

NHS Blood and Transplant

Epidemiology and Survival of Transfusion Recipients

Angus Wells

- Study background
- Provisional results
- What can we do with this information?
- Further work

EASTR Study Background

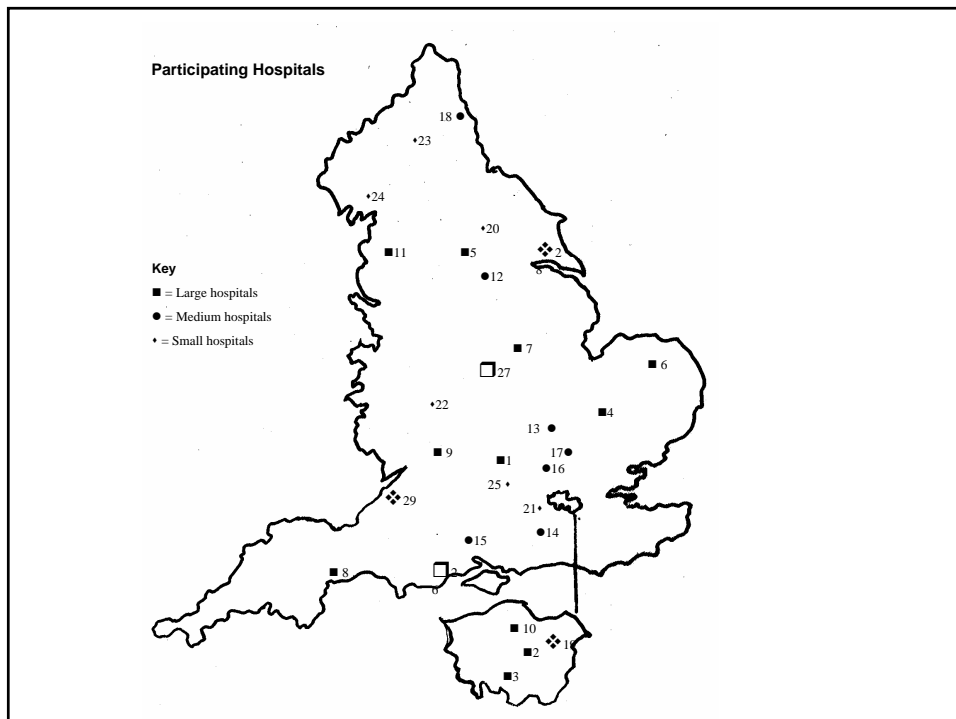
- requirement for up-to-date information on NBS transfusion recipients:
 - planning & predicting future demand
 - monitoring patterns of blood use
 - identifying high use clinical areas
 - modelling transfusion-transmitted disease

EASTR Study Background

- No national data
- Regional studies
 - Newcastle, Where does blood go?
 - London, Stanworth et al

