Myrill Stewart Bio

- Director of Nursing for a 160 Bed aged care facility with 30 years aged care experience with Blue Care
- Masters degree in nursing & qualifications in education, training & management
- Background in health education, & lecturing for Griffith University School of Nursing and as a regional Staff Development Manager for Blue Care
- Passionate about resident care & has commissioned both a 32 low care and award winning 128 high care bed facility

Ceiling Hoists in Residential Aged Care

- Myrill Stewart

Labrador Gardens

Winner of the Master, Builders Gold Coast Project of the Year 2009 award.

- Blue Care Labrador Gardens Aged Care Facility is an architecturally designed, state of the art 160- high care bed facility.
- Two-level complex boasts stylish modern features and is designed to provide residents with independence, privacy and security.

Why Tracking Hoists?

- Physical demanding nature of aged care work

- Aging predominately female work force
- Ever increasing workloads
  - With increased resident dependency levels
  - Increasing resident weight
  - Increased pushing pulling & turning force
  - Work cover & increasing associated costs
  - Prevailing view that it is no longer acceptable that nurses will carry stress & strain injuries that are work related

Why Tracking Hoists?

- Opportunity to get it right
  - Get involved in initial design
  - Get hold of the building specs
- Avoiding retro fit costs
- Keep staff *(air conditioning; secure car park; tracking hoists!)*

Why Tracking Hoists?

- Consultants recommendations
  - recent publications of effect on lowering injury rates
- Room clutter
  - premium use of limited space

- To bring Blue Care forward into the 21st Century

Selection

Stage 1 buildings 2006

- Low care facility
- Room covering system into assisted bathroom
- Load Bearing Beam in place in each room for straight track over bed & through to toilet
- Door opening system allowing
- Track from room to bathroom

Door Way Modification For Track

Selection

Stage 2 buildings 2009

- 128 high care facility
- SINGLE ANGLED track 4m
- EVERY room
- Consultative process for brand choice
  - Allied Health
  - Building Project team
  - WH & S
  - Specialist Consultant
  - Nursing staff

How to Train Your Architect

- Where you want it
  - Every room
    - » Aging in room
    - » Increasing dependency levels – low care really high care
    - » Retrospective funding unlikely
- Implications for design of
    - » Orientation of the bathroom
    - » Bathroom entrance position
    - » Door header, fans, lights etc

Cost Considerations

- Ceiling Modification
- Track
- Track fitting
- Hoist
- Hoist Trolley
- Slings

Associated Clinical Decisions

- Preferred room covering unaffordable
- Single track options
  - » Length
  - » Position
  - » Angle

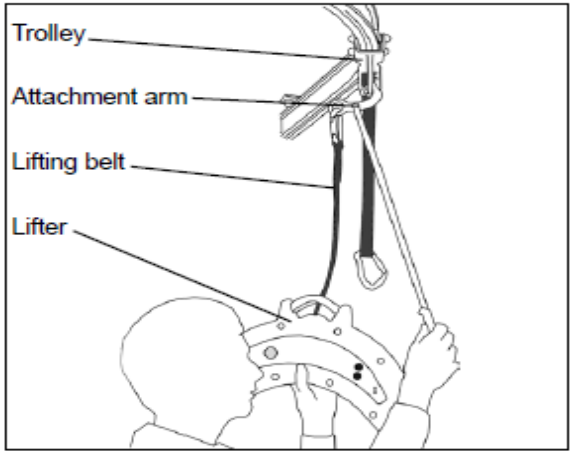
Cost considerations ….

- Makes sense to provide as part of original cost of building & FFE budget
- Failure to do so incurs a cost in future operational capital budgets
- Can’t be add on due to installation requirements *e.g. ceiling type, lights, fans etc*

HOW MANY?

