

### Pre-Operative Anaemia Service – An evaluation of the costs, benefits and flaws of the service

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### What is the service for?

- Developed as an adjunct to the work done by ERAS and PBM schemes
- Identifies patients prior to major surgery in the following areas -
  - Colorectal
  - Gynaecology
  - Upper GI
  - Hepatobiliary



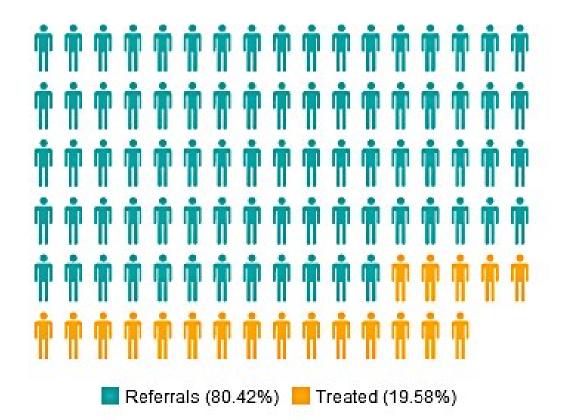
Fig 1

Pre-operative Anaemia Pathway in General Surgery Patient listed for Major Cancer Surgery (Upper GI, Colorectal, HPB, Uro-oncology) ICE request pages 'Surgical Anaemia' Record body weight Any hypersensitivity reactions to iron? All patients to have: No iron deficiency FBC, retics (Ret-He) U+E LFT Bone CRP Refer back to surgeon, continue B12, Folate, Ferritin Transferrin Saturation on surgical pathway Patient info for anaemia Not anaemic Anaemia Specialist nurse reviews ICE list and triages patients according to results in Hb >130g/L M, collaboration with consultant haematologist Hb >120a/L F using anaemia algorithm Check ferritin Patient anaemic Iron deficient but not anaemic Hb <130g/L (M) IV iron 500mg Hb <120g/L (F) Patient info sheet LET1 Patient Anaemic Patient Anaemic Patient Anaemic Patient Anaemic Not iron deficient Not iron deficient **Functional iron** B12 folate Anaemia not Straightforward iron deficiency correctable deficiency deficiency Ferritin 30 - 100 Ferritin <30 TF5 < 20%

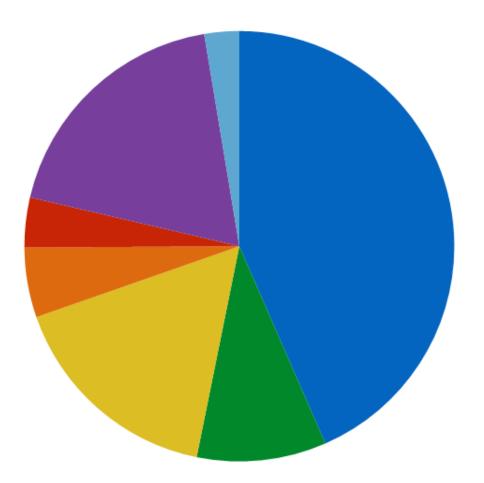
## Algorithm

- The algorithm decides who is eligible for treatment based mainly on their Ferritin level -
  - <30 Iron Deficient
  - 30-100 Functional Iron Deficiency
- Treat with IV Iron, the dose of which is based on the patient's weight

The service so far...



### Anaemia Status



Not Anaemic

Iron Deficient

 Iron Deficiency Anaemia
B12/Folate Deficiency

Mixed Deficiency

- Anaemia not treatable
- Bloods not taken

## Aims

- Has the service met its own original aims?
  Reduction in transfusion rates
- Is it being efficiently run in terms of cost?
- Are there areas for improvement of the service?



