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Educating Nurses on the Use of the Bedside Mobility Assessment Tool (BMAT) to Create a

Culture of Safety

Kaylin Laine

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Introduction

In 1898 a nursing textbook documented that a nurse injured her back while moving a patient (Rob as cited in Zwerdling, 2015). A hundred years later, government agencies and universities began showing that using proper body mechanics to reposition, move, and mobilize patients, is dangerous. Around the same time, the National Institute for Occupational Safety and Health (NIOSH) started researching why nurses were injuring their backs (Zwerdling, 2015). However, it was not until 2012, 15 years later, that the State of California took action to protect healthcare workers. In January of 2012, California passed the Hospital Patient and Healthcare Worker Injury Protection Act, requiring hospitals to implement a Safe Patient Handling and Mobility (SPHM) policy as part of an injury and illness prevention program (Department of Industrial Regulations, 2016). Since then hospitals have been tasked with rolling out SPHM policies practices to protect both patients and workers.

To implement an effective SPHM program, the Occupational Safety and Health Administration (OSHA) recommends hospitals involve both management and staff when developing a SPHM policy (2015). In addition, OSHA identifies the following as important steps when implementing a SPHM program: perform a needs assessment, obtain equipment, provide education and training, and evaluate the program (2015). This prospectus outlines a proposed process in order to to accomplish the steps listed above, focusing on the education and training of staff.

An essential part of a quality SPHM program is provision of quality education for staff regarding performing patient mobility assessments and use of equipment. Basic knowledge of hospital policies and procedures regarding SPHM is not sufficient education to create a culture of

safety. Nurses need to be taught how to assess patients' mobility to determine the appropriate assistive equipment to use in positioning, transferring, and mobilizing patients. This mobility assessment needs to be standardized in order to provide consistent care for patients. Nurses and other healthcare workers who participate in direct patient care, also need to be guided in correct use of assistive equipment. In addition, policies are required regarding communication of patients' mobility status between members of the healthcare team to ensure consistent, proper equipment usage.

Banner Health developed a Bedside Mobility Assessment Tool (BMAT) as a standardized process for nurses to assess a patient's mobility level. This assessment tool uses four steps to test patients' functional task levels. It includes assessment of weight-bearing ability and evaluation of patient mobility while standing (Boynton et al., 2014). A study was conducted to assess the validity of the tool: satisfactory validity and inter-rater reliability were found (Boynton et al., 2014). Therefore the BMAT provides a standardized way for nurses to assess patient mobility in order to determine safe and effective practices for patient handling activities. Choosing to educate nursing staff on how to correctly use the BMAT not only meets requirements outlined in the Hospital Patient and Healthcare Worker Injury Protection Act, but also satisfies a portion of SPHM education required to maintain a hospital culture of safety.

The other aspect of SPHM is effective equipment education. Healthcare staff first needs to have easy access to equipment provided to assist with patient handling. They also must be provided with instruction on how to operate the equipment in order to be comfortable using it to move patients. While this paper does not focus on the particulars of how this aspect of a SPHM

is implemented, it operates under the assumption that staff is provided with access to equipment and proper education prior to receiving education on patient mobility assessment.

Statement of Problem

Hospitals are one of the most hazardous places to work. Healthcare workers are more at risk for getting injured on the job than employees in any other industry. In 2011 hospitals in the U.S. recorded an average of 6.8 injuries and illnesses per every 100 full-time employees, almost double the rate reported for the private sector (OSHA, 2013). The Bureau of Labor Statistics analyzed hospital injury and illness reports and found that almost half of those reported were related to overexertion and bodily reaction, which includes lifting, bending, or reaching - actions often performed while repositioning and mobilizing patients (OSHA, 2013).

To combat the amount of injuries related to lifting and moving NIOSH established a maximum lift weight of 50 pounds. In 1994 the limit was changed to 35 pounds after the organization revised their equation that calculates the risk for injury based upon situational criteria, including the weight of the item to be lifted (Centers for Disease Control and Prevention, 2016). Despite this reduction in the maximum lift weight, it is argued that hospital workers should never manually lift a patient as the equation does not account for patients that are uncooperative or resisting; nor does it take into account that nurses and nursing assistants are often not able to be in the ideal positioning or vicinity of the patient to utilize proper body mechanics (Waters, 2007).

Lift equipment and assistive devices are recommended for patient handling activities. These devices either completely or significantly reduce the amount of weight nurses and nursing assistants have to lift, thereby reducing the risk for injury. This reduction of risk for injury is

beneficial not only for hospital staff, but also for hospitals themselves. SPHM injuries tend to be musculoskeletal in nature and are often some of the most expensive injuries in terms of cost to the employer (Waters, 2007). Therefore, hospitals have an ethical and monetary incentive to institute SPHM policies.

Healthcare organizations that create a culture of safety through institution of comprehensive SPHM programs have reported decreased costs related to workers compensation claims and medical treatments, decreased turnover rates and absenteeism (Krupp & Anderson, 2014). “At Stanford University Medical Center, an \$800,000 safe lifting program resulted in a five-year \$2.2 million net savings, approximately half of which came from a decrease in worker compensation claims and a reduction of pressure ulcers in patients” (Weinmeyer, 2016, p. 416). Though the savings are considerable when compared to the costs, many hospitals are reluctant to invest in SPHM equipment, training, and programs unless required to do so. In addition, many nurses and healthcare workers are reluctant to employ new practices and use equipment that they view will take additional time during an already-busy shift. This means that effective SPHM education needs to incorporate strategies that address a change in culture in order to encourage adoption of practices by staff.

Hospitals struggle to provide effective education to their nurses and staff due to time, space, and monetary constraints. Education is often disseminated using online or e-learning platforms, and is often kept short to reduce the wage expense. Curriculum therefore tends to be designed to communicate the minimum amount of information and often doesn't adequately engage learners or promote a motivation to change. It is then important to explore educational

practices and teaching methods that maximize engagement and promote knowledge retention to encourage staff adoption of new practices.

Rationale

Research shows that in the United States, hospitals are dangerous places to work and that nurses and nursing assistants have a higher risk of incurring a work-related injury than people employed in other professions. It has also been found that a majority of nursing injuries are related to patient handling events (OSHA, 2013). However, it is important to determine the scope of this problem at a particular hospital before employing a plan of action.

The hospital identified for this performance improvement project is a 395-bed, acute care, non-profit hospital located in California's San Francisco Bay Area. Roughly 1,500 nurses are employed in 21 units at this magnet-recognized hospital. During the 2015 calendar year, the hospital reported 46 SPHM injuries among its nursing staff. While this is only an injury rate of roughly three percent, it is a costly expense for the hospital and its employees. From 2006-2011, the average cost of a hospital worker's compensation claim was \$15,860 (OSHA, 2013). If this figure is used to estimate the cost of SPHM injuries during 2015, in total the hospital spent \$729,560. From April 1, 2015 to March 31, 2016 the hospital reported 48 SPHM injuries, resulting in an estimated cost of \$761,280. The number of SPHM injuries for nursing assistants was not reported and thus represent additional expenses. While these costs are significant, they only represent the expenses associated with medical treatments for the injuries. The price the hospital incurred for paid sick leave, replacement staffing, and possible turnover is an additional strain on the budget of the organization. In addition, there is no way to quantify the pain and suffering and life changes experienced by the injured nurses.

The medical, patient care resources, and telemetry/stroke unit experienced the largest number of injuries. Hospital leadership also noted the critical care unit experienced a significant amount of SPHM injuries. To assess the root cause of the problem, unit and equipment assessments were performed on four units (two medical-surgical units, the telemetry/stroke unit, and the critical care unit). Behaviors regarding assessment of patient mobility and use and knowledge of lift equipment and assistive devices were observed. Additionally, four other units (the medical surgical unit, telemetry unit, mother and baby unit, and labor and delivery unit) were assessed only for equipment access and availability to provide broader context of needs for the facility as a whole.

Observation data for unit assessments can be found in Appendix A. When the data was synthesized, the following common issues were discovered: there was no standardized approach to assess patient mobility, patient mobility status was often not mentioned during report handoff, and no communication between nurses and Certified Nursing Assistants (CNAs) regarding patient mobility was observed, improper body mechanics were frequently used during patient handling activities, and staff seemed unfamiliar with majority of the lift equipment and assistive devices, which were not widely utilized. Common positive behaviors observed included good communication when assistance was needed to lift and/or mobilize a patient, consistent use of the Hendrich Falls Risk Assessment to assess patients' fall risk, widespread implementation of the facility's fall risk prevention program, and use of some assistive equipment, notably Z-Sliders, transfer boards, walkers, and Hovermatts.

The equipment assessments are detailed in Appendix A which shows that all units are in need of either lift equipment or slings, but are well-equipped with walkers which are in every

patient room. Additional assessments found that not only is there a lack of equipment availability, but there is also no standardized central location for storing equipment in units. Equipment was often found to be poorly labeled with many devices lacking instructional reference sheets. Time trials were conducted to measure the amount of time needed to transport equipment from the storage location to the farthest patient room. It was found that it took an average of one minute, thirty eight seconds to transport the device.

