

Incontinence Management System Use Significantly Reduces Incontinence Exposure Time

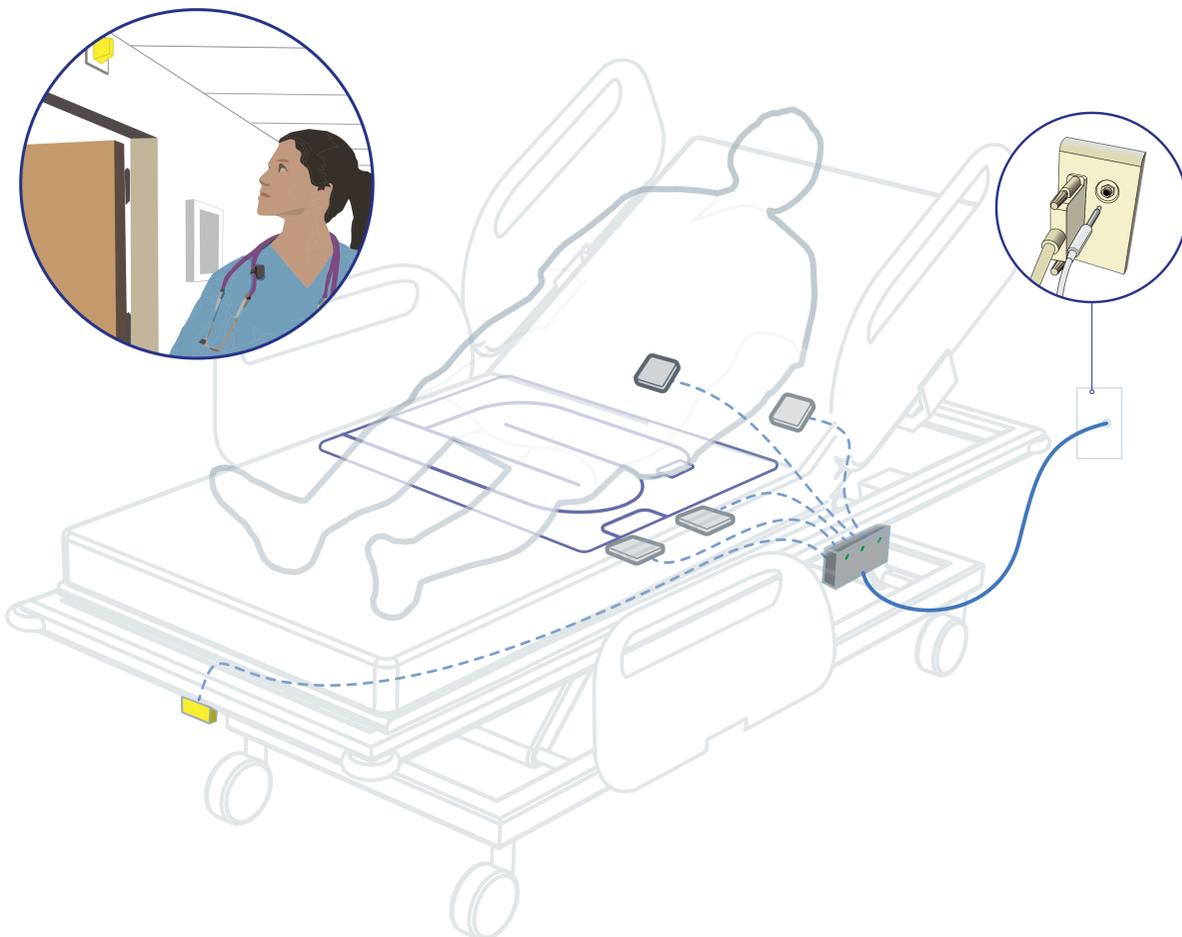


AUTOMATED INCONTINENCE DETECTION AND NOTIFICATION

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Incontinence Management System:

HOW IT WORKS



Abstract

PURPOSE

Studies have shown that, after exposure to incontinence, healthy subjects exhibit signs of skin breakdown within 15 minutes.¹ Incontinence associated dermatitis (IAD) is an independent risk factor for pressure injury (PI), and patients with IAD are more likely to have full thickness PIs.^{2,3} Risk of PI in the presence of IAD has been shown to be up to 6 times greater than without IAD.⁴ Decreasing exposure time (the duration from the incontinence event to when the underpad is replaced) is an important aspect of IAD and PI prevention.

METHODS

In a controlled study, we compared patients' exposure time to incontinence events during blinded (control) and unblinded (intervention) phases of an incontinence management system implementation that detects presence of incontinence events in real-time. In the unblinded phase, nurses were alerted to event detection via the nurse call system. The duration of the control and intervention arms were 54 days and 93 days respectively.

RESULTS

A total of 1548 incontinence events were identified: 507 during the blinded phase and 1041 during the unblinded phase. Comparison of the average exposure time in the blinded phase to that of the unblinded phase, there was a significant decrease (from 123 minutes to 18.9 minutes; $P < 0.001$).

CONCLUSION

Use of the incontinence management system to detect and notify nurses of incontinent events was associated with a statistically significant decrease in exposure time.

Background

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

Purpose

- The purpose of this presentation is measure the effect of the use of an incontinence management system on incontinence exposure time.
- We explored how real-time detection and notification of incontinence events might impact skin health in the sacral and gluteal regions through measurement of moisture exposure time

Methods

- We compared patients' exposure time to incontinence events during blinded (control; $n=507$) and unblinded (intervention; $n=1041$) phases of an incontinence management system implementation that detects the presence of incontinence events in real-time.
- In the blinded phase, the nurses did not receive any notifications from the system.
- In the unblinded phase, nurses were alerted to incontinence event detection via the nurse call system. The duration of the control and intervention arms were 54 days and 93 days respectively.
- Minimal staff education was provided regarding the incontinence management system.
- Staff notified of patient IEs through nurse call and discreet lights at the foot of the bed and through the nurse call system
- Nursing staff responded per standard hospital guidelines.

Results

EXPOSURE TIME

- A total of 1548 incontinence events were identified
- 507 during the blinded phase
- 1041 during the unblinded phase
- Mean exposure time decreased from 123 minutes in the blinded phase to 18.9 minutes in the unblinded phase ($P < 0.001$).

SUBJECTIVE FEEDBACK

- Nurses felt more confident in resource capacity to provide best practice incontinence care.
- Patients and family members expressed positive subjective feedback

Conclusions

- Incontinence associated dermatitis (IAD) is an independent risk factor for pressure injuries (PIs) and full thickness pressure injuries.^{1,2}
- Studies have shown exposure to incontinence leads to signs of skin breakdown within 15 min.¹
- Use of the incontinence management system significantly decreased exposure time to incontinence events (123 minutes to 18.9 minutes).
- Further studies are necessary to determine whether the use of the incontinence management system significantly decreases IAD and PI rates.

References

- ¹ 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.
- ² 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.
- ³ 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.
- 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.

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