

Plus Size Turning Project

Situation and background

One of the inpatient rehabilitation units at Hertfordshire Community Trust has been the designated plus size rehabilitation unit since 2018. In 2021, the hospital underwent extensive building redesign and building adaptation to better manage plus size patients care. This included door widening for evacuation purposes, installation of track and ceiling hoisting, purpose built larger isolation rooms and adapted bathrooms. All substantial staff underwent plus size moving and handling training and plus size moving and handling equipment has been purchased / appropriate procurement contracts have been set up so equipment can be rented as and when needed. In 2024, it was decided the unit would be commissioned to have 6 plus size patients in the unit at any one time, which is an increase on the 4 commissioned beds in previous years.

There was an increase in the number of staff related moving and handling injuries at the unit with managing plus size patients personal care in the bed, pad changes in the bed and lye to sit on edge of bed transfers. There were 4 nursing staff injuries and one therapy staff injury in a 3-month period (May - July) 2024. The Occupational Therapy Lead Caroline Benton and Quality Lead for inpatient beds, Rose Aknai were tasked with exploring a piece of equipment to support safer moving and handling of plus size patients to reduce staff injuries. This report details our experience with the Q2 Roller.

Method

Root cause analysis – Fishbone diagram

A root cause analysis was carried out to identify the cause of staff injuries. See appendix 1 for Fishbone Diagram.

Using the Fishbone diagram, the following causes were identified as the reason for increased injuries:

- When repositioning in the bed: Plus size patients frequently have reduced range of movement in their shoulders, so they are unable to reach across their bodies to grab hold of a bed lever to assist with turning themselves onto their side. They are subsequently unable hold their weight in a side lying position in the bed. 2-4 staff are needed to assist with re-positioning a plus size patient in the bed. These

staff numbers are not always available so staff feeling pressure to undertake repositioning with less than recommended staff.

- Agency, bank and staff from other units do not routinely undertake Plus Size moving and handling training, so may lack the required skillset for this patient cohort.
- All the standard equipment (slide sheets, hoist, profile function on beds, rails) is used appropriately, however due to the size of the patients, the amount of staff for handling was high.

Actions:

- Ward manager highlighted the lack of plus size moving and handling training for bank, agency and rotational staff to lead nurse for inpatients.
- Explore equipment options which may support patients use of shoulder movement to enable more independence and would also support nursing staff with repositioning and changing pads on the bed.
- Explore equipment options to assist with lye to sit on edge of bed transfers to assist with safer moving and handling for therapists.

Exploring moving and handling equipment options

Three pieces of specialist handling equipment were reviewed as follows:

Option 1

Reviewed by Rose Aknai at the training event at Head Office on 27/08/2024.

Safe Working Limit (SWL) – 63 stone for plus size, 36 stone for standard patients.

Cost - £XXX for standard and £XXXX for plus size rollers £XXX per patient single use – would be having to be disposed of.

Laundry costs of the sheets need to be considered.

Summary of positive and negative aspects:

Advantages	Disadvantages
Good for turning and rolling a patient in a profile bed	Can only be used on a profile bed, not a divan or pythe for rehab
HES provide in community (as special order), so there would be consistency	May not be compatible with Trust hospital beds

Good for end-of-life patients and patients with no rehab goals who are returning home to be managed in bed, or hoisted into a chair.	Does not support lie to sit of SOEOB transfers
	Changing roller sheet is time consuming and tricky due to the roller attachments – issue if roller becomes soiled
	Only compatible with hoist for transfers as rollers may get in way of other handling devices.

Option 2

Reviewed by Caroline Benton Therapy Lead, therapists and nursing staff on the unit on 30/07/2024.

Trialed with two patients – one plus size and one normal weight for 2 days before both requested for the mattress to be changed.

Not available for purchase. Rental only.

