Main Line Health
Lankenau Institute for Medical Research

Essex Privacy Screen: A Simple Tool to Help Prevent Hospital Inpatient Falls During Toileting

Jeshahnton V. Essex, FACHE[1*†] George C. Prendergast, PhD,[2*] Kelsey Abernathy, PhD[3] Leo Doering,[3] Kristen Karlovich MRes,[3] and Kuanyu (Suker) Li, MEng[3]

[1]Bryn Mawr Hospital, Main Line Health, Radnor, PA; [2]Lankenau Institute for Medical Research, Main Line Health, Wynnewood, PA; [3]Lankenau Ventures, Baltimore, MD

*Corresponding Authors: Bryn Mawr Hospital, 130 S. Bryn Mawr Ave., Bryn Mawr, PA 19010 USA (JVE) and Lankenau Institute for Medical Research, 100 Lancaster Ave., Wynnewood, PA 19096 USA (GCP; prendergast@limr.org).

†Current address: Baylor University Medical Center, Baylor Scott & White Health, 3500 Gaston Avenue, Hoblitzelle – Suite 219, Dallas, TX 75246. Email: jeshahnton.essex@bswhealth.org.

Lankenau Institute for Medical Research
100 West Lancaster Avenue | Wynnewood, PA 19096
limr.org

Summary

Inpatient care protocols at most hospitals dictate nurse monitoring and assistance during toileting, when many falls occur. However, loss of privacy is a major reason why inpatients sometimes refuse assistance despite awareness of their need. Thus, a device that can increase patient privacy during toileting may benefit both patients and caregivers. Here we describe a novel device called the Essex Privacy Screen to increase privacy during toileting in the presence of a nurse. This tall, cylindrical device contains a roll of tearable absorbent pads with sticky ends that are used to adhere the dispensed pad to a wall or vertical surface, creating a simple visual barrier for a patient seated on the commode. In dispensing pads from the roll, a nurse can select any height for adherence to a wall, partition, or other fixture to partially screen the lower body of the patient. A white noise device on top of the dispenser masks toileting sounds, increasing patient privacy. When needed, the pad screen is easily torn away, allowing the nurse quick access when the patient is ready to rise from the commode. The device is easily moved to any floor position on lockable wheels. Refills are simple with standard-size absorbent and eco-friendly pad rolls already in common use at hospitals. The features of the Essex Privacy Screen provide a straightforward and versatile tool for nurses and other caregivers seeking to reduce falls during toileting by inpatients, whether in hospitals, elderly care facilities, nursing homes, or other settings where fall prevention is critical.

Introduction

Falls during toileting in hospitals remain a major inpatient safety issue, with substantial clinical and financial repercussions.[1] Toileting-related falls often occur due to impaired mobility, cognitive deficits, or inadequate assistance, particularly among elderly or postoperative patients. Studies have shown that at least 20% of all inpatient falls in hospitals occur during toileting, making it one of the most common scenarios for such incidents.[2] Falls during toileting can result in injuries ranging from minor bruises to severe fractures or head trauma, prolonging hospital stays and increasing the risk of complications such as pressure ulcers or infections. They also negatively impact patient confidence and quality of life, further complicating recovery.[3,4]

The financial costs associated with toileting-related falls are substantial, adding to the economic burden on healthcare systems. The U.S. Centers for Medicare & Medicaid Services does not reimburse hospitals for costs related to fall-related injuries, making fall prevention a critical priority. In 2013, one study estimated that the average cost of a fall with injury can range from $14,000 to $30,000 per incident, depending on the severity and required interventions.[5] Additionally, indirect costs, such as increased staff workload, plus medical and legal liabilities, exacerbate the economic impact. Targeted interventions such as toileting schedules, fall-prevention alarms, and staff education programs have been shown to reduce falls, offering various cost-effective strategies to enhance patient safety during toileting.[6]

Design of the Essex Privacy Screen

The Essex Privacy Screen includes several elements to address the challenge of reducing falls and fall-induced injuries during toileting as an aid to nurses and other caregivers (see **Figure 1**).

The main element is a hollow vertical cylinder to hold and dispense an absorbent pad roll composed of tearable pads used to create a simple privacy screen. The ends of each pad on the roll include adhesive tape for sticking the pad end to a wall, partition, or fixture in the bathroom. The design allows a nurse or caregiver to quickly dispense one or more pads from the roll. One end can adhere to a wall while the other remains attached to the pad roll, or, alternately, the pad screen can be completely detached from the pad roll and attached to a second wall, partition, or fixture. This cylindrical device stands about three feet tall, allowing the pad screen to be dispensed at a height masking the torso but not the head of a patient seated on the commode (in the single-end attachment scenario). The plastic external covering of the pad roll dispenser can be rapidly disinfected with hospital cleaning solutions. Alcohol- and non-alcohol-based solutions widely used by hospitals and other care organizations can be used to clean and sterilize the cylinder surface of the pad roll dispenser. This aspect of the design was welcomed in design trials, where nurses could be assured that the device incorporates an established hospital standard for surface cleaning and disinfection.

