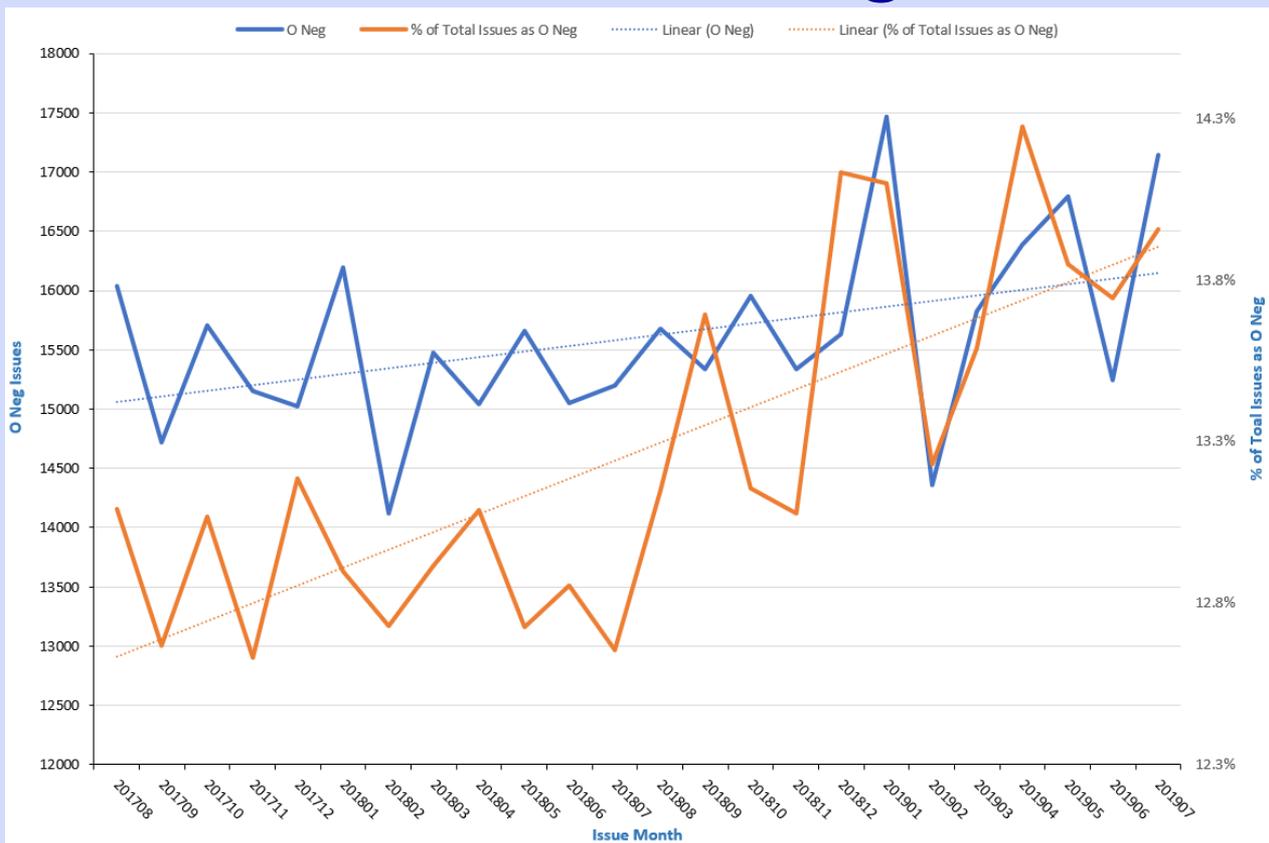


O Neg Data