Hospital has a rental agreement contract with XXX. Rental Cost is £XX per day. SWL 454kg

Advantages	Disadvantages
Reduced need for staff turning patient – helpful for repositioning	'Bottomed out' so uncomfortable for patients
	Does not aid lye to sit on edge of bed transfers
	Does not support independence for patients
	Does not deflate behind patient once it has turned patient therefore not helpful for personal care / pad changes

Option 3

Q2 Roller by ETAC

Reviewed by Caroline Benton OT lead and Rose Aknai Quality Lead with unit ward manager and members of the unit nursing and therapy teams 08/08/24 and trailed with a plus size patient on the ward

Cost XXX

Advantages	Disadvantages
Promotes independence by improving body positioning to allow plus size patients with limited shoulder range of movement to reach the bed levers and assist with repositioning / pad changes / lye to sit on edge of bed transfers.	Not part of local Equipment Service Specialist Equipment Framework, so cannot be ordered directly through HES for patient use but can be provisioned through ACS.
Reduces number of staff	Roller is Single patient use only.
Reduces time for staff to complete tasks	
Reduces risk of injury	
Can be used for a variety of tasks repositioning, pad changes and lye to sit on edge of bed transfers	
Easy for staff to operate	
Can be used for plus size patients	
Positive staff and patient feedback	
Pump can be used with multiple patients	
Pump is compatible with existing Hoverjack equipment used in the units	
Can be used on any beds	
Can be used on plinth in rehabilitation sessions	
Can be purchased through Adult Care Services if reduces the need for carers under the Care Act 2014	

Summary

In view of the lower cost and more advantages of the ETAC Q2 roller, a short project was initiated to look at the costs and staffing benefits of it.

Data collection

All staff at the unit, received training in how to use the Q2 Roller prior to commencing the data collection. This training was face to face (initially given by the ETAC rep to a group of staff, who then cascaded the learning to others). Training videos were also made which provided a step by step guide to help staff understand how to fit the Q2 roller to

the bed, how to use it to turn a patient in the bed and how to use it to assist a patient with their lye to sit on edge of bed transfers. All staff signed a self-declaration form to confirm their competence with using this item of equipment with patients. All staff were informed of the project and how to complete the data collection tools via email, in ward meetings and in daily handovers.

Etac agreed to give the unit some Q2 rollers to trial. Initially ETAC provisioned one roller to use with a plus size patient and then ETAC sent a further supply of rollers to support the data collection. Data was collected over a 2.5-month time frame.

Unfortunately there were delays in the shipment of the further supply of rollers which were needed to try with other patients and then there were inappropriate patients once this supply of rollers arrived. This meant that there was a delay in getting some of the data.

Staffing shortages with the nursing staff also meant that there was less data for some of the tasks.

A total of 32 moving and handling interventions were analysed on the following 3 tasks:

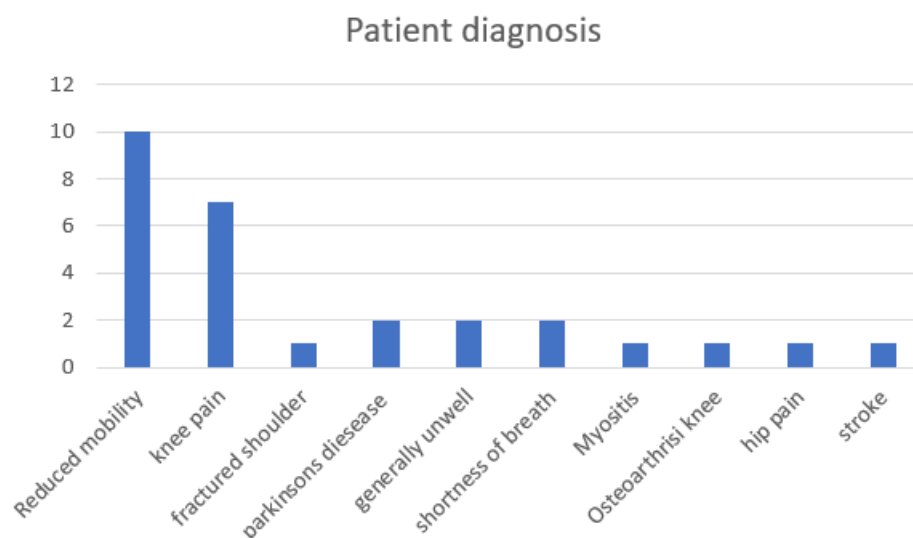
- Reposition – with and without the Q2 roller.
- Pad changes – with and without the Q2 roller.
- Sit on edge of bed (SOEOB) - with and without the Q2 roller.

