depressed or sick. These observations were first reported in 1966-8² and have been reiterated many times since.³ This hazard of immediate cord clamping, however, which may be largely obviated by a delay of 20-30 seconds, has been largely ignored by modern obstetric practice which is too often more interested in obtaining samples of umbilical arterial and venous blood between triple clamps than in understanding and preserving the normal physiology of childbirth.⁴ There is more excuse for division of a tight nuchal cord but when possible this is best avoided by unlooping the cord over the baby's head.

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Top up transfusions in neonates

Sir,

The article by Robertson on 'Top up transfusion in neonates' was both stimulating and provocative.¹ Comments about lack of cooperation of pathology services in neonatal intensive care units are common and highlight a growing problem which needs to be addressed.

At present there are clear technical limits to reducing the quantity of blood required for most procedures. The idea that appropriate ultra microscopic methods are likely to be available in the near future appears to be rather optimistic but much can still be done and the requirement for blood transfusion, with its known and unknown dangers, can be limited. Dr Robertson did indeed refer to the problem of infants receiving blood infected with HIV in another Brisbane Hospital before the disease was recognised. The Royal Women's Hospital in Brisbane which has approximately the same number of neonatal intensive care patients has a lower rate of blood transfusion and a similar epidemic did not occur here. The reasons for the lower transfusion rate are not precisely known but include the following factors:

- (1) A conservative requesting policy.
- (2) A dedicated phlebotomy service. This ensures that the quality of the blood sampled is consistently high and repeat sampling is minimised.

(3) A dedicated neonatal laboratory service which allows close liaison with laboratory staff. Collection problems can be discussed easily.

(4) Use of manual methods which reduce the volumes required—for example, by predilution. The quality of staff training must be of a high standard to maintain high quality assurance.

Therefore even without a major technological advance, progress can be made to reduce the size of blood samples and limit the need for transfusion.

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Whole blood assay of theophylline concentrations using immunochromatographic stick

Sir,

Elias-Jones and colleagues have shown that in 77 pairs of samples the mean difference between theophylline concentrations measured by a new method and a standard method was small.¹ They have not, however, presented their raw data or the standard deviation (SD) of the mean differences. Provided differences within the range mean difference +2 SD to mean difference -2 SD would not be clinically important the two measurements could be used interchangeably, and so it is important to know that the SD is not unacceptably large. Bland and Altman have recently outlined a simple method for assessing agreement between two methods of clinical measurement and have demonstrated how this can be presented.²

It is also important to know how many comparisons were made at the upper and lower limits of the therapeutic range. The clinician not only needs to know how well the new method of assay of theophylline concentrations agrees with the standard method when concentrations are within the therapeutic range but also how well they agree in the potentially toxic and subtherapeutic ranges. Does the scatter of differences increase as the values increase, especially when values are >100 mmol/l? This information needs to be available before the new method of assay of theophylline concentrations can be substituted for a standard method.

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