

# National and Regional Wastage

**East Midlands RTC Education Day**

**“The Good, The Bag and the Ugly” – Appropriate  
component use**

Matthew Bend  
Blood Stocks Management Scheme Manager

# What is BSMS?



- The Blood Stocks Management Scheme (BSMS) was established in 2001 to understand and improve blood Inventory management across the blood supply chain.



- Central to its work is VANESA, the data management system where hospital and blood service data is submitted. In return, participants can view real time data and charts. The BSMS has a large bank of data on the blood supply chain and has detailed knowledge of its various elements.

# BSMS - Information



## Monthly O Neg RBC Highlight Report

**NHSBT East Midlands RTC**

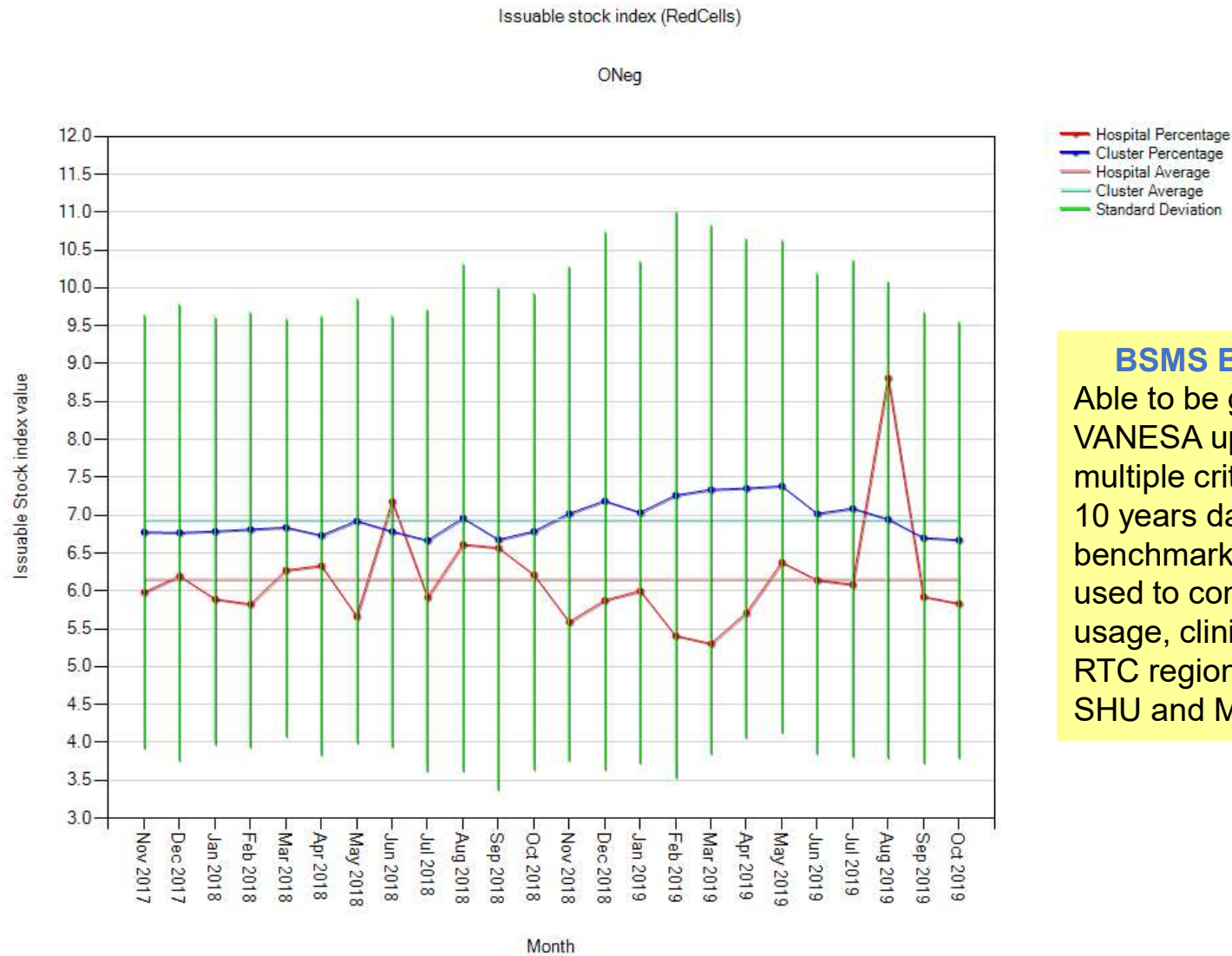
**Percentage of population that are O Neg within RTC 8.83%**

				Stock and Issue Data from Nov 2019											7 days use Includes Waste	O Neg WASTAGE FOR Nov 2019	
Hospital Details				NHSBT Issues			Hospital Send or Receive Stock	VANESA NET Issues			Hospital Requests		O Neg Issues-Requests	7 days use Excludes Waste			Average Daily Stock Held
Pulse	Hospital Name	O Neg	Total	% O Neg	O Neg	Total		% O Neg	O Neg Requests	O Neg % Req							
D002	Pilgrim Hospital, (Boston)	39	451	8.6%				39	8.6%			9.9	9.6	9.6	1		
D003	Chesterfield and North Derbyshire Royal Hospital	31	344	9.0%				31	9.0%			10.3	9.0	10.3	0		
D004	Royal Derby Hospital	88	889	9.9%				88	9.9%			22.7	19.9	22.7	0		
D007	Grantham and District Hospital	23	109	21.1%				23	21.1%			4.8	6.1	4.8	0		
D010	Leicester General Hospital	58	253	22.9%				58	22.9%			9.1	13.0	9.1	0		
D011	Glenfield General Hospital	112	586	19.1%				109	18.6%			23.8	28.5	23.1	3		
D012	Leicester Royal Infirmary	145	1,213	12.0%				134	11.0%	11		37.5	39.9	35.9	7		
D013	Lincoln County Hospital	80	476	16.8%				80	16.8%			17.1	8.9	16.9	1		
D015	Kings Mill Hospital	52	400	13.0%				52	13.0%			13.6	12.3	13.4	1		
D016	Nottingham University Hospital - City Campus	213	1,083	19.7%				195	18.0%	18		31.6	25.4	31.1	2		
D017	Nottingham University Hospital - Queens Campus	144	803	17.9%				145	18.1%			30.4	23.5	30.4	0		
D184	SPIRE Hospital Leicester					0	0					N/A	3.8	N/A	No Entries		
D186	SPIRE Hospital Nottingham	6	8	75.0%				6	75.0%			1.5	5.7	<1	6		
T611	Kettering General Hospital	48	445	10.8%				48	10.8%			12.7	12.9	12.5	1		
T615	Northampton General Hospital	79	590	13.4%				79	13.4%			23.1	18.5	22.9	1		

### BSMS O Neg Report

Provided by BSMS team to all Hospitals each month showing transparency data for entire RTC

