

Intra-operative Cell Salvage (IOCS)



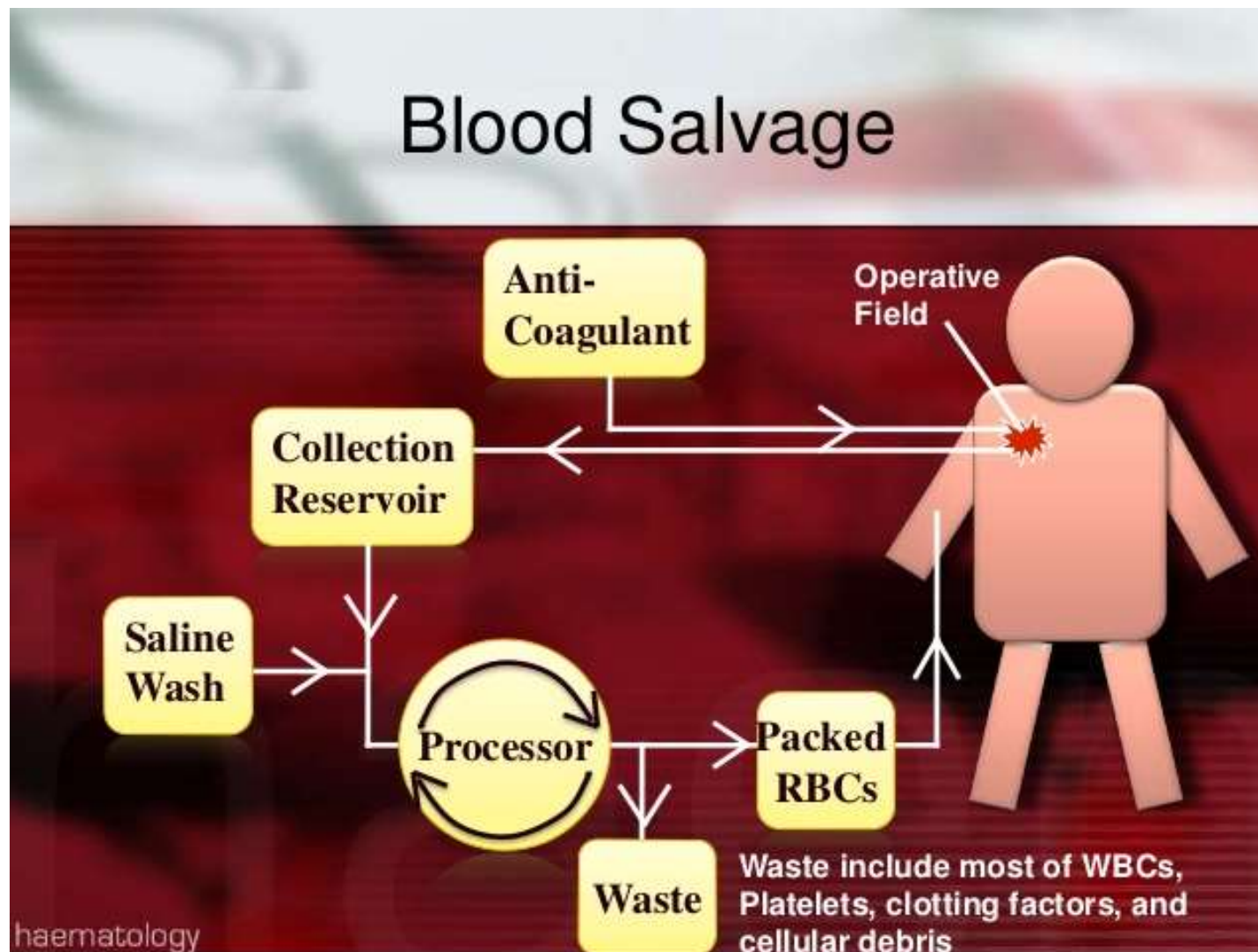
Elmarie Cairns

Blood Conservation Coordinator
North Bristol NHS Trust

AIMS

- ▶ What is IOCS?
- ▶ What are the benefits of IOCS?
- ▶ IOCS machines that are available
- ▶ The processes of IOCS
- ▶ Limitations and contra-indications
- ▶ Incident reporting/networking & support

What is IOCS?

