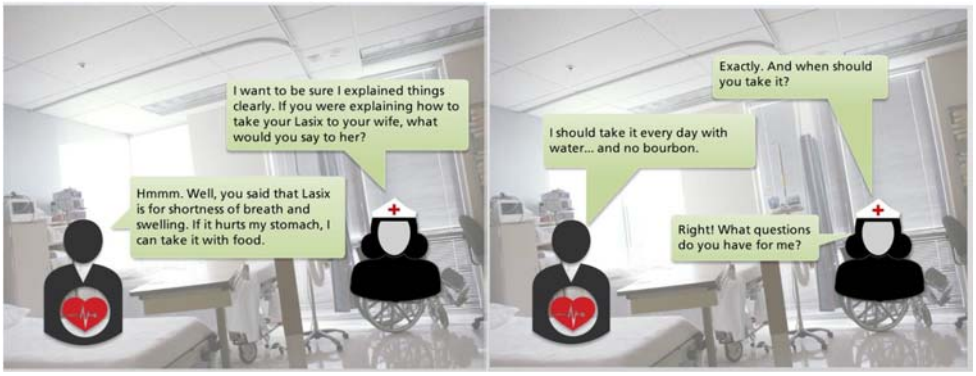


Figure EP13EO-3 Examples of Revised Patient Education Materials

Figure EP13EO-4 Example Scenario Based E-Learning Module for Team Members

Figure EP13EO- 5&6 Example Scenario Based E-Learning Module for Team Members





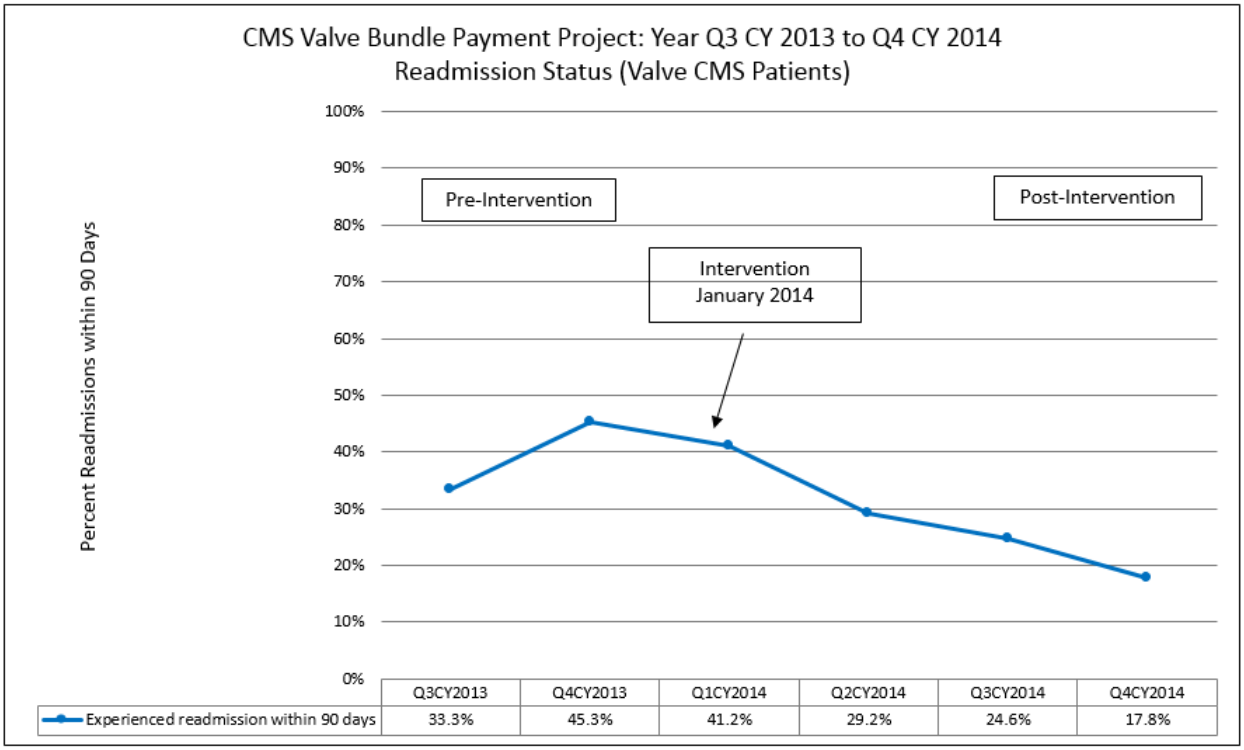
Participants

Participant	Credentials	Role in Organization	Practice Area	Role on Committee
Brittney Cunningham	MSN, RN	Director, Episodes of Care	VHVI	Quality Nurse Specialist
Kathy Burns	MSN, RN, CNS, CCRN	Clinical Nurse Specialist	5 North CVICU	Clinical Nurse Leader
Marie Glaser	MSN, RN	Associate Nursing Officer, VHVI	VHVI	Administrative Nurse Leader
Heather Campbell	MSN, RN	Clinical Business Coordinator	VHVI	Clinical Nurse Manager
Michael Petracek	MD	Chair Cardiac Surgery	VHVI	Physician Lead
Vickie Davis	BS, MS, PMP	Sr. Consultant	Workforce Performance Organization	Learning Consultant
Lane Stiles	BA, BS, MA	Director	Patient Education	Education Consultant
Shelly Padgett	BSN, RN	Professional Development Specialist	Nursing Education & Professional Development	Education Specialist
Nora Jewell	MSN, APRN	Assistant Inpatient Nurse Practitioner, VHVI	VHVI	Clinical Consultant
Michelle Hasselblad	MSN, RN, NE-BC	Associate Nursing Officer, Patient Care Center	VHVI	Administrative Nurse Leader

Courtney Channels	BSN, RN	Valve Patient Care Coordinator	Inpatient Cardiology, 7N	Clinical Consultant
Kathy Hatton	BSN, RN	Valve Patient Care Coordinator	VHVI Administration	Clinical Consultant
Brenda Reed	MSN, RN	Case Manager II	VHVI	Care Coordination
Erin Martin	BSN, RN	Case Manager II	VHVI	Care Coordination
Amy Williford	Certified Exercise Specialist, ACSM	Coordinator, Health Promotion Center	Health Promotion Center	Physical Therapy Specialist
Sondra Park	RN	Clinical Staff Leader	5 South CV Progressive Unit	Clinical Leader
Erin Neal	PharmD	Clinical Pharmacist	5 South CV Progressive Unit	Pharmacy Specialist
Leslie Potts	BSN, RN	Clinical Nurse	5 South	Clinical Leader
Cecil J Barber	RN	Clinical Staff Leader	5 North CVICU	Clinical Leader

Outcomes

A significant and sustained reduction (greater than 10%) in 90 day readmissions among CMS valve bundle project patients was noted from quarter 1 through quarter 4 (calendar year quarters) of 2014 from 41.2% to 17.8% after implementation of patient education pathway in January 2014.


CMS Valve Bundle Payment Project: Year Q3 CY 2013 to Q4 CY 2014
Readmission Status (Valve CMS Patients)
Percent Readmissions within 90 Days
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Pre-Intervention
Post-Intervention
Intervention
January 2014
Q3CY2013
Q4CY2013
Q1CY2014
Q2CY2014
Q3CY2014
Q4CY2014
Experienced readmission within 90 days
33.3%
45.3%
41.2%
29.2%
24.6%
17.8%

EP14

Accountability, Competence, and Autonomy

EP14: Resources, such as professional literature are readily available to support decision-making in autonomous nursing practice.

- Provide two examples, with supporting evidence, of how resources are used to support evidence-based clinical decision-making in autonomous nursing practice.

Introduction

Vanderbilt places a high priority on evidence-based nursing practice and the use of that evidence to support clinical decision-making and we provide a number of readily available resources for support. Examples of those resources are listed below:

- Nursing Research Office
- Nursing Research Committee
- Evidence-Based Practice & Nursing Research website
    - https://www.mc.vanderbilt.edu/root/vumc.php?site=evidencebasedpractice
- Evidence-Based Nursing Practice (EBNP) Fellowship
- Writing for Publication workshops
- Evidence-based clinical librarians are available through electronic request to assist the clinical nursing staff in literature searches and can also complete evidence searches for immediate patient treatment decision needs.
- The Clinical Work Stations (CWS) – electronic documentation system computers – throughout the units and clinics and in some areas in each patient's room house a number of easily accessible marked websites (icons) in addition to supporting search functions.
    - Mosby's – our one on-line resource for nursing practice and procedures – provides evidence-based practice recommendations and is continuously updated to ensure current evidence is used
    - ZYNX – a proprietary product that provides an evidence-based plan of care, with direct links to the evidence
    - Up-To-Date
    - MD Consult
    - Direct link to our medical library for searching in Medline, CINAHL and other databases such as Cochrane, with access to the librarians for assistance EP14a-1 Screenshot Library A-Z Database Access
- Clinical Practice Committee and Clinical Policy and Practice Committee – all clinical policies, protocols, etc. are required to have supporting evidence
- Department of Quality, Safety & Risk Prevention (QSRP) provides consultative services and also supports SciHealth – a portal that houses data such as nurse-sensitive quality indicators, infection rates, other quality data and administrative data, such as hours per patient day, etc.
- Electronic Data Warehouse (EDW) – repository for electronic data that can be mined

- A number of internal specialty consultants that are readily available to the clinical staff; including, but not limited to: advanced practice nurses, infection prevention nurses, wound/ostomy nurses, nursing quality consultants, etc.
- Research Support Services (RSS) – provides assistance for all steps throughout any research process
- Institutional Review Board (IRB) Consultation Services – assists all investigators in the full IRB process

Example a

Psychiatric Hospital Clinical Nurses Use Evidence to Develop Groups that Cater to a Geriatric Population

Vanderbilt Psychiatric Hospital's (VPH) Adult 3 program's scope of service includes providing acute psychiatric/mental health inpatient treatment for patients diagnosed with mood disorders, as well as a geriatric component. The provision of care for the geriatric population has required program development and staff investment. Along with advocating for needed resources for the delivery of quality care for the geriatric population, clinical nurses have been instrumental in utilizing evidence to guide their autonomous practice. Through the unit's geriatric task force, nurses have utilized evidence to develop psycho-educational groups that cater to the specific needs of the geriatric population. During the first quarter of 2014, the Adult 3 clinical staff developed tools that are instrumental in providing quality programming for group content for the geriatric population.

Clinical staff at VPH have full access to our Eskind Biomedical Library (EBL) from the Clinical Work Stations, which is the hub of Vanderbilt University Medical Center's (VUMC) information services and resources. The EBL provides access to materials to support patient care, healthcare education, and biomedical research missions of VUMC. The EBL provides an extensive digital library of electronic journals, books, databases and other resources, in addition to over 200,000 print volumes. Additionally, VPH clinical staff have access to an in-house nursing library which houses volumes specific to the care of psychiatric/mental health patients, and psychiatric/mental health nursing. Meredith Melvin, BSN, RN-BC and the geriatric task force conducted a literature review to develop group content that was evidence-based, and would meet the varied needs of geriatric patients with multiple diagnoses on the Adult 3 unit (i.e., dementia, anxiety, depression, Parkinson's disease).

The following references were used in relation to the movement group development:

Arnold, C. M., Sran, M. M., & Harrison, E. L. (2008). Exercise for fall risk reduction in community-dwelling older adults: a systematic review. *Physiotherapy Canada*, *60*(4), 358-372.

Galantino, M. L., Green, L., DeCesari, J. A., MacKain, N. A., Rinaldi, S. M., Stevens, M. E., ... & Mao, J. J. (2012). Safety and feasibility of modified chair-yoga on functional outcome among elderly at risk for falls. *International journal of yoga*, *5*(2), 146.

Heiberger, L., Maurer, C., Amtage, F., Mendez-Balbuena, I., Schulte-Mönting, J., Hepp-Reymond, M. C., & Kristeva, R. (2011). Impact of a weekly dance class on the functional mobility and on the quality of life of individuals with Parkinson's disease. *Frontiers in aging neuroscience*, *3*.

Nauert, R. (2010, January 12). *Scientific basis for yoga benefits*. Retrieved from http://psychcentral.com/news/2010/01/12/scientific-basis-for-yoga-benefits/10693.html

Oken, B. S., Zajdel, D., Kishiyama, S., Flegal, K., Dehen, C., Haas, M., ... & Leyva, J. (2006). Randomized, controlled, six-month trial of yoga in healthy seniors: effects on cognition and quality of life. *Alternative therapies in health and medicine*, *12*(1), 40.

Palo-Bengtsson, L., Winblad, B., & EKMAN, S. L. (1998). Social dancing: a way to support intellectual, emotional and motor functions in persons with dementia. *Journal of psychiatric and mental health nursing*, *5*(6), 545-554.

Schrack, J. A., Simonsick, E. M., & Ferrucci, L. (2010). The energetic pathway to mobility loss: an emerging new framework for longitudinal studies on aging. *Journal of the American Geriatrics Society*, *58*(s2), S329-S336.

Shumway-Cook, A., Gruber, W., Baldwin, M., & Liao, S. (1997). The effect of multidimensional exercises on balance, mobility, and fall risk in community-dwelling older adults. *Physical therapy*, *77*(1), 46-57.

Initial work was centered on the development of a movement group as it pertained to the unit's geriatric population. Needs were identified by clinical staff that included minimal opportunities for physical exercise for the geriatric patients, as well as an observed reluctance of the geriatric patients to attend the unit's current group offerings targeted for the entire unit.

The creation of a movement group was developed by Meredith and the geriatric task force. Evidence supported the multiple benefits associated with increasing daily activity for the elderly. Meredith coordinated and summarized the findings from the literature to outline the movement group content, while working in parallel with the geriatric task force and Dr. William Petrie, the physician chair of the geriatric task force.

Initiation of the movement group was approached by encouraging buy-in from the geriatric patients by pointing out the positives that the group afforded (i.e., healthy coping skills, increased physical activity, increased independence with activities of daily living (ADL), and improved emotional and physical well-being). The group was incorporated into the unit's schedule at specific times in order to provide for convenience and readiness of the patients to attend and participate actively.

Participants

Name	Credentials	Role in Organization	Practice Area	Role
Meredith Melvin	BSN, RN-BC	Clinical Nurse	VPH Adult	Leader
Alyssa Wooding	BSN, RN-	Clinical Staff	VPH Adult	Member

	BC	Leader		
Shannon Webb	BSN, RN-BC	Nursing Manager	VPH Adult	Sponsor
Alexandra Bowers	BS Social Work	Mental Health Specialist 2	VPH Adult	Member
Brandi Felts	MSW	Social Worker 2	VPH Adult	Member
Theresa Herman	M.D.	Physician – Administrative Operation Officer	VPH	Member
Tammy Novak	MSW	Director of Social Services	VPH	Member
Monica Nwachuku	MSW	Social Worker 2	VPH Adult	Member
Todd Peters	M.D.	Physician	VPH Adult	Member
William Petrie	M.D.	Physician	VPH Adult	Member
Meghan Riddle	M.D.	Clinical Fellow	VPH Adult	Member
Amanda Wilson	M.D.	Physician	VPH Adult	Member

The movement group was well received by patients on the Adult 3 Program. They responded well to the concept of targeted group content that supported the addition of increased physical activity into each day. Added benefits of this group work included ease of incorporation into daily programming, little to no resource requirements by way of extra staff or equipment, and applicability for patients with varying diagnoses. Clinical nurses also observed that the benefits experienced by patients within the group could be offered as reminders for them throughout their hospitalization relating to healthy coping skills and other gains that were attained by increasing physical activity during each day. Patient participation increased by both attendance and engagement within the group. The group was found to be easily modifiable for patients with physical limitations or special needs. EP14a-2 Email from Manager re: Work 1/27; EP14a-3 Email Exchange re: Program Schedule 2/28; EP14a-4 Email Outline re: Movement Group 3/4; EP14a-5 Email Talking Points VPH Geriatric Program 4/7

Meredith's structuring of the movement group included consideration of the results of evidence from randomized controlled clinical trials on the influence of exercise intervention for older adults. Arnold, Sran, and Harrison (2008) indicate that as part of a systematic review, seventeen of nineteen studies found positive effects for patients overall, in relation to either group or individual strength/balance focused training. In addition, there were improvements in fall risk factors that were measured. Meredith considered chair exercise components as part of the group in relation to her findings from research by Galantino et al. (2012) who piloted a study that found the use of chair yoga exercise sessions for elderly adults were both feasible and safe with respect to an exercise interventional program for the older adult. These findings were instrumental for the work group in consideration of patients with limitations. Guided breathing,

stretching, flexion and extension were all parts of the movement portion of the group which targeted exercises for patients who were mobile and for those with physical limitations.

