



Introduction of ROTEM + Fibrinogen Concentrate to a District General Hospital Obstetric Service

Impact on blood product usage – A 2-year experience

NHS Fife Anaesthetics Department – Victoria Hospital Kirkcaldy
Dr Luke Dornan, Dr Aislinn Scullion, Dr Laura Gill

BACKGROUND

- Victoria Hospital, Scotland is a medium sized DGH with approximately 3000 births per year (across consultant led and midwifery led units).
- Major Obstetric Haemorrhage (MOH) is a significant contributor to maternal morbidity and can be exacerbated by haemostatic impairment.
- National standards recommend that haemostatic resuscitation in MOH is guided by point of care coagulation devices (e.g. ROTEM Sigma).
- Fibrinogen deficiency is the commonest coagulation abnormality identified by ROTEM.

METHOD

- In May 2023, a ROTEM[®] machine was introduced. This was supported by staff training and a transfusion protocol.
- Since its introduction, ongoing work has led to additional improvement measures, such as the introduction of fibrinogen concentrate.
- Data on MOH rates and blood product usage was collected over a 12-month period (May 22-May 23, Period 1).
- Data was recollected after introduction of ROTEM analyser, standardised transfusion protocol and fibrinogen concentrate (Aug 23-Aug 24, Period 2).

RESULTS TABLE

	PRE	POST	Analysis
DELIVERIES	2686	2780	
MOH (>2000mls)	52 (1.9% of all deliveries)	61 (2.2% of all deliveries)	
NUMBER REQUIRING RED CELLS (% of MOHs)	46 (88.5%)	42 (68.9%)	Reduction P=0.013
NUMBER REQUIRING FFP (% of MOHs)	11 (21.2%)	4 (6.6%)	Reduction P=0.028
TOTAL RED CELL UNITS USED	116 units	101 units	Reduction P=0.056
TOTAL FFP UNITS USED	26 units	8 units	Reduction P=0.028
NUMBER REQUIRING CRYO	3	2	
NUMBER REQUIRING FIBRINOGEN CONCENTRATE	-	6	

RESULTS

- Use of ROTEM has increased over time - it is now used in 75% of MOH >2L (Fig 1). In the first year, it was used in 30 cases with blood loss <1.5L to assist diagnosis/prediction.
- Statistically significant reduction in the number of cases requiring red cell and FFP transfusion, 88.5% to 68.9%, and 21.2% to 6.6% respectively (Fig 2).
- Overall, total annual units of red cells and FFP used reduced from 116 to 101 and 26 to 8 respectively (Fig 3).
- Fibrinogen replacement (with either cryoprecipitate or fibrinogen concentrate) more than doubled with the use of ROTEM guided treatment.

