Safe Patient Handling Equipment Purchasing Checklist
3rd Revision 2014

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There are many variables to consider when selecting, purchasing, implementing and evaluating safe patient handling (SPH) equipment and accessories to ensure that the goals of a safe patient handling program are met. The checklist was created as a guide for health care organizations and caregivers involved in the selection and purchase of SPH equipment and accessories. It is intended to be used as part of a comprehensive a SPH program plan.

The checklist incorporates information from ergonomics and medical equipment design standards and guidelines and from reference materials published in peer reviewed journals together with the author's experience in developing safe patient handling programs and purchasing and installation of SPH equipment in a wide variety of health care facilities.

Purchase of equipment should occur *after you* have identified the hazards to be addressed that are related to patient handling (e.g. the type of lift, transfer, movement or patient care task), the needs of the patient population (physical and cognitive abilities and clinical needs), the physical environment where equipment is to be used and the work systems the equipment is used within.

This check list is **not** all inclusive. Other stakeholders who are impacted by the SPH program such as, equipment vendors, purchasing staff, facilities engineering, maintenance, and biomed staff, infection control, wound care, environmental services and staff who will use the equipment and members of your multidisciplinary safe patient handling team will also provide valuable information. A collaborative approach helps to ensure that the equipment choice made is one that fits your patient, staff, facility's design and organizations' needs.

When choosing any medical device including patient handling equipment keep in mind basic ergonomics design principles that is, to ensure the device accommodates a majority of the *user* population's physical, perceptual and cognitive (mental) capabilities so that the equipment is used safely and efficiently, is comfortable for patients and the risk of operator error is minimized. [1,2]

In health care the equipment user population may include staff who perform direct patient care, support care staff (e.g., radiology), transportation, environmental services and maintenance; and patients or residents and their families especially in the home care setting. [3]

It is also important that your SPH program and the equipment you purchase will 'fit' future needs of the organization, e.g. a changing patient population, changing surgical procedures or medical treatment protocols; facility design changes (new building, renovations or movement of units/depts.) etc., so that the maximum return on investment of the equipment purchase is achieved. [4]

Remember to 'Try Before You Buy'. Conduct structured trials of equipment with the users before purchase to determine the best fit for patients, staff and the physical work environment, etc. Consider the following when evaluating SPH equipment (or any other medical device). [3-6]

- Effectiveness of device/system – does it fulfill the work-related needs and functions of the clinician using it (or needs of the user) and clinical goals?
- Efficiency of use.
- Acceptance by intended users of the system.

- Comfort associated with the operator's use of the system.
- Potential safety or ergonomics related hazards or risk of error during use and anticipation of misuse of the device. Ensure new hazards are not created.
- Needs related to support processes/systems., e.g. training, maintenance, infection control, etc.
- Integration with other devices and overall clinical systems and with the physical layout within other department's if the equipment is transported and used in multiple care and diagnostic areas. Consider the impact of the equipment within the work system 'upstream' and 'downstream' from the point of use.

The checklist is divided into the following sections:

Safe Patient Handling (SPH)- Equipment Purchasing Checklist

Note – some questions are applicable to powered equipment only

Action Item	Components	Yes	No	Notes
A. Basic Ergonomics Design Principles for SPH Equipment:				
1. Designing for the User - Physical Capabilities Goal: Design within physical capabilities for at least a majority of users (90%) [7-9]	a. Provide Adjustability.			
	b. Allow for neutral working postures (ability to use proper body mechanics) when operating or using equipment e.g., working with arms in front of body between knuckle and waist height			
	c. Ensure easy reach distance to access controls for hands and feet.			
	d. Avoid static postures especially when combined with force.			
	e. Ensure acceptable force to activate hand/finger/foot controls.*			
	f. Ensure minimal grip force to hold hand controls or lever mechanisms e.g., raising the head of a stretcher when loaded, lowering side rails on beds and gurneys*.			
	g. Ensure acceptable force to maneuver, push or pull equipment such as floor lifts, stretchers and beds. Consider floor covering; entryways; slopes uneven floors and wheel type.**			
	h. Ensure minimal repetitive motion is required to operate equipment especially if combine with forceful motions e.g., using a hand crank or foot pump mechanism when			

