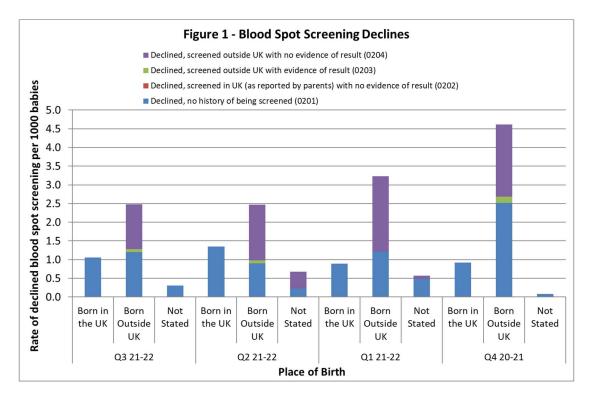
## Manchester Newborn Screening Laboratory Quarterly Blood Spot Screening Report: Quarter 3 2021-22

Manchester Newborn Screening Laboratory, which serves babies born in Greater Manchester, Lancashire and South Cumbria, received 14289 blood spot samples between 1<sup>st</sup> October and 31<sup>st</sup> December 2021. This report describes performance against the NHS Newborn Blood Spot Screening Programme Standards. Full details of the standards including definitions and exclusions can be found at https://www.gov.uk/government/publications/standards-for-nhs-newborn-blood-spot-screening. The appendix of this document contains the data for standards 3-7 in table form.

The data for the laboratory reportable standards is presented by maternity unit/NHS trust of the sample taker. For accurate figures, please ensure the trust code is written/stamped on the blood spot card. Overall, the maternity/ trust code was missing from 9 sample cards (0.06%).

#### **Declines**

In Quarter 3 the laboratory received 51 notifications of declined blood spot screening. Figure 1 shows the trends in declined screens over the past year, by place of birth (born in UK or born outside of UK). The laboratory should be notified of all declines, including those for babies screened elsewhere, rather than directly notifying Child Health.



### Key to colour coding

Met achievable threshold

Met acceptable threshold

Within 10% of acceptable threshold

More than 10% below acceptable threshold

# Standard 3 – The proportion of blood spot cards received by the laboratory with the baby's NHS number on a barcoded label

**Acceptable:** ≥ 90.0% of blood spot cards are received by the laboratory with the baby's NHS number on a barcoded label.

**Achievable:** ≥ 95.0% of blood spot cards are received by the laboratory with the baby's NHS number on a barcoded label.

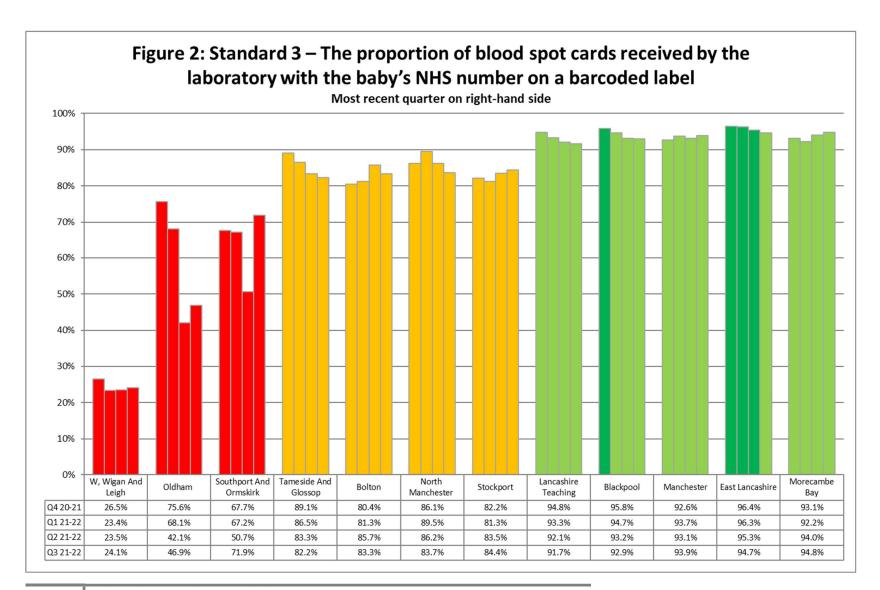
Figure 2 displays performance against standard 3.

