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Safe Client Handling Program in Fraser Health

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Author Note: Deanna Harrison (BSc (Kin), BA (Psych), CPE) has over 20 years of experience in the application of ergonomics principles to injury prevention and over 15 years' experience in healthcare. Her program focus is on Safe Client Handling within acute care, residential care and home health. She has previously published on safe client handling in the operating room.

Remi Adejumo (PT) has worked in various healthcare settings for her entire career of 20+ years; as a clinician and now as an Ergonomist. She finds the multifaceted healthcare setting with its evolving processes, makes for an engaging, yet challenging environment to apply ergonomic principles. Her focus is working collaboratively with stakeholders to address concerns identified as barriers to a safe work environment, with the implications for the quality of work in those environments.

Melanie Gee (BSc (Kin)) has worked for 10 years as an Ergonomist for Fraser Health. The focus of her work is to help prevent musculoskeletal injuries by promoting the Safe Client Handling program, helping identify barriers and overcoming these challenges through collaboration and staff engagement. She enjoys the variability of practicing ergonomics in healthcare.

Nermin Helal, BSc, has been a member of Fraser Health's Ergonomics Team for 10+ years, is a Canadian Certified Professional Ergonomist (CCPE) and a certified Project Management Professional (PMP). Nermin works to support ongoing safe patient handling and ergonomic programs within Fraser Health, as well as, provide consultation for the implementation of ergonomic and safe patient handling infrastructure in the design of new builds and renovations. Nermin also has a professional background in mining, manufacturing, and industrial ergonomics.

Leah Thomas-Olson (BKin, MSc.) is an Ergonomist at Fraser Health and also conducts research & evaluation for the larger Workplace Health Department at Fraser Health. She has over 10 years' experience working on the development of the Safe Client Handling program as well as a wide range of research projects within the occupational health and safety programs offered by Fraser Health. She has published articles on safe client handling in emergency and operating room departments, as well as critical incident stress management. Leah has a Master of Science degree in Ergonomics and Organisational Behaviour and enjoys the complexity of healthcare ergonomics and collaborating with staff to foster a culture of safety.

Abstract: The healthcare industry experiences high rates of musculoskeletal injuries (MSIs) and patient handling activities are the leading cause of injuries. Literature supports that no single intervention strategy is effective in addressing patient handling injuries, and a multi-component program that includes minimal manual lifting policies, patient assessment strategies, modern lifting and transfer equipment and education and training is required. Fraser Health is a large multi-site healthcare organization in British Columbia, Canada. One of the goals of the Safe Client Handling Program at Fraser Health is to ensure that early mobilization is part of patient care, and is safe for clients and staff. The program is structured with a clinical policy, mobility assessment guidelines, equipment solutions, and training resources across all care sectors. Funding for the program over the last 15 years has come from health authority and hospital funding, and WorkSafeBC.

Outcome measures include tracking of patient handling MSIs, staff perception surveys, focus groups and safety culture surveys. Successes have been achieved by implementing equipment solutions, primarily ceiling lifts, and integrating mobilization and care planning with nursing practice focusing on safe mobilization. Barriers and supporters of safe client handling are identified and addressed at the unit level, with processes and tools that are context-specific and unit-sustainable. Examples of components of the program elements will be presented. Unit-specific needs assessment findings and action plans will also be reviewed.

Keywords: healthcare, injury prevention, patient handling

1. Introduction

Healthcare continues to be plagued by high injury rates due to patient handling. In British Columbia, overexertion claims in healthcare are higher than those in construction, retail services or transportations industries (WorkSafeBC, 2015).

In Fraser Health, injuries to staff from patient handling activities continue to be the top driver of injuries and costs, annually accounting for about 25% of WorkSafeBC claims and 35% of claims costs.

Fraser Health is a large, regional health authority in southwestern British Columbia, Canada. With over 25,000 staff, the region has 12 acute care hospitals. There are over 7,500 residential care beds, and services for mental health care, public health and home and community care are also provided. The Safe Client Handling (SCH) program in Fraser Health is managed by the Ergonomics team, part of the Workplace Health department. The focus of the SCH program is to prevent injury to staff and to promote early and safe mobilization for patients by working collaboratively with key stakeholders to develop policy and assessment processes, promote the safe and appropriate use of patient handling equipment and support education and training. We also provide input on new buildings and renovation projects to optimize the design of care facilities to support safe client handling. This paper will provide an overview of the program elements with examples.

