

Prevention Emergency Project (PEP)

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Introduction

- The elderly are the most common patient group presenting to emergency departments (EDs), and are at high risk of developing pressure ulcers (PUs), particularly if they have long waiting times.
- A combination of early risk assessment (i.e. starting in the ambulance), together with the use of sacrum and heel dressings, and other preventive interventions, reduces the emergence of hospital-acquired PUs.¹

Aim

- To evaluate the outcome of a quality improvement project, focusing on early identification of PU risk factors and implementation of interventions to prevent PU in ‘at risk’ patients throughout their stay in hospital (Figure 1).

Methods

- Data collection took place in the ED of Karolinska University Hospital, Stockholm, Sweden, between 31 November 2017 and 6 February 2018.
- Consecutive patients with suspected hip fracture or elderly patients (>75 years of age) having one of the following were recruited into the study:
 - Malnutrition
 - Immobility (difficulty changing position)
 - Reduced general health (e.g. fever, malaise)
- Inclusion into the study was determined by nursing staff either in the ambulance or at ED triage.
- Patients were randomized into one of two groups:
 - Intervention** – heel (Mepilex® Border Heel) and sacrum (Mepilex® Border Sacrum) dressings^{2,3} and prevention mat (Mölnlycke® Tortoise® Turning and Positioning System, MTTPS)⁴
 - Control** – standard care (skin inspection within 30 minutes; repositioning every 2 hours)
- Hospital staff dealing with the patients were asked about aspects of PU prevention in two surveys: conducted prior to start (Survey 1) and at end (Survey 2) of project. The number of participants in Survey 1 and 2 were 59 and 60, respectively.

Results

- The study enrolled 400 patients; 200 in each group. Of these, data were available for 147 patients in the intervention group and 119 in the control group.
- Survey 1 revealed that a significant proportion of staff (51%) sometimes turned the patient without assistance, which led to staff at times experiencing neck, back and shoulder problems (51%) prior to the start of the project.
- Ergonomic aids were sometimes (53%) or often used (29%) according to Survey 2.
- 70% said use of the MTTPS made turning patients a little easier, easier or much easier (Figure 2).
- Around 75% of staff in Survey 1 and 38% in Survey 2 said that adequate care for prevention of PU was only sometimes applied.
- The use of the MTTPS coincided with a reduction in the incidence of PUs (34 vs 27 at arrival and exit) compared to standard care (18 vs 17 at arrival and exit) (Table 1).

Conclusions

- This quality improvement project has established a new PU prevention model for the ED and acute inpatient setting, using simple supportive aids and MTTPS.
- Consistent use of this new model will particularly benefit elderly patients who are most at risk of PU.

