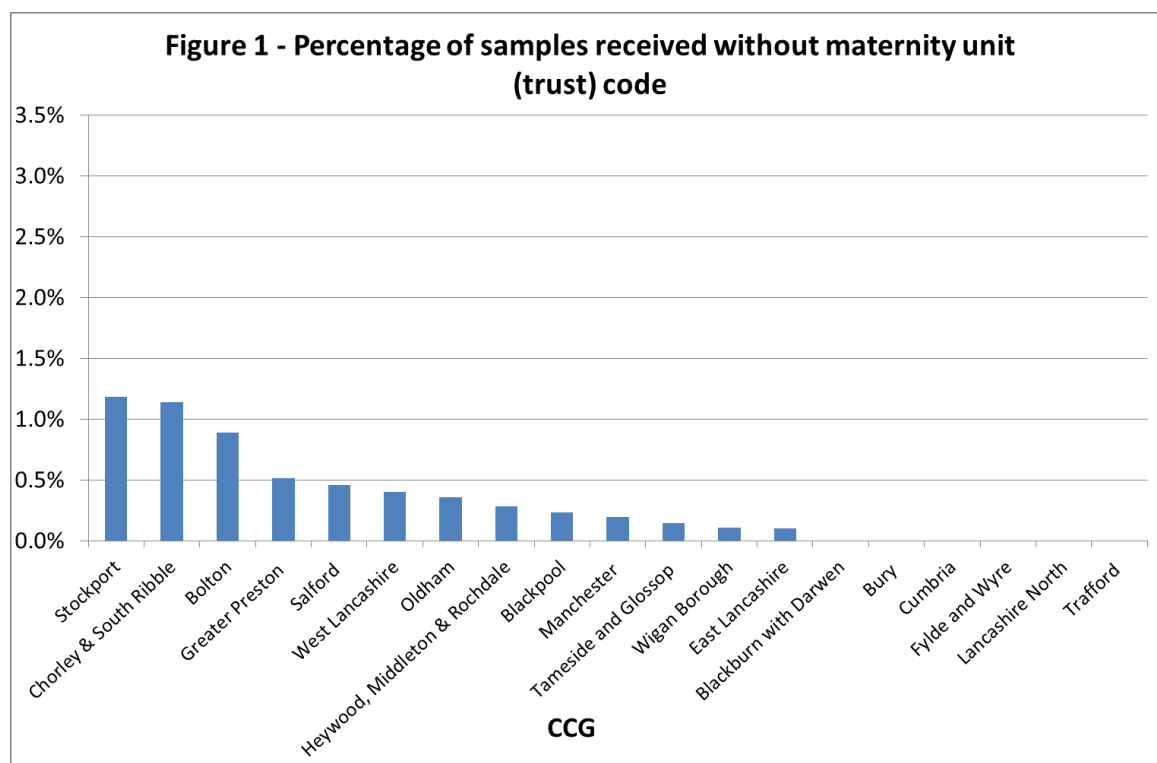


Manchester Newborn Screening Laboratory Quarterly Blood Spot Screening Report: Quarter 4 2020-21

Manchester Newborn Screening Laboratory, which serves babies born in Greater Manchester, Lancashire and South Cumbria, received 12800 blood spot samples between 1st January and 31st March 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.

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

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. The proportion of samples with a missing maternity unit/trust code is presented in figure 1 by CCG. Overall the maternity/ trust code was missing from 46 sample cards (0.4%).



Declines

In Quarter 4 the laboratory received 67 notifications of declined blood spot screening. Figure 2 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.

Figure 2 - Blood Spot Screening Declines



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 3 displays performance against standard 3.

Overall, 83.1% of samples received in quarter 4 of 2020/21 had a barcoded NHS number label, which is more than the previous quarter (81.7%). Of 12 maternity units, 5 met the standard, including two reaching the achievable threshold (Blackpool and East Lancashire). Four units were more than 10% below the acceptable threshold, with slightly improved performance compared with the previous quarter.

