Improving Patient Safety and Nursing Care Utilizing

Safe Patient Handling Devices

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Abstract

Injury to patients and nurses who utilize manual lifting and transfer techniques is a significant problem in today’s healthcare environment. Nurses suffer injuries from manual patient handling, which can lead to career limiting/ending injuries for nurses. The purpose of this project was to gain a better understanding of the frontline nurse experience in the clinical setting today and determine what leads them to utilize workarounds in the care of the patient. The goals were to identify best practice evidence through research and use the evidence to improve the utilization of safe patient handling (SPH) equipment and devices. Establish a culture that embraces the use of the SPH program. Reduce injuries to patients and clinicians through elimination of manual handling techniques. The objectives were to use nursing focus groups, structured observations and a questionnaire to determine what change was needed to decrease injuries and increase utilization of the SPH program, review systems and processes that hinder a safe working environment and discover the complexities nurses face in patient care setting. Thereby gaining a better understanding of nursing knowledge levels and knowledge deficits that prohibit appropriate SPH equipment use and identification of obstacles that prohibit lifting and transferring patients safely. Evaluation methods included equipment usage and a decrease in musculoskeletal injuries related to the use of proper body mechanics and lifting techniques with SPH equipment and devices. Without the completion of this project, the future clinical would be continued incidence of manual handling injuries, lost and restricted work days and continued avoidable costs to patients, nurses, and the organization.

Keywords: patient handling, patient safety, nurse safety, musculoskeletal injury, behavior modification
Improving Patient Safety and Nursing Care with a Safe Patient Handling Program

Problem Identification

There is little argument that patient handling and lifting is a risky task for nurses and nursing assistants (Nelson & Baptiste, 2004). Employees feel that safe patient handling (SPH) equipment and device use is: very time consuming, difficult to use, not readily available, and cumbersome for episodic use. There is a feeling that manual lifting and transfer techniques are less time consuming and easier to execute (Wardell, 2007). However, the use of manual techniques is ineffective in the prevention of injury related to lifting and transferring of patients (Garg & Kapellusch, 2012).

Problem Significance

In 2010 the acute care facility I studied invested in SPH equipment and devices to establish a SPH program. Enough equipment was purchased to make it readily available to nurses keeping them from searching for the equipment and taking time away from patients. The goal was to minimize and eventually eliminate manual patient handling with enough equipment and devices that would support safe patient care ergonomics. From 2010 to 2013 the acute care facility experienced 111 injuries, 27 lost work days and 300 restricted duty days, with a direct cost for one injury claim for a nurse not using lift equipment of $57,348. For every dollar spent in direct cost the indirect cost to the acute care facility was higher, at $78,334 per claim. This cost alone provides a compelling reason for change and the need to keep employees healthy and injury free. In 2012, twenty-four percent of injuries reported in the acute care facility involved manual patient handling.
In 2013 additional SPH equipment and devices were added which included, ceiling lifts in all neuro critical care rooms, and enough equipment to meet the needs of each unit. I was encouraged we were finally where we needed to be. With this SPH equipment purchase the acute care facility received vendor consultation two days per quarter from an experienced SPH RN who was to support ongoing education each visit. Another key benefit to the equipment chosen is the ability of the equipment to track utilization rates. During each SPH RN site visit, utilization rates are extracted from the equipment and examined by the nursing leadership team. Our last visit provided disappointing results. Key stakeholders were not utilizing the equipment. Some unit equipment had zero hours logged and others had logged up to 20 hours. During this time period the facility also experienced an increase in employee injuries due to patient handling. The last assessment had shown the SPH program had diminished during this time. Potential causes for this related to lack of leadership support for use of the program, lack of communication and exclusion of frontline input to placement of equipment and devices within each area. This poor utilization is what has led to determining the need for critical exploration of staff practices, a review of our current policies, barriers and solutions to the lack of use.

Another compelling factor is the average age of the nurses in the acute care facility is 47 years old. According to Fragala and Bailey (2003) an “individual’s strength begins to decline by age 40 and the decline increases as an individual gets closer to age 50” (p.407). According to the 2015 National Nursing Workforce Study, 50% of the working RN’s in the U.S. are age 50 or older (see Appendix A for the graph of the 2015 age distribution of RN’s). According to Rho (2010) “nursing is ranked among the top 10 physically demanding occupations for older females; workers in physically demanding jobs may be unable to work until retirement age. Phillips and Miltner (2015) describe how work environments with high physical demands require individuals
who have increased coordinated body movements and balance to work safe and decrease injury risk. But, as women age “weakening progresses earlier and balance abilities decline” (Phillips & Miltner, 2015). Research by Blakely and Ribeiro (2008) sites that older nurses leave their jobs due to “physical limitations and workload demands” (p. 30).

Compounding this issue is the potential for lost work days or for restrictive duty days which places the healthcare organization at risk for higher costs. According to the Bureau of Labor Statistics (2012) data revealed injury incidence rates of 125.1 per 10,000 full-time RNs; median absence rates were seven days per injury. Inappropriate handling also provides a risk to the patient, for instance skin shearing, broken bones, risk of falls, awkward patient handling and potential impact to surgical sites.