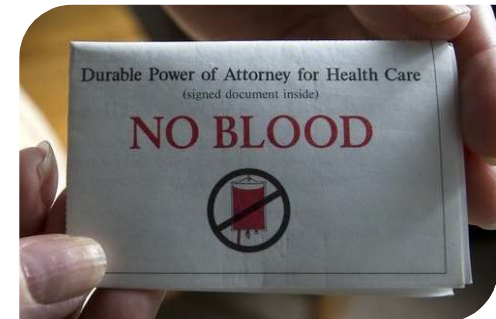
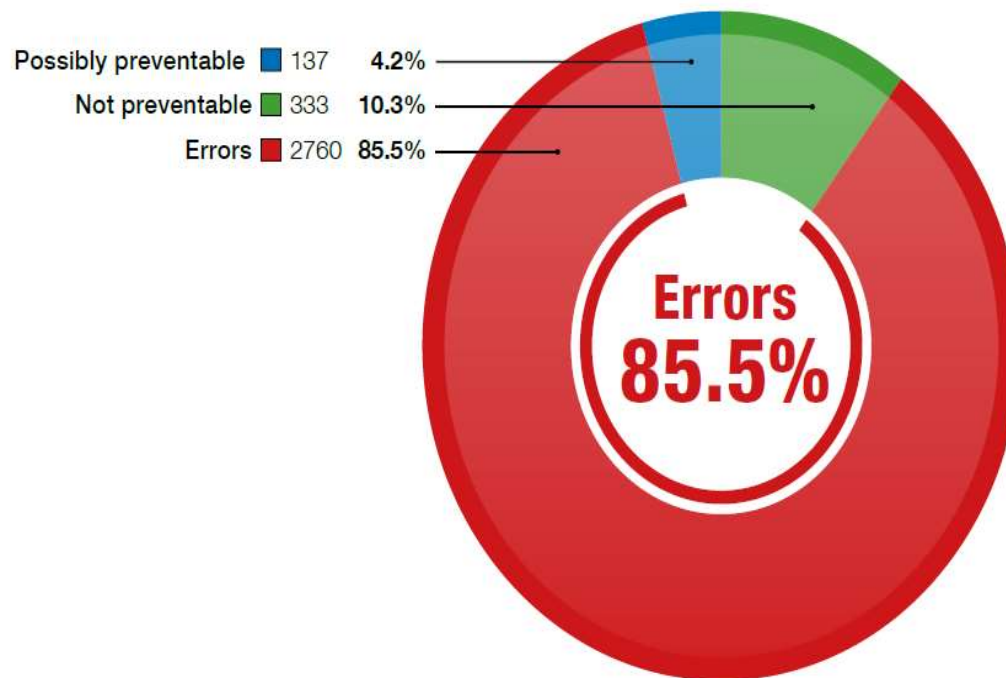


Benefits

Deaths where transfusion was implicated n=21

Major morbidity n=112

Figure 3.1:
Errors account
for the majority of
reports: 2760/3230





THE ASSOCIATION OF ANAESTHETISTS
of Great Britain & Ireland

It's Recommended

	PILLAR ONE	PILLAR TWO	PILLAR THREE	THREE PILLARS OF PATIENT BLOOD MANAGEMENT
	Optimise RBC Mass	Minimise Blood Loss	Manage Anaemia	
PREOPERATIVE	> detect/treat anaemia & iron deficiency > treat underlying causes > optimise haemoglobin > cease medications	> identify, manage & treat bleeding/bleeding risk > minimise phlebotomy > plan/rehearse procedure	> patient's bleeding history & develop management plan > estimate the patient's tolerance for blood loss > optimise cardiopulmonary function	
INTRAOPERATIVE	> time surgery with optimisation of erythropoiesis & red blood cell mass	> meticulous haemostasis/ surgical/anaesthetic techniques > cell salvage techniques > avoid coagulopathy > patient positioning/warming > pharmacological agents	> optimise cardiopulmonary function > optimise ventilation & oxygenation > restrictive transfusion strategies	
POSTOPERATIVE	> manage anaemia & iron deficiency > manage medications & potential interactions	> monitor & manage post op bleeding > keep patient warm > minimise phlebotomy > awareness of drug interactions & adverse events > treat infections promptly	> maximise oxygen delivery > minimise oxygen use > treat infections promptly > tolerance of anaemia > restrictive transfusion strategies	