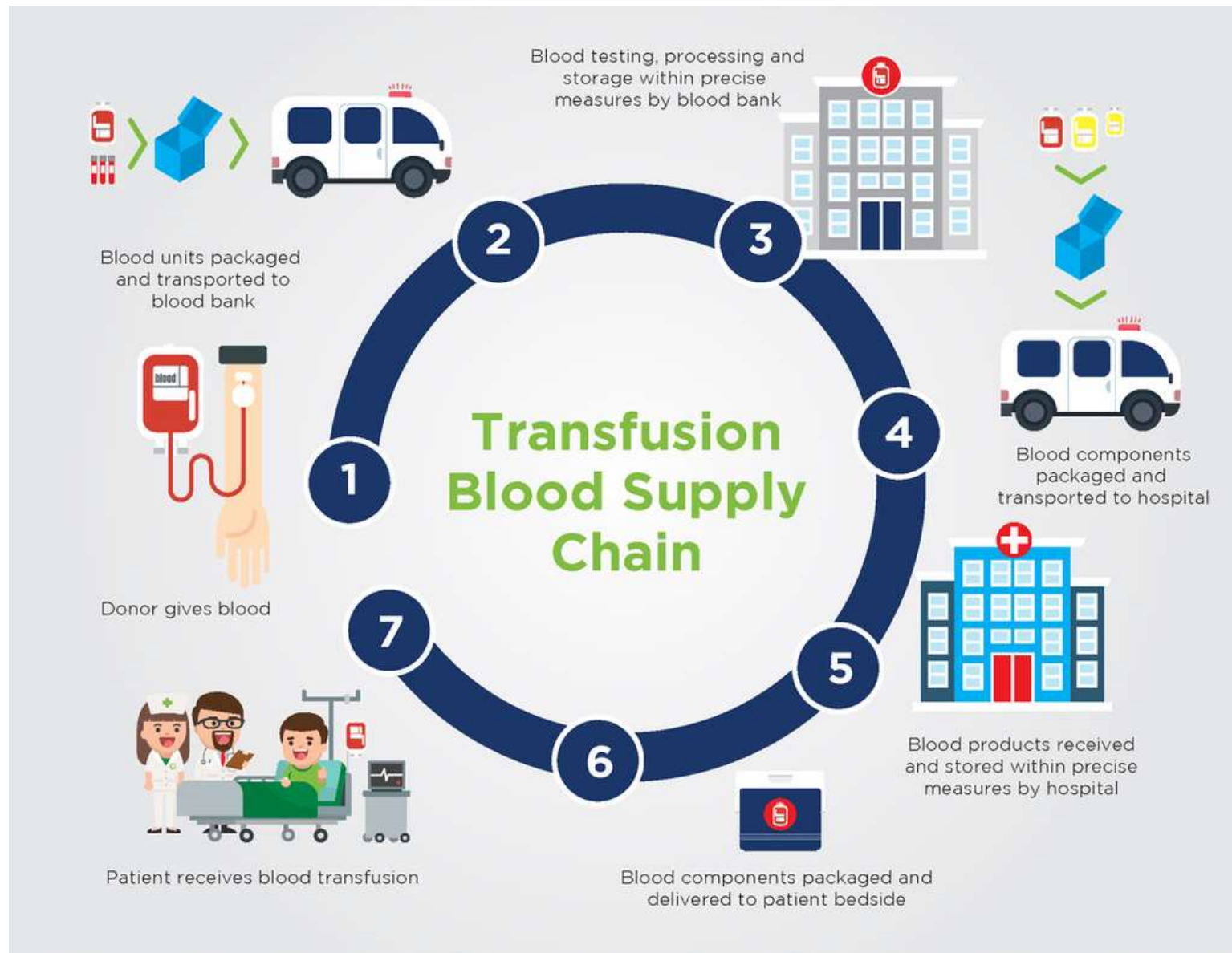
# BSMS - Information



## BSMS Benchmarking

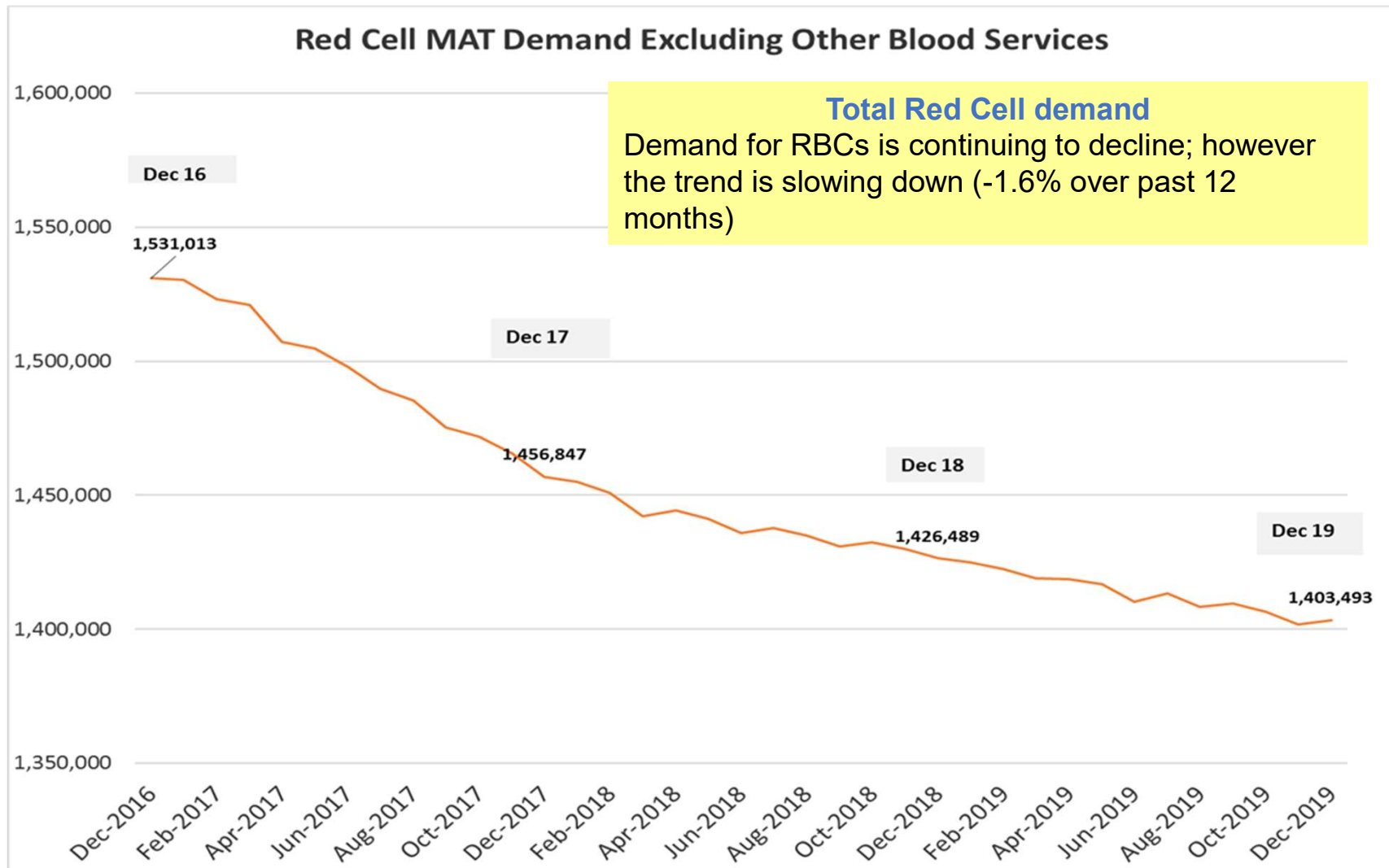
Able to be generated by VANESA upon request for multiple criteria for the last 10 years data. Provides benchmarking which can be used to compare by RBC usage, clinical specialities, RTC region, distance from SHU and MTC cohort