In 2013 the American Nurses Association (ANA) unveiled its National Standards for Safe Patient Handling and Mobility to help elicit healthcare organizations to encourage workplace cultures of safety. The goal is to infuse a stronger culture of safety and provide universal foundations for policies, practices, regulations and legislation to protect patients and healthcare workers from injury (Sachs & Jones, 2013). It is easy to presume that by providing programs that are supposed to protect patients and healthcare workers from harm that they will adopt them in to practice. Unfortunately, healthcare is becoming more complex and chaotic with the introduction of new and improved technology that nurses today are inundated with so many different types of technology creating a divide between the nurse’s ability to spend time at the patient’s bedside and the technology she/he is expected to manage. Advances in technology do provide safety benefits to patients but they also have a tendency to decrease the efficiency and effectiveness of nurses. SPH programs are no different. When a patient is in need of lifting or help getting up to
the bathroom it typically right as the nurse enters the room. Nurses find it easier to go ahead and use manual techniques rather than tell the patient she/he will be right back because they have to find the equipment to lift or move them. It is imperative that we find ways to support the expectations of a no lift environment by uncovering the barriers that keep healthcare workers from using the equipment and devices that are meant to keep them safe.

With a nursing shortage before us we cannot afford to lose nurses to career ending injuries or to lost work days or restricted work duties that affect the rest of the healthcare team from providing safe patient care.

Problem Evidence/Review of the Literature

According to the U.S. Bureau of Labor Statistics (BLS) nurses suffered the fifth most injuries and illnesses related to musculoskeletal injuries in 2011, equating to missed work days and increased costs for healthcare organizations (www.bls.gov). BLS (2011) Sites the top five causes of injuries among hospital workers are related to overexertion and bodily reaction, including motions such as lifting, bending and reaching. And sprains and strains account for 54% of injuries, resulting in missed work days (www.bls.gov). The highest workers compensation claims are derived from strains occurring from lifting (www.bls.gov).

According to the Occupational Safety and Health Administration (OSHA) hospitals are one of the most hazardous places to work (www.osha.gov). According to OSHA (2013) workplace injuries come at a high cost with the estimated costs to replace a nurse varying from $27,000 to $103,000. Price, Sanderson and Talarek (2013) state that “nurses are among the professionals with the highest risk for musculoskeletal disorders” (p.13). Nurses leave the hospital setting because of injuries and stress. They state, “Nurses leave the profession at a rate of 12% a year
due to neck, shoulder and back pain and/or injury” (Price, Sanderson & Talarek, 2013, p. 13). Or they continue to work with injuries. According to Holman, Ellison, Pe and Thomas (2010) “nurses place their patient’s safety above their own, so it is not surprising that 40% of nurse’s surveyed state that strains, sprains and sore backs are just a part of the job” (p.25).

According to CDC weekly (2015) incidence rates for patient handling were 11.3 per 10,000 workers per month. Nurse assistants and nurses had the highest injury rates of all occupations examined (www.cdc.gov). The CDC obtained information from over 112 facilities and found that of all patient handling injury reports 62% included data on the use of lifting equipment; alarmingly 82% chose not to use the equipment and devices. An exploration of the factors affecting lack of usage and an operational solution are an imperative for the health and well-being of nurses as well as the safety of patients.

Through a review of literature, I have discovered that there is an abundance of information related to the need for SPH programs due to the related injuries to healthcare workers and patient safety issues. According to Darragh, Shiyko, Margulis & Campo (2014) safe patient handling programs are developed and implemented due to “high rates of injury associated with manual patient handling” (p. 589). These programs provide policies that delineate weight limits staff are allowed to manually lift. They also provide references for staff to use to identify the appropriate equipment and devices (e.g., standing devices, ceiling lifts, floor devices, slings, slides low beds) (Darragh et al., 2014). Programs use a mix of policies and procedures, patient assessments, quick references to determine equipment selection (Darragh et al., 2014).

The U.S. Department of Labor Bureau of Labor Statistics (2011) rank registered nurses as fifth in the overall category of work related injuries and days away from work. When nurses
utilize manual handling techniques in the care of their patient, the provider is at greater risk for a musculoskeletal injury. Mayeda-Letournea (2014) surmises that the use of SPH programs help to reduce the incidence of “musculoskeletal injuries, associated work compensation costs as well as improved employee satisfaction as a result of moving and lifting patients” (p. 127). Including the care provider in the design of the program is essential along with managerial, senior executive level support, along with tools for patient device assessment and the actual use of the SPH equipment and devices drive the effectiveness of the SPH program. However, there is little information in the literature related to factors that affect the nurse’s ability to utilize the SPH equipment and devices. This has encouraged this project proposal and quest to explore factors and solutions through nursing focus groups, structured nurse observations and a questionnaire to support the rationale for operational change, behavioral change and determine what was needed for a sustainable SPH program that supports a safe environment for patients and clinicians. The question answered was as follows: Does the use of mechanical lift or transfer equipment, versus manual assistance without use of equipment reduce patient and nurse injuries for patients who are totally or partially dependent for transfers (see Appendix B for PICOT).

PICOT format
P population is nurses
I intervention is the use of mechanical lift or transfer equipment,
C comparison involves nurses who use manual assistance without equipment
O outcome is reduced patient/nurse injury and improved nurse care
Purpose

The purpose of this project is to explore factors that keep nurses from utilizing mechanized lift equipment in the handling of patients. SPH programs provide a mechanism to keep nurses and patients safe. Back injuries are increasing not only in the acute care facility studied but among health care providers nationwide. The nursing workforce is aging and repetitive patient handling places nurses at greater risk for injury.