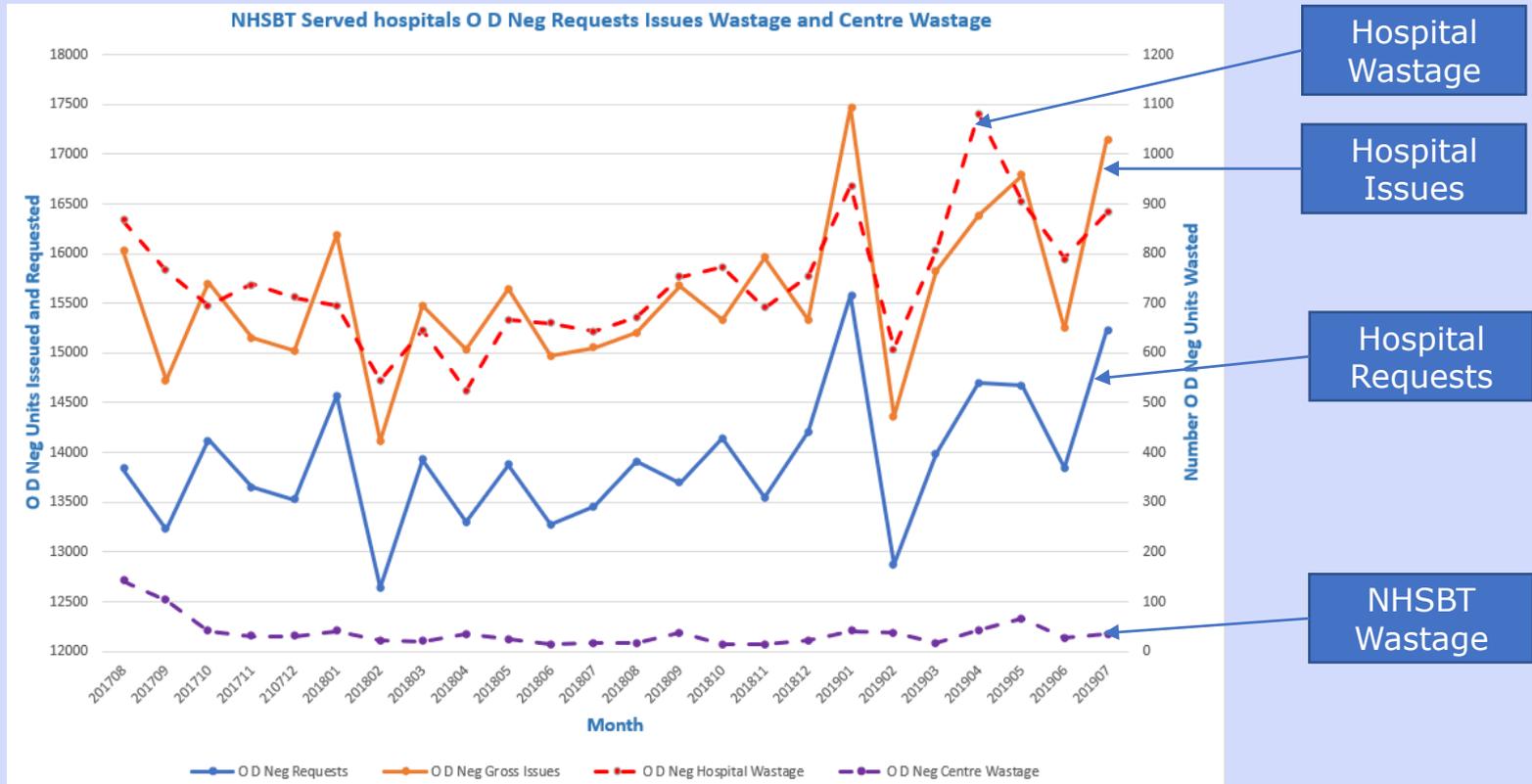
BSMS Roadshow – 16th October 2019
NHSBT - Tooting

