

## Avoidable Repeat Rate for March 2021 for Newborn Blood Spot Screening - Manchester Laboratory

The avoidable repeat rate for samples received during March 2021 is displayed by Trust in Figure 1 and by current hospital (for in-patients) in Figure 2. The raw data is provided in Tables 2 and 3. The avoidable repeat rate is calculated by dividing the total number of avoidable repeats by the number of babies tested (i.e. first samples).

32 samples (first samples and repeats) received in March had no Trust code (0.7%).

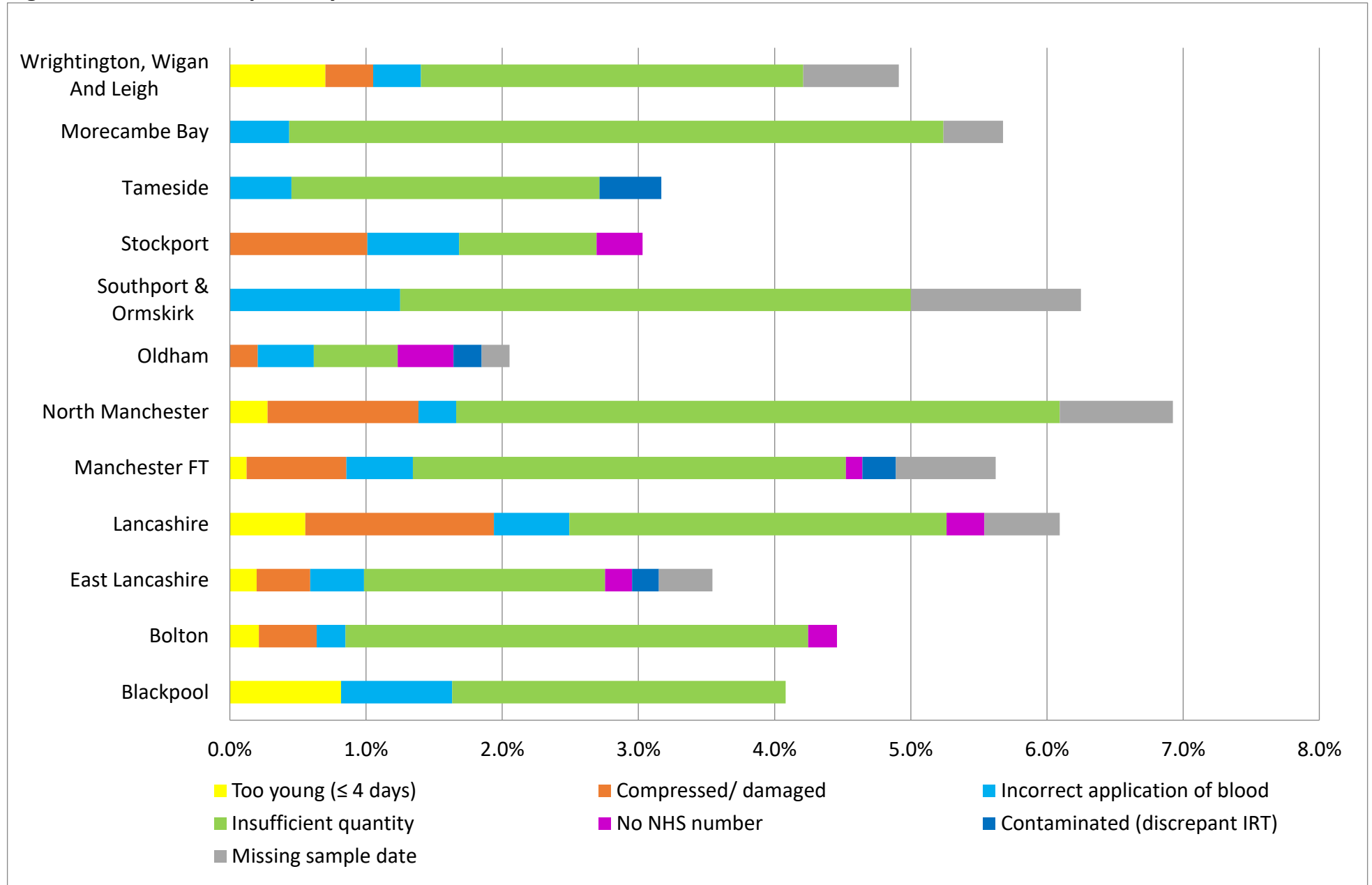
Please write the Trust code for your maternity unit/ neonatal unit in the PCT field (old style card) or the 'Trust of sample taker' field (new style card) to improve the accuracy of the figures. A list of trust codes is provided in Table 1. Alternatively, maternity units could stamp cards with the code prior to issuing to midwives/neonatal units, depending on local arrangements. It would also be helpful if health visitors could write 'HV' in the PCT field (old style card) or 'Trust of sample taker' field (new style card) so that we can provide data specific to health visitors.

