

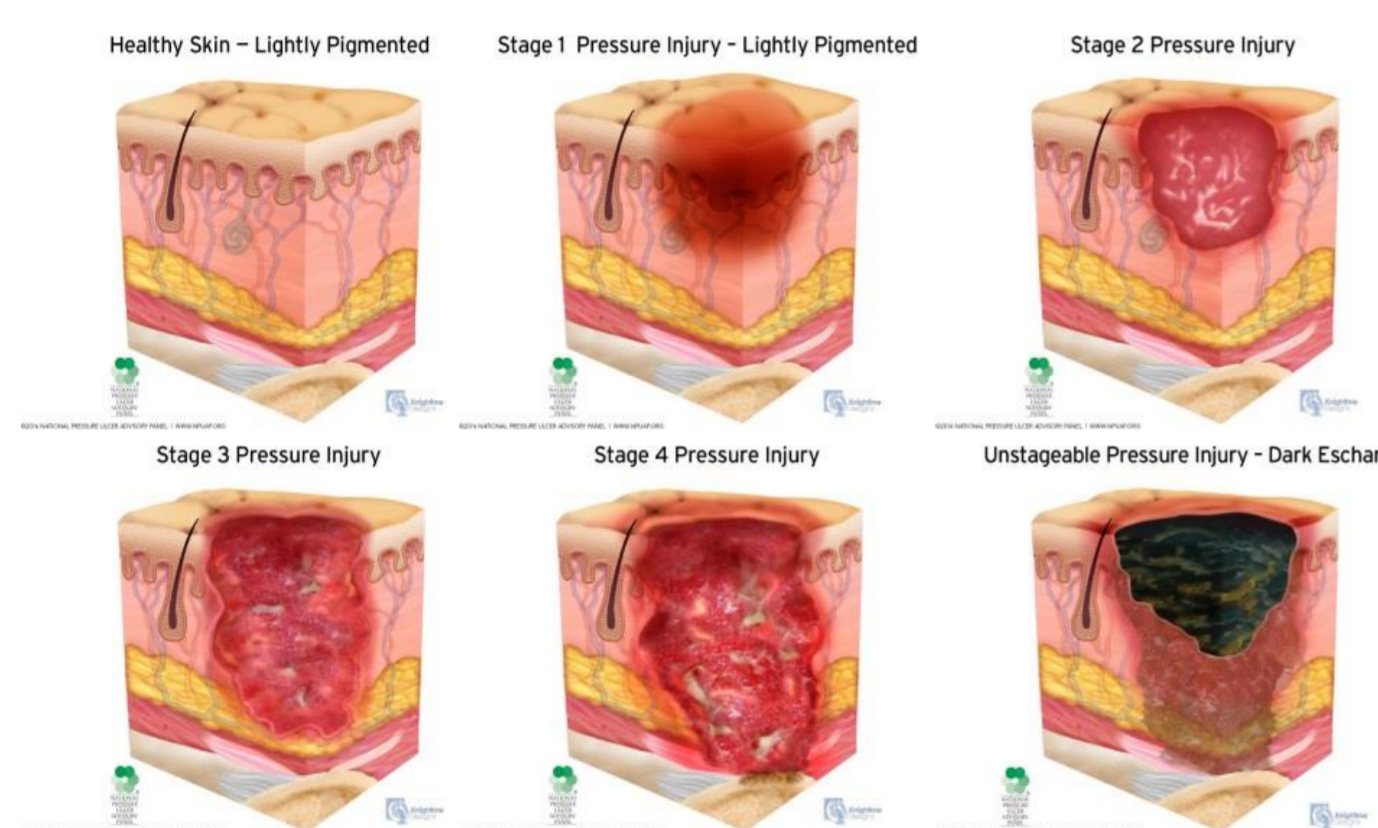
# THE USE OF A CLINICAL IT SYSTEM TO ENHANCE NURSING PRACTICE IN THE PREVENTION OF PRESSURE ULCERS AND MEDICAL DEVICE RELATED SKIN DAMAGE

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## BACKGROUND

Critically ill and post operative patients are identified to be at an increased risk of pressure ulcers (PU's) and medical device related damage due to prolonged immobility. Patients in the critical care unit (CCU) also have multiple factors that increase the risk of skin damage; mechanical ventilation, medical devices and the infusion of vasoactive agents (Makic, 2015). The development of PU's is associated with adverse patient outcomes, and contributes to pain, loss of function and increased incidence of sepsis (Cox, 2011). Whilst there is no single factor which increases the probability of PU development – rather a complex interplay of factors – the most effective treatment for PU development is prevention.

