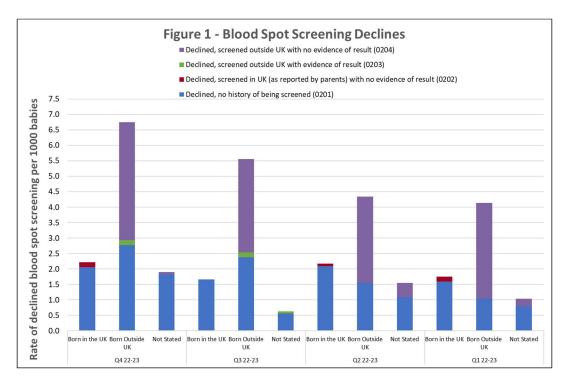
### Manchester Newborn Screening Laboratory Quarterly Blood Spot Screening Report: Quarter 4 2022-23

Manchester Newborn Screening Laboratory, which serves babies born in Greater Manchester, Lancashire and South Cumbria, received 13288 blood spot samples between 1<sup>st</sup> January and 31<sup>st</sup> March 2023. 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.

#### Declines

In Quarter 4 the laboratory received 137 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:  $\geq$  90.0% of blood spot cards are received by the laboratory with the baby's NHS number on a barcoded label.

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

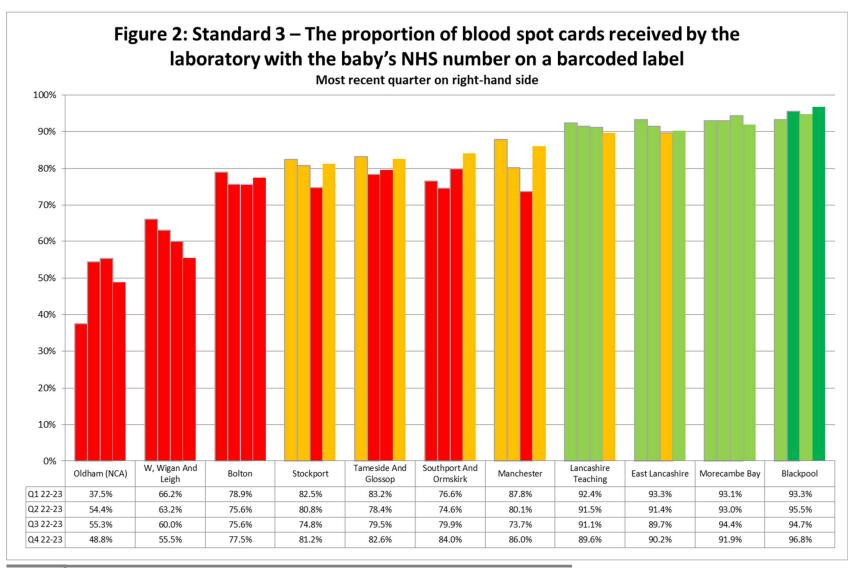
Figure 2 displays performance against standard 3.

Overall, 77.8% of samples received in quarter 4 of 2022/23 had a barcoded NHS number label, which is higher than the previous quarter (75.2%). Of the 11 maternity units, 3 met the standard and one met the achievable threshold. Interestingly, almost one quarter of the samples received from Wigan had labels which did not scan successfully in the laboratory. In other areas the main issue was missing barcoded labels.

