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U.S. Department of Veterans Affairs

Safe Patient Handling and Mobility (SPHM) For Everyone Around the World



Safe Patient Handling and Mobility (SPHM) practices have come a long way over the past 25 years. VHA started addressing reduction of nursing staff injuries in long term care settings and found that over time all direct care providers are at risk for Musculoskeletal Injuries (MSI) due to manual patient handling techniques. The evidence is clear that manually handling patients that exceed 35 pounds causes excessive forces on the musculoskeletal system and that these repetitive activities causes significant harm to direct care providers compared to other industries, as reported by Waters (2007).

In 2008 the Veterans Health Administration (VHA) implemented a comprehensive enterprise wide national directive program requiring all health care systems to provide alternative technological solutions to manual patient handling techniques (such as overhead lift devices) which has resulted in a 50% reduction in staff injuries related to patient handling over 10 years. VHA is currently measuring not only staff injuries related to patient handling techniques, but also patient outcomes related to SPHM directives. VHA has exhibited a dramatic cultural change through SPHM programs and the addition of early mobility/activity/exercise programs that has positively impacted patient outcomes, including a reduction of falls; prevention of hospital acquired pressure injuries, catheter associated urinary tract infections (CAUTI), and central line associated bloodstream infection (CLABSI); and reduced hospital length of stay (LOS), ventilator days, and functional decline in the acute care and long term care settings. Injuries related to patient handling have decreased by 50% over the last 10 years. We are now expanding from inpatient settings to offer SPHM technologies to Veterans and their caregivers in their homes and communities.

Personally, working as an APN in 700 bed Level I Trauma Center at a University Health Care system for 23 years, I never would have anticipated that SPHM programs could and should have been offered to all Health Care Systems (HCS) and settings. Professionally, in my role as the SPHM National Program Manager for the VHA, I call on all HCS systems in the private sector and other government health care systems to develop an action plan to implement an evidence-informed SPHM program as part of a culture of safety based on principles of High Reliability Organizations (HRO). One of the main pillars of HRO is Safety Culture. One of the principles of Safety culture is "no blame". Focus not on the person involved with punitive intent, but encourage all staff to look for potential problems before they occur, reward reporting of near misses, and focus on the organizational factors (policies, processes, etc.) which result in any harm by performing purposeful root cause analyses. This document represents a pathway to facilitate implementation of SPHM programs for all health care providers in every clinical setting. It is no way all-inclusive but begins to illustrate where SPHM can live and suggests associated technologies that can best support safety initiatives for staff, patients, and their caregivers. Thus, benefiting our Veterans and impacting their quality of life by reducing undue harm. The VHA acknowledges many health care providers are providing care to our Veterans outside of the VHA and desires to support any efforts for SPHM implementation success. The goal is to work together in health care and expand the principles of SPHM to everyone everywhere.

Department/Service	Caregiver high risk tasks	Equipment and technology solutions	Potential patient outcome measures	Technology Improvements needed
Labor & Delivery	 Limb Holding Turning Repositioning Lateral transfers Side lying Epidural positions Delivery positions C-Section positions Awkward positions Foley cath insertion Ambulation 	 Overhead lifts * Floor-based full body sling lifts Floor based powered and non-powered sit to stand devices Air transfer devices* Friction reducing devices Power drive GYN stretchers/ beds* Air powered lifting device 	 Falls reduction Pain management Improved patient comfort minimize birthing process trauma Improved access for proce- dures Improved patient satisfaction 	 Bariatric suite with adequate equipment, space and design Bariatric SPHM equipment for technology dependent patients Bedside Furniture to accom- modate families of all sizes Power drive beds and stretchers
Pediatrics/NICU	 Applying of Prosthetic devices, e.g. body jackets Quadriplegia Ventilator Dependent Uncooperative Limited comprehension Aggressive behaviors Sensory disorders 	 Overhead lifts* Floor based full body sling lifts Floor based powered and non-powered sit to stand Air transfer devices Friction reducing devices Air powered lifting device 	 Patient friendly technology to encourage safer mobility Utilizing play for therapy Sensory devices 	 Bariatric Kid-friendly attractive play technology, non-intimidating to kids Built in play devices / sensory stimulation Accident prevention and elimination of hanging points Child-proof features
Physical Medicine & Rehabilitation (OT, PT, Kinesiology, Chiropractic)	 Ambulation, balance & exercise training Transfers Limb holding Awkward positions All mobility tasks Joint mobilization Joint manipulation 	 Overhead lifts * Floor based full body sling lifts* Floor based powered and non-powered sit to stand aids Air transfer devices* 	 Facilitation of improved patient function Potential to reduce Length of stay 	 Bariatric Therapy equipment available for outdoors Access to more SPHM Bariatric equipment for therapy in multiple settings.

