[A] Evidence Based Asthma Education Intervention for Adults in a Primary Care Setting Using Self-Management Guidelines

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Purpose of Study: The plan was to promote an organizational change within a primary care practice as a planned asthma care visit. In order to be a non-acute care reactive environment the plan will change the current asthma patient visit from one that is acute exacerbation driven to one that is preventative. Using the guidelines of the National Institutes of Health, Blood and Heart Institute to provide evidence based care.

Description and Methodology: The design was a Pre and Post comparison of outcome measures. These measures will include: a decrease in acute episodes of participants by 50%, an increase in patient perceived self-efficacy as demonstrated by an increase in demonstrated knowledge of control by 50%. A decrease of 80% of patient incorrect use of rescue inhalers.

Study Design, Target Population, and Sample: The quality improvement project used a pre-post-test study design within a designated medical home practice. The target population were patients registered within the practice who are aged 18 or over with asthma seen within the last two years. There was 720 patients identified with asthma. These patients were evaluated on criteria specified. The sample for the project was two fold, one group identified will be seen by the asthma educator and, all patients with asthma will be seen.

Rationale and Significance: According to the Centers for Disease Control report of 2010, asthma is a public health problem with significant impact in the United States. It ranks among the country’s most common chronic conditions. Self-management in the form of guided self-care, the patient takes an active role in their care and managing their symptoms. “The minute a patient walks into the clinic the education must start and the message must continue to be reinforced through the treatment” (Utah Department Of Health, 2009 p. 1).

Subject Findings: Prior to the quality improvement project. No patients received an Asthma Control Test(ACT), had severity rating in EMR, correct diagnosis was not listed in problem list based on NAEPP guidelines and, many had not received spirometry, or follow up of their asthma in several months to years. There was no formalized education program in place for patients with asthma. The proportions (or percent’s) jumped from 20% of the group to 100%. 53% of the patients seen in the practice received all of the elements that proved evidenced based care

Conclusions and Recommendations for Future Study: The conclusions are that this pilot project was successful. For the overall practice, the project was successful in showing that evidence based care does have an effect on patient satisfaction and self-esteem.Using the standards of treatment for asthma developed by the expert panel reports from the National Heart, Lung, and Blood Institute allows a clear roadmap to patient centered control. A patient-centered practice identifies patients, and knows that the patient is the driver of their care, and need to be more involved in decisions about their care, and in the management of their health. Patients need to actively engage in their healthcare, and good providers of care will use Evidence Based Asthma Education Interventions that use Self-Management Guidelines to provide this care.
Using Rapid Cycle Change to Positively Influence the Culture of a Unit

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Purpose of Study: To understand the process of using rapid cycle change and the influence the successful implementation of this method can have on a unit. Additionally, to describe the positive effect on patient and nurse satisfaction and to highlight the elevation of the culture and professionalism of the unit.

Rationale and Significance: Nurses are constantly striving to improve care, enhance efficiency and manage complexity in an ever changing healthcare system. In an effort to challenge the status quo, nurses must seek to improve patient care as well as nurse satisfaction. Implementing innovative processes allows for these improvements and fosters the development of new leaders.

Description of Methodology: As part of a two year grant offered by the American Organization of Nurse Executives, Care Innovations and Transformation, (CIT) program educated a team of core “champions” about how to implement rapid cycle changes and the adopt, adapt, abandon process. These champions conveyed the process of change to their nursing colleagues on the unit and through the identification of a “point person” and extensive education, were able to implement several innovative ideas on their unit.

Subject Findings: In just over one year, the team of nurses on a 20 bed gynecology/oncology unit has implemented over 25 innovative ideas. Patient satisfaction has increased as evidenced by rising HCAHPS scores. Additionally, the resistance to change has virtually dissipated and a small focus group highlighted emergent themes related to the experience of using rapid cycle change:

- “Eye opening experience”
- Enhanced sense of empowerment and greater control over practice and process improvements
- Greater appreciation of the value of data
- Pride in what has been accomplished in only one year
- What’s “good enough” can be better
- Life’s better here now

Conclusion: Using rapid cycle change to implement innovative ideas can positively influence patient and nurse satisfaction as well as dramatically improve the culture of a unit. Resistance to change waned and acceptance of change is now embraced. New leaders emerged and the practice and professionalism of this unit has been elevated to an unprecedented level.