2. Safe Client Handling Program Elements

2.1 Review

Literature supports that no single intervention strategy is effective in reducing musculoskeletal injuries (MSIs) due to patient handling in the healthcare sector. A multi-component program is needed (Bassett, Vollman, Brandwene, & Murray, 2012; Collins, Wolf, Bell & Evanoff, 2004; Evanoff, Wolf, Aton, Canos & Collins, 2003; Nelson et al, 2006; Nelson & Baptiste, 2006; Powell-Cope et al, 2014; Zadvinskis & Salsbury, 2010). The SCH program at Fraser Health is structured based on the following core elements.

2.2 Safe Client Handling Policy

First introduced in Fraser Health in 2004 and revised in 2013 and 2016, the Safe Handling of Patients/Residents/Clients Policy is intended to establish a framework for the provision of care so the risk of injury to staff during client handling tasks is minimized and safe, quality care for clients is achieved. The policy outlines the specific expectations and responsibilities of employees, management, and leadership. The policy is intended to set the foundation and provide the framework for the program.

2.2 Mobility Assessment Processes

With a multi-disciplinary team of nursing, physiotherapy, occupational therapy and ergonomics representatives, Fraser Health developed a mobility assessment clinical practice guideline that outlines roles and responsibilities to ensure client mobility is assessed, documented and communicated.

As per the guideline, all staff who participate in mobilizing clients are to include observation and/or screening and assessment prior to mobilization to determine the safest method for moving client which includes transferring (e.g., from bed to chair), in-bed repositioning (e.g., boosting or turning in bed) and ambulation. The guideline contains a set of mobility algorithms that are task-based, chosen based on the mobilization task at hand. See Figure 1 for an example mobility algorithm.

The algorithms provide a series of quick steps to observe and assess client abilities. Following the steps and ensuring the client meets the criteria before proceeding provides a path to select a safe method for mobilization. The algorithms are to be used on admission and prior to any mobilization to ensure safety for both staff and clients. The clinical practice guideline was released in 2014 for acute and residential care, and has recently been revised and re-released in 2017 to include home health settings.

