SW PBM Group Meeting

23rd January 2024

(via Microsoft Teams)

Chair - Elmarie Cairns
Clinical Lead: Dr Oliver Pietroni
Support - Jackie McMahon RTC administrator

Housekeeping

- By accepting the invite to this meeting you have given consent for us to record the meeting for the purpose of compiling written minutes.
- To view presentations you will need to access the call via laptop/ computer. You can dial in if you need to use a phone for audio function.
- **To enlarge the presentations please use the 'Focus on Content' option from the More Actions tab at the top of the screen (three dots).**
- Please keep yourself muted unless you are speaking to reduce background noise and interference.
- To participate in discussion please use the "Raise hand" function on the tool bar, the chair will invite people one at a time. Don't forget to unclick it once you have contributed.
- During presentations, save questions for the end of the presentation and use the "hand raise" or chat function
- Please be aware the "Raise hand" function doesn't work with the mobile phone app. You will need to make yourself known to participate in a discussion or use the chat function.
- If you have any TEAMS related issues, email Jackie.McMahon@nhsbt.nhs.uk for assistance.
- For any IT related issues, you will need to contact your own helpdesk

Thank you!

Agenda

NHS

South West Regional Transfusion Committee

South West Patient Blood Management Group
Date: 23 January 2024
10:00 – 12.00, via Teams

AGENDA			
Minute No.		**App No:**	**Lead**
1.	**Apologies for Absence**		
2.	**Freedom of Information** This group will observe the requirements of the Freedom of Information Act 2000 which allows a general right of access to recorded information including minutes of meetings, subject to specific exemptions. No one present today had any objections to their names being distributed in the minutes.		
3.	**Declaration of Any Other Business**		
4.	**Summary of Previous Meeting and Matters Arising**		EC
5.	**Terms of Reference - Ratification**		EC
6.	**RTC & PBM Update**		ST
7.	**UKCSAG Update**		EC
8.	**Regional Cell Salvage Data Update & Future Direction/KPIs**		OP
	Coffee Break		
9.	**Running a Cell Salvage Service using MCAs**		IG
10.	**Amniotic Fluid Embolism with DIC Presentation**		SS/DD
11.	**AoB / Future Meeting Dates**		

Declaration of Any Other Business

Summary of Previous Meeting and Matters Arising:

- Met on 26th September F2F
- Business updates from RTC, PBM, Transfusion Survey and UKCSAG
- Excellent presentations from Sue Scott, on the use of EPO in Preoperative Anaemia. Stuart Cleland on Maternal Anaemia and a Case review by myself on when the electronic blood fridge breaks in a MH
- Actions included sharing of information – Patient Information Leaflet for ICS, Business cases for TEG/ROTEM, MSBOS examples and Baths Anaemia/EPO pathway
- Subgroup to be formed to meet and discuss KPI's for cell salvage

Minutes/ Action plan and presentations from previous meetings are available via the SW PBMG SharePoint and the SW RTC website

Feedback from the Meeting

- Continue Cell Salvage database with a view for national collection
- Experience/ business case education on PBM equipment
- POCT
- Anaemia management
- Once per year F2F meetings

SW PBM Group - Terms of Reference

Terms of Reference (ToR) - Southwest Patient Blood Management Group (SWPBMG)

Date:	December 2023
Version:	1.1
Review Date:	December 2025
Approving Committee:	Southwest Patient Blood Management Group (SWPBMG)
Date Approved:	
Target Audience:	SWPBMG members

Document History:

Date of Issue	Version	Approval Date	Changes made	Review date
12/12/23	1.1			

Purpose:

To provide a multidisciplinary PBM working group that reports to the South West Regional Transfusion Committee (SW RTC), collaborating on regional work, providing education and a network of support for PBM within the Southwest region.

The group was formed in 2015 by John Faulds and superseded the Blood Conservation Group.

Aims and Objectives:

- To provide education and support on the 4 pillars of PBM within the Southwest region.
- To share best practice techniques within the region, promoting safe and effective patient blood management.
- To collaborate on PBM projects where applicable and standardise PBM practice where possible.
- To identify areas of clinical practice improvement for PBM to ensure continued practice development and improvement.

- To work with the SW RTC in the implementation of new guidelines and safety initiatives.

Membership & Structure:

- Clinical staff working in hospitals in the southwest region that have an association with PBM are eligible for membership.
- Health care professionals working in an equivalent role in National Health Service Blood and Transplant (NHSBT within the southwest
- The group requires a Chair, +/- Clinical Lead (if Chair is not a Clinician) and Administrator
- There are no restrictions on member numbers but attendance to meetings must be confirmed prior to meeting dates.
- There is currently no patient representation on this group.
- Outside speakers and other staff members are welcome by invitation but may be asked to leave for discussions of clinical incidents or other sensitive confidential issues.
- There is no specific length of time for membership, however hospitals must update the administrator with any changes to PBM contacts.
- Members of the group agree for their professional details (name, place of work, email address) to be shared on the SW PBMG SharePoint page.

Accountability:

- The Chair/ Clinical lead are responsible for reporting the workstream to the SW RTC and providing updates on the SW RTC newsletter.
- The positions of Chair/Clinical lead should be reviewed/reappointed after 3 years, with consideration of any expressions of interest for a new leadership.
- Group members are responsible for cascading information to their hospital.