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

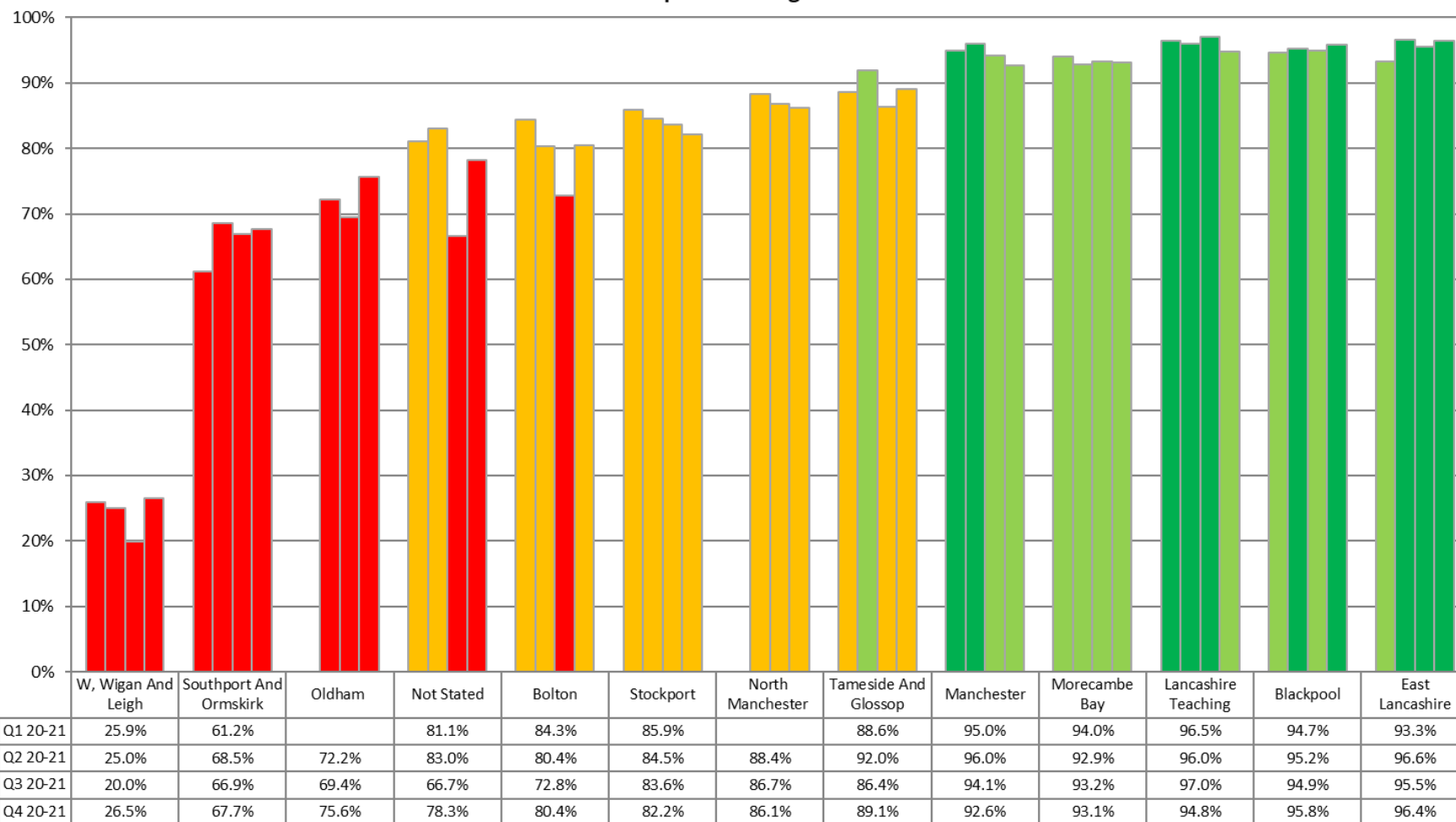
Acceptable: ≥ 90.0% of first blood spot samples are taken on day 5.

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

Figure 4 displays performance against standard 4. Overall, 92.6% of samples received in quarter 4 of 2020/21 were collected on day 5, which is the same quarter 3. All 12 maternity units met standard 4, including 3 meeting the achievable threshold (MFT, Tameside and Stockport).

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

Most recent quarter on right-hand side



The Pennine data is now presented as two separate sites: North Manchester and Oldham. Split data for previous quarters is not available.

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

Most recent quarter on right-hand side



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.