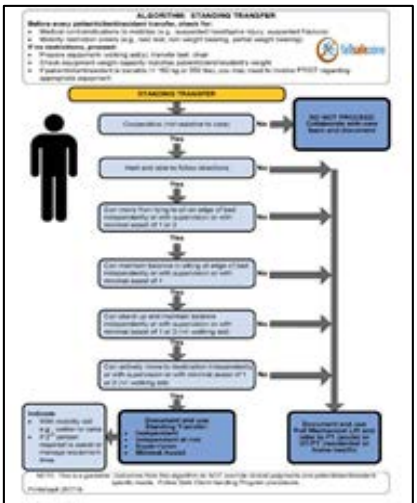

Figure 1: Mobility algorithm

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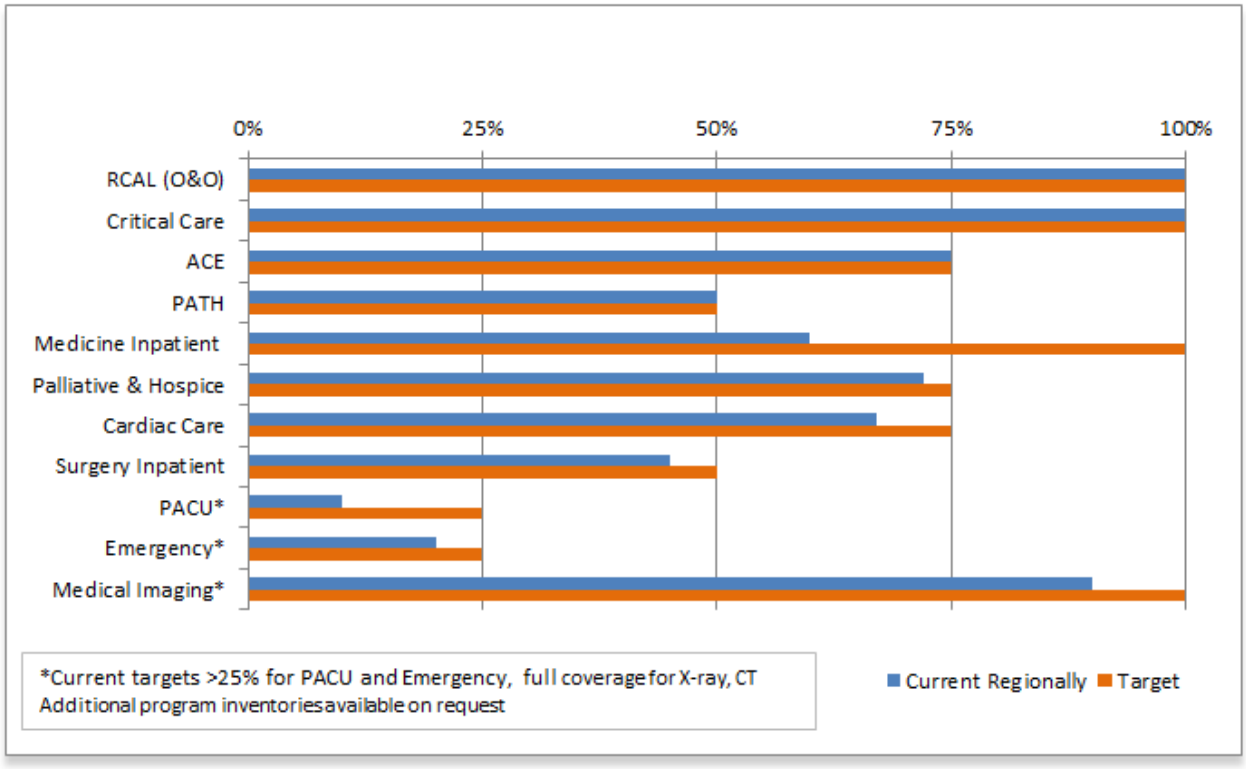

Figure 2. Percent ceiling lift coverage

2.4 Equipment and Assistive Devices

As referenced in the policy and based on the work by Waters (2007), for client handling tasks, the maximum recommended weight limit for lifting under ideal conditions is 15.9 kg (35 lbs). Therefore, if a staff member is required to lift more than 15.9 kg, use of equipment or assistive devices is strongly recommended. Based on the risk factors for injuries associated with client handling, use of mechanical lifts and assistive devices is essential practice. The Fraser Health Ergonomics team assists in the provision of client handling equipment and assistive devices.

We provide consultation and design standards to optimize the design of care facilities for safe client handling. This includes input on new buildings and site redevelopment and renovation projects. To assist, we have documented standards that can be used by our facility planning and architecture teams for projects. For example, for ceiling lift installations we have outlined functional requirements and recommended configurations for patient rooms and bathrooms and have provided recommendations on percent coverage based on the type of unit and patient populations that will be served. We provide reviews for documents and drawings and provide consultative guidance during design development stages.

For patient handling equipment purchases, annual funding has been provided by the health authority, through individual hospitals and through WorkSafeBC for over 15 years. Funding has been used to invest in equipment infrastructure which has primarily been ceiling lifts. Unit/program priorities were established with initial investments going to ceiling lift coverage for our residential care beds. When full coverage was reached in residential care, we established a multi-year plan for ceiling lift installations at the acute care sites. We currently have achieved full coverage in ICUs, and have achieved at least 25% coverage in all in-patient units that are designated as “high risk” due to the frequency of patient handling activities. We are continuing with installation projects on an ongoing basis. To date we have achieved >75% coverage in our older adult units and hospice units and coverage in our in-patient surgical and medical units ranges from 25%-100%. We are close to full coverage in X-ray and CT scan. We are continuing to increase coverage in Emergency departments.

Each fiscal year we establish an annual installation plan based on needs by looking at lowest coverage areas and injury costs, then seek executive input and approval, and move forward with projects. See Figure 2 for current percent coverage.