- Confidentiality and Freedom of Information - all members must take particular care of group papers / electronic files in their possession prior to and after meetings. Any patient identifiable information should be disposed of in accordance with NHS policy.
- SharePoint access will be to group members only and individual access managed by the group administrator.
- Information on Share Point will be reviewed as to relevance 6 monthly by the Chair/ Clinical lead and Administrator.

Document control/ sharing:

- Minutes from each meeting will be circulated to the group and uploaded to the SharePoint and JPAC website.
- The chair is responsible for taking the minutes. The duty is facilitated by the NHSCT administrator, and in their absence is rotated amongst the members.
- Members of the group can discuss, share, and access information on SharePoint. Members agree that any documents/policies/information shared on this platform are accurate at the time of posting.
- Chat forum function available on the SharePoint website +/- group email for discussion purposes.

Review:

- The group will review the relevance and value of its workstream at each meeting, and when reporting back to the SWRTC.
- ToRs to be reviewed 2 yearly.

Quoracy/Meetings:

- 3 meetings per year to be held.
- At least 1 meeting per year to be face to face.
- 1 meeting per year to be informal – no agenda.
- The Chair/ Clinical Lead and Administrator will organise dates/ locations of the meetings and send relevant information to the group.

- An Agenda will be circulated at least 2 weeks prior to the meeting.
- Invitation to the meetings will be by invitation only and with the aims ands objectives of the group in mind.
- The formal meeting with be quorate providing a minimum of ……SW Trusts/ organisations are present at the meeting.
- Informal meetings are not subject to these conditions.

Definition of terms:

- PBM – Patient Blood Management
- RTC – Regional Transfusion Committee

Revised December 2023, Ratified by SWPBMG

RTC/RTT Update

Sam Timmins/Oliver Pietroni

Objectives:

- Maternal Anaemia. Results from the regional survey presented at the Nov 23 RTC meeting, along with a presentation on the Scottish Pregnancy Anaemia Management project – PRAMS and results from the WOMAN-2 Trial. The RTT is now investigating the feasibility of a regional pathway for the identification and treatment of maternal anaemia.
- TXA continues to be a focus of the RTT
- A working group is in the process of being set up to look at the feasibility of running of a regional non-medical authorisation course.

Transfusion Survey:

- The annual survey has been postponed until summer 2024 to enable incorporation of the QS138 quality improvement audit tool which will enable the collection of more tangible data.

Education:

- The next topic has been selected for the NBTC education programme, covering transfusion practice in medicine. Hazards of Transfusion will be hosted by the SW RTC , via Teams on 11 June, 10.00-12.00. Content is in the process of being confirmed.
- The working groups including the PBMG and the TLM continue to support education pertinent to their members.
- The regional BMS education programme, designed to support the national BMSEDG, by covering core topics continues to roll out.

NBTC Realignment:

- As an outcome of the pandemic and recent blood shortages, work is being undertaken to improve NBTC's business continuity and organisational integrity which includes strengthening ties with the ICBs, a piece of work the SW RTC is piloting. The reporting structure for the RTC Administrators will also be changing.

PBM Update

Sam Timmins


Patient Blood Management
2023 Review
A look back at Patient Blood Management team activity in 2023 with everything from NMA courses, new audit tools, appropriate component use and loads of educational resources and events.
1
QS138 Quality Insights Tool
NICE Quality Standard QS138 is intrinsically linked to PBM. Our free self-assessment quality improvement tool QS138 Quality Insights to improve patient care and appropriate blood use
2
PBM Pop-up Stands
PBM awareness events in November 2023 held at North Tees Hospital & Torbay Hospital. More events planned for 2024
3
Obstetric Toolkit
Updated resources for healthcare professionals and the public, aim to help raise awareness of how to prevent, identify, and treat anaemia in pregnancy
4
Happier Working Lives
Using methodology from NHS Happier Working Lives course to invest in the PBM team to build happiness and resilience
5
PBM video
A summary of who we are, what we do and why we do it. How PBM aligns with the blood service and how we balance the needs of both services
6
NMA courses
Coordinated and delivered 5 online courses to 110 delegates with an average feedback score of 9/10
7
Amber Alert
Supporting the implementation of blood conservation initiatives in hospitals through educational material. A post alert survey providing vital insights into the effectiveness of the actions taken to improve any future events
8
NBTC website
Supported the design, development and delivery of a new and updated website for NBTC, showcasing regional and national activity, transfusion guidance and resources


9
Blood Assist International
Blood Assist is now being translated into Spanish by the Spanish Society of Blood Transfusion to support users in Spain and South America
10
BMSEDG
Facilitated 11 online sessions to an average audience of 199. A total of 3331 registered users and an average 88% satisfaction score
11
O positive red cells to bleeding men
Joint project with the NBTC. Conserve O D negative red cell stocks using recommendations for O D positive red cells in bleeding males
Coming Soon
Blood Essentials transfusion resource
Baby Blood Assist
Updated: Essential Transfusion Practice eLearning
Updated PBM website pages
Stay in touch
Keep up to date with latest news from PBM and access to all our resources via our website and social media accounts. For general enquiries contact us at PBM.team@nhsbt.nhs.uk or via your local PBM practitioner.
https://hospital.blood.co.uk/patient-services/patient-blood-management/
Twitter - @PBM_NHS
YouTube - PatientBloodManagementEngland

UKCSAG Update

Elmarie Cairns

UKCSAG Update

- Last meeting on 16/11
- All factsheets on UKCSAG being reviewed and updated
- UKCSAG cell salvage survey report and publication
- ToR's and offers of interest for new chair
- Winter Newsletter
- Questions to group: Use of band 2 HCA's , Von Willebrands disease, Cell salvage use and Malignancy