Performance against the transport standard (figure 5) was good. Overall, 96.7% samples were received within 3 working days. 10 Trusts met the standard, including 3 reaching the achievable threshold. Performance was worse than last quarter (98.1% samples received within 3 working days). Southport and Ormskirk has improved since the last quarter from 64.7% to 82.7%

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 3.4%, which is higher than quarter 3 (2.8%). This was due to an unusually high number of insufficient samples received in March. Please see the monthly avoidable repeat report for March, for further details. The performance for each trust is displayed in figure 6. Two Trusts met the standard (Blackpool and Tameside). Figure 7 compares the avoidable repeat rate for samples collected from in-patients with samples collected from babies at home/ in the community. The rate was 2.9% for babies at home (2.4% in quarter 3) and 7.6% for samples collected from in-patients (6.3% in quarter 3).

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

Most recent quarter on right-hand side

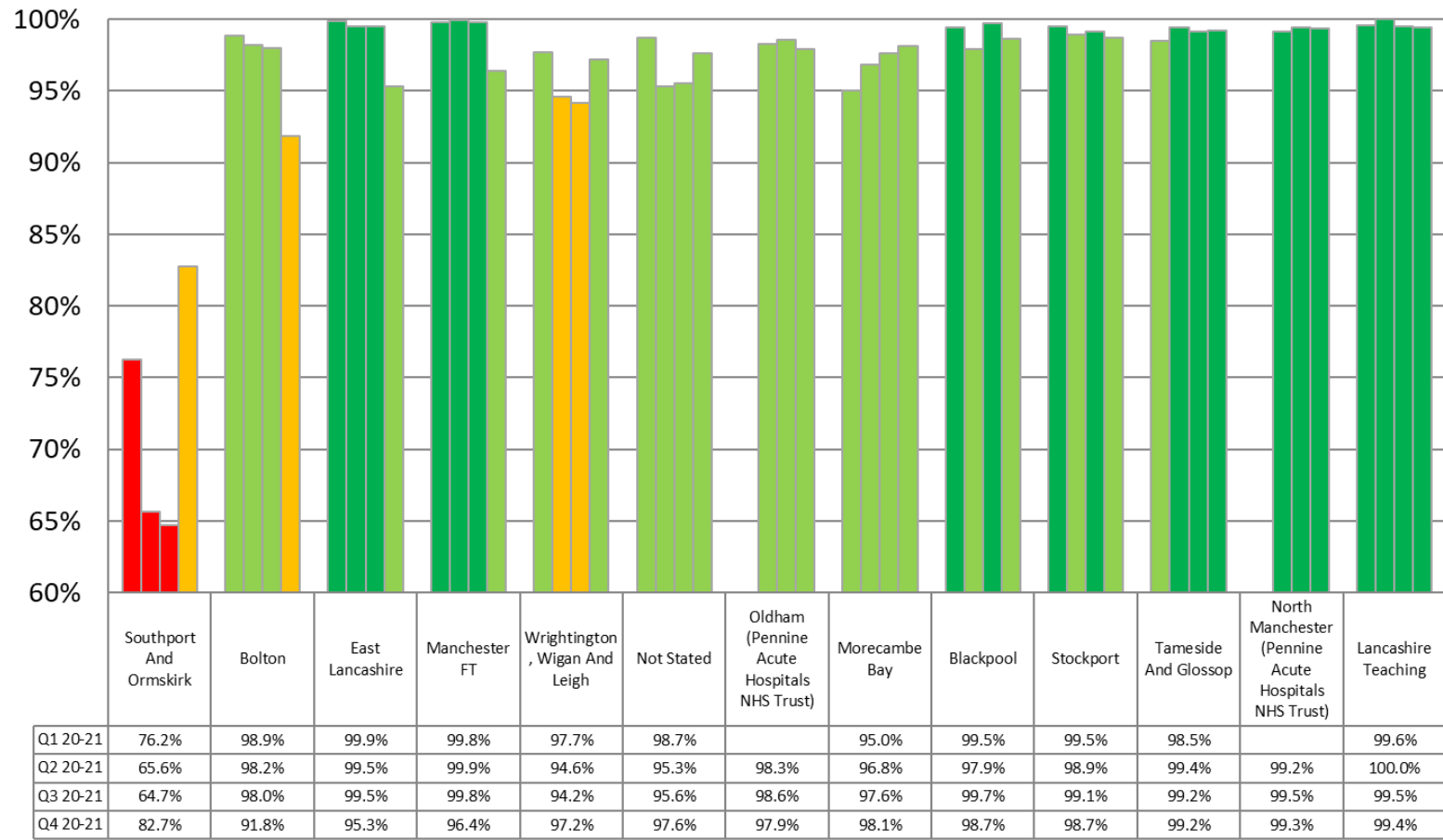


Figure 6: Standard 6 - The proportion of first blood spot samples that require repeating due to an avoidable failure in the sampling process

