NHS Blood and Transplant

BBTS 2019

Improving access to automated red cell exchange in sickle cell disease

Sasha Wilson: NHSBT TAS Education & Governance Lead
Abby Faver: NHSBT TAS Senior Nurse Manager

Objectives

NHS Blood and Transplant

- NHSBT Therapeutic Apheresis Services (TAS) is a national service delivering care to adults and children with sickle cell disease (SCD).
- We plan to share our perspectives on how access to automated red cell exchange might be improved.
- First by giving an overview of the context; Why do we need to improve access to automated red cell exchange for patients with sickle cell?
- Next we will give an overview of how our service is delivered, to optimise access for our sickle cell patients.

Why do we need to improve access to automated red cell exchange?

NHS Blood and Transplant

- In the UK, around 15,000 people have sickle cell disease (SCD) & more than 300 babies are born each year with the condition.
- Greater use of automated red cell exchange transfusion benefits patients by -
  - Reducing complications of SCD
  - Reducing cost of iron chelation treatment
  - Improving patient access and experience

Manual vs Automated Red Cell Exchange

NHS Blood and Transplant

	Top-up transfusion	Manual exchange	Automated exchange
Staffing and training	Basic	Moderate	High
Frequency	3-4 weekly	3-4 weekly	4-8 weekly
Length of procedure	4-6 hours	2-4 hours (up to 4-8 if acute, previously untransfused)	2 hours
Units of red cells	2-3	3-6	8-10
Volume shifts	Large	Minimal/Moderate	Minimal
Ability to predict HbS% and Hb post transfusion	Moderate	Moderate	Very accurate
Iron loading (long term use)	High	Moderate	Minimal

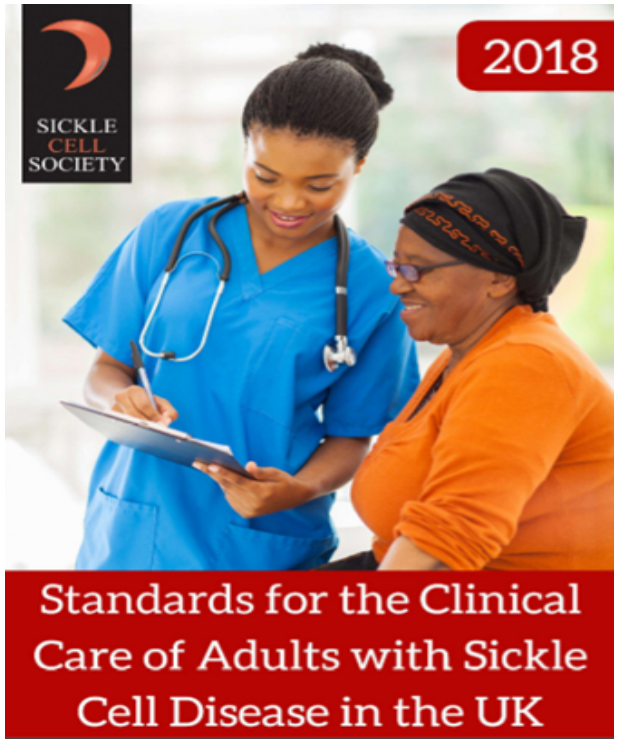
From: Standards for Clinical Care of Adults with Sickle Cell Disease in the UK, 2nd Edition 2018

Guidelines and Standards

NHS Blood and Transplant

Sickle Standards 2018, NHS England haemoglobinopathy service review

- All patients with sickle cell disease (SCD) should have access to specialised care regardless of geographical location
- Automated exchange transfusion should be available to all patients SCD
- Patients should have access to 24/7 care as standard



British Society for Haematology
Listening • Learning • Leading

- Transfusion in Sickle Cell Disease Parts I&II (Davis et al 2016)
- Management of Acute Chest Syndrome in sickle cell disease (Howard et al 2015)
- Clinical Use of Apheresis Procedures (Howell et al, 2015)

Guidelines and Standards

NHS Blood and Transplant

NICE National Institute for Health and Care Excellence

Medical technologies guidance 2016

- The case for adopting Spectra Optia for automated red blood cell exchange in patients with sickle cell disease is supported by the evidence.
- Spectra Optia is faster to use and needs to be done less often than manual red blood cell exchange.
- Automated red blood cell exchange should be considered in patients with sickle cell disease who need regular transfusion
- Cost modelling shows that in most cases using Spectra Optia is cost saving compared with manual red blood cell exchange or top-up transfusion.