Regional Cell Salvage Data Update & Future Direction/KPIs

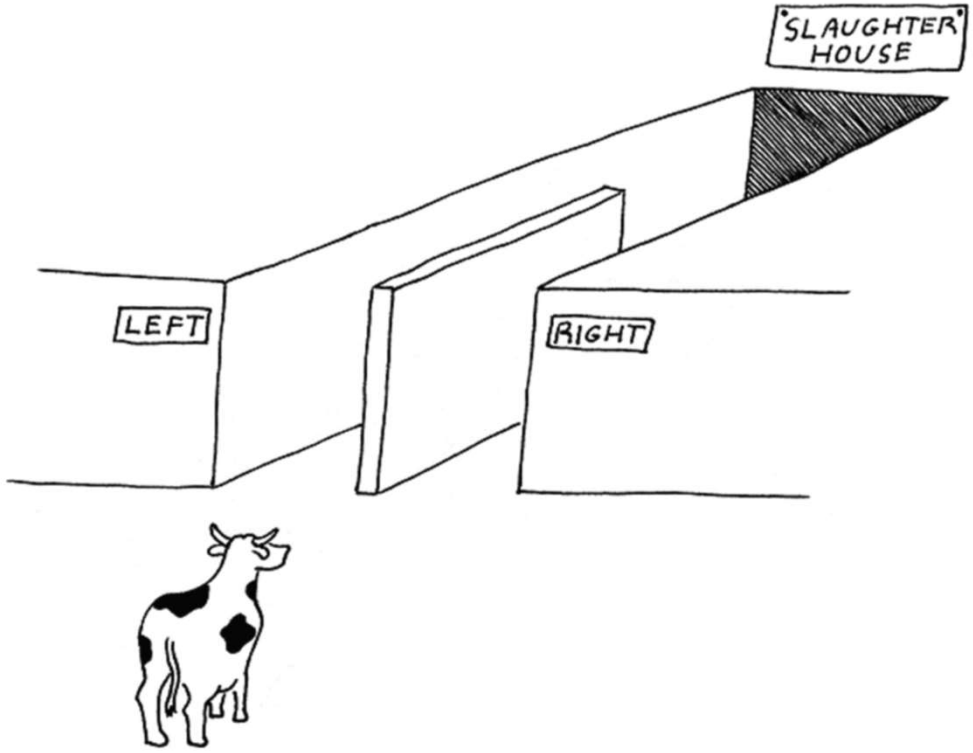
Oliver Pietroni

Aims

- Future Directions
- Standards
- Key Performance Indicators

Future Directions

- Publication / presentation of data & experience
- Continuation?
- Standardisation of practice?
- Collaborative projects
- Anything else?



SWPBMG Standards

1. ICS should be performed for surgical procedures in adults where blood loss is anticipated > 500ml, unless contra-indicated.

2. There should be an ICS clinical lead for every trust carrying out ICS

3. Salvaged blood should have a patient ID label attached to the re-infusion bag at the point of processing (or before)

4. There should be comprehensive record detailing specifics of ICS use in clinical notes

SWPBMG Standards

5. Every ICS use should be audited, and include volume of salvaged blood available for re-infusion

6. ICS operators should be trained and competency assessed

7. ICS use should be governed by organisational policy

8. Adverse events involving ICS should be reported to the SHOT (Serious Hazards Of Transfusion) haemovigilance scheme.

SWPBMG Key Performance Indicators

1. ICS should be governed by an organisational policy
    - Target: 100%
    - Measured by: Annual audit
2. There should be an ICS clinical lead for every trust carrying out ICS
    - Target: 100%
    - Measured by: Annual audit
3. Every ICS use should be audited using local data collection form/electronic patient record
    - Target: 100%
    - Measured by: Annual audit

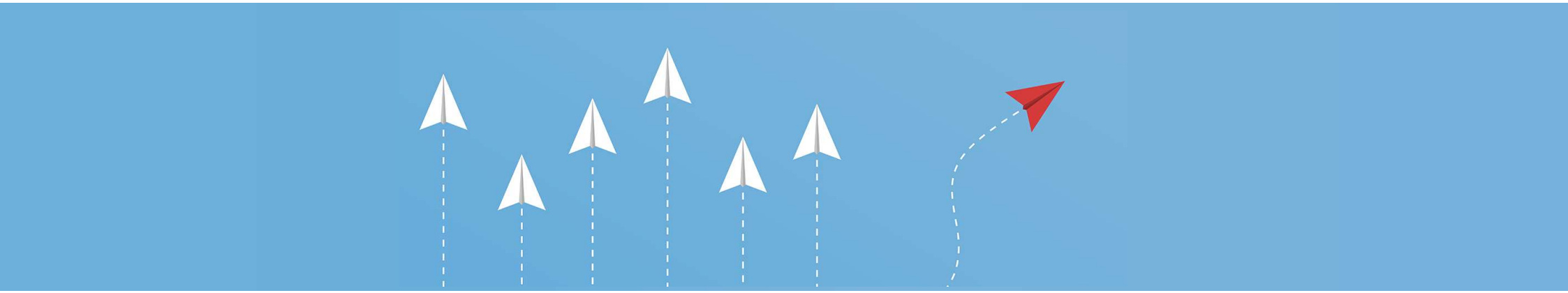
SWPBMG Key Performance Indicators

4. Adults undergoing surgical procedures with an anticipated blood loss >500ml should be offered ICS, unless contra-indicated, or specific local protocol in place
    - Target: 95%
    - Measured by: ICS Data collection forms / EPR

5. A locally agreed quality assurance programme is provided in collaboration with the Transfusion Laboratory.
    - Target: 100%
    - Measured by: Annual audit

What Next?