These assessments provide evidence that while the hospital does have an existing SPHM policy and provides lift equipment and assistive devices for staff to use during patient handling activities, there are additional steps that need to be taken if the SPHM policy is to expand into a quality program that is effective in reducing risk for injury to patients and nurses. This prospectus focuses on the need for standardized nursing assessment of patient mobility and how to effectively educate nurses on how to perform the assessment and determine the correct equipment to use for patient handling activities.

Literature Review

A review of academic literature concerning safe patient handling programs was conducted, and recommendations were identified for the use of a mobility assessment tool for nurses. Boynton, et al. recommends the use of the BMAT at patient admission, every shift, and with patient status changes, such as after a procedure, a medication change, or a tiring therapy session (2014). To aid with communication between all staff, it was also recommended that patients' mobility status is posted by the room door on personalized care boards visible in patient rooms (Hursh, Salsbury, Lenhart, Doran & Zadvinskis, 2013). For standardization across

the facility it is advised to use generic terminology for lift equipment instead of brand names, and to use non-medical terminology when posting patient mobility information on patient care boards (Hursh, Salsbury, Lenhart, Doran & Zadvinskis, 2013). When studying the implementation of a SPHM program in an Intensive Care Unit, standardization of room setup and stocking a sling that could be used by both the ceiling lift and portable passive lift in the rooms was found to improve nurse and CNA use of SPHM equipment to reposition, transfer, and mobilize patients (Krupp & Anderson, 2014). When implementing a SPHM program it is important to take into account these considerations in order to provide proper education and ensure effective adoption of policies by staff. It is also important to carefully design the SPHM curriculum for staff education which may maximize engagement and knowledge retention.

Historically, face-to-face instruction has been the primary method of educating groups of people. When the power of the Internet was leveraged to offer online learning options, many organizations, notably those in the private sector, viewed it as an effective solution for solving the problem of educating employees. Online education, or e-learning, solved the issues of time and space restraints, allowing companies to quickly educate employees on needed topics, especially when “just-in-time” education was required. However, online education notably has issues with learner engagement. Its effectiveness has been questioned, for unless the learner is self-motivated, an active learner, or in possession of exceptional organizational habits applied to learning, he or she may not be readily engaged by online learning modules (Lim, Morris, & Kupritz, 2007). In addition, researchers cite that online learning can be dissociative, harmful to the student-teacher relationship, and a barrier to creating a community (Reese, 2015). These are factors that researchers have found significantly influence learner satisfaction with learning and

learning transfer effectiveness (Lim, Morris, & Kupritz, 2007). To address this issue, the method of blended learning has emerged, blending traditional learning methods with online learning.

While blended learning is a relatively new approach to teaching, research shows that it is more effective than traditional learning or e-learning on their own. However, the evidence has low statistical power. Research instead finds that adequately engaging participants, providing opportunities to effectively connect with peers, and offering flexibility for how learning occurs are key components to providing effective instruction (Milanese, et al, 2014). Teaching methodology; therefore, needs to be taken into account when designing instruction in order to maximize learning, retention, and participant satisfaction.

A search of academic literature regarding e-learning and blended learning for nurses and nursing students finds that although there is lack of quality research on the topic, there is no statistical difference between face-to-face instruction and e-learning (Lahti, Hatonen, Valimaki, 2014). Weak evidence has also been found for blended learning versus traditional instruction (Milanese, et al, 2014). However, the literature does show that multi-modal teaching strategies and methods tailored to the learner and are the most influential in engaging learners and impacting knowledge retention (Lahti, Hatonen, Valimaki, 2014). Therefore, it is safe to apply educational research when planning to educate adult learners in the nursing profession.

Plan of Action

After taking research into account along with the information found during unit assessments, a plan of action was created for revising the BMAT and creating and disseminating education for nursing staff regarding patient mobility assessment. While availability and education regarding equipment are also essential components of SPHM, this plan focuses on

including performing assessments of patient mobility as part of new hire and annual training on SPHM to staff.

The BMAT was revised to simplify instructions and to increase ease of use for staff. The original BMAT created by Banner Health can be viewed in Appendix B, and the revised version is located in Appendix C. The most notable change can be seen in the splitting of step four into two separate steps: March & Step and Walk. This change allows nurses to differentiate between patients that are able to stand and walk a few steps and patients who are able to ambulate independently for a moderate distance. Additionally, Medicare requires a functional assessment of patients upon admission and discharge that tests a patient's ability to walk 150 feet so this differentiation provides healthcare providers with needed information for Medicare patients (RTI International, 2014). Other changes made to the BMAT include rewording for ease of understanding and the addition of a second page depicting mobility levels with the corresponding equipment and assistive devices. Reference badges were also created for employees to have as a reference with BMAT steps on one side and mobility level and equipment on the other (Appendix D). Lastly, a detailed BMAT reference guide was created for nurses to refer to if needed (Appendix E). These materials provide the foundation for the curriculum used to educate the nursing staff.

Effective strategies to engage learners include connecting the material to be learned to past experiences and realms of experiences of the learner (Braungart). Presenting to nurses only information on laws and regulations regarding SPHM and evidence-based practices that comply with these policies (BMAT) does little to engage them in the process or create buy-in. Therefore, the BMAT education was designed to be introduced with interactive activities and real-life

accounts of nurses with debilitating, life-changing injuries related to SPHM. After introducing SPHM regulations and the risks associated with repositioning, transferring, and moving patients, the BMAT educational module reviews each BMAT step, mobility level, and coordinating equipment and assistive devices. The module then requires participants to review case study scenarios and practice using the BMAT to determine the level of a patient's mobility. The module concludes with a multiple choice and matching assessment that is used to determine participants' knowledge.

To address the possible barriers to a change in SPHM policy, an in-person educational lesson was created to educate hospital nurse educators, nurse managers, and unit and shift peer leaders. Though the BMAT content is the same as listed above, this lesson (Appendix F) employs the use of games and group discussion to assist in the introduction of SPHM regulations as well as the BMAT, and utilizes small groups for the case study scenarios. The PowerPoint presentation used to facilitate teaching the module can be found in Appendix G. Pre- and post-tests to assess the gaining of knowledge were also created (Appendix H).

Due to time and space constraints, an interactive online module was created to be used by bedside nurses. This module (Appendix H), covers the same information as the in-person lesson minus the group games, discussions and activities. The plan for the hospital-wide implementation is depicted in Appendix I and denotes that bedside nurse education should follow the in-person educational module, assuming all equipment is accessible, labeled correctly, and all resources and signage are printed and distributed for immediate use by staff.

Evaluation and Expected Results

Prior to the in-person educational module, a trial run was conducted with university-graduate nursing students to assess its effectiveness. Aside from running over the allotted 90- minute time slot, the lesson was paced and organized well, and provided valuable instruction per participant feedback (Appendix I). Most participants suggested reducing the number of case study scenarios so that three out of twelve scenarios were retained one for each of the first three mobility levels. In addition, instead of each small group working through a scenario and then presenting to the class at large, each group received all three scenarios and worked through them as a group.

The students were also administered the pre- and post-tests (Appendix I) to assess the construction of the assessment and gain in knowledge from the presentation. A Google Forms online application was used to administer the assessment for grading ease. Unfortunately, application limitations were found during the administration of the pretest. Participants were unable to select more than one answer for the matching question. In addition, one of the selections on the matching question did not have a correct answer available to choose, and participants were unable to select more than one answer for a select all question. Due to these issues, the assessments had to be scored by hand, throwing out one question and giving participants points for selection of one correct answer for each matching item as well as for the select all question. While accounting for these changes, participants still showed an increase in knowledge after participating in the module. The average score on the test increased by 17.31% from 63.46% on the pretest to 80.77% on the posttest (Appendix J), attesting to the effectiveness of the module in increasing knowledge about patient mobility.

Participants were asked to complete a module feedback evaluation in addition to the pre- and post-tests to assess the pace, organization, clarity, and content of the module (Appendix K). The feedback form also asked participants to evaluate their confidence in knowledge learned and instructor performance in order to assess if any changes were needed before presenting the final module to hospital nursing staff. The graduate students rated the module as clear, well organized, and paced well with valuable information given. The interactive activities were also the favorite part of the module. However, the module was commented on as being too long and it was recommended to rework how the scenarios were presented in order to reduce overall module time. Additionally, participants recommended that the instructor speak more slowly to facilitate better understanding of the topics presented.

Edits to module and assessments were made based upon feedback from the nursing graduate students. The final version of the in-person educational module was subsequently presented to the hospital's educational director, nursing educators, nurse managers and a small group of nurses boarding to the facility. Though better paced, the module still ran long and the final two activities involving a card sort and mobility level/equipment matching were not used. The participants appeared engaged throughout the lesson and gave good feedback for presentation style and content. The introductory activity and the segment from the NPR report *When Hospitals Fail to Protect Nursing Staff From Becoming Patients* were especially well-liked and created a great springboard for discussion, though both activities ran over planned time and were the cause of cutting the overall lesson short. The hospital's educational director was pleased with the module and requested an edited 45-minute version so that an attempt could be made to provide in-person education to more staff. The module was also effective in terms of

knowledge gain with an average gain of 18.17% between the pre and posttest. Participants averaged a score of 46.12% on the pretest and 64.29% on the posttest, with the educational director and nursing educators scoring the highest on the pre-test and nursing educators scoring the highest on the post-test. Details of the pre- and post-test results can be found in Appendix L, which describes the effectiveness of the educational module for all participants.