# The blood supply chain

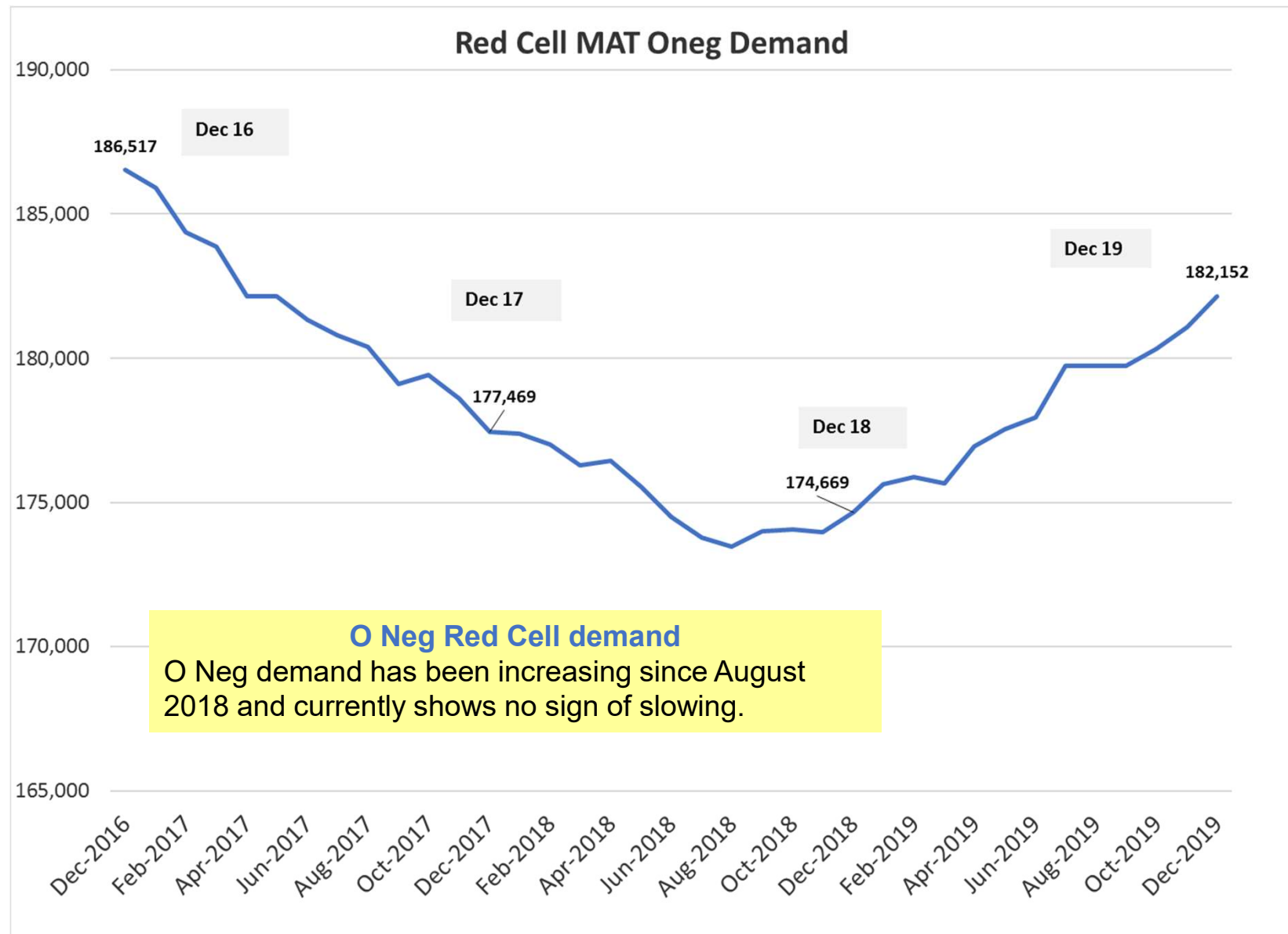




# Current RBC demand

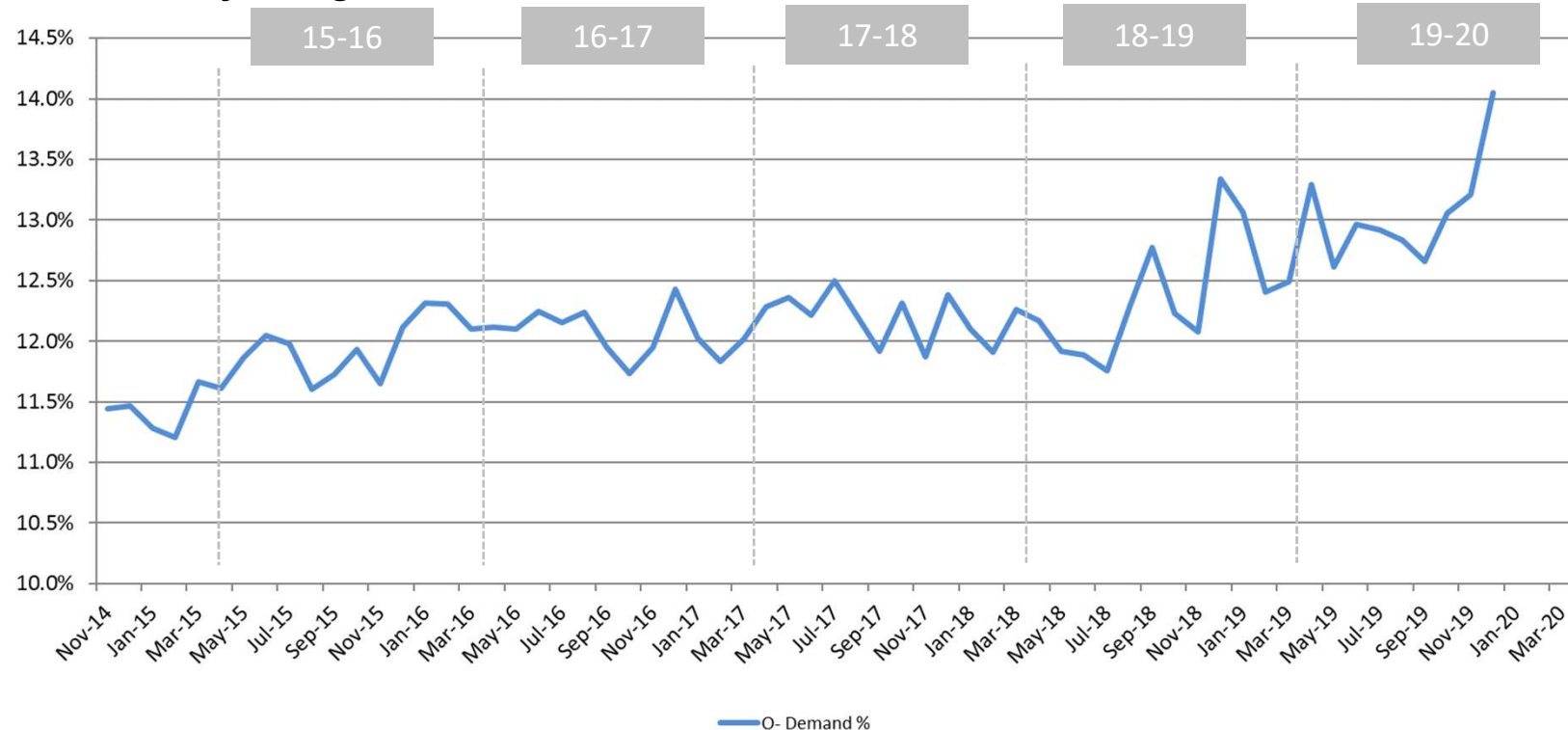


# The “Elephant” in the room



# Percentage O neg demand

Monthly O neg demand as a % of total demand



## O Neg Red Cell demand

- O neg demand increased in December to 14.1% of total (13.2% in November).
- Only 7% of the UK population has the O neg blood type, meaning December's demand reached double the population prevalence.