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

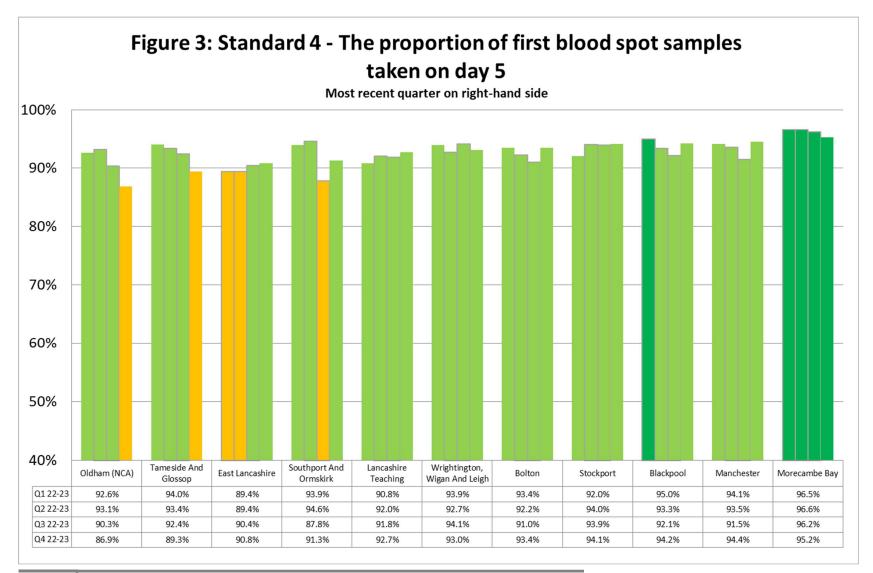
Acceptable: ≥ 90.0% of first blood spot samples are taken on day 5. Achievable: ≥ 95.0% of first blood spot samples are taken on day 5.

Figure 3 displays performance against standard 4. Overall, 90.8% of samples received in quarter 4 of 2022/23 were collected on day 5, which is similar to the previous quarter (90.5%). 9 out of the 10 maternity units met standard 4, and 1 maternity unit met the achievable threshold.



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

Acceptable:  $\geq$  95.0% of all samples received less than or equal to 3 working days of sample collection.

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

Figure 4 displays performance against standard 5.

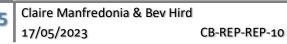
Overall, 98.1% samples were received within 3 working days. 10 Trusts met the standard, including 2 reaching the achievable threshold. Performance was better than the previous quarter (97.1% samples received within 3 working days). There has been a large improvement for Ormskirk.

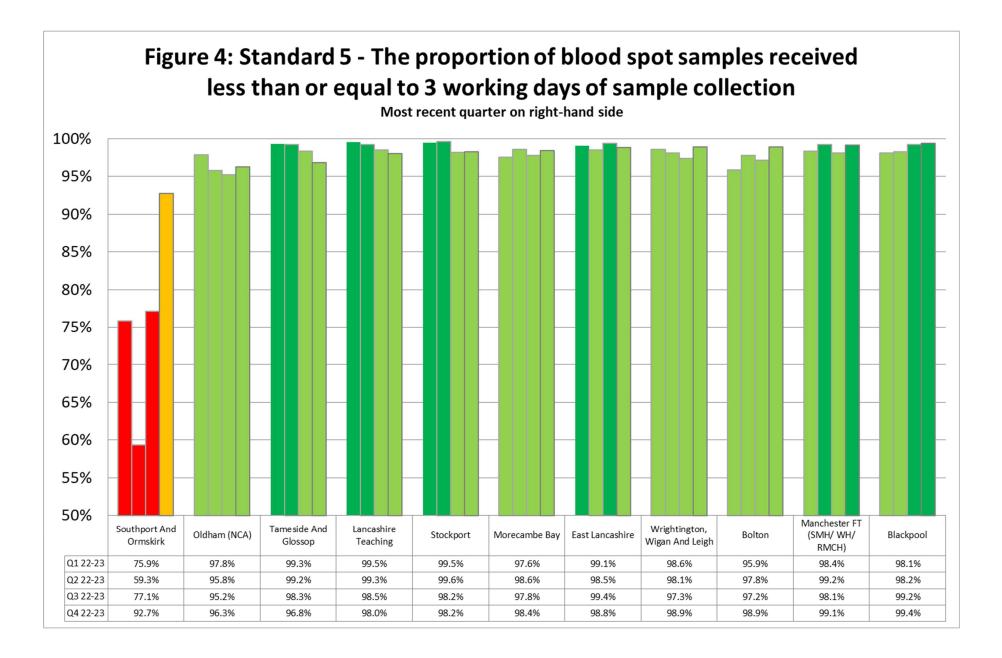
# Standard 6 - The proportion of first blood spot samples that require repeating due to an avoidable failure in the sampling process