American Society for Apheresis (ASFA)

- Guidelines published every 2-3 years
- Comprehensive literature review
- Practical recommendations
- 2019: Padmanabhan, A, et al. 8th Special Edition J Clin Apheresis. 2019; 34: 171– 354.

Improving Quality of Life

NHS Blood and Transplant

Female university student age 20: "Without my monthly blood exchanges, my education would be limited"

Male Teaching Assistant age 25: Having a monthly blood exchange has given me the opportunity to progress in my role and improve my social activities with friends.

Automated exchange red cell usage

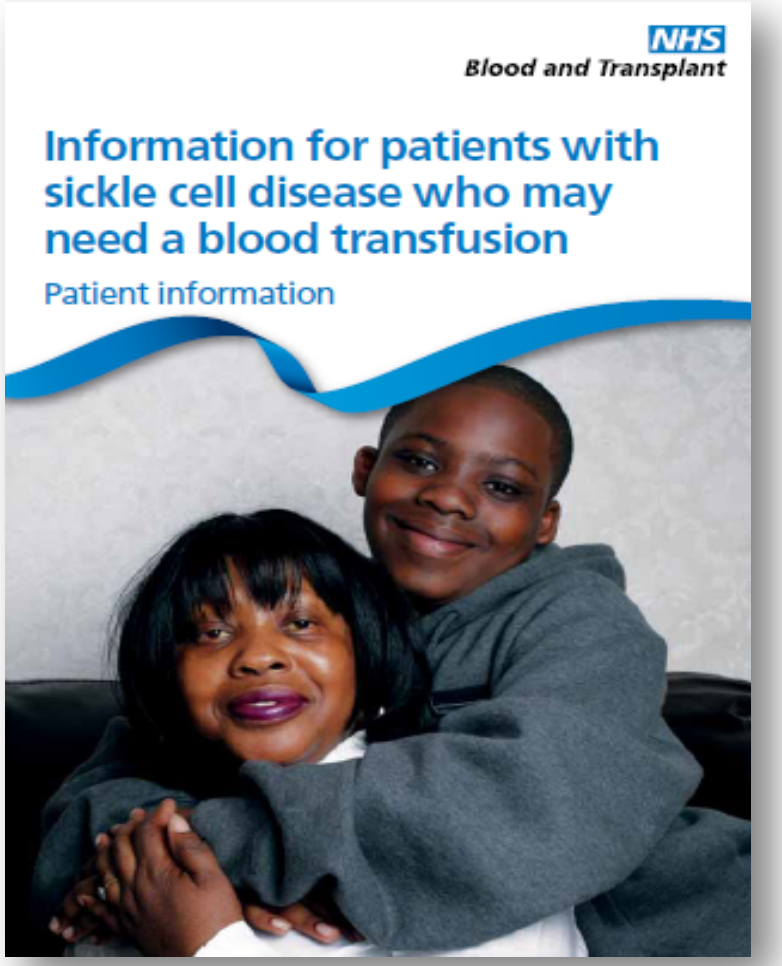
NHS Blood and Transplant

Adult Red Cell Exchanges -TAS National	2017/18
Patients	137
Procedures	545
Red Cells	4329
Average Red Cells per Patient	32
Average Red Cells per Procedure	8

Paediatric Red Cell Exchanges -TAS National	2017/18
Patients	24
Procedures	76
Red Cells	390
Average Red Cells per Patient	16
Average Red Cells per Procedure	5

