ABSTRACT
Exposure to incontinence puts patients at high-risk for painful skin breakdown issues including incontinence associated dermal ulcers (IAD) and pressure injury (PI). This study evaluated a new incontinence management system (IMS) that detects urine and liquid fecal events which was used in a Neuro Intensive Care Unit (NICU). Using the system, staff provided real-time feedback and the team conducted PI/ IAD incidence surveys. This case series demonstrates that the incontinence management system was effective in detecting patient incontinence events (IEs), reducing exposure time, and resulted in staff and family satisfaction. The incontinence management system, when used in conjunction with existing incontinence standard of care practices, can be used as a tool to help prevent incontinence associated skin breakdown in critically-ill at-risk patients.

BACKGROUND
• Prevalence of urinary and/or fecal incontinence > 50% in the hospital and ICU population
• Exposure to incontinence puts patients at high-risk for painful skin breakdown issues including incontinence associated dermal ulcers (IAD) and pressure injury (PI)
• To promote skin health and prevent patient dignity, incontinence events should be identified quickly to reduce exposure. However, this is a significant challenge where staff do not know when incontinence events occur. Staff are not always aware when a patient is experiencing incontinence events.

METHODS
• Following IRB approval (Catholic Health Initiatives Institute for Research and Innovation Institutional Review Board Approval # 1239598-1), ten (10) incontinent patients (urine, fecal, or dual) consented to participate in the study. The incontinence management system was used for the patients’ entire length of stay on the Neuro-ICU.

CASE SERIES OUTCOMES
In 10 patient cases:
• 79 incontinence events detected
• Average incontinence event exposure time: 9 minutes, 16 seconds
• Braden scale stratification:
  - Low Risk: 1 subject
  - Moderate Risk: 2 subjects
  - High Risk: 4 subjects
• No new cases of IAD
• No pre-existing case of IAD resolved while utilizing the system
• 1 PI developed in a patient with skin failure identified at the time of enrollment

CONCLUSIONS
• The incontinence management system prioritized care, improved staff workflow and preserved patient dignity in overall higher quality of care for patients with urinary and/or liquid fecal incontinence.
• Decreased exposure time has been suggested as the most important factor for development of incontinence associated skin damage.4 Average incontinence event exposure time with the system was 9 minutes 16 seconds, compared to the estimated 16 minutes standard of care prior to system implementation.
• No new cases of IAD developed demonstrating that the system was an effective tool, when used with existing incontinence standard of care practices, for helping prevent incontinence associated skin breakdown in at risk patients. Controlled studies are required to confirm these results.

In one patient, the system provided a less invasive option in comparison to a Foley catheter because staff could respond more quickly.
• The incontinence management system provided a voice for these patients where they would not have had one otherwise. In 2 cases, the patients were unable to voice the need for a bedpan due to aphasia.
• Patients’ family members expressed appreciation that the system allowed for patients’ needs to be addressed in a timely manner.

REFERENCES

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