- Approve wording of Standards & KPIs
- Present to RTC
- Annual audit & benchmarking



Take a break.....

Running a Cell Salvage Service Using MCAs

Issie Gardner

UHBW – St Michaels

Cell salvage
St Michael's Hospital
Bristol

Dr Issie Gardner January 2024

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Cell salvage St Michael's Hospital

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Major Haemorrhage Procedure SMH

Shock Pack A	Shock Pack B SMH	Subsequent issue: Shock Pack C
(on site at St Michael's in CDS Blood Fridge)	(issued by lab and transported to SMH)	4 units RBC* 4 units FFP 1 adult dose platelets or clinician requested based on clinical picture or test results
4 units of O negative	4 units O negative 4 units FFP*	
Immediately available from CDS Fridge	*Pre thawed A/AB FFP immediately available for SMH	*O neg/grouped/electronic issue [illegible] on samples in lab

6g fibrinogen concentrate immediately available in theatre 1/2 anaesthetic room for use in ongoing major haemorrhage after discussion with consultant and/or based on TEG 6 results. NB Abruption (especially if significant enough to cause IUD), amniotic fluid embolism and severe sepsis associated with early low fibrinogen levels.

BRI porter will carry blood and blood samples between lab and delivery suite until stand down by hospital transport or taxi.

[illegible] issue/grouped blood will **automatically** be brought to CDS after initial shock pack unless cross matched blood already on SDS.

Leave O neg and FFP in transport boxes on arrival. If not required send back to lab via major haemorrhage porter.

Major Haemorrhage Profile available for requesting blood tests on ICE **REQUEST FIBRINOGEN LEVEL EVERY SET OF BLOODS**. Send group and screen sample via major haemorrhage porter if not sent before activation. Inform blood bank when fibrinogen concentrate given so they can restock.

Fibrinogen concentrate 6g in anaesthetic room theatre 1/2

(Under TEG machine)

Call blood bank (22579 or 22529) to stand down the procedure when haemorrhage is under control

Cell salvage in obstetrics

2007

BJOG An International Journal of Obstetrics and Gynaecology

BJOG: an International Journal of Obstetrics and Gynaecology
February 2005, Vol. 112, pp. 131–132

DOI: 10.1111/j.1471-0528.2004.00349.x

COMMENTARY

Cell salvage in obstetrics: the time has come

The risk/benefit ratio is clearly in favour of cell salvage in obstetrics—what are we waiting for?

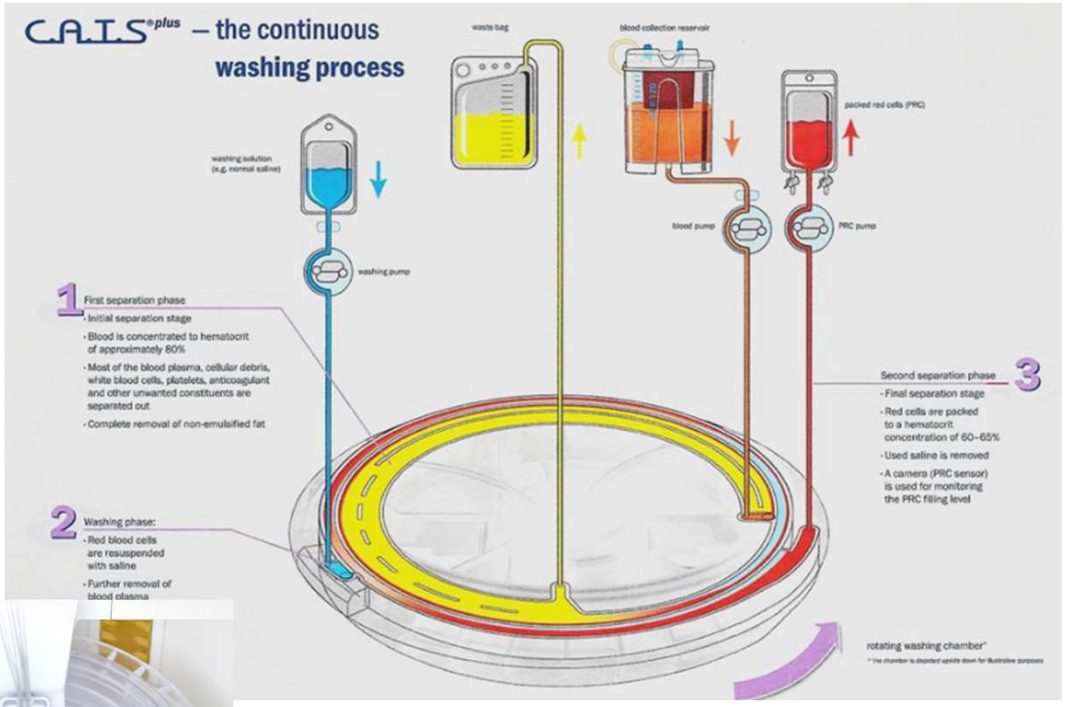
Sue Catling, Lisa Joels
Singleton Hospital, Swansea, UK

endorsed by several bodies

- CEMACH, ACOG, OAA/AAGBI
- NICE cautious

slow intro into obstetrics – safety concerns

Cell salvage St Michael's



Cell salvage St Michael's

- Staff

Standard Operating Procedure

INTRAOPERATIVE CELL SALVAGE AT ST MICHAEL'S HOSPITAL, PREPARATION AND OPERATION OF EQUIPMENT

SETTING	Theatres, St Michael's Hospital
FOR STAFF	Theatre Nursing Assistants, other theatre and medical staff
PATIENTS	Patients undergoing surgical procedures at St Michael's