Action Item	Components	Yes	No	Notes
	operating equipment.			
	i. Ensure that there are no contact stress on soft tissue when using equipment e.g. from sharp edges, and ensure potential pinch points are guarded on all moving parts (for employees or patients).			
	j. Prevent or minimize transmission of vibration from equipment to operator, e.g. from powered tools or motors.			
2. Designing for the User – Perceptual, Cognitive/ Mental Capabilities [2, 10] Goal: Equipment is intuitive to use & user friendly thus reducing training time and risk of operator error.	a. When activating equipment controls ensure that feedback to indicate if action is correct or incorrect is immediate, visible, and meaningful (e.g., light comes on, or equipment does not operate).			
	b. Equipment operation errors can be easily reversed.			
	c. Procedures (menus and navigation) if present are logical and intuitive e.g. use of electronic scales on a lift device.			
	d. Equipment controls and displays are consistent – consider standardization between groups of equipment *and* between units or departments if appropriate.			
	e. Device Control and Display functions are clearly communicated: i. Control type is appropriate for function/use * ii. Labels are legible, consistent and adjacent to corresponding control iii. Comprehensible icons or pictograms iv. Activation of controls and information on displays meet population stereotypes v. Redundant coding systems are used (e.g., shape, size, color) vi. Consider impact of lighting, glare and viewing distance (bifocal use considered) if displays have to be read e.g. operating a lift in low light conditions.			
	f. Controls are designed to prevent accidental activation – e.g. not too close together or too easily activated.			
3. Some other considerations related to usability of the equipment and operator training needs [3,4,11]	a. Consider the impact of standardizing or not standardizing the type, design and functionality of equipment and slings chosen within a facility e.g., using more than one brand of ceiling lift motor and/or slings from a variety of manufacturers may increase the risk of operator or user error and increase the time to conduct and cost of staff training. b. When considering training costs, time and competency needed to ensure safe and error free use of the equipment etc. Consider: ▪ What level of competency is required to operate the equipment? ▪ What specialist training /knowledge/competency is required to ensure the completion of the SPH task or			

Action Item	Components	Yes	No	Notes
	process safely? ▪ What level of peer communication is required for the safe completion of the SPH task ▪ What learning tools may be needed e.g. patient assessment protocols, checklists, algorithms, information related to the patients's needs posted in the patient room, etc.?			

* For information about grip force requirements refer to *Kodak's Ergonomic Design for People at Work.* 2nd edition (2003). John Wiley & Sons, Inc. http://www.wiley.com or the MIL-STD 1472G Department of Defense Design Criteria Standard Human Engineering. (2012) http://www.everyspec.com/MIL-STD/MIL-STD-1400-1499/MIL-STD-1472G_39997/

** For information about the maximum push force (initial and sustained) that a majority of the user population may safely exert refer to *The Liberty Mutual Manual Materials Guidelines 2005*. *http://libertymmhtables.libertymutual.com/CM_LMTablesWeb/taskSelection.do?action=initTaskSelection*

Action Item	Components	Yes	No	Notes
B. General Design Considerations for Safe Patient Handling (SPH) Equipment				
1. Powered Equipment [12]	a. Is the speed of operation satisfactory for staff and patients?			
	b. Is the soft start/stop (smooth acceleration/deceleration)?			
	c. Is the range of adjustment e.g., lift height range sufficient? E.g., *a floor or ceiling lift needs to lower far enough to reach a patient who has a low bed or has fallen to the floor, or raise high enough to position patient on a bed or fixed height exam table* .			
	d. What is the weight or load capacity of the equipment?			
	e. Is weight capacity and the operation instructions listed on equipment?			
	f. Is a scale incorporated or can one be attached to the equipment?			
	g. Does the device have an emergency shut off switch or stop control?			
	h. Is it easily accessible?			
	i. Is there a manual override control –if the battery loses power e.g. lowering mechanism on floor, ceiling lifts and sit to stand devices?			
	j. Is it easy to access and use?			
	k. Is there protection against free falling?			
	l. Is there a Boom Pressure Sensitive Switch (boom lifts automatically if inadvertently lowered onto the patient, etc.)?			
	m. What is the noise level when in operation?			
	n. Are there any application limitations?			

