

The Influence of Wearable Technology on Nursing Attitudes and Adherence to Patient Turning and Repositioning

Melissa Klaeb, PT, DPT, Kim Krafft, RN, MSN, Bernadette Walters, RN, CWON, Jason Lowe, MS, Annemari Cooley, MA, MBA
Leaf Healthcare, Inc

ABSTRACT

Introduction: Promoting early, safe mobility in hospitals is vital to prevent adverse outcomes. One aspect of mobility, patient repositioning, is demonstrated in literature to be as low as 38-66%. To discover if wearable technology can influence attitudes towards patient repositioning and/or increase turning adherence, nurses were surveyed and turn adherence analyzed in facilities evaluating the technology.

Methods: 16 nursing units (ICU, telemetry, med-surg) across 9 acute-care hospitals in California, Washington and Texas implemented a patient-monitoring system capturing real-time patient position/movement data. Turn adherence was calculated based on timeliness and adequacy.

Staff were administered pre/post-implementation surveys on patient repositioning challenges, ease of maintaining turning protocols with/without monitoring technology, and teamwork/workflow changes.

Results: Average 30-day patient turn adherence across nine facilities was 90%. Pre-survey respondents (N=484) reported biggest patient repositioning obstacles were interruptions by other duties (56%) and inadequate time/resources (52%), and 44% said timely turning was "difficult or very difficult" before technology. Post-survey respondents (N=264) said technology eased identifying patients requiring repositioning (86%), improved teamwork (75%), and helped prioritize workflow (71%). Almost half reported timely turning was now "easy or very easy."

Conclusions: Monitoring technology can influence patient repositioning attitudes, increase turn adherence, and ultimately, help promote early mobility.

BACKGROUND

Promoting early, safe mobility in hospitals is vital to prevent adverse outcomes. One aspect of mobility, patient repositioning, is demonstrated in literature to be as low as 38-66%.¹⁻²

To discover if wearable tech can influence attitudes towards patient repositioning and/or increase turning adherence, nurses were anonymously and voluntarily surveyed and turn adherence analyzed.

METHODS

A wireless patient-monitoring system[†] was implemented in 16 nursing units (ICU, telemetry, med-surg) across 9 acute-care hospitals in California, Washington and Texas.

- The system captured real-time patient position/movement data.
- Turn adherence was calculated based on timeliness and adequacy of turns.

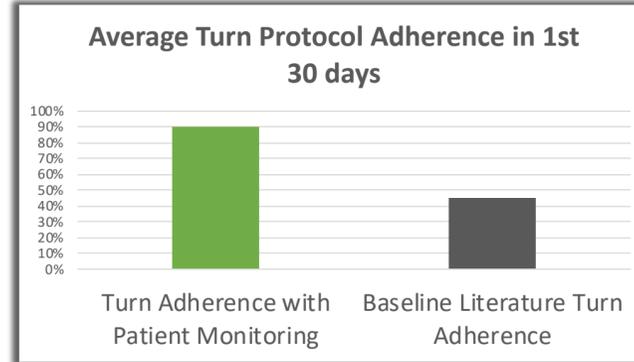
Wearable sensors relay real-time patient movement and position



Staff were administered pre/post-implementation surveys on the following:

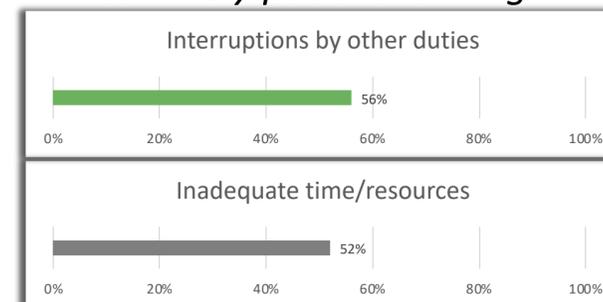
- Patient repositioning challenges
- Ease of maintaining turning protocols with/without monitoring technology
- Teamwork/workflow changes

RESULTS



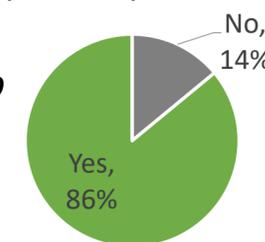
Pre-Survey Results (N=484)

What are the TWO biggest obstacles to timely patient turning?

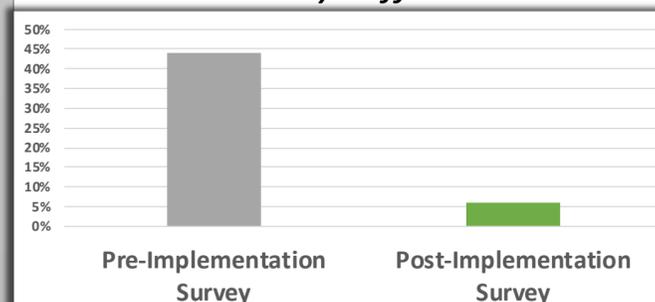


Post-Survey Results (N=264)

Did patient monitoring tech help identify which patients needed repositioning?

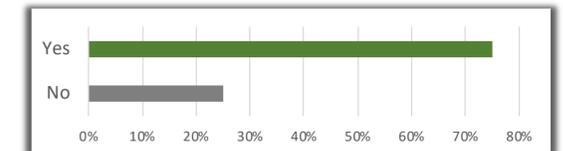


Percentage of Respondents who answered: Timely turning is Difficult or Very Difficult

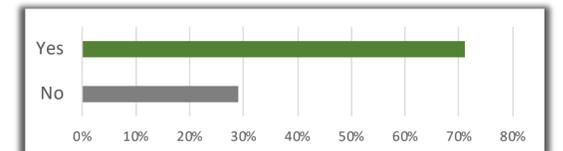


RESULTS

Did patient monitoring technology improve unit teamwork?



Did patient monitoring technology help prioritize workflow demands?



CONCLUSIONS

Wearable monitoring technology can influence the ease of timely patient repositioning, increase turn adherence, improve teamwork, enhance workflow, and ultimately, help promote early mobility.

REFERENCES

[†] Leaf Healthcare, Inc, Pleasanton, CA

1. Goldhill DR, Badacsonyi A, Goldhill AA, Waldmann C. A prospective observational study of ICU patient position and frequency of turning. Journal of Association of Anaesthetists of Great Britain and Ireland. Anaesthesia. 2008;63:509-515.
2. Voz A, Williams C, Wilson M. Who is turning the patients? A survey study. JWOCN. 2011;38(4):413-418.