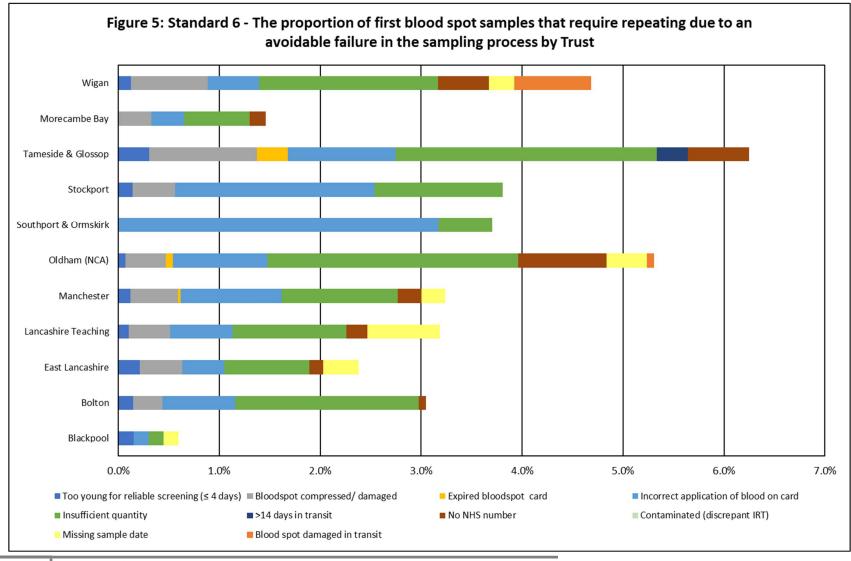
Acceptable: Avoidable repeat rate is  $\leq 2.0\%$ 

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

The avoidable repeat rate for quarter 4 was 3.6%, which is higher than last quarter (3.1%). The main reason for an avoidable repeat was insufficient blood, followed by incorrect application of blood. The performance for each trust is displayed in figure 5. Two Trusts met the standard including 1 within the achievable range. 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 2.8% for babies at home (2.7% in quarter 3) and 8.8% for samples collected from in-patients (6.1% in quarter 2).

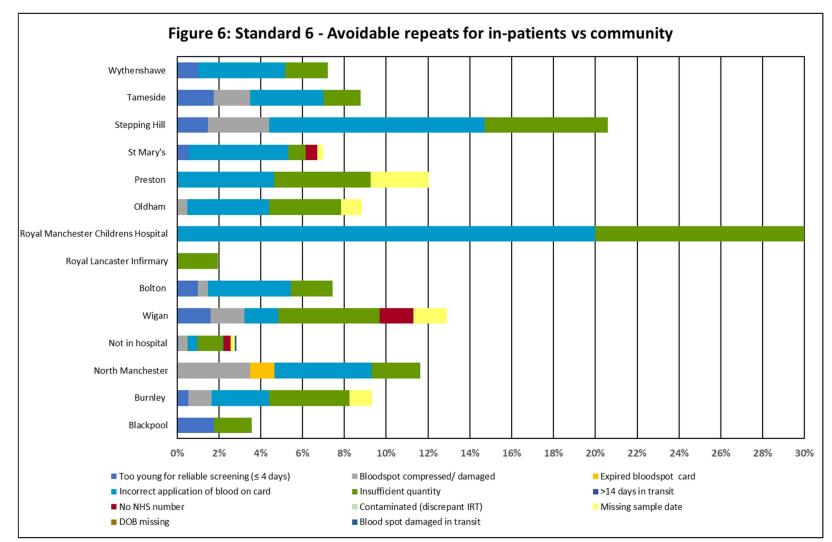






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There are no avoidable repeats for Royal Blackburn Hospital, Ormskirk & District General Hospital and Furness General Hospital.

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Q4 22-23 Table 1 - Summar	ry of perform	ance		
Trust	Standard 3	Standard 4	Standard 5	Standard 6
Blackpool Teaching Hospitals NHS FT	96.8%	94.2%	99.4%	0.6%
Bolton NHS FT	77.5%	93.4%	98.9%	3.0%
East Lancashire Hospitals NHS Trust	90.2%	90.8%	98.8%	2.4%
Lancashire Teaching Hospitals NHS FT	89.6%	92.7%	98.0%	3.2%
Manchester University NHS FT - SMH, RMCH, WH & NMGH	86.0%	94.4%	99.1%	3.2%
Oldham (NCA)	48.8%	86.9%	96.3%	5.3%
Southport & Ormskirk Hospital NHS Trust	84.0%	91.3%	92.7%	3.7%
Stockport NHS FT	81.2%	94.1%	98.2%	3.8%
Tameside And Glossop Integrated Care NHS FT	82.6%	89.3%	96.8%	6.3%
University Hospitals of Morecambe Bay NHS FT	91.9%	95.2%	98.4%	1.5%
Wrightington, Wigan and Leigh NHS FT	55.5%	93.0%	98.9%	4.7%