Current situation – O D Neg RBC's Issues

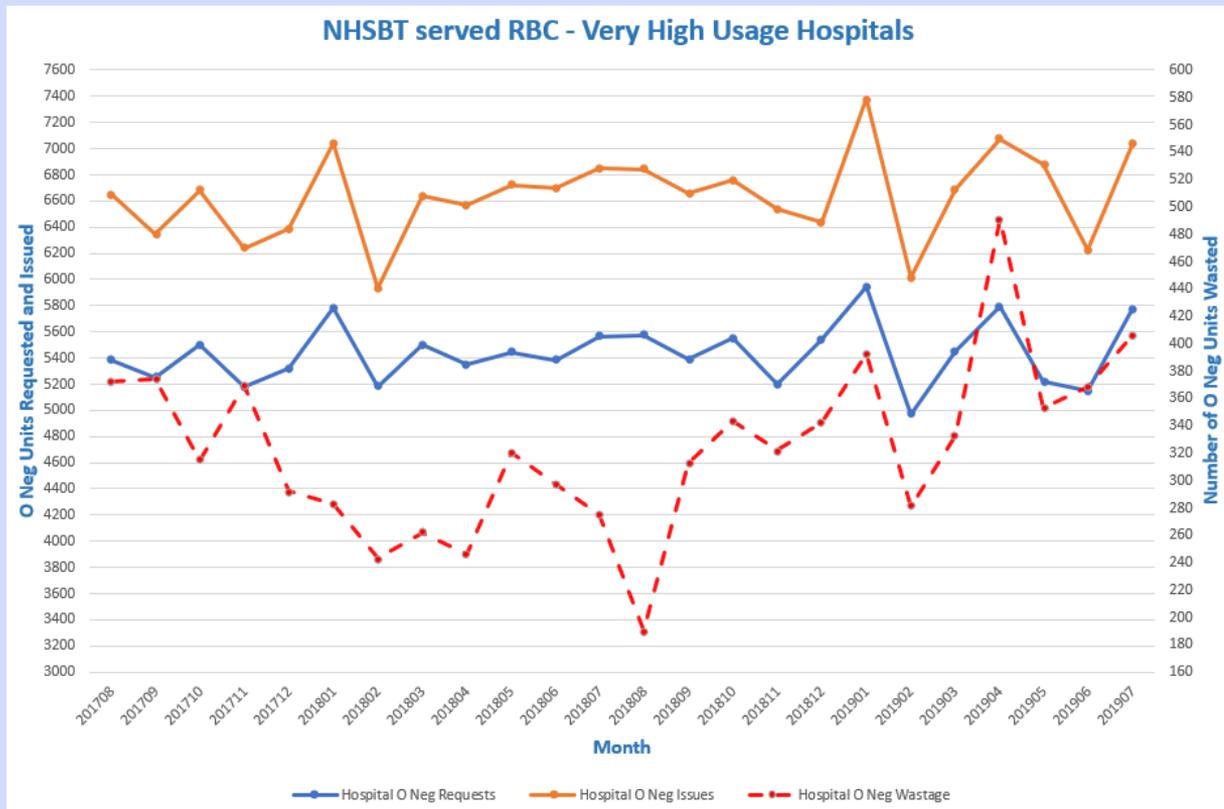


O Neg Issues
have RISEN 4.2%
BUT overall
issues have fallen
5.2%

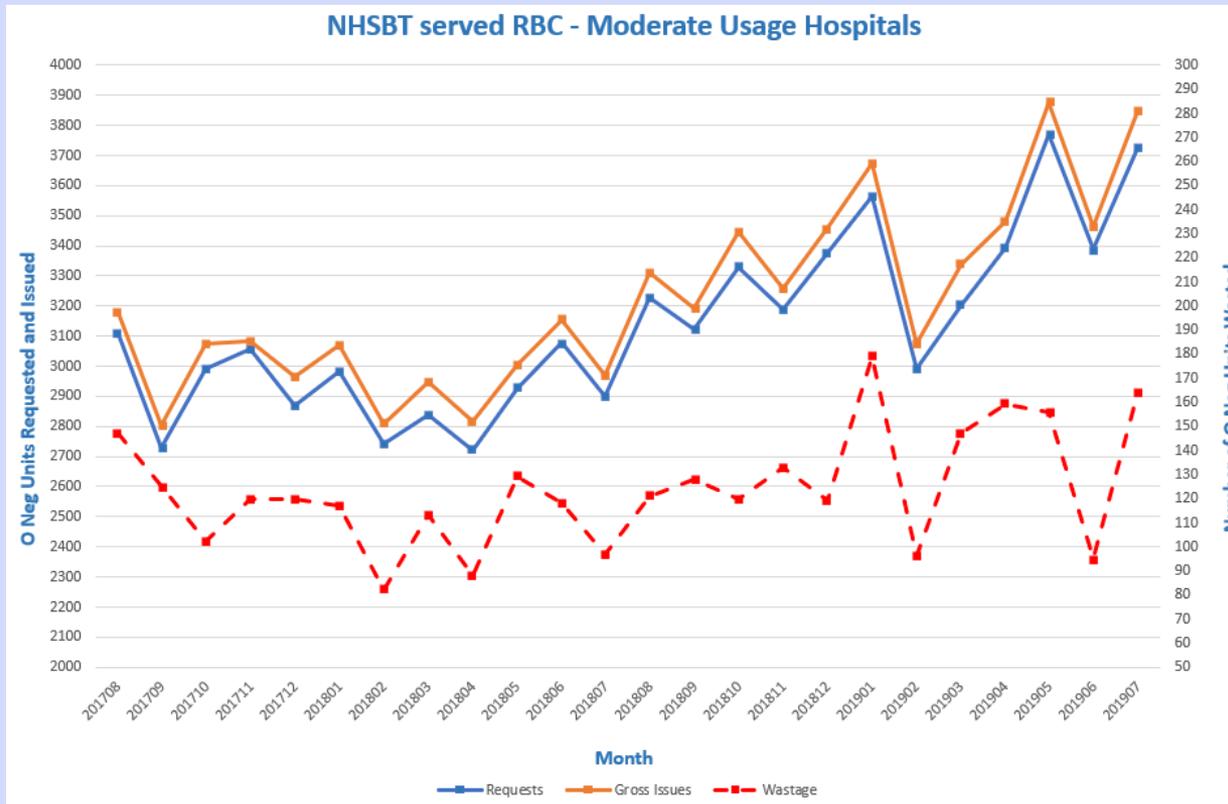
O Neg Issues, Requests, Wastage last 2 Years