Summary/Conclusion

Effective patient mobility assessment is a crucial part of an successful SPHM program, and usage of a standardized assessment tool assists nurses in improving the plan of care for mobilizing patients safely using the appropriate equipment. The Banner Health BMAT was reviewed and streamlined for ease of use by staff with the addition of a flowchart and equipment paired to each mobility level. Reference sheets, mobility level signs, and reference badges were developed as resources for staff to use, and an educational module on how to use the BMAT was developed for nursing educators, nurse managers, and shift and unit peer leaders. The educational module was demonstrated to be effective in increasing knowledge regarding patient mobility assessment and participants expressed high satisfaction with the method of delivery.

Future steps to promote hospital-wide implementation of the BMAT include supplying units with needed lift equipment, devices, and accessories in central locations, and distribution of reference sheets, signs, and badges to employees as reminders and resources on how to correctly assess patients and to choose the most appropriate equipment for mobilization. It is recommended to pilot the BMAT on one unit, performing an in-depth root cause analysis regarding patient mobility prior to the implementation of the change in order to assess possible

barriers to usage of the BMAT. Once successfully implemented in a unit, assessed for effectiveness, and modified to be maximally effective, units should be introduced to the BMAT one by one to ensure adoption of culture change and compliance with the process.

When hospital-wide deployment of the BMAT is complete, it is expected that the number of nursing and nursing assistant injuries related to patient handling and mobility tasks will be reduced. In addition, a corresponding reduction in patient fall rates and injuries should also be seen. Overall, the hospital should also see a decrease in costs associated with workplace injuries. Therefore, not only will the health and safety of staff and patients increase, but the hospital will also experience positive financial benefits by implementing usage of an effective patient mobility assessment tool.

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Appendix A

Mobility Assessment Data By Unit							
Unit Observed	# Patients Observed	# of Mobility Assessments Observed	Mobility Given in Report	Patient Asked About Mobility	# Patients Ambulated / Moved	Equipment Used to Mobilize Patient	Appropriate Equipment Used
2C (Medical)	26	0	8	1	10	5	3
3C (Stroke/Telemetry)	23	6	0	0	8	6	1
4A (Medical-Surgical)	25	2	0	1	15	12	9
CCU (Critical Care Unit)	3	0	0	0	1	0	0
Medical-Surgical LG	8	3	1	0	4	1	1
Totals	85	11	9	2	38	24	14
Percentage		12.94%	10.59%	2.35%	44.71%	63.16%	58.33%

Type of Equipment Used on Each Unit								
	Walker	Percentage	Wheelchair	Percentage	Portable Passive Lift	Percentage	Mechanical Sit-to-Stand	Percentage
2C (Medical)	3	11.54%	0	0.00%	0	0.00%	0	0.00%
3C (Stroke/Tele)	6	26.09%	1	4.35%	0	0.00%	0	0.00%
4A (Med-Surg)	7	28.00%	0	0.00%	0	0.00%	0	0.00%
Critical Care	0	0.00%	0	0.00%	0	0.00%	0	0.00%
MS Los Gatos	1	12.50%	0	0.00%	0	0.00%	0	0.00%
Total	16	18.82%	1	1.18%	0	0.00%	0	0.00%

	Non-Mechanical Sit-to Stand	Percentage	Z-Slider	Percentage	Ceiling Lift	Percentage	Hovermatt	Percentage
2C Medical	0	0	0	0.00%	0	0.00%	0	0.00%
3C Stroke/Tele	0	0	2	8.70%	0	0.00%	0	0.00%
4A Med-surg	0	0	0	0.00%	1	4.00%	4	16.00%
Critical Care	0	0	3	100.00%	0	0.00%	0	0.00%
Los Gatos	0	0	0	0.00%	0	0.00%	0	0.00%
Total	0	0.00%	5	5.88%	1	1.18%	4	4.71%

Mobility Assessment Data for All Units						
	# of Mobility Assessments	Mobility In Report	Patient Asked About Mobility	# Patients Ambulated / Moved	Equipment Used to Mobilize Patient	Appropriate Equipment Used
Percentage	5.88%	10.59%	2.35%	44.71%	63.16%	58.33%

Equipment Usage Data for All Units								
	Walker	Wheelchair	Portable Passive Lift	Mechanical Sit-to-Stand	Non-Mechanical Sit-to-Stand	Z-Slider	Ceiling Lift	Hovermatt
Percentage	18.82%	1.18%	0.00%	0.00%	0.00%	5.88%	1.18%	4.71%

Appendix B



BMAT-Picture Guide

Assessment Level One

Sit and Shake

Mobility Level 1

Unable to move to assessment level 2, consider use of total lift and other SPHM mobility equipment.



Assessment Level Two

Stretch and Point

Mobility Level 2

Unable to proceed to assessment level 3 consider sit to stand and other SPHM Mobility equipment.

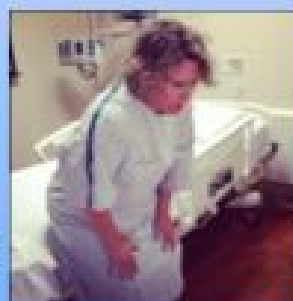


Assessment Level Three

Stand

Mobility Level 3

Unable to proceed to assessment level 4 or needs assistive equipment. Standby or offer assistance with non-powered stand aid.



Assessment Level 4

Walk

Mobility Level 4

Patient is able to walk independently . Always implement safest method for ambulation remind patient "Call don't fall".



*Refer to the Banner Mobility Assessment Tool for Nurses (BMAT) for complete assessment details.

Appendix C

BMAT

BEDSIDE MOBILITY ASSESSMENT TOOL

BMAT CONTRAINDICATIONS

- Bilateral extremity non-weight bearing
- Strict bed rest
- Unable to follow commands

*Before you begin this assessment determine the patient's baseline functional mobility level.



STEP 1: SIT AND SHAKE

Assess if the patient can:

1. Sit themselves up from a semi-reclined position and maintain balance on the edge of the bed
2. Reach across midline, grab and shake clinician's hand. Assess bilaterally, one hand is sufficient to proceed.

YES, GO TO STEP 2
NO = LEVEL 1



STEP 2: STRETCH&POINT

Assess if the patient can:

1. From seated position, straighten one knee, and hold for 5 seconds.
2. Flex the ankle and point toes towards the ceiling. Assess legs that patient is intending to stand on. One leg is sufficient to proceed.

YES, GO TO STEP 3
NO = LEVEL 1



STEP 3: STAND

Assess if the patient can:

1. Stand up from chair or bedside without assistance and hold standing position for 5 seconds

*Note: Use a walker if prescribed, used at home, or otherwise indicated

YES, GO TO STEP 4
NO = LEVEL 2



STEP 4: MARCH & STEP

Assess if the patient can:

1. March in place for 5 seconds
2. Take a step forward and return each foot to original position. Assess bilaterally.

*Note: Use a walker if prescribed, used at home or otherwise indicated

YES, GO TO STEP 5
NO = LEVEL 3



STEP 5: WALK

Assess if the patient can:

1. Walk at least 150 feet (75 floor tiles) safely, without loss of balance, without assistance, and without assistive device.

*Note: Use fall prevention chair

YES = INDEPENDENT
NO = LEVEL 4

BMAT

BEDSIDE MOBILITY ASSESSMENT TOOL EQUIPMENT GUIDE

LEVEL 1: TOTAL ASSIST



Ceiling Lift



Portable Passive Lift



Hovermatt

LEVEL 2: MAXIMUM ASSIST



Mechanical sit-to-stand



Z-slider

LEVEL 3: MODERATE ASSIST



Non-mechanical sit-to-stand

LEVEL 4: MINIMAL ASSIST



Walker



Crutches



Belt



Cane

LEVEL 5: INDEPENDENT

Appendix D

BEDSIDE MOBILITY ASSESSMENT TOOL (BMAT)	
STEP 1: SIT & SHAKE	Sits @ edge bed or chair maintain balance; shake hands to grab across <u>midline</u>
STEP 2: STRETCH & POINT	Straighten knee & hold 5 sec flex ankle/toes & hold 5 sec
STEP 3: STAND	Stand from sitting for 5 sec; use <u>assistive device prn</u>
STEP 4: MARCH & STEP	March in place 5 sec; step forward & back; use <u>assistive device prn</u>
STEP 5: WALK	Walk min 150 safely; no loss of balance, no <u>assistive device</u>

BMAT LEVEL	EQUIPMENT
Level 1	Ceiling or portable passive lift, <u>maximove</u> , golvo, hovermat, repositioning sheets
Level 2	Mechanical sit-to-stand device, SARA plus, Z-slider
Level 3	Non-mechanical sit-to-stand, SARA steady
Level 4	Walker, cane, crutches, gait belt
Level 5	N/A

STEP 4: MARCH & STEP



The **March & Step** portion of the assessment tests for steady standing and walking. Ensure that your patient is stable on his feet before you ask him to take a step.



- Some conditions cause taking steps forward and backward difficult. Ensure safety and guide the patient back to the edge of bed if your patient appears unstable.
- Some ortho and neuro conditions may render a patient unable to step backwards. Please use your clinical judgment.
- Provide assistive device such as walker, cane, or crutches if needed.