Meredith considered findings associated with research by Schrack, Simonsick, and Ferrucci (2010) who examined the relationship that physical activity, walking independently, and mobility have on preserving muscle mass, quality of life, and reducing comorbidities. With the realization that voluntary aerobic activity helps to sustain endurance, strength, and capacity, she incorporated discussion into the group activity which included the identification of ways to increase movement activities during the course of each day. Opportunities to improve cardiovascular health, strength, and endurance were points of reference for the group discussion. Additionally, the physiological and psychological benefits of exercise were planned as discussion points. Underscored during the group was that evidence supports that exercise can improve balance and mobility functioning, as well as reduce the likelihood of falls for older adults (Shumway-Cook, Gruber, Baldwin, & Liao, 1997).

When the clinical nursing staff are conducting the exercise groups they have the information and the outline that Meredith prepared for the groups. The nurses can then target each patient in the group if they need modified exercise or special instruction. In addition, as they work with the patients on a daily basis, they can heighten the patient's awareness of how to work more exercise into their daily routines. Meredith's research and group exercise outline as approved by the physicians provides the support for autonomous practice. *(Refer to Original Evidence EP14a-3 Email Exchange re Program Schedule 2.28; Refer to Original Evidence EP14a-4 Email Outline re Movement Group 3.4; Refer to Original Evidence EP14a-5 Email Talking Points VPH Geriatric Program 4.7)*

Below is an evidence table that shows the incorporation of the research into the planning for the group activities.

EP14a Table 1 Evidence used for group preparation outline

Author (Year Published)	Purpose/ Aim	Population/Sample/ Setting	Vanderbilt Psychiatric Hospital (VPH) Previous Practice	Identified new evidence	Implementation /New VPH Practice
Arnold, C. M., Sran, M. M., & Harrison, E. L. (2008)	To evaluate the influence of exercise on falls and fall risk reduction in community-dwelling older	Systematic review of randomized controlled trials (200-2006) that used an exercise or physical activity intervention that involved	VPH lacked groups that were specific to movement for the	Falls and fall risk can be reduced with exercise interventions in the	Evidence utilized in the creation of a new movement group specific for the geriatric population on

	adults and to present an updated synthesis of outcome measures for assessment of fall risk in community-dwelling older adults.	participants over age 50.	geriatric population.	community-dwelling elderly, although the most effective exercise variables are unknown.	the Adult 3 Program.
Galantino, M. L., Green, L., DeCesari, J. A., MacKain, N. A., Rinaldi, S. M., Stevens, M. E….& Mao, J. J. (2012)	The goal of this pilot study was to assess the safety and feasibility of structured yoga in an elderly population with fall risk.	Preliminary research of a chair yoga based program in an assisted living community among 80-90 year old seniors.	VPH lacked groups that were specific to movement for the geriatric population.	A variety of studies have shown that exercise increases balance and quality of life for seniors [1], [2], [3], [4]. This study offers chair-based yoga as a potential	Evidence utilized to incorporate chair exercise as part of the considerations for a movement group specific for geriatric patients.
Schrack, J. A., Simonsick, E. M., & Ferrucci, L. (2010)	The capacity to walk independently is a central component of independent living. Numerous large and well-designed longitudinal studies have shown that gait speed, a reliable marker of mobility, tends to decline with age and as a consequence of chronic disease. This study hypothesized that a functional	This study hypothesized that age-related decline in physical activity and, ultimately, walking speed are compensatory mechanisms for decreased energy	VPH	intervention to increase balance and self-efficacy. Functional balance is an important characteristi	Incorporated these findings into group discussions of the evidence behind the need for daily physical activity in order to promote

	decline of available energy induces the decline in customary walking speed with aging and disease. This prospective clinical investigation examined the effects of a multidimensional exercise program on balance, mobility, and risk for falls in community-dwelling older adults with a history of falling	availability. An associated aim was to understand factors that affect these energy constructs in order to help explain why older persons tend to have a low fatigability threshold. The purpose was to identify new targets for disability prevention in older individuals.	lacked groups specific to movement for the geriatric population.	c as it represents the ability of the individual to complete activities of daily life. Findings suggest that, with older age, energy availability declines, and energy needs for independent living increase. The relationship between physical activity and mobility indicates that these changes may be modifiable through maintaining or increasing physical activity in adulthood and late life to preserve muscle mass and quality, and reduce	mobility, independence, and quality of life.
Shumway-Cook, A., Gruber, w., Baldwin, M., & liao, S. (1997)		A total of 105 community-dwelling older adults (> or = 65 years of age) with a history of two or more falls in the previous 6 months (no neurologic diagnosis) participated. They were classified into	VPH lacked groups		This evidence was incorporated into talking points within the group to emphasize that exercise can improve balance and mobility function, as well as decrease the fall risks often

		(1) a control group of fallers (n = 21), (2) a fully adherent exercise group (n = 52), and (3) a partially adherent exercise group (n = 32).	specific to movement for the geriatric population.	comorbidities. Both exercise groups scored better than the control group on all measures of balance and mobility. Although both exercise groups showed a reduction in fall risk compared with the control group, the greatest reduction	associated with older adults.

				was found in the fully adherent exercise group. Factors associated with successful response to exercise included degree of adherence to exercise program and pretest score on the Tinetti Mobility Assessment . Exercise can improve balance and mobility function and reduce the likelihood for falls among community-dwelling older adults with a history of falling. The amount of exercise needed to achieve these results, however, could not be determined	

				from this study.	

Additional References:

1. Schmid AA, Van Puymbroeck M, Koceja DM. Effect of a 12-week yoga intervention on fear of falling and balance in older adults: A pilot study. Arch Phys Med Rehabilitation 2010; 91:576-83.

2. Arnold CM, Sran MM, Harrison EL. Exercise for fall risk reduction in community-dwelling older adults: A systematic review. Physiotherapy Can Fall 2008; 60:358-72.

3. Lord SR, Castell S, Corcoran J, Dayhew J, Matters B, Shan A, et al. The effect of group exercise on physical functioning and falls in frail older people living in retirement villages: A randomized, controlled trial. J Am Geriatric Society 2003; 51:1685-92.

4. Kim S, Lockhart T, Roberto K. The effects of eight-week balance training or weight training for the elderly on fear of falling measures and social activity levels. Quall Ageing 2009; 10:37-48.

Example b

Vanderbilt Center for Women's Health Develops an Evidence-Based Education Program for Patients with Gestational Diabetes Mellitus

Background

Fetal macrosomia complicates up to fifty percent of pregnancies in women with Gestational Diabetes Mellitus (GDM). Due to a higher body fat percentage, thicker skin folds, and greater shoulder circumference, a macrosomic fetus experiences higher rates of shoulder dystocia and birth trauma. Maternal morbidity is also adversely affected due to an increased risk of cesarean delivery, postpartum hemorrhage, birth trauma, and shoulder dystocia.

Aware of the higher rate of macrosomia in women with untreated GDM, the nurses at Vanderbilt's Center for Women's Health wanted to provide patient-focused education and support to these expectant GDM patients. Creating an educational program based upon a strong, evidence-based foundation would support optimal health of women with GDM while decreasing the incidence of fetal macrosomia; ultimately, decreasing maternal and fetal complications.

Example

Supported by physician partners and nursing leadership, clinical nurse Holly Rickets, BSN, RN, EFM, and dietician Becky Gregory, RD, created an evidence-based program to empower GDM patients to embrace and engage in optimal self-care activities. Most importantly, they recognized that individual assessment of each patient's needs and customization of educational approach and content would be the key. Access to professional literature and other resources was and continues to be instrumental in the program's development and ongoing refinement and supports practice autonomy to assure and sustain patient-centered care.

Using clinical judgment guided by current evidence and clinical practice guidelines, this team modified education and health coaching to meet the individual needs of each woman. Following an individual needs assessment, staff draw upon a number of resources to tailor teaching materials to support understanding, self-care, and independence. Patient handouts have been developed that reflect thoughtful review and effective collation of relevant information from multiple resources.

Internal and external literature resources are also readily available from VUMC's clinical and administrative work stations. For example, Mosby Nursing Consult and Skills and Up-to-Date are incorporated into and easily accessible while in a patient's electronic health record, "*Star Panel*". EP14b-1 Resources via EHR Most importantly, patients also experience benefits of this ready access. Utilization of laptop computers during the GDM group classes allow the team real-time access to internal VUMC references through Eskind Biomedical Library's extensive databases, as well as Krames On-Demand patient education system which is evidence-based. EP14b-2 Krames Patient Education; EP14b-3 Krames GDM

Other patient educational materials provided by well-known and recognized external experts, such as the National Institute of Child Health & Human Development, U.S. Department of Health and Human Services, American Dietetic Association, and National Diabetes Education Program are also frequently utilized.

Clinical practice guidelines from two national organizations, Academy of Nutrition and Dietetics' Nutrition Practice Guidelines 2008 and the American Diabetes Association's Guidelines for Pregnancy currently guide the center's care of women with GDM to assure best practice and optimal maternal and fetal outcomes. Becky Gregory, RD is an active member of the National Committee for the Academy of Nutrition and Dietetics that advises and compiles the organization's practice guidelines.

Additional resources employed through national professional organizations include: American College of Obstetricians and Gynecologists Association of Women's Health, Obstetric and Neonatal Nurses and American Academy of Pediatrics. Current editions of the textbooks, *"Pregnancy: A New Life Handbook"*, and *"Telephone Triage for Obstetrics & Gynecology"* also serve as vital information reserves for the center's team and are available at the clinical site.

In summary, convenient and readily available evidence-based resources provide the GDM nurse team members the flexibility and practice autonomy to personalize written instructions and guidance for diet, exercise and self-care behaviors. Such individualization and patient-centered approach empowers self-care and independence, supports adherence and, ultimately, renders positive maternal and neonatal outcomes. EP14b-4 Taking Glyburide During Pregnancy

Evidence

In addition to previously submitted references, the following evidence-based resources were used in autonomous nursing practice for the clinical assessment, planning, and implementation of care for gestational diabetic patients during group sessions and one-on-one counseling conducted by Holly Rickets, BSN, RN, EFM, clinical nurse. Structure and content of the Gestational Diabetes Group Sessions is shown in an informational brochure *(New Evidence EP14b-1 Gestational Diabetes Group Session informational brochure)*. Other materials created from evidence-based literature include "What does Gestational Diabetes mean for me and my baby?" and "Medicines Used in Pregnancy to Lower Blood Sugar". *(New Evidence EP14b-2 Gestational Diabetes- Me and My Baby; New Evidence EP14-3 Medicines Used in Pregnancy)*

American Diabetes Association. (2000). *Medical management of pregnancy complicated by diabetes (3rd ed.).* Alexandria: VA: American Diabetes Association.

American Diabetes Association, 2013 Nutritional Guidelines - http://www.diabetes.org/newsroom/press-releases/2013/american-diabetes-association-releases-nutritional-guidelines.html#sthash.sX6syJHE.tqEaZSgq.dpuf

Asemi, Z., Tabassi, Z., Samimi, M., Fahiminejad, T., & Esmaillzadeh, A. (2013). Favourable effects of the Dietary Approaches to Stop Hypertension diet on glucose tolerance and lipid profiles in gestational diabetes: a randomized clinical trial. *British Journal of Nutrition*, *109*(11), 2024-2030.

Asemi, Z., Samimi, M., Tabassi, Z., & Esmaillzadeh, A. (2014). The effect of DASH diet on pregnancy outcomes in gestational diabetes: a randomized controlled clinical trial. *European journal of clinical nutrition*, *68*(4), 490-495.

Boucher, J. L., Evert, A., Daly, A., Kulkarni, K., Rizzotto, J. A., Burton, K., & Bradshaw, B. G. (2011). American Dietetic Association revised standards of practice and standards of professional performance for registered dietitians (generalist, specialty, and advanced) in diabetes care. *Journal of the American Dietetic Association*, *111*(1), 156-166.

Evert, Alison B., et al. "Nutrition therapy recommendations for the management of adults with diabetes." *Diabetes care* 37.Supplement 1 (2014): S120-S143.

Fagen, Cathy, J. A. C. Q. U. E. L. I. N. E. D KING, and Miriam Erick. "Nutrition management in women with gestational diabetes mellitus: a review by ADA's Diabetes Care and Education Dietetic Practice Group." *Journal of the American Dietetic Association* 95.4 (1995): 460-467.

Gabbe, S. G., Niebyl, J. R., & Simpson, J. L. (2002). *Obstetrics: Normal and problem pregnancies (4th ed.).*Philadelphia: PA: Churchill Livingstone.

Han, Shanshan, et al. "Different types of dietary advice for women with gestational diabetes mellitus." *The Cochrane Library* (2013).

Kitzmiller, John, et al., eds. *Managing preexisting diabetes and pregnancy: technical reviews and consensus recommendations for care*. American Diabetes Association, 2008.

American Diabetes Association (2000). Diabetes and pregnancy: What to expect (4th ed.). Alexandria: VA: American Diabetes Association.

American Diabetes Association (2000). Gestational diabetes: What to expect (4th ed.). Alexandria: VA: American Diabetes Association.

The table below outlines the sources and application of evidence-based resources utilized to create the materials and for nursing management of the GDM patients.

