



NHS

Blood and Transplant

An Epic journey to the WinPath of least resistance and beyond...

Electronic requesting and reporting of Fetal *RHD* screening tests

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Introduction



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In 2016, NICE recommended high-throughput non-invasive prenatal testing for fetal *RHD* genotype in pregnant women to prevent unnecessary administration of anti-D prophylaxis^{1,2}



In response, NHS Blood and Transplant (NHSBT) introduced fetal *RHD* screening³, with a paper-based referral process



Paper requesting is time consuming and transcription errors can occur at booking in or result entry, leading to sample rejections/re-bleeds, and delayed/incorrect results



This can pose a significant risk to patient safety from inappropriate use of anti-D prophylaxis



Transfusion 2024 outlined key priorities for clinical and laboratory transfusion practice to enable safe patient care, with an objective for NHSBT to implement electronic-requesting and reporting⁴



Key Objective



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Action for NHSBT

Enhancing IT connectivity between hospitals and NHSBT

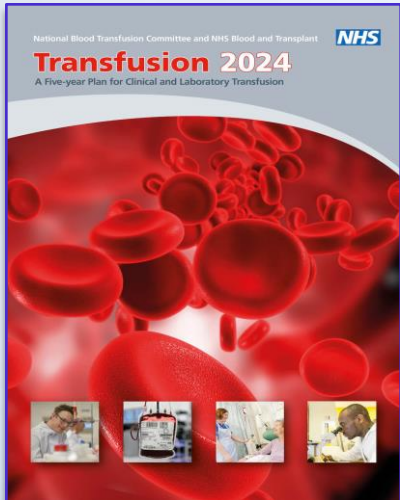
Implement an electronic requesting system that enables reporting of RCI results direct into hospital transfusion laboratory information systems, enabling faster access to results to support decisions about patient care

Molecular Diagnostics

Red Cell
Immunohaematology

Histocompatibility &
Immunogenetics

C1b: Pilot electronic requests for NHSBT reference laboratory tests and electronic provision of results from NHSBT to Trusts





Why do we want to do it?



Improve clinical management and treatment of patients by incorporating the results of referred investigations directly into hospital LIMS



Improve the accuracy of information exchanged, reducing transcription steps and errors, improving the quality of healthcare delivery and its supporting process



Support development of a technical solution for e-requesting and reporting for both hospital Laboratory Information Management Systems and Electronic Patient Record providers



Allow end to end order communications with NHSBT laboratories in structured, electronic format from request to result for all hospitals across England



Key Benefits



Improves efficiency – removes manual processes both at NHSBT and in hospital laboratories



Improves turnaround times for reporting results



Reduces costs, saves staff time and storage space



Offers auditable sample tracking for referring laboratory to testing laboratory



Methods



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NHSBT requested volunteers to pilot electronic-requesting and reporting of fetal *RHD* screening

Require patient identifiable information, test request and estimated date of delivery (EDD) in the yyyy/mm/dd format



Results are then transferred electronically into the hospital LIMS (results are still reported via Sp-ICE)

These exchanges could not be made directly to or from hospitals to NHSBT. An interface was required: NHSBT adopted Labgnostics



Methods



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**Kings Mill Hospital
WinPath 5.32**



**Royal Derby &
Chesterfield
WinPath Enterprise**

**Manchester NHS
Foundation Trust - Epic**



Methods



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Must include the Estimated Date of Delivery (EDD) field in the HL7 interface in field OBX-3.1. The date format is YYYYMMDD

Requester

Performer

clinisys
Epic



HTL LIMS/EPR
Request message

NHSBT LIMS
Request message

Results message
HTL LIMS/EPR

Results message
NHSBT LIMS

Lab A
Laboratory System

Lab B
Laboratory System

Labgnostic

"A system-agnostic laboratory interoperability solution which facilitates the electronic exchange of test requests and results among multiple diagnostic organisations"¹⁵

Reported via Sp-ICE



Request for Fetal RHD Screen
Call Free Helpline from anywhere in the UK

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This form is only to be used for RHD negative pregnant women.
 DO NOT USE this form for referring samples from women who have anti-D (or -G) antibodies as samples will be rejected. A different sample volume and form is required. Information about appropriate testing and referrals can be found on the ISGL website <http://www.isgl.org.uk> or consult your Fetal Medicine Unit.
 At least three points of matching identification must be used on form and sample tubes.

Mother's Details:
 NHS No. _____ or* Hospital No. _____
*All NHS No. is not known. Please ensure that the numbers on this form and the sample tube label match on both form and sample tube. Hospital No. is not required.