1. March in place for 5 seconds

- Use assistive device if prescribed, used at home, or indicated during first three steps of BMAT assessment.
- Make sure the bed is right behind the patient



2. Take a step forward and return each foot to original position, Assess bilaterally.

- If patient is using a walker or other assistive device to complete Step 4, do not attempt independent walking in Step 5. Patient will be a Level 4 if any type of assistive device is needed.

If patient successfully completes this step move on to **Step 5**
If not the patient is: **LEVEL 3 - Moderate Assist**

Level 3: Equipment

Non-mechanical sit-to-stand



STEP 5: WALK



The **WALK** portion of the assessment tests for steady walking for more than 150 feet. Ensure that your patient is stable on his feet before you ask him to take a step.



- Provide assistive device such as walker, cane, or crutches if needed.
- Please have a fall prevention chair ready while assisting patient to walk

1. Walk at least 150 feet (75 floor tiles) safely, without loss of balance, without assistance, and without assistive device.

- Follow patient with fall prevention chair and use clinical judgment to determine need for supervision.

If patient successfully completes this step they are **INDEPENDENT**
If not the patient is: **LEVEL 4 - Minimal Assist**

Level 4: Equipment

Walker



Crutches



Cane



Belt



Appendix F

Planned Lesson Date: April 27, 2016

Planned Lesson Duration: 90 minutes

Target Audience: ECH Nursing Educators, Shift and Unit Peer Leaders, Nursing Managers

LESSON TOPIC:

Bedside Mobility Assessment Tool (BMAT)

RATIONALE/OVERVIEW:

California requires hospitals to adopt a safe patient handling policy as part of the Injury and Illness Prevention Program

- Nurses must assess patients' mobility needs and "prepare safe patient handling instructions for the patient" (Cal/OSH Standards Board, 2014)
 - The Bedside Mobility Assessment Tool (BMAT) offers a standardized approach that can be used by all nursing staff

OBJECTIVES:

Participants will be able to:

- Explain the purpose of using the Bedside Mobility Assessment Tool (BMAT).
- Demonstrate how to conduct each step of the BMAT.
- Correctly assess patients' mobility level using the BMAT.
- Identify the correct mobility assistive device to use for each BMAT level.

MATERIALS:

- | | |
|---|-------------------------------------|
| ● Overhead projector | ● BMAT Folder of Handouts |
| ● Computer | ○ Handout of PPT Slides |
| ● BMAT PowerPoint Presentation | ○ BMAT Instruction Sheet |
| ● 2015 NPR Report on Nursing Injuries Podcast | ○ Summary of Mobility Level Handout |
| ● BMAT Video | ○ Handout of BMAT Scenarios PPT |
| ● 4 Corners Letters | |
| ● BMAT Scenarios Cards | ● 1 Inpatient hospital bed |
| ● BMAT Card Sort Cards | ● 1 of each lift device |
| ● Mobility Level Cards | ● Walker |
| ● BMAT Pre Test | ● Cane |
| ● BMAT Post Test | ● Fall Prevention Chair |

PROCEDURES:**Welcome/Pretest**

- Facilitator/Module introduction
- Pre Test
- Pass out BMAT folder of handouts

BMAT Intro (Slides 1-10 of Powerpoint)

- Pass out the BMAT packet (Powerpoint, BMAT handout, etc)
- Introduce the BMAT tool and rationale for use
- Present findings from ELCO unit assessments that support the need for BMAT implementation

Four Corners (Slides 11-22 of Powerpoint)

- Refer to the “Four Corners Directions” handout for instructions on how to facilitate the activity and the Powerpoint notes to facilitate question discussion.

2015 NPR Report on Nursing Injuries (Slide 23 of Powerpoint)

- Play a segment of the 2015 NPR Report on Nursing Injuries (1:56-2:47)
- Using the questions on slide 23 as prompts, facilitate a small discussion with the group regarding their experience with injuries on the job

BMAT Learning Objectives, Purpose, Steps (Slides 24-36 of Powerpoint)

- Present a quick overview of how to use the BMAT tool
- Physically demonstrate each step to the group
- Review each mobility level

BMAT Video (Slide 37 of Powerpoint)

- Play the BMAT video

BMAT Surgical Tips (Slides 38 and 39 of Powerpoint)

- Outline tips for surgical patients

BMAT Scenarios (Slides 40-49 of Powerpoint)

- Break participants into equal groups
 - Have participants bring their BMAT Instruction Sheet and Summary of Mobility Level Handout to use as resources
- Assign each group a facilitator who will act as a patient
 - Each facilitator/ “patient” will have 3 scenarios and 3 rationale cards (Use BMAT Scenarios Powerpoint as card handouts - this lesson will use scenarios 1,7,9)

- Have each group go through the BMAT with their “patients” to determine the patients’ mobility level AND the appropriate devices that can be used for the determined mobility level
- Note: Each group’s facilitator should be available to answer questions that may arise about the patient/scenario and able to guide the group as needed.
 - If there is only one facilitator for the entire lesson a group member should be assigned to be the “patient” and the facilitator should rotate amongst the smaller groups during this time to answer questions

BMAT Card Sort (Slides 50 and 51 of Powerpoint)

- In their smaller groups have participants race to see who can put the BMAT steps in the correct order the fastest

BMAT Levels (Slide 52 of Powerpoint)

- Put the Mobility Level Signs up around the room
- Assign each small group some assistive devices and have them move them under the appropriate mobility level
- Review as a group

ECH BMAT Rollout (Slides 54 and 55 of Powerpoint)

- Review the planned rollout of using the BMAT at ECH

BMAT Post Assessment (Slide 56 of Powerpoint)

- Distribute the post assessment to all participants and have them answer all questions.

Feedback/Questions (Slide 58 of Powerpoint)

Appendix G

BEDSIDE MOBILITY ASSESSMENT TOOL (BMAT)

An Educational Module for Nurses

BMAT Pre-Test

- Please complete the BMAT Pre-Test
- Turn in to facilitator when done

Why BMAT

- California requires hospitals to adopt a safe patient handling policy as part of the Injury and Illness Prevention Program
- Nurses must assess patients' mobility needs and "prepare safe patient handling instructions for the patient" (Cal/OSHA Standards Board, 2014)
- The Bedside Mobility Assessment Tool (BMAT) offers a standardized approach that can be used by all nursing staff

Injuries

Did you know that a hospital is one of the most hazardous places to work?

- In 2011, U.S. hospitals recorded 58,860 work-related injuries and illnesses that caused health care workers to miss work

Injury and Illness Rates, 1989-2011

Data source: Bureau of Labor Statistics

Bar chart: Cases per 10,000 full-time employees

Hospitals	157.5
Construction	147.4
Manufacturing	111.8
Private Industry (U.S. average)	105.2
Professional and business services	54.5

Data source: Bureau of Labor Statistics

Musculoskeletal Injury Rates For Selected Occupations in 2013

Nonfatal injuries and illnesses resulting in lost work days, per 10,000 full-time workers

Source: Bureau of Labor Statistics, Census BLS

Costs

- The average worker's comp claim for a hospital injury from 2006-2011 was \$15,860
- In 2015 there were 46 safe patient handling or mobility injuries at ECH (\$729,560)
- From 4/1/2015 to 3/31/2016 there were 48 safe patient handling or mobility injuries reported (\$761,280)

Injury and Illness Analysis Report

Injury and Illness Analysis Report

Four Corners

- Gather in the center of the room
- After each question is read, walk to the corner that describes what you *would* do (not *should* do)
- Discuss with others who chose the same option

Four Corners

1. What is the number one cause of caregiver injuries?

- Slips, trips, and falls
- Overexertion and bodily reaction**
- Contact with objects
- Violence

Four Corners

1. What is the number one cause of caregiver injuries?

- Slips, trips, and falls
- Overexertion and bodily reaction**
- Contact with objects
- Violence

Four Corners

2. What is the maximum manual lift weight for nurses?

- 50 lbs
- 45 lbs
- 35 lbs
- 75 lbs

Four Corners

2. What is the maximum manual lift weight for nurses?

- 50 lbs
- 45 lbs
- 35 lbs (OSHA, 2014)**
- 75 lbs

Heavier Patients Mean Heavier Lifts

How much each body part might weigh for a man at different body weights (in pounds)

Source: Weight calculated from body segment parameters compiled by Phebe de Luca in a study published in the Journal of Biomechanics. ©2007, Lyle Borenstein and Aaron Phillips

Four Corners

3. An 85-year old, 110 lb total assist stroke patient needs to be moved up in bed, what do you do?

- Use the sheet to pull her up from the head of the bed
- Call someone else to help you move the patient up with a draw sheet
- Get a z-slider and use it to pull the patient up from the head of the bed
- Put the patient on a Hovermatt and have someone help you move her up

Four Corners

3. An 85-year old, 110 lb total assist stroke patient needs to be moved up in bed, what do you do?

- Use the sheet to pull her up from the head of the bed
- Call someone else to help you move the patient up with a draw sheet
- Get a z-slider and use it to pull the patient up from the head of the bed
- Put the patient on a Hovermatt and have someone help you move her up**

Four Corners

4. How do you know if a patient can safely stand independently?

- The patient can go from a sitting to a standing position in one movement without using his/her hands as an assist
- The patient states he/she is independent at home and ambulates without any assistive devices
- The patient states he/she can stand independently once someone assists him/her to a standing position
- The patient has a physical therapy order to ambulate independently at least twice a day

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Four Corners

4. How do you know if a patient can safely stand independently?

- The patient can go from a sitting to a standing position in one movement without using his/her hands as an assist**
- The patient states he/she is independent at home and ambulates without any assistive devices
- The patient states he/she can stand independently once someone assists him/her to a standing position
- The patient has a physical therapy order to ambulate independently at least twice a day

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Four Corners

5. A 65-year old, 170 lb patient with diabetes desperately needs to get up and use the bathroom. The patient states she ambulates independently at home and just needs help to stand, what do you do?