Ro red cell units

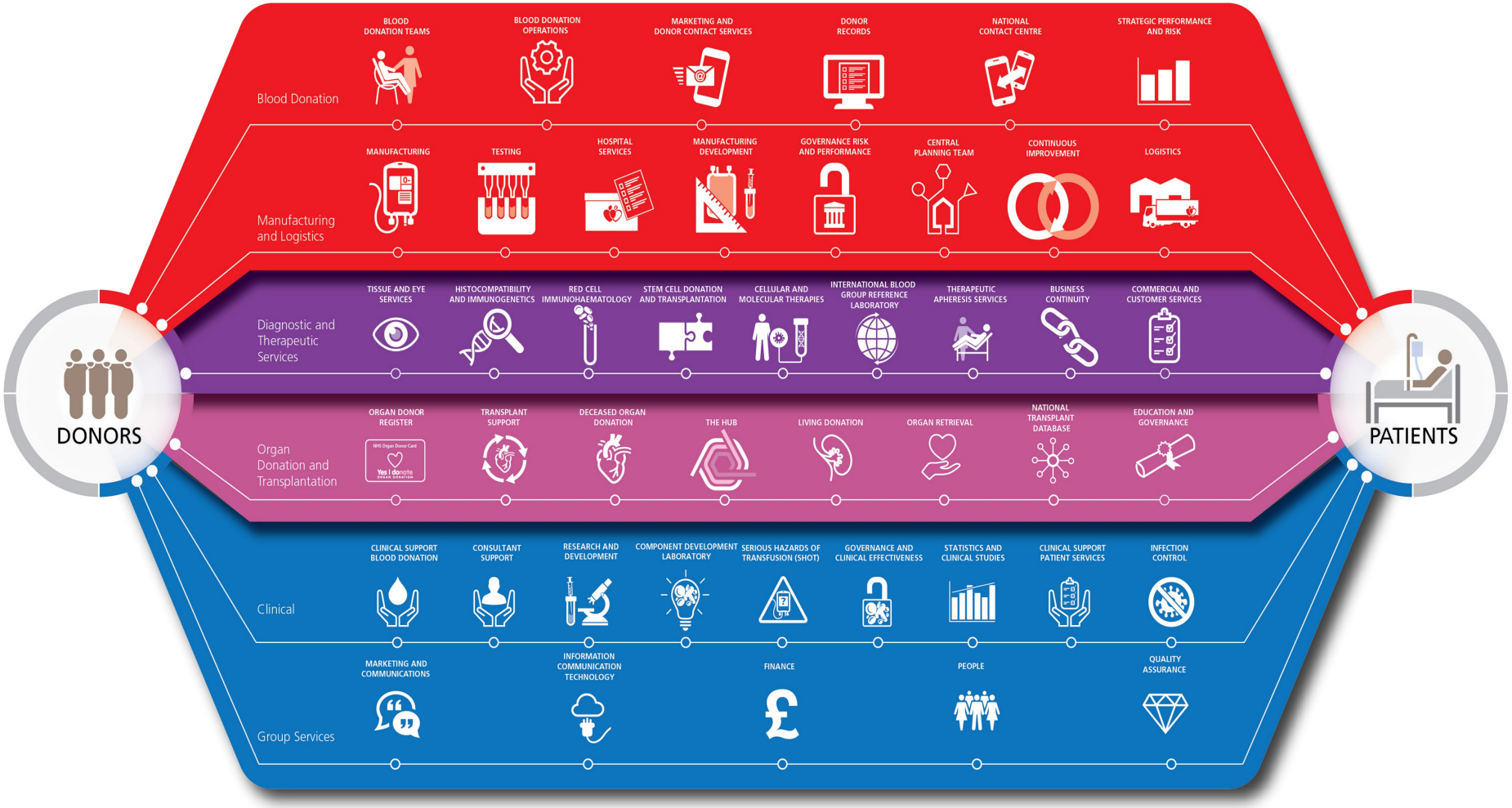
- Approximately 60% of patients with sickle cell disease require Ro phenotype red cells (cDe)
  - Ro 10 x more common in Black African and Black Caribbean than White ethnic background
- Only 2% blood donors Ro
- Demand for Ro increasing approximately 15% per year
- Effective communication with BT Laboratories and NHSBT and advance notification for planned exchanges. Notify them as soon as possible for emergency exchanges, to help the demand to be managed.