- 1 in 16 chosen & considered minimum
  - 2 per court; 32 beds per court
  - All high care

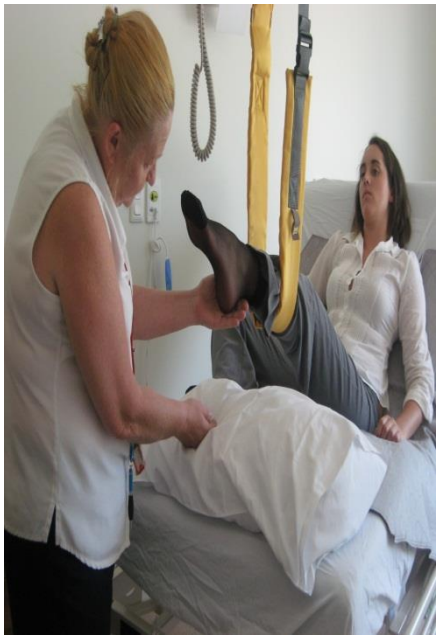
- Attach the safety hook on the lifting belt on the attachment arm.

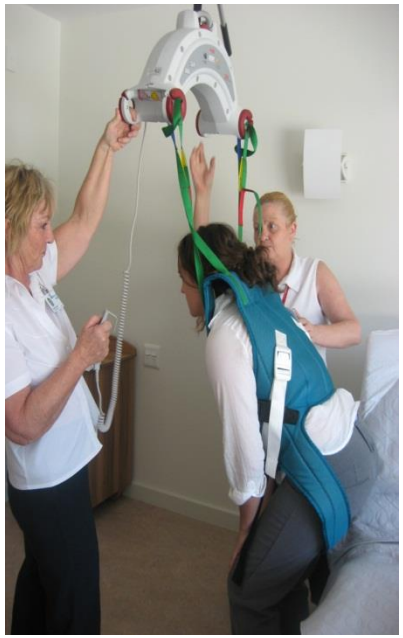


- Hook the attachment arm to the trolley.

Clinical examples other than transferring

- Support of grossly oedematous legs
- Suspending limbs for dressing change (1 staff)
- Decrease slide sheet use
- Advanced stage pressure area who required total pressure relief of a mattress are able to be suspended in TOP SHEET applied to overhead ceiling unit
- Use for rehabilitation / mobility programs





EVALUATION OF IMPLEMENTATION

- Qualitative and quantitative methods were used to assess the effectiveness of ceiling hoist as compared with mobile hoists for bed transfers. During September and October 2009. Staff who were current users (n=53) of the ceiling hoists system were asked to complete a confidential and anonymous Staff Satisfaction Survey

EVALUATION OF IMPLEMENTATION

- Cognitively-able residents (n=12) were asked and consented to participate in a confidential interview. Four staff members participated in the ergonomic evaluation which involved the video-taping of transfer tasks using the ceiling hoist and mobile hoist and 14 staff members participated in an ergonomic participatory workshop.

Ergonomic Biomechanical Findings

- Care staff from 3 RACF performed a variety of two-person bed-transfers using the mobile and ceiling hoist mechanisms,using a staff volunteer acting as the ‘resident’. These transfers were videotaped and then the biomechanical forces required for each transfer were quantified using a specialised biomechanics software program.

Ergonomic Biomechanical Findings

- Fourteen staff who either used hoists or were involved in manual handling training participated in an ergonomic workshop facilitated by Dr Gary Dennis. This data provided strong evidence that the ceiling hoist system was a far superior method for safely transferring residents than the mobile hoist system.

Ergonomic Biomechanical Findings

- The risk of acute and cumulative injury to shoulder and lumbar spine were lower ranging from 5 to 66 percent ($p<.05$) when transfers where performed using the ceiling hoist as compared with the mobile hoist.

Ergonomic Biomechanical Findings

- Assessment of various physical and environmental hazards associated with transfer tasks resulted in an estimated risk reduction for acute (33-67%) and cumulative (14-40%) injury risk.

Ergonomic Biomechanical Findings

- Staff feedback from the workshop also indicated the following; (a) transfers were quicker, (b) involved less resident anxiety, (c) involved less movement of furniture, (d) removed the risk of running over the staff member's toes, (e) required less storage space, and (f) were less likely to cause damage to walls and furniture that may occur while manoeuvring the mobile hoist.