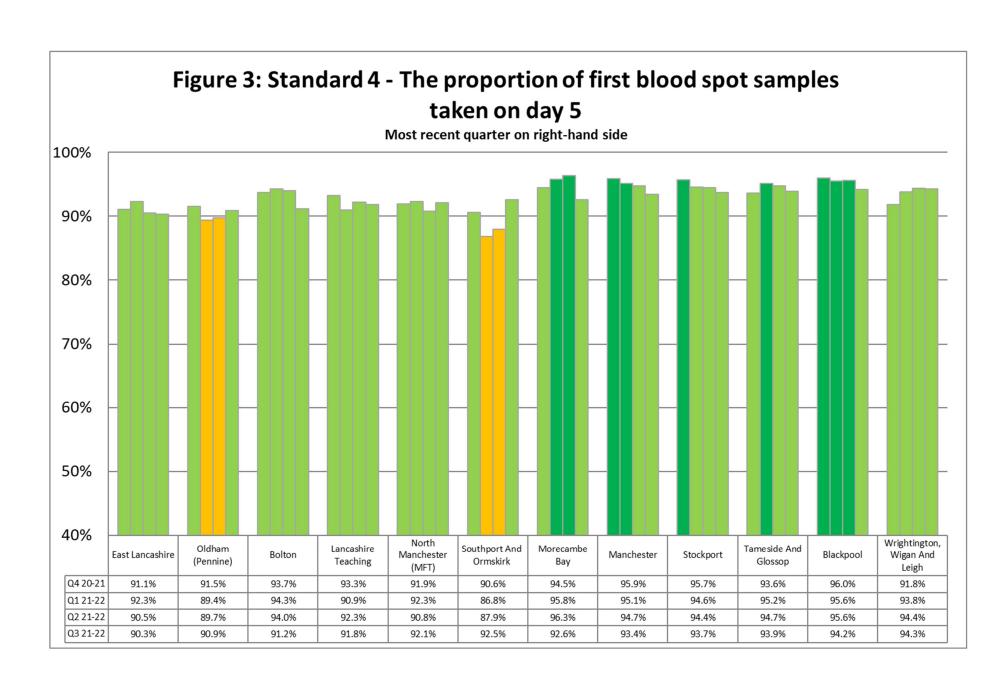
Overall, 79.0% of samples received in quarter 3 of 2021/22 had a barcoded NHS number label, which is similar to the previous quarter (78.7%). Of the 12 maternity units, 5 met the standard. Three units were more than 10% below the acceptable threshold, which is the same as the previous quarter.

### Standard 4 - The proportion of first blood spot samples taken on day 5

Acceptable:  $\ge$  90.0% of first blood spot samples are taken on day 5. Achievable:  $\ge$  95.0% of first blood spot samples are taken on day 5.

Figure 3 displays performance against standard 4. Overall, 91.6% of samples received in quarter 3 of 2021/22 were collected on day 5, which is less than quarter 2 (92.4%). All 12 maternity units met standard 4.





Standard 5 - The proportion of blood spot samples received less than or equal to 3 working days of sample collection

**Acceptable:** ≥ 95.0% of all samples received less than or equal to 3 working days of sample collection.

Achievable: ≥ 99.0% of all samples received less than or equal to 3 working days of sample collection.

Performance against the transport standard (figure 4) was good. Overall, 96.8% samples were received within 3 working days. 9 Trusts met the standard, including 3 reaching the achievable threshold. Performance was slightly worse than last quarter (97.4% samples received within 3 working days) which may be due to the additional bank holidays over the Christmas period.

Standard 6 - The proportion of first blood spot samples that require repeating due to an avoidable failure in the sampling process

