

Impact of Fetal RHD screening test upon a UK hospital's practice for Routine Antenatal Anti-D Prophylaxis (RAADP)

Authors: Anna MY Li¹, D. Economides², A. Mehta², G. Cavolli², M. Sekhar¹

¹ Clinical Haematology, Royal Free London NHS Foundation Trust, London, United Kingdom

² Maternity Dept., Royal Free London NHS Foundation Trust, London, United Kingdom

BSH abstract ref. no.: BSH2020-PO-197



1. INTRODUCTION

UK national guidelines^{1,2} specify pregnant women who are D negative should be offered routine antenatal anti-D prophylaxis (RAADP) to prevent sensitisation to the potentially D positive fetus. However, a new NHS Blood & Transplant (NHSBT) non-invasive pre-natal immunohaematology test³, using the woman's blood, predicts fetal D status prior to delivery thereby negating prophylactic anti-D injections where fetus is predicted as D negative. At our hospital, introducing the test has impacted positively upon patient experience, patient safety, and care pathways.

2. AIM

There are approximately 3,000 births per annum at the Royal Free Hospital, Hampstead, where women identified as D negative are given RAADP at 28 weeks and post-delivery for sensitisation events. Firstly we had to implement and integrate adoption of the 'Fetal RHD screening test' for the Ante-Natal Care (ANC) pathway to allow avoidance of prophylactic anti-D injections where test predicted fetus to be D negative. The test was offered from 11+2 weeks and ended before reaching 26 weeks. This allowed avoidance of anti-D at 28 weeks and post-delivery if fetus was D negative. Secondly, we undertook an audit to assess compliance with the new pathway, and capture the woman's experience of it.

3. METHOD

- Retrospective data collection over an 8 month period post go-live on March 2018 included:
 - Consent and email notification to Anti-D team
 - Sample taking and timing of taking the test
 - RAADP administration of anti-D, or not, where a fetus D prediction was available
 - Verification of NHSBT test result with the cord
 - Anti-D immunoglobulin product usage
- Patient experience and feedback on the impact of the new test was collected by face-to-face surveys at post-delivery over a 6 month period post go-live.

7. REFERENCES

- NICE 2008 Routine antenatal anti-D prophylaxis for women who are rhesus D negative www.nice.org.uk/guidance/ta156
- BSH 2014 Anti-D Guidelines <https://b-s-h.org.uk/guidelines/guidelines/use-of-anti-d-immunoglobulin-for-the-prevention-of-haemolytic-disease-of-the-fetus-and-newborn/>
- NICE 2016 High-throughput non-invasive prenatal testing for fetal RHD genotype <https://www.nice.org.uk/guidance/dg25>

4. RESULTS

PATIENT EXPERIENCE SURVEY (n=15)

Top reasons for agreeing to the Fetal RHD screening test?

- Safety (53%)
- Avoid injections (33%)

Do they remember the purpose of the test?

- Identify blood group (73%)
- Not sure (13%)

What was their impression of the test?

- Recommend to others (85%)
- Those not offered the test who would have agreed to it (100%)

Positive comments

- "So easy to do, just another blood test"
- "Felt less stressed"
- "Not waiting until baby was born to find out blood group"

Room for improvement

- "Does not believe in it"
- "Had to have anti-D injection because CORD sample was missing"

Fig. 1 Distribution of the number of days from Blood group sample date to Fetal RHD screening test sample date (n=277)

