

Use of an Incontinence Management System to Improve Nurse Efficiency

Barbara Mayer, PhD, RN, CNS, CPHQ; Chungmei Shih, MSN, RN, CNS, CWON
Stanford Health Care, Stanford, California, USA

Background

- Incontinence associated dermatitis (IAD) is an independent risk factor for pressure injury (PI).¹
- Patients with IAD are more likely to have full thickness PIs.²
- Signs of skin breakdown are seen within 15 minutes' exposure time in healthy subjects.³
- IAD increases PI risk up to 6 times.⁴
- Decreasing exposure time (the duration from the incontinence event to when the under-pad is replaced) is an important aspect of IAD and PI prevention.

Purpose

- Determine average incontinence exposure time at our facility
- Evaluate the functionalities of the Incontinence Management System

Methods

- Setting: trial was conducted in a 26-bed acuity adjustable unit (AAU) at an academic medical center.
- Trial period: November 2018 to February 2019.
- The incontinence management system has a disposable incontinence pad with a build-in sensor. The sensor detects when a pad becomes wet (urine or liquid fecal).
- Staff were notified of patients' incontinence events through nurse call system, dome light, and a discreet light at the foot of the bed.
- Incontinence exposure times (the time lapse from when a pad is wet or soiled to when the pad is removed) were measured.
- Nursing staff feedback was collected.

Results

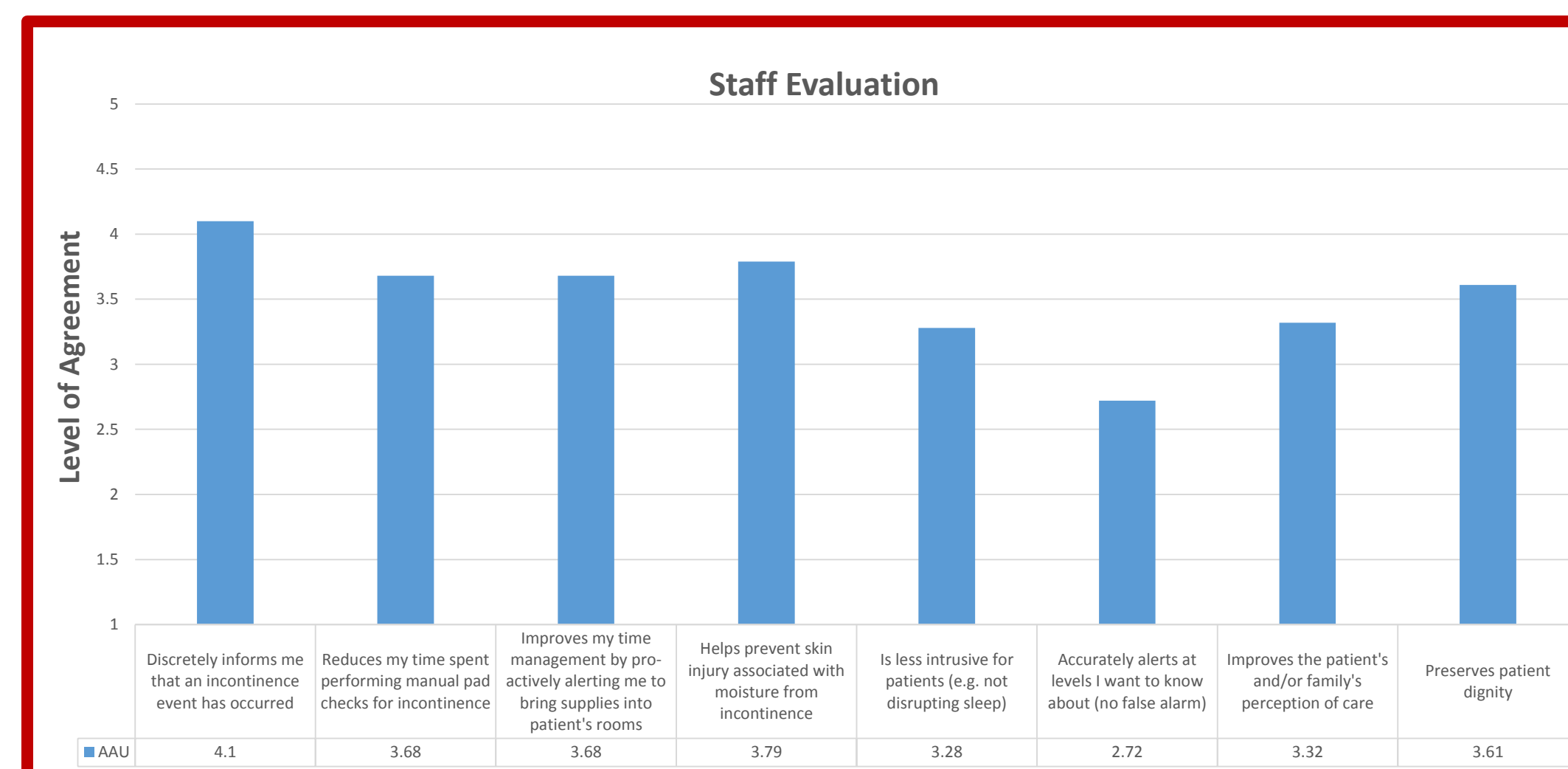
Exposure Time

- 1,201 incontinence events were detected during the trial.
- Average incontinence exposure time = 22.08 minutes (95% confidence interval: 20.44 – 23.73).