Recommendation for Future Study: After understanding rapid cycle change and implementing innovative processes, the challenge and ultimate goal becomes sustaining interventions and spreading this work to other units within the facility as well as to the community and nationally. Recommendations for future studies should examine the processes for sustaining and spreading these initiatives.
Understanding Non-Financial Barriers to Preventive Dental Care in Vermont

Sarah McLaughlin, Colleen Long, Bill Swaney

**Purpose:** To develop a survey identifying the barriers to utilization of preventive dental health services (annual cleanings) in an insured population of healthcare workers employed at a small, rural hospital in Vermont.

**Rationale:** Despite the fact that preventative dental cleanings are covered at 100% of cost by employee dental insurance plans, only 68% of insured employees use this benefit. Seventy-five percent of employees at peer organizations receive annual dental cleanings. The cost to opt in to the employee dental insurance is one dollar per year. Underutilization of preventative dental care puts employees at risk for dental illness and poor general health, leading to potentially costly and painful procedures, and absenteeism at work. The employer is concerned about the underutilization of preventative dental care and seeks to understand the barriers to utilization.

**Methods:** An environmental assessment of the local community, dental providers and the workplace was conducted. As well, informal interviews were conducted with a small sample of insured employees. This led to the development of a survey reviewed by the employer and pilot tested by public health nursing students in preparation for distribution to hospital employees.

**Subjects:** Approximately 350 full-time employees of a small, rural hospital.

**Findings:** The survey format was validated by the pilot group as sufficiently able to identify key barriers to dental benefit utilization and concise enough to be completed by employees with time constraints. Of the 12 employees informally interviewed in the workplace, all 12 were aware of the offered dental benefit. Nine employees opted in for dental insurance while three were covered under spousal insurance. Of the nine employees who opted in, seven utilized preventative dental care and put a high value on their dental health. The overlapping of employee and spousal/dependent utilization was identified as a source of confounding data.

**Conclusion:** The true scope and nature of the underutilization of care by the subject population must be evaluated through further data collection (by survey). The in-person interviews and on-site assessment of the employees' work environment was critical in shaping the survey and identifying potential barriers and improving the quality of the baseline data.

**Recommendations for Future Study:** Results of this survey will guide opportunities to study the success of targeted interventions to increase preventative dental care utilization. Based on the response rate and utility of survey responses, this survey format could be used to determine the barriers of preventative dental care at peer organizations. With improved understanding of the barriers to preventative dental care, other employers and public health institutions could implement preventive care promotion activities to improve health and reduce long-term expenditures on dental care.
[D] Refugee Mothers Study: Raising Children with Special Needs

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Background: Vermont is a refugee resettlement site with a yearly influx of refugees. This study provided an initial inquiry into the experiences of refugee mothers with children with disabilities.

Objective: The purpose of this study was to understand and identify the perceptions of refugee mothers who have children with special needs regarding the educational and healthcare needs of their children.

Design: This was a qualitative study most aligned with a grounded theory design. No hypotheses were formed a priori.

Methods: Five Somali Bantu mothers and one father (husband of one of the mothers) were interviewed in their homes using a semi-structured open ended interview. A Somali Bantu professional interpreter was used for all interviews. Interviews were audio-taped and transcribed, field notes were taken. Participants were compensated with $20.00 and a large box of diapers. The data were coded and categorized into themes (Glesne, 1999).

Results: Four predominant categories emerged from the data:

- Native healing practices: all mothers wished for Native healing practices
- Needs: money, ‘cultural medication’, learning to help their children with homework, managing confusing behavior
- Helpful Helping: suggestions for professionals included: extra time to explain things; repeat explanations; raise issues, such as safety; completing forms; transportation; help bring Native healing practices to local area
- Most difficult thing in raising a child with a disability. Two themes emerged from the data within the most difficult category:
  - Not understanding etiology, treatment, systems of care
  - Managing special needs especially its impact on work, supporting the child at home, barriers for Native healing practices, using their children as interpreters.