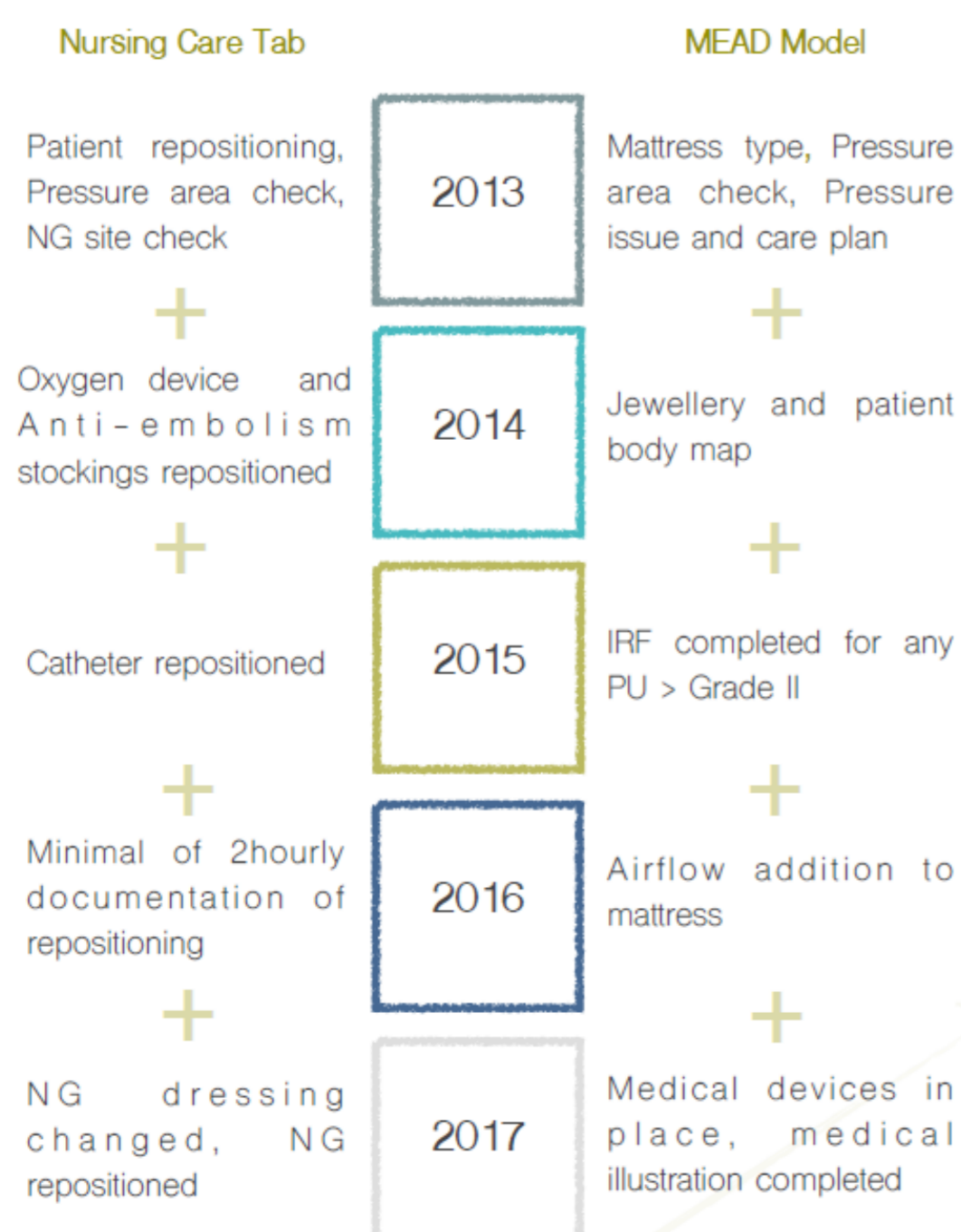
*The National Pressure Ulcer Advisory Panel (NPUAP) defines pressure ulcers (PU) as a form of "localized tissue injury that develop as a result of pressure or pressure in combination with friction/shear."*



