



Postural risk reduction and the electric profiling bed



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Beds are key items of equipment in health and social care, yet the importance of providing the right bed for patients and care service users is sometimes overlooked. The right bed can enhance the quality of life of those who use them; poorly designed or inappropriately chosen beds can have a significant detrimental effect. Typically, injuries happen while moving patients up or down the bed or helping them to sit up or turning them in bed (Hignett 2003*). The provision of an electric profiling bed would seem a logical step in reducing such risks by enabling a patient to move from a recumbent, to sit-to-stand position, with minimal aid. The purpose of this initiative was to quantify the risk reduction encountered within this single, commonly undertaken, task.

The data was collected, with the full co-operation of LINET UK, using a vibration feedback harness to ascertain if there is an impact when using the Mobi-Lift® mobilising handle or lateral tilt function on LINET electric profiling beds. LINET beds provide the patient with independence through active mobilisation with unique features such as integrated Mobi-Lift® mobilising handle and lateral tilt function. These safety features ensure patient safety when standing and reassure nursing staff. The Mobi-Lift® mobilising handle is integrated into the bed's mattress platform to act as a support for the patient when getting out of bed. A Hi-Lo button is integrated into the Mobi-Lift® handle which eases the efficiency of patient standing and allows the patient to actively control their own movement.

Results Overview

		Normal	Tilt	Mobi
Total Time		17.400	23.350	12.600
Stand	< -15	0.575	0.125	0.075
	> 10	1.775	0.05	0.225
Frequency	< 15	17	4	2
	> 10	14	2	5
Percentage (Time)	< -15	3.30	0.72	0.43
	>10	10.20	0.29	1.29
Percentage (Angles)	< -15	34.69	8.16	4.08
	> 10	28.57	4.08	10.20
Individual Angles		49	24	23

Movement Data

The movement data highlights that with both the normal electric profiling (Figure 1) and the use of the Mobi-Lift® mobilising handle (Figure 2) there is a standing spike which is not present with the lateral tilt function (Figure 3). The movement data from the lateral tilt function shows that the patient adopts a more natural standing movement. The use of a standard bed (to stand a patient) adversely affects the patient's posture as a spike of up to a 47 degree forward curve of the spine is shown.

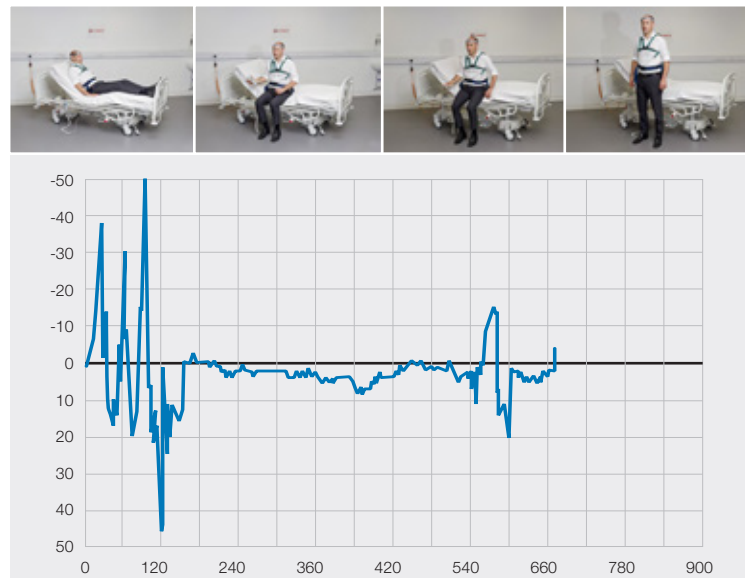


Figure 1

Movement data captured using a normal electric profiling bed

The sit-to-stand movement was completed in approximately 17 seconds and the spikes in the graph show the number of times where a spinal movement, in excess of 15° forwards and 10° backwards, were encountered.