Twenty-four of these interventions were with plus size patients and 8 were with nonplus size patients. Some of the interventions were for the same patient, i.e. reposition n and then pad change.

Data was collected on the following:

- Date
- Number of staff and staff band
- Time taken for task.
- How many times task performed over 24 hours.
- Patients' diagnosis
- If patient was plus size
- Patient feedback
- Staff feedback
- Staffing cost per task
- Staffing costs were then totalled to work out staffing cost over 24 hours.

Patient diagnoses were variable as follows:



See appendix 2 for data collection tools used for all tasks.

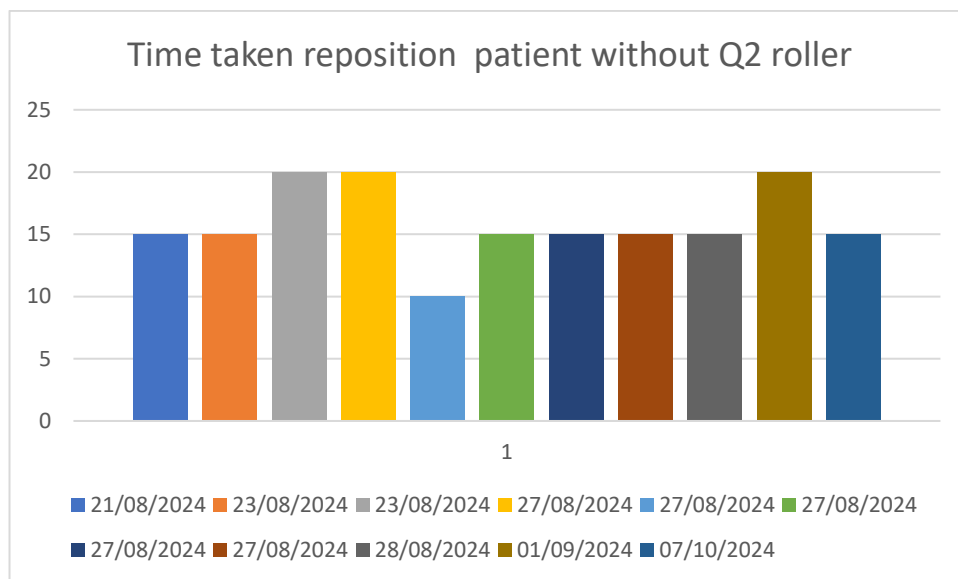
Results

Repositioning

Repositioning **without** the Q2 roller:

Quantitative data:

- The times varied from 20 mins to 10 mins with the average being 15.9 minutes.
- The band of staff varied across bands 3-5 nursing staff.
- 2 staff members were required for each reposition.
- The staffing cost per task varied from £6.56 to £17.50, with the average being £10.00.
- The total staffing cost over 24 hours varied from the lowest cost being £29.65 to the highest being £79.09, with the average cost of nurses supporting with repositioning over 24 hours being £57.28



Qualitative data:

Feedback from patients was negative about this task and comments included:

- task gave them pain
- being short of breath
- sore bottom
- being exhausted.