NHS
Blood and Transplant

Who are Therapeutic Apheresis Services and how do we contribute to improving access to automated red cell exchange for SCD patients?

NHS Transplant



NHS
Blood and Transplant

NHS
Blood and Transplant

Therapeutic Apheresis Services

Saving and Improving Lives

8896
Treatments

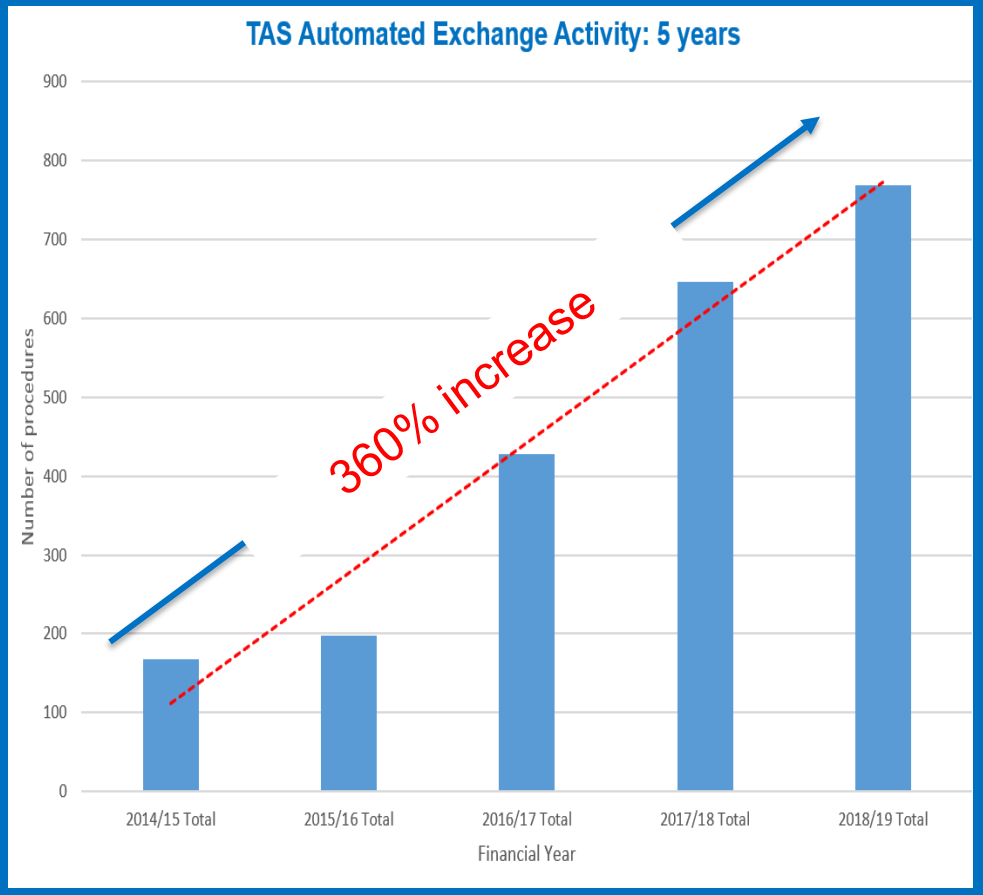
Caring Expert Quality

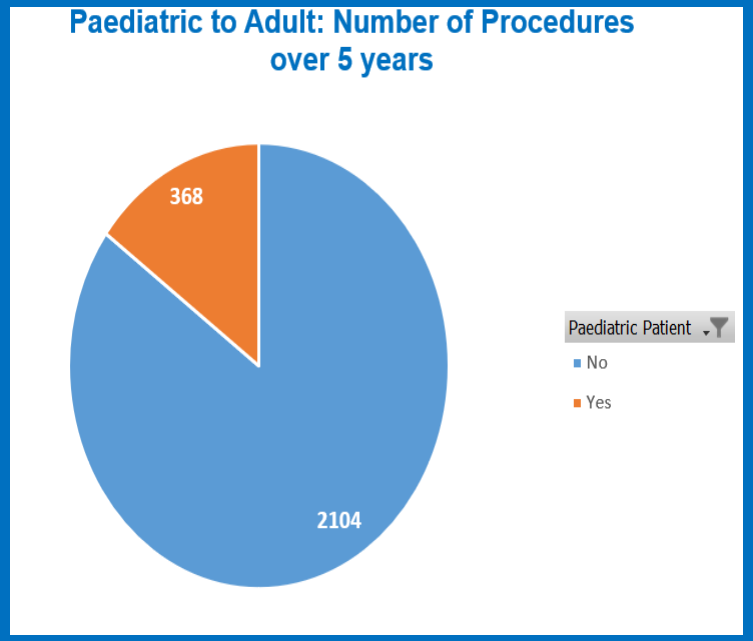
1448
Patients

NHS
Blood and Transplant

TAS ARCX Activity

NHS Blood and Transplant





How does this look?

NHS Blood and Transplant

- Work collaboratively with trusts/ services to provide access to ARCX service for patients needing acute or long term transfusion
- Assurance of robust service with established national model/ policies and procedures
- Regular MDT and patient review meetings to evaluate care
- Annual review of service user (clinical teams) satisfaction (74% 2019)