* Hignett, S. Lang, R. (2003) 'Project managing a change to electric hospital beds'. British Journal of Health Care Management. 9 (8) 271-276

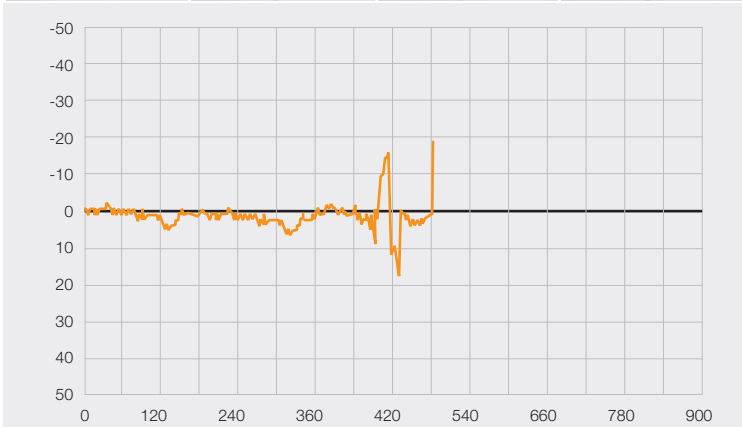


Figure 2
Movement data captured using a Mobi-Lift® mobilising handle

The movement was completed in a little over 12 seconds and the frequency of injury risk was greatly reduced and only encountered in the last 2 seconds of the movement.

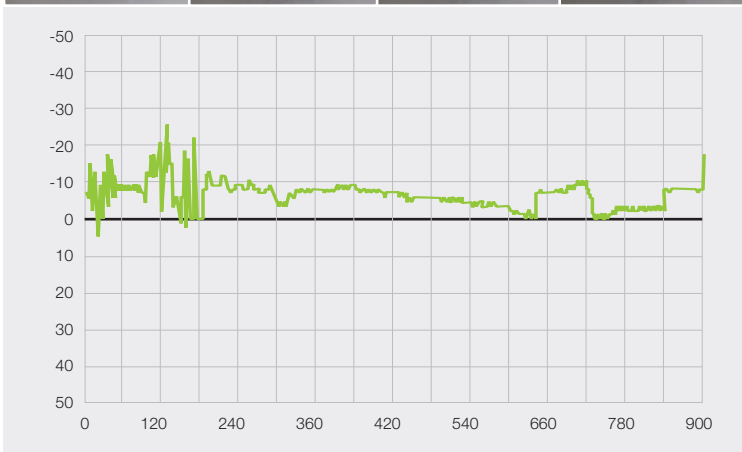


Figure 3
Movement data captured using a lateral tilt function

Although the movement took the longest time (over 23 seconds) very little postural risk was encountered.

Number of individual angles used

The number of adverse angles (Figure 4) adopted by the patient during the 'sit to stand' move when using a normal electric profiling bed increases by more than 50% compared to the use of the Mobi-Lift® mobilising handle or the lateral tilt function.

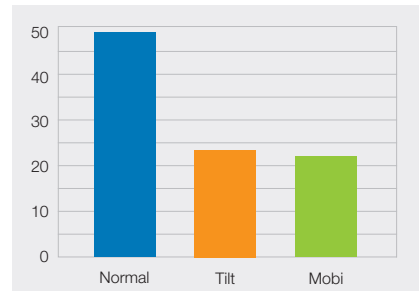


Figure 4
Number of individual angles used
Time taken to perform move

The time taken to perform the move (Figure 5) is increased when using a lateral tilt function as the additional time taken for the bed to tilt must be taken into consideration.

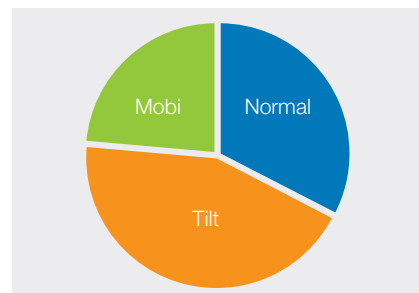


Figure 5
Time taken to perform move
Conclusion

The data suggests that the impact of the Lateral tilt function on the reduction of postural risk on the Healthcare worker and the patient is clearly greater where there is a higher level of patient dependency. Where Healthcare workers are frequently carrying out patient handling tasks when standing the patient out of bed, the data obtained shows it is clearly a practicable measure in reducing any injury risk compared to the data produced from non-use of the lateral tilt function. The evidence indicates that the most optimum electric profiling bed to assist a patient from a sitting to standing position would be one with a Mobi-Lift® mobilising handle and lateral tilt function within the same bed platform.



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