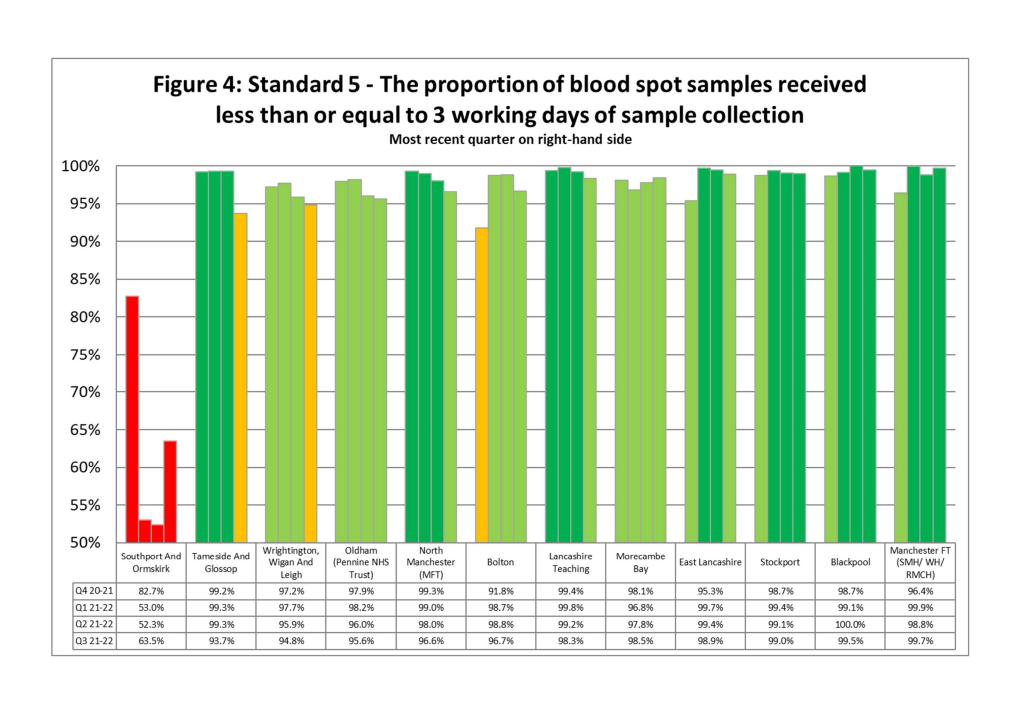
**Acceptable:** Avoidable repeat rate is  $\leq 2.0\%$ 

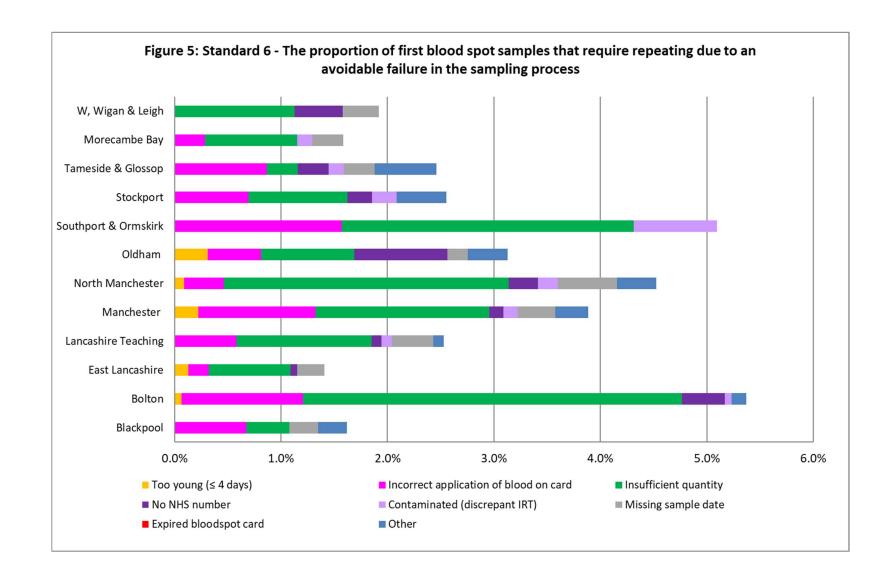
**Achievable:** Avoidable repeat rate is  $\leq 1.0\%$ 

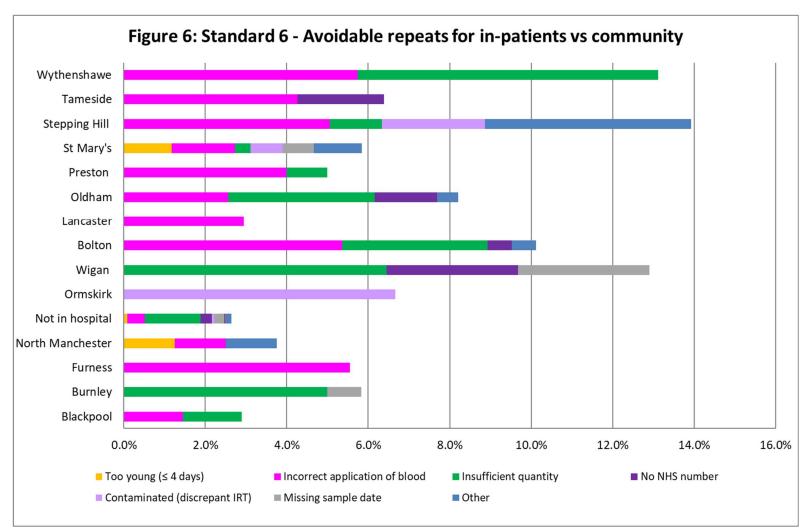
The avoidable repeat rate for quarter 3 was 3.2%, which higher than last quarter (2.7%). There main reason for an avoidable repeat was insufficient blood. The performance for each trust is displayed in figure 5. Four Trusts met the standard (Blackpool, East Lancashire, Morecambe and Wigan). Figure 6 compares the avoidable repeat rate for samples collected from in-patients with samples collected from babies at home/in the community. The rate was 2.6% for babies at home (2.3% in quarter 2) and 7.9% for samples collected from inpatients (5.4% in quarter 2).