EP14b Table 1 Evidence-based resources and application for GDM

Evidence-Based Resource	Highlights	Setting Utilized or Document Created
American Diabetes Association. (2000). *Medical management of pregnancy complicated by diabetes (3rd ed.).* Alexandria: VA: American Diabetes Association.	Book provides guidance for: • Prevalence/impact of preexisting (type 1 & 2) diabetes and gestational diabetes (GDM) • preconception care & counseling • Recommended screening & GDM diagnosis guidelines • Pregnancy metabolism alterations • Maternal/fetal complications • Evidence-based management guidelines • Postpartum care & follow-up	• GDM Group Session for group and individualized education and counseling • GDM Group Session brochure • Patient educational handouts - "What does gestational diabetes mean?" • (EP14b -3) - "Medicines used in Pregnancy" (EP 14b – 4)

American Diabetes Association, 2013 Nutritional Guidelines - http://www.diabetes.org/newsroom/press-releases/2013/american-diabetes-association-releases-nutritional-guidelines.html#sthash.sX6syJHE.tqEaZSgq.dpuf	• Nutritional therapy based on scientific evidence • Diet: nutrient dense, appropriate portions, individualized • Dietary consultation essential with RD • Participation in diabetes self-management education program • Daily Na content 2300 mg per/day • Avoid sugar sweetened beverages • Fatty fish 2 x per week • No demonstrated benefit of vitamin/mineral supplements	• GDM Group Sessions • Individualized, patient-centered education & counseling
Asemi, Z., Tabassi, Z., Samimi, M., Fahiminejad, T., & Esmaillzadeh, A. (2013). Favourable effects of the Dietary Approaches to Stop Hypertension diet on glucose tolerance and lipid profiles in gestational diabetes: a randomized clinical trial. *British Journal of Nutrition*, *109*(11), 2024-2030.	• Dash diet: fruits, vegies, whole grains, low-gat dairy, 2400 mg Na/day. • DASH diet effective in improving glucose tolerance, decreasing A1C, HDL/LDL cholesterol, systolic BP • DASH diet x 4 weeks in GDM women rendered positive glucose and lipid effects	• GDM Group Sessions • Individualized, patient-centered education & counseling
Asemi, Z., Samimi, M., Tabassi, Z., & Esmaillzadeh, A. (2014). The effect of DASH diet on pregnancy outcomes in gestational diabetes: a randomized controlled clinical trial. *European journal of clinical nutrition*, *68*(4), 490-495.	• Pregnancy outcomes optimized by: lifestyle modifications, dietary intervention, oral hypoglycemic agents, insulin therapy. • DASH diet helped control HTN • Lower rate of C-section noted in DASH diet group vs control group • Lower incidence of insulin therapy needed in DASH diet group vs	• GDM Group Sessions • Individualized, patient-centered education & counseling

	control group	
Boucher, J. L., Evert, A., Daly, A., Kulkarni, K., Rizzotto, J. A., Burton, K., & Bradshaw, B. G. (2011). American Dietetic Association revised standards of practice and standards of professional performance for registered dietitians (generalist, specialty, and advanced) in diabetes care. *Journal of the American Dietetic Association*, *111*(1), 156-166.	• Revised Standard of Practice & Standards of Professional Performance for optimal interdisciplinary coordination • Updates/revisions in nutrition therapy • Evidence-based practice for safe, competency nutrition therapy & counseling, professional evaluation & professional behavior and interaction with patients	• GDM Group Sessions • Individualized, patient-centered education & counseling
Evert, Alison B., et al. "Nutrition therapy recommendations for the management of adults with diabetes." *Diabetes care* 37.Supplement 1 (2014): S120-S143.	Best practices for diabetic management: • Healthful eating • regular physical activity • diabetic pharmacotherapy • no “one-size-fits-all eating pattern; • active engagement in self-care, education & treatment with healthcare provider.	• GDM Group Sessions • Individualized, patient-centered education & counseling
Fagen, Cathy, J. A. C. Q. U. E. L. I. N. E. D KING, and Miriam Erick. "Nutrition management in women with gestational diabetes mellitus: a review by ADA's Diabetes Care and Education Dietetic Practice Group." *Journal of the American Dietetic Association* 95.4 (1995): 460-467.	• GDM most common medical disorder during pregnancy • Nutrition therapy essential to diabetes management • Dietary intake should promote euglycemia • Appropriate weight gain while meeting maternal/fetal nutritional needs • Diet and exercise habits should be individualized. Monitoring of glucose levels must be regular and guide all	• GDM Group Sessions • Individualized, patient-centered education & counseling

	pharmacological and non-pharmacological interventions.	
Gabbe, S. G., Niebyl, J. R., & Simpson, J. L. (2002). *Obstetrics: Normal and problem pregnancies (4th ed.).*Philadelphia: PA: Churchill Livingstone.	GOOGLE for content	• GDM Group Sessions • Individualized, patient-centered education & counseling
Han, Shanshan, et al. "Different types of dietary advice for women with gestational diabetes mellitus." *The Cochrane Library* (2013).	Dietary therapy and counseling is main strategy in managing GDM. Which dietary therapy is most effective is unclear. Of the 11 nutritional strategies studied, no one type of dietary advice was more effective than others. Nutrition therapy must be assessed and individualized based on glycemic response.	• GDM Group Sessions • Individualized, patient-centered education & counseling
Kitzmiller, John, et al., eds. *Managing preexisting diabetes and pregnancy: technical reviews and consensus recommendations for care*. American Diabetes Association, 2008.	Multidiscipline, patient centered team care for women with GDM is effective Medication therapy must be evaluated for safety and effectiveness before and during pregnancy. Continue team care throughout pregnancy and into post-partum period. Regular follow-ups essential for ongoing management and optimal outcomes. Education should include CV risk, benefits of breastfeeding, long-term glycemic control, detrimental sequela of DM if not controlled.	• GDM Group Sessions • Individualized, patient-centered education & counseling
American Diabetes Association (2000). Diabetes and pregnancy: What to expect (4th ed.). Alexandria: VA: American Diabetes Association	Comprehensive guide for management of type 1 DM	• GDM Group Sessions • Individualized, patient-centered education & counseling • Patient educational handouts

		"What does gestational diabetes mean?" • (EP14b -3) • "Medicines used in Pregnancy" (EP 14b – 4)

Autonomous Clinical Decision Making

These resources guided and provided parameters for sound clinical decision making and autonomous practice as evidenced through electronic health record (EHR) documentation for individuals who participated in group sessions. Holly conducts the group sessions and also meets one-to-one with the patients. She partners with the dietician on issues related to glucose control and diet and exercise. *(New Evidence EP14b-4 EHR Documentation for English Speaking Patients; New Evidence EP14b-5 EHR Documentation (Spanish speaking)*

EP16

Accountability, Competence, and Autonomy

EP16: Nurse autonomy is supported and promoted through the organization's governance structure for shared decision-making.

- Provide one example, with supporting evidence, of clinical autonomy that demonstrates the authority and freedom of nurses to make nursing care decisions (within the full scope of their practice) in the clinical care of patients.
  AND
- Provide one example, with supporting evidence, of organizational autonomy that demonstrates the authority and freedom of nurses to be involved in broader unit, service line, organization, or system decision-making processes pertaining to patient care, policies and procedures, or work environment.

Example a

Clinical Nurse Autonomy

Application of the nurse-driven discontinuation protocol in the SICU reduces CAUTI to zero

The Surgical Intensive Care Unit (SICU), located on the ninth floor of the critical care tower at Vanderbilt University Medical Center is a 34-bed intensive care unit specializing in surgical patients, including transplantation, thoracic, general, and head and neck surgery.

Many patients in the SICU require invasive devices for monitoring and treatment. As part of an institutional initiative to reduce catheter-associated urinary tract infections (CAUTI), a nurse-driven discontinuation protocol was implemented in April 2014. No change was seen in the frequency of catheter use or the rate of CAUTI for the first six months after implementation. Feedback from nursing staff suggested that despite nurses' willingness to adapt to a nurse-driven protocol, there was hesitation noted in discontinuing catheters and a trend of reinserting catheters more quickly than suggested in the protocol. EP16a-1 Nurse Driven Foley Removal Protocol; EP16a-2 Guidelines for Management of Indwelling Catheters

In March 2013, prior to the nurse-driven protocol, a unit based protocol had been implemented for providers as well as the establishment of a CAUTI task force which included many of the same discontinuation goals and replacement considerations. This was challenging to implement due to a constant turnover in physician staffing and newer advanced practice providers. As a continuous presence in the SICU, the nurses were identified as crucial to the success of such specific catheter guidelines and were empowered to utilize the nurse-driven protocol. A unit-based quality improvement team

worked with the clinical nurses to improve compliance with the protocol, encouraging autonomous application of the discontinuation protocol based on nursing assessment. EP16a-3 SICU PI Meeting Minutes January 2014

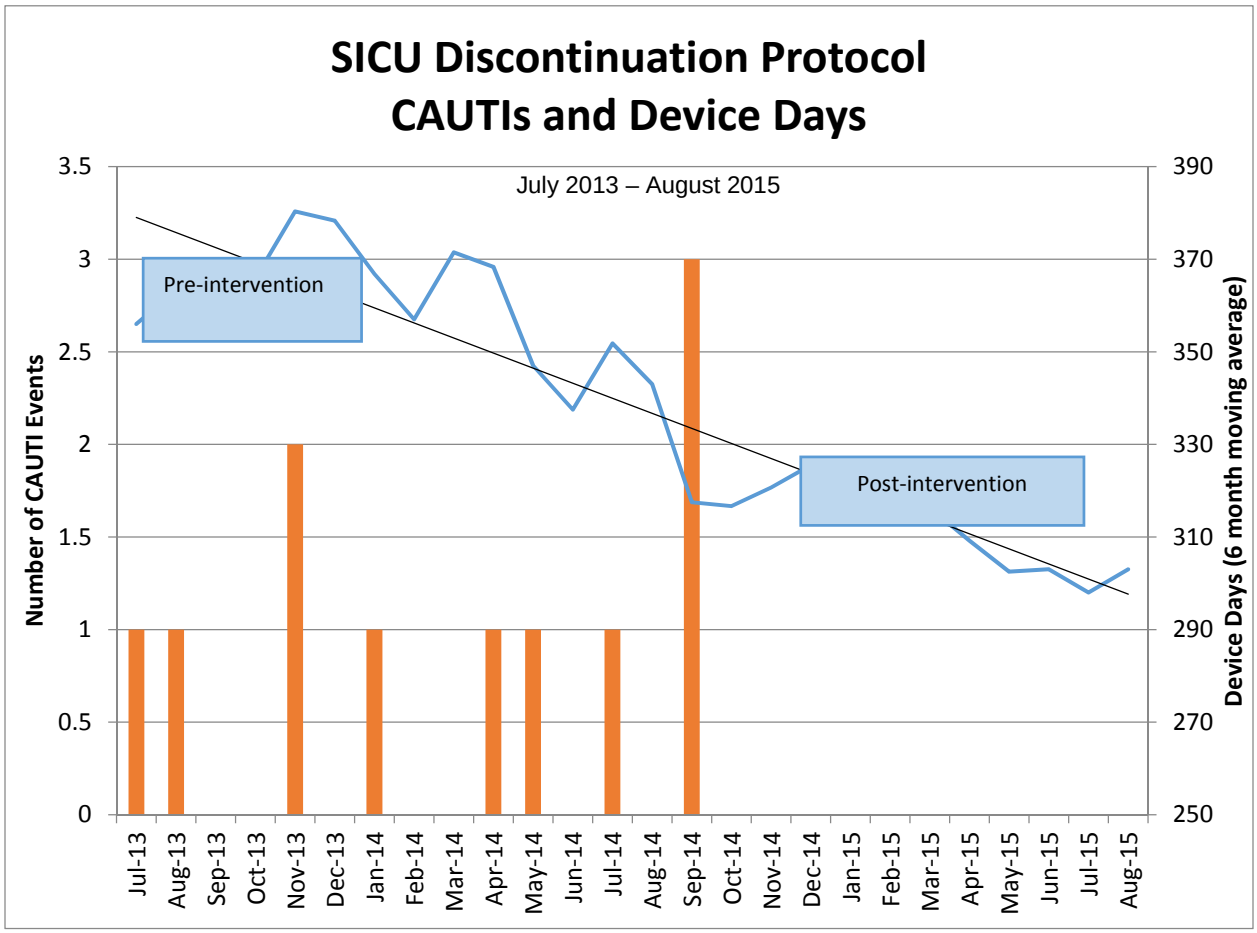
Once the knowledge and application gap of the recently launched hospital-wide nurse-driven Foley discontinuation protocol was acknowledged with nursing staff and SICU house staff, multiple efforts were made to reinforce the protocol. Education was sent out to all nursing staff via weekly newsletters, charge nurses began intentional, daily rounds on all patients on the unit that had Foley catheters, and bedside nurses began presenting the status of their patients' Foley catheters and whether they met discontinuation criteria during daily interprofessional rounds. House staff received education regarding the protocol via presentations in leadership focused discussions during monthly Performance Improvement Committee meetings. New residents rotating through the SICU were given education on the nurse-driven protocol as well. EP16a- 4 SICU PI Meeting Minutes November 2014; EP16a-5 SICU PowerPoint PI Report November 2014

Participants

Name	Credentials	Role in organization	Practice Area	Role on committee
Heather Hart	BSN, RN, CCRN	Critical Care – Clinical Nurse	Surgical Intensive Care Unit	Co-Chair, SICU Process Improvement Committee
Bradley M. Dennis	MD	Assistant Professor	Division of Trauma and Surgical Critical Care	Co-Chair, SICU Process Improvement Committee
Caroline Banes	MSN, ACNP	Critical Care Nurse Practitioner	Division of Trauma and Surgical Critical Care	Co-Chair, SICU Process Improvement Committee
June McGhee	BSN, RN, CSL	Clinical Staff Leader	Surgical Intensive Care Unit	Clinical Staff Leader Liaison, SICU Process Improvement Committee

Outcome

Since October 2014, after reinforcing the education with nursing and other team members, the SICU has had no CAUTIs. The device utilization has declined by 26%. Nurses have embraced the clinical autonomy of determining the need for discontinuation and reinsertion of Foley catheters based on nursing assessment.



Example b

Pediatric sedation service changes made across the hospital for improved patient care

At Vanderbilt, nursing is supported to participate in the various shared governance staff councils and interprofessional committees. These professional practice groups develop practice improvements that lead to autonomy in nursing practice and for patient care. The following is an example of a nurse recognized problem where they took the lead in creating a solution. The autonomous practice of the nurses involved in the pediatric sedation service enabled them to see an organization-wide problem. And resolve it through the governance process.

Autonomous practice

At Monroe Carell Jr. Children's Hospital at Vanderbilt (MCJCHV), the pediatric sedation service provides sedation for minor procedures outside of the operating room using an advanced practice nurse sedation consult service. This nursing team is recognized as an expert resource for sedation care by hospital administrators, physician and nursing

leaders. With this recognition and responsibility, the sedation team is empowered to begin problem solving with multiple care providers, and to develop a sedation coordination of care team. In order to define the most efficient process for planning this care, there was collaboration with anesthesia, pediatric surgical, medical, procedural, scheduling and admitting services in perioperative and radiology departments.

The role of the nurse-driven pediatric sedation team is well respected within MCJCHV and thus provides the team with the autonomy and flexibility to create solutions influencing care in multiple departments. Ongoing documentation and reporting of patient outcomes with the Pediatric Sedation Research Consortium (PSRC) serves to establish the team's reputation for excellence in patient safety. The PSRC is a sedation research network administered through the Society for Pediatric Sedation (SPS) with greater than forty member institutions entering sedation outcome data into a single database. Reports can be generated that provide an analysis of the data submitted by the pediatric sedation team at MCJCHV. This allows for comparison of the team's patient care outcomes with participating institutions. This benchmarking has drawn attention to the team's personalized approach to sedation care that produces better outcomes for children and their families.

One critical function of the team includes managing consults from multiple patient care areas, including procedural and diagnostic imaging departments. Each sedation consult is reviewed, triaged and coordinated into the most appropriate and readily available sedation resource: the deep sedation service, moderate sedation service, pediatric general anesthesia, or pediatric cardiac anesthesia. Interdisciplinary evidence-based protocols identify referral criteria and also guide sedation planning and documentation of the expected standard of care. This process is designed to increase patient access to procedures and imaging requiring sedation and to improve communication and coordination of services for the requesting providers.

Problem identified

Procedural and diagnostic procedures were being planned by schedulers from multiple subspecialties, leading to fragmented, uncoordinated care. For patients, this meant multiple trips to the hospital for two separate sedations and procedures or imaging. This also resulted in two separate fasting periods, two separate intravascular access attempts, two intubations and two anesthetic exposures. In the past, hospital providers and nursing teams would recognize that patients were scheduled for more than one sedated procedure, such as an MRI and a minor surgery, often within the same month, but this was discovered too late to coordinate the care.