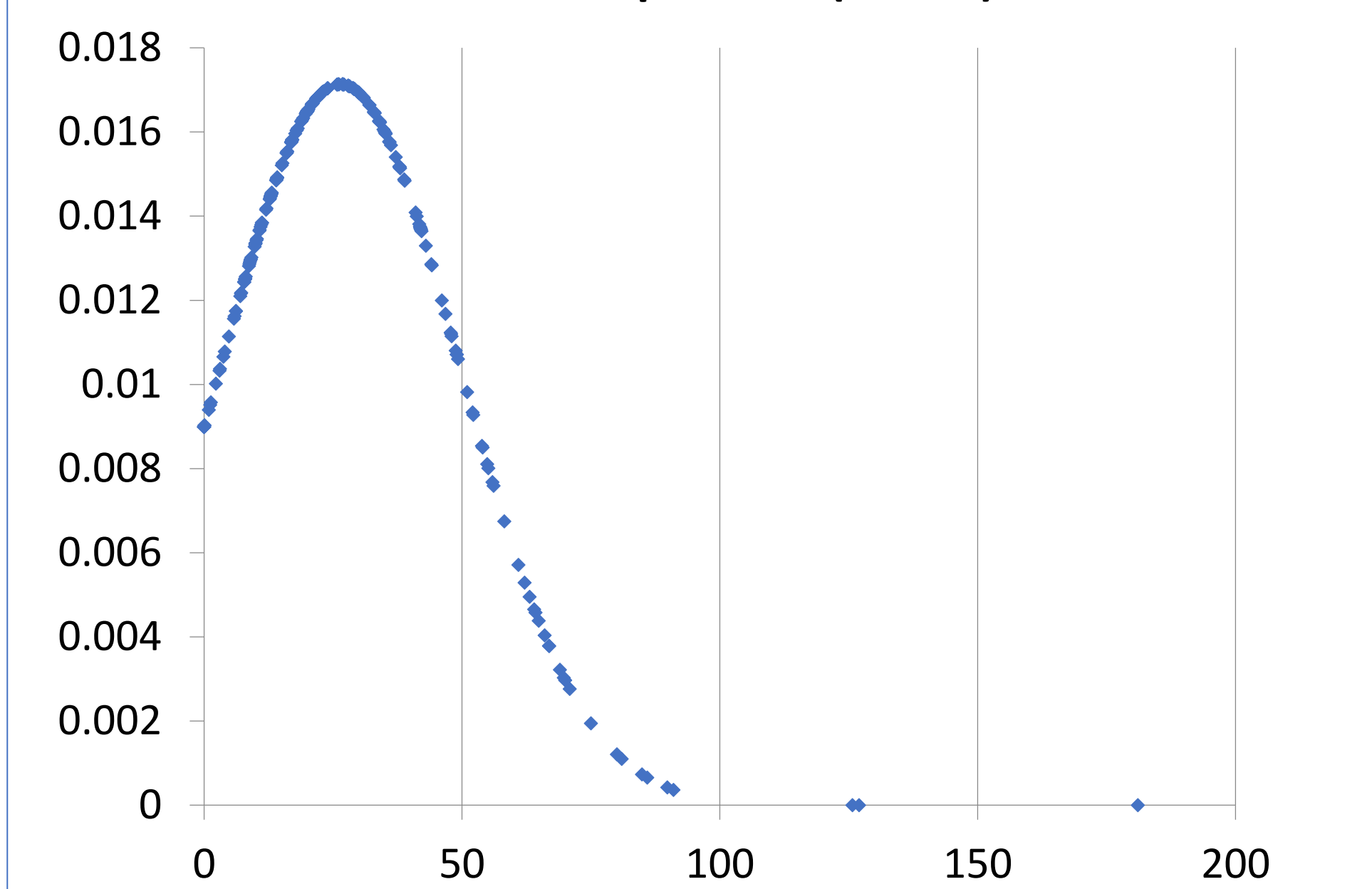
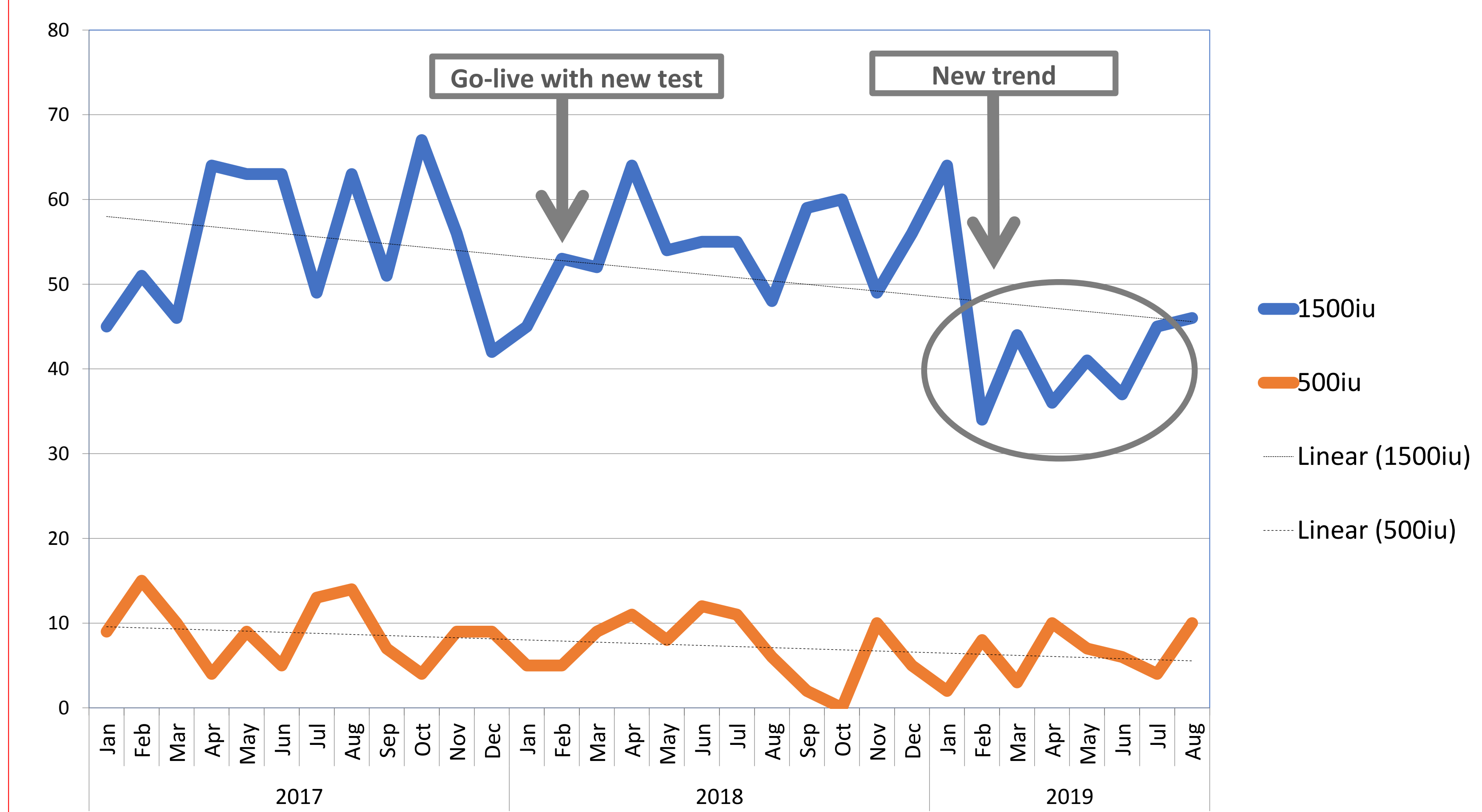