### Methods











**BloodTrack® Enquiry** 

### PATIENTS



### BLOOD



### COSTING

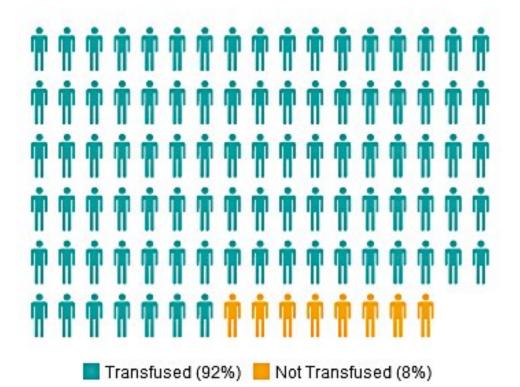




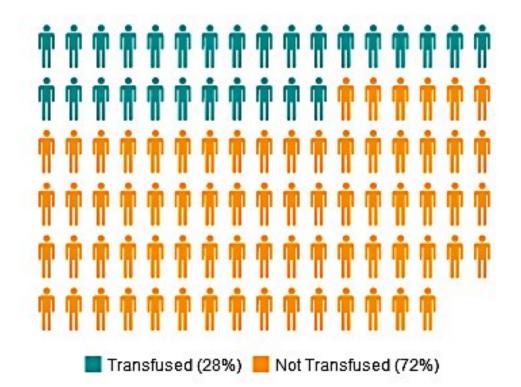
# Patient X



#### 2015 Transfusion Rate

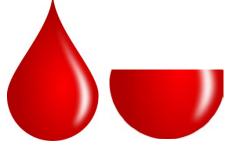


#### 2017 Transfusion Rate



### Units per surgery

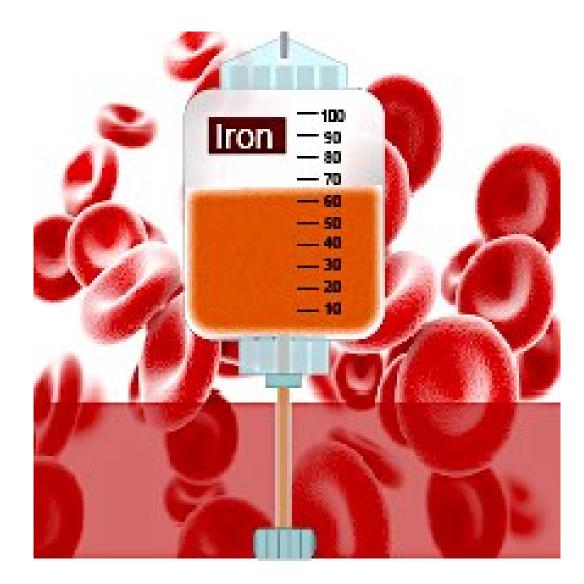
 In 2015, every patient on average had 1.4 units of blood.



• Post service implementation, every patient on average received 0.9 units of blood.







### **Costing Analysis**

Costs	Total	Income	Total
Staff Time for Triage	£2,929	Tariff Generated	£20,695
Staff Time for 1 dose	£2,990	Blood components saved	£14,960
Equipment	£443.95		
Testing	£8,285.01		
IV Iron	£9,140.30		
Total	£23,788.26	Total	£35,655.00
		Income Generated	£11,866.74

### Response from clinicians





### **Gynaecology Outcomes**

	Entire patient group	Treated Group
Hb at listing (g/L)	124 (89-154)	120
Lowest post-operative Hb (g/L)	98 (51-141)	98
Hb at discharge (g/L)	105 (80-141)	105

### **HPB** Outcomes

	Entire patient group	Treated Group
Hb at listing (g/L)	125 (81-171)	113
Lowest post-operative Hb (g/L)	92 (64-142)	88
Hb at discharge (g/L)	104 (73-147)	104

• The 17 treated patients also had an average rise in their Hb level of 4g/L between listing and day of surgery.

### The service needs...

- Investment
  - Staff
  - Money
  - Resources

### In order to..

 Expand to include all patients, not just those on major surgery pathways

• Capture patients as early in the pathway as possible, to allow more time to treat

## Doing this will..

- Mean the service can change the lives of even more patients
- Save even more blood components