Action Item	Components	Yes	No	Notes
	o. Does the device have features that are not available on other products? If so, what are they?			
	p. Is the lifting device compatible with different slings produced by other suppliers? *Also refer to Section E.1.d.*			
	q. What is the life expectancy of equipment and parts? *Applicable to all equipment and slings and equipment accessories*			
2. Hanger Bar (Spreader or Sling Bar) (i.e., on floor and ceiling lift devices)	a. What type of hanger bar does the device have e.g., 2, 3 or 4 sling connection points; configuration shape is X or H 4 point or 3 point pivot configuration; configuration is specialized e.g. 8 point frame?			
	b. Does the configuration (shape, size and number of connection points) meet your patient handling task needs e.g., for bariatric, pediatric patients etc?			
	c. Does the hanger bar or support boom allow sufficient clearance for taller patients when being moved in sling?			
	d. Does the design of the mechanism for attaching a sling to the hanger bar prevent accidental unhooking or release?			
	e. Are edges, corners, surfaces on the hanger bar that will be in contact with the sling attachment point are smooth –i.e., there are no sharp edges or burrs that could damage the sling connection point?			
	f. Is the hanger bar connection point is large enough to allow the sling (e.g. key/clip or a loop design) attachment to be seated in the connection point without risk of shearing, crushing, trapping e.g. multiple loops on a sling can be easily seated in the hanger bar connection point with locking device closed correctly?			
	g. If the hanger bar detaches from a lift: i. Is it easy to remove and reattach (consider grip force and manual dexterity required)? ii. Can it be easily handled and stored (consider weight of the bar and size for storage as relevant)? iii. Does it meet load testing requirements as required by ISO 10535?			
3. Hand Control	a. Are function keys are easily understood on control device; it is easy to tell if the control is upside down or right side up?			
	b. Is there an easy access area on equipment to place hand control when attaching a sling to the device and when assisting or maneuvering the patient?			
	c. Is it resistance to water damage and droppage?			
	d. If the control is a wireless device – will it interfere with other equipment?			

Action Item	Components	Yes	No	Notes
4. Battery	a. What is the type of battery that is used e.g. lead acid or gel cell batteries?			
	b. Is there a battery status indicator?			
	c. How long will the battery operate before needing to be recharged e.g. how many patient lifting tasks can be completed?			
	d. What is the battery recharge time?			
	e. What is the expected life of a battery?			
	f. Can a 'dead' battery be replaced with a fully charged battery or does the equipment need to be plugged in to charge?			
	g. Will extra batteries be needed e.g., one is charging in a charging station and one is loaded in the lift ready for use?			
	h. Is there an automatic shutdown of power on the equipment when not in use to save energy and battery life?			
	i. Can batteries be shared between different devices e.g. between a floor lift and a sit to stand device?			
	j. What is the battery replacement cost?			
	k. What is the weight of the battery?			
5. Storage for Equipment and Supplies	a. What are the storage "footprint" requirements?			
	b. Can staff access the equipment easily and efficiently? Consider time to access and ease of transporting the equipment to where task is being performed			
	c. Is storage available with easy access to electrical outlets to charge equipment and/or equipment batteries?			
6. Patient Considerations[5,13]	Consider the following when assessing patient safety related scenarios: a. Safety, comfort and function/ease of use related to the patients': i. Clinical condition and medical needs e.g., a patient with an unstable spine should not be moved on an air assist mat unless a rigid spine board is used etc. ii. Having multiple lines, tubes, monitors attached iii. Level of postural support required iv. Physical shape and size v. Having any sensory deficits or disturbance vi. Dignity when using the equipment vii. Being: ▪ Unstable or asymmetrical ▪ Unpredictable or suffer spasm or pain during the process ▪ Uncooperative ▪ Unable to assist in the moving process			