The second element of the Essex Privacy Screen is a battery-powered white noise generator atop the cylindrical pad roll holder. This element creates an auditory screen that supplements the visual pad screen. In addition to masking toileting sounds, the white noise creates a local relaxation aura that may further ease the awkwardness that the patient experiences from the presence of a nurse during toileting. While optional in the design, we believe these dual benefits incentivize inpatient compliance with toileting protocols that the Essex Privacy Screen helps enable. The white noise generator is relatively small and has a negligible effect on the weight of the device.

The third element of the device is a weighted base that includes four rubber swiveling wheels. Its design maintains vertical stability while enabling ready horizontal movement of the device, whether within the bathroom or between bathrooms on site. The wheels can be locked by foot-operated levers, securing the device on a tiled, hardwood, or carpeted floor. Device prototypes reviewed by hospital inpatient nurses and other caregivers identified movement and stability as key factors for both patient care and storage (whether singly or in bulk). The broader dimensions of the base relative to the pad roll dispenser increase the relative vertical stability of the device, preventing tip-overs from horizontal movement.

Discussion and Conclusions

Using the Essex Privacy Screen can reduce toileting-related falls in several ways. First, it can increase privacy during toileting without compromising the caregiver's monitoring role by helping incentivize compliance with toileting protocols. The device can increase privacy at both visual and auditory levels, each of which is important to inpatients. Second, it can promote comfort in the necessary communications and access between caregiver and patient during toileting, easing what can be an awkward interaction for both. Despite providing only a partial screen, the device offers a psychologically established mechanism of separation, easing contact around a difficult moment without compromising communication or access. Third, its flexible design makes it applicable to increasing privacy in most configurations of an inpatient bathroom, making it useful to hospitals and other healthcare entities with site variations in bathroom layouts. Lastly, the device is easy to move, clean, store, and refill, using low-cost absorbent pads like those already routinely acquired by hospitals.

To summarize, the Essex Privacy Screen offers an inexpensive new tool to address risks of falls and fall-induced injuries during toileting, a major challenge in a variety of healthcare settings, including hospitals, senior care, home care, and hospice organizations. Further information about this device and how to purchase it can be found on the Lankenau Ventures website at lankenau.com.

Figure 1. Diagram of the Essex Privacy Device. The device is a wheeled vertical cylinder composed of three elements: a pad roll dispenser, a white noise generator, and a weighted lockable wheelbase. It is approximately 3.5 feet in height and 8 inches (cylinder) or 10 inches (base) in diameter. The pad roll dispenser is loaded with a 36-inch roll of tearable absorbent pads, used to create a simple visual barrier for patient privacy. The vertical side of each pad on the roll includes adhesive tape. The tape is exposed by removing a plastic cover, allowing the pad end(s) to be adhered to a wall, partition, or fixture on each side of a patient seated on a commode. One end of the pad screen can be kept on the device, or it can be torn off to generate a second free end for attachment as needed. The white noise generator creates a simple auditory barrier for patient privacy (optional). The weighted lockable wheelbase provides vertical stability and secure footing, allowing the device to be fixed in place on tiled, hardwood, or carpeted floors or moved on the floor as necessary.

References

[1] Montero-Odasso M, van der Velde N, Martin FC, Petrovic M, Pin Tan M, et al. World guidelines for falls prevention and management for older adults: a global initiative. Age Ageing 2022;51(9):afac205. doi: 10.1093/ageing/afac205.

[2] Tzeng H-M, Yin C-Y. Toileting-related inpatient falls in adult acute care settings. Medsurg Nurs. 2012;21(6):372–377.

[3] Oliver D, Britton M, Seed P, Martin FC, Hopper AH. Development and evaluation of evidence based risk assessment tool (STRATIFY) to predict which elderly inpatients will fall: case-control and cohort studies. Brit Med J. 1997;315(7115):1049–53. doi: 10.1136/bmj.315.7115.1049.

[4] Milisen K, Staelens N, Schwendimann R, De Paepe L, Verhaeghe J, Braes T, Boonen S, PelemansW., Kressig RW, Dejaeger E. Fall prediction in inpatients by bedside nurses using the St. Thomas's Risk Assessment Tool in Falling Elderly Inpatients (STRATIFY) instrument: a multicenter study. J Am Geriatr Soc. 2007;55(5);725–733. doi: 10.1111/j.1532-5415.2007.01151.x.

[5] Haines TP, Nitz J, Grieve J, Barker A, Moore K, Hill K, Haralambos B, Robinson A. Cost per fall: a potentially misleading indicator of burden of disease in health and residential care settings. J Eval Clin Prac. 2013;19(1):153–61. doi: 10.1111/j.1365-2753.2011.01786.x.

[6] Cameron ID, Kurrie SE, Sherrington C. Preventing falls and fall-related injuries in older people. Med J Aust. 2024;221(3):140–144. doi: 10.5694/mja2.52374.