Please note, following advice from the National Screening Programme from Monday 20th December 2021 until Friday 28th January 2022 the Newborn Screening Laboratory used different sample acceptance criteria (see below). This was to try to mitigate the potential impact of the Omicron COVID variant.

- Day 4 samples were accepted
- Samples with a missing date were accepted if the date could be obtained verbally from the person who collected the sample.
- Unsuitable/insufficient samples were accepted where possible
- Maximum transit time was extended from 14 days to one month







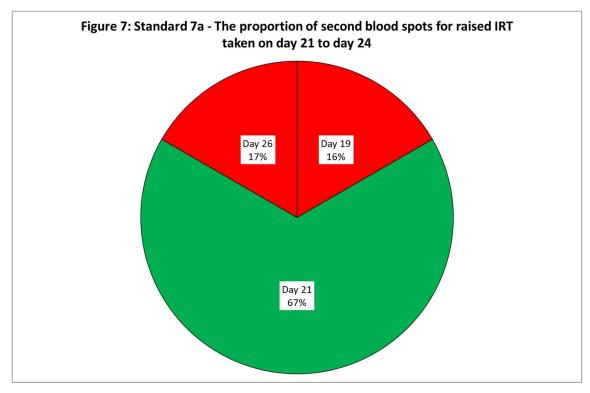
Manchester Children's Hospital was excluded from the chart due to a high avoidable repeat rate (2 out of 5 samples; 40%).

Q3 21-22 Table 1	- Summary of pe	erformance							
Trust	Standard 3	Standard 3 Standard 4 Standard 9							
Blackpool Teaching Hospitals NHS FT	92.9%	94.2%	99.5%	1.6%					
Bolton NHS FT	83.3%	91.2%	96.7%	5.4%					
East Lancashire Hospitals NHS Trust	94.7%	90.3%	98.9%	1.4%					
Lancashire Teaching Hospitals NHS FT	91.7%	91.8%	98.3%	2.5%					
Manchester University NHS FT - SMH & RMCH & WH	93.9%	93.4%	99.7%	3.9%					
North Manchester (MFT)	83.7%	92.1%	96.6%	4.5%					
Oldham (Pennine Acute Hospitals NHS Trust)	46.9%	90.9%	95.6%	3.1%					
Southport & Ormskirk Hospital NHS Trust	71.9%	92.5%	63.5%	5.1%					
Stockport NHS FT	84.4%	93.7%	99.0%	2.6%					
Tameside And Glossop Integrated Care NHS FT	82.2%	93.9%	93.7%	2.5%					
University Hospitals of Morecambe Bay NHS FT	94.8%	92.6%	98.5%	1.6%					
Wrightington, Wigan and Leigh NHS FT	24.1%	94.3%	94.8%	1.9%					

### Standard 7a - The proportion of second blood spots for raised IRT taken on day 21 to day 24

Acceptable: ≥ 80% of second blood spot samples taken on day 21 to day 24 Achievable: ≥ 90% of second blood spot samples taken on day 21 to day 24

Overall, standard 7a was not met. During quarter 3 there were 6 repeats for raised IRT (CF inconclusive). Of these, 67% (4) were collected on day 21-24. CF inconclusive repeats are performed by Screening Link Health Visitors. The data is presented in figure 7 and by local Child Health Records Department, in table 2.

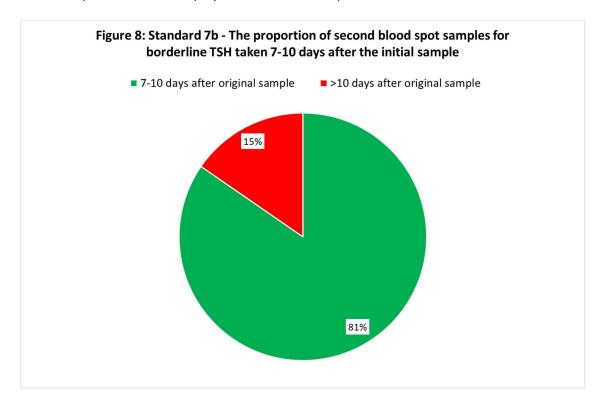


		Q3 T	Γable 2	- Standard 7a	1	
Child Health Department	•	Collection Clusive Ro (days)		Grand Total	% Collected day 21	% Collected day 21-24
•	19	21	26		,	•
Blackpool		1		1	100%	100%
Bolton		1		1	100%	100%
Central Lancs		1		1	100%	100%
Manchester	1			1	0%	0%
Salford		1		1	100%	100%
Tameside			1	1	0%	0%
<b>Grand Total</b>	1	4	1	6	67%	67%