Surname _____
 First name _____
 Address _____

DOB _____ EDD from _____
*Please arrange a dating scan, if not already performed, for the date of delivery to be confirmed.

Please provide one 50ml EDTA blood sample
(store at room temperature, do not seal sample tube)

Date of sample taken _____

Hospital and Requesting Clinician
 Hospital name (as on NHS website) _____
 Hospital NHS Code* _____
*NHS Formulary (NHSX) code

Sender's name and address _____
 Telephone _____
 Email _____

SEND SAMPLE WITH THIS FORM TO THE PATHOLOGY LABORATORY
Instructions for Laboratory Reception
 Follow Hospital Trust SOP
 See sample labelling and transport instructions on the reverse of this form.

At present, this form is a standard form. It is the responsibility of the test requester to ensure that appropriate patient consent has been obtained. The laboratory assumes the responsibility of clinical analysis and a comprehensive laboratory report will be provided. Where appropriate, a copy of this report will be provided to the patient. The laboratory is not responsible for the accuracy of the information provided on this form. The laboratory is not responsible for the accuracy of the information provided on this form. The laboratory is not responsible for the accuracy of the information provided on this form.



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Labgnostic

Shipping Manifest

Shipment Dispatched: 20/04/2023 12:05:48

Shipment Last Edited: N/A

Originating Lab:
 Oak House
 Reeds Crescent
 Watford
 Hertfordshire
 WD24 4QN

Performing Lab:
 Filton Blood Centre
 500 North Bristol Park
 Bristol
 Northway
 BS34 7QH

These specimens have been tracked using Labgnostic.

Go to <https://lab2lab.test.nhs.labgnostic.com/> and enter your username and password. Scan the barcode below into the 'Quick Scan' box at the top right and follow the on-screen instructions to book in the samples for processing.