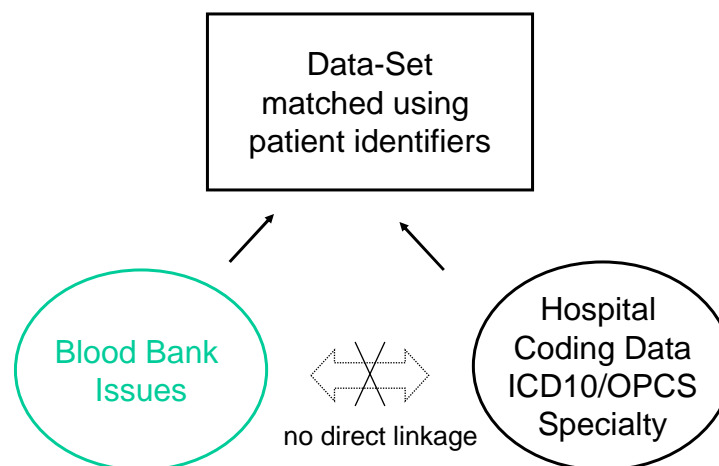
EASTR Study Aims

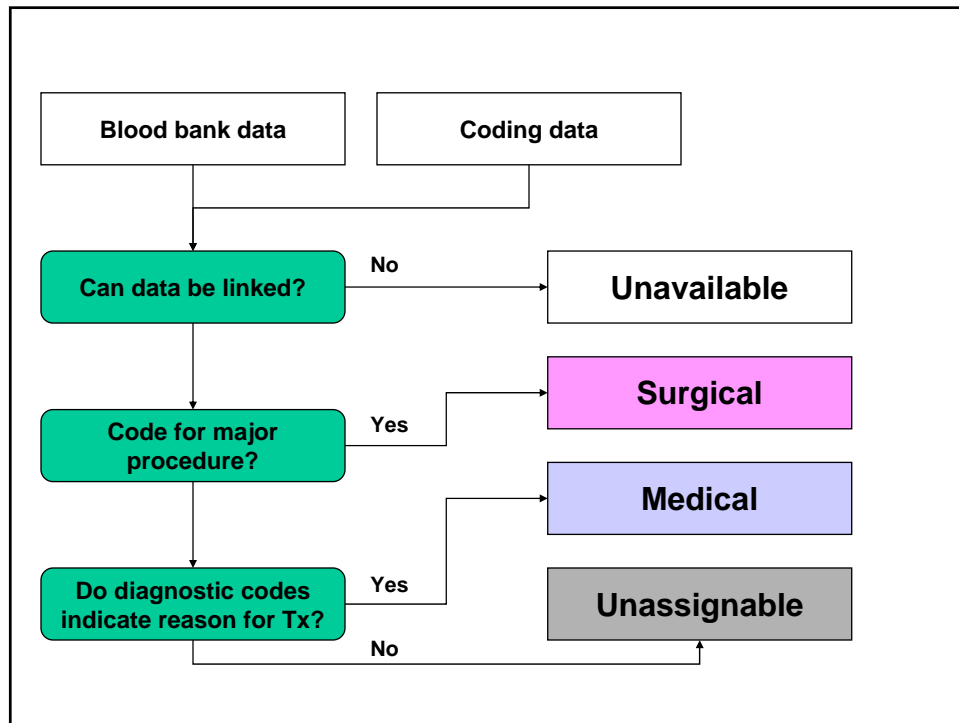
- national age/sex profile transfusion recipients
- establish indication for transfusion using coding information recorded by hospitals
 - diagnostic (1^o and 2^o ICD10 codes) and procedure (1^o OPCS-4 codes)
 - classify by clinically relevant groupings
- 10 year survival data




EASTR sampling scheme

- Blood bank issues (n=29 hospitals)
 - 1 Oct 2001 to 30 Sep 2002
 - separate monthly quota for RBC, FFP, PLT recipients
 - stratified by hospital size
- Each recipient selected only once during course of year (=index admission)
 - details of other admissions with transfusions recorded






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EASTR Presentation

- National Data Collection completed
 - PIAG delays
- Analysis Phase underway
- Preliminary results on RBC recipients
- Unadjusted data only
- Data on index admissions only
- Excludes repeat admissions

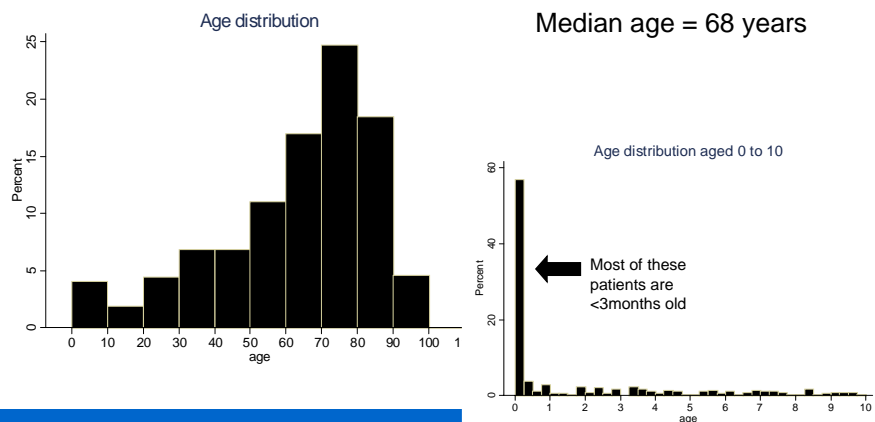
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National Blood Service

Results - RBC Recipients

- 9,142 selected red cell recipients
 - total 14,331 transfusion recipients selected
- 37,698 red cell units transfused
- Median 3 units per index admission
- 85% given red cells only
- Median index admission 11 days