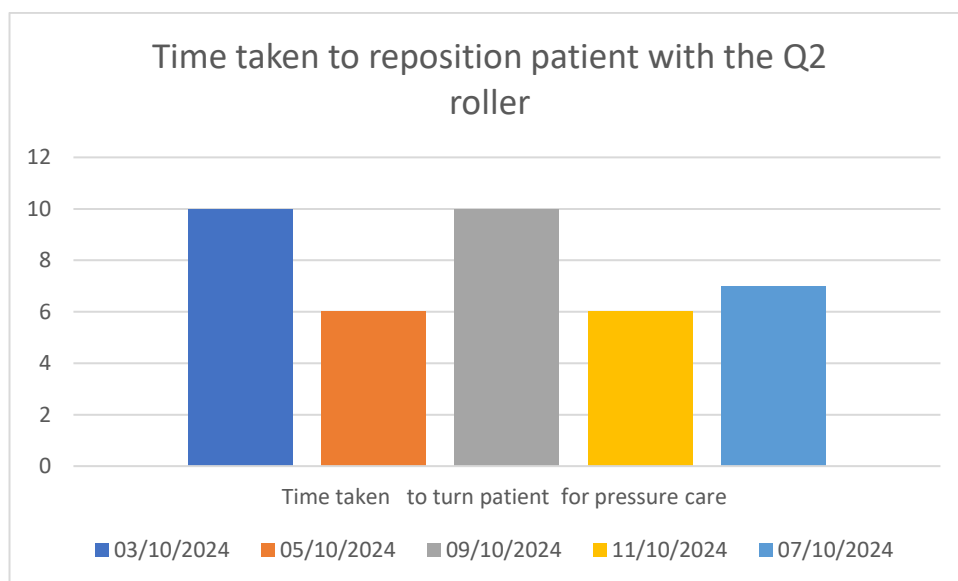
One staff member fed back they had no problems, but all other feedback from staff was negative and gives insight into how difficult the task was for them:

- It was a heavy task (entered 6 times for different patients)
- They found it very hard to roll the patient
- The patient was very stiff to roll (entered twice for different patients)

Repositioning **with** the Q2 roller

Quantitative data:

- The times carrying out this task varied from 10 mins to 6 mins with the average being 7.8 minutes. This is a significant reduction in time.
- The band of staff varied across bands 3-4 nursing staff.
- 2 staff members were still required for each reposition.
- The staffing cost per task varied from £2.62 to £4.67, with the average being £3.64. This is a significant reduction in staff costs.
- The total over 24 hours varied from the lowest cost being £18.34 to the highest being £26.26, with the average over 24 hours being £22.76. Again, a significant reduction in staff costs.



Qualitative data:

One patient fed back that they found the Q2 roller confusing, however all other patients had the following positive feedback:

- Easy
- Comfortable x 3
- Very comfortable x 1
- Staff feedback was very positive, giving insight that using the Q2 roller supported them with the task.
- They viewed it as good for reducing manpower
- They found it reduced physical stress
- Staff felt confident and competent.
- Staff found it much quicker

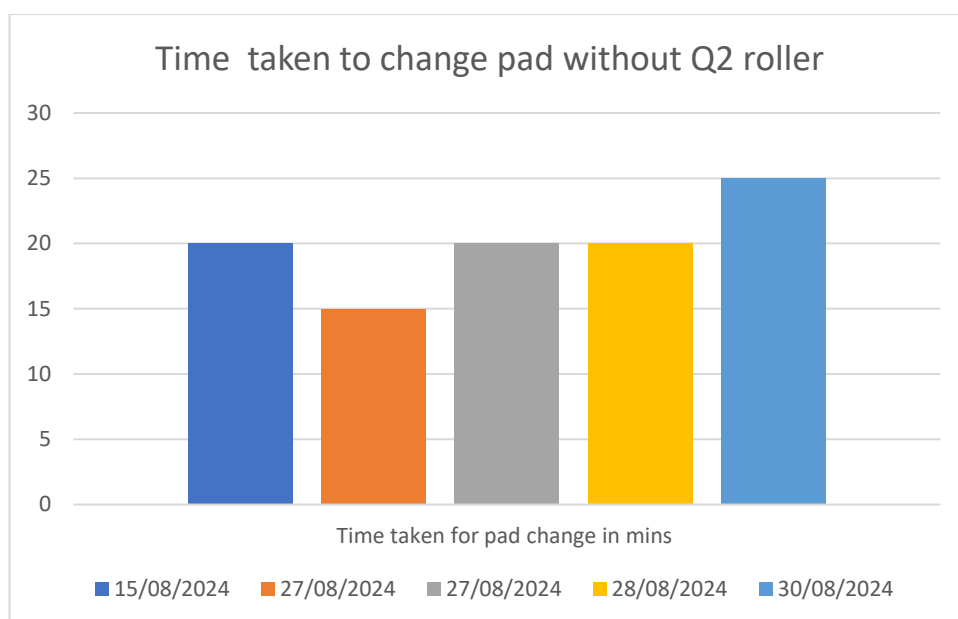
5b Pad change

Pad change **without** the Q2 roller:

Quantitative Data:

- The times varied from 25 mins to 15 mins with the average being 20 minutes.
- The band of staff varied across bands 3-5 nursing staff.
- Staffing numbers varied between 2-3 staff needed.
- 2-3 staff members were needed for each task but were higher for the plus size patients.
- The staffing cost per task varied from £6.56 to £16.40, with the average being £10.66 per task.

- The total over 24 hours varied from the lowest cost being £26.26 to the highest being £96.24, with the average over 24 hours being £57.88.
- Qualitative data
- There was no feedback from patients on this task.
- 1 staff fed back they had no problems, but all other feedback from staff was negative and gives insight into how difficult the task was for them:
- They found it hard work (entered 3 times for different patients)
- That the patient become stiff due to Parkinson's Disease



Pad change **with** the Q2 roller

There was a lack of data provided for this task. Of the provided data:

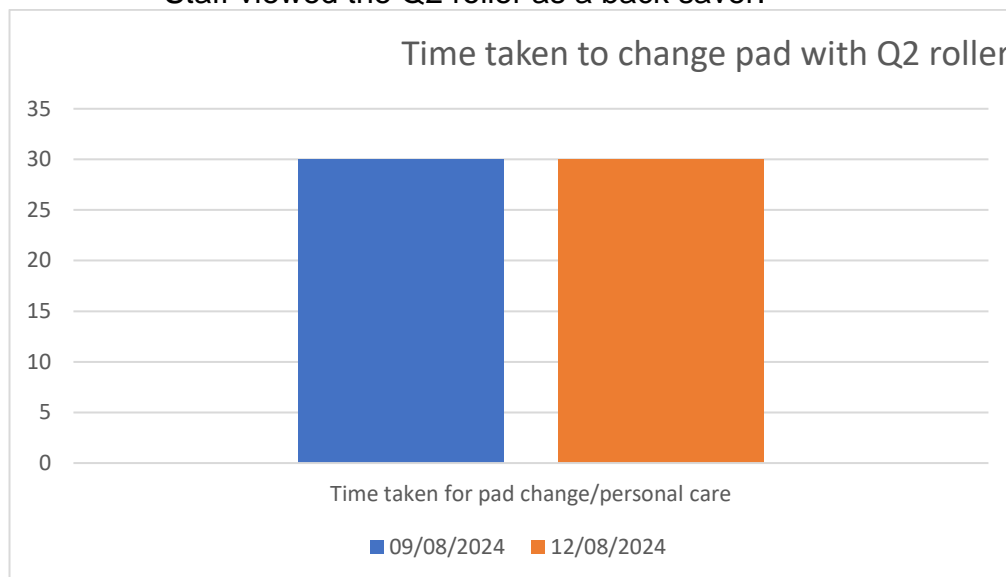
Quantitative data:

- The times taken were both 30 min, so this was longer than without the Q2 roller.
- The band of staff varied across bands 3-4 nursing staff.
- On one occasion the task took 3 members of staff, the other time it took 2 members of staff. This was for different patients.
- Costs are difficult to identify due to lack of data.

Qualitative data

- 1 patient fed back that they found the Q2 roller good to use.
- Staff feedback was very positive, giving insight that using the Q2 roller supported them with the task.
- That it made the task easier for patient to assist with rolling

- Staff viewed the Q2 roller as a back saver.