Action Item	Components	Yes	No	Notes
7. Other	a. Are there special features of the equipment or product not offered by comparable products e.g. equipment has multiple SPH functions such as a sit to stand device that also converts to a walking aid or a low based floor lift that offers an ambulating and weighing function, b. Consider environmental impact and energy-efficiency			
C. Equipment Design Considerations - Specific				
1. Portable Lift, Floor Based Systems and Transport Devices [3,14,15]	a. Is the lift or height adjustment mechanism powered?			
	b. Can the device be easily maneuvered in area of use to ensure safe and efficient operation e.g. caregiver and/or patient posture is not constrained? Consider: ▪ Required diameter of turning circle ▪ Clearance through doorways/in the bathroom/elevators/in other depts. ▪ Clearance of leg support *under* beds (especially motors) and chairs ▪ height of leg supports/size of casters ▪ Adjustability of base to allow the legs to fit *around* chairs, bed motors, commodes, etc. ▪ Sufficient vertical height to perform lifting task on beds, exam and imaging tables.			
	c. Are base legs power adjust or require manual adjust?			
	d. Is high force required to start pushing the device?			
	e. Is high force required to sustain movement of the device? Consider: ▪ Distance to be pushed ▪ Force to control equipment when turning corners ▪ Force required to push equipment on carpet, over thresholds, on uneven or sloping and/or slippery floors and gratings. ▪ Steering mechanism peak and sustained push force turning etc.			
	f. Does the diameter of the caster assist to minimize force required to push the equipment (in general, larger casters require less force to push/pull and maneuver)?			
	g. Is caster material and size suitable for floor type?			
	h. Can brakes be easily activated and released with foot?			
	i. Is there powered steering or steering assist for equipment that is used for transporting a patient e.g. stretchers, beds or gurneys?			
	j. Handle design – can operator maneuver equipment using vertical handles and neutral body postures?			

Action Item	Components	Yes	No	Notes
	k. Can the device be used to lift a patient from car e.g. floor lift?			
	l. Will the device discontinue operation if load or weight capacity is exceeded?			
	m. Stability - Can the device be easily pulled over – tipped with and without load?			
	n. Will the device be used in extremes and/or highly variable of temperature or humidity?			
	o. Additional considerations for Sit to Stand devices: ▪ Do leg or shin pads have adequate range of adjustment to accommodate to be positioned below the knees of patients with of various statue? ▪ Is a leg strap available if needed? ▪ If the foot plate is removable if so is it easy to remove (consider access to remove and weight of plate)?			
	p. Additional considerations for devices that assist with mobilization (e.g. a walking frame with folding seat hand hold): ▪ Does the arm rest allow the patient to walk using neutral hand and arm postures and normal gait e.g. consider elbow height of the smallest to tallest patient and forward clearance for gait?			
Ceiling Lift Systems [3,4, 12,16] *Also refer to '3' above and to the Patient Handling and Movement Assessments: A White Paper (PHAMA). The Facilities Guideline Institute (2010).* **1. Facility Structure Considerations & Track Configuration**	a. Are ceiling lifts to be installed in new construction or existing facility (retrofit)? *(This may impact the mounting systems and track configuration that can be used)*			
	b. Can they be installed in the ceiling or installed as wall mount systems? There are many types of mounting systems and considerations related to structures in and above a ceiling or behind walls such as HVAC and electrical systems and multilevel ceilings or radius walls.			
	c. Is there sufficient vertical clearance (from beds, gurneys or other surfaces to ceiling height) to allow minimum lifting range required for use of lifting equipment?			
	d. Is there sufficient clearance to operate the motor in relation to privacy curtains, medical gases delivery systems, exam lighting, and sprinkler heads, etc.?			
	e. Can ceiling lift tracks be moved or reconfigured after they are installed to accommodate changing needs?			
	f. What configuration is available and best for tasks required ▪ Full room coverage vs. straight track? ▪ Curved, turntable, access into bathroom, other? *If a design is submitted other than room covering, the track layout should have the ability to lift patients from a position which is off center from the lift. Moving beds and other*			