Methods/Implementation

Focus Groups, structured observations and a questionnaire, (see Appendix C for questionnaire), along with a participant explanation letter, (see Appendix D for patient letter), were used to support understanding of the factors that keep clinicians from using the SPH equipment and devices. The plan consisted of six focus groups with a goal of 15 nurses in attendance. I used a proxy facilitator in order to encourage open and honest dialogue to discover the root cause of poor utilization of the SPH program. I analyzed the demographics of the nurses that attended the focus groups, for instance, age, number of years in nursing, last degree obtained to determine patterns and opportunities to improve the SPH program. There were also structured observation/shadowing experiences that tapped into the frontline nurse’s knowledge of workflow, unit structure and resources. There was no exclusion criterion for the focus group or structured observations. The goal was to obtain a solid mix of novice to expert nurses to determine if there is a correlation with nurse experience and knowledge of use. The only exclusion to the project was the exclusion of other clinical disciplines like respiratory therapy, physical therapy etc. I was inclusive of all bedside RN’s with the questionnaire in order to gain a large return.
The project took place in a 196 bed acute care facility, which is 67 miles northeast of Atlanta, Georgia. I included all units that use SPH equipment and devices in my project to gain better insight to barriers, opportunities and issues hindering the program. Resources were available to support this project and to support what is needed for a sustainable SPH program.

My goal was to gain a better understanding of the frontline nurse experience in the clinical setting today and what lead them to utilize workarounds in the care of the patient. Nurse Workarounds were typically the end result of systems or processes not working well, so discovery through nursing focus groups, and staff observations have provided a better understanding of the complexities nurses face in the patient care setting. Provide a staff survey to understand their knowledge levels and knowledge deficits regarding the appropriate use of equipment. Identification of obstacles has supported the change needed to help staff lift and transfer patients in a safe manner.

This project identified the amount of change needed, the benefits of change, and nurse attitudes toward the use of SPH equipment and devices and a readiness and willingness to utilize the SPH equipment. This gathering of information provided better understanding of the current state of practice and valid barriers to use of the SPH equipment and devices laying the groundwork for improving SPH equipment use and informing the DNP project. The end result was to design a SPH program that made it easy for the nurses to do the right thing every time and make it hard to do the wrong thing which is using manual lifting and transfer techniques.

Timeline

My project implementation began once IRB approval or exemption was received. The project was started mid-December with the development of the questionnaire and securement of focus
group dates once IRB Approval or exemption was obtained. As soon as approval was received the project began and the final evaluation and outcomes occurred in April of 2016.

IRB Approval

The project was submitted to Drexel University Office of Research for approval. A project exemption was requested for the project due to the fact that it does not involve human subjects as defined by Department of Health and Hospitals (DHH) & Food and Drug Administration (FDA) regulations. On January 27, 2016 the request for Letter of Determination of non-human subject research was granted. IRB review and approval by Drexel University was determined to not be required (see Appendix E for Letter of Determination).

Implementation

The implementation of the focus groups began the week of February 2, 2016 and concluded on February 19th. The questionnaire was sent out and collected during the same time period. Four shadow experiences were conducted the week of February 22, 2016.

Findings and Evaluation

The findings from the focus groups, questionnaire and shadow experience were analyzed and grouped in to themes. The common themes described by the RN participants not utilizing the SPH devices relate to equipment and supplies not being easily accessible, not consistently stocked, and available when needed. They felt they are not trained adequately so they had perceived feelings of inadequacy and competency. Utilizing safety equipment and devices was time consuming and they could bypass and get the job done timelier using manual techniques and processes. And they felt that leadership did not support the use of the equipment because
they had not helped remove the barriers and complexities creating the workarounds. Overall they agreed that they liked the SPH equipment and devices and wanted to use them consistently but felt they were not able to do this until the barriers were removed.

Demographic data was collected to determine if there were any patterns to the findings. There were 72 participants in the focus groups and there were 88 questionnaires completed and returned. The findings from the questionnaire were based on available information reported. Not all participants completed all questions and some refused to fill out demographic data. Therefore, some of the findings were based on a lower n-size and will be identified in the results. The findings from the focus groups and questionnaire were combined for the purpose of reporting.

Demographics

There were 16 males (10%), 143 females (89%), and one other (1%) who did not reveal gender. The average age of the RN participating was 38 years old. Sixty percent of the RN participants were <40 years old and 36% were 40+ years of age or older (see Appendix F for table describing the age distribution of participants). The participant’s average years in nursing were 12 years.

The focus groups, questionnaire and shadow experiences provided a safe place for the nurse to voice areas of concern with our current SPH program as well as identify what they thought worked well. Frequently identified areas of concern include:

- Not knowing who to contact when the equipment was broken.
- Lack of hands on training
- Lack of support from physical therapy who nurses felt discouraged use.
• Rooms were small and the equipment was bulky making it easier to seek help from a colleague rather than to utilize SPH equipment and devices.
• Too time consuming and confusing, which lead to frustration and lack of use.
• Not knowing which equipment to use for transfer and lifting.

Other concerns voiced:

• Staff did not know who their unit super users were – staff wants the super user to promote the use of SPH program.
• Staff did not know they had quick reference binders to help remind them how to use the SPH program.

Focus groups were conducted using a proxy facilitator with a predetermined set of questions to provide insight to the SPH program. Questions related to the equipment, the environment, staff perceptions of the SPH program and suggestions from staff that would make the program easier to utilize (see Appendix G for focus group questions). When asked about the equipment, nurses commented "that the equipment is nice to have, but it is bulky and too big to maneuver in the patient rooms". Staff also shared, "that the supplies that accompany the equipment for instance, slings are hard to find which leads them to determine that it is not worth the time to look for the items" so they opt to use manual techniques. Their perceptions are that the "environment and the operations of the equipment is difficult because the patient rooms are small and they have limited space". Also, staff shared that "the equipment is not readily available and they have to hunt for it". Staff wants it to be close to rooms and readily available. Staff suggestions to improve usage included, have super users available every shift, organize the supplies for easy grab and go by size, leadership support to help break down barriers, and more
timely education. Staff stated "if you do not use it a lot, you forget how to use it". Future items to focus on based on recommendations will be to evaluate the feasibility of a lift team for the hospital.