Sit on Edge Of Bed (SOEOB)

SOEOB without the Q2 roller:

Quantitative Data:

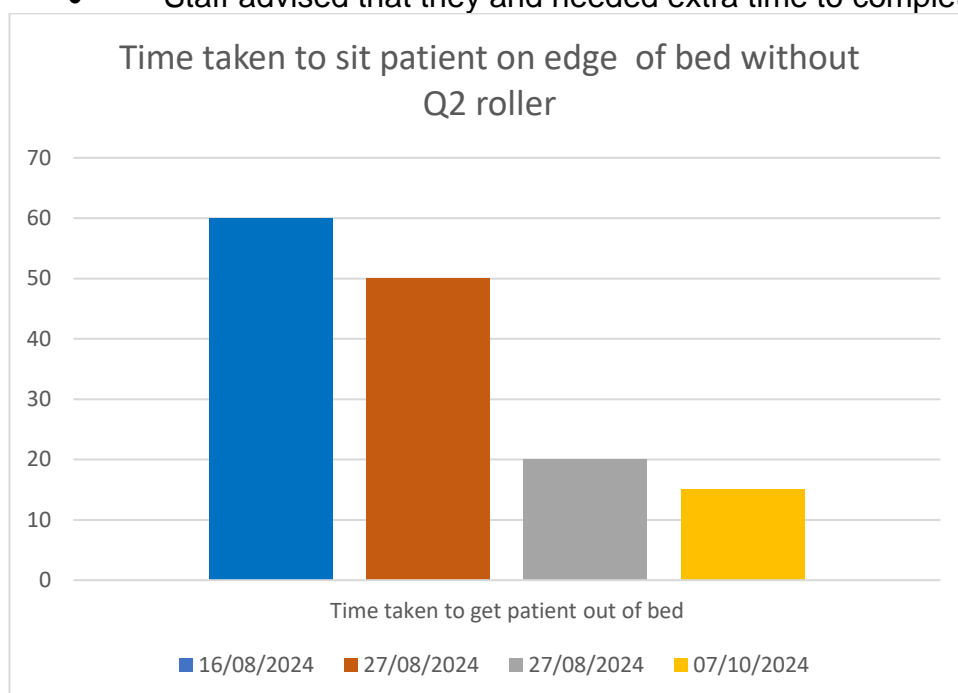
- The task times varied from 60 mins to 15 mins with the average being 36 minutes
- The band of staff varied across bands 3-6 nursing and therapy staff.
- Between 2 and 4 staff members were required for each transfer. The higher numbers of staff were required for the plus size patients.
- The staffing cost per task varied from £62.94 (when 4 staff members were required) to £8.75 (when 3 staff members were required), with the average being £32.55
- The total staffing cost over 24 hours varied from the lowest cost being £17.50 to the highest being £125.88, with the average cost of nurses and therapists supporting with this transfer over 24 hours being £65.07

Qualitative data:

Feedback from patients was negative about this task and comments included:

- Task too hard and tiring
- Too hard and complained of pain.
- Out of breath and very difficult to get to the edge of the bed.
- Struggled and tired
- Feedback from staff on this task was all negative and gave insight into the difficulty of this task, especially with plus size patients:

- Staff fed back that the task involved Too much moving and handling. On one occasions they had to abort and use ceiling track hoist.
- Staff viewed the task as hard work – with risk of back pain for them
- Staff advised that they had to give the patient a lot of help to roll to edge of bed.
- Staff advised that they and needed extra time to complete the task.



SOEOB with the Q2 roller

Quantitative data:

- The times carrying out this task were significantly less than without the Q2 roller and varied from 8 mins to 1 minute 1, with the average being 4.12 minutes – this is a significant reduction in staff time.
- The band of staff varied across bands 3-6 nursing and therapy staff.
- Staff members reduced to 1-2 for each task.
- The staffing cost per task varied from £3.28 to 63p, with the average being £1.72. This is a significant reduction in staff costs.
- The total staffing cost over 24 hours for this task varied from the lowest cost being £1.76 to the highest being £6.56, with the average over 24 hours being £3.52. Again, a significant reduction in staff costs.