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

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

During quarter 4 there were 5 repeats for raised IRT (CF inconclusive). Of these, 100% were collected on day 21-24. CF inconclusive repeats are performed by Screening Link Health Visitors. The data is presented by local Child Health Records Department, in table 2.

Q4 2	Q4 22-23 Table 2 - Standard 7a												
Child Health	Age at Collec Inconclusive Re	Total	% collected										
Department	21	1	day 21-24										
Ashton, Wigan & Leigh	1		1	100%									
Bury	1		1	100%									
East Lancs	1	1	2	100%									
Manchester	1		1	100%									
Total	4	1	5	100%									

## 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:  $\geq$  80.0% of repeat blood spot samples taken as defined Achievable:  $\geq$  90.0% of repeat blood spot samples taken as defined

During quarter 4 there were 24 repeats for borderline TSH (CHT). Of these, 83% were collected 7-10 days after the original sample. Table 3 displays the information by Trust.

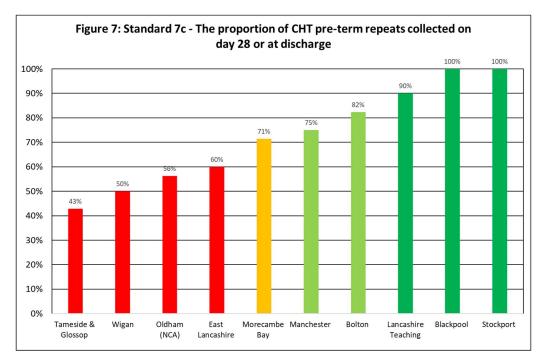
	Q4 Table 3: Standard 7b											
	Num	ber of		% collected 7-10								
Trust		co	Total	days after								
	3	7	8	9	10	12	14	22		original sample		
Bolton NHS FT			1			1			2	50%		
East Lancashire Hospitals NHS Trust				1					1	100%		
Lancashire Teaching Hospitals NHS FT				1					1	100%		
Manchester University NHS FT - SMH & RMCH	1	1		2	1				5	80%		
Manchester University NHS FT - Wythenshawe		2	1						3	100%		
North Manchester (MFT)					1				1	100%		
Oldham (NCA)		3			1			1	5	80%		
Stockport NHS FT			1		1				2	100%		
Tameside And Glossop Integrated Care NHS FT			2						2	100%		
Jniversity Hospitals of Morecambe Bay NHS FT							1		1	0%		
Wrightington, Wigan and Leigh NHS FT				1					1	100%		
Total	1	6	5	5	4	1	1	1	24	83%		

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

Acceptable:  $\geq$  75.0% of repeat blood spot samples taken as defined Achievable:  $\geq$  85.0% of repeat blood spot samples taken as defined

During quarter 4, 124 CHT pre-term repeats were received (avoidable repeats and duplicates excluded). Performance by trust is displayed in figure 7. 72% were collected on day 28 or at discharge, 23% were collected after day 28.

Of note, 11 out of 29 babies with samples collected after day 28 had transfusions on days 25-28, which could account for the delayed sampling.



Quarter 4 2022	23: Star	ndard 7c			
Trust		er of Pre-te samples co		Total	% Prem repeats collected on day
	EARLY	ON-TIME	LATE		28 or at discharge
Blackpool Teaching Hospitals NHS FT	0	5	0	5	100%
Bolton NHS FT	0	14	3	17	82%
East Lancashire Hospitals NHS Trust	1	9	5	15	60%
Lancashire Teaching Hospitals NHS FT	1	9	0	10	90%
Manchester University NHS FT - SMH, RMCH, WH & NMGH	1	30	9	40	75%
Oldham (NCA)	2	9	5	16	56%
Stockport NHS FT	0	3	0	3	100%
Tameside And Glossop Integrated Care NHS FT	0	3	4	7	43%
University Hospitals of Morecambe Bay NHS FT	0	5	2	7	71%
Wrightington, Wigan and Leigh NHS FT	1	2	1	4	50%
Grand Total	6	89	29	124	72%

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### 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 10 screen positive samples for CHT and 5 for IMD in quarter 4. All were referred within 3 working days of sample receipt.