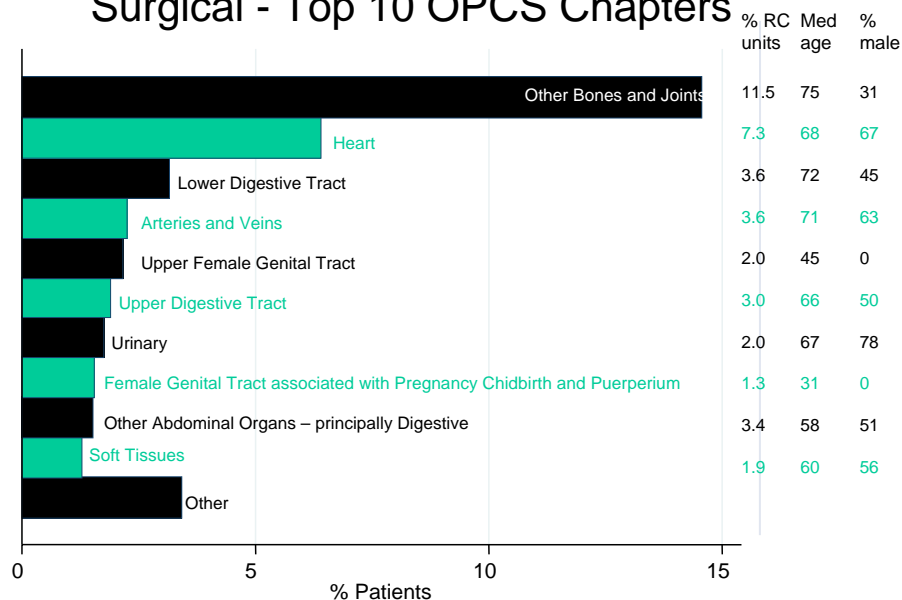
Age distribution of RBC Recipients



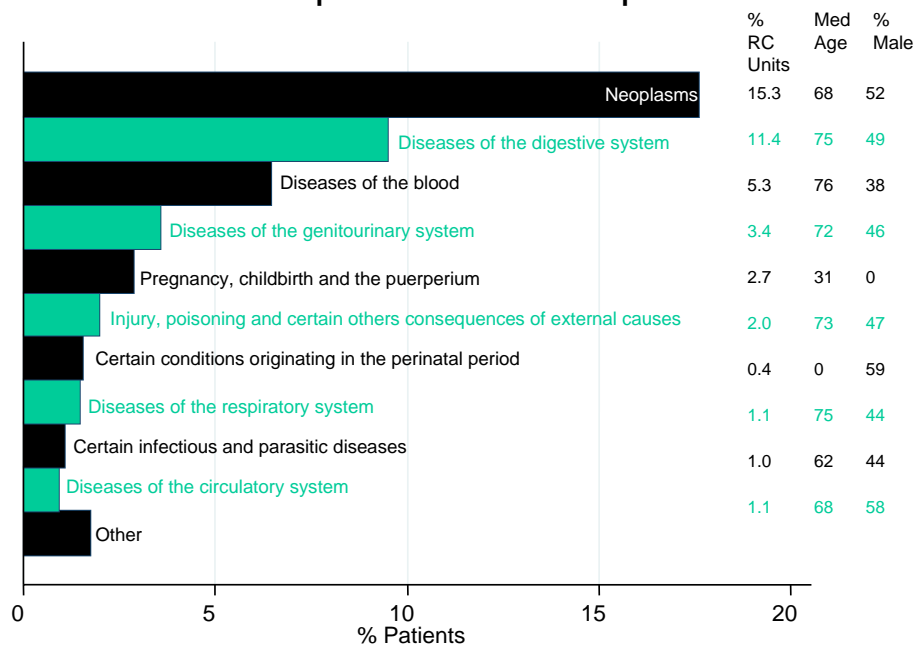
Reason for transfusion per admission: Result of algorithm

- 40% major surgical procedure (n=3,635)
- 48% medical diagnosis (n=4,073)
- 2% unassignable (n=226)
- 9% missing data (n=845)

Surgical - Top 10 OPCS Chapters



Medical - Top 10 ICD10 Chapters



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The devil is in the detail.....