Action Item	Components	Yes	No	Notes
	furniture when using the ceiling lift system to position a patient may increase time to complete the task and decrease use of the lift system by staff.			
	g. Does the ceiling and track configuration enable the following patient handling tasks to be performed? e.g.: ▪ Bed to chair seated transfers ▪ Horizontal/supine lifting ▪ Turning in bed ▪ Re-positioning up and down in bed ▪ Sit-stand ▪ Bathing ▪ Toileting ▪ Assisted walking/ambulation ▪ Lifting from the floor from any point in the room.			
	h. Can the spreader or hanger bar easily removed for storage and/or safety reasons as needed?			
	i. Does the spreader or hanger bar pose a safety hazard to staff and/patients when not in use e.g. staff could hit their head on the bar etc? If yes, review use of a wall hook system to store hanger bar is a safer position when attached to the motor.			
	j. Can the lift motor be quickly and easily removed from a patient room (e.g., by facilities maintenance) if it poses a safety issue to the patient e.g. patients in medical units who are violent or could harm self?			
2. Weight capacity	a. What is the maximum safe working load of the tracking system?			
	b. What is the weight capacity of a motor?			
	c. Are 2 motors required to lift patients who weigh over 500-600lb?			
	d. Are portable scale units are available for the lift system?			
3. Safety features	a. Does the system have low friction wheels or trolley (minimal effort required to move lift along track)?			
	b. How is motor recharged? On track charging or return to charge (automatic or manual)? c. If manual return to charge is present: ▪ Ensure location of charging station is easily accessible to staff (e.g. not hindered by wall mount computer stations) and located at a height that allows 90% of the staff population to use neutral body postures to access the handset and charging station, i.e. not lower than 39" or over 55" from the floor [7] ▪ Can the handset be easily 'knocked' off the charging station or is there a feature e.g. magnetic 'lock' to prevent accidental removal thus preventing the battery from being charged?			

Action Item	Components	Yes	No	Notes
	d. Does the system have overload protection?			
	e. Is the emergency stop button easily accessible?			
	f. Is there automatic shut-off if hoist strap is twisted and if load capacity exceeded?			
	g. Are emergency lowering system with instructions clearly outlined on the motor or easily visible during operation?			
	h. Can the lift be operated safely by one caregiver?			
	i. Can overhead track systems are able to be used in wet and humid environments (bathrooms, showers, and bathing areas)?			
4. Portable motors (moved from room to room as needed)	a. Refer to ***Batteries*** for questions about charging			
	b. What is the weight and size of the motor unit?			
	c. Can the motor be easily attached to the rail system without staff standing on step stools or chairs etc.?			
	d. Is a cart offered to store and transport the motor from room to room?			
5. Installation piece	a. Who will conduct a structural engineering inspection and provide stamped structural drawings?			
	b. What type of anchoring system will be used?			
	c. What building, electrical, fire and seismic codes have to be met? *Also refer to Regulatory Requirements I*			
	d. Who will install the tracking system – employees of the vendor or other contractors?			
	e. How are the installers trained and certified by the lift system manufacturer? Have vendor provide applicable documentation.			
	f. Are the installers licensed and bonded to work in your state? Have vendor provide prove of insurance etc.			
	g. Ask the vendor is ceiling lift installation meets any international safety design standards e.g. at a minimum the ISO 10535 standard 'Hoists for the transfer of disabled persons- requirements and test methods'? ISO 10535 is a recognized consensus standard by the FDA as applied to Patient Transfer Devices; both ac-powered and non-ac-powered patient care lifts thus, manufacturers of such devices should meet ISO 10535 design and testing criteria. Manufacturers from other countries should be knowledgeable re such standards. The ISO 10535 standard does have recommendations re the maximum deflection of the rail during maximum load and load testing of the ceiling lift system including track systems joints and attachments.			

