



POSITION STATEMENT

Safe Patient Handling and Mobility in the Orthopaedic Setting

ISSUE

Healthcare and social assistance occupations have one of the highest incidence rates of nonfatal occupational injuries and illnesses of any industry sector (U.S. Bureau of Labor Statistics, 2019). In 2018, registered nurses suffered musculoskeletal disorders (MSDs) such as sprains, strains, and tears, bruises and contusions, and soreness and pain, requiring days away from work (U.S. Bureau of Labor Statistics, 2018). The most often affected body parts are the shoulder and low back (Occupational Safety and Health Administration, n.d.). Manual patient handling tasks performed by nurses caring for patients contribute to the high number of workrelated MSDs among nurses (American Nurses Association [ANA], 2008).

Nurses who suffer MSDs due to manual patient handling may be more susceptible to future injuries, suffer chronic pain, functional impairment, and permanent disability. Injury can put an end to the nurse's career (Sedlak et al., 2009).

Nurses cannot rely solely on body mechanics and transfer techniques for moving and lifting patients. Injuries can be prevented by using evidence-based solutions for high-risk patient handling and movement tasks (Sedlak et al., 2009). Complete elimination of manual patient handling is necessary to establish a safe environment for nurses (ANA, n.d.).

POSITION

The National Association of Orthopaedic Nurses (NAON):

- stands with the ANA's official position on safe patient handling: "In order to establish a safe environment of care for nurses and patients, the ANA supports actions and policies that result in the elimination of manual patient handling" (ANA, 2008, p. 1).
- advises nurses to follow the Safe Patient Handling and Mobility Algorithms for the Adult Orthopaedic Patient developed by the NAON Safe Patient Handling and Movement Task Force to reduce injuries and protect healthcare workers when lifting and moving orthopaedic patients.
- recommends nurses demand that facilities adopt universal safe patient handling and mobility standards and allocate resources to minimize musculoskeletal injuries to nurses.
- encourages all states to enact legislation requiring healthcare facilities to establish safe patient handling programs.

Background



Manual lifting, moving, and repositioning of patients is the single greatest risk factor for overexertion injuries (Centers for Disease Control and Prevention, 2013a). Nurses cannot rely on body mechanics to protect them from injury when lifting or moving patients, and there is a large body of evidence regarding safe patient handling interventions to reduce musculoskeletal injuries in healthcare providers (Sedlak et al., 2009). To manually lift or transfer patients, nurses often perform the activities with outstretched arms while bending forward. While working within the constraints of the physical work environment, nurses may be forced into awkward, twisted positions. All this increases the risk of injury (de Castro, 2006).

There is no easy way to determine safe weight limits for practitioners when lifting patients. The human body does not lend itself easily to manual lifting by healthcare providers, and a patient's medical condition, size, and potential for unpredictable movements often complicate the task. Assuming an "ideal" patient handling situation, the maximum recommended weight limit for any single person is 35 lb. Conditions encountered during a manual lift can reduce the safe weight limit even further: lifting with extended arms, sitting, kneeling, lifting with the load off to the side of the body, or lifting with one hand. Because the majority of patient handling situations are far less than ideal, the National Institute for Occupational Safety and Health (NIOSH) does not designate any specific weight as a limit in patient handling (Centers for Disease Control and Prevention, 2013a).

When caring for orthopaedic patients, nurses find it necessary to lift and hold limbs during treatment procedures. The added weight of orthopaedic appliances such as casts and splints and the awkward position often assumed during the task puts the caregiver at higher risk for work-related MSDs. The length of time needed to perform the procedure, the calculated weight of the patient's limb, and the added weight of the cast help to determine whether the lift is acceptable (Waters, Sedlak, et al., 2009).

In 2006, the NAON partnered with the James A. Haley Veterans Hospital Patient Safety Center, the NIOSH, and the ANA to create the Safe Patient Handling and Movement Task Force. The work of the task force was to impart evidence-based techniques for safe patient handling of orthopaedic patients to prevent injuries to nurses (Sedlak et al., 2009).