Fig. 2 Trend of quantity of Anti-D immunoglobulin used at Royal Free Hospital (Jan 2017 to Aug 2019)



5. CONCLUSIONS

Impact on midwifery teams

- Reduction in RFL anti-D clinic attendance reduced time for the patient and staff for this task
- Compliance remains low [n=??] for taking cord samples from babies predicted as D neg

Cost implications

- NHSBT charge £22 per test, but if rejected samples £12.50 per sample. Rejection must stay low.
- Not all patients go on to deliver at RFL e.g. St Elsewhere, therefore benefits may not apply
- Product usage has dropped but cost of product could increase as immunoglobulin costs rise

Impact on woman

- Women felt empowered and perceived their care as better
- No additional appointments required for the test

Next steps

- Aim to improve compliance for checking D status prediction before giving anti-D
- Identify optimum time for testing to ensure test is timely and delivery likely at booked hospital
- Organisational-wide quality improvement initiative to optimise the timing of taking the sample in the pathway and improve patient awareness and experience of the test

6. ACKNOWLEDGEMENT

Erika Rutherford at NHSBT provided a summary of NHSBT (Royal Free Hospital) Fetal RHD screening test results for comparison of local to national population.

8. CONTACT INFORMATION

anna.li@nhs.net 0207 472 6628
demetrios.economides@nhs.net 0207 472 6692
gjylieta.cavolli@nhs.net 0207 472 6692