# Standard 7b - The proportion of second blood spot samples for borderline TSH taken between 7 and 10 calendar days after the initial borderline sample

**Acceptable:** ≥ 80.0% of repeat blood spot samples taken as defined **Achievable:** ≥ 90.0% of repeat blood spot samples taken as defined

Overall, standard 7b was met. Figure 8 displays the proportion collected 7-10 days after the initial sample and table 3 displays the information by Trust.



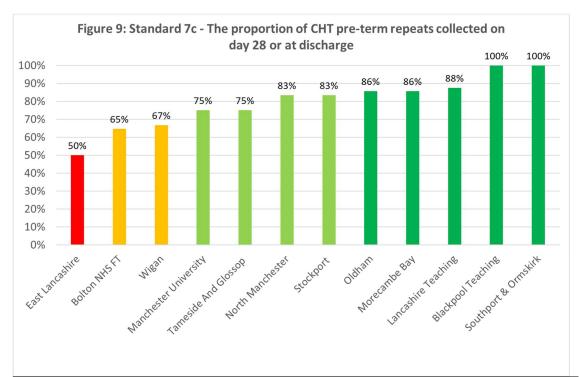
	Q3 Table 3: Standard 7b													
Trust	Νι	ımber	of days collect	Grand	% collected 7- 10 days after									
	5	7	8	9	10	11	12	14	Total	original sample				
Blackpool Teaching Hospitals NHS FT				1	1				2	100%				
Bolton NHS FT					1	1	1		3	33%				
East Lancashire Hospitals NHS Trust			1						1	100%				
Lancashire Teaching Hospitals NHS FT					1		1	1	3	33%				
Manchester University NHS FT (SMH/RMCH/WH)		1	1	3					5	100%				
Manchester University NHS FT - Wythenshawe		2	2	1					5	100%				
North Manchester (MFT)	1		1						2	50%				
Oldham (Pennine Acute Hospitals NHS Trust)				1					1	100%				
Southport & Ormskirk Hospital NHS Trust				1					1	100%				
Stockport NHS FT			1	1	1				3	100%				
Wrightington, Wigan and Leigh NHS FT			1						1	100%				
Grand Total	1	3	7	8	4	1	2	1	27	81%				

### Standard 7c - The proportion of CHT pre-term repeats collected on day 28 or at discharge

**Acceptable:** ≥ 75.0% of repeat blood spot samples taken as defined **Achievable:** ≥ 85.0% of repeat blood spot samples taken as defined

During quarter 3, 155 CHT pre-term repeats were received (avoidable repeats and duplicates excluded). Performance by trust is displayed in figure 9. 75% were collected on day 28 or at discharge, 4% were collected too early (and required a further repeat) and 21% were collected after day 28.

Of note, 9 out of 33 babies with samples collected after day 28 had transfusions on days 25-28, which could account for the delayed sampling.



Qua	rter 3 2021-	22: Standard	7c		
Trust	Number	% Prem repeats collected on day 28			
	Early	On time	Late	Total	or at discharge
Blackpool Teaching Hospitals NHS FT		5		5	100%
Bolton NHS FT	2	11	4	17	65%
East Lancashire Hospitals NHS Trust	3	10	7	20	50%
Lancashire Teaching Hospitals NHS FT		7	1	8	88%
Manchester University NHS FT - SMH, RMCH, WH		33	11	44	75%
North Manchester (MFT)		5	1	6	83%
Oldham (Pennine Acute Hospitals NHS Trust)		24	4	28	86%
Southport & Ormskirk Hospital NHS Trust		1		1	100%
Stockport NHS FT	1	5		6	83%
Tameside And Glossop Integrated Care NHS FT		3	1	4	75%
University Hospitals of Morecambe Bay NHS FT		6	1	7	86%
Wrightington, Wigan and Leigh NHS FT		6	3	9	67%
Grand Total	6	116	33	155	75%

### Standard 9 - Timely processing of CHT and IMD (excluding HCU) screen positive samples

Acceptable: 100% of babies with a positive screening result (excluding HCU) have a clinical referral initiated within 3 working days of sample receipt

There were 15 screen positive samples for CHT during quarter 3. 14 were referred within 3 working days, 1 was referred after 5 working days (sample was received on Christmas Eve).