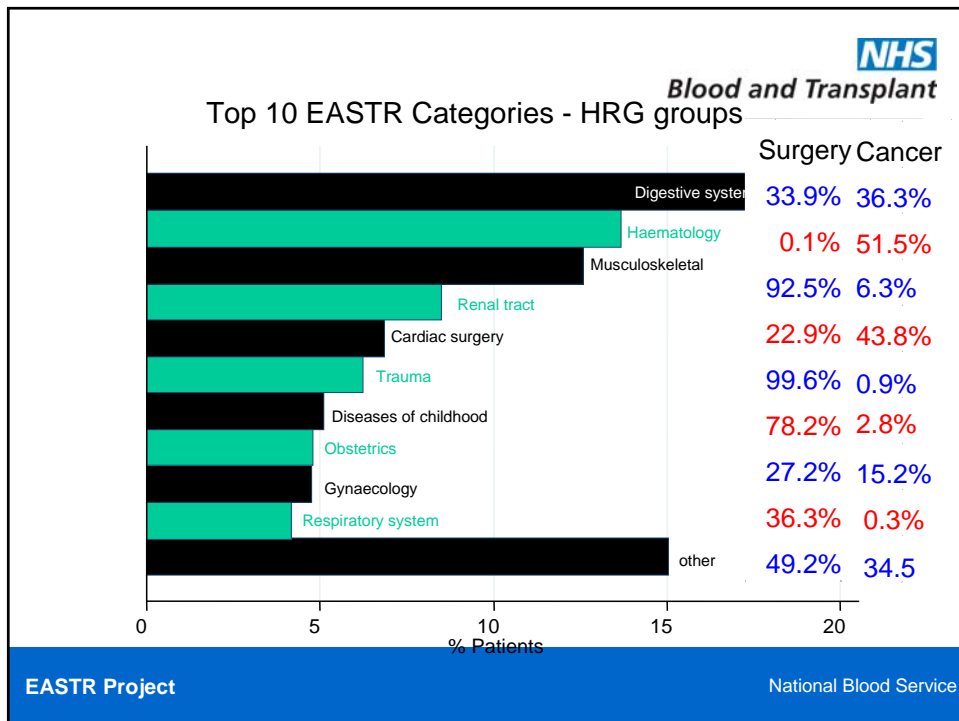
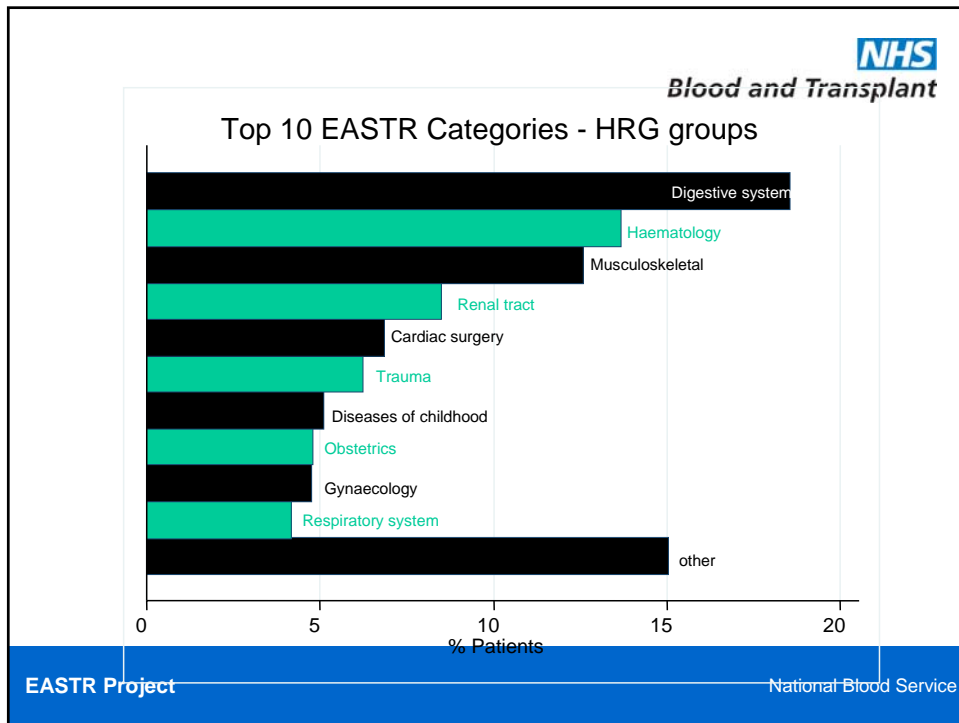
- Chapter K Heart
- K40 to K46 Procedures to replace/bypass coronary arteries
- K40 Saphenous vein graft replacement of coronary artery
- K40.3 Saphenous vein replacement of three coronary arteries