- Each TAS unit is fully regulated by the Human Tissue Authority, JACIE, Care Quality Commission
- Annual review of patient satisfaction survey (97% 2018)

Examples of existing collaborations

NHS Blood and Transplant

- Leeds Teaching Hospitals

559 ARCX procedures in 5 years

- Birmingham and Sandwell Trust

482 ARCX carried out in 2.5 years.

- Manchester Children's Hospital

Newly established service 2019

Connect with TAS

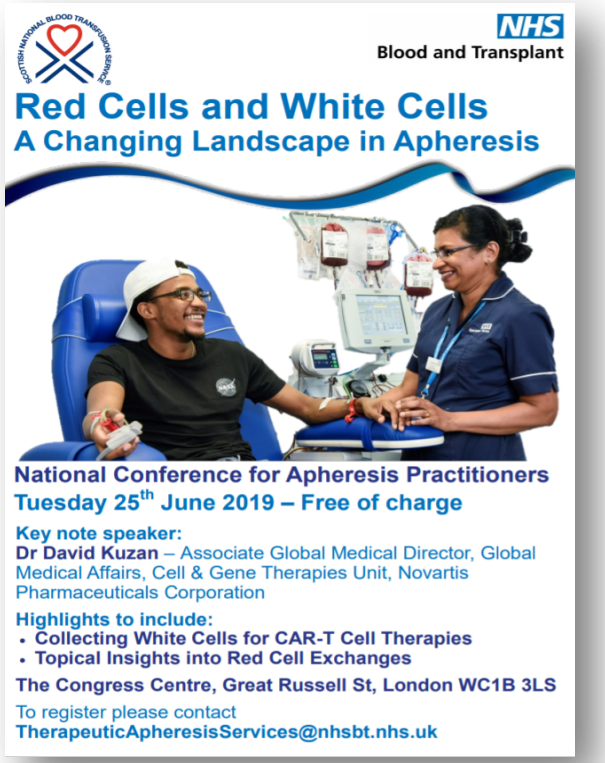
NHS Blood and Transplant

https://www.nhsbt.nhs.uk

Google.com/maps

@NHSBTTAS

Youtube.com



We host an Annual Apheresis Conference
TherapeuticApheresisServices@nhsbt.nhs.uk

Thank you for listening
Any questions?

Acknowledgements

All our NHSBT Therapeutic Apheresis Unit Staff

NHSBT TAS National support

Lydia Ball, Chris Ogle

Kay Harding

Catherine Howell

TAS Consultant

Dr Helen New

Blood Donation

Ebony Laws

For the photographs

Thank you to: Patients, families and TAS Staff .