Department/Service	Caregiver high risk tasks	Equipment and technology solutions	Potential patient outcome measures	Technology Improvements needed
Respiratory Care Practitioners Primary Care, Specialty Care Medical providers (MD/NP/PA)	 Intubation Chest PT Ambulation & exercise Assisting in care Repositioning Transfers CPR Awkward positions to perform procedures 	 Intubation pillow* Overhead lifts* Floor-based full body sling lifts Floor based powered and non-powered sit to stand* Floor based lifts Air transfer devices* Friction reducing devices* Air powered lifting device 	 Rapid ET tube placement Reduction in Hospital Acquired Pneumonia due to increased mobility. Improved patient comfort Falls reduction 	 Expanded capacity tracheosto- my ties, face masks, CPAP/BIPAP devices Improved patient securing technology for rapid access and precise procedures.
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Department/Service	Caregiver high risk tasks	Equipment and technology solutions	Potential patient outcome measures	Technology Improvements needed
Operating Room/ Perioperative, PACU, Short Stay Unit (SSU)	 Lateral transfers Turning Repositioning Limb holding Proning Lifting of OR bed attachments Lateral decubitus positions Low OR tables during proce- dures Transferring patients in beds 	 Overhead lifts* Floor-based full body sling lifts Floor based powered and non-powered sit to stand Air transfer devices* Friction reducing devices OR tables with features to facili- tate safe positioning* 	 Improved positioning for effective procedures Improved patient comfort Reduced skin shearing and pressure sores Fall prevention Minimizing nerve damage due poor positioning. 	 Bariatric Integrated overhead lifts in booms to facilitate pan- nus holding or securing, limb holding, lateral and proning and positioning. OR table and C Arm technology expanded capacity. OR Tables that monitor pressure points and by voice command; remind the nurse to check pressure point. OR tables such as swiss army knife or inspector gadget
				 attachments that pop up or by remote are part of the bed and made of a material that doesn't add weight to the table. A drive through OR bed for outpatient surgery procedures. The patient remains on the outpatient/surgical bed from ambulatory check-in to OR and back to preop for discharge. Bed material should not add to weight of table or table should have a driving device such as is done for moving supplies and luggage to and from the airplanes. An automated device that straps around patient legs and hoists them up for the nurse to position lithotomy.

Department/Service	Caregiver high risk tasks	Equipment and technology solutions	Potential patient outcome measures	Technology Improvements needed
Dialysis inpatient and outpatient	 Lateral transfers Wheelchair transfers Weights Hypotensive episodes position- ing Repositioning 	 Overhead lifts* Floor-based full body sling lifts Floor based powered and non-powered sit to stand* Air transfer devices* Non friction reducing devices* Air powered lifting device 	 Falls reduction Skin shear reduction Comfortable treatment and transfer Patient satisfaction 	 Bariatric power drive height adjustable extra wide chairs with Trendelenburg features, and foot extensions, attached tabletops, w/ scales
Oncology inpatient and outpatient	 Chemotherapy equipment Transfers Repositioning 	 Overhead lifts* Floor-based full body sling lifts Floor based powered and 	Falls reductionSkin shear reductionComfortable transfer	Bariatric Height adjustable extra wide chairs with foot extensions with attached
	 Ambulation Low seating and awkward positions 	 non-powered sit to stand* Air transfer devices Friction reducing devices Motorized elevated toilet lift seat. Air powered lifting device 		tabletops
Cath/EP Lab	Lateral transfersWheelchair transfers	 Overhead lifts Lateral Air Transfer Device* or roll boards Portable or overhead lift outside of cath lab 	 Falls reduction Skin shear reduction Comfortable transfer Access to safe procedure 	 Bariatric weight and width capacity table Consider Integrated overhead lift/boom systems
Diagnostic Radiology	 Wheelchair transfers Lateral transfers Ambulation Standing Positioning Vertical lift assistance from standing position up to proce- dure table 	 Overhead lifts* Floor-based full body sling lifts* Floor based powered and non-powered sit to stand Air transfer devices* Friction reducing devices Low/High Mobile lift mate. Air powered lifting device 	 Falls reduction Skin shear reduction Comfortable transfer Access to procedure 	• Bariatric weight and width capacity table.