GUIDANCE

The Fresenius C.A.T.S device (Continuous Auto Transfusion System) is an auto transfusion system for intraoperative processing of blood lost during surgery. The blood is mixed with anticoagulant, filtered and collected in a sterile reservoir before entering a continuous washing process which produces packed red cells of constant haematocrit (65%) for reinfusion to the patient. This process washes out coagulation factors, the anticoagulant and damaged red cells.

Cell Salvage Operators St Michael's and Medical Staff

Before operating the machine without direct supervision the Theatre Nursing Assistants/medical staff must be trained, assessed and be confident in all aspects of cell salvage equipment preparation, operation and processing.

This should be achieved by the following methods-:

- Company equipment device training by a designated company trainer
- Evidence of competency following assessment by a St Michaels Hospital Consultant Anaesthetist cell salvage link trainer with record of assessment

A register of trained Theatre Nursing Assistant and Medical personnel should be kept in the department.

An Anaesthetist will be present in the theatre whilst cell salvage is taking place and will check before use

- anticoagulant (ACD-A 750 ml bag)
- normal saline (0.9% sodium chloride) intravenous (IV) 1000ml bags

The Surgeon, Anaesthetist and scrub team should all be familiar with the aspects of cell salvage for the surgery being performed. The clinicians are responsible for decisions on whether to process blood and whether to return processed blood to the patient.

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C.A.T.S Cell Salvage Equipment Use Competency St Michael's Hospital

Name of practitioner:

Role:

Date :

Aim: The practitioner will be able to demonstrate competency in the safe set up and use of the above equipment

Entry Criteria:
Health Care Assistants or Theatre Practitioners working at St Michael's Hospital, University Hospitals Bristol NHS Foundation Trust

Knowledge and Understanding Criteria

By the end of the assessment the practitioner should demonstrate knowledge and understanding and be able to apply the following:

Enter Make/Model of Device: Fresenius CATS/CATSmart The Practitioner will be able to:	Level of achievement
. Prepare C.A.T.S equipment for blood collection	
. Manage ongoing blood collection	
. Blood processing equipment set up	
. Swab washing set up	

Resources available (hard copies in resource folder):-

Standard Operating Procedure preparation and operation of cell salvage equipment at St Michael's
http://nww.avon.nhs.uk/dms/download.aspx?did=22731

Intra operative Cell Salvage intra operative use at ST Michael's
http://nww.avon.nhs.uk/dms/download.aspx?did=15515

Cell Salvage Technical fact sheets
http://www.transfusionguidelines.org/transfusion-practice/uk-cell-salvage-action-group/technical-factsheets-and-frequently-asked-questions-faq

What are we doing?

University Hospitals Bristol and Weston NHS Foundation Trust

- Who
- When
- What
- Where

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Cell salvage St Michael's

Cell salvage guideline and SOP

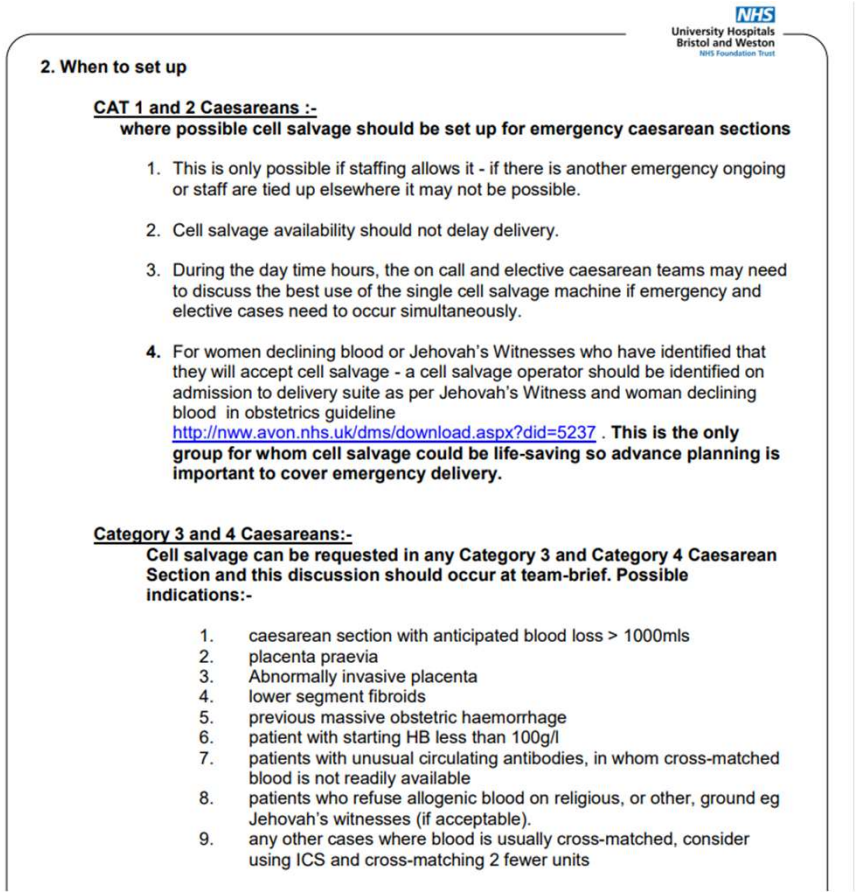
- Single suction
- Wash swabs

Processing set installation on screen instructions

No decisions re bowl size

What are we doing?

