

Meeting nutritional requirements following severe burn injury (>20% TBSA), a Victorian Adult Burns Service (VABS) r

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Victorian Adult Burns Services (VABS) compliance with the Australian & New Zealand Burns Associations Bi-National Burn Registry (ANZBA Bi-NBR) clinical quality indicator for early enteral feeding (EEF) within 24 hours of admission for severe adult burn (>20% TBSA).

Changes within the structures and processes of VABS that contribute to delays in commencing enteral feeding (EEF) within 24 hours of admission for severe adult burn (>20% TBSA). This information is used to identify system-wide opportunities to improve patient care and related patient outcomes.

Malnutrition is a consequence of severe burn injury and early provision of adequate nutrition is critical to quality burn management.¹

EEF within 24 hours is associated with a reduction in rates of paralytic ileus and prolongation of the catabolic response and prevention of malnutrition.⁴

The clinical quality registry aimed at improving quality of burn care through the use of the ANZBA Bi-NBR Clinical QI is 'Was enteral/parenteral feeding commenced <24 hours? (Adults >20%TBSA; Paediatrics >10%TBSA).

The standard states that 100% of adult patients with >20%TBSA should receive EEF within 24 hours of admission based on consensus opinion and the existing evidence.

The Alfred Hospital contributes data to the Bi-NBR as the statewide provider of specialist burn care. Data from the 2011 - 2012 period showed that 59% of patients with severe burn injury at the VABS commenced EEF within 24 hours of admission.

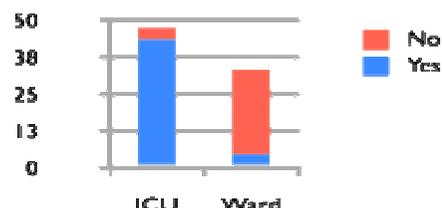
Data from the Bi-NBR for VABS patients with burns >20% TBSA including: age, length of stay (LOS), ICU LOS and if EEF was commenced <24hrs following admission.

Medical records identified timing of enteral nutrition following admission, time of the assessment, recommended nutritional regime and admission destination (Ward vs. ICU).

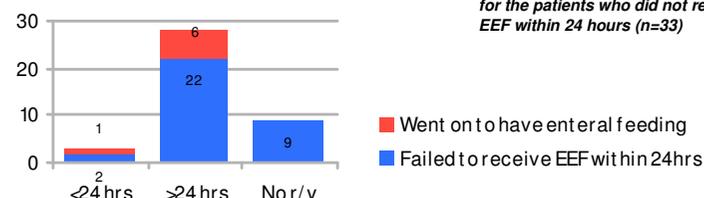
Structures and processes related to patient admission, nasogastric (NG) tube insertion and commencement of enteral feeding were also reviewed.

Results

- 80 eligible patients with >20% TBSA were admitted between 2010 - 2012.
- The median age of the patients was 37, the median %TBSA was 25.5% and the average LOS was 35 days.
- 47 (59%) of cases received enteral nutrition within 24 hours of admission.
- Of the 47 patients initially admitted to ICU, 43 (91%) received enteral nutrition within 24 hours of admission.
- 33 patients (41%) were initially admitted to the burn ward. 4 (12%) of these patients received enteral nutrition in <24hours (Graph 1)



Graph 1. Admission destination by enteral feeding <24 hours



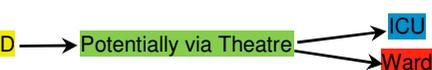
Graph 2. Timing of nutrition review for the patients who did not receive EEF within 24 hours (n=33)

- 26 of the 33 patients (79%) who did not receive EEF in <24hrs, did not receive enteral nutrition at all during the admission (Graph 2)
- 24 of these patients were provided with nutritional assessment and the median time to review was 5 days.
- 9 patients did not receive any nutritional review during their admission.
- 17 cases were recommended a high energy and high protein diet with supplements.
- Discussion with the multidisciplinary team and review of hospital guidelines related to NG insertion and enteral feeding identified various factors that contribute to the delay in EEF on the Burn ward. These issues were highlighted at clinical meetings and a working party was formed to develop system-wide change (see Table)

Findings that impeded enteral feeding < 24 hrs	Reasons identified for system issues	Resolution (Changes to practice)
ICU achieved higher rates of compliance compared to Burn ward (91% vs. 12%)	ICU has a standardised EEF protocol for all critically ill patients Burn ward has no EEF protocol	Develop standardised protocol for all critically ill patients Commence enteral feeding within 24 hours for burns >20% TBSA
Burn ward unable to commence EEF without Nutrition review	A protocol that prevents commencement of enteral feeding until after dietitian review exists	Standardised protocol for NG tube insertion Minimum enteral feeding to be commenced prior to NG tube insertion
NG tube position must be confirmed radiologically prior to enteral feeding as per protocol	After hours access to Xray is often delayed for Burn ward patients	Insert NG tube prior to after hours Radiological service to be accessible (Discuss with Radiology)
Variance in dietitian recommendations made on the Burn ward	Absence of a standardised EEF protocol for major burns Clinicians unaware of ANZBA recommendations	Education to increase awareness of EEF Standardised ANZBA recommendations
Burn ward nutrition reviews were delayed by a median of 5 days	ICU has an automatic dietitian referral system Burn ward relies on e-referrals made by Nursing staff	Revision of the current admission form to include clinical team to initiate enteral feeding for adult burns >20% TBSA
A small group of patients on the Burn ward refused NG tube insertion	Benefits of EEF inadequately explained to patient	Education of the nursing team on the importance of explaining the benefits of EEF to the patient
19 patients (55%) were admitted to the Burn ward between 4pm Friday afternoon and Sunday	Nutritional service only available during weekdays on the Burn ward	Development of a proposal to increase service resources during weekends

Conclusion

- This study reviewed VABS capacity to initiate EEF in severely burnt patients according to the Bi-NBR standard and issues that delayed EEF were identified.
- Changes to VABS current practice were developed to overcome structural and process issues delaying EEF.
- These changes are currently being trialled with the aim of improving the quality of nutritional care provided at VABS. Further changes to confirm that the changes implemented produce the desired health outcomes will be conducted as part of a future study over the next year.
- The study also demonstrates the potential of the Bi-NBR to drive regional improvements of patient care.



References:

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