Action Item	Components	Yes	No	Notes
6. Room Preparation – Pre & Post Installation	Consider: *Pre Install -* ▪ Relocation of patient to appropriate site ▪ Removal of beds, equipment, privacy curtains ▪ Secure area from staff and patients and meet infection control containment requirements ▪ Consider areas where all staff/ patients cannot be removed (e.g., ICU, emergency) ▪ Design work procedures/work plan to accommodate *Post Install -* ▪ Cleaning of room ▪ Undo lockout ▪ Replace beds and equipment ▪ Replace privacy curtains etc. ▪ Site safety inspection(s) prior to use of room ▪ Also refer to Environment of Care and Life Safety codes with Joint Commission .accreditation standards or related standards required by other regulatory entities			
7. Other Safety Considerations	a. If concrete drilling is required, ensure location of electrical, gas, and water lines are known?			
	b. Is there is the risk of asbestos disturbance?			
	c. Are there confined space requirements (per OSHA standards)?			
	d. What lockout considerations are required to work on room consider electrical, gas, etc?			
	e. Is there a staging area for ceiling tracking materials and equipment?			
8. Load testing	a. What is the vendor load testing policy or recommendations post installation prior to use?			
	b. Will all room covering overhead track systems, joints and attachments used for lifting be tested?			
	c. What is the test load e.g. maximum weight plus x%? Testing should be conducted for static and dynamic loads.			
	d. Will load test be administered by installers in the presence of administration and facilities personnel and other authorities as necessary?			
	e. What is the recommended routine load testing schedule?			
	f. Can in-house maintenance staff perform this testing			
	g. Will the vendor provide training re this procedure?			
9. Other post Installation Checks	a. Are rail end stops present and secured well?			
	b. Who will certify the installation e.g. a structural engineer?			

Action Item	Components	Yes	No	Notes
D. Equipment Design Considerations: Slings				
1. General [12,17-20]	a. What type of sling is available and required? e.g. Seated; toileting/hygiene; supine/flat or repositioning; limb; ambulation; amputee sling. Single patient use, reusable slings or slings that can be wiped clean Consider cost, usage and available laundry system or process etc.			
	b. What size of slings should be available (consider head neck support, removal of seated slings)?			
	c. How many of each type of sling is needed? Consider delivery and return time to/from laundry and facility and restock delivery time to units for reusable slings.			
	d. Can slings be used with both floor lift and ceiling systems and/or can slings and lifts from different manufacturers be used – e.g. attachment point (fabric loop vs. key lock system) is compatible with spreader bar receptacle and does not impact on the center of gravity and affect hoist stability? Note: Clip (or plastic key) and loop slings **should never be mixed** e.g., a sling with a loop attachment should only be used on a hanger bar designed for a loop system and a sling with a clip should only be used on a hanger bar designed for a clip system. Consider standardizing sling type e.g. loop or clip within a facility to reduce the risk of human error and assist in simplifying user training e.g. for example slings with loops are only used with the appropriate hanger bar.			
	e. Does the design of the sling change weight load, center of gravity or affect lift stability?			
	f. Does the design of the sling and hanger bar combination allow the patient to be positioned safely and comfortably as needed to meet the patient's physical and clinical needs?			
	g. Is the sling sizing/weight capacity is clearly and easily identified e.g. color-coding is used to indicate sizing and written sizing information?			
	h. Is the safe or maximum working load is clearly marked on a sling?			
	i. Is a symbol for cleaning and/or written cleaning instructions included on the sling label?			
	j. Is the manufacturing batch code visible on the sling label?			

Action Item	Components	Yes	No	Notes
	k. Is there a place to mark or indicate 'date of first use' on a sling?			
	l. Can customized labels be added to the slings by the vendor e.g. identifying a specific facility and/or unit?			
	m. Other information that may also be helpful to have on a sling label includes: • The type of hanger bar that the sling is to be used with e.g. key or clip vs. loop connection and hanger bar configuration 2 or 3 or 4 or other. • A warning to always inspect a sling before use. • A reminder not to use a damaged or badly worn sling.			
	n. What material are slings made of e.g. synthetic, blend or natural fibers? Are they a solid material, mesh, padded or have a rigid component? Can they be left under the patients' body when in bed and/or in a chair without compromising the patients skin?			
	o. Do slings have positioning handles for correct sling and patient positioning?			
	p. Are custom made specialty slings are available?			
	q. What is the warranty on the slings?			
	r. How long will reusable slings last? (Note this will depend on how they are laundered)			
	s. What is the replacement/repair policy including turnaround time and costs?			
	t. What is the sling trade-in policy?			
2. Safety	a. Are there instructions for proper use of slings provided by the manufacturer that include at least the following information? i. How the sling can be safely applied, adjusted and removed ii. If sling is unsuitable for a specific handicap (disability) or clinical condition iii. Indication showing the types and design of spreader bar with which it may be used. iv. Information about the materials used in the sling fabric v. The information listed in 1 g-j, m, and q above.			
	b. Are slings load tested for safety e.g., cleaned and dried ten (10) times in accordance with the manufacturer's instructions and then tested with a static load of 1.5 x the maximum load for 20 min as required by ISO 10535**?**			
	c. Sling inspection and management: Consider how slings will be inspected for wear and tear, fraying etc.? ▪ Before placing into first use ▪ On a periodic basis			