Discussion

The SPH program in the acute care setting has diminished over the last few years, as other facility projects/concerns have taken precedence. The information received from the frontline RN, through the focus groups and questionnaire explained why the SPH program had not been utilized. The program was originally championed and rolled out by the employee health manager based on her recognition of the trend with caregiver injuries rising, and patient falls and pressure ulcers rising. Her intentions were in the right place but the program was designed and rolled out without the voice of the end-user. According to Norris (2009) if systems are designed based on the “equipment, job and environment” (p. 204) and we fail to think about the people working in the system it is unlikely the new program will be a good fit. Programs need to be “designed to fit people” (Norris, 2009, p. 204). A strong focus on patient/employee safety especially related to the SPH program will positively affect this and other related benchmarks like a reduction in patient falls, pressure ulcers, nurse injury and the number of lost or restricted work days. A renewed concentration on goals and objectives will reinvigorate the SPH program use and sustainability.

The goals were developed based on the results of the focus groups, questionnaire and shadow experience and are derived from the best evidence from research. The concepts of the revised SPH program centered on a design that was standardized and simplistic, was participative in that it included the voice of the frontline clinician, an understanding of how the
program design promoted safety, and a foundation built around a team approach. The action plan will utilize a multifaceted approach moving the SPH program forward, aligning positive employee behaviors, and removing barriers that promoted manual techniques and a program designed to makes it easy for nurses to do the right thing every time and make it hard to do the wrong thing.

Objectives have determined that the program plan reduced nurse injuries and lost and restricted work days, improved nurses feeling of comfort and knowledge to use the SPH program, removed of barriers, and leadership support and ownership for SPH program success.

The plan included 1.) Creation of nursing leadership super user SPH training program and nurse leader champion to co-chair the multidisciplinary steering committee; 2.) Identified new super users in all departments on all shifts; 3.) Consistent staff development and training to ensure bedside caregiver ownership and use of the SPH program and how it aligned with our culture of safety, (see Appendix H for quick tips for caregivers); 4.) Re-examined supply chain issues with stocking SPH slings/slides with a plan to resolve issues; 5.) Educational methods (see Appendix I for patient brochure) were developed to better engage patient/families in their understanding of the use of SPH devices for their care and safety; 6.) Laminated cards identify what equipment or device to use to best meet the demands of the patient and keep them safe, this is explained to the patient on admission and visibly displayed in patient’s room for all staff members and physicians (see appendix J for laminated card); 7.) Waiver from Joint Commission (JC) was obtained in order to house SPH equipment in designated hallway spaces for easy access (see Appendix K for JC waiver); 8.) Development of color coded shelves for each sling size for ease of identification; and 9.) Implementation of structured executive leadership rounds
The above action items created the solutions to the barriers and opportunities voiced by nurses prohibiting the use of the SPH program. The training of the nurse leaders has informed their knowledge of the use of each device in order for them to advocate staff compliance. Identification of a nurse leader to co-chair the steering committee has provided evidence to staff that program success is vital to a culture of safety.

During focus group discussions it was evident that nurses were unaware of who the department super users were. With staff turnover it was recognized that many of the super users that were previously trained were no longer with the organization. During the nurse leader training new super users were identified. Quick reference sheets were made for each department identifying all hospital super users. This has provided the ability for staff to call another department if their department super user is not working. Nelson and Baptiste (2004) describe that this model assures that nurses who received this specialized training, take back their knowledge and skills to co-workers and “transfer and forge a direct connection between staff and program goals (p. 11).

Staff identified that they need consistent training in the use of SPH program. Without it they lack the confidence to use the equipment and opt for the use of manual techniques. The SPH program has become a standing agenda item at monthly staff meetings and has become a part of the annual skills fair, where return demonstrations are required for all devices. All new nurses entering the organization will receive an intensive training with hands on demonstration prior to department orientation.

The shadow experience identified that the slides were not being picked up regularly for laundering. Staff commented that they were remaining full for days. The slides are supposed to
be picked up twice per day for laundering to ensure replacement of par levels. Meetings have taken place with the leader and staff of supply chain to provide an understanding of the SPH program and how it aligns with patient and nurse safety. Metrics were identified to ensure that slides are picked up twice a day for laundering and that the par levels are correct. Supply chain leadership are serving on the steering committee in order to keep them abreast of identified issues and barriers and as a way of showing RN’s their support of the SPH programs importance.

Educational materials created to educate the patient and family about the SPH program and laminated cards are being used on admission with all patients. This has encouraged an upfront conversation about the equipment that might be needed to transfer and lift the patient during the stay. During focus groups nurses shared that they only discuss the SPH program with patients who need it. Talking about the program from admission will help hold staff accountable to use the equipment. Nurse leaders have audited compliance with patient brochures and laminated equipment reference cards during nurse leader rounds.

The waiver from JC has allowed the SPH equipment to be placed in designated hallway locations, providing easy access and eliminating barriers to equipment use. Staff identified that when it is not easily accessible they will not take the time to go find the equipment. Unfortunately, they feel it is a part of the job to have aches and pains and feel it is OK to use manual techniques.

