

### Background & Objectives

Farnham Community Hospital is part of the community hospital inpatient service in Surrey. Virgin Care delivers inpatient rehabilitation units at the hospital providing clinical intervention and rehabilitation for adults and older people in the local population. The inpatient service operates a 24-hour service, 365 days per year.

These wards were selected by Virgin Care to be part of a service improvement project aimed at supporting early identification and prevention of avoidable hospital acquired pressure ulcers. The project involved an initial six-month feasibility pilot of the SEM Scanners. During the second phase a new Pressure Damage Prevention Bundle was developed collaboratively by Virgin Care colleagues and Matrons, Nurses, HCAs. The bundle combines elements of traditional risk assessments and the SEM Scanner to create a streamlined tool to guide colleagues in the assessment, documentation and action planning for their patients.

The aim of the service improvement project was to gather evidence to evaluate the new approach to pressure ulcer prevention and inform the clinical-operation question of “fully deploy,” “refine and deploy,” “extent pilot” or “reject” the bundle.



**Fig 1. SEM Scanner**  
(technology for detection of early-stage pressure damage)

### Materials & Methods

The six-month feasibility pilot ran from June – November 2015, following which the new Pressure Ulcer Prevention bundle was developed. The bundle was deployed across the wards for evaluation in March 2016 and reviewed at three and six months.

The new Pressure Prevention Bundle was developed from existing practices, modelled on UK NICE and European Pressure Ulcer Advisory Panel (EPUAP) guidelines, and incorporated use of the SEM Scanner, a new diagnostic technology, which detects early stage pressure ulcer damage (Fig 1).

The bundle also includes a risk matrix (fig 2), a visual tool representing the interaction between the risk score on the Waterlow and the deviation reading from the SEM Scanner. The matrix is used to segment patients into four categories of risk and guide staff in clinical decision making and action planning for their patients i.e. frequency of localised scanning.

During the feasibility pilot, 234 patients on the two rehabilitation wards were scanned. Each ward comprised 20 beds, with average lengths of stay of 31 days. Ward participants included Matrons, Registered Nurses and Health Care Assistants. Specialty wound services are provided by a team of Tissue Viability Nurses.

The following evidence was gathered to evaluate the impact of the new prevention approach; quality of care (grade II-IV HAPU rates), patient experience (feedback postcards) and colleague acceptance and knowledge (questionnaire and interviews). Quality of care was assessed via a “pre-post” method, where PU incidence during the pilot period (“post”) were compared to PU incidence for the same periods in the prior period (“pre”).

### Results

During the feasibility pilot, grade II-IV hospital-acquired pressure ulcers (HAPUs) at Farnham Community Hospital were reduced by more than 95%. A comparable reduction in HAPUs at Farnham has been maintained following the full introduction of the Pressure Ulcer Bundle in March 2016.

Staff reported the time and resource required to carry out the SEM scan as a down side. It can be challenging practically for one person to carry out the scan, and this is compounded for immobile patients. On the flip side they saw the increased time spent looking at the patients skin as a result of the scanning procedure a positive factor.

In the June colleague feedback survey, 75% of nurses described the new technology as easy to use and 88% of staff reported that the SEM Scanner provided additional information to support their clinical decision making. It is worth noting that refresh training around the used of the scanner and prevention bundle was delivered ahead of the staff feedback. A commercial evaluation of the technology was conducted to support a comprehensive business case for the implementation of the bundle in other wards run by Virgin Care.

### Conclusion

Gathered evidence pointed to a success of the pilot of the technology. A decision was taken to “refine and deploy” and introduced the SEM Scanners and Pressure Ulcer Prevention bundle into Woking Community Hospital from March 2016, to confirm the reduction in HAPUs is replicable.

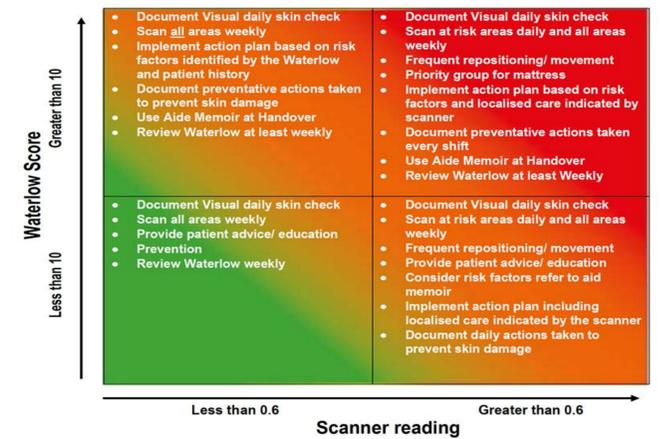
Through combining new technology and a new preventative approach to pressure damage, the evidence suggests that the right interventions and education can be put in place to prevent avoidable pressure damage. Where patients were scanned the level of intervention and decision making was much clearer and concise.

### Discussion

Using data from the technology alongside existing methods of PU risk-assessment and prevention to make effective clinical decisions about the right care was a challenge.

As a result, a Pressure Damage Prevention Clinical Decision Matrix was designed (Fig.2) to provide guidance on how to develop patient action plans based on both Waterlow scores and SEM Scanner data.

**Fig 2. PU Prevention Clinical Decision Matrix**



The matrix proved critical in decision-making and was deployed following the evaluation, as part of a refined Pressure Prevention bundle.

Patients who were categorised as “High-Low” and “Low-High” on the risk matrix were the most complex but were where most benefit stood to be gained from use of individual diagnostic data alongside traditional risk assessment. In particular patients who had low Waterlow scores but high deviation reading, who would previously been overlooked as ‘low risk’ could be given additional attention.

Having additional data allowed clinical staff to make more informed decisions about earlier preventative care: using the same range of available interventions but varying timing, sites and type of intervention based on the risk matrix.