Qualitative data:

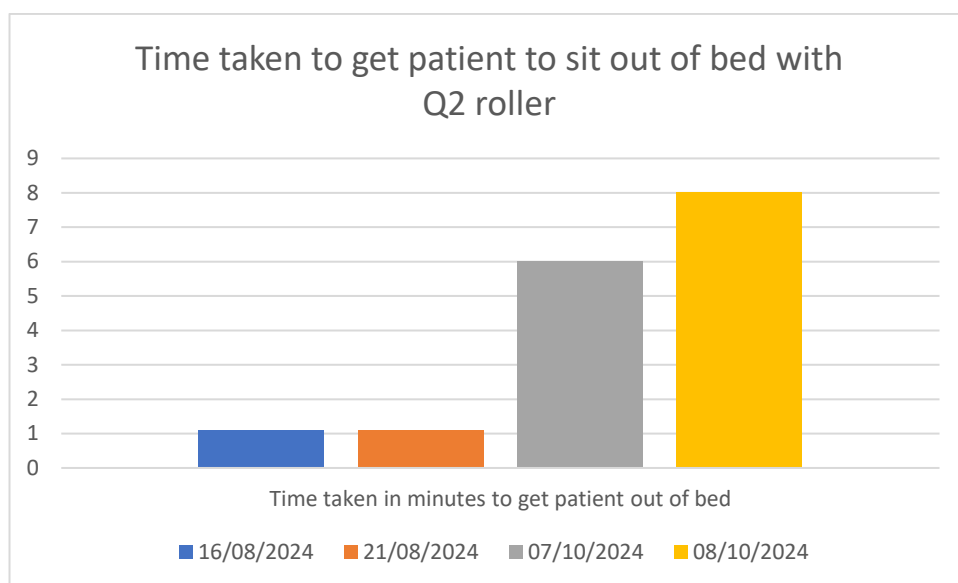
One patient feedback that they felt breathless, all other patients were very positive about using the Q2 roller:

- they found it amazing and reduced pressure from falling back

- they found it very easy
- Quick and comfortable

Staff feedback was overwhelmingly positive:

- They fed back that it initiated the roll and bed transfers allowing the patient to use his upper limbs and be more independent
- Since using this, staff felt that patients arm strength and range of movement improved
- Staff found it quick and easy to use



Staff injuries

There have been no reported nursing or therapy staff injuries carrying out moving and handling tasks since the Q2 has been trailed on the ward.

Conclusion and summary

Within the unit, quantitative data in this short study has demonstrated that the Q2 roller significantly reduced staffing time and costs with repositioning patients and enabling them sit on the edge the bed. There was insufficient data to draw any conclusions regarding if the Q2 reduced time and cost when changing pads.

Qualitative data from patients was very positive, reporting that they found it more comfortable than when transferred without it. Crucially as this is a rehabilitation unit, patients also feedback that it facilitated their independence.

