Iron Optimisation - RCHT
The Story So Far

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Blood Conservation Coordinator
RCHT

Outcome for Today

To show a program of

Surgical Blood Conservation

(in particular optimisation),

with the aim of reducing blood Tx in the elective surgical setting.

Key benefits of Introducing a Blood Conservation service

- Reduced risk for patients and improved patient care
- Reduced demand on blood banks and associated costs
- Reduction in last minute cancelled operations
- Reduced risk of peri-operative complications leading to reduce length of stay.

Challenges for Blood Conservation

- Implementing a new service/idea (cultural change)
- Proving financial viability
- Data collecting

Our Service

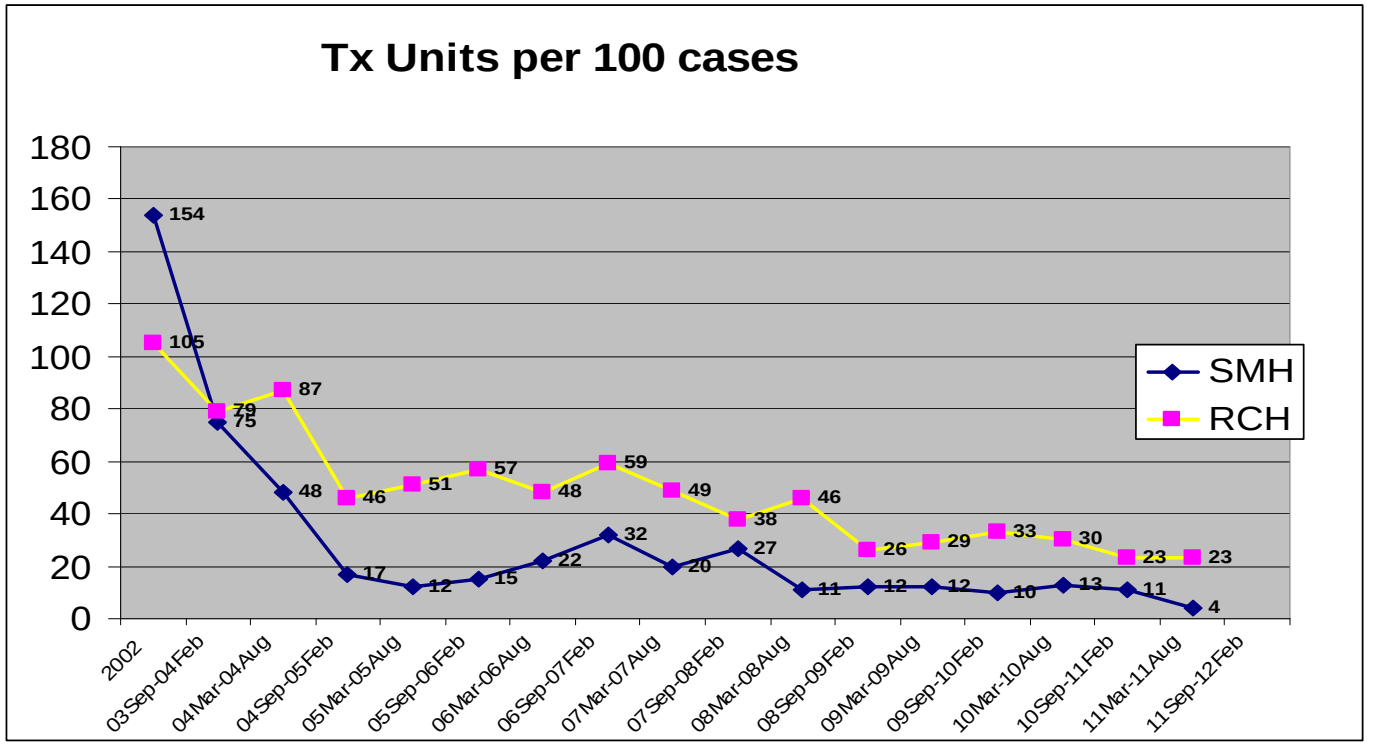
- Staffing – 2 WT + 0.5 PT (nursing)
  - O.1 A &C
  - Consultant - 1 pa

- Optimisation – Pre surgery (X3 half day clinics)
- Intra Operative Cell Salvage
- Quality assurance
- Point of care testing
- Research