Pad Performance

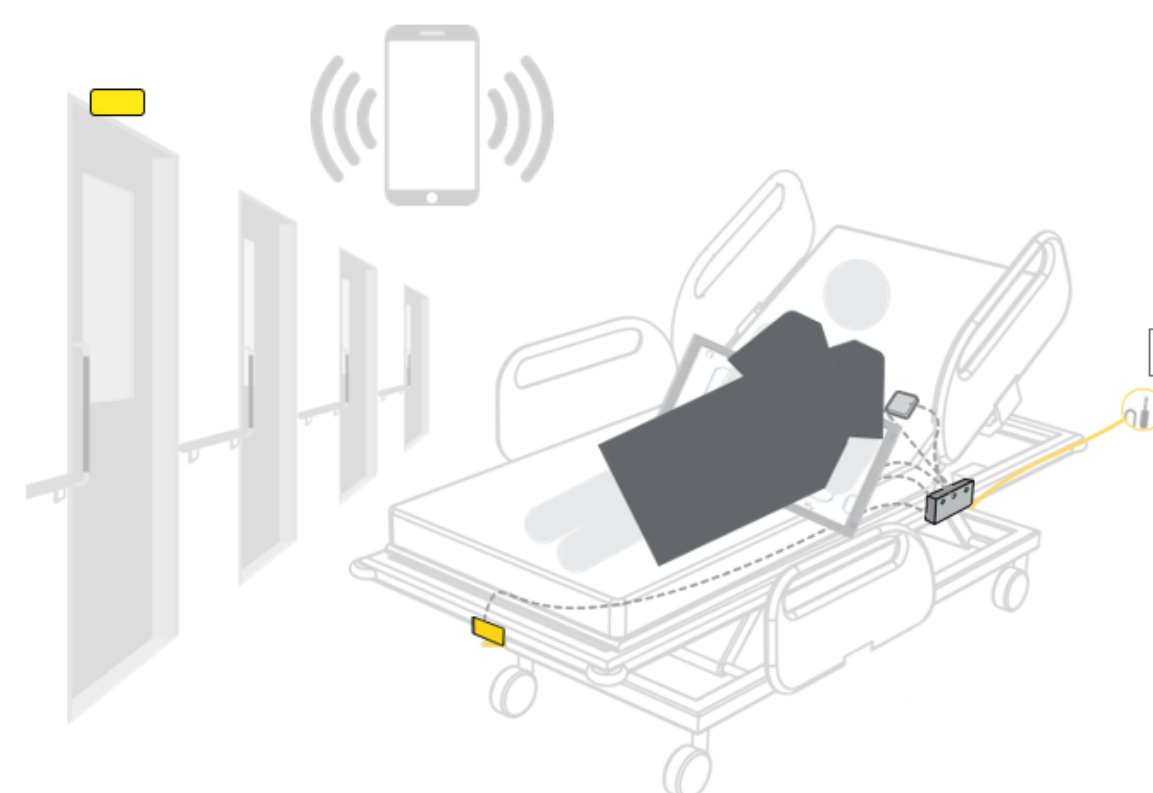
- Through nursing staff surveys (n=20), 95% reported the system underpad was the same or better when compared to current high performing, moisture wicking underpad in urine absorbency; and 90% in liquid fecal absorbency.
- With respect to pad strength, 84% reported the system underpad was the same or better.
- Of surveyed nursing staff, 76% recommended the use of the incontinence management system.

Staff Evaluation: see graph below



Level of Agreement: 1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree

Incontinence Management System: HOW IT WORKS



Conclusion

- The incontinence management system reduced nurses' time spent checking patients' incontinence status.
- Notification of an incontinence event allowed nurses to gather necessary supplies before going into the patients' rooms increasing their efficiency.
- Most nursing staff reported pads were similar or better in absorbency and pad strength than their current underpads.

References

1. Gray M, Giuliano KK. Incontinence-Associated Dermatitis, Characteristics and Relationship to Pressure Injury: A Multisite Epidemiologic Analysis. *J Wound Ostomy Continence Nurs.* 2018;45(1):63-67.
2. Lachenbruch C, Ribble D, Emmons K, Vangilder C. Pressure Ulcer Risk in the Incontinent Patient: Analysis of Incontinence and Hospital-Acquired Pressure Ulcers From the International Pressure Ulcer Prevalence™ Survey. *J Wound Ostomy Continence Nurs.* 2016;43(3):235-41.
3. Phipps L, Gray M, Call E. Time of Onset to Changes in Skin Condition During Exposure to Synthetic Urine: A Prospective Study. *J Wound Ostomy Continence Nurs.* 2019;46(4):315-320.
4. Manderlier B, Van damme N, Verhaeghe S, et al. Modifiable patient-related factors associated with pressure ulcers on the sacrum and heels: Secondary data analyses. *J Adv Nurs.* 2019.

Acknowledgments

The authors thank B3 staff, Wound/Ostomy department, Facilities services, Biomed, Supply Chain, Engineering Department, and leadership for supporting this project.