- Assess the patient's mobility prior to standing the patient
- Use the non-mechanical sit-to-stand to assist the patient to a standing position and transport her to the bathroom
- Assist the patient to a standing position and walk with her to the bathroom in case assistance is needed
- Have the patient use a walker to assist herself to a standing position and allow her to independently ambulate to the bathroom

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Four Corners

5. A 65-year old, 170 lb patient with diabetes desperately needs to use the get up and use the bathroom. The patient states she ambulates independently at home and just needs help

- Assess the patient's mobility prior to standing the patient**
- Use the non-mechanical sit-to-stand to assist the patient to a standing position and transport her to the bathroom
- Assist the patient to a standing position and walk with her to the bathroom in case assistance is needed
- Have the patient use a walker to assist herself to a standing position and allow her to independently ambulate to the bathroom

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When RNs Become Patients

- Hospitals fail to Protect Nursing Staff From Becoming Patients
 - NPR 2015 Report
- Raise your hand if you, or someone you know, has been injured while lifting, repositioning, mobilizing, or assisting a patient
 - Keep your hand raised if the injury required work modifications
 - If it caused missed days of work
 - If you or that person were unable to work in the same role after the injury

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BMAT Learning Objectives

- By the end of this presentation, the learner will be able to:
 - Explain the purpose of using the Bedside Mobility Assessment Tool (BMAT)
 - Demonstrate how to conduct each step of the BMAT
 - Correctly assess patients' mobility level using the BMAT
 - Identify the correct equipment and/or assistive device to use for each BMAT level

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The Purpose of BMAT



BMAT:


- Is a nursing tool that recommends equipment for safe patient transfers and mobility
- Standardizes care related to the risk of patient handling and falls
- May reduce in-hospital falls
- May reduce nursing injuries related to patient-handling

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BMAT Contraindications

- Bilateral extremity non-weight bearing
- Strict bed rest
- Unable to follow commands

**Before you begin this assessment determine the patient's baseline functional mobility level.*



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STEP 1: SIT AND SHAKE

Assess if the patient can:

- Sit themselves up on the edge of the bed from a semi-reclined position with feet flat on the floor or stool and maintain balance.
- Reach across midline and shake clinician's hand. Assess bilaterally. **Note:** ability to shake with one hand still sufficient to proceed.

Did You Know? If you observe a patient using their arms to stabilize themselves while sitting, he or she most likely will need a walker.

YES: Proceed to Step 2
NO: Patient is LEVEL 1, Total Assist

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STEP 2: STRETCH AND POINT

Assess if the patient can:

- From a seated position, straighten one knee and hold for 5 seconds.
- Flex the ankle and point the toes towards the ceiling. Assess bilaterally.

Note: Assess leg(s) that patient intends to stand on; one leg is still sufficient to proceed.

YES: Proceed to Step 3
NO: Patient is LEVEL 1, Total Assist



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LEVEL 1: TOTAL ASSIST EQUIPMENT






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STEP 3: STAND

Assess if the patient can:

- Stand up from chair or bed and hold standing position for 5 seconds.

Note: Use assistive device if prescribed, used at home, otherwise indicated.

YES: Proceed to Step 4
NO: Patient is LEVEL 2, Moderate Assist



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LEVEL 2: MAXIMUM ASSIST EQUIPMENT




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STEP 4: MARCH & STEP

Assess if the patient can:

- March in place (5 times/leg)
- Take a step forward and return each foot to original position. Assess bilaterally.

Note: Use assistive device if prescribed, used at home, or otherwise indicated.

YES: Proceed to Step 5
NO: Patient is LEVEL 3, Moderate Assist



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LEVEL 3: MODERATE ASSIST EQUIPMENT



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STEP 5: WALK TEST

Assess if the patient can:

- Walk at least 150 feet safely without loss of balance, without assistance, and without assistive device.

Note: If patient uses walker for Step 4, do not attempt to ambulate without walker. The highest mobility score this type of patient can get is a 4. (Assess patient walking with walker to assess endurance and safety awareness.)

YES: Level 5: Independent
NO: Patient is LEVEL 4, Minimal Assist



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LEVEL 4 MINIMUM ASSIST EQUIPMENT








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Summary of Mobility Level

Mobility Level 1	Total Assist: patient unable to sit on the side of the bed or edge of chair. 0E- patient able to sit and shake, but unable to stretch and point.
Mobility Level 2	Maximum Assist: patient can sit, shake with at least one hand, stretch and point with at least one leg, but is unable to stand.
Mobility Level 3	Moderately Dependent: patient can sit, shake with at least one hand, stretch and point with at least one leg, able to stand (E2), but unable to march or step.
Mobility Level 4	Minimal Assist: patient passed all previous BMAT steps, including March and Step, but requires assistance and/or assistive device to walk.
Mobility Level 5	Independent: patient passed all previous BMAT steps, and is able to walk at least 150 feet with no patient handling assistance and assistive device.

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BMAT Summary Video

Tips for Surgical Patients

For patients with any condition that prevents a patient from coming to a sitting position independently (e.g. spinal precautions, large abdominal/thoracic wounds/fractures, etc.), you may make additional accommodations to safely assist the patient with the assessment of BMAT.

Getting the Patient to the Edge of Bed Option 1: Therapeutic Steps to Sit

- Use bed controls to assist raising HOB and allow patients to use side rails as assistance.
- For patients with spinal precautions, instruct the patient to hold their chin, back, and feet together, and then lower their leg.
- Some are hard to patient to balance or equilibrate, but if patient is pulling or requiring more support, consider option 2.

Tips for Surgical Patients

Getting the Patient to the Edge of Bed Option 2: Sit Assistance

- Utilize ceiling lift or floor based total lift and sling. Secure the sling to the slingside and lift the patient to a suitable sitting position at the edge of bed as soon as feasible.
- Clear patient is positioned safely at the edge of the bed, secure the harness on the lift and patient is able to maintain sitting posture with the assessment.

Patient Scenarios

- Count off into small groups
- Each "patient" has a scenario card that describes his/her level of mobility
- The group will act as the "RN" and assess the patient's mobility using the BMAT
- Each group will act out their scenario for the class
 - Mobility level and appropriate equipment

Scenario 1

Scenario 1

- You are a multi-trauma patient who broke your right leg, but you are able to bear weight on your left leg.
- You are able to sit up to the edge of the bed without assistance, shake hands, stretch and point your left foot for at least 5 seconds, and stand on your left leg for at least five seconds.
- You can also hop in place, hop forward, and backwards with the assistance of a walker.

Scenario 1 Rationale

The patient passed the Sit and Shake, Stretch and Point, Dynamic Stand, and the March and Step with a walker. Because the patient cannot walk without a walker for at least 150 feet, he cannot be independent. Although patient is not "independent," the nurse should walk patient with a walker to test endurance of the patient. The patient is **Mobility Level 4 (Minimal Assist)**.

Scenario 2

Scenario 2

- You are an elderly woman who is two days post-op from a left knee replacement surgery.
- You passed the Sit and Shake, Stretch and Point, and Stand steps and march with minimal difficulty.
- However, when you are asked to step forward with your right leg, you freeze, and the nurse assists you with stepping back and sitting down on the bed.

Scenario 2 Rationale

The patient was able to pass the Sit and Shake, Stretch and Point, and Stand, which indicates the patient surpassed Mobility Level 2. Although the patient was able to march in place, she was unable to step forward, indicating that the patient is a **Mobility Level 3 (Moderately Dependent)**.

Scenario 3

Scenario 3

- You are a patient in the progressive care unit. You have been in bed for more than 1 week and are deconditioned. You are sat down on the side of the bed.
- You're able to balance yourself, pass the sit and shake bilaterally, and pass the stretch and point bilaterally.
- When attempting to stand you were not able to lift your buttocks off the bed.

Scenario 3 Rationale

Patient failed Step 3, "Stand" test, which labels the patient as **Mobility Level 2 (Maximum Assist)**.

Card Sort

In your small group:

- Sort the BMAT steps into the correct order
 - Correctly pair the descriptions with each step

BMAT Step	BMAT Step	BMAT Step
Description of step	Description of step	Description of step

Card Sort

Sort the mobility levels into the correct order

- Correctly pair the pass/fail of each step to the appropriate mobility level
- Correctly pair the appropriate equipment with each mobility level

Mobility Level	Mobility Level	Mobility Level
Pass/Fail	Pass/Fail	Pass/Fail
Equipment	Equipment	Equipment

BMAT Equipment

- Move the BMAT equipment to the wall with the correct mobility level

Did you know?