O Neg Issues, Requests, Wastage Very High Hospitals



O Neg Issues, Requests, Wastage Moderate Hospitals



National O Neg Wastage

- 2018/19 Q4 (Jan – Mar 2019)
- O Neg Wastage 2,358 (31.8%)
- O Neg TIMEX 1,676 (34.2%)
- 2019/20 Q1 (Apr – Jun 2019)
- O Neg Wastage 2,759 (32.2%)
- O Neg TIMEX 1,948 (33.8%)
- But A Neg TIMEX increased by 33.9%

NHSBT							
RBC A,B & O units Wasted by NHSBT Hospitals in 2018/19 Q4							
Reason	O Pos	O Neg	A Pos	A Neg	B Pos	B Neg	A,B & O
FF	23	23	22	6	7	3	84
MISC	229	185	174	60	57	21	726
OTCOL	619	474	391	122	76	31	1,713
TIMEX	595	1,676	622	809	545	647	4,894
National	1,466	2,358	1,209	997	685	702	7,417

NHSBT							
RBC A,B & O units Wasted by NHSBT Hospitals in 2019/20 Q1							
Reason	O Pos	O Neg	A Pos	A Neg	B Pos	B Neg	A,B & O
FF	42	67	39	7	10	3	168
MISC	193	192	156	51	30	26	648
OTCOL	723	552	440	118	131	33	1,997
TIMEX	621	1,948	804	1,083	634	674	5,764
National	1,579	2,759	1,439	1,259	805	736	8,577

Initial Summary

- O D Neg issues higher than requests, by around 1,700 units a month, but this was 2,468 units in July
 - Substitutions for R₀ requests
 - Issuing of phenotyped units for patients
- O D Neg wasted in hospitals more than any other group.
 - Just under 1 in 3 units overall
 - Just over 1 in 3 units for TIMEX
- O D Neg issues RISING whilst overall issues continue to fall
 - O D Neg Issues ROSE by 4.2%
 - Overall Issues fell by 5.2%

Current UK guidance

- So what is the specification for an Emergency unit?
- BSH Guideline

bjh guideline

A practical guideline for the haematological management of major haemorrhage

Beverley J. Hunt,¹ Shubha Allard,² David Keeling,³ Derek Norfolk,⁴ Simon J. Stanworth,⁵ Kate Pendry⁶ and on behalf of the British Committee for Standards in Haematology

¹Department of Haematology, GSST, St Thomas' Hospital, ²Department of Haematology, Royal London Hospital, London, ³Oxford Haemophilia and Thrombosis Centre, Oxford University Hospitals, Churchill Hospital, Oxford, ⁴Department of Haematology, Leeds Hospital, Leeds, ⁵NHSBT/Department of Haematology, John Radcliffe Hospital, Oxford, and ⁶Patients' Clinical Team, NHSBT, Manchester, UK

Red cells

Group O blood. Group O red cells should be used in the emergency situation until the ABO group is known. The satellite refrigerators near clinical areas where major haemorrhage can occur should have a stock of group O red cells. The exact specification of red cells will depend on the clinical specialities likely to use the emergency supply e.g. red cells for females of child-bearing potential less than 50 years of age should receive O RhD negative and Kell negative red cells.

Dependant on the age and sex of the recipient plus the clinical speciality.