**Table 1**

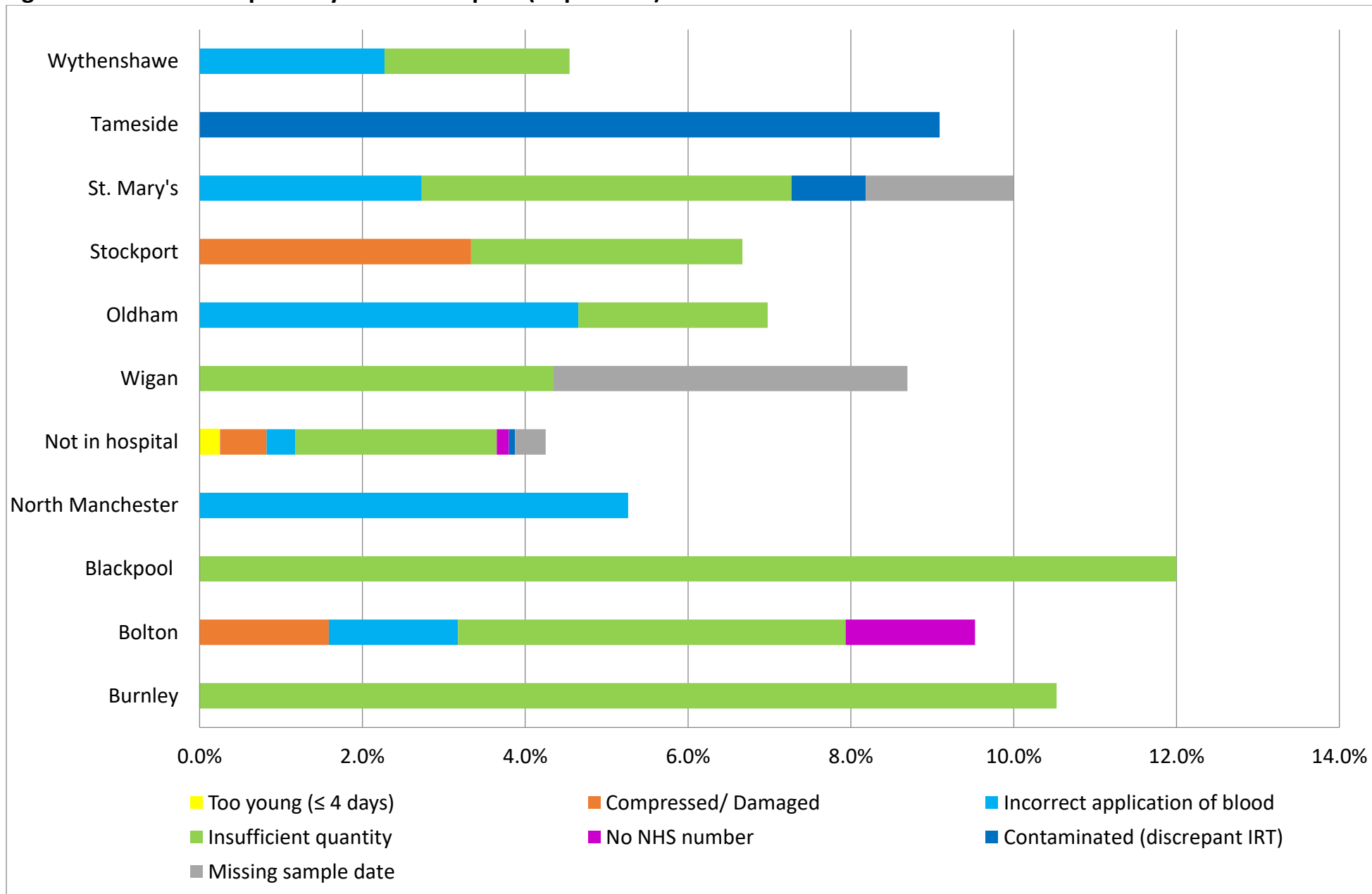
<b>Code</b>	<b>Trust Name</b>
RXL	BLACKPOOL TEACHING HOSPITALS NHS FOUNDATION TRUST
RMC	BOLTON NHS FOUNDATION TRUST
RXR	EAST LANCASHIRE HOSPITALS NHS TRUST
RXN	LANCASHIRE TEACHING HOSPITALS NHS FOUNDATION TRUST
RW3	MANCHESTER UNIVERSITY NHS FOUNDATION TRUST – ST. MARY’S & RMCH
RM2	MANCHESTER UNIVERSITY NHS FOUNDATION TRUST - WYTHENSHAW
NM-RW6	PENNINE ACUTE HOSPITALS NHS TRUST – NORTH MANCHESTER
OL-RW6	PENNINE ACUTE HOSPITALS NHS TRUST – OLDHAM
RVY	SOUTHPORT AND ORMSKIRK HOSPITAL NHS TRUST
RWJ	STOCKPORT NHS FOUNDATION TRUST
RMP	TAMESIDE HOSPITAL NHS FOUNDATION TRUST
RTX	UNIVERSITY HOSPITALS OF MORECAMBE BAY NHS FOUNDATION TRUST
RRF	WRIGHTINGTON, WIGAN AND LEIGH NHS FOUNDATION TRUST