### Admissions



### Staffing



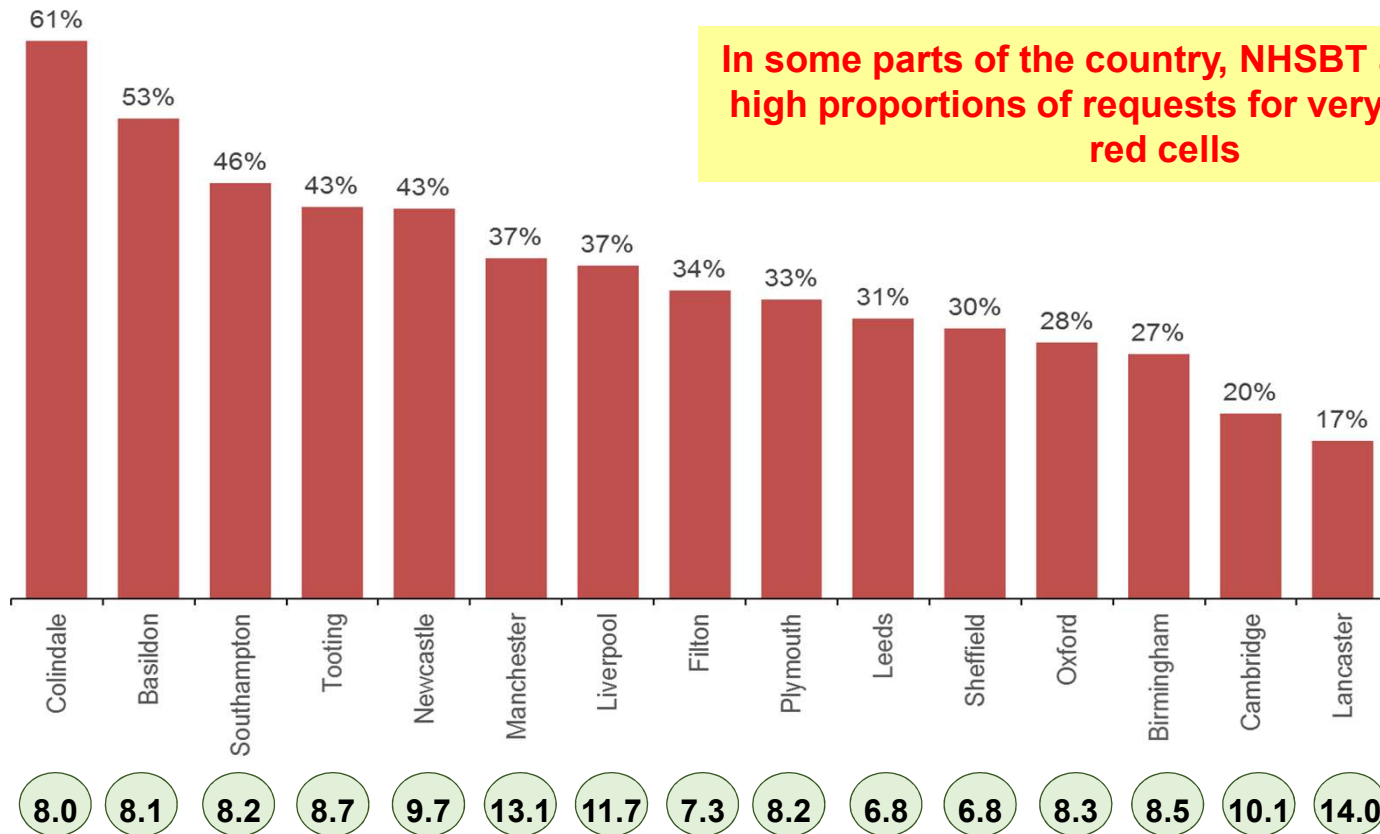
### Pre-Hospital care





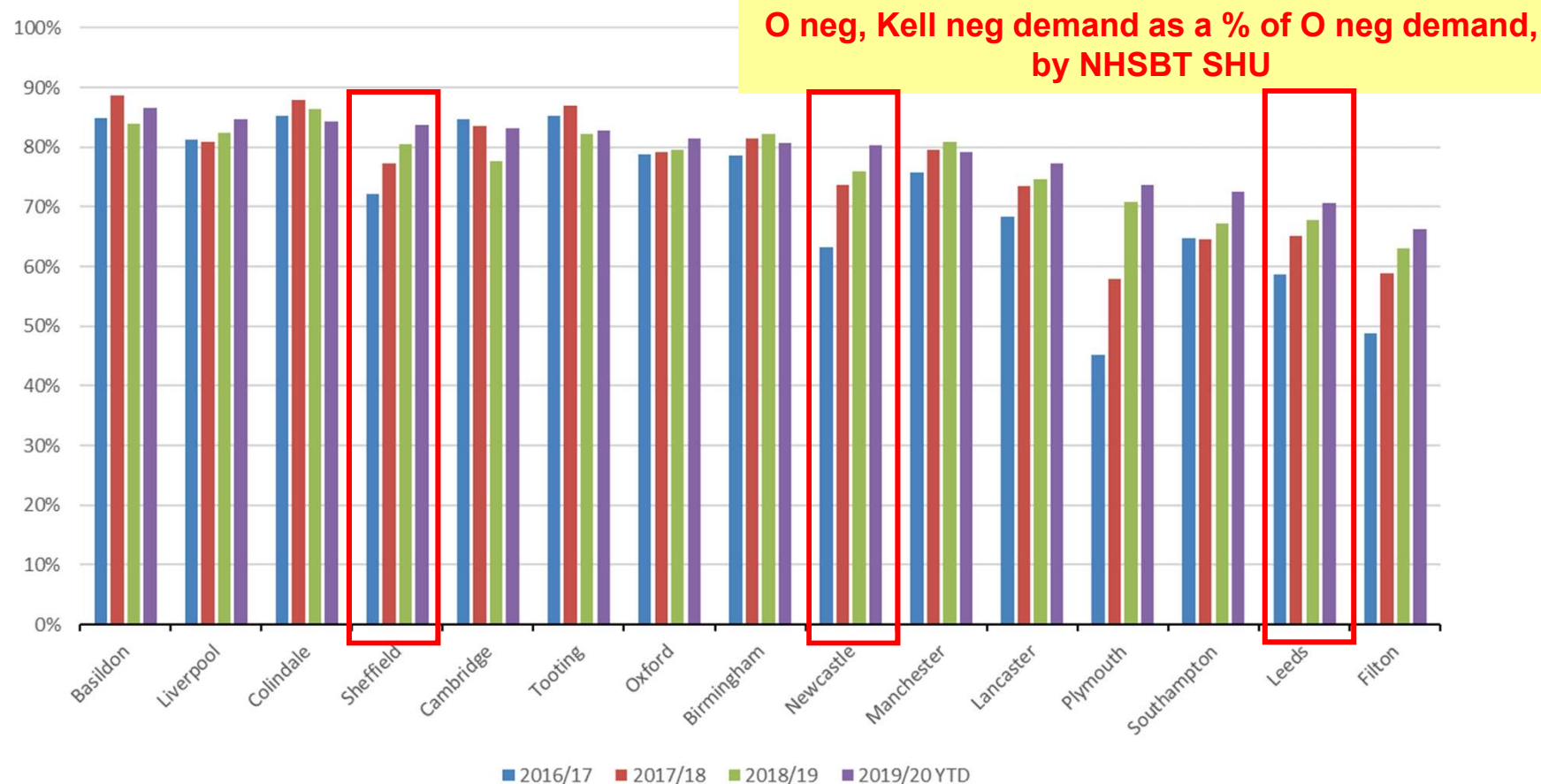
# Developing trends

% of total O neg requests where “Max Shelf Life” or “Fresh as Possible” is specified in order, by NHSBT issuing site (1 September – 10 December 2019)



- Where we receive high demand for very fresh red cells, we can no longer operate “First in, First out” stock management.
- This leads to high stock expiry rates and we will sometimes offer older O neg units as a substitute for other demand to avoid time expiry.

# Specification of O neg requests



- Demand for O neg Kell neg red cells as a % of total O neg demand has been increasing over the last 3 years.
- Demand increases are more prevalent in certain locations more than others (shown by NHSBT stock holding units).
- NHSBT collects c.10% of O neg as Kell pos, so higher Kell neg demand is leading to unequal distribution of Kell pos units and higher expires.

# Key messages

- NHSBT delivers a high level of service to hospitals, consistently meeting >98% of all the orders of blood components placed by hospitals in full and on time (excluding Ro red cells).



- While overall red cell demand has been declining, demand for O neg and Ro Kell neg red cells has been increasing. We are attempting to keep pace with increasing demand through growth of our donor bases.
- High proportions of requests for very fresh O neg red cells and Kell neg units, which makes stock management challenging.