- Who
- When
- What
- Where



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2. When to set up

CAT 1 and 2 Caesareans :-
where possible cell salvage should be set up for emergency caesarean sections

1. This is only possible if staffing allows it - if there is another emergency ongoing or staff are tied up elsewhere it may not be possible.
2. Cell salvage availability should not delay delivery.
3. During the day time hours, the on call and elective caesarean teams may need to discuss the best use of the single cell salvage machine if emergency and elective cases need to occur simultaneously.
4. For women declining blood or Jehovah's Witnesses who have identified that they will accept cell salvage - a cell salvage operator should be identified on admission to delivery suite as per Jehovah's Witness and woman declining blood in obstetrics guideline http://nww.avon.nhs.uk/dms/download.aspx?did=5237 . **This is the only group for whom cell salvage could be life-saving so advance planning is important to cover emergency delivery.**

Category 3 and 4 Caesareans:-
Cell salvage can be requested in any Category 3 and Category 4 Caesarean Section and this discussion should occur at team-brief. Possible indications:-

1. caesarean section with anticipated blood loss > 1000mls
2. placenta praevia
3. Abnormally invasive placenta
4. lower segment fibroids
5. previous massive obstetric haemorrhage
6. patient with starting HB less than 100g/l
7. patients with unusual circulating antibodies, in whom cross-matched blood is not readily available
8. patients who refuse allogenic blood on religious, or other, ground eg Jehovah's witnesses (if acceptable).
9. any other cases where blood is usually cross-matched, consider using ICS and cross-matching 2 fewer units

What are we doing?

University Hospitals Bristol and Weston NHS Foundation Trust

- Who
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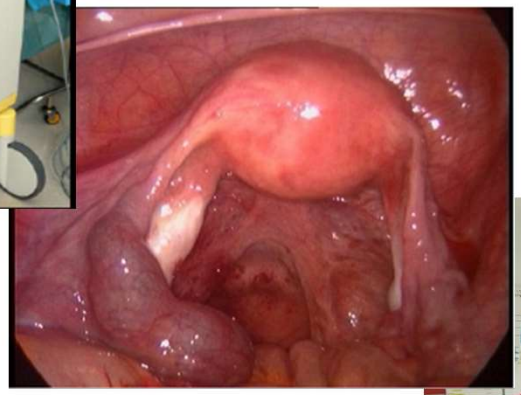
- What
- Where



Other situations?

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International Journal of Obstetric Anesthesia (2015) **24**, 103–110
0959-289X/$ - see front matter
http://dx.doi.org/10.1016/j.ijoa.2014.12.001

CrossMark

ELSEVIER
www.obstetanesthesia.com

ORIGINAL ARTICLE

Is cell salvaged vaginal blood loss suitable for re-infusion?

K.M. Teare,[a] I.J. Sullivan,[b] C.J. Ralph[a]
[a]*Department of Anaesthesia,* [b]*Blood Transfusion Department, Royal Cornwall Ho*
UK

ABSTRACT
Background: Haemorrhage is one of the commonest causes of maternal critical care admiss
section can contribute to a reduction in allogeneic blood consumption. This study sought t

Received: 10 December 2021 | Revised: 20 February 2022 | Accepted: 20 February 2022
DOI: 10.1111/trf.16846

HOW DO I?

TRANSFUSION

How do I perform cell salvage during vaginal obstetric hemorrhage?

Jaclyn M. Phillips[1] | Sara Sakamoto[1] | Alexandra Buffie[1] | Selma Su[1] | Jonathan H. Waters[2]

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Appendix 3

Vaginal Cell salvage set up

Early recourse to EUA with ongoing vaginal bleeding to stop bleeding if initial standard management fails

Once in theatre collect blood as below.

Equipment:-

Standard set up of cell salvage machine for collection only initially

+

Under buttock drape with pocket.

Preparation:-

Allow ACDA anticoagulant 100-200mls to run directly into pocket from suction irrigation line.

Blood/anticoagulant can be aspirated from pocketed drape into cell salvage reservoir.

Swabs used can also be washed as per standard obstetric cell salvage set up

Processing :-

If sufficient blood collected processing can be set up and team decision to re transfuse based on risk/benefit to individual.

Evidence suggests bacteraemia risk low from in vitro research. Clinical decision to decide on processing and returning blood. Risk benefit likely to favour returning cell salvaged vaginal blood in massive PPH for JW woman.