New EASTR classification system

- Separation of surgical vs medical useful
- Consultant specialty categories too broad
- But..uniform breakdown of ICD-10 or OPCS codes not always clinically relevant to transfusion teams.
 - Chapters for small user such as neurosurgery
 - Blocks e.g. hip replacements, renal failure
 - 3 or 4 digit codes
- We need an easily understood classification system, using single code selected using EASTR algorithm

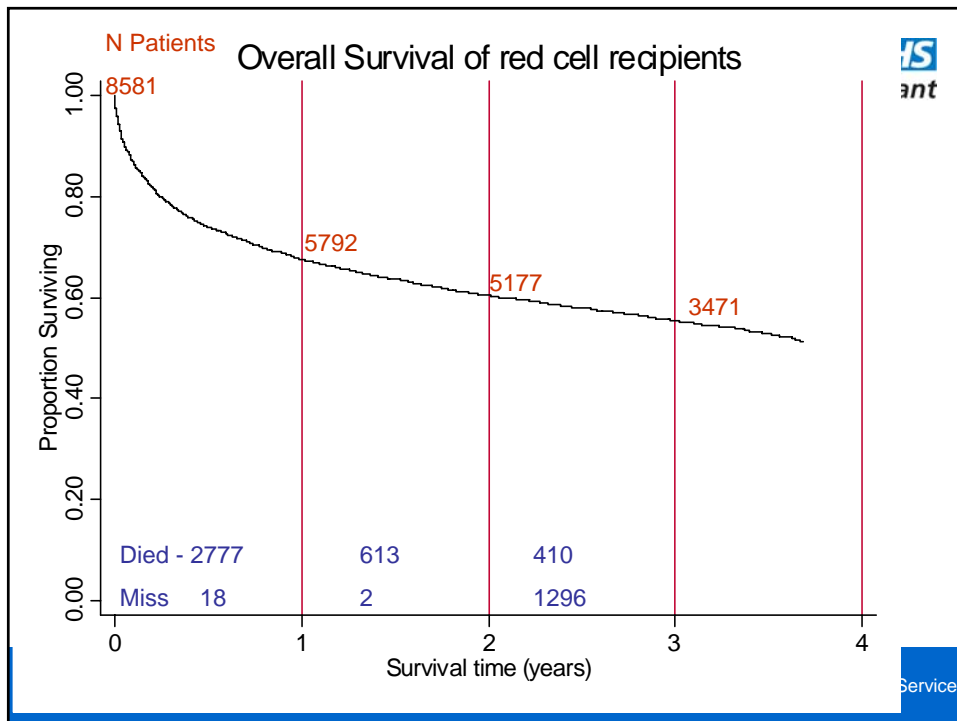
New EASTR classification system

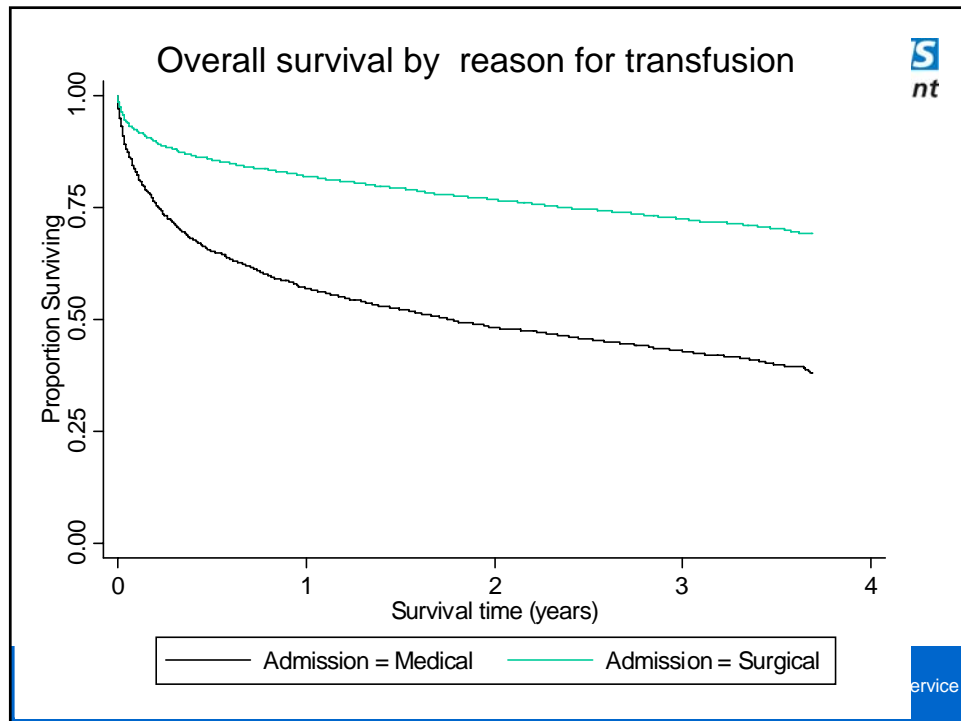
- Modelled on Healthcare Resource Groups
 - Designed for costing, commissioning and funding healthcare
 - Developed by NHSIA and clinical groups
- Combines medical and surgical groups
- Reason for transfusion selected per admission mapped to modified HRG chapters
 - WDBG indications



EASTR patient survival

- Selected recipients traced using the NHS Strategic Tracing Service (NSTS)
- Central register of all patients registered with a GP in England & Wales