Action Item	Components	Yes	No	Notes
	▪ By staff before each use ▪ Determine sling safety training and documentation needs etc. ▪ Develop a process to track sling date of purchase; inspections completed; inventory, any repairs performed, monitor sling recalls or upgrades.			
	d. If using single patient use slings: ▪ Is there identification on a sling that indicates that they must not be laundered? ▪ Do slings have some type of symbol that indicates if the sling has been laundered e.g. a label that changes color if laundered?			
3. Laundry	a. Where will reusable slings be laundered – external or in-house laundry? Consider how they will be collected e.g. with regular linens to be laundered or in separate bags/containers.			
	b. What are the laundering requirements for reusable slings? i. Washing temperature required ii. Special drying requirements e.g. no high heat dry? iii. Can slings tolerate washing in chlorine (bleach) and peroxide-based cleaning agents? iv. Can slings be laundered with other linens? v. Can slings be laundered to be in compliance with the Centers for Disease Control (CDC) Guidelines for Environmental Infection Control in Health-Care Facilities?[20-22]			
	c. Are laundering instructions available from the vendor?			
	d. Do specialty slings such as ambulating harnesses require special washing protocols e.g. placing in a mesh bag for laundering?			
	e. What is the sling laundry management process e.g. process to send slings to be laundered; time to send and return clean slings to/from the laundry to a patient care unit; delivery and stocking of slings in patient care areas, par stock requirements, storage of slings and ease of access by staff and processing of damaged slings?			
E. Infection Control Considerations				
Also refer to *Slings*	a. How easily can equipment such as floor and sit to stand devices be cleaned? b. Consider effectiveness of cleaning stitched seams, rope attachments, etc.			
	c. What chemicals can be used to clean equipment and slings that can be wiped clean? d. What information does the manufacturer supply?			

Action Item	Components	Yes	No	Notes
	e. Is the wipe down (with approved disinfectant) of slings, belts and transfer devices that do not touch patient's skin an acceptable practice?			
	f. Has the infection control officer approved decontamination procedure for all equipment and accessories etc.?			
F. Maintenance Considerations				
Maintenance [11,12, 23]	a. What preventative maintenance and inspection is required and how often? Consider: ▪ The recommended standard interval for cleaning tracks on ceiling lift systems ▪ The recommended standard interval for cleaning motors, moving parts; wheels and casters.			
	b. Can this be performed by facilities maintenance staff?			
	c. Can facilities maintenance staff perform emergency maintenance?			
	d. Will the vendor or representative provide training and orientation for facilities maintenance with equipment training?			
	e. How difficult is the device to maintain/service? Consider: ▪ Access and clearance for facility maintenance techs/Biomed & IT personnel ▪ Time and effort to diagnose/troubleshoot problem ▪ If special tools required			
	f. What is the availability of replacement and spare components, cost and time to delivery?			
	g. What is the procedure for replacing defective parts, or getting replacement and spare components? Do you have to buy parts from the vendor or can you buy parts at a local supplier or store? Some sales representatives stock their own parts, whereas others rely on the Manufacturer to supply parts.			
	h. Is loaner equipment available if repairs are extensive or replacement is required? If so how quickly can it be delivered and placed into service?			
	i. Consider environmental impact & disposal of equipment and accessories such as batteries.			
G. Vendor Service				
1. Overall Also Refer to Ceiling Lift Installation	a. Obtain references from vendor and contact other facilities (possible include the Better Business Bureau) re their experience with purchase, training and after service.			