Orthopaedic nurses identified tasks they perform that could put them at high risk for musculoskeletal injury when caring for orthopaedic patients. Using the science of ergonomics, four evidence-based algorithms and two clinical tools (Lifting and Holding Legs or Arms in an Orthopaedic Setting and Alternate Method for Determining Safe Lifting and Holding of Limbs with Casts) were developed by the Safe Patient Handling and Movement Task Force (Sedlak et al., 2009). These algorithms, including reference notes, were updated by the NAON in 2016, and may be found on the NAON website.

ALGORITHMS

The NAON Safe Patient Handling and Mobility Algorithms for the Adult Orthopaedic Patient (NAON, 2016) are:

- Orthopaedic Algorithm 1: Repositioning in bed. Updated from turning the patient in bed (side to side) (Gonzalez, Howe, Waters, & Nelson, 2009).
- Orthopaedic Algorithm 2: Vertical transfer of an orthopaedic patient with or without upper or lower extremity precautions. Updated from vertical transfer of a postoperative



total hip replacement patient (bed to chair, chair to toilet, chair to chair, or car to chair) (Gonzalez, Howe, Waters, Nelson, & Hughes, 2009).

- Orthopaedic Algorithm 3: Vertical transfer of a patient with an extremity cast/splint. Updated in 2016 from algorithm of same name (Patterson et al., 2009).
- Orthopaedic Algorithm 4: Ambulation. Updated in 2016 from algorithm of same name (Radawiec et al., 2009).

FUTURE PLANS

With the development of the orthopaedic algorithms, ongoing evaluation, testing, and peer review are needed in a broad range of practice settings via a national level through the NAON, ANA, NIOSH, and Veterans Administration Medical Center. Testing each algorithm needs to focus on assessment of the applicability, value, ease of use, acceptance, and availability of the recommended technology (Sedlak et al., 2009). Technology refers to equipment and items for patient mobility such as lifts, slings, slide sheets and resources for education, monitoring, and evaluation (ANA, 2013).

In 2012, the ANA recognized that all healthcare disciplines would benefit from standards that would encompass the entire continuum of patient care. As a result, an interprofessional group of subject matter health experts was convened and developed eight standards of care for use in a variety of settings (acute, long-term, home health) (ANA, 2013). The workgroup also changed the term from “movement” to “mobility,” helping to distinguish patient-initiated mobility from movement performed by others (ANA, 2013). The term “mobility” is commonly used now in documents produced by the NAON, the ANA, the Veterans Affairs, and the NIOSH.

BENEFITS OF SAFE PATIENT HANDLING PROGRAMS

The benefits of Safe Patient Handling and Mobility programs include reduction in healthcare staff injuries, improvement in patient care, and reduced costs to employers.

Healthcare workers can benefit from safe patient handling programs that promote a culture of safety by eliminating manual patient handling. Elements of a safe patient handling program include assessment of hazards, investment in equipment, and training for the staff. Front-line nurses should be involved in the decision-making teams that choose the appropriate technology for their setting, ensure its accessibility, participate in ongoing training to maintain competency, and program evaluation and remediation (de Castro, 2006; Fragala et al., 2016).

Safe patient handling techniques need to be incorporated into the education of nursing students in preventing MSDs in healthcare workers. The reliance on teaching “proper” body mechanics in moving patients has been replaced with emphasis on safe patient handling and mobility. Graduates of nursing programs where safe patient handling methods are taught can become advocates of the procedures and policies that will help reduce MSDs in nurses (Waters, Nelson, et al., 2009).

Safe patient handling procedures improve the quality of care for patients by enhancing safety, comfort, and dignity. Use of assistive equipment and devices can reduce the potential for patient injuries from falls, skin tears, and shoulder dislocations, to name a few. A patient’s dignity, self-esteem, and privacy can be preserved during transfers using assistive devices (ANA, 2008; de Castro, 2006). The use of safe patient handling and mobility equipment in progressive mobility



programs can help to promote functional status and improve clinical outcomes (U.S. Department of Veterans Affairs, 2016).

When worker injuries decline, the costs, both direct and indirect, associated with those injuries decrease. Adverse consequences at the organizational level include lost work time, absenteeism, decreased retention, and high turnover in nursing staff (de Castro, 2006). Adopting new technology to assist with safe patient handling may appear to be expensive, but the corresponding reduction in workman's compensation costs and loss of nurses' productivity can easily outweigh the cost of investment and serve to benefit both patients and caregivers (Aslam et al., 2015; The Faculty Guidelines Institute, 2019).