Limitations: The small number of participants is the greatest limitation of this study.

Conclusions: This small study demonstrates that there is a great need to understand the refugee experience in raising children with special needs in Vermont. More investigation is needed regarding number of refugee families with children with special needs and understanding their unmet needs. This study suggests that better communication between providers and families on critical topics is needed.

**[E] Improving Care of Patients who Receive Intravenous Vancomycin**

Shayne Olmsted RN, BSN & Jennifer Hayes RN, BSN

**Purpose of Study:** To establish an evidence-based procedure for ensuring adequate therapeutic vancomycin levels and monitoring of troughs.

**Rationale and Significance:** Vancomycin is an antibiotic that needs monitoring of trough levels to ensure patients are in the antibiotic’s therapeutic range. Failure to achieve and maintain therapeutic levels increases the likelihood of antibiotic resistance while prolonged supratherapeutic levels can lead to renal impairments.

**Description of Methodology:** Policies and procedures concerning vancomycin monitoring from the medical center, the larger umbrella organization, and local geographic area were reviewed as was related material from a literature search. The Chief of Infectious Disease, the Infectious Preventionist, and a data management analyst were consulted. A sample size of 22 medical records remained after the application of exclusion criteria to a population pool of 61 records. The 22 medical records were reviewed using an evidence-based checklist.

**Findings:** 50% of the records did not have documentation of sufficient monitoring; none had documentation of loading doses. 55% of the records documented subtherapeutic doses with only 33% of those having documentation of increased vancomycin dosing. Vancomycin dosing and trough level checks procedures were not found in the local documents reviewed.

**Conclusion:** There was no standardized replicable process for the monitoring of intravenous vancomycin.

**Recommendation for Future Study:** A standardized process is being developed for vancomycin monitoring. A future study might analyze implementation of the process, as well as voice of the customer (clinician) satisfaction with the process.
CDC Trial… Dialysis Station Disinfection

Peggy Bushey RN CDN

Purpose: Surface disinfection practices of patient equipment and dialysis stations between patient shifts are variable among centers. Inadequate surface disinfection during station turnover from one patient to the next increases the risk of transmission of bloodborne pathogens such as hepatitis C or hepatitis B. Prior to our trial there were no published “best practices” for surface disinfection of dialysis stations. As participants in the CDC sponsored Dialysis BSI Prevention Collaborative, Fletcher Allen Health Care’s St Albans Dialysis Clinic participated in a “test of change” improvement project. We trialed CDC’s newly developed recommendations and checklist (Environmental Surface Disinfection in Dialysis Facilities; Notes for Clinical Managers and Checklist: Dialysis Station Routine Disinfection) to standardize and improve our practices.

Process: The CDC Dialysis Collaborative “Disinfection Checklist” was distributed to the dialysis staff for review.

- Staff agreed to one week trial of recommended CDC procedure
- Staff first established what their current baseline disinfection protocol consisted of and how much time it took to “turnover” the station for the next patient.
- Next, for 1 week using CDC “Disinfection Checklist” for station disinfection, they followed step by step the protocol outlined; recording staff perception of the process and how turnover time was impacted.

Findings: The staff found that aside from removing the patient from the treatment station, they had been following the CDC protocol routinely.

- Using CDC protocol and forced to wait until the patient left the treatment station gave the technician a chance to slow down, complete all treatment documentation and mentally collect their thoughts before moving on to the next patient. They didn’t feel rushed to have everything done before the patient left the station.
- Risk of inadvertently touching the new “clean” setup machine while taking the current patients final blood pressure was eliminated. (They would have to perform hand hygiene and change gloves if machine was set up for new patient before pushing button on machine for BP cuff to inflate).
- Patient turnover times were minimally affected.
- There were less machine alarms and patients reported a “calmer, quieter” turnover

Conclusions: The staff reported an overall positive response to the “test of change”. Taking the time to discharge the patient from the treatment station before disinfecting and setting up for the next patient reduced the risk for cross contamination, allowed staff to collect their thoughts, complete documentation and feel less pressured to get the next patient on. The impact to length of treatment time and patient turnover was minimal. The patients reported a calmer turnover, with staff more focused on the individual patient. We have since replicated this process in our remaining 5 dialysis facilities with similar success.