**Standard 11 - Timely entry into clinical care** Data for standard 11 is displayed in table 5.

		Table 5: Sta	andard 11			
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%	5	5	100%	2 x PKU, 3 X MCADD
CHT (suspected on first sample)	Attend first clinical appointment by 14 days of age	Acceptable: 100%	3	4		1 baby seen on day 22 (1st sample collected on day 14). Incident logged by Oldham.
CHT (suspected on repeat following borderline TSH)	Attend first clinical appointment by 21 days of age	Acceptable: 100%	5	5	100%	
CF (2 CFTR mutations detected)	Attend first clinical appointment by 28 days of age	Acceptable:≥95.0% Achievable:100%	3	3	100%	
нси	Attend first clinical appointment by 28 days of age	Acceptable:≥95.0% Achievable:100%	0	0	-	
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	2	2	100%	
SCD	Attend first clinical appointment by 90 days of age	Attend first clinical appointment by 90 days of age	0	1	0%	4 babies have not yet reached the 90 day cut-off.



#### 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
2347447	10/01/23	3 - moderate	1 - no harm	Blood spot collection error: delay/ failure to collect screening sample	Screen terminated due to failure to collect a valid screening sample	External	Tameside Health Visitors	Greater Manchester	Yes
2350423	19/01/23	3 - moderate	1 - no harm	Blood spot collection error: delay/ failure to collect screening sample	Screen terminated due to failure to collect a valid screening sample	External	Bolton Health Visitors	Greater Manchester	Yes
2351675	23/01/23	3 - moderate	1 - no harm	Blood spot collection error: delay/ failure to collect screening sample	Screen terminated due to failure to collect a valid screening sample	External	Bolton Health Visitors	Greater Manchester	Yes
2353860	30/01/23	3 - moderate	1 - no harm	Blood spot collection error: delay/ failure to collect screening sample	Screen terminated due to failure to collect a valid screening sample	External	Bolton Health Visitors	Greater Manchester	Yes
2365209	01/02/23	3 - moderate	1 - no harm	Blood spot collection error: delay/ failure to collect screening sample	Screen terminated due to failure to collect a valid screening sample	External	Lancashire Care Health Visitors	Lancashire	Yes
2373811	24/03/23	3 - moderate	1 - no harm	Lab reporting error: result reported as not suspected instead of carrier	SCD result	MFT	NBS Lab	Greater Manchester	Yes
2374156	30/03/23	3 - moderate	1 - no harm	Blood spot labelling error: another baby's bar-coded demographic sticker, detected prior to reporting		External	Morecambe Bay Maternity Unit	Lancashire	Yes

### Appendix

	Quarte	er 4 2022-23: S	tandard 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	Unreadable Barcodes	Percentage of all blood spot cards including babies' NHS number	Percentage of all blood spot cards including ISB bar-coded babies' NHS number	Percentage of all Unreadable Barcodes
Blackpool Teaching Hospitals NHS FT	681	681	659	5	100.0%	96.8%	0.7%
Bolton NHS FT	1509	1507	1169	87	99.9%	77.5%	5.8%
East Lancashire Hospitals NHS Trust	1523	1517	1374	17	99.6%	90.2%	1.1%
Health Visitor	310	301	9	0	97.1%	2.9%	0.0%
Lancashire Teaching Hospitals NHS FT	1003	1001	899	21	99.8%	89.6%	2.1%
Manchester University NHS FT - SMH & RMCH & WH & NMGH	3570	3561	3071	99	99.7%	86.0%	2.8%
Not Stated	14	14	10	0	100.0%	71.4%	0.0%
Oldham (NCA)	1599	1586	780	22	99.2%	48.8%	1.4%
Southport & Ormskirk Hospital NHS Trust	194	194	163	4	100.0%	84.0%	2.1%
Stockport NHS FT	738	738	599	37	100.0%	81.2%	5.0%
Tameside And Glossop Integrated Care NHS FT	694	690	573	40	99.4%	82.6%	5.8%
University Hospitals of Morecambe Bay NHS FT	631	629	580	12	99.7%	91.9%	1.9%
Wrightington, Wigan and Leigh NHS FT	822	818	456	201	99.5%	55.5%	24.5%
Grand Total	13288	13237	10342	545	99.6%	77.8%	4.1%