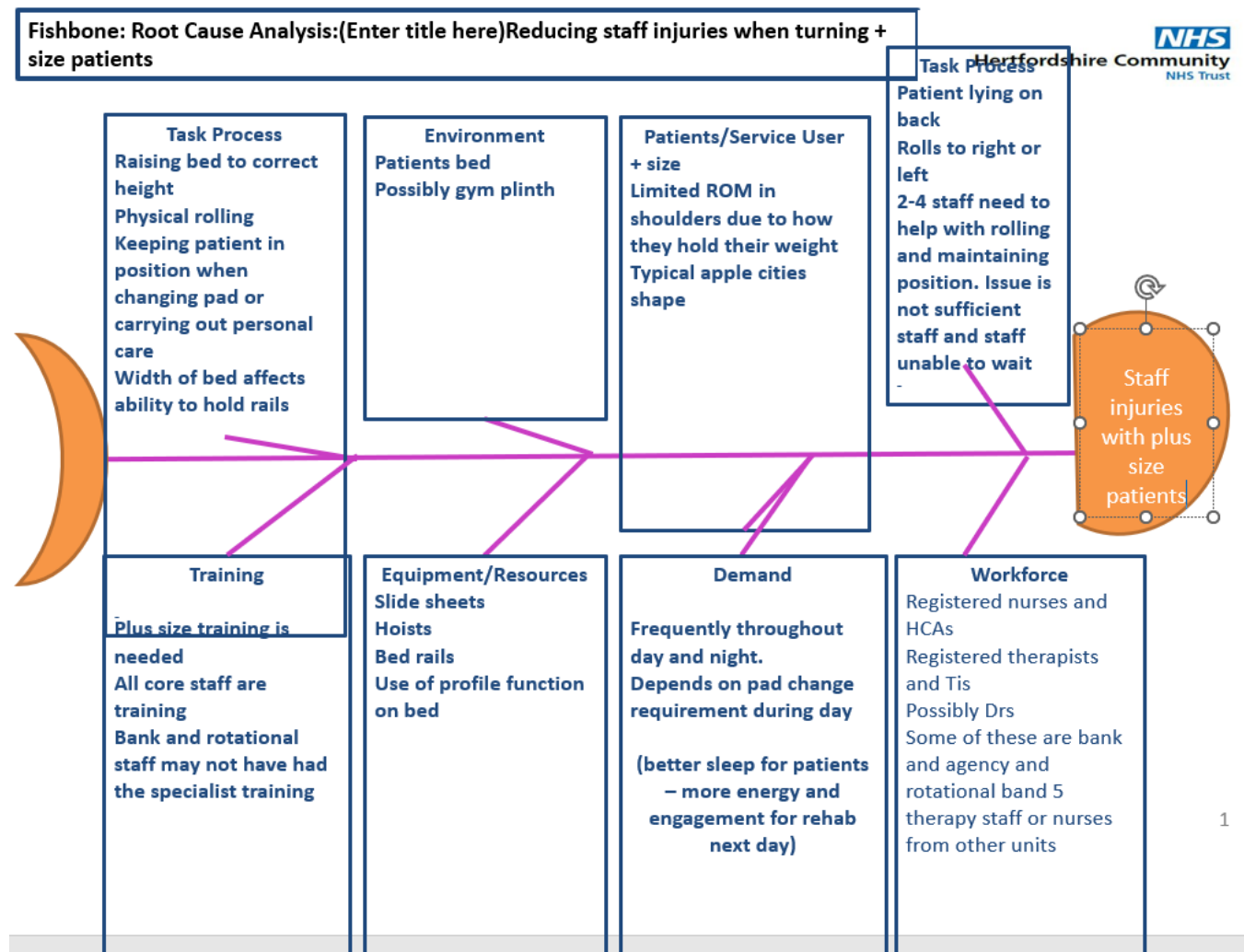
Qualitative data from staff was also very positive, that it reduced staffing numbers, it made the task less effortful and less heavy for them. Staff also observed that the Q2 enabled independence. The Q2 roller benefitted handling tasks with both plus size and non-plus size patients. There has been no further injuries associated with managing plus size patient reported by staff since the use of Q2 rollers on the unit.

Recommendations

It is recommended that the Q2 is purchased for the unit. On discussion with staff and based on numbers of patients over the past 6 months it is recommended that 2 boxes (of 5) would be required per quarter at present to be on the safe side. This equates to 8 boxes per year. See appendix 3 for cost details.

Authors, Caroline Benton, Occupational Therapy Lead, and Rose Aknai, Occupational Therapist and Clinical Quality Lead, December 2024

Appendix 1 – Fish bone diagram



Appendix 2 – example of data collection sheets staff completed.

For turning patients: **WITHOUT** Q2 roller (10 different patients to be recorded please)

Date	Number of staff needed	Time taken to turn patient for pressure care	How many times does this patient need repositioning in 24 hours?	Is the patient a plus size	Diagnosis of patient	Feedback from patient about being turned	Feedback from Staff about turning <u>patient</u>

For turning patients **WITH** the Q2 Roller (10 different patients to be recorded please)

Date	Number of staff needed	Time taken to turn patient for pressure care	How many times does this patient need repositioning in 24 hours?	Is the patient a plus size	Diagnosis of patient	Feedback from patient about being turned	Feedback from Staff about turning <u>patient</u>

Appendix 3 raw data – redacted

Appendix 4 Costs - redacted