PALLIATIVE CARE NETWORK OF WISCONSIN

FAST FACTS AND CONCEPTS #462
PHYSICAL RESTRAINTS IN ADVANCED ILLNESS

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Overview Physical restraints are broadly defined as any physical device, material, or equipment that limits a patient's deliberate bodily movement or normal access to their body (1). Typically, physical restraints cannot be controlled or removed easily (1). In clinical practice, the most common physical restraints are bedrails, bed and chair alarms, wrist and ankle mittens, lap belts, and chairs with fixed tables to prevent patients from rising (2). While estimates of physical restraint use vary widely in the literature, across countries, and across care settings, they are felt to be most utilized in hospitals and long-term care facilities. A population-based study across over 14,000 nursing homes in the US found the prevalence of physical restraint use among residents to be roughly 9% (3).

Why are physical restraints used? The decision to utilize physical restraints is nearly universally made as a safety measure to prevent patients with cognitive impairment or delirium from harming themselves or others (4,5). Among patients with advanced illness, risk factors for physical restraint use include ICU-level care, use of medical devices (e.g., nasogastric tubes, intravenous lines), and use of anticholinergic medications or benzodiazepines (6,7). Among geriatric patients, agitation, impaired mobility, impaired cognitive status, and being a "fall risk" are recognized risk factors (7). Overall, minimization of fall risk and preventing medical device removal are the two most common reasons for use (8).

The impact of physical restraints There is little evidence to suggest that physical restraints increase patient safety or reduce medical device removal (9-11). There is evidence of negative physical, psychological, and social consequences of physical restraints. Namely, physical restraints are associated with increased incontinence and pressure ulcers (12). They also appear to increase the risk of delirium and agitation, leading to an increased use of psychoactive drugs and longer hospital stays (12-16). Moreover, patients who have been physically restrained are more likely to experience nightmares, avoidant behavior, and PTSD symptoms as well as a sense of vulnerability and a loss of dignity (12-15).

How can clinicians minimize the use of physical restraints for patients at the end of life? Physical restraints continue to be overused for patients with advanced illness due in part to staffing challenges and misperceptions that these restraints are necessary for patient safety. At a bare minimum, if physical restraints are used, it should be the least restrictive, yet effective restraint and for the shortest duration possible. Furthermore, their use should trigger the clinical team to reassess the clinical situation and care environment for any modifiable factors which may be contributing to their use (e.g., loud noises at night). The following evidence-based approaches may reduce the need and duration of use (17).

- Educate clinicians on the appropriate use of physical restraints, as well as their potential negative impacts. Recent work has shown 4-hours of staff education to be an effective means of changing clinicians' attitudes regarding physical restraints and ultimately decreasing their utility, without increasing the incidence of falls, injury, or psychoactive drug use in elderly patients (17,18).
- Provide specific nurse "restraint reduction coordinators" for care units with a high prevalence of patients with cognitive impairment and delirium. A 2016 study suggested that in nursing home settings, these clinical roles can help minimize the need for physical restraints (18).
- Utilize a 1:1 care person for better supervision. Consider admission to a more supervised setting (e.g., hospital, inpatient hospice unit) if staffing is not available for 1:1 in the current environment.
- Utilize best non-pharmacologic and non-physical strategies to minimize end-of-life delirium, such as frequent reorientation, enabling/encouraging the presence of familiar family members or loved ones, promoting a healthy sleep-wake cycle, and maintaining access to glasses and hearing aids.
- Limit the use of potentially inappropriate medications for the elderly (e.g.,STOPPFrail).
- Identify and manage treatable symptoms like pain, anxiety, constipation, and urinary retention which can lead to the use of physical restraints.
- Since physical restraints often are used in part to protect the patient from the removal of medical equipment (even in end-of-life care), clinicians should continually evaluate the goals of medical care and the need for each medical device (6). For instance, perhaps the clinician's assumed goals of life-prolongation are not the primary goals of care of the patient's surrogate after a thorough discussion of

the patient's underlying illnesses. Should goals of care then transition to comfort, medical device use may no longer be necessary if medications can be given sublingually or subcutaneously rather than enterally or intravenously (4,5).

- Perform regular interdisciplinary care rounds to promote better collaboration between the bedside nurses, pharmacists, clinicians, specialists, etc. as well as review the need of medical devices and physical restraints. When appropriate, consider alternative approaches (6).
- In instances where a reversible cause of delirium is unidentifiable and delirium poses a significant risk of harm to self or others, the use of chemical or pharmacologic restraints as opposed to physical restraints may be necessary. For more information on the pharmacologic management of delirium, please refer to *F*ast *Facts* #1, 60, 315 and 397.

Summary: The use of physical restraints in cognitively impaired patients facing serious illness or EOL should be limited only to situations that are necessary for safety. Their use should trigger clinical teams to reevaluate better strategies. Shared decision-making and regular dialogue within the interdisciplinary team can minimize the use of physical restraints in patients with life-limiting illness.