Senior executive rounds have been conducted each week to show support of the SPH program and a culture that promotes safety for patients and nurses. During these rounds executives have asked staff if they have the tools to do their job and if they are utilizing the tools.
At different time intervals throughout the reimplementation of the SPH program, formative assessments have been and will be continuously occurring using set criteria to measure success. The metrics were defined during the planning phase and included the number of clinicians trained to use SPH equipment and devices, culture of safety and the reason the SPH program was a must have. Once the program was implemented and training was completed the metrics to be followed centered on number of musculoskeletal injuries, lost work days, restricted work days and equipment utilization rates. The metrics are being reviewed quarterly by the steering committee and recommendations will be made after each quarterly analysis is completed. Retraining occurs annually at the education skills fairs and consists of return demonstrations of all equipment and devices. Mandatory skills fairs were scheduled to begin the week of March 21, 2016. New staff was trained using the Lewin Change Theory principles during their orientation period. Reward and recognition programs were established for the departments with the highest use rates. Due to the nature of this program ongoing monitoring for compliance has occurred. An early test of change was started the week of April 4, 2016 post skills fair. During nurse leader patient rounding, nurse leaders have asked the patient if they were educated on admission for SPH device needs. They will also have looked for the lift device laminated sheet attached to the white board. Metric for compliance is the number of patients educated divided by the total number of patients rounded on. This percentage is placed on the nurse leader rounding tool and will be examined daily. A summative assessment has provided ongoing assessment to determine success or failure of the intervention. If the intervention has been successful targets will be met, injuries reduced and staff and patients will be safe. Ongoing assessments will remain an integral part of the organizational culture and will be monitored for continued use and compliance.
Strengths and Limitations

Strengths of this project included the number of staff members that participated in the focus groups and completion of questionnaires. The use of a proxy facilitator provided a safe venue for nurses to speak openly and honestly about the barriers that prohibit the use of the SPH program. The methods of data collection provided the feedback needed to make the necessary changes that will encourage caregiver ownership to the SPH program.

Limitations to the project include the short timeframe to conduct the focus groups and questionnaires and the project was limited to one facility. Despite the limitations, implementation of the action steps could be generalized to other organizations.

Future Plans

The plan for the future of the SPH program will include continued evaluation of the program through utilization rates on a quarterly basis. Findings will be presented to the steering team identifying usage rates by department. Utilization rates below the desired threshold will be sent to department leader with a request for action steps for improvement. Injury reports will be monitored by the employee health director. If it is identified that SPH equipment was not utilized and an injury is sustained, the employee and department director will be required to participate in a root cause analysis to identify reasons for not utilizing the SPH equipment and devices. Evidence based practices will be researched annually for new tips and techniques available to enhance the SPH program. Changing behaviors from the norm of manual handling will be a potential challenge to achieve. An organizational understanding that change will not occur overnight and preparation for staff resistance will be considered. Employee satisfaction will be evaluated annually during the skills fair. The SPH program will be used in recruitment efforts as
an employee benefit in order to show our commitment to current and future employees
promoting a culture of safety.

Conclusion

The SPH program provides a vehicle to establish organizational safety for patients and
clinicians. Clinician promotion of patient safety and self-safety from strains, sprains and back
injury requires a change in the culture. A renewed focus and reimplementation of the SPH
program using a stepwise fashion with targeted education, training, redesign of the workflow and
empowerment will foster a liberating environment to provide care in a safe and effective manner
while protecting their own health. With the tools and resources readily available to clinicians the
success of sustaining the SPH program is a viable proposition. Leadership’s commitment to
promote a culture of accountability will encourage continued use of the program unfreezing the
old way of manually moving patients.
References


Sachs, A., & Jones, J. (2013). ANA unveils national standards for safe patient handling and


Appendix A

2015 Age Distribution of working RN’s

![Age Distribution of RNs](image)

National Council of State Boards of Nursing
Appendix B

PICOT

P – Population is Nurses

I – Intervention is the use of mechanical lift or transfer equipment

C – Comparison involves nurses who use manual assistance without equipment

O – Outcome is reduced patient/nurse injury and improved nurse care
Appendix C

Safe Patient Handling Equipment and Device Questionnaire

Is the Safe Patient Handling program at St. Mary's easy for you to use?

☐ Yes ☐ No

Based on your response above please answer why it is or is not easy to use?

Do you feel like you have received enough training to be effective in using the equipment? ☐ Yes ☐ No

If you responded No, what would be the best way to keep you updated on the equipment?

If you responded yes above how often do you think we should review Safe Patient Handling equipment and devices to help you remain comfortable?

Are you regularly using the safe patient handling equipment and devices?

☐ Yes or ☐ No

If you are not can you list the barriers that prohibit you from using it?

Do you feel that leadership supports the use of the SPH devices and equipment?

☐ Yes ☐ No

Are you introducing the equipment to your patient on admission and explaining the need for the equipment?

☐ Yes ☐ No – If you answered no to the question above please explain why you are not explaining the equipment

Are you aware there is a bright Pink Safe Patient Handling User Guide for every nurse’s station? If aware, are you using it? Why or why not?

If you could change one thing about the program what would that be?

Thank you for responding to this questionnaire. Your answers will be utilized to enhance the Safe Patient Handling program within St. Mary’s Health Care System and make the work environment safe for you and your patients.

Age__________________ Gender__________________ Years in Nursing______________
Dear Project Participant:

I am in the final phase to complete my Doctorate of Nursing Practice from Drexel University. One of the requirements is completion of a Capstone Scholarly Project that will inform nursing practice. This project will help me gain a better understanding of the nursing work environment and how to make the environment conducive to utilize tools to enhance clinician safety. I will be designing, implementing, and evaluating the effect of translating this intervention into the practice setting at St. Mary’s Health Care System. The goal is to gain a better understanding of why injuries to patients and nurses utilizing manual lifting and transfer techniques is a significant problem in today’s healthcare environment. Nurses suffer injuries from manual patient handling, which can lead to career limiting/ending injuries for nurses. The purpose of this project is to gain a better understanding of the frontline nurse experience in the clinical setting today and determine what leads them to utilize workarounds in the care of the patient.

The goals will be:

- To identify best practice evidence through research and use the evidence to improve the utilization of safe patient handling (SPH) equipment and devices.
- Establish a culture that embraces the use of the SPH program.
- Reduce injuries to patients and clinicians through elimination of manual handling techniques.