		Q	uarter 4 20	22-23: Star	ndard 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	1	630	30	2	1	5	0.1%	94.2%	4.5%	0.3%	0.1%	0.7%
Bolton NHS FT	2	1223	59	8	6	11	0.2%	93.4%	4.5%	0.6%	0.5%	0.8%
East Lancashire Hospitals NHS Trust	5	1256	81	16	6	19	0.4%	90.8%	5.9%	1.2%	0.4%	1.4%
Health Visitor	0	7				215	0.0%	3.2%	0.0%	0.0%	0.0%	96.8%
Lancashire Teaching Hospitals NHS FT	2	889	47	8	1	12	0.2%	92.7%	4.9%	0.8%	0.1%	1.3%
Manchester University NHS FT - SMH, RMCH, WH & NMGH	5	3106	110	15	16	37	0.2%	94.4%	3.3%	0.5%	0.5%	1.1%
Not Stated	0	6				2	0.0%	75.0%	0.0%	0.0%	0.0%	25.0%
Oldham (NCA)	2	1245	113	19	11	43	0.1%	86.9%	7.9%	1.3%	0.8%	3.0%
Southport & Ormskirk Hospital NHS Trust	0	168	14	1		1	0.0%	91.3%	7.6%	0.5%	0.0%	0.5%
Stockport NHS FT	1	659	32	3		5	0.1%	94.1%	4.6%	0.4%	0.0%	0.7%
Tameside And Glossop Integrated Care NHS FT	3	570	41	9	4	11	0.5%	89.3%	6.4%	1.4%	0.6%	1.7%
University Hospitals of Morecambe Bay NHS FT	0	580	24	1	1	3	0.0%	95.2%	3.9%	0.2%	0.2%	0.5%
Wrightington, Wigan and Leigh NHS FT	1	721	39	3	1	10	0.1%	93.0%	5.0%	0.4%	0.1%	1.3%
Grand Total	22	11060	590	85	47	374	0.2%	90.8%	4.8%	0.7%	0.4%	3.1%

Quarter 4 2022-23: Standard 5													
Trust	Number of samples received in 3 or fewer working days of sample being taken	Number of samples received in 4 or fewer working days of sample being taken	Number of samples received in 5 or more 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	Percentage of samples received by laboratories in 4 or fewer working days of sample being taken	Percentage of samples received by laboratories on or after 5 working days of sample being taken						
Blackpool Teaching Hospitals NHS FT	675	676	3	679	99.4%	99.6%	0.44%						
Bolton NHS FT	1374	1388	1	1389	98.9%	99.9%	0.07%						
East Lancashire Hospitals NHS Trust	1440	1451	6	1457	98.8%	99.6%	0.41%						
Health Visitor	229	240	11	251	91.2%	95.6%	4.38%						
Lancashire Teaching Hospitals NHS FT	977	991	6	997	98.0%	99.4%	0.60%						
Manchester University NHS FT - SMH, RMCH, WH & NMGH	3424	3435	20	3455	99.1%	99.4%	0.58%						
Not Stated	3	3	10	13	23.1%	23.1%	76.92%						
Oldham (NCA)	1492	1542	8	1550	96.3%	99.5%	0.52%						
Southport & Ormskirk Hospital NHS Trust	179	190	3	193	92.7%	98.4%	1.55%						
Stockport NHS FT	723	733	3	736	98.2%	99.6%	0.41%						
Tameside And Glossop Integrated Care NHS FT	670	684	8	692	96.8%	98.8%	1.16%						
University Hospitals of Morecambe Bay NHS FT	620	626	4	630	98.4%	99.4%	0.63%						
Wrightington, Wigan and Leigh NHS FT	810	818	1	819	98.9%	99.9%	0.12%						
Grand Total	12616	12777	84	12861	98.1%	99.3%	0.65%						