- Demand for A neg and AB neg platelets have also been rising as a % of total platelet demand. Overall platelet demand has also increased slightly.

## How can you help!

We need support from the wider NHS to ensure demand is appropriate.





# 2018 NBTC O D neg Audit & O D neg use in the East Midlands



**Blood Stocks**  
Management Scheme

# O D neg Audit 2018



**Blood Stocks**  
Management Scheme

RTC	No of Hospitals	TOTAL UNITS	UNITS TRANSFUSED											
			FATE: OD Neg - PATIENT	FATE: Transfused from major haemorrhage pack or "flying squad" f	FATE: Patient's ABO/D group unconfirmed	FATE: Allogenic Bone Marrow Transplant (BMT) with ABO/D group mi	FATE: Solid organ transplant (with ABO/D group mismatch)	FATE: Transfused to avoid time expiry	FATE: Extended phenotype required (and not available in patients	FATE: Irradiated unit required (and not available in patients AB	FATE: CMV Negative unit required (and not available in patients	FATE: HbS Negative unit required (and not available in patients	FATE: Ro phenotype required (and not available in patients ABO/D	FATE: Tick here in addition if any "substitution" indicated above
EM	11	393	228	63	6	12	0	53	23	7	3	11	3	2
EofE	16	467	299	53	9	8	2	34	17	3	3	12	0	0
Lond	38	1071	385	175	10	31	4	191	50	36	12	64	76	3
NE	11	334	180	21	7	8	0	40	13	2	0	0	6	1
NW	27	629	408	84	15	3	2	58	20	10	0	0	1	0
SC	15	454	223	83	26	22	0	59	15	4	2	2	14	15
SEC	15	333	216	35	1	1	0	52	11	9	3	0	0	0
SW	19	451	277	60	2	10	0	62	13	4	0	0	0	9
WM	17	568	303	125	2	18	3	38	10	12	1	3	22	21
Y&H	24	643	427	95	18	13	0	38	10	7	1	6	6	4
		5343	2946	794	96	126	11	625	182	94	25	98	128	55