 - NHS number





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How can we use EASTR data?

- Targeting blood saving
- Interpreting SHOT
- Estimate the impact of new safety initiatives
- Baseline for
 - monitoring changing patterns of use
 - benchmarking

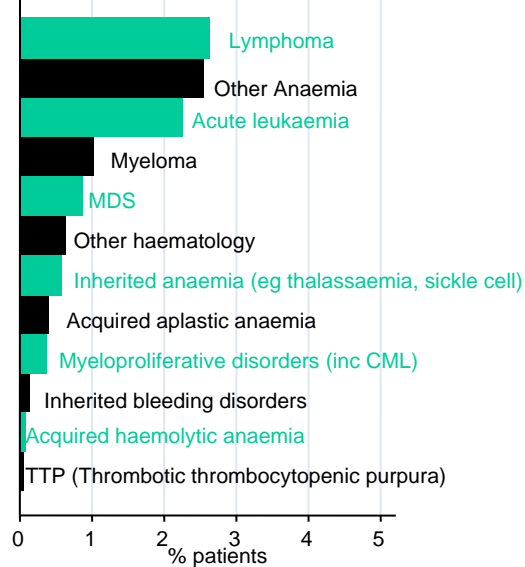
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Targeting blood saving

- 1. Medical blood use
 - 48%
 - Exceeds surgical (perioperative) blood use
 - Significant reduction blood use since study period (01/02)
 - ‘Complex’ elderly patients included in unassignable category (e.g. IHD, NIDDM, COAD, UTI)

Haematology breakdown

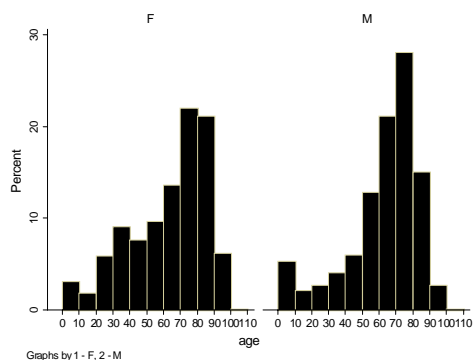


Targeting blood saving

- 1. Medical blood use
- 2. Haematology
 - 12% red cell recipients
 - Not all acute leukaemia and BMTs!
 - Limited scope for epo

55% Female

44% Male



Targeting blood saving

- 1. Medical blood use
- 2. Haematology
- 3. Young women
 - Obs and Gyn (approx 4% each)
 - ? Involvement with BBT2
 - Preventing HDN