Department/Service	Caregiver high risk tasks	Equipment and technology solutions	Potential patient outcome measures	Technology Improvements needed
Mental Health and Psychiatric units $M_{A} E, N, T, A, L,$ $H, A E, A, L, T, H_{A}$	 Fall rescue Aggressive Behaviors management Seizures Total care Therapeutic containment 	 Floor-based full body sling lifts* Floor based powered and non-powered sit to stand and transfer devices* Lateral air transfer device* Air powered lifting device* 	 Falls reduction Skin shear reduction Comfortable transfer Access to procedure 	Bariatric overhead ceiling lift full room coverage that is not accessible to patient but fully accessible to caregivers
Nuclear Medicine	Lateral transfersRepositioning	 Overhead Lifts Air transfer devices* Friction reducing devices 	 Falls reduction Efficiency in procedures Patient comfort 	Bariatric, length, weight and width capacity tables
Interventional Radiology	 Lateral transfers Repositioning Side lying positions Proning positions Table too narrow to mobilize patient. 	 Overhead Lifts Air transfer devices* Friction reducing devices 	 Falls reduction Efficiency in procedures Patient comfort and satisfaction Music therapy 	 Bariatric, length, weight and width capacity tables. Overhead ceiling lift integrated in boom systems. C Arm able to accommodate wider table Bariatric Integrated boom overhead ceiling lifts can be explored.
GI Lab	 Wheelchair Transfers Lateral transfers Proning Pushing on Abdomen 	 Overhead lifts* Floor based lifts Air transfer devices* Friction reducing devices Abdominal pressure aids 	 Falls reduction Skin shear reduction Comfortable transfer Access to procedure 	 Bariatric, length, weight and width capacity power drive stretchers. Proning sling
ED & Urgent Care Centers	 Car extraction EMS Transfers Lateral transfers Gurney pushing Repositioning Turning Limb holding Proning Seizures Aggressive behaviors 	 Overhead lifts* Floor based lifts Floor-based full body sling lifts Floor based powered and non- powered sit to stand Air transfer devices* Friction reducing devices Ambulance bay overhead lift* Air powered lifting device Powered Drive Stretchers* 	 Falls reduction Skin shear reduc tion Comfortable transfer Access to procedure 	Bariatric, length, weight and width capacity power drive stretchers.

Department/Service	Caregiver high risk tasks	Equipment and technology solutions	Potential patient outcome measures	Technology Improvements needed
Ophthalmology/Vision Dental, Audiology Speech and Language Blind Rehabilitation	 Wheelchair Transfers Positioning 	 Overhead lifts* Floor-based full body sling lifts Floor based powered and non- powered sit to stand Wheelchair lift recliner* Air powered lifting device 	 Falls reduction Skin shear reduction Comfortable transfer Access to procedure 	 Bariatric, length, weight and width capacity chairs and exam tables. Audiology booth to accommodate lifting/transferring device
Dementia and Alzheimer's Units	 Aggressive Behavior Assaults Ambulation Wheelchair transfers Repositioning Fall rescue Hygiene Care/toileting/ Showering 	 Overhead lifts* Floor-based full body sling lifts Floor based powered and non-powered sit to stand Floor based lifts Air transfer devices* Friction reducing devices Air powered lifting device Floor based Lifts for hygiene/ water resistant 	 Falls reduction Skin shear reduction Comfortable transfer Access to procedure Dignity/Autonomy 	 Existing technology Bariatric patients tend to be minimal in this population
ICU-cardiac, medical, surgical, cardiovascular transplantation, Code teams, Rapid Response Teams	 Wheelchair transfer Lateral transfers Turning and repositioning Proning Limb holding Sitting Ambulation Intubation Medical procedures 	 Overhead lifts* Floor-based full body sling lifts Floor based powered and non-powered sit to stand Floor based lifts Air transfer devices Friction reducing devices Air powered lifting device Powered drive beds* 	Cordioc Tipper Morel	