Adapted from Spahn DR, Goodnough LT. *Alternatives to Blood Transfusion*. Lancet 2013; 381:1855-65; Hofman A, Farmer S, Towler SC. *Strategies to preempt and reduce the use of blood products: an Australian perspective*. Curr Opin Anaesthesiol. 2012; 25:66-73; Ishister ID. *The three-pillar matrix*

NICE National Institute for Health and Care Excellence



Cell Salvage Manufacturers



Haemonetics



Fresenius



LivaNova

The Process of IOCS

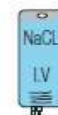
1. Collection



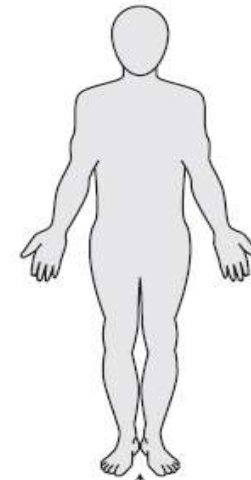
2. Separation



3. Washing

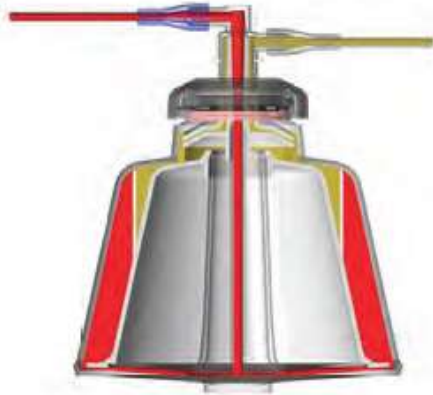


4. Reinfusion

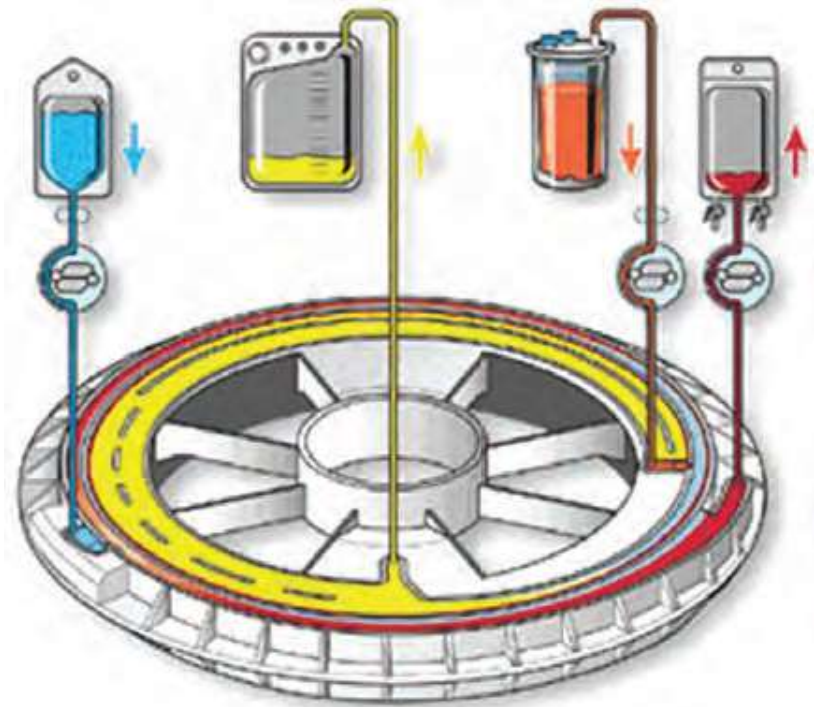


Methods of Cell Salvage

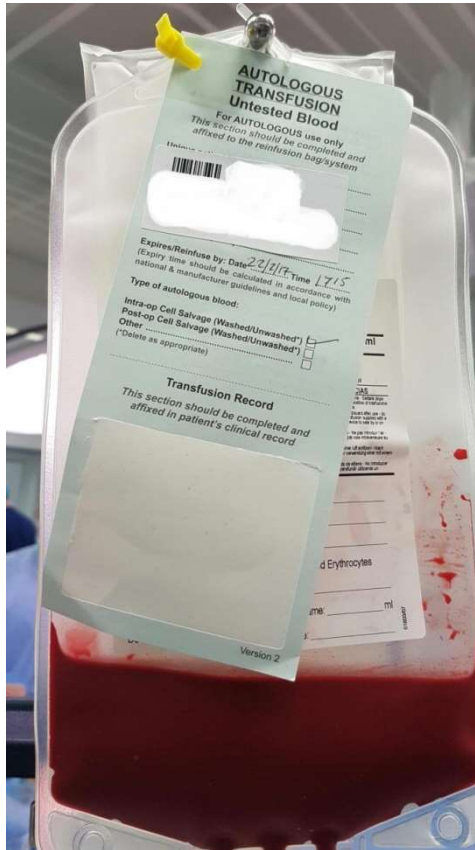
Fixed bowl



Continuous Rotary System



Reinfusion



- ▶ Labelled
- ▶ Checked
- ▶ Reinfused within 4 hours

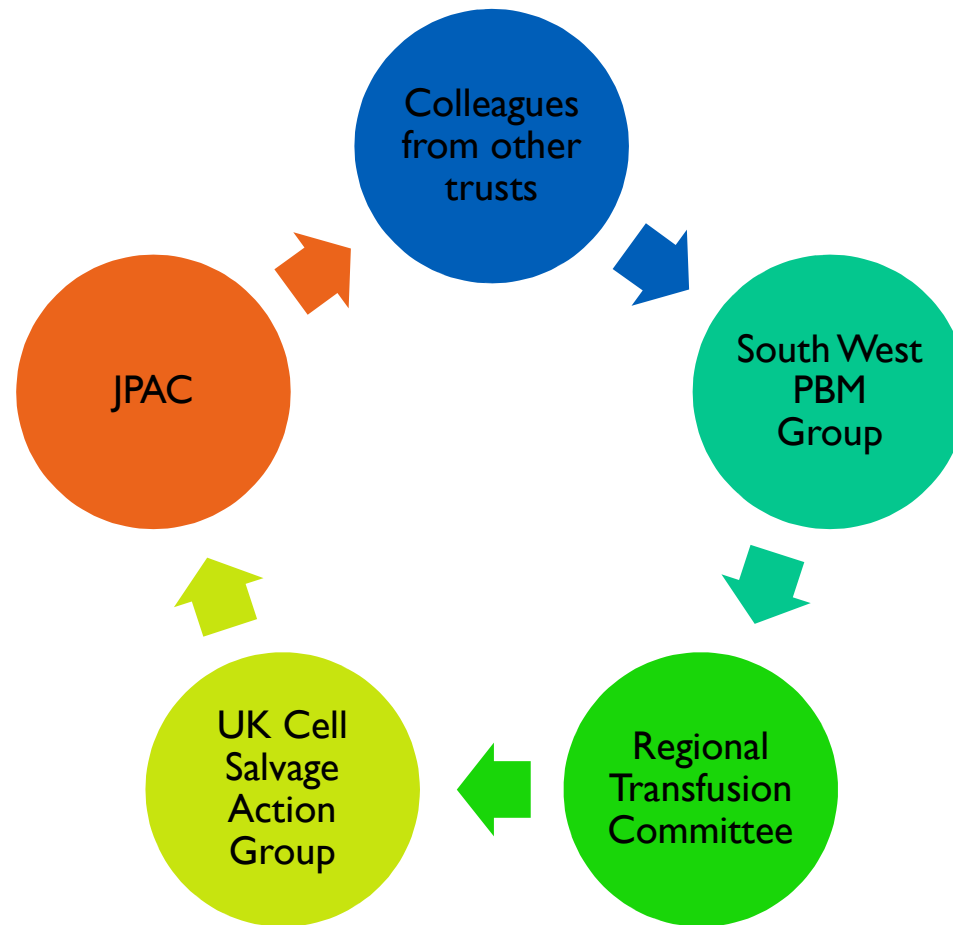
Limitations and Contra-Indications



Incident Reporting



Networking and Support



<http://www.learnbloodtransfusion.org.uk/>