Resource implications of adopting a restrictive neonatal blood transfusion policy

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Background. Blood transfusions (BTFs) are not without risk and pose a significant financial burden on resource-limited services. In line with current international evidence, the nursery at Groote Schuur Hospital (GSH), Cape Town, South Africa, introduced a restrictive BTF protocol to minimise transfusions and manage costs.

Objective. To determine whether adopting a restrictive BTF policy results in fewer transfusions.

Methods. Data were retrospectively collected on all infants who received BTFs in the GSH nursery over a 6-month period following adoption of a restrictive BTF policy in 2010. BTF figures for a similar period before the restrictive policy, during 2008, were obtained for comparison.

Results. After introduction of the restrictive BTF policy, 42 of 1 097 infants admitted (3.8%) received a total of 64 BTFs. In comparison, 102 of a total of 940 infants (10.9%) admitted during a period of the same length before introduction of the restrictive BTF policy received a total of 121 BTFs. Comparison between the number of BTFs administered before and after the restrictive policy showed a highly statistically significant difference (p<0.001). The total cost of the blood products used in the two 6-month periods was R91 870 v. R48 640, based on current prices.

Conclusions. By adopting a restrictive policy, we were able to halve the number of BTFs, reduce risks associated with transfusions, and achieve significant cost benefits. Following evidence-based guidelines results in high standards of care, while also making the most effective use of resources.
The cost of the blood products used in the 6 months of 2011 was R48 640 compared with R91 870 in 2008, based on current prices (Table 1).

### Discussion

Before introduction of the restrictive BTF policy in the GSH nursery the unit did not have a standardised restrictive protocol to inform BTF decisions, which were left to the discretion of the individual attending doctors. These decisions were often made on an empiric basis, and variations in practice existed between individuals.

In a recent Cochrane review, four trials that enrolled a total of 614 infants compared low (restrictive) with high (liberal) haemoglobin thresholds. There were no statistically significant differences in the combined outcomes of death or serious morbidity at first hospital discharge.\(^5\)

This review, coupled with our drive to adopt cost-effective evidence-based guidelines in our unit, resulted in the introduction of a restrictive BTF policy. The adoption of this protocol was consensus driven and had unanimous ‘buy in’ from all senior clinicians in the unit. The ‘buy-in’ was evidenced by the fact that the new protocol achieved 100% compliance during the entire study period.

Evidence-based medicine has been described as ‘the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients’.\(^6\) Implementation of evidence-based protocols facilitates translation of clinical trials into day-to-day practice, with maintenance of the highest quality and safety of care. Furthermore, resources are allocated cost-effectively.

During the two time periods studied, while the number of admissions remained similar, the number of BTFs administered was almost halved. What was more marked was that the number of infants receiving BTFs was reduced from 102 to 42, representing an almost 60% reduction. This resulted in marked cost savings and preservation of scarce blood products, while also decreasing patient exposure to potentially harmful side-effects.

### Conclusions

We have demonstrated that it is possible to achieve 100% compliance with the commitment of the entire healthcare team, while standardising neonatal care. We were able to halve the number of BTFs and achieve significant cost benefits. Following evidence-based guidelines ensures high standards of care while also making the most effective use of resources.

### References


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