Department/Service	Caregiver high risk tasks	Equipment and technology solutions	Potential patient outcome measures	Technology Improvements needed
Medical surgical units, Orthopedics, Tele, SDU, Long term care, Burn unit, Hospice, Palliative care	 Lateral transfers Wheelchair transfers Repositioning in bed/chair Toileting Showering Limb holding Turning Compression hose Application CPM machine 	 Overhead lifts* Floor-based full body sling lifts Floor based powered and non-powered sit to stand Floor based lifts* Air transfer devices* Friction reducing devices Air powered lifting device Powered drive beds Floor based Lifts for hygiene/ water resistant 	 Falls reduction Skin shear reduction Comfortable transfer Access to procedure Reduction in HAP wounds and lungs Early ambulation Reduction in LOS Falls reduction Access to procedure Reduction in incontinenc Dignity/Autonomy 	 Improved access to bariatric slings e.g. pannus holder, turners, limb holders, repositioning Bariatric expandable width and length power drive beds Bariatric bed linen and clothing Integration of fitted bed sheet/sling air transfer device
Ambulatory Care Clinics Primary Care Specialty Care	 Lateral transfers Wheelchair transfers Repositioning in exam table/ chair Toileting Limb holding Turning Compression hose Application Car Extraction 	 Overhead lifts* Floor-based full body sling lifts Floor based powered and non-powered sit to stand* Floor based lifts* Air transfer devices* Non friction reducing devices Scales Air powered lifting device High/low exam tables 	 Falls reduction Skin shear reduction Comfortable transfer Access to procedure Ability to examine patient outside of wheelchair on exam table 	 Bariatric, length, weight and width capacity chairs Access to swivel tables and accessories to minimize awk- ward positions

*Items are preferred devices

Department/Service	Caregiver high risk tasks	Equipment and technology solutions	Potential patient outcome measures	Technology Improvements needed
Home and Community Care, schools, sports, recreation	 Lateral transfers Wheelchair transfers Repositioning in bed/chair Toileting Showering Limb holding Turning Compression hose Application CPM machine Vehicle transfer* Extraction from floor or ground Emergency Evacuation devices Assisted ambulation 	 Overhead lifts* Floor-based full body sling lifts Floor based powered and non-powered sit to stand Slings, sheets and repositioning straps. Powered toilet lifting devices Floor based lifts Vehicle-mounted lifts Air transfer devices Friction reducing devices Ambulation device Air powered lifting device Indee lifts 	 Falls reduction Skin shear reduction Comfortable transfer Access to procedures and community activities. Safe Participation in community activities 	 Improved healthcare access to: Sports/leisure Swimming/ Kayaking Hand cycling Skiing Golf Beach Movies Shopping Eating out Travel by Air, Auto, Cruise, train School Health care Alternative therapies Participation in all community activities.
Clinical Lab	 Accommodation for bariatric wheelchairs and scooters Lateral transfers Repositioning 	 Bariatric Blood draw chairs and tables Stations to accommodate wheelchairs scooters 	 Falls reduction Skin shear reduction Comfortable transfer Access to procedure 	
MRI	 Lateral transfers Repositioning Lifting 	 Overhead lift in holding area. * Lateral Air transfer in MRI* Friction reducing devices 	 Falls reduction Skin shear reduction Comfortable transfer Access to procedure 	 Bariatric MRI weight and width capacity table. Wider barrel diameter