				Q	uarter 4 2	022-23: Sta	ndard 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 & NMGH	Not Stated	Oldham (NCA)	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)	1	2	3	0	1	4	0	1	0	1	2	0	1	16
0302: too soon after transfusion (<72 hours)	0	0	7	0	0	3	0	0	0	1	1	1	0	13
0303: insufficent sample	1	25	12	7	11	39	0	37	1	9	17	4	14	177
0304: unsuitable sample (blood quality): incorrect blood application	1	10	6	9	6	34	0	14	6	14	7	2	4	113
0305: unsuitable sample (blood quality): compressed/damaged	0	4	6	2	4	16	0	6	0	3	7	2	6	56
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
0307: unsuitable sample for CF: possible faecal contamination	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0308: unsuitable sample: NHS number missing/not accurately recorded	0	1	2	5	2	8	0	13	0	0	4	1	4	40
0309: unsuitable sample: date of sample missing/not accurately recorded	1	0	5	1	7	8	0	6	0	0	0	0	2	30
0310: unsuitable sample: date of birth not accurately matched	0	0	0	1	0	0	0	0	0	0	0	0	0	1
0311: unsuitable sample: expired card used	0	0	0	1	0	1	0	1	0	0	2	0	0	5
0312: unsuitable sample: >14 days in transit, too old for analysis	0	0	0	0	0	0	0	0	0	0	2	0	0	2
0313: unsuitable sample: damaged in transit	0	0	0	0	0	0	0	1	0	0	0	0	6	7
Number of Avoidable Repeat Requests	4	42	34	26	31	110	0	79	7	27	41	9	37	447
Number of first samples received/ babies tested	672	1378	1428	182	974	3399	8	1489	189	709	656	616	790	12490
Avoidable Repeat Requests Rate	0.6%	3.0%	2.4%	14.3%	3.2%	3.2%	0.0%	5.3%	3.7%	3.8%	6.3%	1.5%	4.7%	3.6%
Transfusion Reapeats are not included i	in the Avoid	able Repea	t calculation											

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					1	Quarter 4	2022-23:	Standard	6 by Curr	ent Hospi	ital							
Status code and description of avoidable repeat	Blackpool Victoria Hospital	Burnley General Hospital	Furness General Hospital	North Manchest er 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	Stepping Hill Hospital	Tameside General Hospital	Wythenshawe Hospital	Grand Total
0301: too young for reliable screening (≤ 4 days)	1	1	0	0	6	0	1	0	2	0	0	0	0	2	1	1	1	16
0302: too soon after transfusion (<72 hours)	0	7	1	0	0	0	0	0	0	0	0	0	0	3	1	1	0	13
0303: insufficent sample	1	7	0	2	136	0	3	0	4	1	1	7	5	3	4	1	2	177
0304: unsuitable sample (blood quality): incorrect blood application	0	5	0	4	50	0	1	0	8	0	2	8	5	17	7	2	4	113
0305: unsuitable sample (blood quality): compressed/damaged	0	2	0	3	45	0	1	0	1	0	0	1	0	0	2	1	0	56
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0308: unsuitable sample: NHS number missing/not accurately recorded	0	0	0	0	37	0	1	0	0	0	0	0	0	2	0	0	0	40
0309: unsuitable sample: date of sample missing/not accurately recorded	0	2	0	0	21	0	1	0	0	0	0	2	3	1	0	0	0	30
0310: unsuitable sample: date of birth not accurately matched	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
0311: unsuitable sample: expired card used	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	5
0312: unsuitable sample: >14 days in transit, too old for analysis	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
0313: unsuitable sample: damaged in transit	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	7
Number of Avoidable Repeat Requests	2	17	0	10	309	0	8	0	15	1	3	18	13	25	14	5	7	447
Number of first samples received/ babies tested	56	182	13	86	10923	12	62	1	202	51	10	204	108	358	68	57	97	12490
Avoidable Repeat Requests Rate	3.6%	9.3%	0.0%	11.6%	2.8%	0.0%	12.9%	0.0%	7.4%	2.0%	30.0%	8.8%	12.0%	7.0%	20.6%	8.8%	7.2%	3.6%
Transfusion Reapeats are not include	d in the Avo	idable Repe	at calculatio	n														