# O D neg Audit 2018

RTC	Nº. of Hospitals	TOTAL UNITS	UNITS WASTED			RECIPIENT ABORH									% Transfused to ONEG	% Transfused to Other ABO/RH	% Wasted	% transfused to avoid Time Expiry
			WASTAGE: TIMEX	WASTAGE: OTCOL	WASTAGE: OTHER	A+	A-	B+	B-	AB+	AB-	O+	O-	UNKNOWN				
EM	11	393	3	0	0	25	12	7	6	1	1	100	225	11	57.3%	41.5%	0.8%	13.5%
EofE	16	467	14	20	1	32	13	13	3	2	1	61	292	13	62.5%	29.6%	7.5%	7.3%
Lond	38	1071	13	13	39	93	29	58	23	7	1	394	381	39	35.6%	60.1%	6.1%	17.8%
NE	11	334	17	13	1	14	8	2	3	0	0	75	180	7	53.9%	32.6%	9.3%	12.0%
NW	27	629	13	8	3	20	16	3	1	1	0	116	421	14	66.9%	27.2%	3.8%	9.2%
SC	15	454	24	13	1	27	12	13	8	0	1	96	237	17	52.2%	38.3%	8.4%	13.0%
SEC	15	333	4	4	2	7	2	8	9	2	0	69	216	3	64.9%	30.0%	3.0%	15.6%
SW	19	451	13	7	5	15	6	10	12	1	2	93	280	4	62.1%	31.7%	5.5%	13.7%
WM	17	568	25	16	2	54	23	20	3	0	1	107	307	14	54.0%	39.1%	7.6%	6.7%
Y&H	24	643	17	15	7	37	24	4	5	5	0	74	427	22	66.4%	26.6%	6.1%	5.9%
5343			143	109	61	324	145	138	73	19	7	1185	2966	144	55.5%	38.1%	5.9%	

- Only 0.8% of O neg units wasted with the East Midlands RTC during the audit period
- Comprised of 3 units wasted as expired (all from 1 Hospital)



# O D neg Audit 2018 - summary



- Proportionately, less O D Negative red cells are going to O D Negative recipients (2018 vs 2010)
- More O D Negative red cells are used in emergencies (2018 vs 2010)
- 12.6% O D Negative red cells transfused to avoid time expiry
- 6 % O D Negative red cells transfused to male and female patients >51 as an emergency who could potentially receive O D Positive red cells as advised by BSH guidelines
- 32% of sites do not have a policy to provide O D positive red cells in an emergency to unknown male patients and females > 50 years old?

# O D neg audit (East Midlands)

							Not available ABO/D Matched								
RBC User category	Nº. O Neg Tx	Tx to O Neg pt	MHP	ABO/D ?	BMT	To avoid TIMEX	Extended Pheno required	Irradiated unit required	CMV-required	HbS required	Ro required	NHSBT subs'tion	Wastage	Unknown fate	O Neg Stock %
Moderate	23	21	1	0	0	1	0	0	0	0	0	0	0	0	10%
High															
Low	9	7	0	0	0	2	0	0	0	0	0	0	0	0	19%
Moderate	23	13	5	0	0	5	0	0	0	0	0	0	0	0	11%
Low															
Very High															
High	43	17	5	1	0	16	2	0	0	0	0	2	0	0	17%
High	45	12	14	0	0	3	4	1	1	7	3	0	0	0	12%
Very High	71	42	0	4	9	5	3	0	0	3	0	0	3	2	12%
Moderate															
Very High	41	20	15	1	0	4	0	1	0	0	0	0	0	0	12%
Moderate	15	10	0	0	0	1	3	1	0	0	0	0	0	0	13%
High	41	14	10	0	0	0	10	4	3	0	0	0	0	0	13%



## O Neg to O Neg patients

Within the East Midlands, 50.2% of O neg units transfused during the audit period were given to O D neg patients



## Major Haemorrhage

Within the East Midlands, 16.1% of O neg units transfused were as part of MH protocols



## TIMEX

Within the East Midlands, 11.9% of O neg units transfused to avoid time expiry



## Phenotype

Within the East Midlands, 7.1% of O neg units transfused due to unavailability of ABO matched units

# National and Regional Wastage data



**Blood Stocks**  
Management Scheme

# National RBC wastage

## All RBCs (supplied by NHSBT)

	FF	Misc	OTCOL	TIMEX	TOTAL	WAPI
2018/19	512	3167	7376	21169	32224	2.3%
2017/18	462	3193	7930	24064	35649	2.4%
2016/17	839	3354	8706	24046	36945	2.5%
2015/16	869	2640	9714	25404	38627	2.5%

## O Neg RBCs (supplied by NHSBT)

	FF	Misc	OTCOL	TIMEX	TOTAL	WAPI
2018/19	119	828	1904	5677	8528	4.6%
2017/18	128	665	2052	5776	8621	4.6%
2016/17	230	681	2162	5583	8656	4.5%
2015/16	194	528	2463	5838	9023	4.7%

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**1 in 4 TIMEX  
units is an O  
Neg RBC**

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➔ **£4,299,970.56**

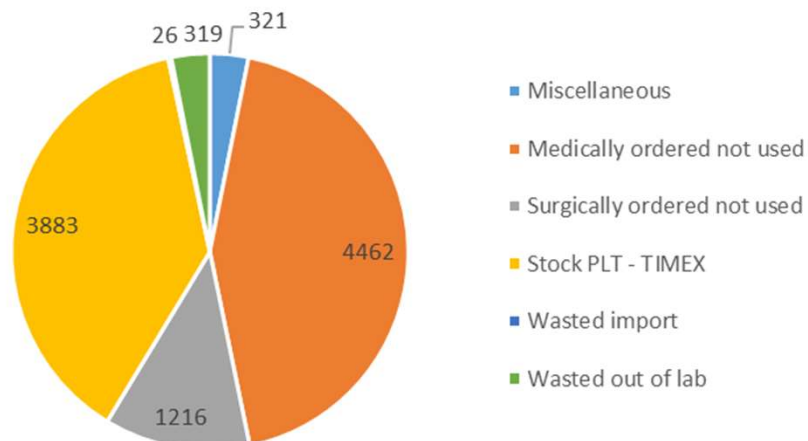
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# National Platelet wastage