The objectives will be:

- To use nursing focus groups, structured observations and a questionnaire to determine what change is needed to decrease injuries and increase utilization of SPH program.
- Review systems and processes hindering a safe working environment and discover the complexities nurses face in patient care setting.
- Gain a better understanding of nursing knowledge levels and knowledge deficits regarding appropriate SPH equipment use.
- Identify obstacles that prohibit lifting and transferring patients safely.

I am planning to conduct focus groups utilizing a proxy, so that you as a clinician will feel comfortable disclosing the concerns you have with our current lift program and what ideas you feel will encourage the use of the devices and equipment so that our clinicians are in a safe working environment.

Project participants will be entered into a drawing for one of 10 - $20.00 Starbucks gift card. Refreshments will be provided during the focus groups. Your participation in the focus groups is vital to the success of this project and to the improvements of a safe working environment that keeps clinicians healthy and free of musculoskeletal injuries.

Thank you,
APPENDIX E

APPROVAL OF PROTOCOL

January 27, 2016

Albert Rundio
Drexel University
College of Nursing and Health Professionals
1505 Race Street
Philadelphia, Pa, 19102

Dear Dr. Rundio,

On January 27, 2016 the IRB reviewed the following protocol:

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<th>Initial</th>
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<td>Title</td>
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<tr>
<td>Investigator</td>
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<tr>
<td>IND, IDE or HDE</td>
<td>None</td>
</tr>
<tr>
<td>Documents Reviewed</td>
<td>Request for Letter of Determination of Non-Human Subject Research</td>
</tr>
</tbody>
</table>

The IRB determined that the proposed activity is not research involving human subjects as defined by DHHS and FDA regulations.

IRB review and approval by this organization is not required. This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these activities are research involving humans in which the organization is engaged, please submit a new request to the IRB for a determination.

Sincerely,

Lois Carpenter

IRB Coordinator
Appendix F

Age Distribution of RN participants in SPH project

<table>
<thead>
<tr>
<th>Participant age ranges</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 – 29 years</td>
<td>56 (35%)</td>
</tr>
<tr>
<td>30 – 39 years</td>
<td>40 (25%)</td>
</tr>
<tr>
<td>40 – 49 years</td>
<td>29 (18%)</td>
</tr>
<tr>
<td>50 – 59</td>
<td>26 (16%)</td>
</tr>
<tr>
<td>60+ years</td>
<td>6 (4%)</td>
</tr>
<tr>
<td>Declined to identify age</td>
<td>3 (2%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>160</strong></td>
</tr>
</tbody>
</table>
Appendix G

Focus Group Questions

1. Describe your perceptions of the equipment that has been purchased for the safe patient handling program? Is the equipment easy to use? If not why not?

2. Describe the environment in which you use the equipment? What are barriers to using the equipment in your work environment?

3. Do you feel that the safe patient handling program can be successful and usage can be increased? If not why not?

4. What do you think can be done to make the program better for you as the individual who is using the equipment and supplies?

If you think about anything you might not have shared during the focus group that would help support the program please email me and I will add your response to our findings. Thank you for participating in today's focus group your feedback will be used to help improve the program within the healthcare facility.
# Care Giver SPH Quick Tips

| Why is it a problem to not use SPH equipment and devices? | • You can be at risk for developing a work related injury to your lower back, spine, and shoulder due to excessive manual handling of patients.  
• Tasks that are risky include: moving a patient up in bed; transfer from bed to chair; moving from a stretcher to bed; ambulating in the hallway.  
• Patients might be at risk if the tasks being performed are beyond the care providers capabilities. Risks include: injuries due to falls; skin tearing or shearing; decreased mobilization; decreased turning in bed, resulting in increased susceptibility for pressure ulcers; increased lengths of stays; and other disabling conditions |
| What are the hazards? | • Excessive force necessary to lift the patient, working in awkward positions, unexpected patient lowering to the floor when ambulating, working in areas with minimal space makes the use of equipment difficult but attainable with the correct device. |
| What is in it for me? | • A safe work environment free from unnecessary risk and injury  
• Safe injury free patient care |
| What should I do to keep my patient and myself safe? | • Follow the Safe Patient Handling policy  
• Utilize the resources available to help minimize risk  
• Comply with the signed acknowledgement to promote a work environment that puts safety first and prevents injury  
• Know your patients physical ability. Conduct an assessment on admission, select appropriate equipment to be used, and place the laminated card on
| How do I report device defects? | • Place a work order for Biomed to repair equipment.  
• Tag broken equipment for easy identification. |
|---------------------------------|--------------------------------------------------------------------------------------------------|
| What support do I have?         | • Department Leaders have been trained to use SPH program.  
• Super users have been identified and trained for all shifts in all departments. See reference list in pink manual.  
• Senior leadership supports the SPH program and is here to help you when needed. |
| How can I get help?             | • See your department manager when you feel the SPH program is not working as outlined by the SPH policy and procedure. |

Tips adopted from the U.S. Department of Labor 2014
Call Don’t Fall

Falls are a major threat to the health and independence of older adults. Here at St. Mary’s we want you to be as safe as possible during your stay. Please do not get up on your own. We are here to help.

What causes falls?
- Being unwell in an unfamiliar place
- Poor mobility and balance
- Poorly fitted clothing and footwear
- Urgent need to use the bathroom
- Medications that cause drowsiness or dizziness

Top Tips to Prevent a Fall

1. Use your call button. Keep it in reach and call early. Please wait for staff to respond to your call before getting up.

2. On admission staff will determine appropriate lift devices to be used to support your safety when getting out of bed or moving in bed.