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References:

1. Bleijlevens MH, Wagner LM, Capezuti E, Hamers JP; International Physical Restraint Workgroup. Physical Restraints: Consensus of a Research Definition Using a Modified Delphi Technique. *J Am Geriatr Soc*. 2016;64(11):2307-2310. doi:10.1111/jgs.14435
2. O'Keeffe ST. Physical restraints and nursing home residents: dying to be safe?. *Age Ageing*. 2017;46(4):536-537. doi:10.1093/ageing/afx014
3. Feng Z, Hirdes JP, Smith TF, et al. Use of physical restraints and antipsychotic medications in nursing homes: a cross-national study. *Int J Geriatr Psychiatry*. 2009;24(10):1110-1118. doi:10.1002/gps.2232
4. de Veer AJ, Francke AL, Buijse R, Friele RD. The use of physical restraints in home care in the Netherlands. *J Am Geriatr Soc*. 2009;57(10):1881-1886. doi:10.1111/j.1532-5415.2009.02440.x
5. Canzan F, Mezzalira E, Solato G, et al. Nurses' Views on the Use of Physical Restraints in Intensive Care: A Qualitative Study. *Int J Environ Res Public Health*. 2021;18(18):9646. Published 2021 Sep 13. doi:10.3390/ijerph18189646
6. Kvale E, Dionne-Odom JN, Redden DT, et al. Predictors of Physical Restraint Use in Hospitalized Veterans at End of Life: An Analysis of Data from the BEACON Trial. *J Palliat Med*. 2015;18(6):520-526. doi:10.1089/jpm.2014.0354
7. Pivodic L, Smets T, Gambassi G, et al. Physical restraining of nursing home residents in the last week of life: An epidemiological study in six European countries. *Int J Nurs Stud*. 2020;104:103511. doi:10.1016/j.ijnurstu.2019.103511
8. Hamers JP, Huizing AR. Why do we use physical restraints in the elderly?. *Z Gerontol Geriatr*. 2005;38(1):19-25. doi:10.1007/s00391-005-0286-x
9. Sze TW, Leng CY, Lin SK. The effectiveness of physical restraints in reducing falls among adults in acute care hospitals and nursing homes: a systematic review. *JBI Libr Syst Rev*. 2012;10(5):307-351. doi:10.11124/jbisrir-2012-4
10. Mion LC, Minnick AF, Leipzig R, Catrambone CD, Johnson ME. Patient-initiated device removal in intensive care units: a national prevalence study. *Crit Care Med*. 2007;35(12):2714-2725. doi:10.1097/01.ccm.0000291651.12767.52
11. Chang LY, Wang KW, Chao YF. Influence of physical restraint on unplanned extubation of adult intensive care patients: a case-control study. *Am J Crit Care*. 2008;17(5):408-416.
12. Scheepmans K, Dierckx de Casterlé B, Paquay L, Milisen K. Restraint use in older adults in home care: A systematic review. *Int J Nurs Stud*. 2018;79:122-136. doi:10.1016/j.ijnurstu.2017.11.008
13. Inouye SK, Westendorp RG, Saczynski JS. Delirium in elderly people. *Lancet*. 2014;383(9920):911-922. doi:10.1016/S0140-6736(13)60688-1
14. Franks ZM, Alcock JA, Lam T, Haines KJ, Arora N, Ramanan M. Physical Restraints and Post-Traumatic Stress Disorder in Survivors of Critical Illness. A Systematic Review and Meta-analysis. *Ann Am Thorac Soc*. 2021;18(4):689-697. doi:10.1513/AnnalsATS.202006-738OC

15. Chien WT, Chan CW, Lam LW, Kam CW. Psychiatric inpatients' perceptions of positive and negative aspects of physical restraint. *Patient Educ Couns*. 2005;59(1):80-86. doi:10.1016/j.pec.2004.10.003
16. Bai X, Kwok TC, Ip IN, Woo J, Chui MY, Ho FK. Physical restraint use and older patients' length of hospital stay. *Health Psychol Behav Med*. 2014;2(1):160-170. doi:10.1080/21642850.2014.881258
17. Pellfolk TJ, Gustafson Y, Bucht G, Karlsson S. Effects of a restraint minimization program on staff knowledge, attitudes, and practice: a cluster randomized trial. *J Am Geriatr Soc*. 2010;58(1):62-69. doi:10.1111/j.1532-5415.2009.02629.x
18. Muñiz R, Gómez S, Curto D, et al. Reducing Physical Restraints in Nursing Homes: A Report From Maria Wolff and Sanitas. *J Am Med Dir Assoc*. 2016;17(7):633-639. doi:10.1016/j.jamda.2016.03.011

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