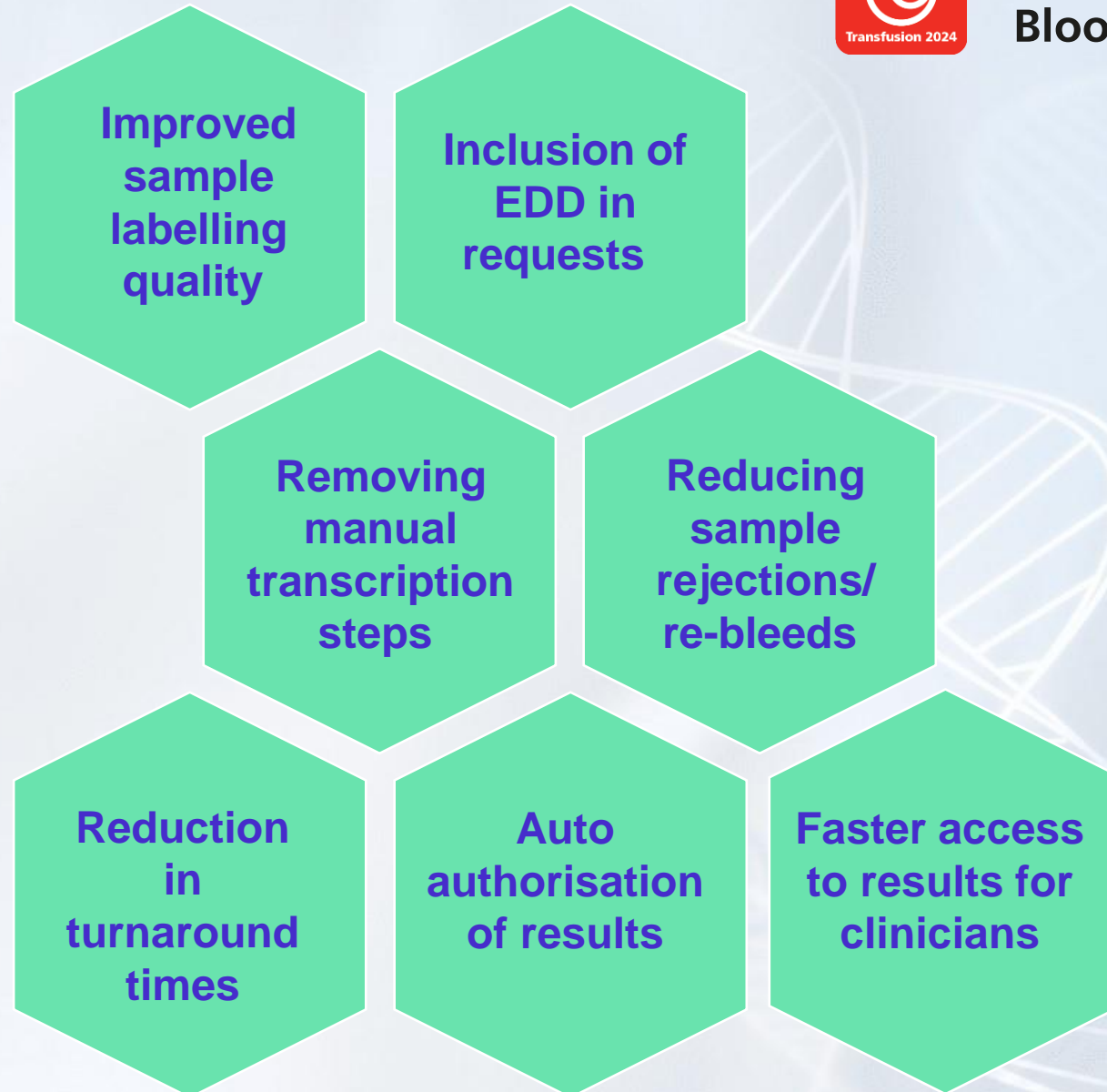
Shipment ID: gvH-rTT7w0ih22dVPLgFQw

#	Hospital Sample No/Collection date	Patient Details	Test/Specimen Type/Details	NHSBT Sample Barcode
1	0990060000773M 19-Apr-2023 14:50:00	IBGRL TEST, TEST 04-May-1983 999 994 0277	Investigation: Hospital referral HOSPREF Sample type: Blood (B) Clinical Details: TEST SAMPLE EDD:	<div style="border: 1px dashed black; border-radius: 15px; padding: 10px; width: fit-content; margin: 0 auto;"> Place Your Barcode Here </div>
Comment:				



Results

Electronic-requesting and reporting of fetal *RHD* screening has improved the end-to-end process and quality of information exchanged between hospitals and NHSBT through:



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Conclusions



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Electronic-requesting and reporting is helping to improve the quality of healthcare delivery and patient experience



Although implementation was not without challenges, the time savings for staff, decreasing the potential for error and improving patient safety far outweigh these



Lessons learned have been shared and improvements made



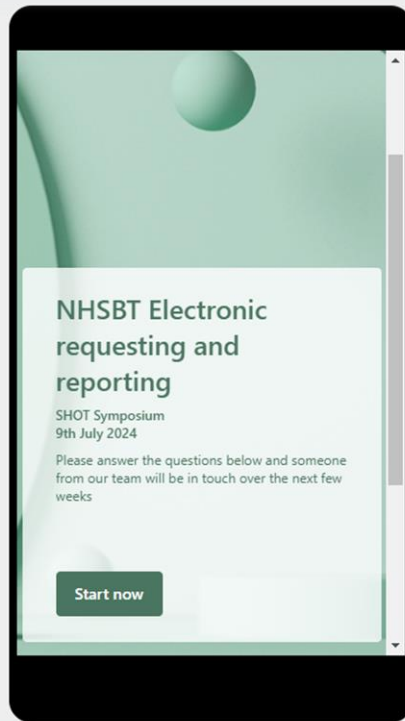
Further roll outs are underway to onboard more hospitals for e-requesting and reporting of fetal *RHD* screens



NHSBT is working to extend the functionality to RCI and H&I referrals and work with other LIMS and EPR systems



Interested in an Epic journey to the WinPath of least resistance and beyond?



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Transfusion 2024

X-Lab, Clinisys and Epic





Thank you for listening
Any questions?





References



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1. NICE. High-throughput non-invasive prenatal testing for fetal RHD genotype: <https://www.nice.org.uk/guidance/dg25>
2. British Society for Haematology. Blood grouping and antibody testing in pregnancy: <https://b-s-h.org.uk/guidelines/guidelines/blood-grouping-and-antibody-testing-in-pregnancy>
3. NHSBT Molecular Diagnostics. Fetal RHD screening test: <https://www.nhsbt.nhs.uk/ibgrl/services/molecular-diagnostics/fetal-rhd-screen/>
4. National Blood Transfusion Committee and NHSBT: <https://nationalbloodtransfusion.co.uk/transfusion-2024>
5. Sørensen A (X-Labs) NHS Blood and transplant speed foetal DNA RHD screening: <https://x-labsystems.com/nhs-blood-and-transplant-speed-foetal-dna-rhd-screening/>