## PREVALENCE

PU prevalence in the general hospital population is approximately 15% in the UK, whilst the incidences of PU's in CCU's vary between 10-41% (Briggs et al., 2013; Cooper, 2013). A prevalence report carried out at The Christie NHS Foundation Trust (2016) highlighted that their PU incidence was at 3.2% higher than the average for a hospital of similar size, despite exceeding CQUINN expectations. A diagnosis of cancer along with a critical illness places patients in the OCCU at a higher risk of PU and medical device related damage. Research has also shown that when nursing staff are educated and knowledgeable on PU prevention, nursing practice can be changed and the prevention of PU damage improved (Chaboyer et al., 2016). Conversely, patient acuity and nursing pressures have amplified, impacting nursing staff's ability to practice quality care due to the working environments demands.

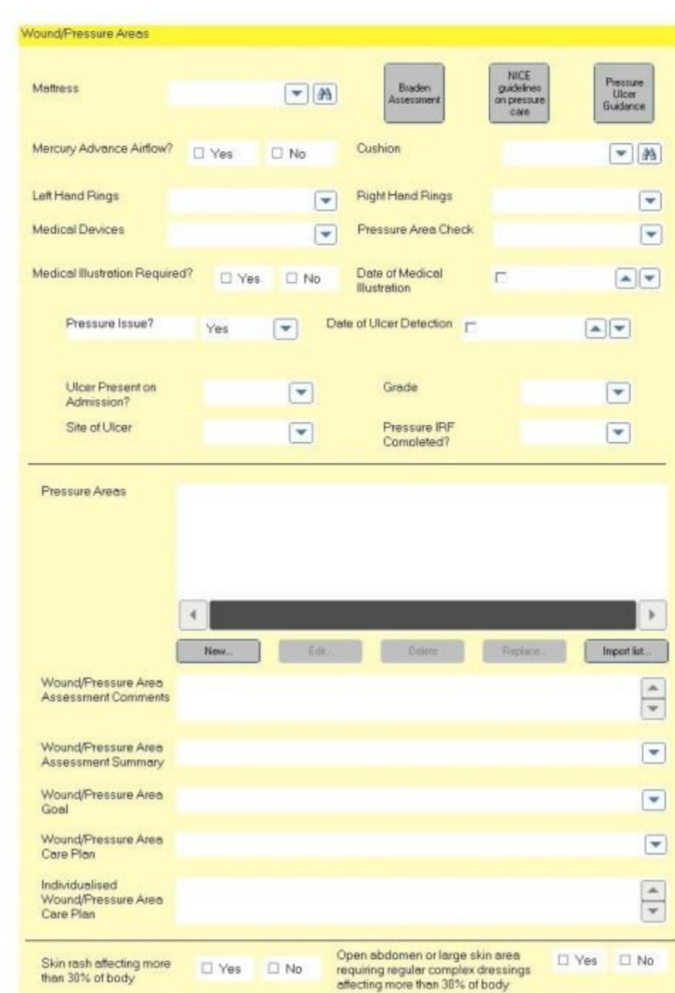
## CHANGE IN PRACTICE



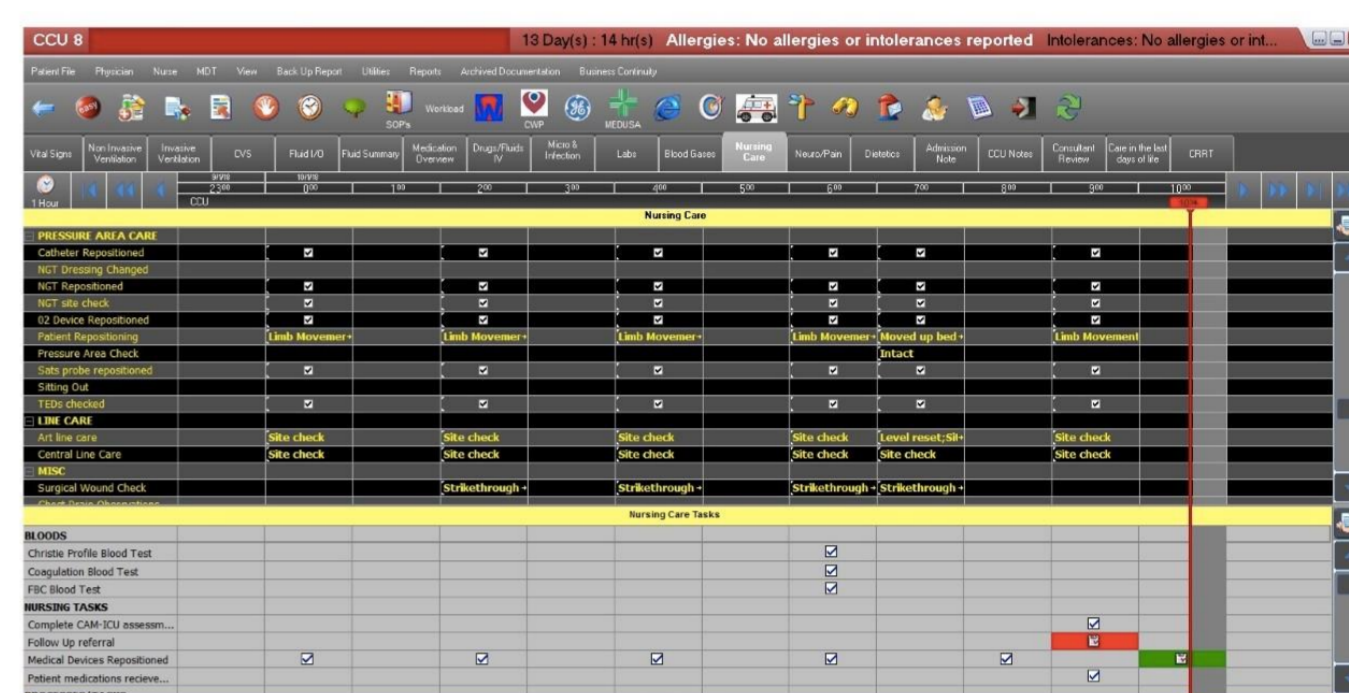
## METAVISION

The implementation of a clinical information system; Metavision (MV) within The Christie, Oncology Critical Care Unit, enhances the potential to streamline and automate the task of collecting and measuring data linked to PU and medical device related pressure damage. Use of MV in the Oncology Critical Care Unit prompts frontline staff to develop a safe culture (NHS Safety Thermometer, 2014), prompting staff to reposition patients and medical devices. MV allows us to examine the incidence of PU and medical device related damage in real time enabling us to react and adapt to measures which are barriers to change, reducing occurrence, incidence and patient harm. In relation to skin assessment, all patients admitted to the OCCU require a nursing skin assessment within 2 hours of admission, using the validated risk assessment scale, called the Braden Scale (Bergstorm et al., 1987). Nurses are also required to document all skin damage and medical devices upon initial assessment using the 'MEAD Model' [Fig, A] (12hourly A-E patient assessment) and all medical device and patient repositioning 2 hourly

