



Fetal DNA screening

Feedback from the lab



Kerry Dowling, MSc
Transfusion Laboratory Manager

NIPT

Non invasive
Prenatal Test



University Hospital Southampton

NHS Foundation Trust



Southampton University Hospitals NHS Foundation Trust (UHS)

- Services 1.9 million patient
- Large maternity unit
- FMU
- 1500IU IM dose at 30 weeks and PN
- 1772 doses anti-D issued year pre change
- 6000 births per year
- Initiative ticks all the boxes for our trust values

University Hospital Southampton



NHS Foundation Trust

Cell Free Foetal DNA (cffDNA) Testing - UHS lab method

○ Aims

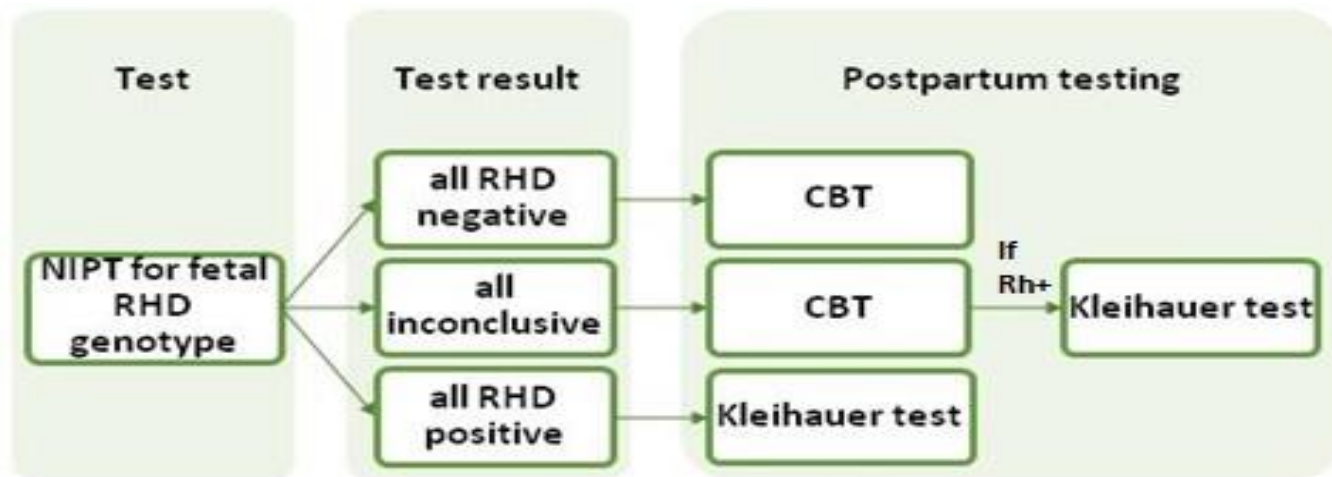
- Help keep it simple for the midwifery team
- Avoid an additional antenatal appointment
- Identify RhD negative women before 24 weeks and ensure they receive information to make a choice
- Send samples to IBGRL and report meaningful results

Working together – method continued

- Daily automated report of RhD negative women (12-60) tested the day before
- Senior staff review and decide which are eligible for testing (pregnant, <24 weeks, not had letter before, not miscarriage or TOP)
- MLA sends letter with information leaflet
- Patient makes decision, discusses at next appt (<26 weeks) and sample is taken by midwife
- Lab send sample to IBGRL
- Reports on Spice
- Lab reports results with coded comments
- Lab controls release of anti-D, taking into account cffDNA result

Basic Clinical Process

- Midwife visit <24 weeks – AGS, letter from lab if RhD-
- Midwife visit 24-26 weeks – AGS + FDNA
- RAADP if Rh neg mum with inconclusive or RhD pos baby
- Midwife visit >26 weeks – RAADP





Implementation

- Blood bank & maternity champion
- Ratified at HTC
- Policy and flow chart
- Clinical training – policy, support line, 30 minutes self directed
- Lab training – training presentation, one to one explanation and written competency
- Validation of process (VMP produced)

May 2017 – May 2018

735 cffDNA
results
reported

University Hospital Southampton

NHS Foundation Trust



BMS feedback

EASY WIN

BETTER FOR
PATIENTS

EASY TO
REPORT

INCREASED
PAPERWORK

LESS WORK
(KL, CORD)