There were 4 IMD screen positive samples and all were referred within 3 working days.

### Standard 11 - Timely entry into clinical care

Data for standard 11 is displayed in table 5.

Condition	Criteria	Thresholds	Number of babies seen by specialist services by condition specific standard	Number of babies referred	Percentage seen by specialist services by condition specific standard	Comments
IMDs (excluding HCU)	Attend first clinical appointment by 14 days of age	Acceptable: 100%	4	4	100%	2 x MCADD, 1 x PKU, 1 x MSUD
CHT (suspected on first sample)	Attend first clinical appointment by 14 days of age	Acceptable: 100%	10	11	91%	1 sample took 8 days to arrive in the laboratory (incident logged).
CHT (suspected on repeat following borderline TSH)	Attend first clinical appointment by 21 days of age	Acceptable: 100%	2	2	100%	2 additional babies were referred following borderline results on day 28 premature repeat samples and subsequent borderline results on repeat 7-10 days later. They were seen at 47 and 43 days of age.
CF (2 CFTR mutations detected)	Attend first clinical appointment by 28 days of age	Acceptable: ≥ 95.0% Achievable: 100%	1	1	100%	
нси	Attend first clinical appointment by 28 days of age	Acceptable: ≥ 95.0% Achievable: 100%	-	-	N/A	
CF (1 or no CFTR mutation detected)	Attend first clinical appointment by 35 days of age	Attend first clinical appointment by 35 days of age	-	-	N/A	
SCD	Attend first clinical appointment by 90 days of age	Attend first clinical appointment by 90 days of age	0	3	0%	A further 2 babies were referred in Q3 but they have not yet reached 90 days of age.

### **Incidents**

Details of incidents at level 3 or above, either detected by the laboratory or occurred at MFT

Incident Number	Incident Date	Incident Severity	Incident Harm	Summary of incident	Further details	MFT or external	Lab/ Ward/ Maternity Unit	Local Area Team	QA informed
2224083	04.10.21	3 - moderate	2 - slight	Blood spot labelling error: another baby's bar-coded demographic sticker, detected prior to reporting	Another babies sticker placed on top of another sticker. Mum's details matched babies details on the sticker underneath	External	Bolton NNU	Greater Manchester	Yes
2229238	22.10.21	3 - moderate	1 - no harm	Lab data entry error: sample matched to incorrect baby in IT system and reported to CHRD	Blood spot card booked into the wrong babies record	MFT	NBS Lab		Yes
2230671	21.10.21	3 - moderate	2 - slight	Blood spot labelling error: another baby's bar-coded demographic sticker, detected prior to reporting	Mum's details on the demographic sticker did not match Mum's details handwritten on the card	External	East Lancs Maternity Unit	Lancashire	Yes
2242580	26/11/21	4 - major		Late referral for treatment of a screen positive baby due to a failing anywhere in the pathway	Delay in treatment of a screen positive referral.	External	Royal Preston NNU	Lancashire	Yes

## **Appendix**

	Quarte	er 3 2021-22: Stand	lard 3		
Trust	Number of all samples (including repeats)	Number of blood spot cards including baby's NHS number	Number of blood spot cards including ISB label barcoded baby's NHS number	Percentage of all blood spot cards including babies' NHS number	Percentage of all blood spot cards including ISB bar-coded babies' NHS number
Blackpool Teaching Hospitals NHS FT	763	763	709	100.0%	92.9%
Bolton NHS FT	1732	1725	1443	99.6%	83.3%
East Lancashire Hospitals NHS Trust	1677	1675	1588	99.9%	94.7%
Health Visitor	146	142	3	97.3%	2.1%
Lancashire Teaching Hospitals NHS FT	1070	1069	981	99.9%	91.7%
Manchester University NHS FT - SMH & RMCH, WH	2522	2519	2368	99.9%	93.9%
North Manchester (MFT)	1139	1135	953	99.6%	83.7%
Not Stated	9	9	2	100.0%	22.2%
Oldham (Pennine Acute Hospitals NHS Trust)	1716	1703	804	99.2%	46.9%
Southport & Ormskirk Hospital NHS Trust	274	274	197	100.0%	71.9%
Stockport NHS FT	901	899	760	99.8%	84.4%
Tameside And Glossop Integrated Care NHS FT	715	713	588	99.7%	82.2%
University Hospitals of Morecambe Bay NHS FT	713	713	676	100.0%	94.8%
Wrightington, Wigan and Leigh NHS FT	912	907	220	99.5%	24.1%
Grand Total	14289	14246	11292	99.7%	79.0%