To decrease risk for patients, a team, led by the sedation nurse practitioner, was developed to coordinate a team effort to proactively plan for all requested imaging and surgical procedures to be sequenced and completed in one visit.

Participants:

- Jill Kinch, MMHC, MSN, APN, CPNP-PC/AC, NE-BC
- Tammy Neal, RN - Pre-Testing

- Leighann Chadwell, BSN, RN CSL - HR/PACU
- Brenda Sandlin, RN, CSL - Periop Services
- Andy Lamoreaux, BSN, RN, CSL - HR/PACU
- Betsy Beazley, BSN, RN, CPN - Pediatric IV Team
- Lea Ann Bowden, MSN, RN, APN-NP - Sedation Team
- Candace C. Galbreath, MSN, RN, APN-NP – Sedation Team
- Jacquelyn Garner, MSN, RN, APN-NP, - Sedation Team
- Leah Katherine Harwell, MSN, RN, APN-NP – Sedation Team
- Rhonda R. Richardson-Rippy, MSN, RN, APN-NP – Sedation Team
- Denise Sadler, MSN, RN, APN-NP – Sedation Team
- Beth Bass, MSN, RN, APN-NP – PATCH Team
- Sarah Hill, MSN, RN, APN-NP – PATCH Team
- Jason Willis, MSN, RN, APN-NP – PATCH Team

Process for the organization wide improvement identified

To define the process, the nurse leader of the sedation team debriefed with stakeholders and reviewed a number of early cases that could have benefited from coordinated sedation care and three key issues were identified. First, communication flow and a clear process needed to be established to support the team work. Second, an informatics access point for coordination and accountability for the plan was also necessary. Finally, identifying team leaders for aligning resources and scheduling was also essential for success. This was an iterative process and required ongoing communication to achieve a well-coordinated team approach. Bringing key stakeholders together to debrief was the most efficient form of designing and re-designing the process.

For each combined care request, once arrangements for all of the requested procedures and imaging is sequenced and tentatively scheduled to allow for one anesthetic, nursing engages the family in the opportunity to have the two procedures and/or imaging performed with one single anesthetic. If the family agrees with the proposed plan of care, the confirmed plan is shared with the lead anesthesia physicians, surgeons, perioperative and radiology nursing teams, and surgical schedulers by saving the patient's plan to a web-based coordination of care list that can be accessed by all inter-professional team members. Additionally, the individualized sedation/anesthesia coordination of care plan is saved to the patient's medical record. This last step authorizes the schedulers to finalize appointments in the radiology, perioperative and operating room locations.

Positive outcomes include both significant patient/family satisfaction with the approach and better understanding of best practice for sequencing and planning coordinated anesthetic care. Families of children requiring combined care procedures can now expect a well-executed hospital experience through the nurses working on their behalf to improve the nursing practice autonomy and improve patient/family satisfaction. Confirmation of improved patient and family satisfaction are evidenced by responses to our patient satisfaction survey (IRB # 120682).

This important culture change would not have been possible without the strong partnership between the nurse practitioner leader and the anesthesiologist leader Dr. Jill Kilkelly. Dr. Kilkelly was instrumental in the adoption of these changes by the rest of the anesthesiology team and the surgeons through education on the importance of coordinating care. The advanced practice nurses and the clinical staff had organizational support and autonomy to coordinate the many details required to develop the care plans and provide communication and education to staff and families.

One of the other driving factors was the enthusiasm of the family members; they were instrumental in motivating all team members to “get on board” and make the extra effort to continue this process. This is an excellent example of how a culture was changed empowering families, patients and nursing to improve care of children.

Families shared their impressions of their experience with this program:

- “I am extremely pleased with the communication level and the compassion shown in trying to coordinate these procedures. My child does not handle anesthesia well and it helped my peace of mind knowing that this was going to be a one-time anesthesia.”
- Parent described the coordination of care as "lifesaving" for her autistic child. “It decreased my child’s aggression and anxiety.”
- “Improved my child's safety”
- “With him being 2 years old we wanted to limit his exposure to anesthesia”
- “Appreciate the opportunity for multiple procedures in the same day since we live so far away”

EP16b-1 Complex Coordination of Care – Rules of the Road; EP16b-2 Complex Coordination of Care Request Form; EP16b-3 October 6, 2014 Sedation Monthly Meeting Agenda; EP16b-4 May 4, 2015 Sedation Team Monthly Meeting Agenda

EP17

Ethics, Privacy, Security, and Confidentiality

EP17: Nurses use available resources to address ethical issues related to clinical practice and organizational ethical situations.

- Provide one example, with supporting evidence, of nurses using available resources to address ethical issues related to clinical practice.

Ethical Issue Related to Clinical Practice

Background

The Center for Biomedical Ethics and Society provides a Clinical Ethics Consultation Service (CECS) for all of Vanderbilt University Medical Center (VUMC) to assist with the resolution of ethical concerns through education and advisory relationships. Any member of the VUMC faculty and staff, as well as all patients, their surrogates, and family members can request a clinical ethics consultation. A clinical ethics consultant is on call 24 hours a day, 7 days a week. The center has an excellent website (http://medicineandpublichealth.vanderbilt.edu/cbmes/) that is available 24/7 and is located on the home page with the pager number clearly displayed. The ethics consult service can also be reached by calling the Vanderbilt Operator. In addition, the center is linked on the nursing website.

The primary goals of the CECS are:

- to elevate patient care by addressing ethical concerns.
- to improve the process of deliberation about important healthcare decisions.
- to enhance mediation of conflicts by bringing someone from the "outside".
- to reduce the moral distress of staff members, patients and families.

An RN, MD and PhD faculty who have extensive experience working toward solutions that are respectful and acceptable to all the parties involved staff the consult service. All clinical ethics consultations incorporate the following fundamental objectives:

1. To promote careful, respectful communication among VUMC faculty, staff and patients and their surrogates and family members.
2. To assist in identifying and clarifying ethical questions and broader ethical issues in clinical care.
3. To advise on ethical questions as they arise in specific patients' care, with a focus on reasonable treatment options, associated outcomes, and the patients' rights and best interests.

As this service is available to all members of the healthcare team, the CECS provides nurses with the tools and resources to seek out assistance with ethical issues. As part of nurse resident orientation, Joseph B. Fanning, PhD, Director of the Clinical Ethics Consultation Service, teaches nurse residents about the CECS program, as well as what to expect if a consult is generated. He presents examples from clinical practice, demonstrating to the nurse residents how nurses in the institution apply the CECS to

practice. He empowers and encourages nurses to speak up, providing examples of reasons to call as well as common excuses staff report for not calling the CECS. EP17-1 PowerPoint for Nurse Residency Training According to 2014-2015 data, 20.5% of CECS consults were requested by nurses in the organization. EP17-2 Ethics Consult Numbers

Example

The Neuro ICU at Vanderbilt University Hospital (VUH) specializes in providing critical care to adult patients with brain tumors, strokes, and diseases of the brain that require surgery. As a Comprehensive Stroke Center, they provide top-level care and unique services to give patients the best chance at recovery. Their excellence in patient care was recognized at the unit level in 2014 when they were awarded the AACN Beacon Award and the Professional Research Consultants, Inc. Excellence in Healthcare award for Overall Quality of Care. The unit is one of the largest neuro ICUs in the country with 22 ICU beds and 12 step-down level beds. Seeing a variety of critical patients with neurological deficiencies affords the team multiple opportunities for the utilization of the Clinical Ethics Consultation Service at Vanderbilt.

Stephanie Williams Keisling, BSN, RN started in the nurse residency program in 2010, working on a general inpatient floor in Medical Center North. EP17-3 Nurse Residency Workshops/Attendance/Ethics #6 (Stephanie Williams) In 2012, she transitioned to the Neuro ICU. Stephanie noted that she learned about the CECS through her nurse residency training.

In July of 2014, Stephanie cared for a 77-year-old patient with neurologic devastation following a stroke. Upon arrival to the Neuro ICU, his prognosis was determined to be very poor, and the palliative care service was quickly consulted to help the family understand the condition and provide comfort measures. One week after admission, a do not resuscitate (DNR) order was obtained for the patient for irreversible neurological condition and imminent death. After this DNR order was obtained, Stephanie became very concerned that despite palliative care's efforts to communicate the patient's prognosis and impending death, the family was insisting that the medical team continue with aggressive life sustaining measures despite the patient's impending death. Although they had consented to the DNR order, they still wanted to press forward with other aggressive measures. There was further concern that the family's difficulty in accepting the prognosis and continuing aggressive treatment would actually harm the patient by prolonging his dying process.

Due to these concerns, Stephanie paged the CECS to have them consult on this case. The CECS team was able to speak with the patient's medical team and review the patient's medical records to better understand the concerns. It was identified that the family needed additional support to guide decisions, assist in understanding, and help them come to terms that additional life sustaining measures were not going to help their loved one recover.

The CECS found that the patient was a church elder and recommended a visit from the chaplain to the family to provide additional support. The Chaplain was able to spend time talking with each family member individually and helped provide grief support during the dying process. The CECS team worked with this family to build trust and helped guide their difficult decision of transitioning their loved one to comfort care. The next day, the medical team was able to compassionately extubate the patient, provide comfort medications and the patient was able to die with comfort and dignity. In addition, the CECS team involvement assisted in supporting the caregivers who were experiencing a great deal of compassion fatigue and moral distress in caring for this patient. EP17-4 Ethics Consult Note; EP17-5 Ethics Consult Database Note

EP18EO

Culture of Safety

EP18EO: Workplace safety for nurses is evaluated and improved.

- Provide two examples, with supporting evidence, of improved workplace safety for nurses resulting from the safety strategy of the organization. Supporting evidence must be submitted in the form of a graph with a data table that clearly displays the data.

Example a

Background/Problem

The nursing staff approached nursing leadership to explain that patient transfer equipment was not readily available to meet the needs of patients within Vanderbilt Psychiatric Hospital (VPH). This was a result of recommendations made in the Adult 3 unit board. Nursing staff and the manager reached out to nursing administration and nursing education in VPH to explore options relative to the procurement of patient transfer devices that could be located within VPH. They also explored additional training that would support the medical center's safety strategies with the Smooth Moves Program to eliminate staff injuries related to patient handling. With the addition of a geriatric service line within the Adult 3 program's scope of service, and an increase in the number of medically acute patients, staff indicated that patient transfer devices were necessary in order to optimize care and avoid staff injury. Nursing staff were anecdotally noting an increase number of injuries among their colleagues. Upon working with the Director of Patient Handling it was determined that in 2011 there was an injury rate of 0.369/10,000 bed days with an almost double rate of 0.707/per 10,000 bed days by 2013.

Not only are nursing staff injuries costly to a health care organization, they have the potential to be career ending. Vanderbilt is committed to staff safety, which is frequently directly linked to patient safety. Therefore, even a small number of injuries is unacceptable.

Goal Statement

Decrease the rate of registered nurse (RN) injuries related to patient transfer through training and smooth moves equipment availability.

The measure selected to demonstrate improvement was VPH's annual rate of RN injury (rate per 10,000 bed days) related to patient transfer.

Description of the Intervention

A patient transfer device (Maximove) was obtained through the assistance of Mamie Williams, MSN, RN, APN-NP, NE-BC, Director of Safe Patient Handling for Vanderbilt University Medical Center (VUMC).

The device was introduced at the unit level in May of 2014, by the identification of safe patient handling nursing champions who attended training in order to educate additional staff. This training was then expanded to include opportunities for clinical staff house-wide to attend.

To date, the Maximove is readily available to trained staff throughout VPH. Additional safe patient handling champions have been identified and have received training in order to continue with education for staff related to the safe use of the device. Safe patient handling/transfer is an addition to the annual staff competency program required for all VPH clinical employees.

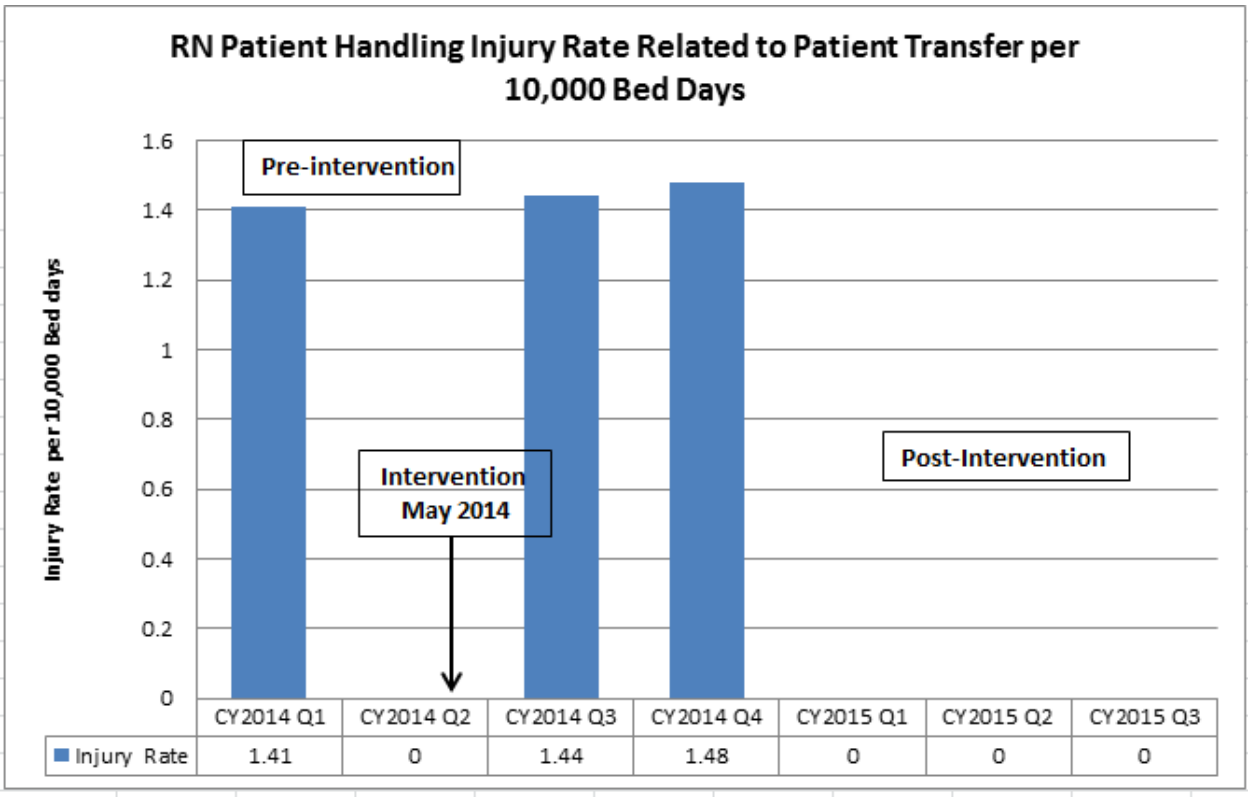
As part of a simultaneous effort to improve accessibility to patient transfer resources, a product already in place was made more available to staff on each unit. The safe and effective use of slippery sheets for lateral patient transfer is reviewed upon hire and annually as part of competency requirements. The sheets were added to par levels of supplies on each unit for ease of accessibility for staff.

Participants

Name	Credentials	Role/Title	Department	Role on Committee
Jennifer Barut	MSN, RN-BC	Nursing Education Specialist	VPH Nurse Education Professional Development	Leader
Avni Cirpili	RN, DNP, NEA-BC	CNO	VPH	Sponsor
Mamie Williams	MSN, APN-NP, NE-BC	Director	Safe Patient Handling	Facilitator
Johnny Woodard	BSN, RN-BC	Manager/Educator	VPH	Co-Leader
Lori Harris	BSN, RN-BC	Manager	VPH	Member
Laura Webb	BSN, RN-BC	Manager	VPH	Member

Outcome

The rate of RN injury related to patient transfer was decreased.