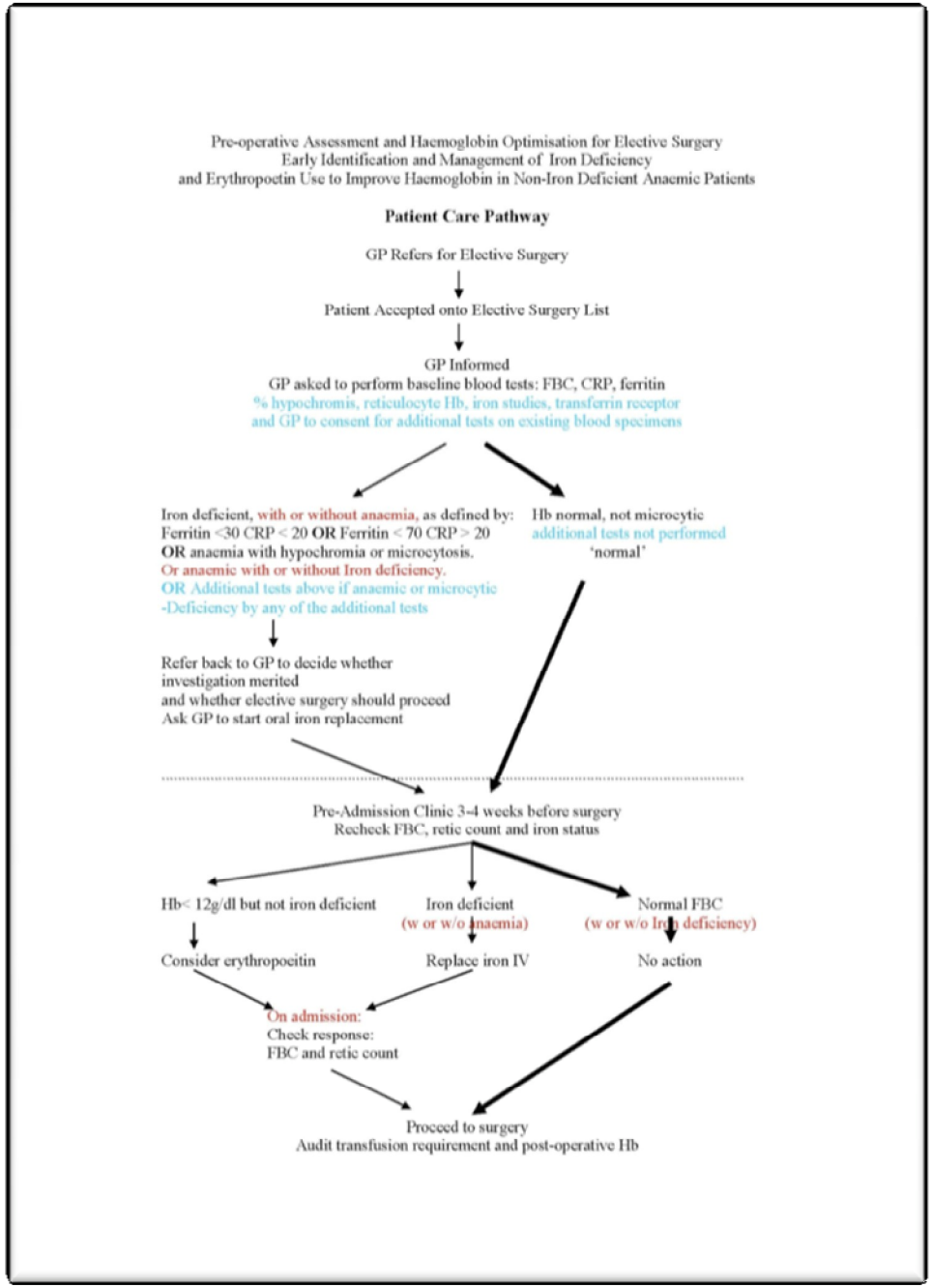
RCHT Time Line

- Pre 2002 = No Program
- Sep 04 – Aug 05 = ICS Program
- Mar 06 – Feb 07 = Change in ICS criteria which showed an increase in Tx
- Mar 07 – Feb 08 ICS program re instated
- Feb 08 – To date = Optimisation program and ICS program

Tx Time Line Graph (Hip surgery)