Targeting blood saving

- 1. Medical blood use
- 2. Haematology
- 3. Young women
- 4. Gastrointestinal disorders
 - GI bleeding and surgery
 - Excludes liver, GB, pancreas

Interpreting haemovigilance

- Provide background to assess reports
- However not a truly random sample, therefore analysis plan includes backweighting

New safety initiatives

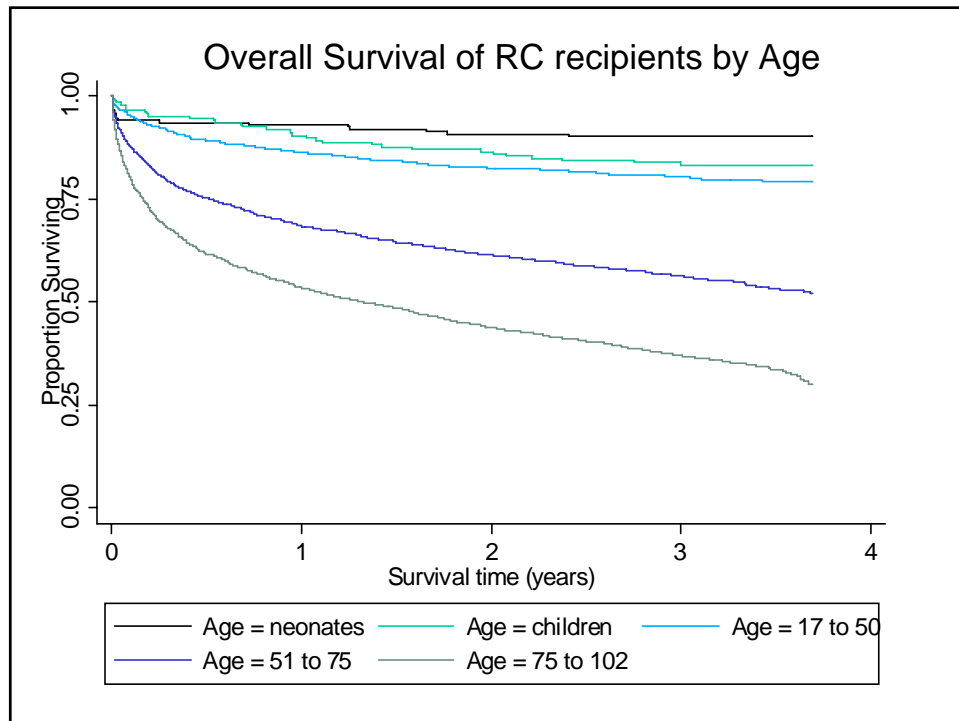
- 1. Heavily transfused patients
 - 80 or more donor exposures may mean risk of vCJD exceeds 1%
 - Platelets= 2.4 donor exposures
 - Public health risk re surgical instruments if high risk surgery
 - 333 heavily transfused patients in EASTR cohort
 - Estimated 4500 patients heavily transfused per year in England
 - May underestimate those transfused 3 or 4 units per month for years

Heavily transfused patients

- TTP
- Aplastic anaemia
- AML
- MDS/myeloprolif
- ALL
- Lymphoma
- Liver & pancreas
- Digestive system
- FFP and platelet recipients
- Younger than average tx recipient
- Single massive transfusion uncommon in this group
- SDFFP for TTP
- Apheresis plts for children

New safety initiatives

- 1. Heavily transfused patients
- 2. Prion reduction filters
 - ? Target age group
 - ? Surgical vs medical



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New safety initiatives

- 1. Heavily transfused patients
- 2. Prion reduction filters
- EASTR data could allow
 - accurate estimates of uptake
 - more accurate calculation of cost per life/infection saved

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National Blood Service

Baseline data

- Baseline to assess change
 - Significant changes already
- Benchmarking
 - More difficult than it seems
 - We don't have details of procedures without transfusion
 - HES data for trusts, our data for hospitals

Further Work Planned

- Refine new classification system
- Further analysis :-
 - by units used, hospital size
 - backweighting to UK population (How many patients transfused per year?)
 - FFP and PLT recipients
 - multiple admissions
- Ongoing update of survival curves

The future

- How to capture information on changing blood use?
- Automate the algorithm
 - HRG grouping software
- Will Connecting for Health make this easier?

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