Calendar Year beginning in January
Average patient days report from statement of occupancy and patient days reported by finance monthly.

Example b

Background
The Centers for Disease Control and Prevention (CDC) Advisory Committee on Immunization Practices (ACIP), and the Healthcare Infection Control Practices Advisory Committee (HICPAC) recommend that all U.S. Health care workers get vaccinated annually against influenza. The definition of health care worker is broad and includes a comprehensive list of staff from physicians and nurses to volunteers. Historically and in the early season of 2014-15, nurses are not at the top of the list for compliance with annual influenza vaccination coverage. The highest was pharmacists, and nurses were fifth in line.

CDC also states that early season flu vaccination was higher among health care personnel whose employers required or recommended that they be vaccinated, compared to those whose employer did not have a policy or recommendation regarding flu vaccination. Vanderbilt had experienced exactly what the CDC was reporting. Historically, nurses had not been at the top of the list in percentage of nurses receiving flu vaccinations and there was no mandate for immunization.

Vanderbilt admits a large volume of patients with influenza each year, both adults and pediatrics. In addition, once one staff member contracts the flu, it can spread rather quickly throughout the organization. Vanderbilt has had a safety strategy to increase the numbers of employees vaccinated for the last couple of years. Of particular importance is the clinical hands-on staff.

Goal

Increase the number of clinical nurses in our clinics (outpatient areas) that receive the influenza vaccination.

Interventions

When we explored with the clinical nurses the barriers to receiving flu vaccinations, one of the major concerns was accessibility. Even with designated influenza days and roving Occupational Health "immunization carts", clinical nurses believed that their major issue was being able to receive the vaccine on their units and in their clinics. In particular the issue with our vast numbers of clinics, both on-campus and off-campus was a challenge.

In July 2013, the Peer Vaccination Program (PVP) was started for units and clinics. The purpose is to make the flu vaccine more accessible to Vanderbilt nurses where they can receive the vaccine without leaving their clinical work areas. Peer vaccinators were selected by their managers and were trained in the administration of the vaccine and the Occupational Health electronic influenza vaccination tracking system. That first season, over 1,300 flu vaccines were given via the PVP.

With each flu season the PVP has become stronger. In the beginning, areas had to order their flu vaccine doses from the pharmacy. Now to increase accessibility and ease for the clinical staff, Occupational Health delivers the vaccine to the clinical areas. The PVP is particularly important to our clinics as many of them are small with a limited number of staff for coverage and the large number that are off the main campus and in surrounding counties.

July may seem to be an early "start" date for influenza vaccinations; however, our employee volume presents quite a challenge. Getting the PVP staff trained and oriented in an early time-frame was extremely important. Again, extremely important to our clinics as they are in multiple locations. The clinic staff embraced this concept and had a large number of PVP during the initial roll-out of this program. This was instrumental in increasing the percentage of flu vaccinations in the clinic areas.

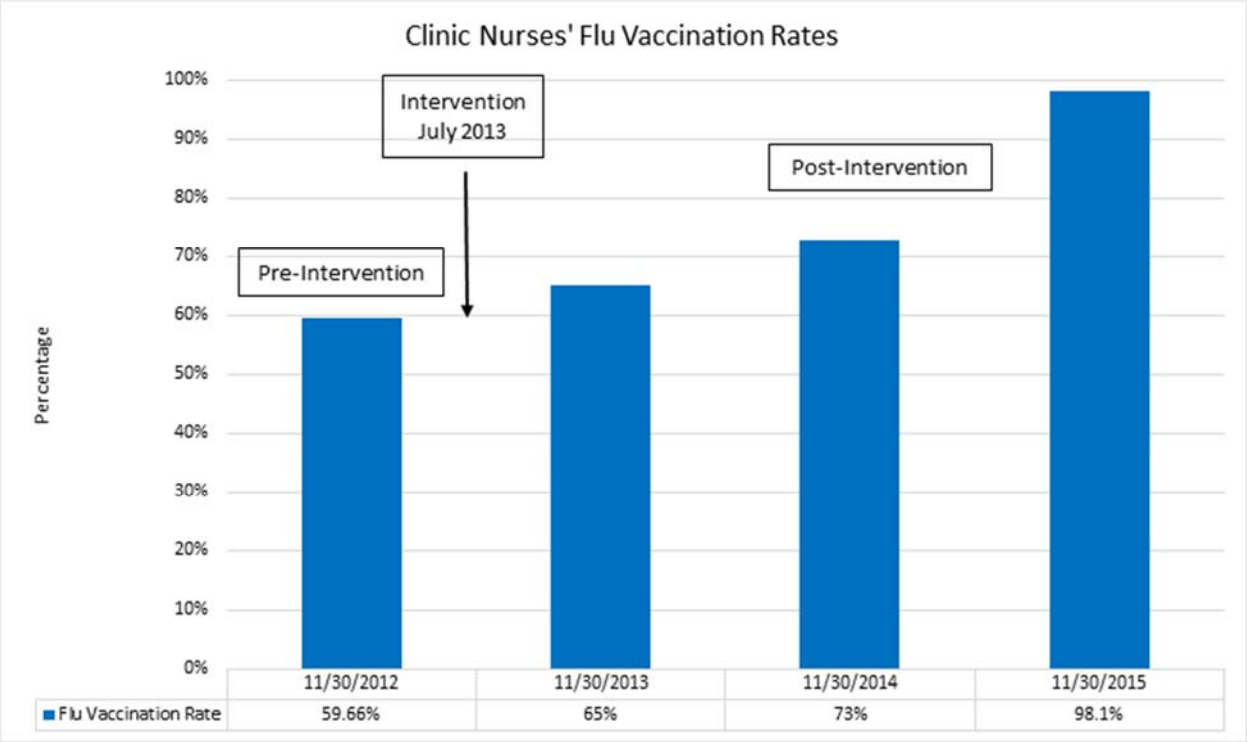
Participants (The Clinic staff trained as PVP in the initial roll-out of this program)

Name	Credentials	Role in Organization	Practice Area	Role in Work
Catherine Qian	MSN, RN	Manager	VUMC Occupational Health Clinic	Facilitator
Rachael Pridgeon	BSN, RN	Clinical Nurse	VASAP (Allergy	Participant

			Clinic)	
Brian Reinersmann	RN	Clinical Nurse	VASAP (Allergy Clinic)	Participant
Sharon Degryse	LPN	Clinical Nurse	Brentwood Primary Care Clinic	Participant
Terrie Lankford	LPN	Clinical Nurse	Brentwood Primary Care Clinic	Participant
Karen Norfleet-McEwan	MSN, RN, APN	Clinical Educator	Center for Women's Health	Participant
Holly Ricketts	BSN, RN, CFM	Clinical Nurse	Center for Women's Health	Participant
Cindy Allman	RN, CFM	Charge Nurse	Center for Women's Health	Participant
Crystal Brown	BSN, RN	Clinical Nurse	Center for Women's Health	Participant
Audra Hill	LPN	Clinical Nurse	Center for Women's Health	Participant
Connie Shanes	LPN	Clinical Nurse	Center for Women's Health	Participant
Susan Shelton	RN, CFM	Clinical Nurse	Center for Women's Health	Participant
Sandra Hutter	RN	Clinical Nurse	Vanderbilt Bone & Joint Center	Participant
Sandra Shoemake	RN	Clinical Nurse	Vanderbilt Bone & Joint Center	Participant
Linda Bonifield	BSN, RN	Clinical Nurse	Vanderbilt Bone & Joint Center	Participant
Brooke Blackwell	RN	Clinical Nurse	VEI Lebanon	Participant
Pamela Chandler	RN	Clinical Nurse	Vanderbilt Heart Murfreesboro	Participant
Lisa Kelley	RN	Clinical Nurse	Vanderbilt Heart Columbia	Participant
Theresa Davies	RN	Clinical Nurse	Vanderbilt Heart Offsite Clinic	Participant
Deborah Abbott	RN	Clinical Nurse	Vanderbilt Heart Offsite Clinic	Participant
Middy Keller	RN	Clinical Nurse	Green Hills Primary Care	Participant
Margaret Barr	BSN, RN	Clinical Nurse	Primary Care at Shelbyville	Participant
Linda Logan	LPN	Clinical Nurse	Primary Care at Shelbyville	Participant
Chaunta Patterson	LPN	Clinical Nurse	Primary Care at	Participant

			Westhaven	

Outcome



EP19EO

Culture of Safety

EP19EO: Nurses are involved in the facility- or system-wide approach focused on proactive risk assessment and error management.
Provide one example, with supporting evidence, of an improvement in patient safety that resulted from nurses' involvement in facility-or system-wide proactive risk assessment or error management. Supporting evidence must be submitted in the form of a graph with a data table that clearly displays the data.

Background
The Neonatal Intensive Care Unit (NICU) is a ninety-eight bed intensive care unit in three separate locations within the medical center; with the largest number of beds and main location being Monroe Carell Jr. Children's Hospital at Vanderbilt (MCJCHV). The average daily census in the NICU is eighty-seven babies. The American Academy of Pediatrics recommends breast milk because it has been shown to protect against respiratory illnesses, ear infections, gastrointestinal diseases, allergies and asthma. Therefore, the NICU supports and encourages mothers to provide breast milk for their babies. When first admitted to the NICU, most babies are not stable enough to breastfeed or to be given breast milk, therefore mothers are encouraged to express breast milk (EBM) and the EBM is then stored in commercial deep freezers in the unit until the baby is stable and ready to feed. Each patient has a basket or bin in the freezer identified with their specific patient information where their milk is stored until it is ready for use.

In November 2012, clinical nursing staff in conjunction with nursing leadership did a deep review of the safety practices in the NICU. The nursing staff became concerned when the number of breast milk errors began to increase. The NICU, as well as the rest of the country, was seeing an increase in breastfeeding rates due to increased education and awareness of the benefits of breastfeeding. This increase in the breastfeeding rate also increased the number of opportunities for breast milk errors to occur. At this time, the NICU had an average of 70% of patients receiving breast milk feeds. On any given day, an average of sixty babies was receiving eight feedings per day, equating to nearly five hundred daily encounters when breast milk identification errors could potentially occur. According to the Centers for Disease Control and Prevention (CDC), Human Immunodeficiency Virus (HIV) and other serious infectious diseases can be transmitted through breast milk and there is a risk of death. Therefore, it was identified that the recent trend in increased breast milk errors was a significant risk to the patient and should be focused on promptly. Proactive measures were needed to decrease this risk and prevent errors. In addition, this was just for the NICU. Across MCJCHV, EBM is stored and used by parents for their infants, almost doubling the risk for errors on a daily basis. The overall Pediatric Quality Committee considered this a significant risk with no room for errors. The increasing numbers continued to increase the risk of errors, which was not acceptable to the organization. Plans began to address this issue across the organization based on what was successful in the NICU.

The NICU initiated a two person bedside identification check prior to each infant feeding on Nov 21, 2012. However, even with this practice in place, breast milk errors continued to occur. EBM was sometimes given to a patient prior to the nurse performing a double check of the patient's identification and matching this to the label on the breast milk bottle. It was also noted that improvement in breast milk errors would occur for a few months, but the improvement could not be sustained for longer than 3-4 months at a time.

Goal Statement
The NICU will decrease the number of breast milk errors to zero and sustain this improvement for 12 months in a row.

Description of Interventions/Activities
Following a breast milk error in November 2014, the leadership team decided to focus interventions on sustainment initiatives to not only help reduce the number of breast milk errors but to sustain this improvement past the historical 4 month relapse period. The leadership team met with clinical nursing staff and medical receptionists to discuss the multi-step processes involved from the time a family delivers breast milk to the staff until the time breast milk is prepared for the baby's feeding. The NICU team believed that families should be a part of the solution and parents were asked to be partners in this improvement process.

By December 2014 the following interventions were in place:

- Signage placed throughout the unit and hospital as well as in family admission packets asking parents to partner with us as part of their baby's healthcare team.
- Printed information was placed inside each bag of breast milk bottles and was provided to each parent. This printed material explained the process that would be followed with each of the baby's feedings and asked for the parent's assistance and cooperation. As their baby's advocate, it emphasized their role in ensuring that proper steps are taken to properly identify breast milk.
- Medical receptionists printed patient labels for babies' bottles and had parents check, verify for accuracy, and sign the labels prior to distributing them.
- Medical receptionists and care partners performed two person freezer checks to ensure the breast milk is in the correct patient bins in the freezer.
- Weekly EBM freezer audits were conducted by the Clinical Staff Leaders
- Process was implemented that required a double check with a second individual if EBM is removed from the original bottle and placed into another bottle for mixing to ensure that the correct label is placed on the new bottle
- Process was implemented requiring a second person check, including at least one licensed personnel, prior to taking breast milk into a patient room and prior to mixing breast milk with fortifiers
- Updated Expressed Breast Milk policy to include specific checks that need to be completed prior to feeding the breast milk to the patient

Participants

Name	Credentials	Role in Organization	Practice Area	Role on Committee/Group/Work/etc.
Marlee Crankshaw	DNP, RN, CNML	Administrative Director for Neonatal Services	NICU/ NBN	Leadership Team
Cheri Wood	MSN, RN, NCC	NICU Manager	NICU	Leadership Team
Stephanie Abbu	MSN, RN	Business Manager	NICU/NBN	Leadership Team
Christy Boop	RN	Clinical Nurse	NICU	Participant
Belinda Mathis	MSN, RN, NCC	NICU Manager	NICU	Leadership Team
Jenny Cotton	BSN, RN	Educator	NICU/NBN	Participant
Nancy Kennedy		Medical Receptionist	NICU	Participant
William Dingman		Medical Receptionist	NICU	Participant
Carol Huber	RN	Lactation Consultant	NICU	Participant
Addie Vienneau	BA	Manager, Family Resource Center	MCJCHV	Participant