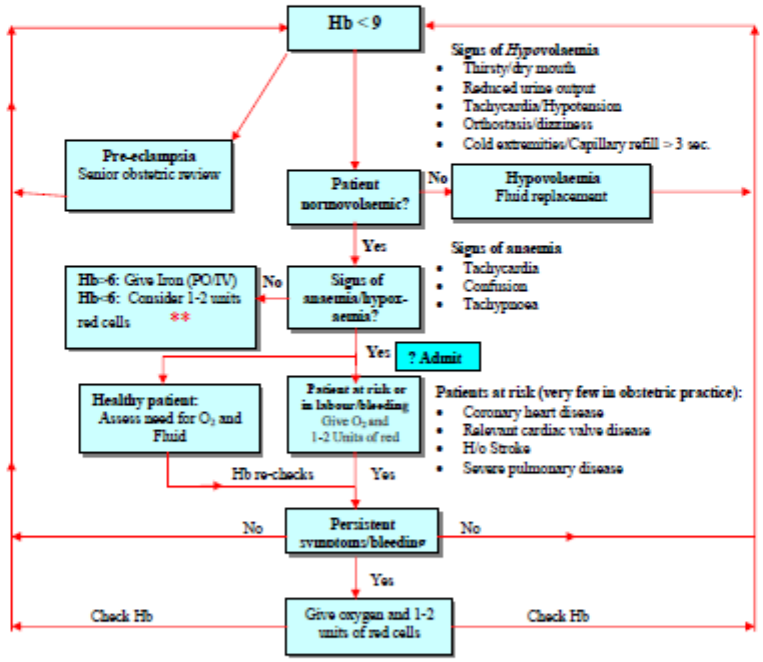


Referral Algorithm



Guidelines for blood transfusions in pregnancy.

- Ante-,peri and post partum management of fluid and blood status includes careful consideration of the need for red cells and other fluid replacement
- **Asymptomatic patients** with normo-volaemic anaemia **do not need blood transfusion** if the haemoglobin level is above 6 g/100ml
- All Hb levels referred to below are in gram per 100 mls



Note: High risk patients need special thresholds for red cell transfusion

Not an indication for transfusion:

- Anaemia with patient feeling well.
- Prophylactic substitution
- Top up of HB in asymptomatic anaemia
- Hypovolaemia.

** If in labour- IV access, FBC X match 2 units, active management 3rd stage with synto infusion. Suture promptly.

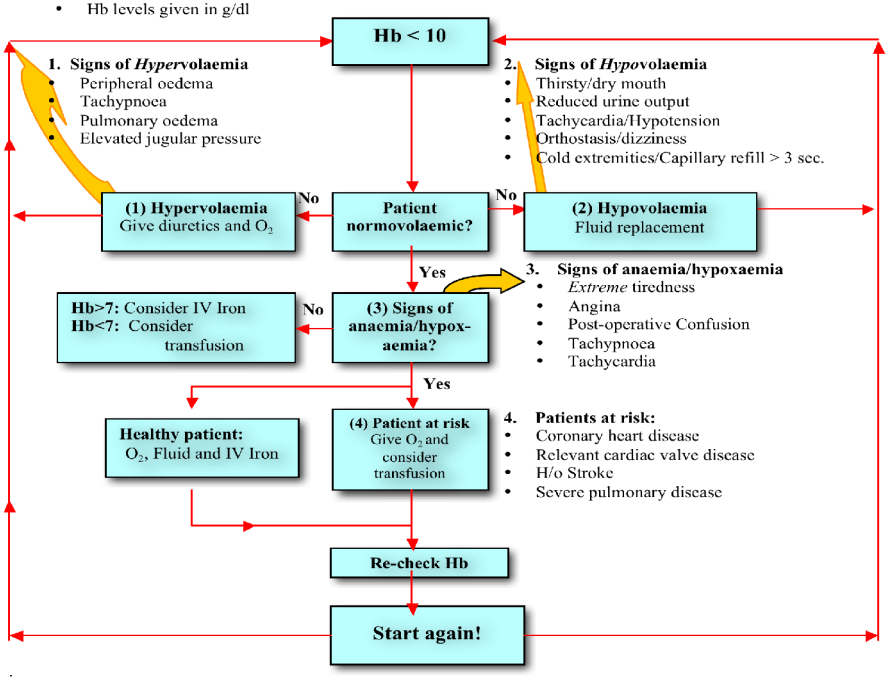
NOTE 1. Asymptomatic women with Hb >6 g/dl do not require blood.