According to Cal OSHA Safe Patient Handling Regulation, a health care worker can refuse to lift, reposition, mobilize or transfer patients if concerned about patient or staff safety or lack of trained personnel or equipment, and shall not be subjected to disciplinary action based on this refusal.

The safety of you and your patient is vital!

The health care worker should communicate concerns regarding the designated activity to an appropriate supervisor.

BMAT Rollout

Patient room signs

- Inside and outside
- Identifies patient mobility level
 - 150, 100, 75
- Serves as a reminder to staff to assess mobility each shift and to use appropriate equipment
- Informs patients of required level of assistance
- Saves time



BMAT Equipment

- Move the BMAT equipment to the wall with the correct mobility level

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Did you know?

According to Cal OSHA Safe Patient Handling Regulation, a health care worker can refuse to lift, reposition, mobilize or transfer patients if concerned about patient or staff safety or lack of trained personnel or equipment, and shall not be subjected to disciplinary action based on this refusal.

The safety of you and your patient is vital!

The health care worker should communicate concerns regarding the designated activity to an appropriate supervisor.

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BMAT Rollout

- **Patient room signs**
 - Inside and outside
 - Identifies patient mobility level
 - RNs, CNAs, PTs
 - Serves as a reminder to staff to assess mobility each shift and to use appropriate equipment
 - Informs patients of required level of assistance
 - Saves time



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ECH BMAT Rollout

- **Reference Badge**
 - Quick reference guide
 - Easily accessible
- **Reference Binder**
 - Detailed BMAT reference guide
 - Case studies
 - Frequently Asked Questions (FAQ)
 - Emphasis on key teaching points



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BMAT Post Test

- Please complete the BMAT Post Test
- Turn in to facilitator when done

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Congratulations!
 You have now completed
 El Camino Hospital's
 BMAT Educational Module!

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Feedback/Questions

- How do you think you will proceed with further steps and training for ECH?
- What barriers do see?

References

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Appendix H

BEDSIDE MOBILITY ASSESSMENT TOOL (BMAT)

An Educational Module for Nurses

Learning Objectives

- By the end of this presentation, the learner will be able to:
 - Explain the purpose of using the Bedside Mobility Assessment Tool (BMAT)
 - Demonstrate how to conduct each step of the BMAT
 - Correctly assess patients' mobility level using the BMAT
 - Identify the correct equipment and/or assistive device to use for each BMAT level

The Purpose of BMAT

- May reduce in-hospital falls
- May reduce nursing injuries related to patient-handling
- Is a nursing tool that recommends equipment for safe patient transfers and mobility
- Standardizes care related to the risk of patient handling and falls.

Did you know? The maximum amount of weight a healthcare worker should lift when assisting a patient with mobilization is 35 lbs!

Criteria to Begin BMAT

Contraindications:

- Bilateral extremity non-weight bearing
- Bed rest
- Unable to take commands

STEP 1: SIT AND SHAKE

Assess if the patient can:

- Sit themselves up from a semi-reclined position and maintain balance on the edge of the bed
- Reach across midline, grasp and shake clinician's hand. Assess bilaterally.

Did You Know? If you observe a patient using their arms to stabilize themselves while sitting, or if the most likely will need a walker.

YES: Proceed to Step 2
NO: Patient is Level 5, Total Assist

STEP 2: STRETCH AND POINT

Assess if the patient can:

- From a seated position, straighten one knee and hold for 5 seconds.
- Flex the ankle and point the toes towards the ceiling, hold 5 seconds. Assess bilaterally.

Note: Assess leg's that patient intends to stand on; one leg is still sufficient to proceed

YES: Proceed to Step 3
NO: Patient is Level 5, Total Assist

LEVEL 1: TOTAL ASSIST EQUIPMENT

STEP 3: STAND

Assess if the patient can:

- Stand up from chair or bedside without assistance and hold standing position for 5 seconds.

Note: Use assistive device if prescribed, used at home, otherwise indicated.

YES: Proceed to Step 4
NO: Patient is Level 3, Moderate Assist

LEVEL 2: MAXIMUM ASSIST EQUIPMENT

STEP 4: MARCH & STEP

Assess if the patient can:

- March in place.
- Take a step forward and return each foot to original position. Assess bilaterally.

Note: Use assistive device if prescribed, used at home, or otherwise indicated.

YES: Proceed to Step 5
NO: Patient is Level 4, Minimum Assist

LEVEL 3: MODERATE ASSIST EQUIPMENT

STEP 5: INDEPENDENCE

Assess if the patient can:

- Walk at least 150 feet safely without loss of balance, without assistance, and without assistive device.

Note: If patient uses walker for Step 5, do not attempt to ambulate without walker. Assess patient walking with walker to assess endurance. The highest mobility score this type of patient can get is a 4.

YES: Level 5, Independent
NO: Patient is Level 4, Minimum Assist

LEVEL 4: MINIMUM ASSIST EQUIPMENT

Summary of Mobility Level

Mobility Level 1	System is Total Assist. Patient unable to move or transfer self
Mobility Level 2	System is Maximum Assist. Patient can move self, but is unable to hold standing position
Mobility Level 3	Moderately dependent patient. This patient can come into a sitting position but cannot stand on his/her self.
Mobility Level 4	Minimal assistance required. Patient can bear weight and may require assistive devices.
Mobility Level 5	Independent. Patient can move and transfer self, requires no patient handling assistance.

Did you know?

According to Cal OSHA AB1136, a health care worker can refuse to lift, reposition, or transfer patients due to concerns about patient or worker safety or lack of trained lift team personnel or equipment, and shall not be subject to disciplinary action, based on this refusal. The safety of you and your patient is vital!

Case Studies

****To ensure adequate functioning of the case studies, make sure this PowerPoint presentation is in slide show mode, which is normally at the bottom of the screen, as shown below.****

Scenario 1

A multi-trauma patient who broke his right leg, but is able to bear weight on his left leg. As the nurse, you do the BMAT assessment. The patient is able to sit up to the edge of the bed without assistance, shake hands, stretch and point his left foot for at least 5 seconds, and stand on his left leg for at least five seconds. The patient can also hop in place, hop forward, and backwards with the assistance of a walker. What is the patient's mobility level? Select one of the boxes below.






Mobility Level 1 Mobility Level 2 Mobility Level 3 Mobility Level 4 Mobility Level 5

Correct!

Mobility Level 4, because patient passed the Sit and Shake, Stretch and Point, Dynamic Stand, and the March and Step with a walker. Because the patient cannot walk without a walker for at least 150 feet, he cannot be independent. Although patient is not "independent," the nurse should walk patient with a walker to test endurance of the patient.

Click to continue →

<p>Case Studies</p> <p>"To ensure adequate functioning of the case studies, make sure this PowerPoint presentation is in slide show mode, which is normally at the bottom of the screen, as shown below."</p> 	<p>Scenario 1</p> <p>A multi-trauma patient who broke his right leg, but is able to bear weight on his left leg. As the nurse, you do the BMAT assessment. The patient is able to sit up to the edge of the bed without assistance, shake hands, stretch and point his left foot for at least 5 seconds, and stand on his left leg for at least five seconds. The patient can also hop in place, hop forward, and backwards with the assistance of a walker. What is the patient's mobility level? Select one of the boxes below.</p> <p> <input type="radio"/> Mobility Level 1 <input type="radio"/> Mobility Level 2 <input type="radio"/> Mobility Level 3 <input type="radio"/> Mobility Level 4 <input type="radio"/> Mobility Level 5 </p>	<p>Correct!</p> <p>Mobility Level 4, because patient passed the Sit and Shake, Stretch and Point, Dynamic Stand, and the March and Step with a walker. Because the patient cannot walk without a walker for at least 150 feet, he cannot be independent. Although patient is not "independent," the nurse should walk patient with a walker to test endurance of the patient.</p>  <p>Click to continue →</p>
<p>Incorrect. Please try again.</p>  <p>Click HERE to go back</p>	<p>Scenario 2</p> <p>A multi-trauma patient who broke both his legs, pelvis, and back. He's considered as a bilateral non-weight bearing patient, and is requesting to use the bathroom. If the patient had a bilateral non-weight bearing order, what mobility level is he? Select one of the boxes below.</p> <p> <input type="radio"/> Mobility Level 1 <input type="radio"/> Mobility Level 2 <input type="radio"/> Mobility Level 3 <input type="radio"/> Mobility Level 4 <input type="radio"/> Mobility Level 5 </p>	<p>Correct!</p> <p>Although this patient may be able to perform the Sit and Shake, he cannot perform the stretch and point. This patient has an non-weight bearing order, and therefore cannot stand. Thus, he is Mobility Level 1 (Total Assist).</p>  <p>Click to continue →</p>
<p>Incorrect. Please try again.</p>  <p>Click HERE to go back</p>	<p>Scenario 2 (continued)</p> <p>Which type of equipment would you use for this patient (click on the appropriate one)? Click one of the equipment below.</p> 	<p>Correct!</p> <p>This is a regular lift designed to lift or transfer a patient that is unable to sit on a transfer aid (Level 1).</p> <p>The middle photo is the mechanical or rollator lift, for a patient that is designed for an ambulatory dependent patient (Level 2). It can be used in a sitting position, but cannot stand or transfer out.</p> <p>The right photo is of a non-mechanical sit-to-stand device, for a patient (Level 3) that can stand, but cannot step forward or backward.</p>  <p>Click to continue →</p>
<p>Incorrect. Please try again.</p>  <p>Click HERE to go back</p>	<p>Scenario 3:</p> <p>The nurse observes the patient perform the "Sit and Shake" and "Stretch and Point." The nurse observes the patient with good sitting balance can only shake with one hand and stretch and point with one leg. Is this sufficient enough to proceed to the next step? Select one of the boxes below.</p> <p> <input type="radio"/> Yes <input type="radio"/> No </p>	<p>Correct!</p> <p>Yes, with sufficient balance, and ability to grasp and mobilize one leg, the patient can be at least Mobility Level 2, Maximum Assist, which can allow them to use the mechanical sit-to-stand.</p>  <p>Click to continue →</p>
<p>Incorrect. Please try again.</p>  <p>Click HERE to go back</p>	<p>Scenario 4</p> <p>The nurse assess a patient who recently had a stroke using BMAT and finds the patient has bilateral foot drop. The patient is able to perform the "Sit and Shake," but is unable to point during the "Stretch and Point" step. What level is this patient? Select one of the boxes below.</p> <p> <input type="radio"/> Mobility Level 1 <input type="radio"/> Mobility Level 2 <input type="radio"/> Mobility Level 3 <input type="radio"/> Mobility Level 4 <input type="radio"/> Mobility Level 5 </p>	<p>Correct!</p> <p>This patient is BMAT Level 1: Total Assist. Although the patient is able to sit up, the patient is unable to flex their foot towards their nose, a key muscle in producing the walking motion.</p>  <p>Click to continue →</p>
<p>Incorrect. Please try again.</p>  <p>Click HERE to go back</p>	<p>Scenario 5</p> <p>During the nurse's assessment of independence, the patient loses her balance and the nurse helps her minimally. What BMAT level should this patient be? Select one of the boxes below.</p> <p> <input type="radio"/> Mobility Level 1 <input type="radio"/> Mobility Level 2 <input type="radio"/> Mobility Level 3 <input type="radio"/> Mobility Level 4 <input type="radio"/> Mobility Level 5 </p>	<p>Correct!</p> <p>Since the patient was able to perform the Sit and Shake, Stretch and Point, and Dynamic Stand, but is unable to walk 150 feet to be independent, therefore the patient is Mobility Level 4.</p>  <p>Click to continue →</p>

