

PURPOSE

In alignment with CALNOC's mission to advance outcomes using actionable data, hospital leadership implemented a novel technology to monitor patients most at risk for pressure ulcers.

- The main goal was to reduce incidence of hospital-acquired pressure injuries (HAPIs) through visual reminders for optimal turning.

METHODS

A wireless patient-monitoring system[†] was deployed across three nursing units – ICU, and two med surg/telemetry units.

- Wearable sensors relay real-time patient movement and position



Sensor criteria: Braden score ≤18

Parameters: 2-hour turn period, minimum 20° turn angle and 15-min tissue recovery time between turns

- A user interface provides visual repositioning cues

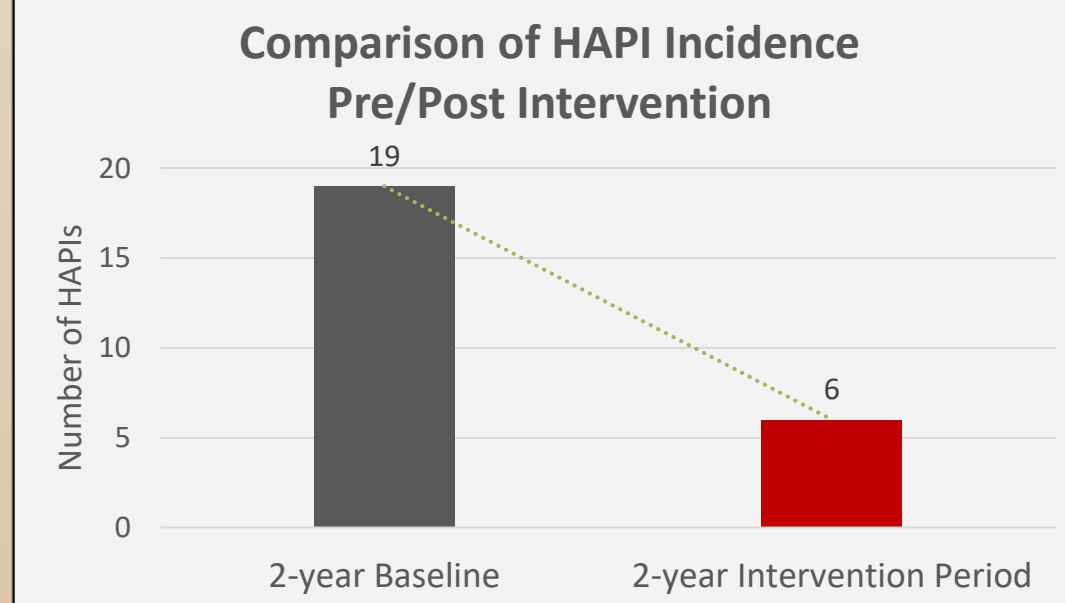
- Patient turning data and HAPI incidence were collected during a 24-month period.
- Turn protocol adherence was calculated based on timeliness and adequacy of turns.

RESULTS

Enrollment Data: Apr 2016-Mar 2018

Number of Patients	1,270
Total Monitoring Hours	116,536
Average Turn Adherence	89%

- Average turn protocol adherence exceeded documented literature benchmarks by almost 2x



- **Incidence of sacrococcygeal HAPIs was reduced by 68%** compared to 24 months prior to implementation, from 19 to 6

CALNOC 2016 & 2017 Reports for HAPI 3+ per 1000 patient days

California Hospitals	.10
All CALNOC Hospitals	.10
Magnet Hospitals	.15
Cedars-Sinai MDR	0

Cedars-Sinai MDR outperformed other hospitals in HAPI 3+ incidence

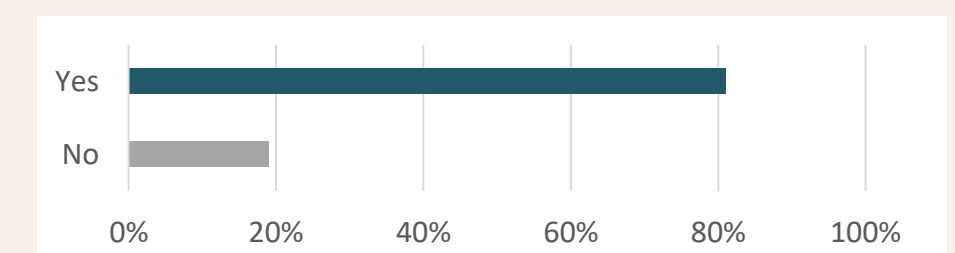
CONCLUSIONS

Frequent, good quality patient turning can significantly reduce hospital-acquired pressure injuries.

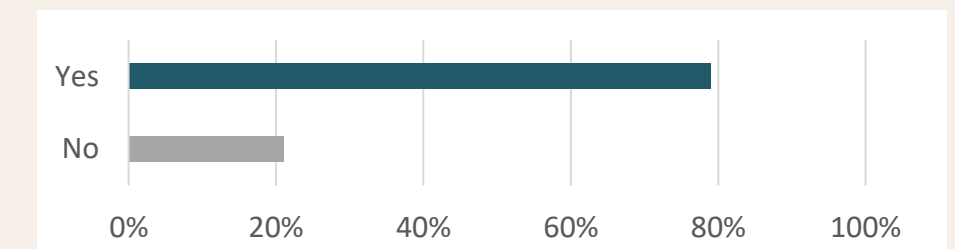
Wearable technology makes it possible to have a sustainable patient repositioning program without the need of additional staff.

- The majority of staff reported increased teamwork and efficiency with the intervention.

Do you believe the monitoring technology facilitates better teamwork?



Do you believe the monitoring technology helps prioritize workflow and improve staff efficiency?



BACKGROUND

Research demonstrates that turning and repositioning patients helps prevent HAPIs.¹

Although well accepted as the standard of care, two-hour turning protocols have proven difficult to maintain, and compliance remains suboptimal with reports ranging from 38% to 66%.²⁻⁴

Many reasons are theorized for lack of adherence to turning protocols and HAPI incidence despite routine repositioning.

Complex nursing workloads and a lack of tools to assure quality can lead to immense variability in offloading tissues vulnerable to pressure injuries.

REFERENCES

[†] Leaf Healthcare, Inc, Pleasanton, CA

1. Pickham, D. Berte, N. Pihulic, M. Valdez A. Mayer, B. Effect of a wearable patient sensor on care delivery for preventing pressure injuries in acutely ill adults: A pragmatic randomized clinical trial (LS-HAPI study) International Journal of Nursing Studies. 2018;80(3028):12-19.
2. Lyder CH, Preston J, Grady JN, Scinto J, Allman R, Bergstrom N et al. Quality of care for hospitalized medicare patients at risk for pressure ulcers. Arch Intern Med 2001;161:1549-54.
3. Voz A, Williams C, Wilson M. Who Is Turning the Patients? A Survey Study. J Wound Ostomy Continence Nurs. 2011;38(4):413-418.
4. Krishnagopalan S, Johnson W, Low L, Kaufman L. Body positioning in Intensive Care patients: Clinical Practice versus Standards. Crit Care Med 2002;30(11):2588-2592.