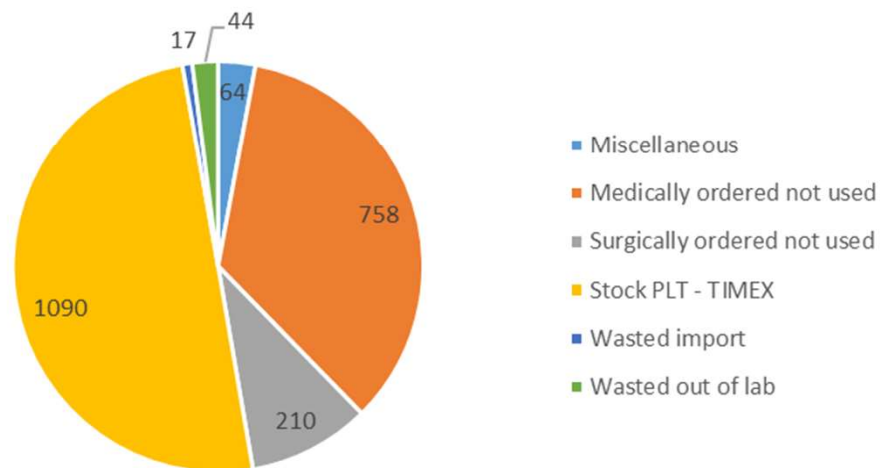
NHSBT - Plt Hospital Wastage 2018/2019



2018-2019  
10,227 platelet  
units wasted

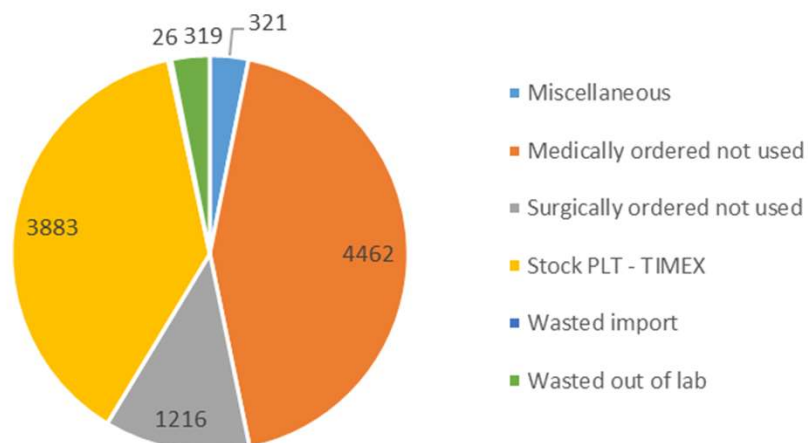
2018-2019  
2,183 platelet units  
wasted

NHSBT - A Neg Plt Hospital Wastage 2018/2019



# National Platelet wastage

NHSBT - Plt Hospital Wastage 2018/2019

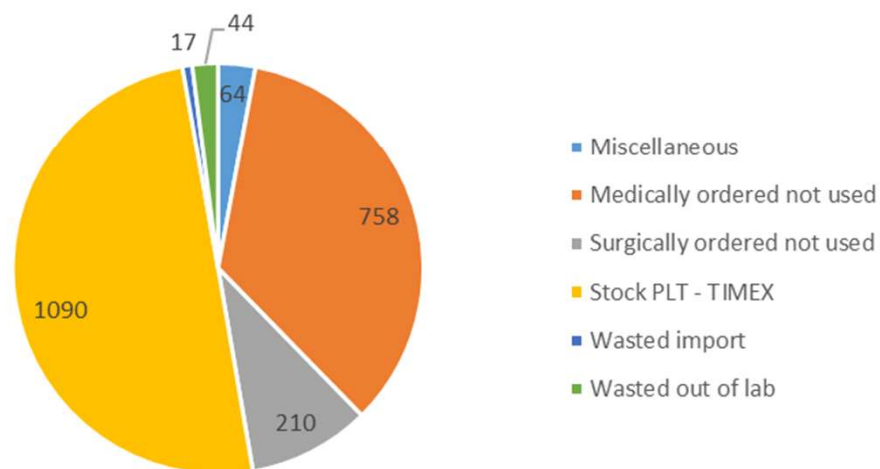


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10,227 platelet  
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**£1,975,242.78**

2018-2019  
2,183 platelet units  
wasted

NHSBT - A Neg Plt Hospital Wastage 2018/2019



# EM RBC Wastage

Site	RBC User category	A,B & O	O Neg	A, B & O WAPI	O Neg WAPI	No. of entries	Net Issues	% O Neg Issues
1	Moderate	31	2	0.61	0.36	12	5155	10.71
2	High	53	15	0.77	1.09	12	7047	19.48
3	Low	5	0	0.37	0	123	1347	21.46
4	Moderate	133	15	2.33	2.14	94	5804	12.06
5	Moderate	58	12	1.21	1.63	12	4883	15.03
6	Low	10	3	0.32	0.58	12	3151	16.47
7	Very High	287	47	1.88	2.18	12	15753	13.7
8	High	70	15	1.18	1.64	376	5953	15.4
9	High	290	65	4.14	5.53	174	7193	16.35
10	Very High	105	24	0.82	1.41	12	13186	12.88
11	High	102	29	1.1	1.78	12	9502	17.13
12	Moderate	72	15	1.43	2.76	54	5134	10.58
13	Very High	48	5	0.4	0.42	11	12257	9.67

- Covers the period January 2019 to December 2019
- Excludes private and independent hospitals
- All hospitals within the RTC are reporting wastage data
- National figures are likely to be an underestimation (not all hospitals participate)

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Date	A,B & O units wasted	O Neg units wasted
Jan 2019 – Dec 2019	1264 (1.3%)	247 (0.3%)
Jan 2017 – Dec 2017	1774 (1.8%)	384 (0.4%)

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- Covers the period January 2019 to December 2019
- Excludes private and independent hospitals
- All hospitals within the RTC are reporting wastage data
- NBTC guidance for O D neg is 12.5%

# EM Plt Wastage

Site	Plt User category	Total	Total WAPI	No. of entries	Net Issues
1	Moderate	39	6.14	12	635
2	High	33	3.26	12	1011
3	Very Low	0	0	108	31
4	High	50	6.14	47	814
5	Moderate	21	8.68	12	242
6	Moderate	7	2.47	12	283
7	Very High	198	7.78	12	2544
8	High	42	3.72	357	1128
9	Moderate	42	5.19	99	809
10	Very High	32	0.9	12	3560
11	High	16	1.58	12	1012
12	Moderate	69	14.87	61	464
13	High	25	2.1	12	1189