Outcome

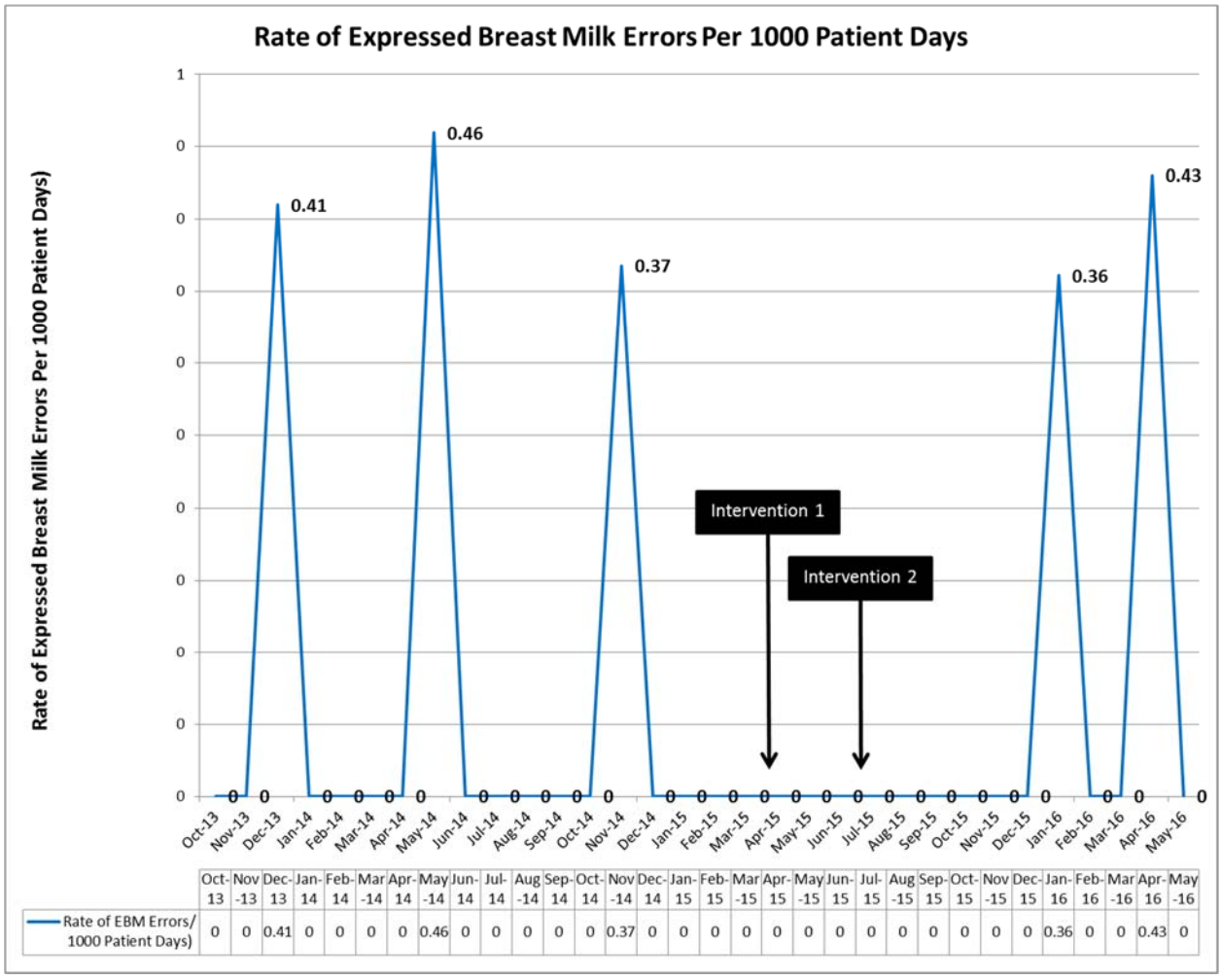
Based on historical data, the NICU was unable to sustain improvement in breast milk error prevention beyond a 3-4 month period. However, the NICU team believed that if families could be a part of the solution and they engaged in the process, the NICU could be successful in sustaining this improvement for a longer period of time. The clinical staff nurses, in conjunction with the NICU leadership team partnered with families and implemented a 2-phase intervention to target family participation in both the expressed breast milk (EBM) bottle labeling and the patient identification processes of EBM administration at the critical 4 month-post error juncture.

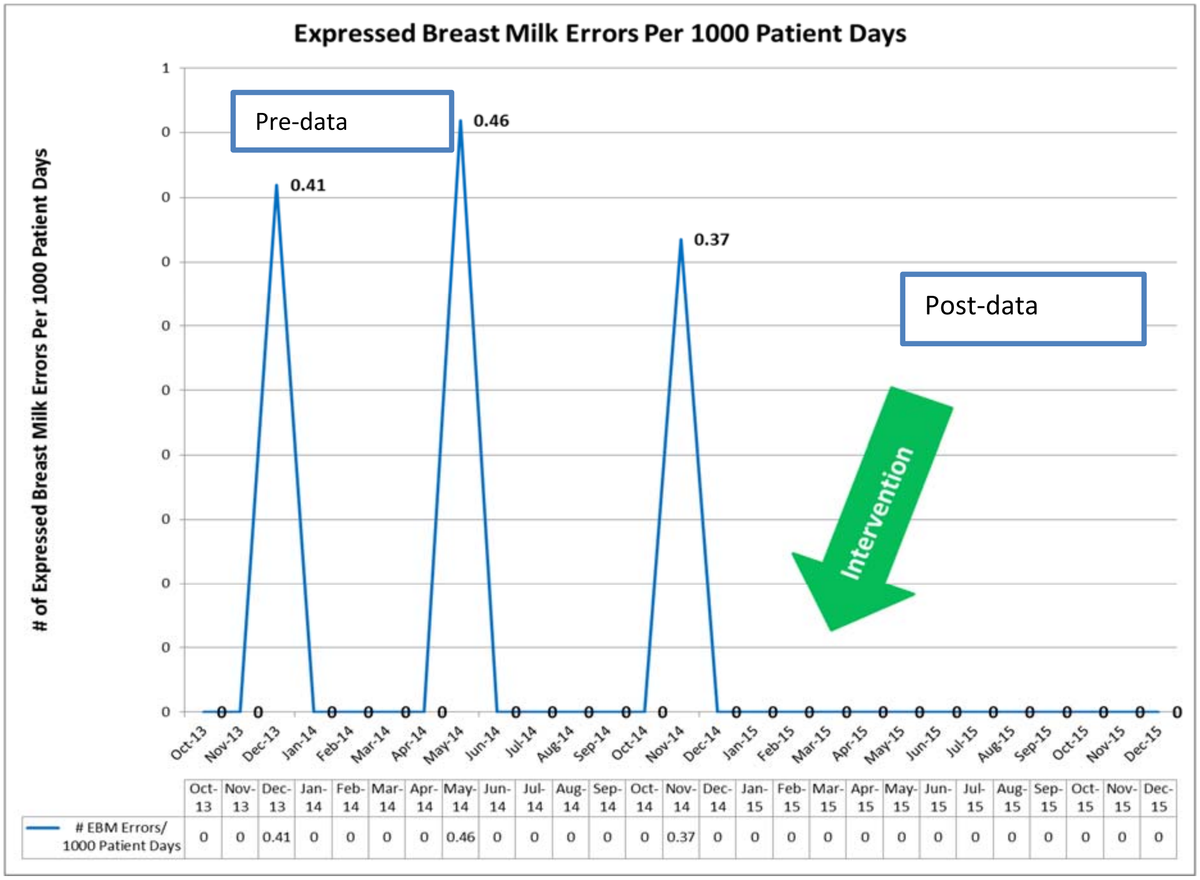
The first intervention was implemented in March 2015 with the focus on correct patient labeling. During this phase, the medical receptionists engaged families by asking the parent to check, verify for accuracy, and sign the printed patient labels prior to distributing them for use on EBM bottles. The second intervention involving family partnership was implemented in June 2015 and focused on correct patient identification. During this phase, the families were engaged by involving them as one of the two

required sources of the 2-person double check needed to either transfer EBM from an original bottle to a new bottle following mixing, to enter a patient room with EBM, or to mix the EBM with a fortifier.

After the implementation of these interventions, the NICU has continued to monitor progress toward zero breast milk errors. The NICU has shown improvement in sustaining a zero error rate longer than the previous 3-4 month time frame. Errors were identified in January 2016 and April 2016. The NICU team took immediate steps to review these errors to identify the underlying causes and take action to prevent future occurrences. Although these two errors occurred, it was determined that the interventions implemented in March and June of 2015 were still being closely practiced. The NICU remains committed to monitoring this process and ensuring patients in the NICU are free from the harm of potential breast milk errors.

Due to the interventions implemented by the NICU nurses for breast milk verification processes, the NICU has experienced a sustained decrease in breast milk errors. This decrease in errors has continued for 12 months.




Expressed Breast Milk Errors Per 1000 Patient Days
# of Expressed Breast Milk Errors Per 1000 Patient Days
Pre-data
Post-data
Intervention
0.41
0.46
0.37
Oct-13 Nov-13 Dec-13 Jan-14 Feb-14 Mar-14 Apr-14 May-14 Jun-14 Jul-14 Aug-14 Sep-14 Oct-14 Nov-14 Dec-14 Jan-15 Feb-15 Mar-15 Apr-15 May-15 Jun-15 Jul-15 Aug-15 Sep-15 Oct-15 Nov-15 Dec-15
EBM Errors/ 1000 Patient Days
0 0 0.41 0 0 0 0 0.46 0 0 0 0 0 0.37 0 0 0 0 0 0 0 0 0 0 0 0 0

EP20EO

Culture of Safety

EP20EO: Clinical nurses are involved in the review, action planning and evaluation of patient safety data at the unit level.

Provide two examples, with supporting evidence, of an improvement in patient safety that resulted from clinical nurses' involvement in the evaluation of patient safety data at the unit level. Supporting evidence must be submitted in the form of a graph with a data table that clearly displays the data.

Example a

Staff Education "Blitz" to reduce CLABSI occurrence in the PCICU.

Background

The Pediatric Cardiac Intensive Care Unit (PCICU), located on the fifth floor of MCJCHV, is an 18-bed intensive care unit for children with congenital or acquired heart disease. Due to a high number of device (ventilators, central venous catheters, foley catheters) days, hospital-acquired infections have been an important quality metric that the PCICU tracks and displays publicly via a board in the unit displaying days between infections. On January 24th, 2014, the PCICU had a Central Line Associated Blood Stream Infection (CLABSI) occurrence; the first in 498 days. Between January 24th and June 23rd, 2014, the PCICU had a total of 6 CLABSIs. Formal, multi-disciplinary Event Analyses were conducted after each CLABSI, with no obvious common causes identified among the CLABSIs. Two unit-based, nurse-led quality committees, the Infection Prevention Committee and the Education Committee, were brought together to provide input on how to intervene.

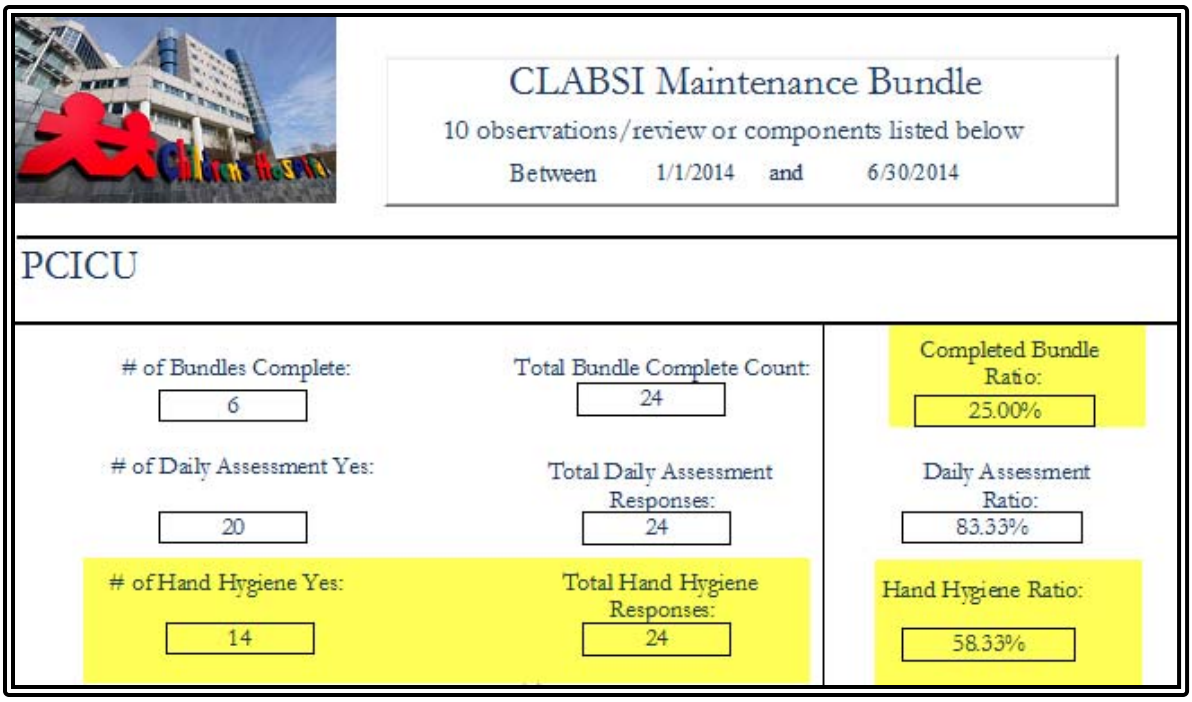
Goal Statement

To have monthly Standardized Infection Ratio (SIR) rates of zero (0) for CLABSIs in the PCICU for at least a 3-month period following re-education of nursing staff related to CLABSI prevention. SIR is a CDC benchmark that compares the number of infections that occur to what is expected based on the national baseline.

Description of Intervention/Activities

The Unit Manager contacted the staff RN Quality Improvement Analyst (QIA), as well as the staff RN leaders of the Infection Prevention and Education Committees to update them on the situation. The QIA and committee leaders briefly met with the Unit Manager to review quality data from the QIA's unit-level weekly audits of care and documentation, the roll-up of CLABSI data, and the findings from each Event Analysis. The committee leaders agreed that there were no common causes from each CLABSI to focus on and recommended focusing on a re-education of CLABSI prevention fundamentals.

A snapshot of the audits completed by the QIA is listed below. In the months of January through June 2014, 24 audits were completed, but only 6 of these were fully compliant with the prevention bundle. Of the 24 audits, only 14 demonstrated that the RN washed their hands prior to accessing the central line.



CLABSI Maintenance Bundle

10 observations/review or components listed below

Between 1/1/2014 and 6/30/2014

PCICU

# of Bundles Complete:	Total Bundle Complete Count:	Completed Bundle Ratio:
6	24	25.00%
# of Daily Assessment Yes:	**Total Daily Assessment Responses:**	**Daily Assessment Ratio:**
20	24	83.33%
# of Hand Hygiene Yes:	**Total Hand Hygiene Responses:**	**Hand Hygiene Ratio:**
14	24	58.33%

The committee leaders called a combined meeting of the Infection Prevention and Education Committees to share CLABSI data and recommendations with all staff RN members of the two committees, and to further define the topics for and mode of education. The PCICU Medical Director was also present to offer guidance as needed and to show provider support for the initiative. Members of the taskforce identified five education topics that needed to be reviewed with all staff based on data from the QIA's weekly audit of nursing care regarding CLABSI prevention and anecdotal staff RN feedback. Those five topics were:

1) Hand Hygiene
2) Correct procedure for injection cap disinfection
3) Correct procedure for injection cap replacement
4) Daily patient baths
5) Surface disinfection in the patient room

Five staff RN members of the taskforce each took one of the above topics and developed education in a concise PowerPoint format to be shared with every staff RN in the PCICU. The material was compiled into one presentation, then reviewed and approved by members of the Taskforce, the Unit Educator, the Unit Manager, and the Medical Director. The taskforce determined that 1:1, face-to-face education with every RN in the PCICU was the optimal mode of education to reinforce the emphasis on individual practice. Since rapid implementation was important to influence practice change quickly, this proposal required a relatively large amount of manpower.