REFERENCES

- American Nurses Association. (2008). Position statement: Elimination of manual patient handling to prevent work-related musculoskeletal disorders. <https://www.nursingworld.org/practice-policy/nursing-excellence/official-position-statements/id/elimination-of-manualpatient-handling/>
- American Nurses Association. (2013). Safe patient handling and mobility: Interprofessional national standards across the care continuum. Author
- American Nurses Association. (n.d.). *Handle with care*. <https://www.nursingworld.org/practice-policy/work-environment/health-safety/handle-with-care/>
- Aslam, I., Davis, S., Feldman, S., & Martin, W. (2015). A review of patient lifting interventions to reduce health care worker injuries. *Workplace Health & Safety*, 63(6), 267–276. <https://doi.org/10.1177.2165079915580038>
- Centers for Disease Control and Prevention. (2013a). Safe patient handling and mobility. <https://www.cdc.gov/niosh/topics/safepatient/default.html>
- Centers for Disease Control and Prevention. (2013b). Safe patient handling legislation in the USA. <https://www.cdc.gov/niosh/topics/safepatient/#Safe%20Patient%20Handling%20Legislation%20in%20the%20USA>
- Congress.gov. (2015). Nurse and Health Care Worker Protection Act of 2015, S 2408, 114th Cong, 1st Sess. Retrieved March 2, 2016, from <https://www.congress.gov/bill/114th-congress/senate-bill/2408/text>
- Congress.gov. (2016). H.R. 4266-Nurse and health care worker protection act of 2015. <https://www.congress.gov/bill/114th-congress/house-bill/4266/related-bills>
- Congress.gov. (n.d.). Summary: S.2408—114th Congress (2015-2016). Retrieved March 2, 2016, from <https://www.congress.gov/bill/114th-congress/senatebill/2408>
- de Castro, A. (2006). Handle with care®: The American Nurses Association's campaign to address workrelated musculoskeletal disorders. *Orthopaedic Nursing*, 25(6), 356–365. https://journals.lww.com/orthopaedicnursing/Fulltext/2006/1100/Handle_with_Care__The_American_Nurses.3.aspx
- Fragala, G., Boynton, T., Conti, M., Cyr, L., Enos, L., Kelly, D., McGann, N., Mullen, K., Salsbury, S., & Vollman, K. (2016). Patient-handling injuries: Risk factors and riskreduction strategies. *American Nurse Today*, 11(5), 40–43. <https://www.myamericannurse.com/wp-content/uploads/2016/05/Patient-Handling-Safety-426b.pdf>
- Gonzalez, C., Howe, C., Waters, T., & Nelson, A. (2009). Recommendations for turning patients with orthopaedic impairments. *Orthopaedic Nursing*, 28(2S), S9–S12. <https://doi.org/10.1097/NOR/06013e3181997a64>
- Gonzalez, C., Howe, C., Waters, T., Nelson, A., & Hughes, N. (2009). Recommendations for vertical transfer of a postop total hip replacement patient (bed to chair, chair to toilet, chair to chair, or car to chair). *Orthopaedic Nursing*, 28(2S), S13–S17.



<https://doi.org/10.1097/NOR.0b013e3181998897>

National Association of Orthopaedic Nurses. (2016). Safe patient handling and mobility algorithms for the adult orthopaedic patient. <http://www.orthonurse.org/p/do/si/topic=533>

Occupational Safety and Health Administration. (n.d.). Safety and health topics: Healthcare: Safe patient handling. <https://www.osha.gov/SLTC/healthcarefacilities/safepatienthandling.html>

Patterson, M., Mehan, P., Hughes, N., & Nelson, A. (2009). Safe vertical transfer of patient with extremity cast or splint. *Orthopaedic Nursing, 28*(2S), S18–S23. <https://doi.org/10.1097/NOR.0b013e318199d1bb>

Radawiec, S., Howe, C., Gonzalez, C., Waters, T., & Nelson, A. (2009). Safe ambulation of an orthopaedic patient. *Orthopaedic Nursing, 28*(2S), S24–S27. <https://doi.org/10.1097/NOR.06013e3181997a93>