In this document North Manchester and Oldham will be referred to as separate maternity units, although they were part of the same Trust during the time period covered by this report.

**Figure 1 - Avoidable repeats by Trust**



**Figure 2 - Avoidable repeats by current hospital (in-patients)**



There were no avoidable repeats for Furness, Ormskirk, Lancaster, RMCH and Preston.

**Table 2 – Avoidable repeats by Trust for March 2021**

Trust	Number of first samples received/ babies tested	Too soon after transfusion (<72 hours)*	Too young for reliable screening (≤ 4 days)	Bloodspot card damaged in transit	Bloodspot compressed/damaged	Expired bloodspot card	Incorrect application of blood on card	Insufficient quantity	>14 days in transit	No NHS number	Contaminated (discrepant IRT)	Missing sample date	DOB missing	Number of Avoidable Repeat Requests	Avoidable Repeat Requests Rate
Blackpool Teaching Hospitals NHS FT	245	0	2	0	0	0	2	6	0	0	0	0	0	10	4.1%
Bolton NHS FT	471	1	1	0	2	0	1	16	0	1	0	0	0	21	4.5%
East Lancashire Hospitals NHS Trust	508	3	1	0	2	0	2	9	0	1	1	2	0	18	3.5%
Lancashire Teaching Hospitals NHS FT	361	0	2	0	5	0	2	10	0	1	0	2	0	22	6.1%
Manchester University NHS FT	818	2	1	0	6	0	4	26	0	1	2	6	0	46	5.6%
North Manchester (Pennine Acute Hospitals NHS Trust)	361	0	1	0	4	0	1	16	0	0	0	3	0	25	6.9%
Not Stated	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
Health Visitor	67	0	0	0	1	0	2	2	0	0	0	0	0	5	7.5%
Oldham (Pennine Acute Hospitals NHS Trust)	487	3	0	0	1	0	2	3	0	2	1	1	0	10	2.1%
Southport & Ormskirk Hospital NHS Trust	80	0	0	0	0	0	1	3	0	0	0	1	0	5	6.3%
Stockport NHS FT	297	0	0	0	3	0	2	3	0	1	0	0	0	9	3.0%
Tameside And Glossop Integrated Care NHS FT	221	0	0	0	0	0	1	5	0	0	1	0	0	7	3.2%
University Hospitals of Morecambe Bay NHS FT	229	0	0	0	0	0	1	11	0	0	0	1	0	13	5.7%
Wrightington, Wigan and Leigh NHS FT	285	0	2	0	1	0	1	8	0	0	0	2	0	14	4.9%
<b>Grand Total</b>	<b>4461</b>	<b>9</b>	<b>10</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>22</b>	<b>118</b>	<b>0</b>	<b>7</b>	<b>5</b>	<b>18</b>	<b>0</b>	<b>205</b>	<b>4.6%</b>