STAFF SATISFACTION

- The staff satisfaction with the ceiling hoist was evaluated with regard to its usefulness to assist staff in their work, the adequacy of training, and any observations related to the use of the hoist equipment. Fifty-three staff participated in the Staff Satisfaction Survey Overall staff had a very favourable impression of ceiling hoists

STAFF SATISFACTION

- Safety and manual handling benefits for staff
  - There were consistent comments that supported the opinion that the use of ceiling hoists for bed transfers provided substantial safety and manual handling benefits for staff.
    - *"Less strain on backs not having to push"*
    - *"Reduces risk of injuries for staff"*
    - *"Operator safety, less strain on backs"*
    - *"It is easy to move the residents; they are more relaxed and more comfortable. It is easier to position them in the chair and it is less strain on my back."*
    - *"There are high exertions ... required to manoeuvre a mobile hoist with client weight."*
    - Safety and manual handling benefits for residents

STAFF SATISFACTION

- There were consistent comments regarding the safety and manual handling benefits for residents.
- *” Feels safer for clients’*
- *“Reduces risk of injuries for clients”*
- *“Ceiling hoists are more stable for clients”*
- *“Clients do not have as smooth a ride compared with the ceiling hoist”*
- Delivery of care
- There was a consensus of opinion about benefits in the delivery of care using ceiling hoists.
- *‘It is great to use because it is easier especially with heavy residents*
- *“Resident wound care is easier”*
- *“Height differences with nurses – the ceiling hoist is better”*
- *“Because it is lighter - it is quicker for residents as they are moved”*
- *“Less time”*
- *“Good for weighing residents”*
- *“Ceiling hoists are more comfortable; clients tend to grab the bars of the floor hoists”*

STAFF SATISFACTION

- Equipment, storage and spatial issues
- There were consistent issues raised regarding the equipment.
- *" the prongs break on the remote"*
- *"Ceiling hoist remotes are less robust and plastic parts are flimsy."*
- *"Storage room taken by the mobile hoist is greater and it is always difficult to locate a mobile hoist''*
- *"There are hazards in positioning and manoeuvring the mobile hoist – sometimes the bed design ... prevents the mobile hoist floor legs from passing under the bed"*
- *"Electrical cords under the bed are run over by the mobile hoist legs causing a jerking motion to manual handling and bumps to clients."*
- *"Ceiling hoist storage is minimal and it is able to be left at defined locations and is easier to locate."*
- *"Damage to walls, doors and furniture occurs regularly because of the mobile hoist."*
- *"it would be good if the track was longer and went into the bathrooms"*

RESIDENT FOCUS

- Skin tears review
  - » 6 month evaluation prior
  - » 6 month POST implementation
  - » Decrease in skin tears sustained during transfer by 85%
- Resident Acceptance
  - » Smooth ride
  - » Dignified compared to mobile hoists
  - » No negative comments re the aaesthetics of the ceiling hoist track and hoist mechanism
  - » Less trauma for weighing bed fast residents
  - » *“Faster than the mobile hoist”*

Would I do it again?

