Improved Patient Safety with the Use of the SEM Scanner™ (A Pilot Study)

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Background & Objectives

St Mary's hospital, on the Isle of Wight, is a district general hospital receiving medical, surgical and orthopaedic admissions. The Isle of Wight population has a high proportion (over 25%) of over 65s.

From April 2014 to March 2015, 390 hospital-acquired pressure ulcers of all grades were reported in the Trust. Of these, 68 were the most serious grade 3 or 4 pressure ulcers.

Despite the implementation of the hospital collaborative and ongoing efforts, including the SSKIN bundle, trends in pressure ulcer incidence, particularly for Grade 2, continue to be of concern.

To address this, St Mary's Hospital evaluated a new technology to support early detection and prevention of early stage pressure ulcers.

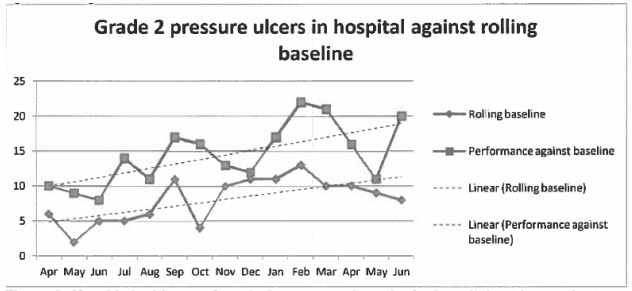


Figure 2: Monthly incidence of grade 2 pressure ulcers in the hospital setting against rolling baseline.

Materials & Methods

The SEM Scanner™ was piloted on a medical ward for a period of two months amongst medical and non-elective surgical patients who were deemed at risk of pressure ulcers (Waterlow score >10).

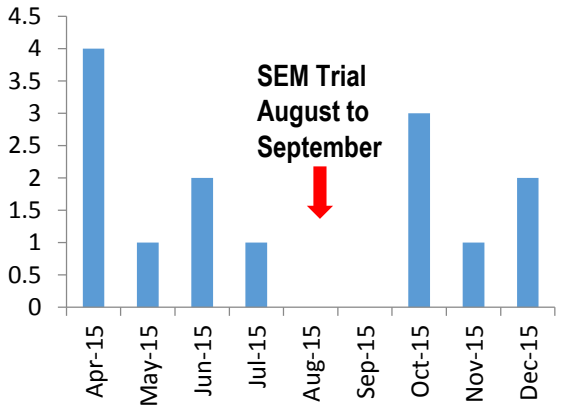
Patients had their heels and sacrum scanned once a day by HSWs from admission. Patients were deemed to have early pressure damage if the SEM Δ value was ≥0.6. The scanners were used by the Healthcare Assistants with the registered nurses interpreting values and making adjustments to clinical care plans as indicated by the objective measurements of the scanners (interventions were escalated or targeted to the site (e.g., heel, sacrum).

SEM Scanner (Bruin Biometrics, LLC) is a CE-Marked hand-held skin assessment device for the detection of early-stage pressure ulcers and deep tissue injury

Results

All of the 35 patients that were scanned had deviations indicative of potential or incipient pressure induced damage (i.e. delta was recorded as ≥0.6). None of the 35 patients that were scanned went on to develop new pressure ulcers during their inpatient stay, although at least one went on to develop pressure ulcers on discharge within 7 days of their inpatient admission.

HAPU Incidence (Ward)



Conclusions

The evaluation suggests that the inclusion of the SEM Scanner™ as part of the examination of the patient was able to inform clinicians about risk before the visual signs of further deterioration occurred. Further, the results were informative to the clinicians and helped the front line staff in their efforts to mitigate pressure ulcer risk in the area in which the technology was piloted.

Pressure ulcer prevention is multifactorial and relies on the recognition by healthcare professionals of the incipient risks, and putting in place the necessary measures as far as is reasonably practicable. The quicker this occurs, the less likely the patent is to experience pressure ulcers.

Incipient skin damage that is not visible to the naked eye still predisposes the patient to likely pressure ulcers if unrecognised. The results of this trial suggest that the use of a hand held scanner to detect incipient skin changes prior to them becoming visually detectable allows clinicians to put in place the necessary measures to avoid them developing pressure ulcers, or the ulceration that is already present from deteriorating