<p>Incorrect. Please try again.</p>  <p>Click HERE to go back</p>	<p>Scenario 3:</p> <p>The nurse observes the patient perform the "Sit and Shake" and "Stretch and Point." The nurse observes the patient with good sitting balance can only shake with one hand and stretch and point with one leg. Is this sufficient enough to proceed to the next step? Select one of the boxes below.</p> <p>Yes No</p>	<p>Correct!</p> <p>Yes, with sufficient balance, and ability to grasp and mobilize one leg, the patient can be at least Mobility Level 2, Maximum Assist, which can allow them to use the mechanical sit-to-stand.</p>  <p>Click to continue →</p>
25	26	27
<p>Incorrect. Please try again.</p>  <p>Click HERE to go back</p>	<p>Scenario 4</p> <p>The nurse assess a patient who recently had a stroke using BMAT and finds the patient has lateral foot drop. The patient is able to perform the "Sit and Shake," but is unable to point during the "Stretch and Point" step. What level is this patient? Select one of the boxes below.</p> <p>Mobility Level 1 Mobility Level 2 Mobility Level 3 Mobility Level 4 Mobility Level 5</p>	<p>Correct!</p> <p>This patient is BMAT Level 1: Total Assist. Although the patient is able to sit up, the patient is unable to flex their foot towards their nose, a key muscle in producing the walking motion.</p>  <p>Click to continue →</p>
28	29	30
<p>Incorrect. Please try again.</p>  <p>Click HERE to go back</p>	<p>Scenario 5</p> <p>During the nurse's assessment of independence, the patient loses her balance and the nurse helps her minimally. What BMAT level should this patient be? Select one of the boxes below.</p> <p>Mobility Level 1 Mobility Level 2 Mobility Level 3 Mobility Level 4 Mobility Level 5</p>	<p>Correct!</p> <p>Since the patient was able to perform the Sit and Shake, Stretch and Point, and Dynamic Stand, but is unable to walk 150 feet to be independent, therefore the patient is Mobility Level 4.</p>  <p>Click to continue →</p>
31	32	33
<p>Incorrect. Please try again.</p>  <p>Click HERE to go back</p>	<p>Scenario 6:</p> <p>A nurse assesses a male patient using BMAT and observes that the patient is able to sit up to the bedside without assistance and is able to shake the nurse's hands. The nurse also observes the patient extend his leg and point it towards his nose. The patient slowly stands up and the nurse notices the patient struggling to stay standing. After about three seconds, the patient asks to be helped to sit back down. What is the patient's mobility level? Select one of the boxes below.</p> <p>Mobility Level 1 Mobility Level 2 Mobility Level 3 Mobility Level 4 Mobility Level 5</p>	<p>Correct!</p> <p>Since the patient passed the Sit and Shake and Stretch and Point, the nurse knows that the patient has now surpassed Mobility Level 1. However, the patient was unable to stand for the full five seconds, therefore the patient is considered Mobility Level 2.</p>  <p>Click to continue →</p>
34	35	36
<p>Incorrect. Please try again.</p>  <p>Click HERE to go back</p>	<p>Scenario 7</p> <p>A nurse assesses an elderly woman who is two days post-op from a left knee replacement surgery. The patient passed the Sit-and-Shake, Stretch and Point, and Stand steps and march with minimal difficulty. However, when the patient was asked to step forward with her right leg, she freezes, and the nurse assists with stepping the patient back and sits her down on the bed. What is the patient's mobility level? Select one of the boxes below.</p> <p>Mobility Level 1 Mobility Level 2 Mobility Level 3 Mobility Level 4 Mobility Level 5</p>	<p>Correct!</p> <p>The patient was able to pass the Sit and Shake, Stretch and Point, and Stand, which indicates the patient surpassed Mobility Level 2. Although the patient was able to march in place, she was unable to step forward, indicating that the patient is a Mobility Level 3.</p>  <p>Click to continue →</p>
37	38	39
<p>Incorrect. Please try again.</p>  <p>Click HERE to go back</p>	<p>Congratulations! You have now completed the El Camino Hospital's BMAT Educational Module!</p>	<p>References</p> <p>Fitzpatrick, M. A. (2014). Safe patient handling and mobility: a call to action. <i>American Nurse Today</i>, 9(Suppl 9), 1.</p>

Appendix I

BMAT Pre and Post Test Questions

Directions: Please read each question and select the best answer from the options below

1. What is the recommended maximum amount of weight a healthcare worker should lift without lift equipment and/or assistive device?
 - a. 15 lbs.
 - b. 25 lbs.
 - c. 35 lbs.
 - d. 50 lbs.

2. What does BMAT stand for?
 - a. Bedside Mobility Assistance Tool
 - b. Bedside Mobility Assessment Tool
 - c. Bariatric Mobility Assessment Tool
 - d. Bariatric Mobility Assistance Tool

3. What is the correct order of the BMAT?
 - a. Sit and Shake, Stretch and Point, Stand and Walk
 - b. Sit and Stretch and Point, Stand and March, Walk
 - c. Sit and Shake, Stand and Stretch, March and Walk
 - d. Sit and Shake, Stretch and Point, Stand, March and Step, Walk

4. Prior to using the BMAT to assess a patient, what should the nurse do?
 - a. Assess the patient to see if he/she can follow verbal commands
 - b. Determine if ambulation is contraindicated
 - c. Check MD orders to see if bed rest is prescribed
 - d. Question the patient to determine his/her mobility baseline prior to hospitalization
 - e. All of the above

5. Match the BMAT level to the appropriate equipment and/or assistive device(s).

Note: Each mobility level may have more than one answer

Level 1: Total Assist ____	a. Z-Slider	f. Cane
Level 2: Maximal Assist ____	b. Walker	g. Crutches
Level 3: Moderate Assist ____	c. Ceiling Lift	h. Hovermatt
Level 4: Minimal Assist ____	d. Portable Passive Lift	i. Non-Mechanical Sit to Stand
Level 5: Independent Assist ____	e. Mechanical Sit to Stand	j. Cane

6. How often should a nurse use the BMAT to assess patient mobility? (Select All That Apply)
 - a. During the initial admission assessment
 - b. Every day
 - c. Every shift
 - d. Before discharge
 - e. When there is a change in patient status (i.e. after a procedure, medication changes, or a tiring therapy session)
 - f. All of the above
 - g. A, C, and E

7. If a patient requires the use of a walker, can he/she be assessed with the BMAT?
 - a. Yes
 - b. No

8. Your patient is able to stand without assistance, however when attempting to March and Step, the patient starts to lose balance. What is the nurse's next step: (select all that apply)
 - a. Assist the patient back to bed and identify the patient as Level 3: Moderate Assist
 - b. Assist the patient safely to a sitting position
 - c. Have patient reattempt the March and Step with the use of a walker
 - d. Have the patient stand in place for a moment and once balance is regained, continue the assessment