3. Wear safe footwear. Please keep your non-slip socks on at all times.

4. Be aware of your medications and their side effects.

5. Do not be afraid to ask questions. Your safety is our top priority!

Slips, Trips and Falls are Preventable

Remember, when you want to get up from bed, use the bathroom, or move around the room: CALL Don’t Fall
<table>
<thead>
<tr>
<th>Lift Device to meet SPPH</th>
<th>Patient Name</th>
<th>When Device is needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Lift Equipment Needed</td>
<td>Patient can stand, pivot, walk with no physical assistance from staff with no risk of falling</td>
<td></td>
</tr>
<tr>
<td>Maxitube or MaxiSliide</td>
<td>No Weight Limit</td>
<td>If patient cannot move self in bed Patient requires assistance with lateral transfers</td>
</tr>
<tr>
<td>Sara Steady &lt; 265 lbs.</td>
<td></td>
<td>Patient can bear weight on at least one leg Patient is able to pull themselves into a standing position</td>
</tr>
<tr>
<td>Sara 3000 &lt; 440 lbs.</td>
<td></td>
<td>Patient can bear weight on at least one leg Patient has sufficient upper and lower body tone Patient can sustain moderate pressure on lower back</td>
</tr>
<tr>
<td>Sara Plus &lt; 418 lbs.</td>
<td></td>
<td>Patient can bear weight on at least one leg Patient has sufficient upper and lower body tone Patient can sustain moderate pressure on lower back</td>
</tr>
<tr>
<td>Maxi – Air Motor and Pad</td>
<td>No Sling needed</td>
<td>Patient is dependent and needs lateral transfer and repositioning May remain under patient at all times. Radiolucent</td>
</tr>
<tr>
<td>Maxi Move &lt; 500 lbs.</td>
<td></td>
<td>Patient can undergo a semi-reclined position Patient is unable to weight bare Patient needs to be lifted from the floor or supine lifting May be used for ambulation with the use of a 2 point bar and walking jacket</td>
</tr>
<tr>
<td>Maxi Sky &lt; 600 lbs. or &lt; 1,000 lbs.</td>
<td>Loop sling White for 500 lb Gray/Black for 1000 lb.</td>
<td>Patient can undergo a semi-reclined position Patient is unable to weight bare Patient needs to be lifted from the floor or supine lifting</td>
</tr>
<tr>
<td>Tenor &lt; 704 lbs.</td>
<td>Reusable slings only Located in Central Supply</td>
<td>Transferring or repositioning a bariatric patient Patient can undergo a semi-reclined position Patient needs to be lifted from the floor</td>
</tr>
</tbody>
</table>
Appendix K

Joint Commission waiver to store SPH devices in designated hallway spaces

*XXXX organization is requesting the categorical waiver for Wheeled Equipment as allowed by George Mills:

Wheeled equipment such as lifts (with certain provisions and restrictions-see NFPA 101-2012 18/19.2.3.4(6) is allowed in the egress corridor provided that at least 5 feet clearance remains and the fire Plan includes management of the lift in a fire condition.

Other wheeled equipment would include crash carts, transport carts (including wheelchairs), and isolation carts. Fixed seating with at least 6 feet of clearance and other restrictions (see NFPA 101-2012 18/19.2.3.4(5) is also allowed. (See Standard LS.02.01.20, EPs 12 and 13.)
Table of Evidence

Table of Evidence: Studies investigating the use of Safe Patient Handling Equipment and Devices to inform scholarly project

<table>
<thead>
<tr>
<th>Author/Date</th>
<th>Purpose</th>
<th>Methodology</th>
<th>Results/Findings</th>
<th>Limitations/Conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blakeley &amp; Ribeiro (2008)</td>
<td>To examine factors that influence nurses to retire early.</td>
<td>A mail out questionnaire using the Likert scale was sent to 200 randomly selected nurses aged 45 and older, living in the Canadian Province of Newfoundland and Labrador. SPSS descriptors were used to outline the data. Multiple t tests with Bonferroni correction, were conducted to test for significant differences between selected by staff nurses, nurse managers, researchers and educators.</td>
<td>Of 124 respondents, 71% planned to retire by age 60. The main reasons for early retirement related to personal issues, personal/financial and work related issues. Incentives were provided to respondents to determine if they would encourage them to not retire early.</td>
<td>Limitations to study include a small sample, only one province in Canada was surveyed leaving it non generalizable throughout. The survey was developed by nurses and provided a good response but failed to determine other potential predictors of early retirement. There is more research needed related to early retirement and the predictors that drive it.</td>
</tr>
<tr>
<td>Darragh, Shyko, Margulis &amp; Campo (2014)</td>
<td>To determine the effect of a safe patient handling and mobility (SPHM) program on patient self-care outcomes.</td>
<td>Retrospective cohort design. Data was obtained from the electronic medical records of 1,292 patients receiving rehabilitation services. FIM scores were compared for patients who participated in</td>
<td>Patients who received inpatient rehabilitation services with an SPHM program were as likely to achieve at least modified independence in self-care as those who received inpatient rehabilitation services without SPHM.</td>
<td>The study was limited by the use of the FIM score as the outcome measure. The FIM is vulnerable to inconsistent or inaccurate scoring dependent on skill of those administering the score. A study utilizing alternative measures would be an important alternative for use in future studies.</td>
</tr>
<tr>
<td>Fragala &amp; Bailey (2003)</td>
<td>A review of the high rate of musculoskeletal disorders (MSD) in healthcare workers and how the trend has continued to go up.</td>
<td>The article provided a review of the major effects of injuries and how they affect the nursing workforce. They examine the number of work related MSD’s and time away from work. They also cited data that ranks the activities that cause strain/sprain injuries to hospital workers. The article also provides direction for improvement.</td>
<td>This was not a study that provided limitations. It was a suggestive study to help reduce healthcare related MSD’s.</td>
<td></td>
</tr>
<tr>
<td>Garg &amp; Kapellusch (2012)</td>
<td>The aim of this study was to evaluate long-term efficacy of an ergonomics program that included patient-handling devices in six long-term care facilities (LTC) and one chronic care hospital (CCH). Patient handling is a source of MSD’s. Studies have shown how SPH devices</td>
<td>Patient-handling devices along with a comprehensive ergonomics program was implemented in six LTC facilities and one CCH. Pre- and post-intervention injury data were collected for 38.9 months (range = 29 to 54 months) and 51.2 months (range = 36 to 60 months), respectively.</td>
<td>Recommendation that future studies include an external control group to better quantify efficacy of patient-handling devices in injury reduction.</td>
<td></td>
</tr>
</tbody>
</table>
can decrease MSD’s however most have been conducted in single sites.

