The SPHM Time/Cost Efficiency Study

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Hypothesis

Using safe patient handling and mobility (SPHM) equipment will prove to be a more efficient method for performing patient care when the total time and cost are calculated between manual handling and SPHM techniques.

Methods

A list of specific patient handling tasks was determined for observation, only those observed at both facilities were included in the study. Two medical centers in the same Healthcare Organization were used. The medical units used for observation include the general Medical-Surgical (Med-Surg) unit and the Labor & Delivery (L&D) unit for each facility. Hospital A has a robust SPHM program with equipment and accessories readily available and in compliance with the PHAMA guidelines[1], the culture of the hospital is accepting of SPHM practices. Hospital B has not accepted the use of SPHM equipment, has 1 mobile lift and 1 mechanical sit to stand. The culture of the unit is to prefer manual lifting without SPHM. Both medical centers have between 300-400 beds in total. Hospital A has a 32 bed Med-Surg and a 12 bed L&D unit used for observation and Hospital B has a 26 bed Med-Surg unit and a 10 bed L&D unit used for observation.

Unit managers were informed of the observations, however clinical staff were informed of the study but not informed of the intention of the study until the completion in an effort not to persuade the clinician's behaviors. A certified safe patient handling (nurse) specialist performed the observations. The data collected included the total time of the task, time was measured as beginning when the patient rang the call light or the time nurse notified the care staff that care was to begin (for the wound care and labor patient/catheter limb holding, as patients did not request this task). The time ended when the task involving caregiver assistance was completed. The time included the time to gather assistance of caregivers and the time to obtain lift equipment and slings. The total time measurement included the total actual time to perform a task multiplied by the total number of caregivers participating in the task in order to find the total people time utilized for each task.

The cost of the task was based on national Bureau of Labor Statistics average wage data for a registered nurse and a certified nursing assistant in the United States[2]. The wages were added together and divided by 2 to find the average wage between the disciplines as a different type of caregiver assisted in each different scenario. The wage cost calculation does not include the cost of benefits for the caregiver.

The observations occurred during a course of 8 days at Hospital A and 6 days at Hospital B.

Data

Table 1- Total Cost of Patient Handling Tasks

Manual Task	TIME	EMPLOYEES	TOTAL COST
Boosting 300lb+ patient in bed	5	4	9.6
Limb Holding for Foley Insertion	20	3	28.8
Placing a bedpan, 250lb+ patient	5	3	7.2
Pivot transfer a moderate assist 250lb+ patient	5	2	4.8
PT Ambulation of moderate assist patient	15	2	14.4
Coccyx or Sacrum wound vac placement dependent 150lb+ patient	30	2	28.8
Limb holding for laboring patient	120	1	57.6
Bed Bath for 180lb+ dependent patient	30	2	28.8
			$180.00
Lift Equipment	**TIME**	**EMPLOYEES**	**TOTAL COST**
Boosting 300lb+ patient in bed	10	1	4.8
Limb Holding for Foley Insertion	2	1	0.96
Placing a bedpan, 250lb+ patient	10	1	4.8
Pivot transfer a moderate assist 250lb+ patient	10	1	4.8
PT Ambulation of moderate assist patient	15	1	7.2
Coccyx or Sacrum wound vac placement dependent 150lb+ patient	30	1	14.4
Limb holding for laboring patient	5	1	2.4
Bed Bath for 180lb+ dependent patient	30	1	14.4
			$53.76

Table 2- Total Costs of Patient Handling Costs

Manual Task	TIME	EMPLOYEES	TOTAL TIME	
Boosting 300lb+ patient in bed	5	4	20	
Limb Holding for Foley Insertion	20	3	60	
Placing a bedpan, 250lb+ patient	5	3	15	
Pivot transfer a moderate assist 250lb+ patient	5	2	10	
PT Ambulation of moderate assist patient	15	2	30	
Coccyx or Sacrum wound vac placement dependent 150lb+ patient	30	2	60	
Limb holding for laboring patient	120	1	120	
Bed Bath for 180lb+ dependent patient	30	2	60	
			375	6.15
Lift Equipment	**TIME**	**EMPLOYEES**	**TOTAL TIME**	
Boosting 300lb+ patient in bed	10	1	10	
Limb Holding for Foley Insertion	2	1	2	
Placing a bedpan, 250lb + patient	10	1	10	
Pivot transfer a moderate assist 250lb+ patient	10	1	10	
PT Ambulation of moderate assist patient	15	1	15	
Coccyx or Sacrum wound vac placement dependent 150lb+ patient	30	1	30	
Limb holding for laboring patient	5	1	5	
Bed Bath for 180lb+ dependent patient	30	1	30	
			112	1.52

Results

When total time per employee was considered, using manual handling techniques without the use of SPHM equipment or aides took a total of 6 hours and 15 minutes compared to similar tasks with the use of patient handling equipment taking a total of 1 hour and 52 minutes of people time.

- Using safe patient handling and mobility- SPHM saved a total of 4 hours and 23 minutes.

The total salary cost to use manual handling techniques without the use of SPHM equipment or aides was $180.00 compared to the total cost of similar tasks with the use of patient handling equipment of $53.76

- Using safe patient handling and mobility-SPHM saved a total of $126.24

Some tasks saved a significant amount of time when using SPHM, manually holding the limb throughout the pushing phase of labor took a total of 120 minutes compared with the use of a limb sling and lift which took only 5 minutes to set up, allowing the staff member to attend to other patients instead.

- Using safe patient handling and mobility- SPHM saved a total of 1 hour and 55 minutes

Conclusion

While many direct care staff may continue to believe that patient handling equipment prolongs the time to perform tasks, this study reveals that the total person time and total costs of using manual handling techniques in fact take more time and cost more money to the organization.

Managers should consider enforcing SPHM to improve time and cost efficiency for their staff.

References:

1. Cohen, Martin H., FAIA, FACHA, Nelson Gaius G., RA, Green, David A., Leib, Roger, AIA, ACHA, Matz, Mary W., MSPH, CPE, Thomas, Phillip A., AIA (2010) Patient Handling and Movement Assessment- A White Paper PHAMA Facility Guidelines Institute retrieved from http://www.fgiguidelines.org
2. Bureau of Labor Statistics (2016) National Wage Data, Occupational Outlook Handbook, 2016.Retrieved from http://www.bls.gov/ooh/healthcare/registered-nurses.htm