Department/Service	Caregiver high risk tasks	Equipment and technology solutions	Potential patient outcome measures	Technology Improvements needed
CT, PET Scanner, SPECT, ultrasound, Mammography	 Lateral transfer Repositioning Patient unstable bearing weight standing 	 Overhead lifts* Floor based lifts Air transfer devices* Friction reducing devices Air powered lifting device 	 Falls reduction Skin shear reduction Comfortable transfer Access to procedure 	 Bariatric weight and width capacity table.
EMS Interfacility Transfers Non-medical emergency transport Emergency, Air and Ship Transport	 Lifting of stretcher and patients into vehicle. Limited space in vehicle / air carrier to perform care / duties Awkward positions for CPR, intubation, procedures. Seizure activity protection Bystander and animal/pet interference 	 Power lift and load stretchers* Lateral transfer devices* Air powered lifting device 	 Falls reduction Skin shear reduction Comfortable transfer Access to procedure 	 Bariatric EMS vehicles, power drive stretchers that are wider and longer with associated equipment and supplies. Powered air transfer devices. Portable lift devices. Enhancement of work safety program in community setting including stairway mobility and transfers with medical equipment, restraints, aggressive behaviors. Equipment that is mobility time efficient
Simulation Training Lab	 Wheelchair transfer Lateral transfers Turning and repositioning Limb holding Sitting Ambulation Intubation Vehicle transfer Medical procedures 	 Overhead lifts* Floor-based full body sling lifts Floor based powered and non-powered sit to stand Floor based lifts Air transfer devices Friction reducing devices Air powered lifting device Simulation EMS transport 	 Falls reduction Skin shear reduction Comfortable transfer Access to procedure 	 Access to most patient care equipment and supplies listed in departments and services for training purposes. Bariatric manikins

Department/Service	Caregiver high risk tasks	Equipment and technology solutions	Potential patient outcome measures	Technology Improvements needed
Emergency Disaster Management	 Vertical Evacuation Lateral Evacuation Lateral transfers Wheelchair transfers Bed transfers 	 Sleds with braking/safety Evacuation chairs Inflatable evacuation devices 	 Falls reduction Skin shear reduction Comfortable transfer Access to procedure 	 Overhead lifts* Floor based lifts Air transfer devices* Friction reducing devices Air powered lifting device
Morgue and Funeral Home	 Lateral transfers Limb holding Repositioning Vertical lifting 	 Overhead ceiling lifts Floor based mobile lifts Lateral Air transfer Devices 	 Cadaver/patient Dignity Preventing damage to the remains 	 Bariatric morgue power drive stretchers that are wider, deeper, and longer. Bariatric morgue refrigeration Increase the footprint of morgue Power lifting for transport vehicles
In house transport and wheelchair escort Services	 Wheelchair transfers Lateral transfers Ambulation Standing Positioning Vertical lift assistance from standing position up to procedure table 	 Motorized wheelchairs Overhead ceiling lifts Floor based mobile lifts Lateral Air transfer Devices Power Drive Stretchers Powered drive beds 	 Falls reduction Skin shear reduction Comfortable transfer Access to procedure 	Wider and longer stretchers
Security and Police Services	 Limb holding and restraining Vertical lifting Lateral transfers Aggressive behaviors Assaults Dealing with weapons and contrabands 	Powered air lift fall rescue devices.	 Falls reduction Skin shear reduction Comfortable transfer Access to procedure 	To be determined

*Items are preferred devices

I am very thankful for the following contributors who added their ideas to make this document convey the message intended.

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1. Injured Nurses by National Public Radio http://www.npr.org/series/385540559/injured-nurses

2. SPHM VHA APP https://staff-sqa.mobilehealth.va.gov/sph/#/cpaa/single-task

3. VHA SPHM Guidebook and Bariatric Guidebook http://www.tampavaref.org/safe-patient-handling/implementation-tools.htm

4. Safe Patient Handling & Mobility (SPHM) for Direct Patient Care Providers – TRAIN 1083299 - https://www.train.org/vha/course/1083299/ Safe Patient Handling & Mobility (SPHM) for VA Employees - 1083300 - https://www.train.org/vha/course/1083300/

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