Reference to articles:-

KM Teare et al. Is cell salvaged vaginal blood loss suitable for re-infusion? *IJOA.* 2015; **24**: 103-110

https://www.sciencedirect.com/science/article/abs/pii/S0959289X14001538

Challenges/Developments

- Staff
- Equipment
- Enthusiasm
- MBL
- Reinfusion

New paperwork

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OBS CELL SALVAGE / MBL AUDIT FORM – ST MICHAEL'S HOSPITAL

DATE:	**CAT** 1 / 2 / 3 / 4	FORENAME:
TIME:	**RHESUS** –ve / +ve	SURNAME:
CELL SALVAGE OPERATOR:		DOB:
ANAESTHETIST:		HOSPITAL NO:

CELL SALVAGE INDICATION — **Cell Salvage Setup:** YES / NO

EMERGENCY CAESAREAN: ☐ *(consider using cell salvage for all emergencies)*

ELECTIVE: Low Hb ☐ Maternal antibodies ☐ Jehovah's witness ☐ Multiple pregnancy ☐
Placenta praevia ☐ Placenta accreta/percreta ☐ Previous APH/PPH ☐
Grand multip (para 4+) ☐ Obesity ☐ Previous abdo. surgery ☐ Other ☐

EARLY MBL: not including swab blood and saline wash

(1) **BLOOD:** reservoir volume (ml) snap-shot measurement
(+ cell salvage blood volume (ml) **if processing started**)
Processed volume: OLD MACHINE → CATS screen = 'Blood' (ml)
NEW MACHINE → Fresenius = 'WB' (ml)

(2) **ANTICOAGULANT:** volume added (ml)

(3) **AMNIOTIC FLUID:** volume at start (ml)

EARLY MBL: (1) – (2 + 3) =

MBL WITH SWABS: recalculate after every 1000ml saline wash suctioned up

(a) **BLOOD:** reservoir volume (ml) *snap-shot measurement* (+ cell salvage blood volume (ml) *if processing started*)			*recalculate in each column*
(b) **SWABS**: running total volume from swabs (ml) ** Ensure cell salvage swabs are washed then weighed ** ***Do not include non-cell salvage swabs here*** Check running total is complete before recalculating MBL Obtain swab weights using laminated sheet on wall			
(c) **SALINE WASH:** saline wash volume given to scrub nurse	1000ml	2000ml	3000ml
(d) **ANTICOAGULANT:** running total volume added (ml)			
(e) **AMNIOTIC FLUID:** *copy volume (3) from table above*			
MBL WITH SWABS = (a + b) – (c + d + e)			

CELL SALVAGE MBL:

*At sign-out ensure **CELL SALVAGE MBL** is documented on both the **'PPH proforma'** and operative note*
(Please leave fully completed cell salvage audit form with other completed forms on the wall in theatre anaesthetic room!)

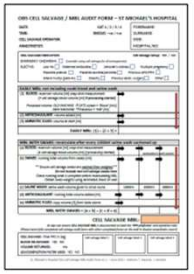
CELL SALVAGE - final PRC in bag:
BLOOD RE-INFUSED: YES NO
VOLUME RETURNED: mls
LEUCODEPLETION FILTER USED: YES NO

Cell salvage label 1 | Cell salvage label 2 | Cell salvage label 3

St. Michael's Hospital Obs Cell Salvage MBL Audit Form v1.1 – June 2022 – Authors: T. Baumer, I. Gardner

(New) Obstetric Cell Salvage / MBL Audit Form

– Additional Instructions / Information



Please complete MBL audit form for all cell salvage cases (blank sheets can be found in anaesthetic room)

Completed forms should be left in the anaesthetic room (in plastic wall-tray)

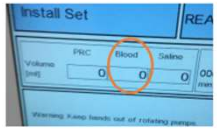
Please give us your feedback:

Audit form training video:

Please note: when recording processed cell salvage blood volume, ensure the following number is used (*volume will be zero if processing not yet started*):

OLDER cell salvage machine
'Blood' volume (ml)

NEW cell salvage machine
'WB' (ml) is blood volume



Standard Operating Procedure

INTRAOPERATIVE CELL SALVAGE AT ST MICHAEL'S HOSPITAL, PREPARATION AND OPERATION OF EQUIPMENT

SETTING Theatres, St Michael's Hospital

FOR STAFF Theatre Nursing Assistants, other theatre and medical staff

PATIENTS Pat

GUIDANCE

The Fresenius C.A.T. system for intraopera anticoagulant, filtered process which produc patient. This process

Cell Salvage Ope

Before operating the n must be trained, asses operation and process

This should be achiev

- Company equip
- Evidence of cor Anaesthetist ce

A register of trained Th department.

An Anaesthetist will be use

- anticoagulant (
- normal saline (

The Surgeon, Anaesth the surgery being perf blood and whether to

NHS
University Hospitals Bristol and Weston
NHS Foundation Trust

C.A.T.S Cell Salvage Equipment Use Competency St Michael's Hospital

Name of practitioner:

Role:

Date :

Aim: The practitioner use of the above equip

Entry Criteria:
Health Care Assistant
University Hospitals B

By the end of the asse understanding and be

Enter Make/Model of Dev
The Practitioner will be
1. Prepare C.A.T.S e
2. Manage ongoing b
3. Blood processing
4. Swab washing set

Resources available (har

Standard Operating Proc Michael's
http://nww.avon.nhs.uk/d

Intra operative Cell Salva
http://nww.avon.nhs.uk/d

Cell Salvage Technical fa
http://www.transfusionga group/technical-factshee

NHS
University Hospitals Bristol and Weston
NHS Foundation Trust

Appendix 3

Vaginal Cell salvage set up

Early recourse to EUA with ongoing vaginal bleeding to stop bleeding if initial standard management fails

Once in theatre collect blo

Equipment:-

Standard set up of cell salvage machir

+

Under buttock drape with pocket.