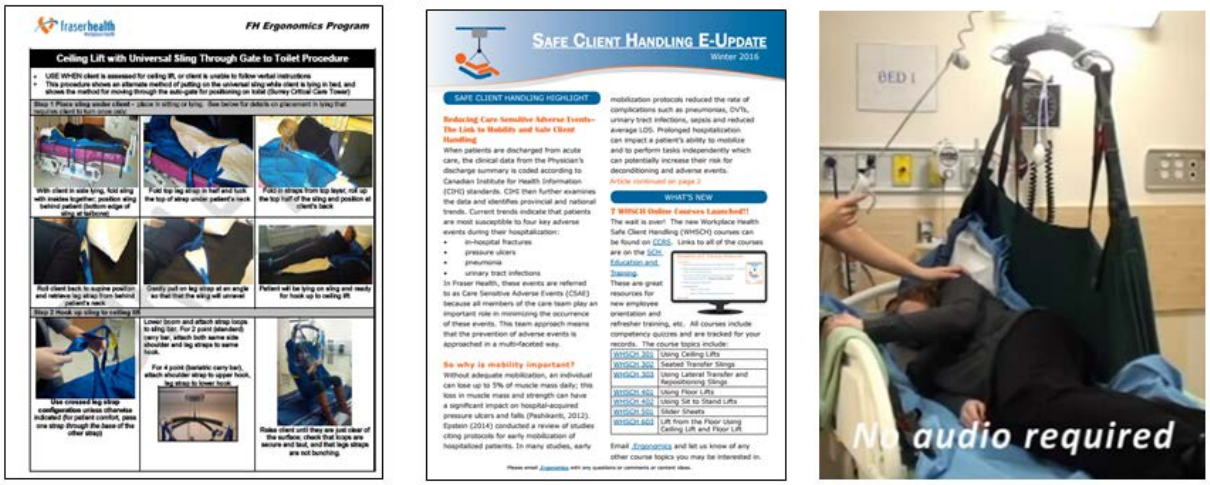

Figure 3. Example training and education resources including written procedure, newsletter and video demonstration

Beyond ceiling lifts, there is program documentation including a patient handling equipment catalogue that is posted on our internal intranet site with information on assistive devices including floor-based lifts, air-assisted transfer devices, low-friction sliding devices and other patient devices such as commodes, wheelchairs, walkers etc. To assist individual units with their patient handling equipment needs, we have designed a needs assessment form that includes space for units to identify their current equipment and sling inventories, and they can use the form to indicate any additional equipment requirements.

2.5 Training and Education

Training is provided to ensure that employees have the skills required to perform the job. This may take many forms including new employee orientation, formal ongoing training, and informal peer training. Education addresses the knowledge requirements of a job. Safe client handling training and education resources are context-specific, applied, learner-driven and unit-sustainable.

Documented procedures for using various equipment and slings have corresponding video clips which provide a short demonstration on use. Procedures are also supported by a series of e-learning modules that staff can access for more detail. The modules take approximately 15-20 minutes each to complete and include interactive exercises and a competency quiz on completion.

We also have a pocket size Safe Client Handling passport that is used for education and training sessions, skills fairs and as a pocket resource for clinical staff. We send out a quarterly newsletter to provide updates on the safe client handling program and introduce new patient handling equipment. All of our resources are centrally posted on our internal intranet site. See Figure 3 for examples of training and education resources.

3. Outcomes

The ergonomics team tracks incidence and severity of MSIs due to patient handling by accessing staff incident/injury reports and extracting reports directed related to client handling. Paper-based or online surveys capture staff perceptions on using patient handling equipment, such as ceiling lifts, and a safety culture survey in residential care sites is used to measure progress. Focus groups are used to collect staff feedback on facility design elements.

In our staff perception surveys, our findings show that staff feel supported by management to work safely and there is a high priority placed on patient safety. We also see high scores for ease of use of ceiling lifts and staff feel adequately trained and knowledgeable on their use. Barriers to using equipment that are reported are lack of space to use the lifts, lack of time, and issues with accessibility and availability of slings. In a survey about supporting patient mobilization, staff reported patient acuity and the patient not wanting to mobilize as top barriers. The top supporters for regularly mobilizing patients were reported to be access to equipment and communication with the multi-disciplinary care team. These findings are general, and they vary by unit and facility.

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We can relate our findings to what the research literature is showing. As we know that no single intervention strategy is effective, we know that equipment alone will not transform the practice environment to fully embrace safe client handling. As stated by Haney & Wright (2007), there is a need for a shift in culture and this can take time. Studies have been conducted that show that nurses will make decisions to use equipment based on their motivation, presence of back pain, convenience and accessibility, and management support (Koppelaar, Knibbe, Miedema & Burdof, 2011). Barriers to using equipment that have been reported include time constraints, equipment unavailable or not accessible, lack of space, lack of training, lack of perceived need and patient-related factors (Holman, Ellison, Maghsoodloo, & Thomas, 2010; Schoenfisch, Myers, Pompeii, & Lipscomb, 2011).