German Experience

Key Part

Emergency transfusion of patients with unknown blood type with blood group O Rhesus D positive red blood cell concentrates: a prospective, single-centre, observational study



Kathleen Selleng, Gregor Jenichen, Kathrin Denker, Sixten Selleng, Bernd Müllejans, Andreas Greinacher

Summary

Background Emergency patients with unknown blood type usually receive O Rhesus D negative (RhD⁻) red blood cell concentrates until their blood group is determined to prevent RhD⁺ related adverse transfusion reactions. As 85% of individuals are RhD⁺, this consumption of O RhD⁻ red blood cell concentrates contributes to shortages of O RhD⁻ red blood cell concentrates, sometimes forcing transfusion of known RhD⁻ patients with RhD⁺ red blood cell concentrates. Here we report the outcome of this transfusion policy transfusing all emergency patients with unknown blood type with O RhD⁺ red blood cell concentrates.

Lancet Haematol 2017;
4: e218–24

Published Online
April 4, 2017
[http://dx.doi.org/10.1016/S2352-3026\(17\)30051-0](http://dx.doi.org/10.1016/S2352-3026(17)30051-0)

See [Comment](#) page e195

Interpretation Transfusing emergency patients with unknown blood type with O RhD⁺ red blood cell concentrates has a low risk of inducing anti-D antibodies (3–6%), but saves more than 10% of the total O RhD⁻ red blood cell concentrate demand, thereby reducing shortage of O RhD⁻ red blood cell concentrates, the need to transfuse known RhD⁻ patients with RhD⁺ red blood cell concentrates, and thus the overall risk to induce anti-D allo-immunisation in the population. These findings should be considered for transfusion guidelines.

Use of O D Pos in Trauma

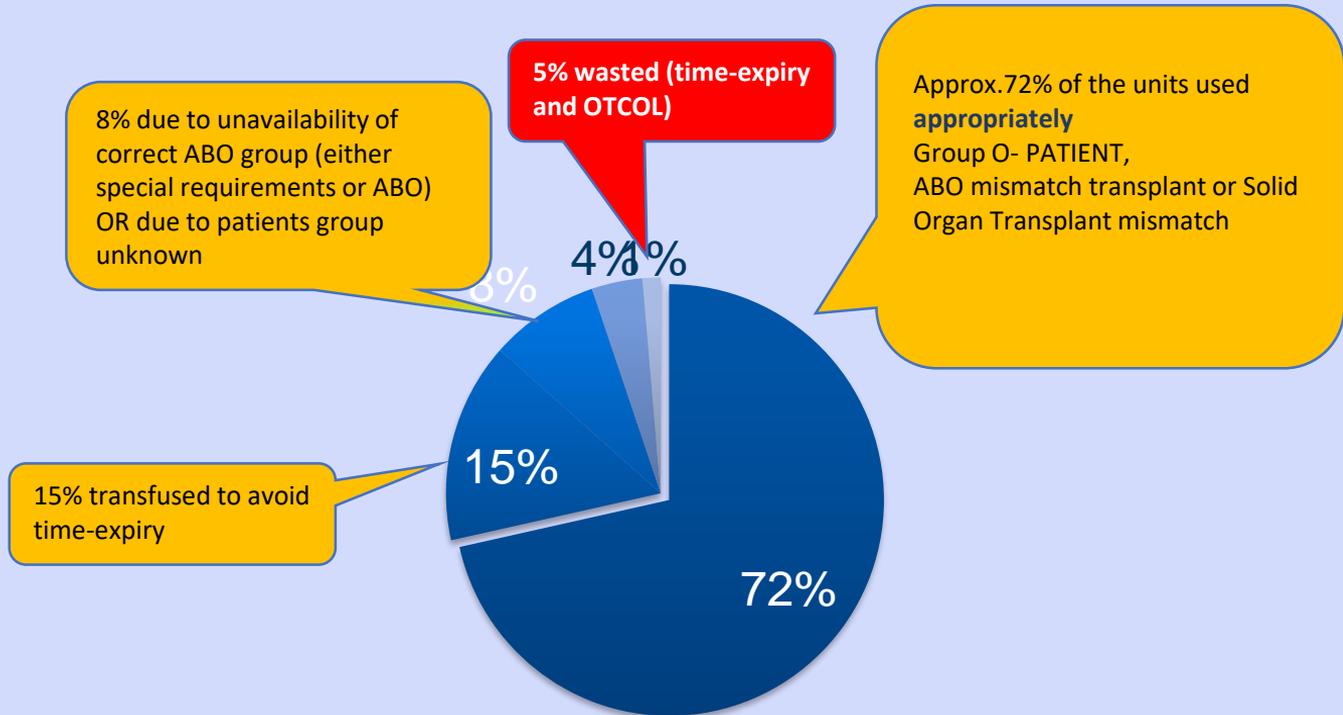
- Theoretical 100 cases
- Population Rh D Negative = **17.07%** (BSMS report 1.4 million groups analysed, 2009)
- So 17 trauma cases should be Rh D Neg
- Percentage of females under 55 = 34% (but 8.5% under 14) (2016 Data)
- Approximately 6 of your 100 trauma patients will be female under 55 years old
- That assumes that females are as likely to be trauma patients as males, LAS report Oct 2017 over 75% of trauma patients were male
- **So of your 100 trauma cases you can expect no more than 2 (1.67%) to be a female less than 55 years old**