Action Item	Components	Yes	No	Notes
	b. Check with your organizations Purchasing Dept. re group purchasing plan discounts or criteria that may apply to the equipment purchase.			
2. Local Consultant/Representative Information	a. How many years of experience with lift and transfer equipment- -does the local consultant/rep have? Be specific to the type of systems you wish to purchases e.g. ceiling lift systems.			
	b. How long has the current representative worked with them?			
	c. How many customer representatives are in this state?			
	d. How many clients do you service in this state?			
	e. Can the company provide data on the success of using their equipment?			
	f. What other hospitals in the state have this equipment? Will they talk to you about their experience and attest to the quality, timeliness and satisfaction with their work for the installation lift and transfer equipment?			
3. Manufacturer Information	a. How many years of experience does the manufacturer have in lift/transfer equipment production?			
	b. How long has the manufacturer done business in the state?			
	c. Does the manufacturer/vendor provide service technicians? If yes, please provide the names of those who would respond to service calls at XXX			
4. Specific to equipment purchase	a. Has the device or equipment been evaluated in a published study by an independent third party organization?			
	b. Can they provide information about usability testing conducted when designing the equipment?			
	c. Has the device been listed on the FDA product recall or safety alert list at http://www.fda.gov/Safety/Recalls/default.htm[24]			
	d. What is the equipment trial evaluation period?			
	e. What is the new equipment delivery time?			
	f. What is the life expectancy of equipment and parts? Compared to similar products?			
	g. Is there an option to rent or lease equipment? Is so what are the lease terms?			
	h. What is the vendor trade-in policy?			
	i. Does the vendor offer bariatric or larger versions of the standard equipment?			

Action Item	Components	Yes	No	Notes
	j. If the manufacture changes the design of slings and or equipment hardware in the future: i. What is the customer notification period related to a change in device and/or sling design? ii. What assistance/service will the manufacturer or vendor provide related to replacing equipment components and training if applicable?			
5. After service	a. What is the average on site response time for service?			
	b. What is the equipment warranty or guarantee for length of service?			
	c. Consider limitations of the warranty			
	d. What is the warrantee for batteries and motors, slings and other 'soft' goods, etc.?			
	e. Will the manufacturer or vendor notify customers when an upgrade for equipment and accessories is needed or available?			
	f. What are the terms or policy for upgrading equipment etc.?			
	g. Will the manufacturer or vendor notify customers about recalls?			
6. Training	a. Will the vendor or factory representative do training for all users on all shifts?			
	b. Does training include the use of all types of slings available for the equipment? (i.e. walking slings, disposable slings, supine slings, octopus, and custom made for amputees etc.)			
	c. What training materials are provided for the facility to use when training new employees etc.?			
	d. Consider training videos or on-line training support.			
	e. Will the vendor return and train new staff periodically?			
	f. Is there a fee for this?			
	g. Will vendor provide any special orientation and training for doctors or other specialty groups, e.g. therapists; maintenance, etc.?			
H. Regulatory Requirements				
Federal **State/Local**	a. Does the device or equipment meet design FDA regulations if applicable e.g. many patient handling devices are considered Class 1 Medical Devices by the FDA and ISO 10535? ISO 10535 is a recognized consensus standard by the FDA as applied to Patient Transfer Devices; both ac-powered and non-ac-powered patient care lifts, thus			

Action Item	Components	Yes	No	Notes
	manufacturers of such devices should meet ISO 10535 design and testing criteria.			
	b. Are there any Joint Commission, CMS or other Federal agency regulations to consider regarding the use and storage of the equipment?			
	c. Are there any state agency regulations to consider e.g., OSHA, state/county/city building, electrical and fire codes. If using equipment and slings in the operating room environment check if specific OR fire standards apply.			
	d. *Electrical*: Many patient handling devices are manufactured 'offshore' in Canada or Europe. Determine per your state, county and city fire codes etc., what safety certification is acceptable for medical electrical devices. For example the typical acceptable designation is the UL rating in the US from the Underwriters Laboratories-Standard for Safety for Medical Electrical Equipment - UL- 2601-1. *Your facilities engineering department should be able to assist you to determine this.*			

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