

THE BENEFITS OF HYBRID SUPPORT SURFACES IN A CARDIOTHORACIC UNIT SETTING



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Background

Despite the implementation of a multi-faceted prevention strategy a small but consistent number of pressure ulcers continue to occur within patients being admitted for cardiac surgery. Over the previous 12 months 24 pressure ulcers occurred of which 9 were heel pressure ulcers (10 sacral and 5 device related).

Staff were utilising a range of pressure redistributing equipment including heel boots and alternating pressure mattresses (APAMs). The usage of APAMs was consistently exceeding the Health Board contracted number by 30 per month and costs were rising.

It was decided to review a new high specification foam mattress which had built in heel protection (designed in collaboration with the Welsh Wound Innovation Centre (WWIC)) within the cardiothoracic unit, which comprised the cardiothoracic ward and cardiac high dependency unit. Alternating mattresses remained in situ in the Intensive Care Unit.

Following confirmation of appropriate governance procedures, all mattresses in the coronary care ward and coronary high dependency unit were replaced with the Dyna-Form® Static Air HZ mattress (see figure 1). Training was provided for staff in each area on how to use the mattress and champions identified to support the data capture. Ongoing support for the data capture was provided by the Tissue Viability Nurse, the company representative and the research team from the WWIC.



Figure 1:
The Dyna-Form® Static Air HZ
(Direct Healthcare Services)

At 4 Months

383 patients had been through the unit and therefore nursed on the new mattress, no new hospital acquired pressure ulcers have been identified.

Only 1 patient had required an alternating pressure mattress compared to 11 in the previous 4 months.

At 6 Months

Data has been collected on a further 124 patients (43 females & 79 males, 2 non responses, summarised in table i.) To date no new cases of pressure damage have been reported and staff continue to find the hybrid mattress a positive solution.

No patient has been provided with additional heel protection which is a further cost saving and also reduces nursing time and is easier for patients.

Table i. Demographic data

	Non Responses	Minimum	Maximum	Average (mean)
Age	4	21	89	68.09
Height	25	143cm	183cm	164.63cm
Weight	14	50.4kg	134kg	85.02kg
Waterlow Score	7	1	20	8.43
Days on HZ	4	1	33	8.63
Days in ICU (53 Patients)		1	7	1.83

Patient Height / Weight

There are 23 patients (4 females & 19 males) weighing over 100kg, 2 of these did not have a height recorded. In this small group the body mass index ranged from 32.71 – 45.63.

Level of Risk

Whilst risk scores appear low, they have been recorded on admission, the nature of the patient group is that the risk score is high for a short period during and after surgery and then reduces prior to discharge.

53 patients (14 females & 39 males) had a stay in Intensive Care ranging from 1 – 7 days.

Conclusion

Patients have been safely nursed on the new hybrid mattresses for as long as 33 days, in total over this 2 month period patients were on the hybrid for 1036 days with no pressure damage occurring. Use of the hybrid mattresses has resulted in cost savings and reduction in the number of patients developing pressure damage. In this high risk group of patients the hybrid mattress has proved a worthwhile investment.