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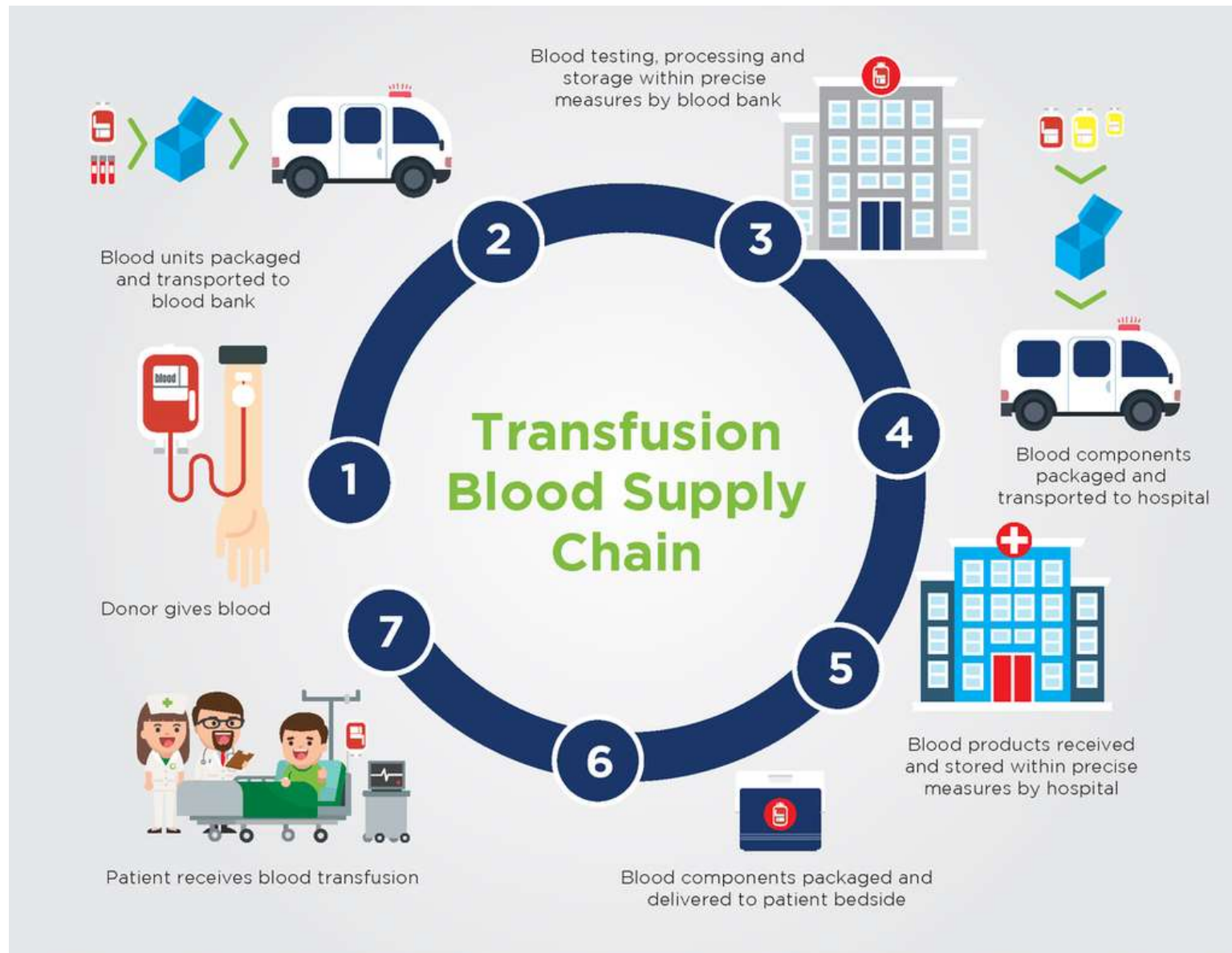


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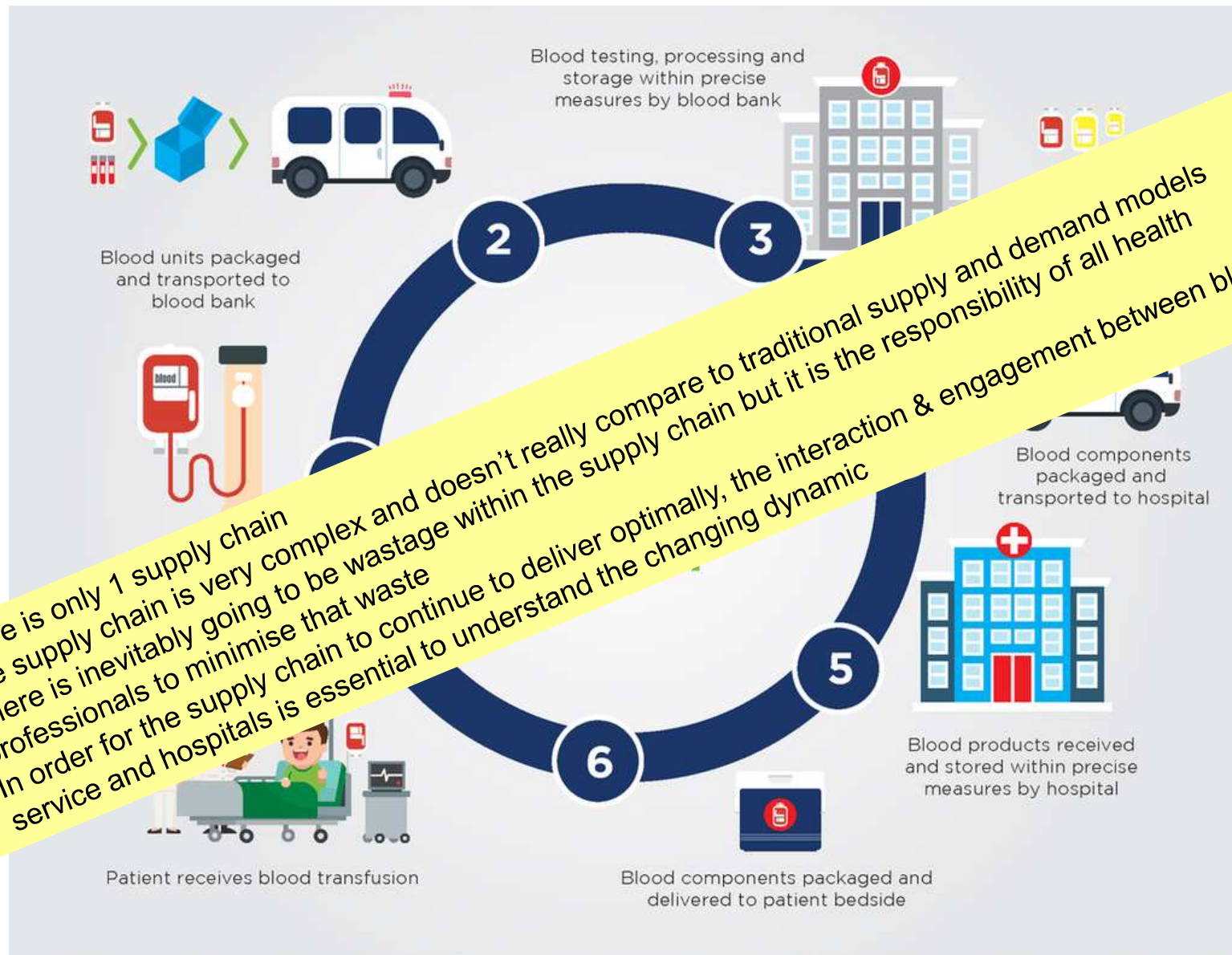
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# The blood supply chain



# The blood supply chain



- There is only 1 supply chain
- The supply chain is very complex and doesn't really compare to traditional supply and demand models
- There is inevitably going to be wastage within the supply chain but it is the responsibility of all health professionals to minimise that waste
- In order for the supply chain to continue to deliver optimally, the interaction & engagement between blood service and hospitals is essential to understand the changing dynamic

# Any Questions?



[matthew.bend@nhsbt.nhs.uk](mailto:matthew.bend@nhsbt.nhs.uk)

Blood Stocks Management Scheme can be contacted on [BSMS@nhsbt.nhs.uk](mailto:BSMS@nhsbt.nhs.uk)

Thank you for listening.

Any Questions?