Refs: 1. HTC 2007.
2. Blood transfusion and the

Guidelines for peri-operative blood transfusions in adults.

(not suitable for acute massive haemorrhage)

- RCHT Blood transfusion policy states: **"Transfusion should only be given when there is no alternative"**
- Peri-operative management of fluid and blood status includes careful consideration of the need for red cells **and** fluid replacement
- The patient's **volume status** needs careful assessment.
- **Asymptomatic normal risk patients** with normo-volaemic anaemia **do not need blood transfusion** if the haemoglobin level is above 7 g/dl.
- **Don't give more blood than necessary to achieve the Hb-level you are aiming for.**
  - Calculate one g/dl Hb per unit of blood. **Single unit transfusion is perfectly acceptable.**
- **IV Iron** Sucrose, Venofer, 200 mg can increase Hb 1g/dl within a few days.of an acute bleed. Max 200 mg/day, max 600 mg/week.
- Hb levels given in g/dl



Note: High risk patients need special thresholds for red cell transfusion

Not an indication for transfusion:

- Anaemia with patient **feeling well.**
- Prophylactic substitution
- Top up of HB in **asymptomatic** anaemia
- Hypovolaemia, i.e. use as plasma expander.

REMEMBER
A blood transfusion will ban the recipient from donating blood!

Management of Hypovolaemia:

- Oxygen 2-4 l/min
- Fluid replacement/challenge with crystalloid (Hartmann's®), starch (Voluven®) or gelatine (Gelofucine®),

Lars Jakt/HTT August 2004.
Version 4
Revised Lars Jakt May 2010
To be revised May 2013

Patient pathway

- Patients flagged up by Pre assessment Staff
- Blood results normally checked within two days
- Blood Conservation contacted via
  - Email
  - Telephone
  - In person
  - Netpage

Surgical Specialities

- Orthopaedics
- GI
- Urology
- Gynaecology
- Others

What operations

Those at risk to transfusion?

Pre op iron choice

- Ferinject now the iron of choice pre surgery

  400mg 600 mg 1000mg

  +/-

  Darbepoetin 300 mcg
- Patient only has to attend once
- Follow up bloods – normally two weeks following iron
- Intervention outcome - HRG 4
  - **Patient discharged**

Delivery of Iron

- All Iron interventions are undertaken in the pre op assessment clinic
- Out patient setting
- Dedicated member of staff
- Iron given as slow IV infusion via Baxter pump
- One to one nursing
- Letter to GP

Follow up

- Bloods normally at two weeks
- Arranged to be taken at GP’s
- May be taken on admission (day of surgery)
- Require – FBC
  Reticulocyte’s
  Ferritin (sometimes)
  CRP

What is a successful intervention?

Peri op Iron

- Iron Sucrose (Venofer) - iron of choice
- Iron given during surgery or post operatively
- Undertaken by anaesthetists or recovery nurses
- Given as a slow IV bolus or via infusion pump
- Administered to patients who have normal Hb low ferritin.

Post Operative Iron

- Patients flagged up at Pre assessment or ward referrals
- Venofer iron of choice
- Normally administered in the ward setting
- Follow up results in two weeks
- Letters to GP

Outcomes to date

- 185 patients treated pre operatively
- No Major ADR’s (to date)
- Mild reactions – Flushing, Headache, Rash
- Ferinject has been approved for the continued use in pre op setting

Optimisation Costs + Income

- HRG 4
- Coded – QZ14B (Tariff of £235 2012/13)
- Predicted yearly costs - £25,500 approx (600 mg)
- Predicted yearly income - £44,000 approx
- Income generation - £18,000 approx

Predicted on 185 interventions

Blood Conservation Budgets

- Total Budget for 2010 – 2011

  £191,000
- Total Budget for 2011 – 2012

  £216,000
- Budget for 2012 – 2013

  Approx £290,000 (35% approx)

Blood Conservation The Future

- To integrate Blood Conservation into the wider trust objectives
- Consider moving from Blood Conservation to Patient Blood Management
- Increase in staff to support the service
- Further ethical research
- Obstetric population
- Improve our data collection
    - Medical patients?

Thank You and Questions