FEEL GOOD

University Hospital Southampton

NHS Foundation Trust

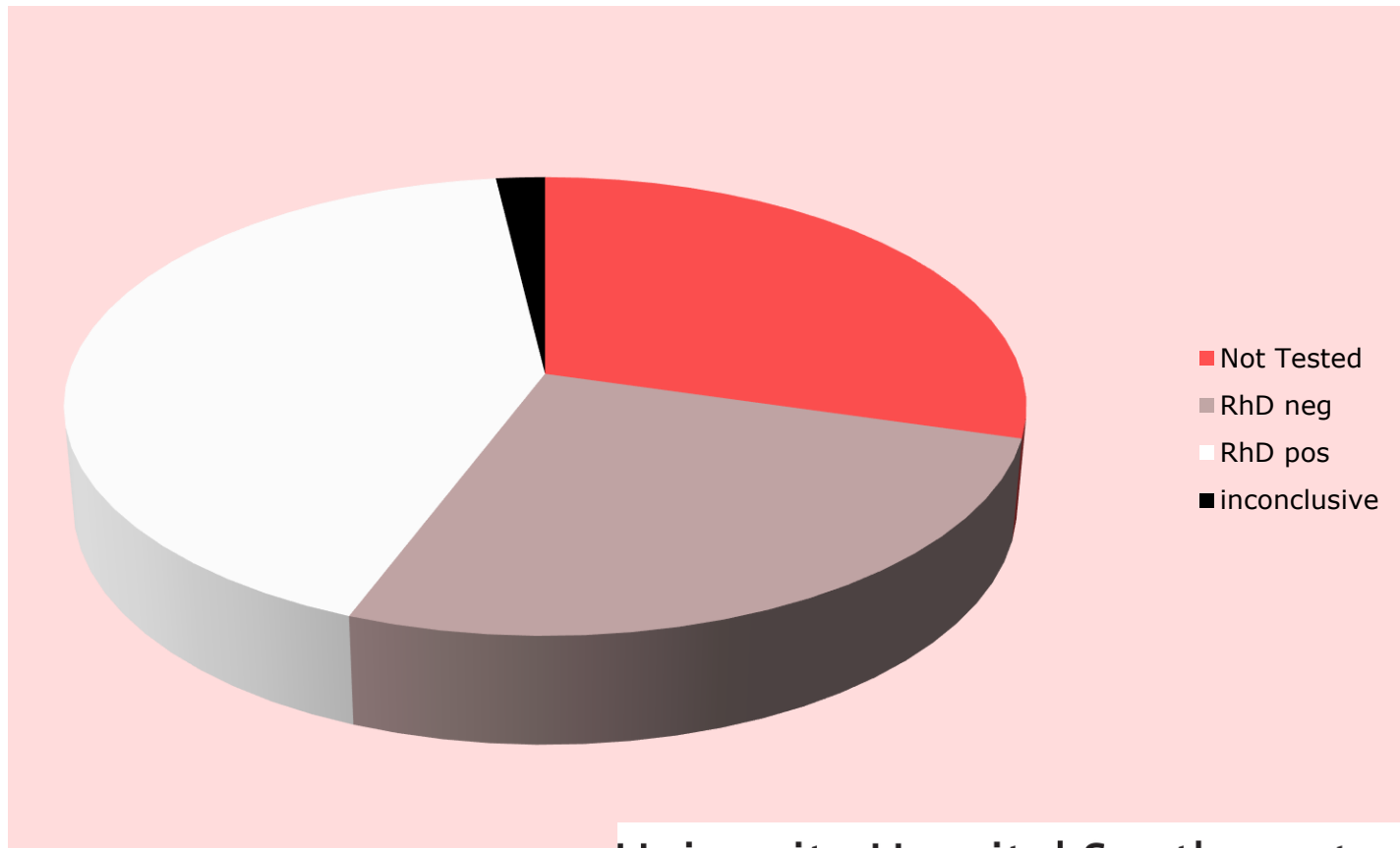


Blood bank learning points

- Screen letters to be sent requires senior input
- Tracking large number of referred samples and results needs a process
- RHM code & EDD vital
- Blood bank to control testing PN (baby group, KI samples sent) and check cffDNA at release of anti-D

Has it been successful

- Audited first 318 patients



Not tested?

- 22 women miscarried after booking
- 6 sample errors with insufficient time for repeat
- 2 patients moved area
- 64 (20%) women choose not to have the test

Predicted RhD negative babies

- 84 (26%)
- All babies tested grouped as RhD neg at birth
- 4 predicted RhD neg babies not tested
- 5 mums received anti-D
 - 1 insisted as baby group not confirmed
 - 2 had RADP dose stopped by lab but received PN
 - 2 had both doses

Predicted RhD positive babies

- 135 (42%)
- 2 missed anti-D cases
 - only given PN dose
 - Unknown if sensitised
- Both occurred in first cohort of mothers to birth ?misunderstanding of policy

Predicted Inconclusive

- 6 (0.02%)
- All received anti-D as per policy
- 5 grouped RhD pos at birth
- 1 grouped RhD neg at birth



Success?

- 79 women saved from unnecessary anti-D (risk)
- At least 158 doses anti-D conserved
- CIP £3264 in 5 months (lab/anti-D only)
- 15 midwife appts/month no longer required

Wish list?

- Drill down into why women decline the test to improve uptake
- Improve the pathmanager search
- Report straight into LIMs from Sp-Ice
- SHOT data

Acknowledgements

- Lab team
- Sally Boxall
(consultant nurse)
- Midwives
- Patients
- IBGRL
- Erika Rutherford



Kerry.dowling@uhs.nhs.uk



University Hospital Southampton

NHS Foundation Trust