Fig 1. Percentage of MOHs that used ROTEM

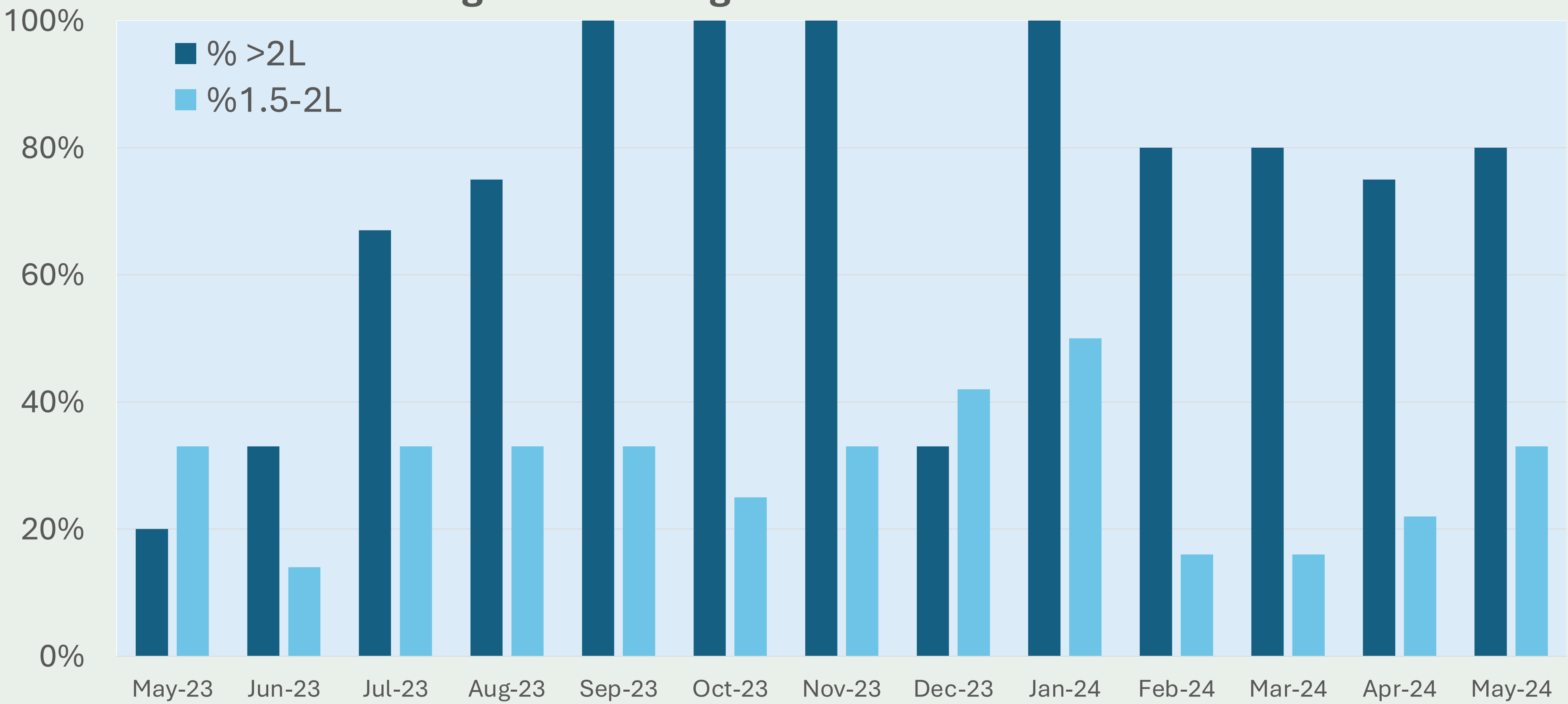


Fig 2. Proportion of MOH's requiring transfusion pre- and post- intervention.