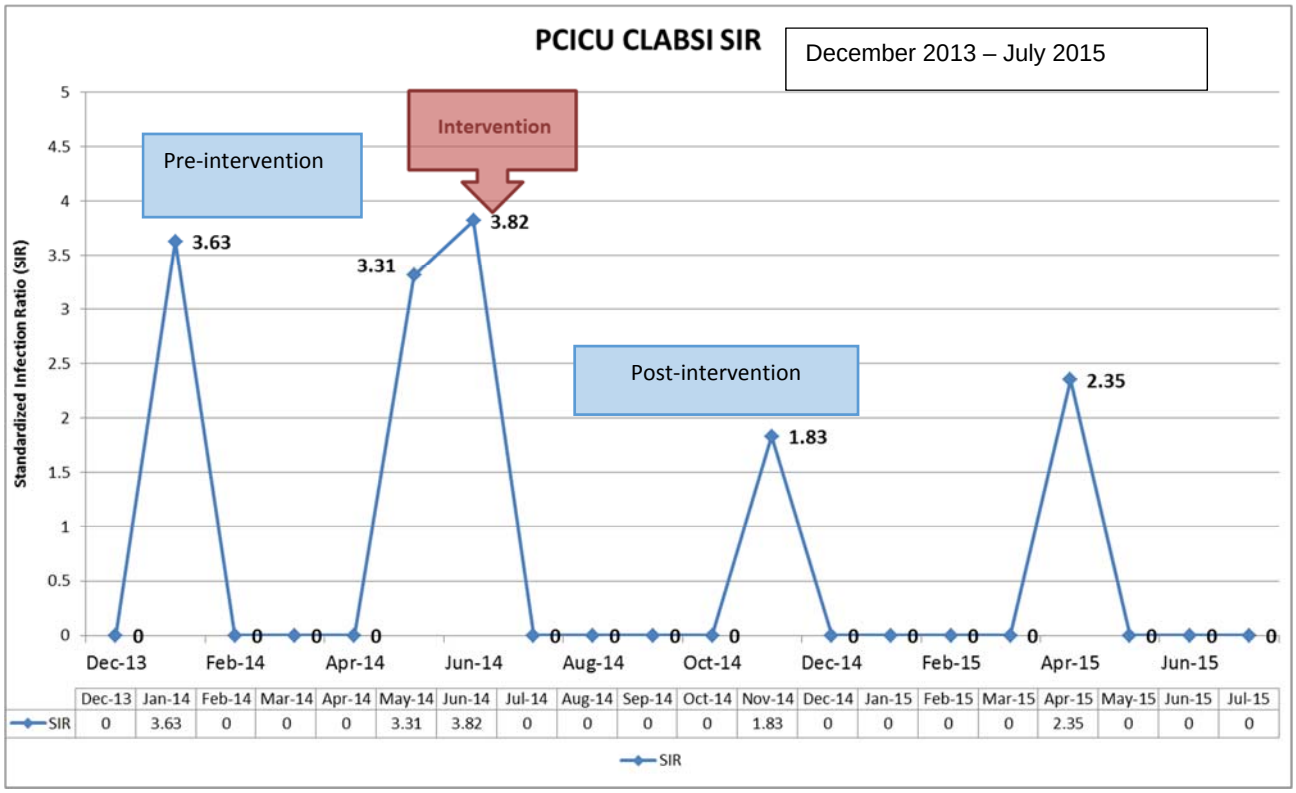
Staff RN taskforce members looked at their work schedules as a group and decided that taskforce members would present the information 1:1 to each staff RN during shifts they worked. They set a goal of educating 80% of PCICU RNs between July 28th and August 11th, and educating the remainder before August 18th, 2014. Each staff RN taskforce member rounded with a computer to present the education 1:1 with staff RNs working. A list was updated to reflect RNs who had received the education. By August 18th, each of the 81 staff RNs in the PCICU had received the education 1:1. Following this re-education of staff, the PCICU CLABSI SIR decreased and the PCICU went 4 months without a CLABSI. The goal was reached.

Participants

Name	Credentials	Role in organization	Practice Area	Role on committee
Ashley Bonner	BSN, RN4, CCRN	Critical Care – Clinical Nurse	Pediatric Cardiac Intensive Care Unit	Quality Improvement Analyst, Content development, presenter
Jessica Hiltenbrand	BSN, RN2 Critical Care	Critical Care – Clinical Nurse	Pediatric Cardiac Intensive Care Unit	Content development, presenter
Jennie Mabe	BSN, RN3 Critical Care, CPN	Critical Care – Clinical Nurse	Pediatric Cardiac Intensive Care Unit	Content development, presenter
Alison McCabe	BSN, RN2 Critical Care	Critical Care – Clinical Nurse	Pediatric Cardiac Intensive Care Unit	Content development, presenter
Katie Walker	BSN, RN3 Critical Care, CCRN	Critical Care - Clinical Nurse	Pediatric Cardiac Intensive Care Unit	Content development, presenter
Debbie Hardy	MSN, RN	Nurse Educator	Pediatric Cardiac Intensive Care Unit	Facilitator
Andrew Smith	MD, MSCI, MMHC	Medical Director	Pediatric Cardiac Intensive Care Unit	Advisor
John David Hughes	BSN, RN	Unit Nurse Manager	Pediatric Cardiac Intensive Care Unit	Facilitator

Outcome

The set goal was met. Monthly SIR rates increased from December to June 2014. The running SIR trend decreased post-intervention, leading to 3 months with an SIR of 0. The monthly SIR rate continues to be lower than the rate at the time of intervention.



	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15
SIR	0	3.63	0	0	0	3.31	3.82	0	0	0	0	1.83	0	0	0	0	2.35	0	0	0

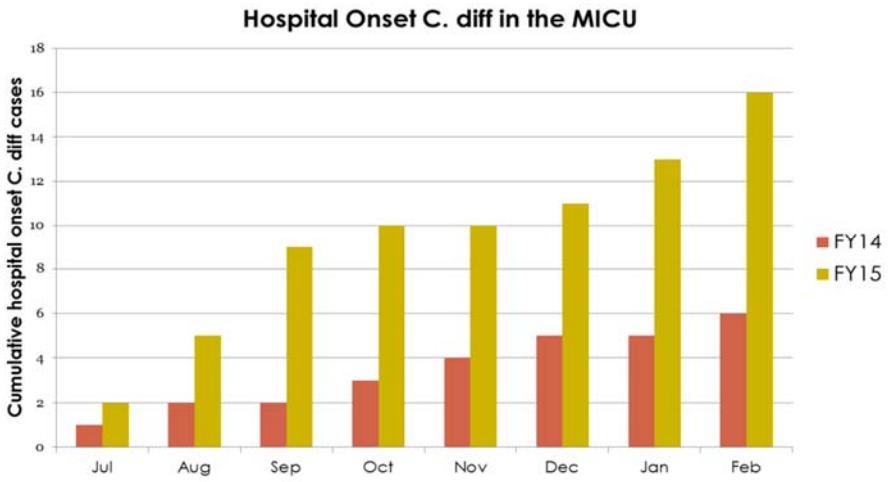
Example b

Using a Lean, Multidisciplinary approach to prevent C. difficile in the MICU

Background

The Medical Intensive Care Unit (MICU) serves a wide variety of critically ill patients and presents nurses with new challenges from shift-to-shift. MICU patients can be particularly susceptible to multi-drug resistant organisms like *Clostridium difficile (C. diff)* and Methicillin-resistant *Staphylococcus aureus*.

In March of 2015, there was a significant increase in the number of C. diff events throughout the organization. Driving this surge was the MICU, with a nearly 200% year-over-year increase. During unit board meetings the MICU nursing staff had reviewed this increase in the number of C. diff cases and were prepared to be part of the team to address these issues.



A task force was formed with the goal of assessing current practice and preventing C. diff across the organization. One of the task force's first recommendations was to form multidisciplinary teams in the most affected units that could address the problem. The sub-group in the MICU consisted of representatives from performance improvement, infection prevention, clinical staff nursing, pharmacy, and the MICU physician team.

Goal Statement

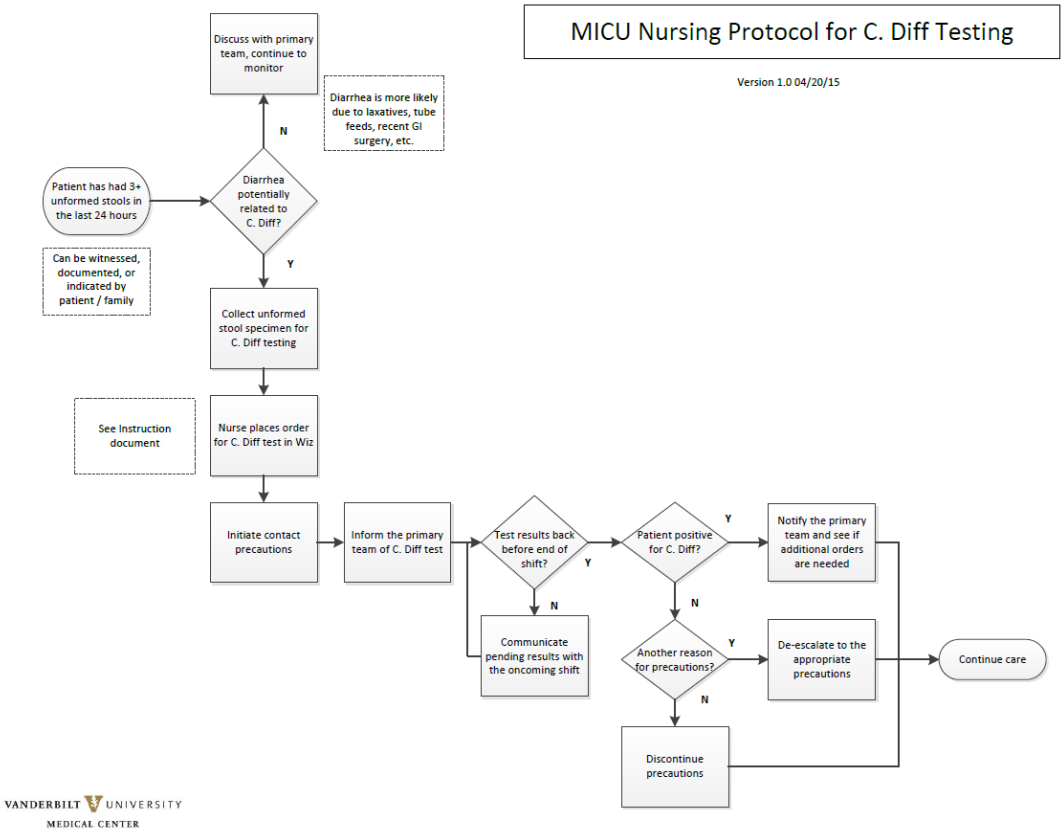
Reduce the incidence rate of hospital onset C. diff cases in the MICU. A hospital onset C. diff case is defined as an event where a positive specimen is collected greater than 3 days after admission to the unit and is measured as a rate per 10,000 patient days.

Description of Intervention/Activities

Lean is the performance improvement methodology of choice at VUMC. At the beginning of the project, the team reviewed the basic principles of Lean (reduce waste, add value) in addition to general information about C. diff. MICU nurses continued their review of their unit data on the number of cases and unit trends compared to national trends.

The group then worked through the initial steps of filling out an A3, including identifying stakeholders and performing a thorough root cause analysis. Potential root causes included delays in testing for C. diff, inappropriate use of antibiotics, variability in room cleaning practices, and a lack of guidance surrounding the removal of linen and meal trays from contact isolation rooms.

To address the potential root causes, several solutions were developed. First, the group refined a nursing protocol for C. diff testing where MICU nurses can order a C. diff test without a provider order, based on the protocol. Nurses on the team helped determine the trigger for initiating the protocol and designed the workflow after positive and negative tests (see flow chart below). The new process began on 04/27/15. The entire unit staff was educated on C. diff and the unit's performance throughout the process. An abbreviated antibiotic review was implemented on rounds for every MICU patient and data from these reviews was collected and placed in a database for further analysis.



Participants

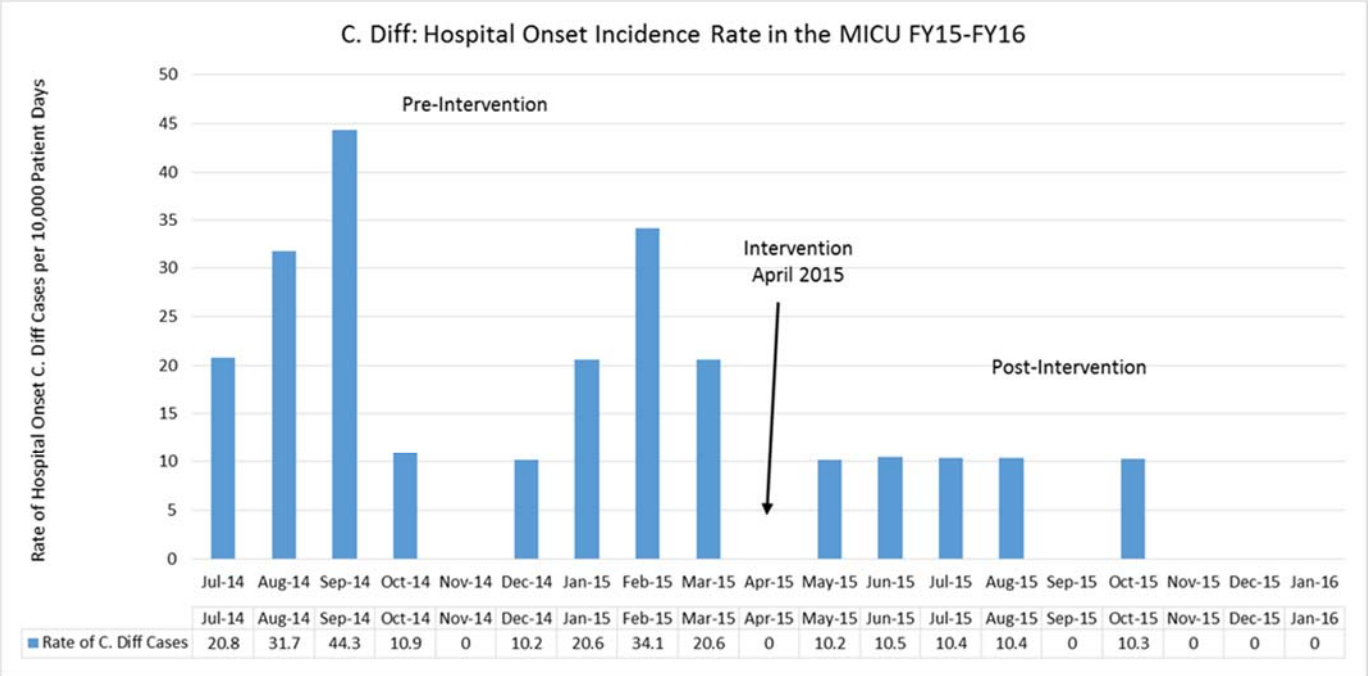
MICU C.diff Committee

Name	Credentials	Role in organization	Practice Area	Role on Committee
Jess Bledsoe	BSN, RN2 Critical Care	Critical Care - Clinical Nurse	MICU	Member -identifying root causes, refining nursing protocols, solution implementation
Phil Cook	MHA	Quality Consultant	Medicine Patient Care Center	Analysis, facilitation
Julie Foss	MSN, RN, NE-BC	Inpatient Nurse Manager	MICU	Member – identifying root causes, refining nursing protocols, solution implementation
Stacey Holt	MSN, RN, CCRN, CCNS	Nursing Education Specialist	MICU	Member – solution implementation and staff education
Jen	BSN, RN2	Critical Care -	MICU	Member - identifying root

McNaught	Critical Care	Clinical Nurse		causes, refining nursing protocols, solution implementation
Mike Noto	MD	Clinical Fellow	MICU	Identifying root causes, designing antibiotic review tool, solution implementation
Joanna Stollings	PharmD	Clinical Pharmacist	MICU	Identifying root causes, designing antibiotic review tool, solution implementation
Kathie Wilkerson	RN, BSN, CIC	Infection Preventionist	Medicine Patient Care Center	Identifying root causes, providing expertise, refining nursing protocols

Outcome

Though more time is needed to assess the total efficacy of the changes, the initial results have been positive. In the 6 months prior to the first intervention, the MICU had 9 cases of hospital onset C. diff. In the 5 months following the interventions, the MICU has had 4 cases of hospital onset C. diff. Future work will focus on the cleaning of patient rooms, conducting event analyses, and implementing a new process to facilitate the removal of linens and meal trays from contact isolation rooms.



EP21EO

Culture of Safety

EP21EO: Nurses are involved in implementing and evaluating national or international patient safety goals.