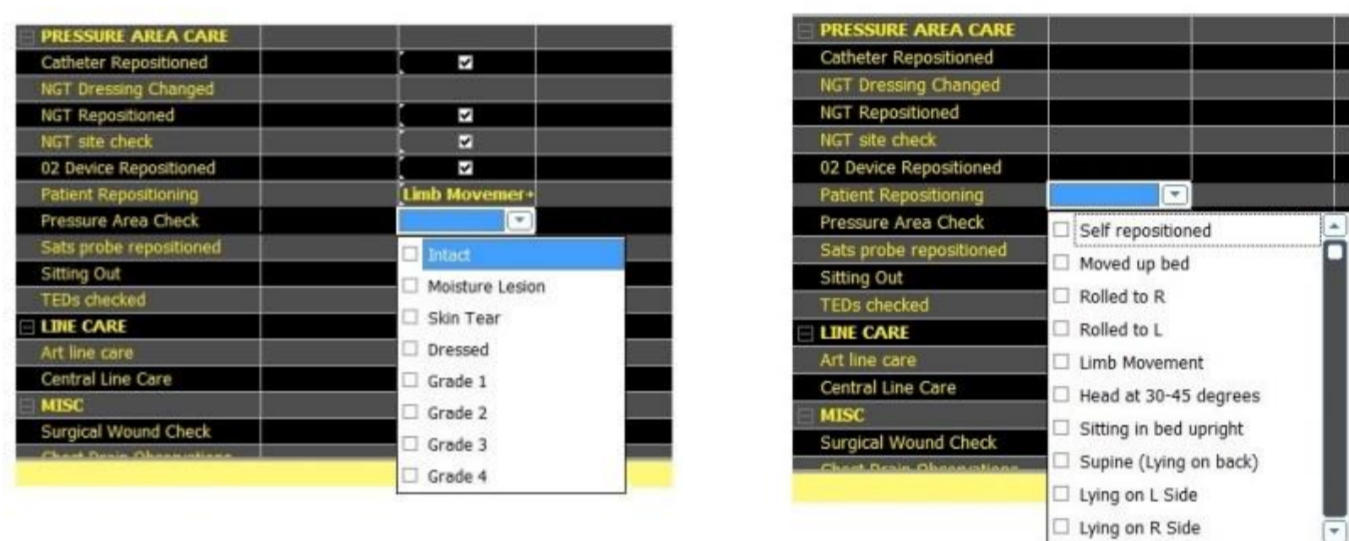
[Fig,A] MEAD Model - Skin Assessment



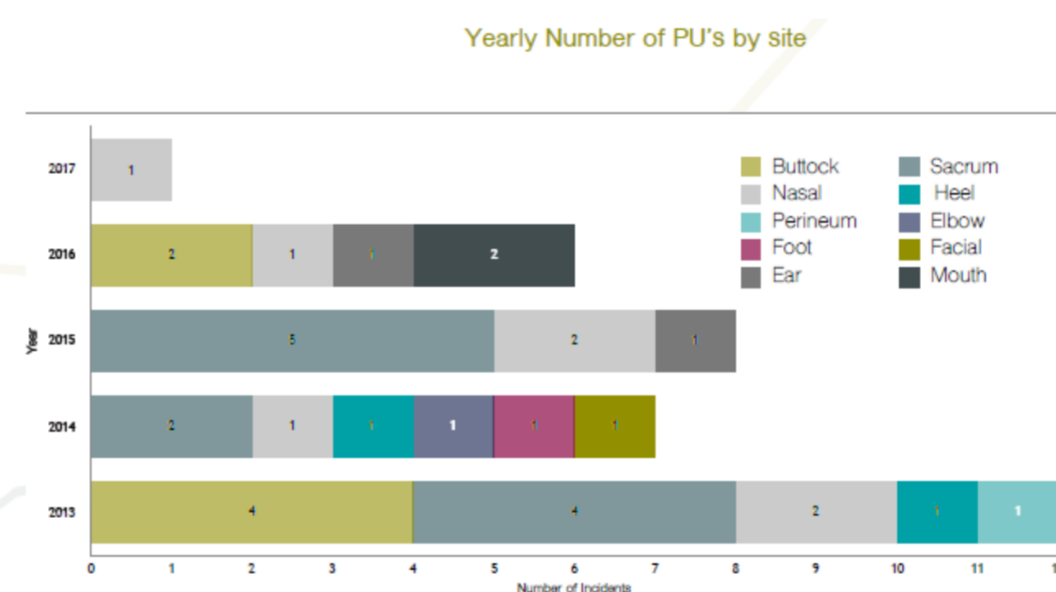
[Fig,B] Nursing Care Tab Metavision



[Fig,D] MEAD Model - Option examples



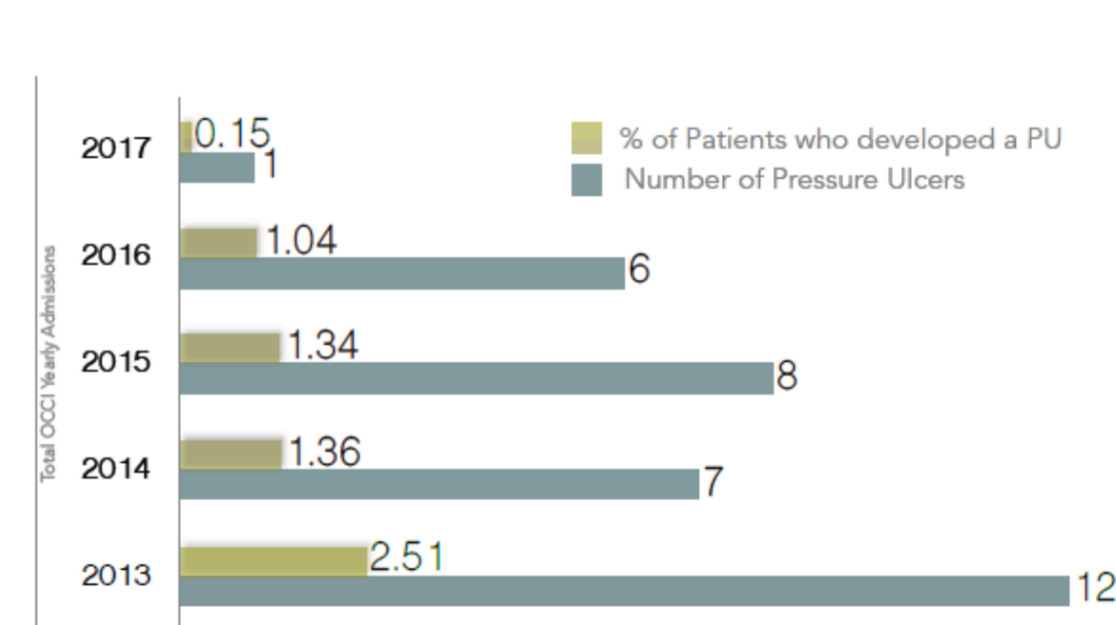
## STATISTICS



Data was retrospectively collected for all patient admissions from 2013 to 2017 and all PU's graded at a stage 2 or greater. A total of 34 PU's (> grade II) developed in 1118 patient admissions over the 5 years, with a cumulative incidence of 2.66%, 12.34% less than the national average for PU development.

Results show that Nasogastric (NG) related PU's and sacral region PU's were most prevalent for the patient population admitted to the OCCU. 20.59% of all PU's were NG related whilst 50% of all recorded PU's were sacral/buttock related. Despite the incidence of recorded PU's being lower than the national average (2.66%) reactive changes to MV over the years has reduced the total incidence of PU's, specifically NG and sacral related PU's

Total Number and % of PU's



## CONCLUSION

Reactive changes to PU documentation on MV has acted as a prompt to the nursing team, improving PU prevalence by 169% from 2013 to 2017 and by 120% for NG related PU's specifically. It is worth noting that this doesn't take into account other environmental factors such as nurse experience and patient condition but it does highlight how MV assists OCCU nurses to improve PU prevalence.

The nurse led IT system — Metavision — allows for live, reactive changes to nursing practice when issues are identified. Identifying the prevalence of PU's and medical device related pressure damage by specific location enables the MV team to adapt and develop the system to change practice, improving both the documentation and frequency of medical device and patient repositioning. MV's focus is to assist nurses working within the OCCU to enhance clinical practice and patient outcomes by having all patient information in one location. As PU's are an avoidable incidence, having all nursing care documentation in one section prompts nurses to change and improve their practice in relation to medical device and patient repositioning.