Preparation:-

Allow ACDA anticoagulant 100-200ml

Blood/anticoagulant can be aspirated

Swabs used can also be washed as p

Processing :-

If sufficient blood collected processing on risk/benefit to individual.

Evidence suggests bacteraemia risk decide on processing and returning salvaged vaginal blood in massive

Reference to articles:-

KM Teare et al. Is cell salvaged vaginal blc

https://www.sciencedirect.com/science

OBS CELL SALVAGE / MBL AUDIT FORM – ST MICHAE

DATE: CAT 1 / 2 / 3 / 4
TIME: RHESUS –ve / +ve
CELL SALVAGE OPERATOR:
ANAESTHETIST:

CELL SALVAGE INDICATION
EMERGENCY CAESAREAN: *(consider using cell salvage for all emergencies)*
ELECTIVE: Low Hb | Maternal antibodies | Jehovah's witness | Placenta praevia | Placenta accreta/percreta | Grand multip (para 4+) | Obesity | Previous abdo. surgery

EARLY MBL: not including swab blood and saline wash

(1) **BLOOD:** reservoir volume (ml) snap-shot measurement (+ cell salvage blood volume (ml) **if processing started**) *Processed volume: OLD MACHINE → CATS screen + 'Blood' (ml) NEW MACHINE → Fresenius = 'WB' (ml)*	
(2) **ANTICOAGULANT:** volume added (ml)	
(3) **AMNIOTIC FLUID:** volume at start (ml)	
EARLY MBL: (1) – (2 + 3) =	

MBL WITH SWABS: recalculate after every 1000ml saline wash suctio

(a) **BLOOD:** reservoir volume (ml) snap-shot measurement (+ cell salvage blood volume (ml) *if processing started*)	
(b) **SWABS:** running total volume from swabs (ml)	
** Ensure cell salvage swabs are washed then weighed ** ***Do not include non-cell salvage swabs here*** Check running total is complete before recalculating MBL Obtain swab weights using laminated sheet on wall	
(c) **SALINE WASH:** saline wash volume given to scrub nurse	1000ml
(d) **ANTICOAGULANT:** running total volume added (ml)	
(e) **AMNIOTIC FLUID:** *copy volume (3) from table above*	
MBL WITH SWABS = (a + b) – (c + d + e)	

CELL SALVAGE MBL:

At sign-out ensure ***CELL SALVAGE MBL*** *is documented on both the* ***'PPH proforma'*** *and operative note (Please leave fully completed cell salvage audit form with other completed forms on the wall in theatre anaesthetic room!)*

CELL SALVAGE - final PRC in bag:
BLOOD RE-INFUSED: YES NO
VOLUME RETURNED: mls
LEUCODEPLETION FILTER USED: YES NO

Cell salvage label 1 | Cell salvage label 2 | Cell salvage label 3

St. Michael's Hospital Obs Cell Salvage MBL Audit Form v3.1 – June 2022 – Authors: T. Baumer, I. Gardner

Anaesthesia
Peri-operative medicine, critical care and pain
Association of Anaesthetists

Guidelines | Open Access

Association of Anaesthetists guidelines: cell salvage for peri-operative blood conservation 2018

- Routine set up
- Cost effective

- Single suction
- L~~E~~ 
- Bigger dose anti D
- Anaemia as indication
- Unanticipated bleeding

Risk vs benefit
Refusal or anticipated significant blood loss

?

Anaesthesia
Peri-operative medicine, critical care and pain
Association of Anaesthetists

Original Article | Full Access

Obstetric intra-operative cell salvage: a review of an established cell salvage service with 1170 re-infused cases†

I. J. Sullivan ✉, C. J. Ralph

Table 1 Transfusion of blood products in intrapartum women on the delivery suite during the study period. Values are number, number (proportion) or median (IQR [range]).

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Annual deliveries	[illegible]	4354	4492	4769	4628	4612	4388	4316	4338	[illegible]
Women having allogeneic RBC transfusion	58 (1.4%)	43 (1.0%)	44 (1.0%)	40 (0.8%)	35 (0.8%)	31 (0.7%)	39 (0.9%)	9 (0.2%)	18 (0.4%)	16 (0.4%)
Total RBC units transfused	259	192	155	167	100	75	112	31	57	39

Table 2 Use of intra-operative cell salvage at caesarean section during the study period. Values are number or number (proportion).

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Caesarean sections	767	764	801	876	845	840	869	951	826	868
Blood collection	41 (5.3%)	251 (32.9%)	369 (46.1%)	622 (71.0%)	806 (95.4%)	805 (95.8%)	853 (98.2%)	930 (97.8%)	814 (98.5%)	861 (99.1%)
Blood processed	20 (2.6%)	67 (8.8%)	98 (12.2%)	155 (17.7%)	228 (27.0%)	230 (27.4%)	258 (29.7%)	288 (30.3%)	264 (32.0%)	337 (38.8%)
Blood re-infused	20 (2.6%)	25 (3.3%)	34 (4.2%)	87 (9.9%)	121 (14.3%)	146 (17.4%)	142 (16.3%)	183 (19.2%)	176 (21.3%)	236 (27.2%)
Cell salvaged blood re-infused plus allogeneic RBC transfusion	2	2	8	5	6	4	10	1	3	3

Any Other Business

- Date for Informal Teams Meeting – 19.06.24
- Date for Face-to-Face Meeting – 24.09.24
- If anyone has a case review they would like to share, audit or poster they are presenting please do let us know