Recommendations: The challenge of decreasing the potential risks of infection to both patients and healthcare workers during the delivery of hemodialysis treatments is ongoing. Building on the successes of this project, and working with the CDC Hemodialysis Collaborative opens up the possibility for other opportunities in our work environment that might be improved upon.
Purpose: The purpose of this project is to develop a curriculum that promotes “key steps” to effective and efficient patient education that can improve the bedside nurses’ ability to be a patient educator.

Rationale and Significance: Patient education is an important part of nursing care because self-care is vital in improving and maintaining one’s health. One of the most important tasks a nurse can do is to promote and support behavior changes that improve patient outcomes. It is important for nurses to have the knowledge, time, and resources in order to be effective and efficient in educating their patients.

Methodology: Quality improvement design. A developed patient education curriculum focusing on “key steps” to effective and efficient patient education was evaluated for both knowledge and performance improvement. Participants completed a Pre-test/post-test to determine knowledge gain and a pre-simulation/post-simulation to determine performance improvement. Performance in simulation was measured using a developed checklist. The pre/post-test and pre/post-simulation checklist were created to correlate to the patient education curriculum’s learner objectives.

Subject: Bedside nurses from two conveniently selected general care nursing units employed at a rural, regional referral center that serves a patient population from Vermont and northern New York.

Findings: Data analysis is currently in progress. Preliminary findings demonstrate a 6% improvement in pre/post-testing. N=66

Conclusions: The anticipated outcome is that there will be an improvement in both knowledge and performance from the pre to post-test and the pre to post-simulation.

Recommendations for further study: After the patient education curriculum has been presented to all general care nursing units; examining re-admission rates or satisfaction surveys for improvement.
Inpatient Oncology Discharges: Interdisciplinary Approach to Improving Quality, Communication and Efficiency

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Purpose of Study: A group of interested clinicians organized to explore the clinicians’ role in the discharge process with the goal of improving communication and coordination across the entire patient experience while increasing efficiency and ultimately improving the quality of care and quality of life for our cancer patients.

Rationale and Significance: The Massachusetts General Hospital (MGH) Cancer Center has a dedicated 32-bed inpatient medical oncology unit that provides Relationship Based Care. Patients admitted to this unit require complex oncology care that addresses their disease treatments, symptom management and support of emotional and spiritual issues. Patients are admitted to either the house staff or an Oncology NP service. Both groups are lead by oncologists and further managed by oncology staff nurses as well as other interdisciplinary specialists. Given the need for coordination of care among all inpatient providers, length of stay can sometimes be extended. A delay in inpatient discharges impacts available beds for patients in need of admission for treatment or symptom management. The unit receives monthly data sets listing the percent of pre-noon discharges and the average length of stay during the month. Review of the data indicated that we were not meeting our unit target percentages. In response to this, an interdisciplinary team was formed to examine our current discharge process, identify possible barriers, and suggest possible interventions for improvement.

Description of Methodology: As the team began to identify the many elements involved in the discharge process, we realized that our approach to improvement would have to be multi-factorial. We started with weekly meetings, which has helped with momentum of the initiative. To explore the patient’s perspective, we conducted a five-question survey of patients concerning issues of discharge. Clinician stakeholders participated in a focus group meeting to elicit their perspective. These activities helped increase unit and team awareness of our initiative. In addition, the RNs and NPs on both services began to analyze, on a daily basis, the reasons for delayed discharges. Increased awareness and communication about discharge was further improved by expanding the dialogue at the early morning discharge focused “huddle”. By providing visuals called “Huddle Bubbles” that prompt the team to include likely timing of discharge, criteria needed for discharge and the likely need for post hospitalization services, we were able to enhance the quality of our shared time in rounds. Other small tests of change have included changing the time of blood draws to allow for adequate time to provide transfusion and electrolyte repletion as needed. Our current pilot brings the discussion of discharge into the room by adding visuals (poster graphic) and in creasing use of the patient communication board with the goal of engaging patients in the discharge process.