9. While performing the Stretch and Point, a patient is only able to successfully perform the task with the left lower extremity. What is the nurse's next step?
 - a. Continue with next step of the BMAT
 - b. Stop and assist the patient back to a lying-down position
 - c. Identify the patient as a Level 1: Total Assist
 - d. Identify the patient as a Level 2: Maximal Assist

10. A patient successfully performs the Sit and Shake, and Stretch and Point, but is unable to stand. What is the nurse's next step?
 - a. Pause the assessment and perform the BMAT one hour later
 - b. Assist the patient back to bed and identify that patient as Level 2: Maximal Assist
 - c. Assist the patient to a standing position and continue the BMAT assessment
 - d. None of the above

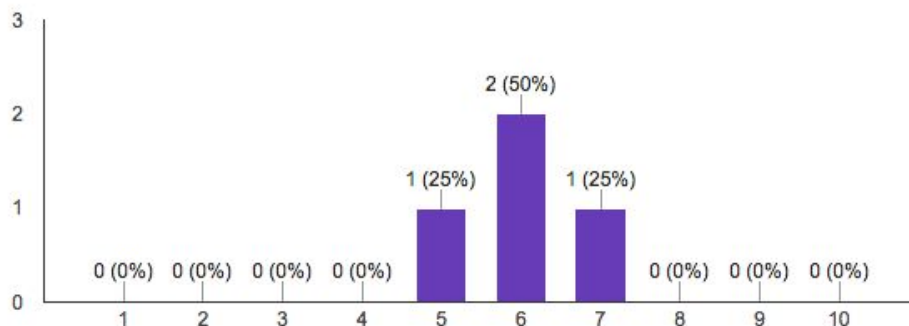
Appendix J

BMAT Education Module - Nursing Graduated Student Scores				
	Pretest Scores Out of 13 Points	Pretest Percentages	Posttest Scores out of 13 Points	Posttest Percentages
	9	69.23%	11	84.62%
	11	84.62%	11	84.62%
	7	53.85%	10	76.92%
	6	46.15%	10	76.92%
Average:	8.25	63.46%	10.5	80.77%

Appendix K

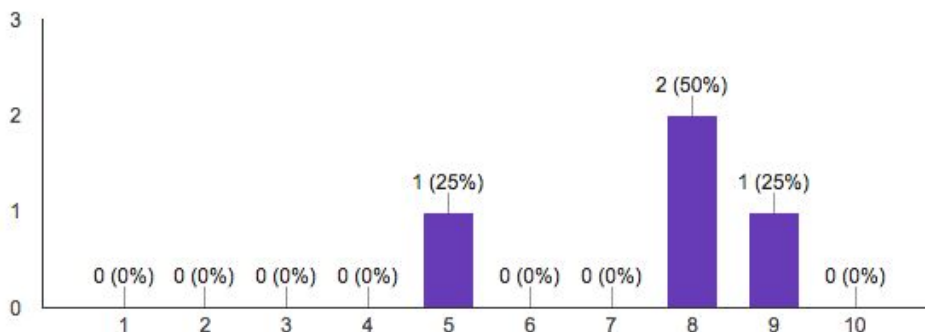
On scale of 1-10, how would you rate the pace of the course? (1 = Way too slow, 5 = Just right, 10 = Way too fast)

(4 responses)



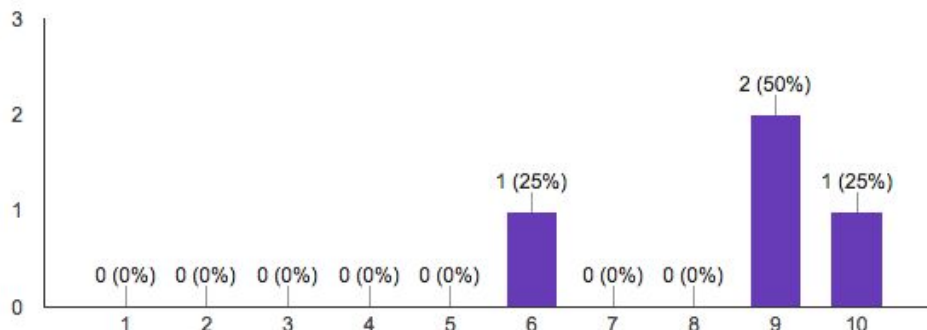
How would you rate the overall organization of the course? (1=Super disorganized, 5 = Fairly well organized, 10 = Super organized)

(4 responses)



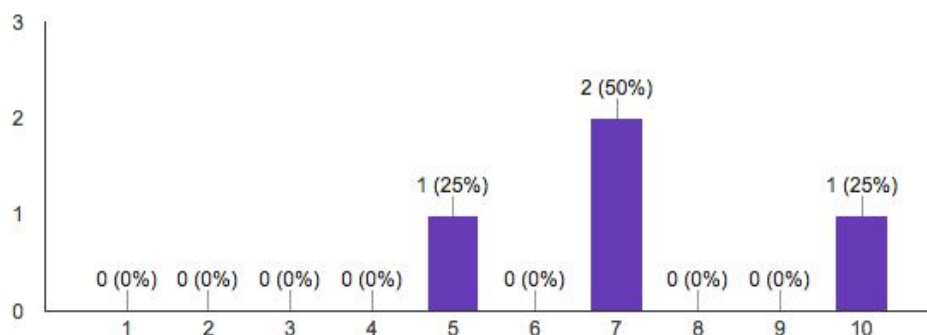
On a scale of 1-10, rate the clarity of instruction. (1= Super unclear, 5 = Just clear enough, 10 = Crystal clear)

(4 responses)



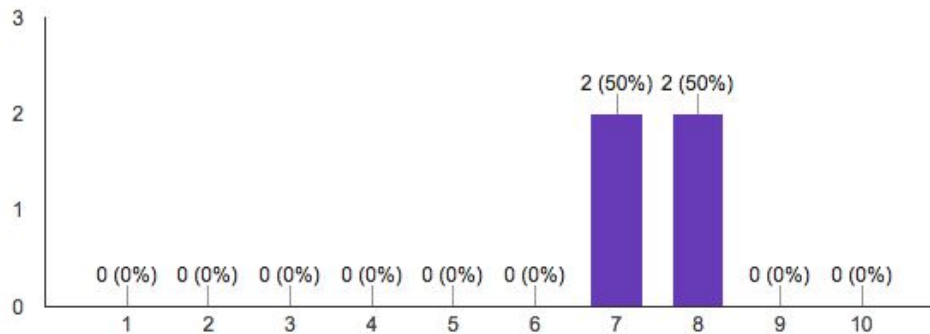
On a scale of 1-10, how would you rate the content of the course? (1 = Not enough information, 5 = Just right, 10 = Way too much information)

(4 responses)



How would you rate your overall knowledge of how to use the BMAT? (1 = No clue, 5 = Enough to give a general description, 10 = Pro status, can teach a class)

(4 responses)



What do you like best about this course? (4 responses)

- the interaction and practice
- the activities - it allowed us to interact and move around the classroom
- It is very interactive
- Activities

What would you like to change about the course? (4 responses)

- more organization with who is doing which scenario
- maybe not use all of the scenarios (to save time)
- Cut down on scenarios and change the wording of questions
- cutting down on scenarios

What are the instructors' strengths? (4 responses)

explaining the steps and answering questions

explained info thoroughly and talked about the background

Very engaging and

clear, loud voice

What suggestions do you have to improve the instructors' teaching?

(2 responses)

speak a little more slowly :)

n/a

Any additional feedback/comments. (Put N/A if no additional feedback)

(4 responses)

n/a

n/a

n/a

N/A

Appendix L

Pre-Test		
Participant Job Title	Score Out of 14	Percentage
Director	12	57.14%
Educator	12	57.14%
Educator	11	52.38%
Educator	6	28.57%
Educator	8	38.10%
Educator	9	42.86%
Educator	13	61.90%
Educator	11	52.38%
Educator	9	42.86%
Manager	10	47.62%
Manager	5	23.81%
New Hire	8	38.10%
New Hire	12	57.14%
New Hire	7	33.33%
New Hire	10	47.62%
New Hire	9	42.86%
New Hire	14	66.67%
New Hire	9	42.86%
New Hire	9	42.86%
Averages:	9.68	46.12%

Post-Test		
Participant Job Title	Score Out of 14	Percentage
Director	6	28.57%
Educator	16	76.19%
Educator	15	71.43%
Educator	19	90.48%
Manager	12	57.14%
New Hire	18	85.71%
New Hire	15	71.43%
New Hire	9	42.86%
New Hire	14	66.67%
New Hire	12	57.14%
New Hire	14	66.67%
New Hire	11	52.38%
New Hire	14	66.67%
New Hire	14	66.67%
Averages:	13.50	64.29%

Pre-Test		
Participant Job Title	Number of Participants Present for Test	Average Percentage
Director	1	57.14%
Educator	8	47.02%
Manager	2	35.71%
New Hire	8	46.43%
Total # of Participants	19	46.58%

Post-Test			
Participant Job Title	Number of Participants Present for Test	Difference in Number of Participants	Average Percentage
Director	1	0	28.57%
Educator	3	-5	79.37%
Manager	1	-1	57.14%
New Hire	9	1	64.02%
Total # of Participants	14	-5	57.28%