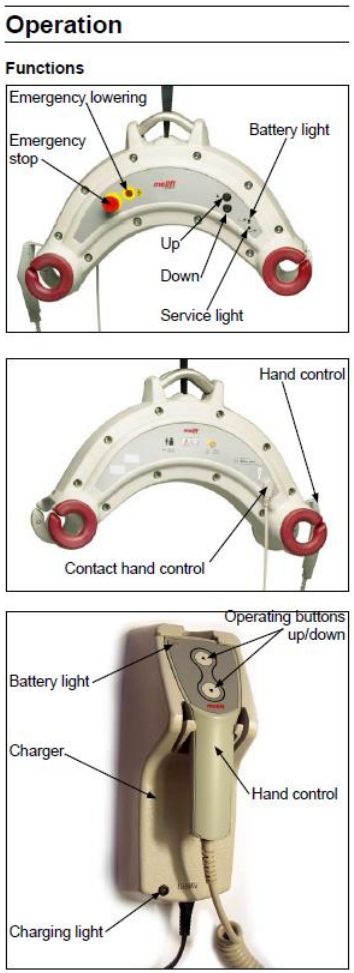
YES

- Well accepted by staff
- Recruitment & retention of staff

- COMFORT for residents
- Decrease risks of trauma & skin tears

What would I do different

- Poor design in hand sets, broken easily
- Poor design of handle connecting unit to track
  - » Handle to long & hit staff
  - » Once shortened too much for a few staff
- Clarification of SLING COMPATIBILITY



Clarification of when, how & WHO completes load testing prior to use

- The installer must provide written manufacturer's instructions on the tracks and cleaning and inspection requirements. This enables compliance with the Australian Standard of annual testing as per manufacture's guidelines.

- The Standard [ISO 1053502002] Annex A A.1 notes, "Every inspection should include a working load test of one (1) lifting cycle with maximum load." My concern remains one raise mid track is not the lift cycle – the standard patient transfer/lift includes a move along the length of the track then lowering, neither of these occur mid track.

LESSONS LEARNT

- As end stops are currently secured with 2 large screws/bolts, shearing in short term is low high risk. However, an engineer understanding metal fatigue should be consulted regarding standard replacement precautions (3 yearly etc). However this may be included in the manufacturer's guidelines. Please note that end stops are only tested *100 x hitting at a set speed to meet a European ISO standard*. It is most likely in short tracks like ours, a care-worker will take it to end stop from time to time. [Note manual handling staff should train staff not to hit or impact *end stop* but compliance is not something as we know one should assume.]

- If a different track is installed and not the hoist manufacturer's, then we should determine what long term trails have been conducted on wear and tear of the 'carriage' with the hoist load.

LESSONS LEARNT

- I have observed that significant dust within the rails – one must question the affect this grit is having on ‘carriage wheels’ and tracking pressure. Teflon type carriage rollers are sturdy, yet a little asymmetry may produce magnified problems over time.
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- If there is load testing done in the middle of the track only once per year is this consistent with the manufacturer requirements?
-
- The qualifications, training process etc of the person carrying out the testing/maintenance be clarified for your liability protection. I am of the belief an engineer familiar with tracks; metal fatigue etc should be involved *as we lift people* not building supplies.

LESSONS LEARNT

- Check lists for the maintenance of the ceiling hoist should be consistent with manufacturer's requirements and specific for the hoist not a one size fits all. For example check lists for standing hoists are not appropriate for ceiling hoists.

- Some brands of ceiling hoist have cut out safety if the lift exceeds recommended angle of safe lift e.g. Guldmann at 40 degrees. Some brands refer to it only generally in the manufacturers' instruction – for example, "The hoist should only be used to lift vertically. Lifting at an angle will wear the lifting tape prematurely." (quoted from Wispa instruction manual) This is poor instruction that users including trainers if not forewarned will lead to at best inappropriate wear on tape and potentially carriage/track and at worse damage to residents.

- Tracking hoists that are fitted in assist bathrooms that are infrequently used should have a check list for pre use.

REMEMBER

- Include cost of hoist slings in operational budget
- Architects do not necessarily know clinical implications of positioning track etc
- Have highly skilled trainer /consultant familiar with ceiling hoists in initial stages
- The more track the better

REMEMBER

- Document maintenance routine and ensure qualified technicians carry our maintenance and testing
- Qualification comes from hoist manufacturer
- Check the criteria for maintenance – make sure it is documented and signed for on completion
- Ensure that the hoist is tested under load
- Ensure that the end stops are tested

REMEMBER

- Make sure the tracks are cleaned routinely (during maintenance checks)
- Train staff in the workplace with the hoist not in a class room
- Train staff to check the attachment mechanisms before commencing the lift
- Train staff not to take the hoist to the end of the track and hit the end stop