Subject: Identifying areas for process improvement surrounding discharge of medically complex patients admitted to a 32-bed inpatient Oncology unit. Through a multifactorial approach, we targeted increasing the communication, coordination, and thus efficiency and quality of care surrounding discharges.

Findings: Our most recent data reflects a significant positive change in percentage of pre-noon discharges, with >10% increase (graphic). We are further exploring the discrepancies between the medical team and the nurse practitioner team. Thus far, staff have recognized an increase in dialogue and communication around discharge and voiced their observation of a changing culture.

Conclusion: Through meeting with patients, clinicians and other stakeholders, our team was able to identify areas in the discharge process that could be improved. By increasing unit awareness, improving communication at our AM “Huddle” and providing visuals to stimulate patient involvement in the discharge process, we have seen an increase in dialogue surrounding discharge and have seen a measured increase in pre-noon discharge rates.

Recommendation for Future Study: The team plans to continue weekly meetings, data measurements, and will re-survey patients regarding their experiences with discharge. Keeping open to the process, we remain committed to providing patients with a sustainable process of high quality, efficient hospital discharges.
[I] Monitoring Nurse Supply: Does National Data Accurately Reflect Small States

Mary Val Palumbo and Betty Rambur

Purpose: Nursing workforce planning increasingly relies on workforce supply and demand data. National nursing data are now available, as are state gathered data in some settings. Thus, this study compares a national nurse workforce study with a voluntary in-state electronic re-licensing survey administered in 2013. This comparison serves to test the validity of national study methods, as well as illustrate any corrective action needed to accurately reflect nursing workforce status in small states. By comparing these findings, a validation of the methodology for type of survey (mailed versus electronic), sampling, and weighting of a sample from a small state is possible.

Rationale and significance: An adequate supply of well-educated nurses is critical for improving health outcomes across settings (Aiken, Clarke, Cheung, Sloan, & Silber, 2003; Cimiotti, Aiken, Sloane, & Wu, 2012; Mastal & Levine, 2012; Shin & Bae, 2012). Accurate research detailing nurse supply is necessary but costly; therefore, the most effective way to measure a small state’s nurse workforce is an important test, specifically, to determine if national data provides an accurate representation.

Methodology: This study is a secondary analysis of two surveys administered in 2013. Registered nurses in Vermont were asked to answer workforce questions utilizing the Minimum Data Set (MDS) for nursing workforce supply studies (Forum of State Nursing Workforce Centers, 2010) as part of their Vermont re-licensure application. For the first time, these questions were embedded into the electronic re-licensure system, but completion of the workforce questions was not mandatory. During the same period of time, the National Council of State Boards of Nursing (NCSBN) sent a paper survey to a random sample, stratified by state, utilizing the same MDS nurse workforce questions. This confluence of events provides an opportunity for testing reliability and construct validity via multi-methods convergent validity.

Subjects: All registered nurses in Vermont at the time of re-licensure in 2013 (n=18,907) were asked to participate during the electronic re-licensure or by completion of a paper survey at their request. Only nurses who reported currently working as a nurse in Vermont were analyzed (n=tbd). In the national survey, NCSBN mailed 1,686 surveys to Vermont nurses and 742 responded. Of that sample, 547 reported currently working as a nurse in Vermont and were used in this analysis.

Findings: Data analysis is currently ongoing, but will be available by the time of the conference.

Conclusion: Findings will either support the validity of current national approaches to workforce supply or offer suggestions for corrective actions to better reflect small states.