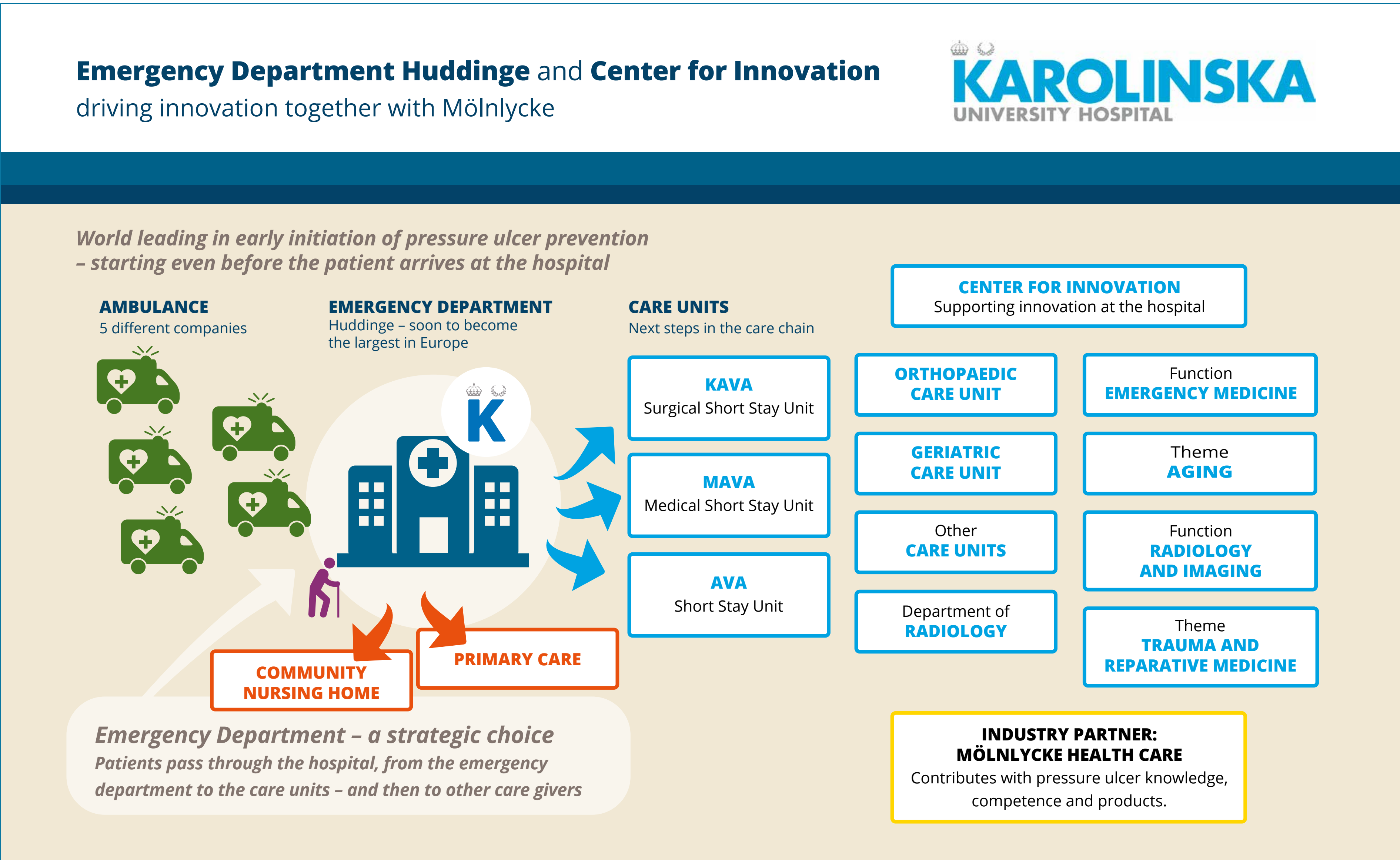


Figure 1. Diagrammatic representation of the quality improvement project

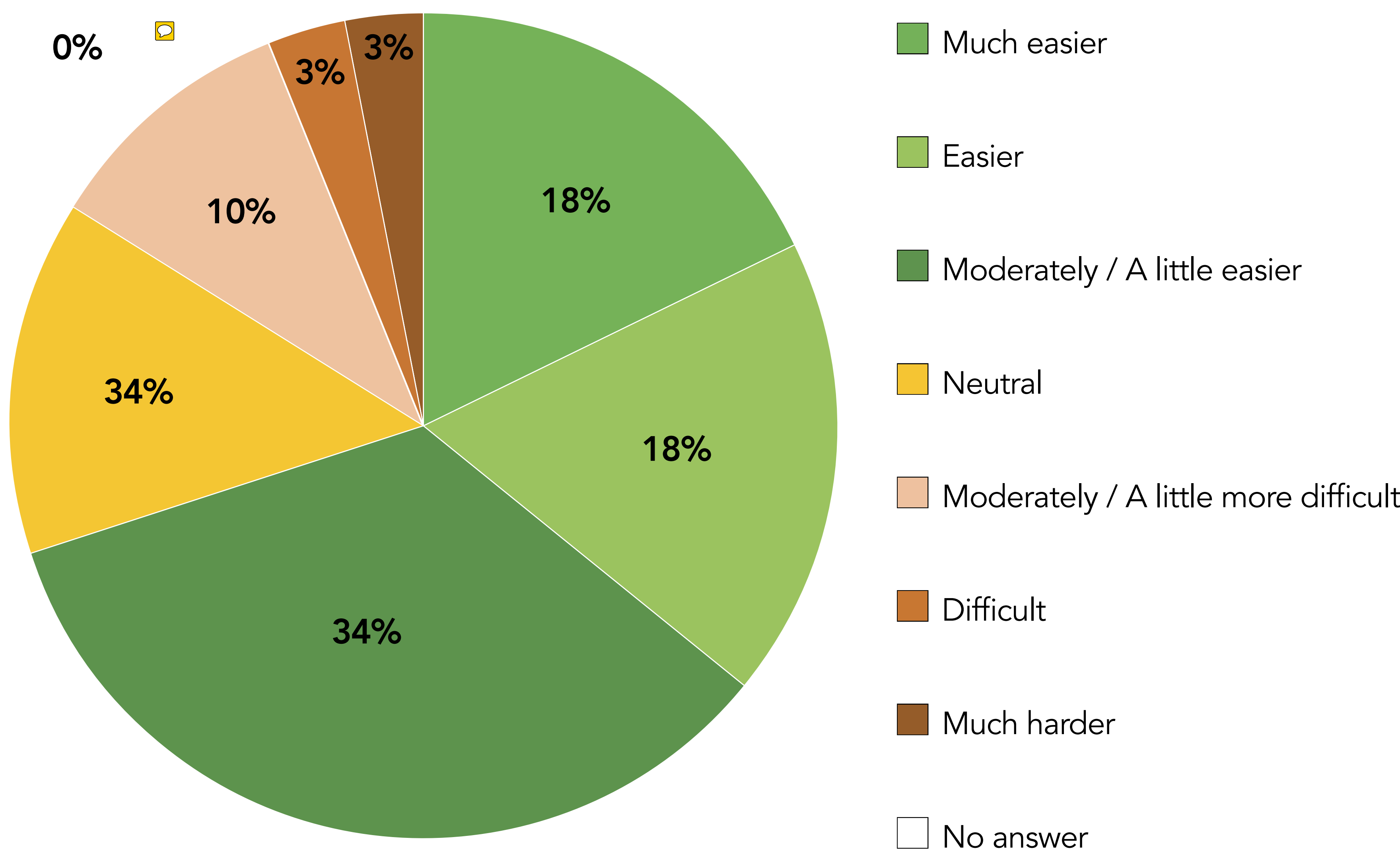


Figure 2. Staff experience of repositioning, turning or pulling a patient using the MTTPS model compared to repositioning a patient without this system.

Table 1. Patients with PUs (n, %) at arrival and exit, and change from arrival to exit by group (MTTPS vs standard care).

Variable	With (n=110)		Without (n=76)		
	n (%)	p-value within group	n (%)	p-value within group	p-value between groups
Skin at arrival					
No PU	76 (69.1%)		58 (76.3%)		
Stage 1	25 (22.7%)		17 (22.4%)		
Stage 2	6 (5.5%)		0 (0.0%)		
Stage 3	0 (0.0%)		1 (1.3%)		
Stage 4	3 (2.7%)		0 (0.0%)		0.10
Any PU at arrival					
No PU	76 (69.1%)		58 (76.3%)		
Stage 1-4	34 (30.9%)		18 (23.7%)		0.36
Skin at Exit					
No PU	83 (75.5%)		59 (77.6%)		
Stage 1	14 (12.7%)		15 (19.7%)		
Stage 2	9 (8.2%)		0 (0.0%)		
Stage 3	2 (1.8%)		1 (1.3%)		
Stage 4	2 (1.8%)		1 (1.3%)		0.30
Any PU at Exit					
No PU	83 (75.5%)		59 (77.6%)		
Stage 1-4	27 (24.5%)		17 (22.4%)		0.87
Change in PU from Arrival to Exit					
Decrease (From Higher to lower stage)	16 (14.5%)		6 (7.9%)		
Equal	85 (77.3%)		64 (84.2%)		
Increase (From lower to higher stage)	9 (8.2%)	0.23	6 (7.9%)	1.00	0.40
Change in Any PU from Arrival to Exit					
Decrease (From Stage 1-4 to No PU)	14 (12.7%)		6 (7.9%)		
Equal	89 (80.9%)		65 (85.5%)		
Increase (From No PU to Stage 1-4)	7 (6.4%)	0.19	5 (6.6%)	1.00	0.47

For categorical variables n (%) is presented.
For comparison between groups Fisher's Exact test (lowest 1-sided p-value multiplied by 2) was used for dichotomous variables and the Mantel-Haenszel Chi Square Exact test was used for ordered categorical variables. For comparison within groups Sign test was used.
2018-08-17 analys.sas

References

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