Sedlak, C., Doheny, M., Nelson, A., & Waters, T. (2009). Development of the National Association of Orthopaedic Nurses guidance statement on safe patient handling and movement in the orthopaedic setting. *Orthopaedic Nursing, 28*(2S), S2–S8. <https://doi.org/10.1097/NOR.0b013e318199c395>

The Faculty Guidelines Institute. (2019). Patient handling and mobility assessments [white paper]. https://d1wqtxts1xzle7.cloudfront.net/62955168/PatientHandling-and-Mobility-Assessments_2nd_Edition_201920200414-60727-uurme1.pdf?1586884740=&response-content-disposition=inline%3B%20Patient_Handling_and_Mobility_Assessment.pdf

assessment.pdf&Expires=1600980431&Signature=N6-oZ2ayvUFLz2fHHN9~r4rYADSkZQsyKc5e9C-qEIJ65H1KocnWMh5hDST6QJv9mEaUvrAPWByq~22LqOHd~GFCR6nIZ36glfMSBb~-Xdf6ayu0RGwZ-10DhLGHcHzRYPWemYE~dhiFtIdHhEDT~Wb-nAkpjJmXi0H~Ydgct33W9-U3BVV7ZApYKxWa0qDuLHOymxK4n7MlwoHkdRKQwDFDAg61zIaRrwLOdr6bvAhg4NG5tv4Z7eoeMFGPJTy6xPJPg1Y17L-T5qARuSVsPAu79y-U2kdXUN2s5PybnkqLeYWYpaaU1KakjTaQz1AzAPLm0LWpdxh6vQf5uA__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA

U.S. Bureau of Labor Statistics. (2018). Injuries, illnesses, and fatalities. Table R9. Number of nonfatal occupational injuries and illnesses involving days away from work by occupation and selected natures of injury or illness, private industry, 2018. https://www.bls.gov/iif/oshwc/osh/case/cd_r9_2018.htm

U.S. Bureau of Labor Statistics. (2019). 2018 survey of occupational injuries and illnesses, charts package. <https://www.bls.gov/iif/soii-charts-2018.pdf>

U.S. Department of Veterans Affairs. (2016). Public health: Safe patient handling and mobility (SPHM). <https://www.publichealth.va.gov/employeehealth/patienthandling/index.asp>

Waters, T., Nelson, A., Hughes, N., & Menzel, N. (2009). Safe patient handling training for schools of nursing. <https://www.cdc.gov/niosh/docs/2009-127/pdfs/2009-127.pdf>

Waters, T., Sedlak, C., Howe, C., Gonzalez, C., Doheny, M., Patterson, M., & Nelson, A. (2009). Recommended weight limits for lifting and holding limbs in the



orthopaedic setting. Orthopaedic Nursing, 28(2S), S28–S32.
<https://doi.org/10.1097/NOR.0b013e3181997a7b>

LINKS FOR ADDITIONAL RESOURCES/INFORMATION

American Nurses Association/ Practice and Advocacy/Work Environment/ Health & Safety/ Handle with Care.
<https://www.nursingworld.org/practice-policy/workenvironment/health-safety/handle-with-care>

American Nurses Association/ Safe Patient Handling & Mobility brochure.
https://www.nursingworld.org/~498de8/globalassets/practiceandpolicy/work-environment/health-safety/ana-sphmcover__finalapproved.pdf

Association of Safe Patient Handling Professionals. <https://asphp.org>

Centers for Disease Control and Prevention/The National Institute for Occupational Safety and Health (NIOSH)/ Safe Patient Handling and Mobility. <https://www.cdc.gov/niosh/topics/safepatient/default.html>

[gov/niosh/topics/safepatient/default.html](https://www.cdc.gov/niosh/topics/safepatient/default.html)

Centers for Disease Control and Prevention/The National Institute for Occupational Safety and Health (NIOSH)/ Safe Patient Handling and Mobility/ NIOSH Publications: Safe Patient Handling Training for Schools of Nursing.
<http://www.cdc.gov/niosh/docs/2009-127/pdfs/2009-127.pdf>

U.S. Department of Veterans Affairs/ Public Health/ Safe Patient Handling and Mobility (SPHM). <https://www.publichealth.va.gov/employeehealth/patient-handling/>

United States Department of Labor/ Occupational Safety and Health Administration/Worker Safety in Hospitals/ Safe Patient Handling. https://www.osha.gov/dsg/hospitals/patient_handling.html