Other Risks in Medicine / Trauma

- Estimated death from General Anaesthetic = 1 in 100,000
- However, Royal college of Anaesthetics survey 1 in 11,700
- Death Rate / Mortality as a result of surgery 3.6% European Surgical Outcomes trial.
- Hip Replacements 3% fail in the post op period as a result of dislocation resulting in further surgery. 6.2% of metal on metal replacements fail within 5 years.
- Audit at St Mary's of 63 'Code Red' calls between 01/07/2017 and 31/12/2017. 12 were Females but of these 11 were Rh Positive.
- So it would seem to me that some Risks are more equal than others, again paraphrasing from the Animal Farm novel.

O D Neg to non O D Neg Patients

- How many of your hospitals routinely transfuse O D Neg to non O D Neg patients to prevent time expiry.
- Data from BSMS O D Neg audit Feb 2016.



O D Neg to non O D Neg Patients

- How big is the problem?
- The results from the BSMS Feb 2016 survey showed that 15% of O D Neg units were transfused to avoid TIMEX.
- How many units do you think that equated to ?
- Based on last years issue figures it was **28,671** that is 15% of the 191,142 O D Neg issues for Aug 2018 to Jul 2019.
- How many hospitals have an SOP to direct these mis-matched units to specified patient groups?
- Should they have one

O D Neg enigma

- D Negative frequency 17%
- Large number of Emergency units are O D Neg (majority cde/cde) K Neg.
- Reason, so as not to stimulate anti-D production in women of child bearing age.
- c Negative frequency 18%
- O D Neg units (particularly emergency units nearing the end of their lifespan) are transfused to non O D Neg patients.
- Do hospitals limit these transfusions to male patients only or have an SOP.
- Does transfusion to non O D Neg recipient's elicit formation of anti c

French Guidance

- Guidelines of the National High Authority for Health
- (Haute Autorité de la Santé : HAS). 2014, November
- In the absence of IH Data (Patient ID), the RBC's issued will be O RH:+1 (Rh D Pos) KEL:-1 (K Neg) except for women from birth until the end of the reproductive period for which the RBC O RH:-1 (Rh D Neg) KEL:-1 (K Neg) are recommended as the first intention within the limits of their availability
- For Women whose RH group is known and are RH:+1 (Rh D+) , if her RH:+4 (little c) is negative or UNKNOWN, it is NOT recommended to transfuse GR RH:-1 (Rh D Neg) from birth until the end of the procreative period. (i.e. of childbearing age)

O D Neg Hospital Requesting – The Reality ?

- Request and Issue data from July 2019
- Nationally what % of O D Neg requests (Non LVT) are for Higher Spec units
- We will define a higher spec unit as O cde/cde K Negative
- Was it 20%
- 30%
- 40%
- 50%
- None of the above
- **Actually it was 61% (8,924 out of a total of 14,703)**

O D Neg Hospital Requesting – The Reality (July 2019)

- But that is an over simplification
- There were also 531 requests for LVT's
- Plus 2,468 units substituted, as previously discussed
- So 11,923 out of 14,703 (~82%)
- **~82% of all O D Neg issues required Higher Spec units.**

Hospital Higher Spec Requesting - Effects

- 10% of O D Neg Donors will be K positive
- Approx 1.7% of O D Neg Donors will possess either the C or E antigen
- So approx 11.7% of donors do not meet O cde/cde K Neg
- BUT ~80% of issues are of O cde/cde K negative units
- So the remaining 20% will contain proportionally more C+, E+, K+ units
- The initial 11.7% not meeting O cde/cde K Neg becomes 58% of the remaining units held in stock at NHSBT.
- **Therefore, at least 5 out of every 10 units remaining will be either K + or C + or E +**

Thank you for your attention

Any Questions ?