\*Not included in calculation of avoidable repeats

**Table 3 – Avoidable repeats by current hospital (in-patients) for March 2021**

Current Hospital	Number of first samples received/ babies tested	Too soon after transfusion (<72 hours)*	Too young (≤ 4 days)	Damaged in transit	Compressed/ Damaged	Expired card	Incorrect application of blood	Insufficient quantity	>14 days in transit	No NHS number	Contaminated (discrepant IRT)	Missing sample date	DOB Missing	Number of Avoidable Repeat Requests	Avoidable Repeat Requests Rate
Burnley General Hospital	38	2	0	0	0	0	0	4	0	0	0	0	0	4	10.5%
Royal Bolton Hospital	63	1	0	0	1	0	1	3	0	1	0	0	0	6	9.5%
Blackpool Victoria Hospital	25	0	0	0	0	0	0	3	0	0	0	0	0	3	12.0%
Furness General Hospital	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
North Manchester General Hospital	19	0	0	0	0	0	1	0	0	0	0	0	0	1	5.3%
Not in hospital	4000	1	10	0	23	0	14	99	0	6	3	15	0	170	4.3%
Ormskirk & District General	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
Royal Albert Edward Infirmary	23	0	0	0	0	0	0	1	0	0	0	1	0	2	8.7%
Royal Lancaster Infirmary	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
Royal Manchester Childrens Hospital	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
Royal Oldham Hospital	43	3	0	0	0	0	2	1	0	0	0	0	0	3	7.0%
Royal Preston Hospital	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
Stepping Hill Hospital	30	0	0	0	1	0	0	1	0	0	0	0	0	2	6.7%
St Mary's Hospital, Manchester	110	2	0	0	0	0	3	5	0	0	1	2	0	11	10.0%
Tameside General Hospital	11	0	0	0	0	0	0	0	0	0	1	0	0	1	9.1%
Wythenshawe Hospital	44	0	0	0	0	0	1	1	0	0	0	0	0	2	4.5%
<b>Grand Total</b>	<b>4461</b>	<b>9</b>	<b>10</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>22</b>	<b>118</b>	<b>0</b>	<b>7</b>	<b>5</b>	<b>18</b>	<b>0</b>	<b>205</b>	<b>4.6%</b>

\*Not included in calculation of avoidable repeats

Tips to help avoid rejection of samples:

- Collect sample on day 5 (date of birth is day 0)
- Check the expiry date on the card
- Wash the baby's heel with water to reduce the risk of a contaminated IRT result
- Ensure that blood spots are the size of the guide circles on the card
- Allow the blood to drop onto the card rather than touching the filter paper to the baby's heel
- Some brands of lancet device are more effective than others
- Extra blood spots, in addition to the 4 indicated by the guide circles, can be collected elsewhere on the card
- Repeat the test at the same visit if the spots are too small or have not soaked through to the back of the card
- Make sure there is a valid NHS number on the card

## **Conclusion**

The avoidable repeat rate for March was 4.6%, which is a large increase on February's rate of 2.8%. The most common reason for rejection was insufficient blood. There was also an increase in the number of compressed/damage samples. Within the laboratory, we have investigated this unusual increase in rejected samples. One contributory factor may have been internal discussions about a new national document on blood spot sample acceptance/ rejection. This may have unintentionally led to an increase in sample rejections due to increased scrutiny of sample quality.

To investigate further, a subset of rejected samples were reviewed by a senior member of staff. The samples did not meet the existing sample acceptance criteria, although some were noted to be borderline cases. We think there may also have been variation in how we handle stained glassine envelopes, which imply either that the sample has been put in the envelope wet or the spots have been compressed. Both practices can

affect the results. Our next step will be to participate in a pilot exercise which aims to standardise blood spot sample acceptance/ rejection across laboratories and between operators within laboratories.

Apologies for any distress and inconvenience this may have caused. Please redouble your efforts to improve blood spot collection technique in your areas as new proposed criteria is likely to result in large increases in rejected samples.