<p>| Holman, Ellison, Pe &amp; Thomas (2010) | The objective of the study was to determine how a nurse views the healthcare environment, organization, culture and the impact on patient transfers. The study randomly selected 1000 nurses, registered in the state of Alabama for at least one year, from a pool of 49,000. A survey instrument was developed to evaluate previously identified parameters that influence patient transfers. The survey methods were multiple choice, ranks, True/False, weighted comparisons and self-reported work measurement. Total of 101 returns (10.1%) were received with 86 having completed all sections. All items and scales were scored from 0 to 100 with 100 being the best score. The survey found that nurses will do whatever it takes in the moment to keep their patient safe even if it jeopardizes their own safety. The product is a patient’s health and policies regarding SPH will not change that. The study found that it is difficult to get lift equipment into bathrooms, space and rooms are too congested and do not permit the equipment to be used. Size and shape of patient and unavailability of staff assistance (understaffed) were the two primary factors cited as problems in patient transfers. Limitations to the study are the number of participants responding to the survey. Only 86 out of a possible 1000 nurses, which had been randomly selected from 49,000. However it did provide the statistical power needed. Selection bias and response bias were also raised as potential limitations. |
| Mayeda-Letourneau (2014) | The purpose of the research was to study the impact of a safe patient handling and movement program on healthcare worker injury, costs and job satisfaction. A critical review of the literature regarding safe patient handling was conducted. Findings from the literature support having a safe patient handling program to decrease injuries, costs, and job satisfaction. Review of literature. There was no study conducted. |
| Nelson &amp; Baptiste (2004) | The purpose was to present evidence to support safe patient handling and movement. Review of literature providing evidence based solutions for high risk patient. The research provides a platform for the development of a SPH program to support reduction of injuries associated with patient handling tasks. For each Review of studies to show evidence based practices that support safe patient handling. |
| Norris (2009) | The papers aim was to introduce the topic of human factors to nursing management and to identify areas where it can be applied to patient safety. | The paper provided the introduction of human factors (ergonomics) to the reader and how utilizing human factors can improve safety in the work environment. It described that you cannot put processes in place without considering the people who work in the environment. | Provided a hierarchy of interventions to improve safety. How to design safety environments in healthcare by knowing your users, understanding why and when things go wrong helping staff do the right things, understand teamwork and manage change. | Introduction paper for nursing managers to implement the tactics of human factors into the work environment. |
| Phillips &amp; Miltner (2015) | The goal of the article was to discuss selected work hazards and safety concerns for aging nurses. | Review of recent relevant literature was conducted. Key issues: repetitive motion injuries, fatigue, slips, trips and falls were reviewed with key factors like normal physiological aging, diminished strength, hearing and vision, workplace variables, schedules, noise, clutter. | The literature identified 5 major work hazards for older nurses. Best evidence suggested managers must consider normal aging outcomes on job performance when assigning job responsibilities. The study provided workplace modifications that will support the aging nurse. | Limitations are related to the opinions of the author on the review of the literature. |
| Price, Sanderson &amp; Talarek | The goal of the article was to describe how one healthcare organization implemented a ceiling mounted lifts. | The article describes how they implemented ceiling mounted lifts to Findings showed that they did not have enough lift equipment for staff to always use the equipment. Two units were selected one with all ceiling lifts. | Limitations would be it was conducted in one facility. However I do feel this generalizable to other facilities. |</p>
<table>
<thead>
<tr>
<th>Study</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMPROVING PATIENT SAFETY</td>
<td>Program to help prevent staff injuries and lost work time.</td>
</tr>
<tr>
<td>Rho (2010)</td>
<td>The goal of this study was to look at physically demanding jobs with difficult working conditions as a reason for early exit from the labor market.</td>
</tr>
<tr>
<td>Sachs &amp; Jones (2013)</td>
<td>Discussion regarding the American Nurses Association unveiling their national standards for safe patient handling and mobility. Endorsing healthcare environments that utilize safe patient handling programs for cultures of safety.</td>
</tr>
<tr>
<td>Wardell (2007)</td>
<td>The goal of the study was to determine the A longitudinal trend study was conducted in a...</td>
</tr>
</tbody>
</table>
The purpose of this study was to compare patient-handling techniques and perceptions about barriers to using patient-handling equipment prior to and subsequent to the implementation of a comprehensive patient handling program. The survey used closed ended questions and multiple choice. Staff were randomly selected from multiple units throughout the hospital to participate in the educational sessions and do a pre and post survey.

Although the Likert scale indicates direction (disagree or agree) and intensity (agree or strongly agree) of attitude, it does not have interval-based properties. The variation in attitude measured in this study indicates changes in direction and intensity, but not an actual quantifiable value.