Recommendations for future study: To assure robust workforce data, similar tests of reliability and validity should be conducted in midsized and highly populated states.
Purpose: The purpose of this project was to research and design strategies and best practices that might be implemented to improve the scores on the Nurse Participation in Hospital Affairs Practice Environment subscale of the American Nurses Association (ANA) National Database of Nursing Quality Indicators® (NDNQI®).

Rationale and Significance: The academic medical institution that this project targeted has average scores in the Practice Environment subscale of the American Nurses Association (ANA) National Database of Nursing Quality Indicators® (NDNQI®). The issue is that these scores have not improved in the 8 years that the survey has been administered.

Methodology: The domains of the Practice Environment subscale were discussed with multiple RNs including two nurse executives and a cross section of managers by individual interviews. Three focus groups consisting of multiple RNs from various different units were also conducted.

Findings: The interviews elicited multiple areas of potential improvement.

Conclusions: Six areas of opportunity were identified. NDNQI data not well disseminated; clinical ladder clarification; nurse bullying; CNO visibility; tuition reimbursement; and opportunity for role clarification for nurse educators and coordinators.

Recommendations for Future Study: Implement the recommended interventions strategically and review the NDNQI survey results from the survey due to be conducted in May 2014.
Purpose of Study: The aim of this study is to explore the relationship between a moderately preterm infant’s level of acuity and continuity of nurse caregivers, and achievement of physiologic competencies necessary for discharge.

Rationale and Significance: Knowing the patient is central to nurse advocacy. As the nurse comes to know their patient, he or she can recognize the patient’s typical responses and the need for a specific intervention. This provides a sense of predictability that is especially important for the non-verbal preterm infant. Many NICUs function with some variation of a primary nursing model in which one nurse is responsible for an infant’s care over time. Other nurses join the primary nurse to create a group of nurses to care for the infant. Factors thought to influence the assignment of infants to particular nurses include the preterm infant’s acuity, as well as variations in scheduling patterns, nurse preferences for types of patients, and nursing assignments made by charge nurses. Moreover, long lengths of stay create challenges in maintaining a cohesive team of nurse caregivers over time.

Research focusing on continuity of nurse caregivers found it to be an important mediator of length of assisted breathing, supplemental oxygen, parenteral nutrition, and length of stay for preterm infants in one NICU. There is a dearth of research identifying the circumstances in which continuity of nurse caregivers occurs and the effect it has on the moderately preterm infant. Research is needed to explore the situations in which continuity of nurse caregivers is achieved and the influence it has on the preterm infant’s achievement of physiologic competencies.

Description of Methodology: A retrospective descriptive design was conducted utilizing existing data including; mean weekly acuity scores (Summed daily Qudramed acuity score/7), weekly continuity of nurse caregivers score (# of nurses assigned to infant/ # of shifts per week), and the well documented outcome variables obtained through chart review including time to (days of life) regain birth weight, time to full oral feedings and the difference in z scores from the birth-weight percentile and the discharge weight percentile. The predictor variables include infant acuity and the continuity of nurse caregiver (CNC) score. The proportion of first time nurse caregivers will also be reported. Institutional review approval was obtained.

Subjects: NICU Nurses: All nurses assigned to care for infants were included in the continuity of nurse caregiver index. During the study period, there were 64 registered nurses (RN), with a median of 16 years of NICU experience, working a minimum of 24 hours per week. The unit practices Team Nursing where teams of 8-10 nurses with varying levels of expertise care for each infant from admission to discharge. Preterm Infants: Surviving preterm infants born between the ages of 30 and 34 weeks gestation discharged from the NICU at Massachusetts General Hospital meet inclusion criteria. Exclusion criteria include any infant the genetic variations including trisomy 21, 18, or 13 and any metabolic disorders. Preterm infants requiring gastrointestinal, facial or tracheal surgery will not be included in the analysis. The sample size is 109 infants with a minimum of 20 infants per week of gestation (30, 31, 32, 33, 34, 35).

Findings: Statistical analysis is in process at this time. Descriptive Statistics will be computed on demographic variables. Multivariate linear regressions will be computed with the three outcome variables.

Conclusions: To be determined

Recommendations for Future Study: To be determined