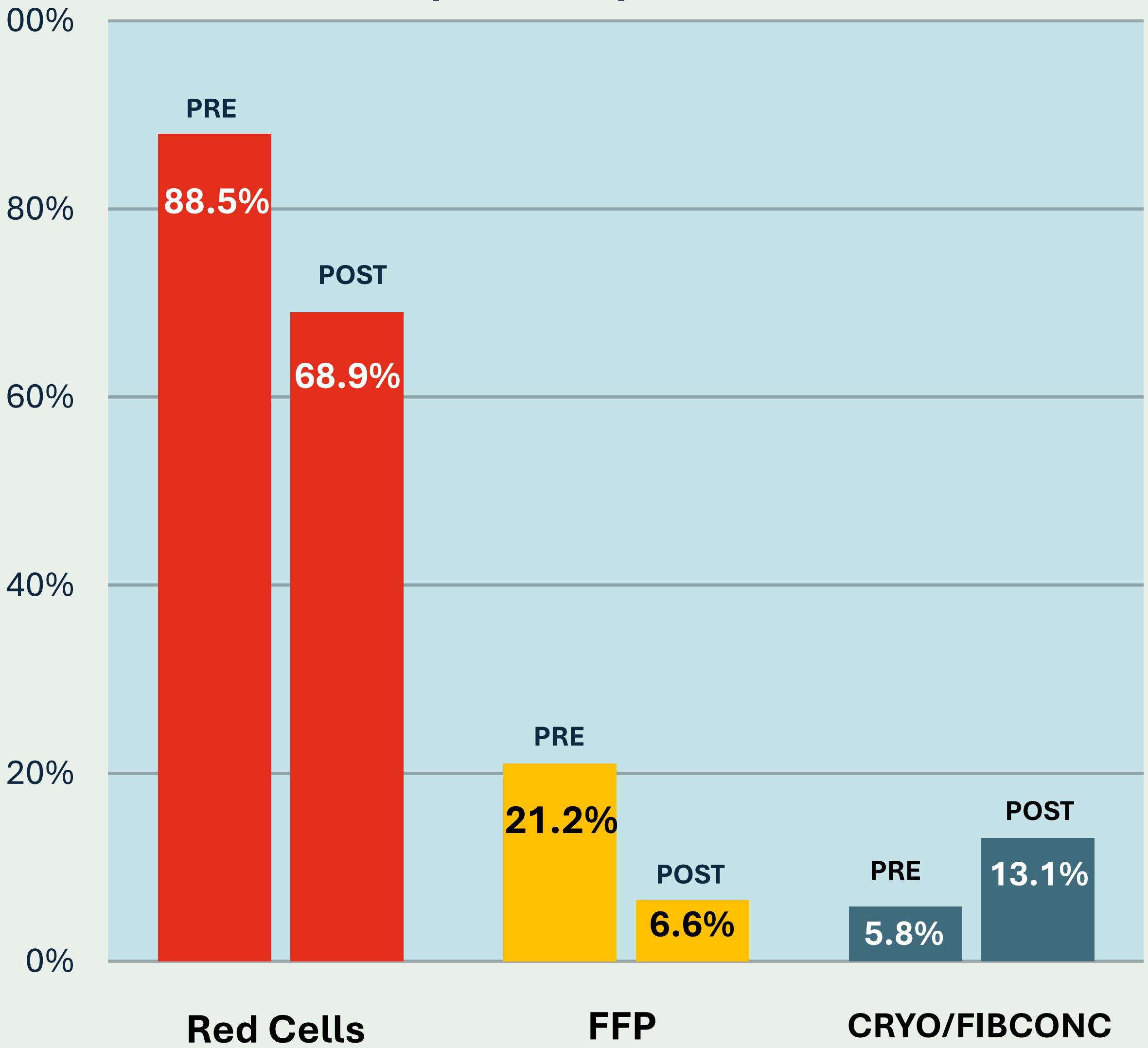
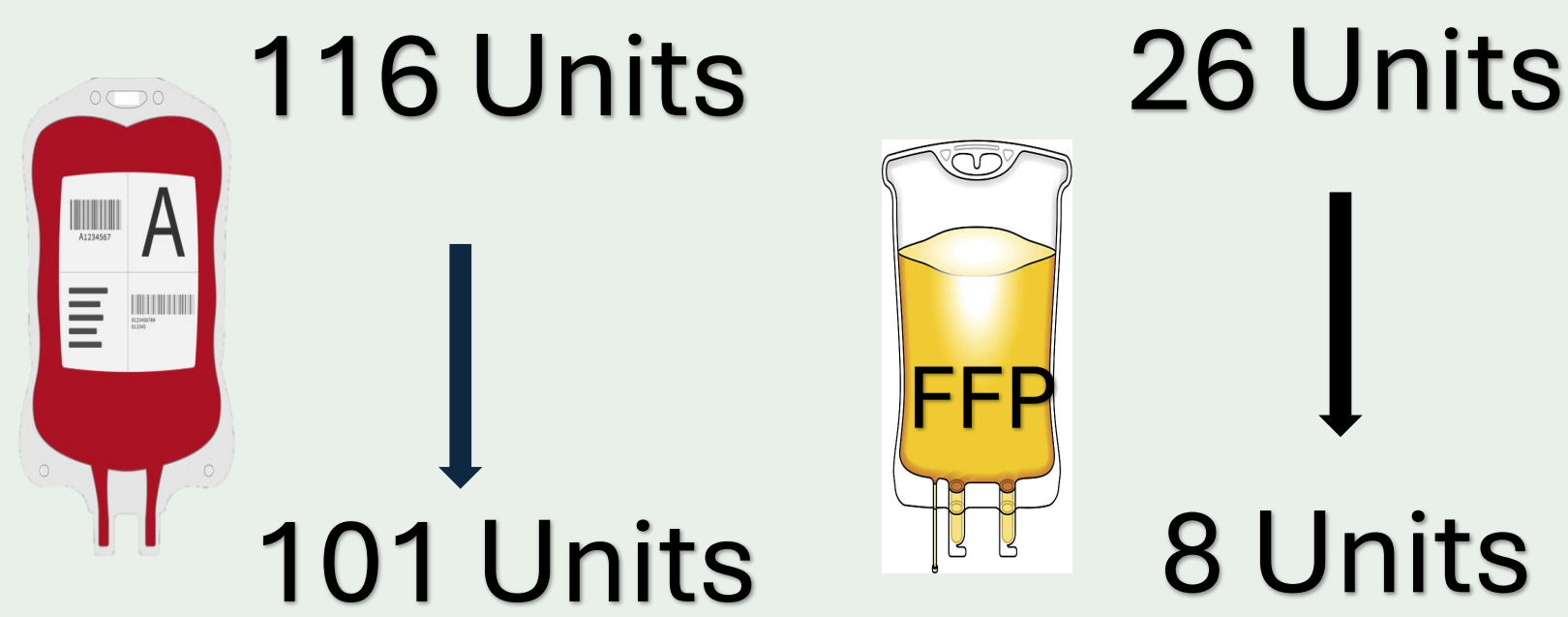


Fig 3 - Blood Product Reduction



CONCLUSION

The introduction of a ROTEM[®] analyser, standardised transfusion protocol and fibrinogen concentrate, reduced the blood product requirements in Major Obstetric Haemorrhages in a District General Hospital. This has both organisational and patient safety benefits.

REFERENCES AND ACKNOWLEDGEMENTS

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