- Provide one example, with supporting evidence, of nurses' involvement in activities that address national or international patient safety goals that led to an improvement in patient safety outcomes. Supporting evidence must be submitted in the form of a graph with a data table that clearly displays the data.

Background

In the most recent National Patient Safety Goals (NPSG) under NPSG.07.05.01 are the elements of performance regarding implementation of evidence-based practices for preventing surgical site infections. These elements are listed below and the example is based on these requirements that we know yield positive outcomes.

- Education for clinical staff and providers
- Patient and family member education
- Policies and practices aimed at reducing the risk for surgical infections
- Conduct risk assessments
- Selection of surgical site measures based on evidence
- Monitor compliance with guidelines
- Evaluate the effectiveness of prevention efforts
- Measurement rates
- Provide data (process and outcomes) for key stakeholders
- Administer antimicrobial agents for prophylaxis based on evidence
- Remove hair if needed and by method based on evidence

Post-operative sternal wound infections (SWI) are a serious and often life threatening complication of cardiac surgery. Monitoring showed that SWI were higher than expected based on National Healthcare Safety Network (NHSN) values. Reducing SWI by monitoring evidence based bundled practices would codify a team based tactic and maximize institutional effort.

In review of this issue, variations in adherence to recommended infection prevention practices were noted by operating room clinical nursing staff, infection prevention observers, and quality consultants. As part of an overall infection reduction initiative, a group of evidence-based strategies had been implemented, but not monitored; as determined effective in the NPSG and evidence. The aim of the new work was to describe bundled evidence based practices used to reduce SWI in cardiac bypass graft

surgery patients and monitor effectiveness using a web-based survey tool. Infection prevention nurses, quality consultant nurses, and cardiac operating room nurses could collaborate together in a web based venue to track compliance with the evidence based bundle elements.

Goal

Decrease sternal wound infections in patients undergoing coronary artery bypass grafting (CABG) utilizing evidence based bundled practices that are tracked using a web-based survey tool.

Interventions

Each month the cardiac surgical team along with cardiac operating room clinical nurses and nursing leadership received a surgical site infection report. When the rates were noted to be increasing by Infection Prevention, an interprofessional task force was assembled to look at cases and determine possible causes for the increase.

Evidence based bundle elements were gathered and approved by the task force to be used to decrease infection rates. Tracking compliance to the bundle elements was described in a survey tool designed to capture data elements. A web-based REDCap (Research Electronic Data Capture) survey tool was designed and implemented for purposes of monitoring sternal wound infections and lapses in practice.

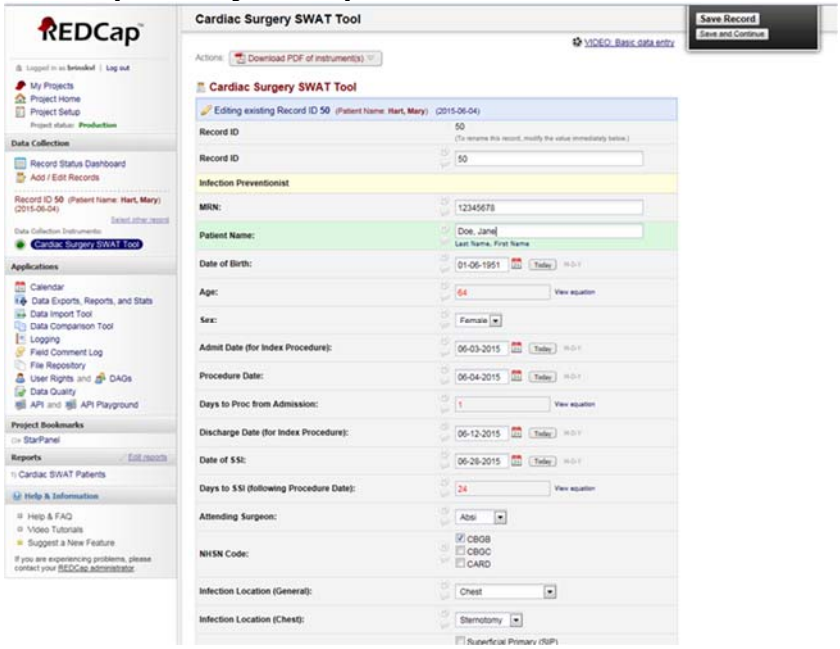
VUMC Guidelines for Prevention of Surgical Site Infection following Cardiac Surgery

Preoperative	Intraoperative (Anesthesia)	Intraoperative (Surgical Team)	Postoperative
Mupirocin to nares BID x 5 days prior to surgery. If inpatient prior to surgery, start Mupirocin as early as possible once surgery is scheduled. If unable to complete preoperatively, continue postoperatively for a total of 5 days BID.	Vancomycin 15 mg/kg IV on call to OR within 2 hours prior to incision. Cefazolin 2 Gm IV once patient is in OR and within 1 hour prior to incision. Levofloxacin 500 mg IV for beta-lactam allergic.	Consistent and effective application of alcohol-based surgical skin prep prior to incision. Allow prep to dry prior to incision.	Glucose maintained less than 200 mg/dl throughout hospitalization. *(CVICU Goal is 100-150)*
CHG showering or wipes chin to toes night before and morning of surgery.	Prophylactic antibiotic administration is timed to occur prior to central line insertion as long as administration is within the time periods noted above.	Avoid immediate use steam sterilization.	Active warming to return to normothermia and maintain core temperature ≥ 36.0°C.
Patient education regarding SSI prevention: preoperative skin cleansing, postoperative incision care.	Antibiotic redosing for prolonged cases as indicated (determined by specific antibiotic[s] used).	If off-pump, maintain core temperature ≥ 36.0°C.	Electrodes are placed at least 1 inch from incisions; wires and cables are positioned to limit contact with incision and drain sites.
If hair removal is necessary, remove with clippers as close to OR time as possible, but not in the OR. Place patient on clean bed after clipping is complete and prior to transport to the OR. For bearded patients, clip beard to ½ inch or less.	Check glucose q 1 hour; maintain less than 200 mg/dl intraoperatively.	Irrigate wound with vancomycin solution 1 Gm / liter NS prior to closure. Vancomycin paste 2 Gm with 2cc NS on sternal edge after wires are placed and just before closing.	For gauze dressing, after 24 hours the dressing is removed and soap and water are used for cleaning. Soiled or saturated incision dressings are changed using sterile technique, including hats and masks if within 24 hours. Chlorhexidine swabs and used for cleaning and an occlusive dressing is reapplied – ensuring that no adhesive is on the incision.
Postpone elective surgery in the case of symptomatic systemic or remote infection.		Minimize dead space; consider placement of drain for patients with thick subcutaneous adipose tissue.	Remove chest tubes and drains as soon as is safely possible.
Prewarming to maintain core temperature ≥ 36.0°C.	Clean scrubs are worn; all hair is covered with disposable caps. Minimize OR traffic; limit room entry and exit to situations required by patient needs.		Stop antibiotics within 48 hours. Do not maintain prophylactic antibiotics for the duration of the chest tubes.
Move electrodes from sternal area; remove adhesive residue.			

- **January – March 2013:** In early 2013, the preoperative components of the bundle elements were approved. A REDCap survey tool was built by Infection Prevention and Quality Safety and Risk Prevention in an effort to capture

compliance to preoperative and post-operative bundle compliance. REDCap is a secure web platform for building and managing online surveys and databases. The REDCap application provides research teams an 'easy way to do the right thing' with planning and data collection strategies. Sections within the tool were divided into Infection prevention, Quality, Perioperative, and Post-operative.
    - Clinical nurses completed the data points in each of the corresponding sections.
    - Cardiac clinic nurses educated the patients regarding preoperative bathing with chlorhexidine (CHG) wipes the night before and the morning of surgery. Supplies were given in the clinic along with instructions. Nasal decolonization with an anti-staphylococcal ointment was also instructed along with a prescription for the ointment.
- **April – December 2013:** Problems were noted for patients not filling prescriptions prior to the day of surgery or performing CHG bathing as instructed. A cohesive educational package was devised to collate the information for the patient and facilitate the nasal decolonization regime. Postoperative bundle elements were solidified and approved by the task force. Perioperative clinical nurses in the post anesthesia recovery unit were responsible for compliance.
- **January – December 2014:** Additional bundle elements were added to the protocol including an intraoperative section (Phase 2).
    - Intraoperative bundle elements were recorded by the CRNAs.
    - Analysis of the compliance data indicated that patients were using the decolonization protocol 4-5 days post op rather than 2-3 days pre-op. Re-education for the patients and clarification of the teaching materials improved compliance with this metric.
    - Teamwork both at the clinic level and in-patient/perioperative arenas was considered essential, in order to ensure patient safety.

REDCap Survey Example



Participants

Name	Credentials	Role in organization	Practice Area	Role on committee
Dana Johnson	MSN, RN	Infection Preventionist	Cardiology	Member
Vicki Brinsko	MSN, RN, CIC	Director, Infection Prevention	Quality	Member
Barbara Martin	MSN, RN	Senior Quality & Patient Advisor	Quality	Facilitator
Kathy Burns	MSN, RN, CCRN	Clinical Nurse Specialist	CVICU	Member
Mary Ann Meredith	BSN, RN, CNOR	Nurse Manager	Cardiothoracic Surgery	Member
Cindy Kildgore	BSN, MHM, RN	Director, Nursing	Perioperative Services	Member
Diane Johnson	MSN, RN	Director, Nursing	Perioperative Services	Member
Janice Gabbard	MSN, RN	Nursing Manager	Cardiology	Member
Venus Manuel	MSN, RN, PCCN	Nursing Education Specialist	General Cardiology	Member
Kimberly Moore	MSN, RN, CCRN	Nursing Education Specialist	CVICU	Member
Grace Fallin	MSN, RN	Advance Practice Nurse	Cardiology	Member
Jessica Hassler	RN	Clinical Nurse	Cardiology	Member
Shelly Bledsoe	RN	Quality Consultant	Cardiology	Member
Dana Wilson	BSN, MBA, RN, NE-BC	Director	Cardiac Cath Lab	Member
Katherine Turner Hatton	BSN, RN	Patient Care Coordinator	Cardiology Services	Member
Betty Adcox	RN	Clinical Nurse	Cardiac Progressive Care	Member
Michael Petracek	MD	Physician	Cardiac Surgery	Consultant
Tom Talbot	MD, MPH	Physician	Chief Hospital Epidemiologist, Infectious Diseases	Consultant

Intervention
Each month the cardiac surgical team, along with cardiac operating room clinical nurses and nursing leadership, received a surgical site infection report. When the rates were noted to be increasing by Infection Prevention, an interprofessional task force was assembled to look at cases and determine possible causes for the increase.

Evidence based bundle elements were gathered and approved by the task force to be used to decrease infection rates. Tracking compliance to the bundle elements was described in a survey tool designed to capture data elements. A web-based REDCap (Research Electronic Data Capture) survey tool was designed and implemented for purposes of monitoring sternal wound infections and lapses in practice.

- By the end of June 2014 the following intervention bundle components had been implemented:
    - Approval for the pre-operative components of the bundle elements. A REDCap survey tool was built by Infection Prevention, Quality Safety and Risk Prevention in an effort to capture compliance to pre-operative and post-operative bundle compliance. REDCap is a secure web platform for building and managing online surveys and databases. The REDCap application provides research teams an ‘easy way to do the right thing' with planning and data collection strategies. Sections within the tool were divided into Infection prevention, Quality, Perioperative, and Post-operative.
        - Clinical nurses completed the data points in each of the corresponding sections.
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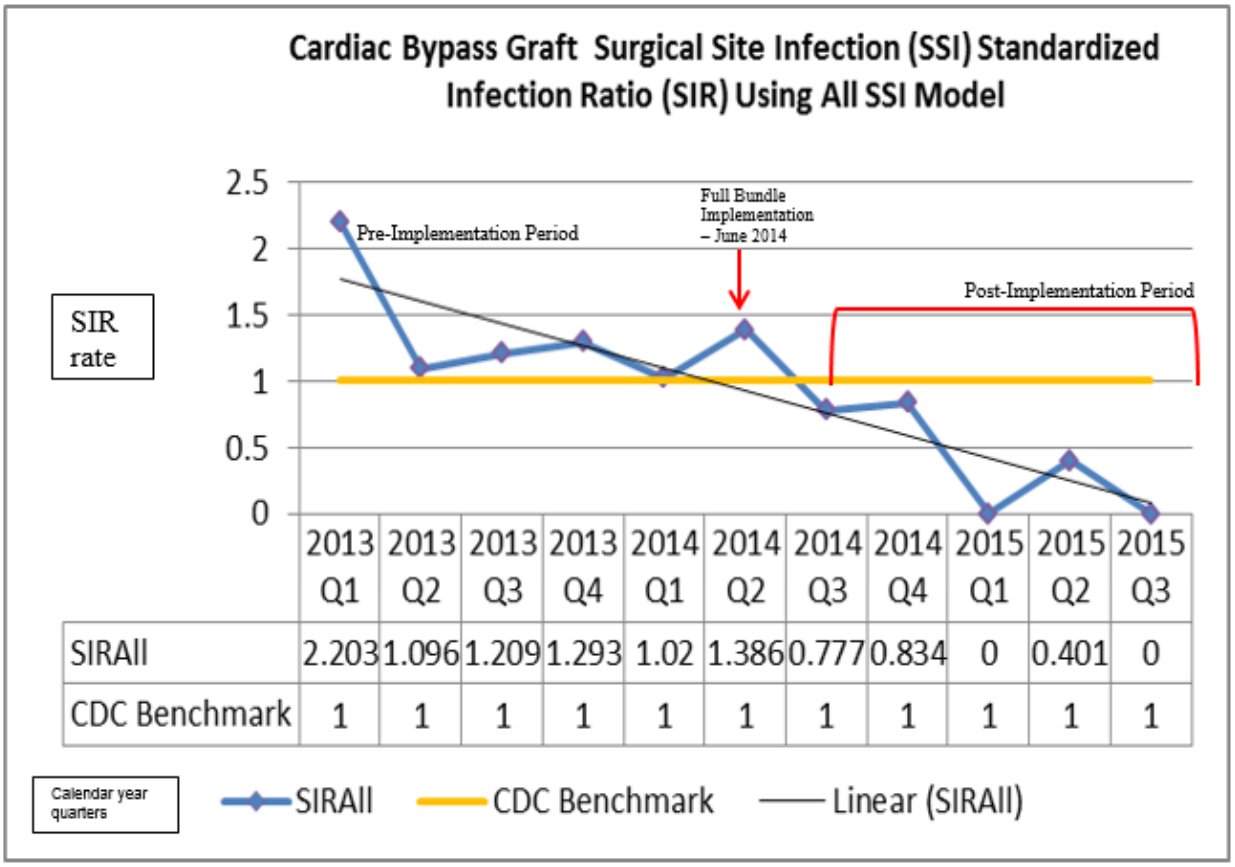
    - A cohesive educational package was devised to collate the information for the patient and facilitate the nasal decolonization regimen.
    - Post-operative bundle elements were solidified and approved by the task force. Perioperative clinical nurses in the post anesthesia recovery unit were responsible for compliance.
    - Intraoperative elements approved for addition to the proposed bundle:
        - Data elements to be recorded by the CRNAs.
        - Education developed to address gaps in timing of pre-op protocol for patients as identified during implementation.
    - Developed teamwork at both the clinic level and inpatient/perioperative arenas, which proved essential to ensure patient safety.

Outcome
The adherence to the bundle elements, tracked through a web-based survey tool, resulted in a decrease in sternal wound infection rates in patients undergoing cardiac surgery.



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Outcome
The adherence to the bundle elements, tracked through a web-based survey tool, resulted in a decrease in sternal wound infections in patients undergoing cardiac surgery.