Quarter 3 2021-22: Standard 4														
Trust	Number of first samples taken on or before day 4	5	6	7	8	9+	4 or earlier	5	6	7	8	9 or later		
Blackpool Teaching Hospitals NHS FT	0	695	31	5	0	7	0.0%	94.2%	4.2%	0.7%	0.0%	0.9%		
Bolton NHS FT	4	1360	101	13	4	9	0.3%	91.2%	6.8%	0.9%	0.3%	0.6%		
East Lancashire Hospitals NHS Trust	5	1409	111	16	3	16	0.3%	90.3%	7.1%	1.0%	0.2%	1.0%		
Health Visitor	0	0	1	0	0	109	0.0%	0.0%	0.9%	0.0%	0.0%	99.1%		
Lancashire Teaching Hospitals NHS FT	0	941	51	9	6	18	0.0%	91.8%	5.0%	0.9%	0.6%	1.8%		
Manchester University NHS FT (SMH/RMCH/WH)	16	2109	102	7	9	14	0.7%	93.4%	4.5%	0.3%	0.4%	0.6%		
North Manchester (MFT)	2	992	56	6	5	16	0.2%	92.1%	5.2%	0.6%	0.5%	1.5%		
Not Stated	0	1	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%		
Oldham (Pennine Acute Hospitals NHS Trust)	7	1450	95	17	8	19	0.4%	90.9%	6.0%	1.1%	0.5%	1.2%		
Southport & Ormskirk Hospital NHS Trust	0	236	15	0	1	3	0.0%	92.5%	5.9%	0.0%	0.4%	1.2%		
Stockport NHS FT	1	808	46	1	0	6	0.1%	93.7%	5.3%	0.1%	0.0%	0.7%		
Tameside And Glossop Integrated Care NHS FT	0	647	31	5	1	5	0.0%	93.9%	4.5%	0.7%	0.1%	0.7%		
University Hospitals of Morecambe Bay NHS FT	6	641	35	2	3	5	0.9%	92.6%	5.1%	0.3%	0.4%	0.7%		
Wrightington, Wigan and Leigh NHS FT	0	832	38	5	3	4	0.0%	94.3%	4.3%	0.6%	0.3%	0.5%		
Grand Total	41	12121	713	86	43	231	0.3%	91.6%	5.4%	0.6%	0.3%	1.7%		

Qua	arter 3 2021-22: Stand	ard 5			
Maternity Unit	Number of samples received in 3 or fewer working days of sample being taken	Total number of samples received	Percentage of samples received by laboratories in 3 or fewer working days of sample being taken		
Blackpool Teaching Hospitals NHS FT	756	760	99.5%		
Bolton NHS FT	1566	1620	96.7%		
East Lancashire Hospitals NHS Trust	1600	1618	98.9%		
Health Visitor	110	124	88.7%		
Lancashire Teaching Hospitals NHS FT	1047	1065	98.3%		
Manchester University NHS FT - SMH & RMCH	2395	2403	99.7%		
North Manchester (MFT)	1093	1132	96.6%		
Not Stated	1	6	16.7%		
Oldham (Pennine Acute Hospitals NHS Trust)	1633	1708	95.6%		
Southport & Ormskirk Hospital NHS Trust	174	274	63.5%		
Stockport NHS FT	891	900	99.0%		
Tameside And Glossop Integrated Care NHS FT	667	712	93.7%		
University Hospitals of Morecambe Bay NHS FT	699	710	98.5%		
Wrightington, Wigan and Leigh NHS FT	860	907	94.8%		
Grand Total	13492	13939	96.8%		
Excludes day 0 'pre-transfusion' samples and samp	oles with missing date of colle	ection			