When working with individual units, one of the ways we have been able to integrate safe client handling components into patient care is through our unit-specific needs assessment process. When a unit identifies issues, or requests assistance from the Ergonomics team, we ask that the manager or a member of the leadership team complete a needs assessment form, which is based on SCH program elements. The form asks for unit profile information (e.g., unit specialty, number of beds), unit process for mobility assessment (e.g., where is patient mobility documented, how it is communicated, what happens when there is a change in client status), and an inventory of patient handling equipment. The unit is also asked to identify patient handling tasks that are performed, and what education and training strategies they have in place. We provide an overview report of patient handling incidents and injuries that have been occurring on the unit. We also conduct a staff survey to gather more feedback and provide insight about the unit's particular barriers and supporters of safe client handling. Our team then reviews the findings with the manager and leadership team and an action plan is developed to address priority issues.

For example, a recent needs assessment completed on a medical unit identified issues with older floor lifts and lack of ceiling lift slings. Our team worked with the unit to help them move forward with replacement equipment, and we provided recommendations for sling purchases and for organization of the sling storage area to gain efficiencies. On another medical unit, it was identified that more formal processes amongst the multi-disciplinary team regarding patient mobility documentation would enhance communication and would benefit staff and patients.

Implementing a multi-component program in a large organization can be challenging. Our experiences have relied on research literature to support establishment of core components and we continue to work at the unit, facility and organizational levels to gather staff feedback, gain support and collaborate on action plans. Change does not happen quickly, but with consistent support, input and messaging we feel that we are moving in a positive direction.

4. References

Bassett, R.D., Vollman, K.M., Brandwene, L. & Murray, T. (2012). Integrating a multidisciplinary mobility program into intensive care practice: A multicentre collaborative. *Intensive and Critical Care Nursing, 28* (2), 88-97.

Collins, J.W., Wolf, L., Bell, J. & Evanoff, B. (2004). An evaluation of a "best practices" musculoskeletal injury prevention program in nursing homes. *Injury Prevention, 10*(4), 206-211.

Evanoff, B., Wolf, L., Aton, E., Canos, J. & Collins, J. (2003). Reduction in injury rates in nursing personnel through introduction of mechanical lifts in the workplace. *American Journal of Industrial Medicine, 44(5),* 451-457.

Haney, L. L. & Wright, L. (2007). Sustaining staff nurse support for a patient care ergonomics program in critical care. *Critical Care Nursing North America, 19*(2), 197-204.

Holman, G.T., Ellison, K.J., Maghsoodloo, S., & Thomas, R.E. (2010). Nurses' perceptions of how job environment and culture influence patient handling. *International Journal of Orthopaedic and Trauma Nursing , 14*(1), 18 - 29.

Koppelaar, E., Knibbe, J.J., Miedema, H.S. & Burdorf, A. (2011). Individual and organizational determinants of use of ergonomic devices in healthcare. *Occupational and Environmental Medicine, 68*(9), 659-665. doi:10.1136/oem.2010.055939.

Nelson, A. & Baptiste, A.S. (2006). Evidence-based practices for safe patient handling and movement. *Orthopaedic Nursing, 25*(6), 366-379.

Nelson, A., Matz, M., Chen, F., Siddharthan, K., Lloyd, J. & Fragala, G. (2006). Development and evaluation of a multifaceted ergonomics program to prevent injuries associated with patient handling tasks. *International Journal of Nursing Studies, 43*, 717-733.

Powell-Cope, G., Toyinbo, P., Patel, N., Rugs, D., Elnitsky, C., Hahm, B., Sutton, B., Campbell, R., Besterman-Dahan, K., Matz, M. & Hodgson, M. (2014). Effects of a national safe patient handling program on nursing injury incidence rates. *Journal of Nursing Administration, 44*(10), 525-534.

Schoenfisch, A. L., Myers, D. J., Pompeii, L. A., & Lipscomb, H. J. (2011). Implementation and adoption of mechanical patient lift equipment in the hospital setting: The importance of organizational and cultural factors. *American Journal of Industrial Medicine, 54*(12), 946-954.

Waters, T. (2007). When is it safe to manually lift a patient? *American Journal of Nursing*, *107*(8), 53-58.
WorkSafeBC. *2015 Statistics*. Richmond, BC: WorkSafeBC; 2015.
Zadvinskis, I. M. & Salsbury, S. L. (2010). Effects of a multifaceted minimal-lift environment for nursing staff: Pilot results. *Western Journal of Nursing Research*, *32*(1), 47-63.