Quarter 3 2021-22: Standard 6 by Trust															
Status code and description of avoidable repeat	Blackpool Teaching Hospitals NHS FT	Bolton NHS FT	East Lancashire Hospitals NHS Trust	Health Visitor	Lancashire Teaching Hospitals NHS FT	Manchester University NHS FT - SMH, RMCH & WH	North Manchester (MFT)	Not stated	Oldham (Pennine Acute Hospitals NHS Trust)	Southport & Ormskirk Hospital NHS Trust	Stockport NHS FT	Tameside And Glossop Integrated Care NHS FT	University Hospitals of Morecambe Bay NHS FT	Wrightington, Wigan and Leigh NHS FT	Grand Total
0301: too young for reliable screening (≤ 4 days)	0	1	2	0	0	5	1	0	5	0	0	0	0	0	14
0302: too soon after transfusion (<72 hours)	0	2	2	0	0	9	0	1	8	0	0	0	0	0	22
0303: insufficent sample	3	53	12	4	13	37	29	1	14	7	8	2	6	10	199
0304: unsuitable sample (blood quality): incorrect blood application	5	17	3	3	6	25	4	1	8	4	6	6	2	0	90
0305: unsuitable sample (blood quality): compressed/damaged	2	2	0	1	1	7	4	0	6	0	4	4	0	0	31
0306: Unsuitable sample: day 0 and day 5 on same card	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0307: unsuitable sample for CF: possible faecal contamination	0	1	0	0	1	3	2	0	0	2	2	1	1	0	13
0308: unsuitable sample: NHS number missing/not accurately recorded	0	6	1	3	1	3	3	0	14	0	2	2	0	4	39
0309: unsuitable sample: date of sample missing/not accurately recorded	2	0	4	0	4	8	6	0	3	0	0	2	2	3	34
0310: unsuitable sample: date of birth not accurately matched	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0311: unsuitable sample: expired card used	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
0312: unsuitable sample: >14 days in transit, too old for analysis	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
0313: unsuitable sample: damaged in transit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Avoidable Repeat Requests	12	80	22	13	26	88	49	2	50	13	22	17	11	17	422
Number of first samples received/ babies tested	740	1490	1563	94	1028	2265	1083	1	1598	255	862	691	694	885	13249
Avoidable Repeat Requests Rate	1.6%	5.4%	1.4%	13.8%	2.5%	3.9%	4.5%	200.0%	3.1%	5.1%	2.6%	2.5%	1.6%	1.9%	3.2%

					Q	uarter 3	2021-22:	Standard	d 6 by Cu	rrent Ho	spital							
Status code and description of avoidable repeat	Blackpool Victoria Hospital	Burnley General Hospital	Furness General Hospital	North Manchester General Hospital	Not in hospital	Ormskirk & District General	Royal Albert Edward Infirmary	Royal Blackburn Hospital	Royal Bolton Hospital	Royal Lancaster Infirmary	Royal Manchester Childrens Hospital	Royal Oldham Hospital	Royal Preston Hospital	St Mary's Hospital, Manchester	Stepping Hill Hospital	Tameside General Hospital	Wythenshawe Hospital	Grand Total
0301: too young for reliable screening (≤ 4 days)	0	0	0	1	10	0	0	0	0	0	0	0	0	3	0	0	0	14
0302: too soon after transfusion (<72 hours)	0	2	0	0	1	0	0	0	2	0	1	8	0	8	0	0	0	22
0303: insufficent sample	1	6	0	0	163	0	4	0	6	0	0	7	1	1	1	0	9	199
0304: unsuitable sample (blood quality): incorrect blood application	1	0	1	1	51	0	0	0	9	1	0	5	4	4	4	2	7	90
0305: unsuitable sample (blood quality): compressed/damaged	0	0	0	1	19	0	0	0	1	0	2	1	0	3	4	0	0	31
0306: Unsuitable sample: day 0 and day 5 on same card	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0307: unsuitable sample for CF: possible faecal contamination	0	0	0	0	8	1	0	0	0	0	0	0	0	2	2	0	0	13
0308: unsuitable sample: NHS number missing/not accurately recorded	0	0	0	0	32	0	2	0	1	0	0	3	0	0	0	1	0	39
0309: unsuitable sample: date of sample missing/not accurately recorded	0	1	0	0	29	0	2	0	0	0	0	0	0	2	0	0	0	34
0310: unsuitable sample: date of birth not accurately matched	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0311: unsuitable sample: expired card used	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
0312: unsuitable sample: >14 days in transit, too old for analysis	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
0313: unsuitable sample: damaged in transit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Avoidable Repeat Requests	2	7	1	3	314	1	8	0	17	1	2	16	5	15	11	3	16	422
Number of first samples received/ babies tested	69	120	18	80	11877	15	62	1	168	34	5	195	100	257	79	47	122	13249
Avoidable Repeat Requests Rate	2.9%	5.8%	5.6%	3.8%	2.6%	6.7%	12.9%	0.0%	10.1%	2.9%	40.0%	8.2%	5.0%	5.8%	13.9%	6.4%	13.1%	3.2%
Transfusion Reapeats are not include	d in the Avo	idable Rep	eat calculat	tion														