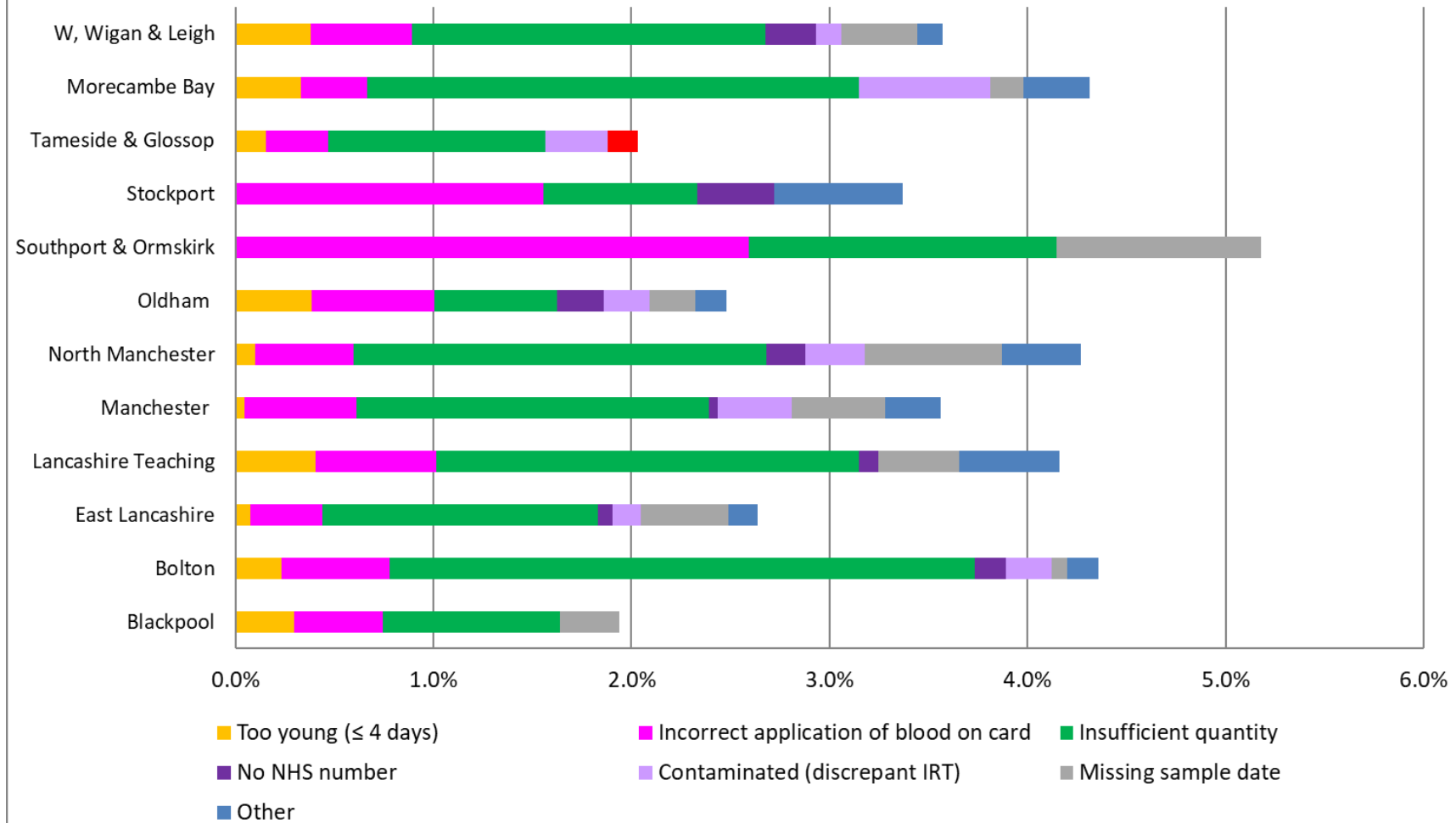
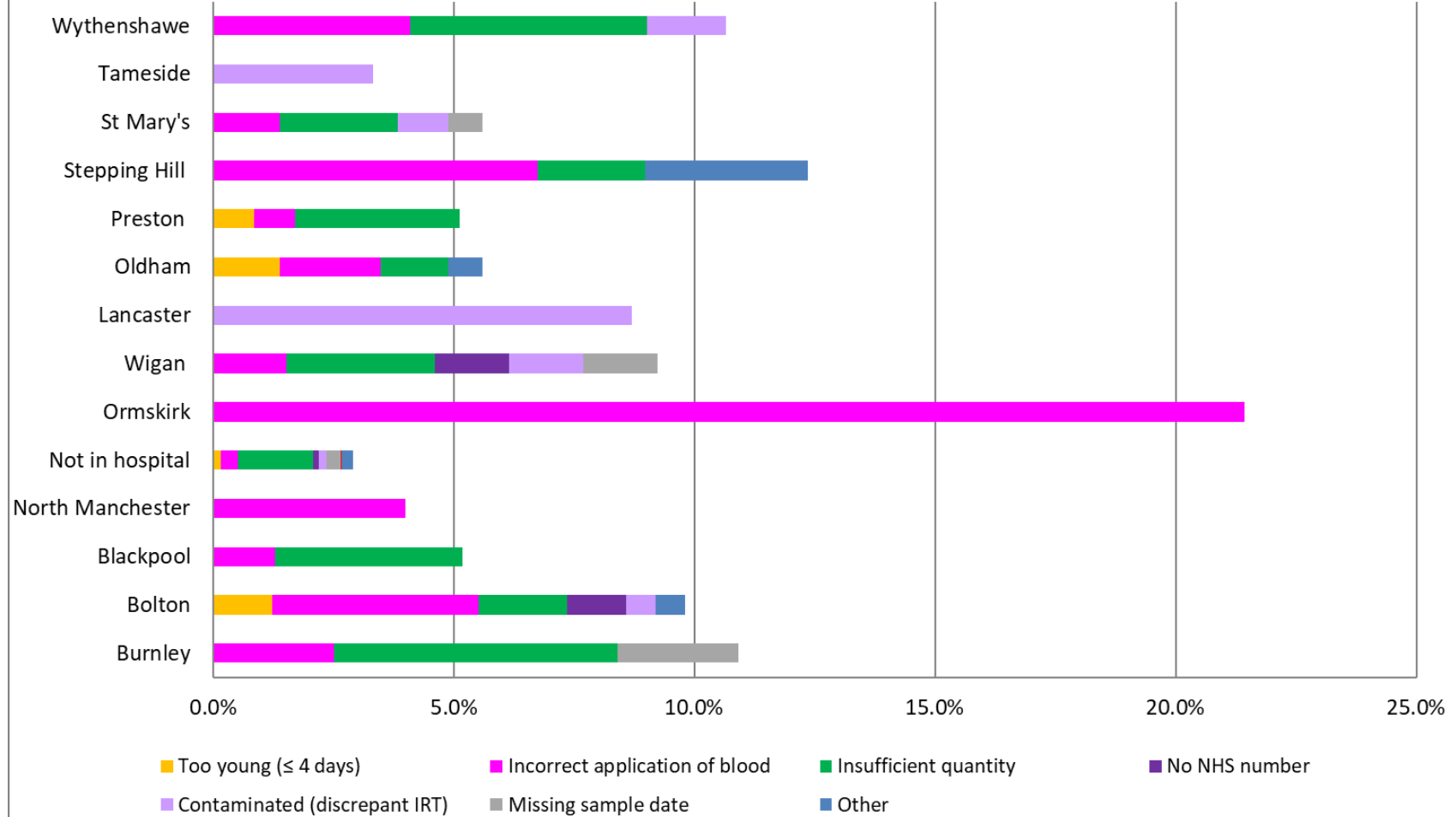


Figure 7: Standard 6 - Avoidable repeats for in-patients vs community



Furness, Royal Blackburn Hospital RMCH are not displayed in the chart (avoidable repeat rate 0%).

Q4 20-21 Table 1 - Summary of performance				
Trust	STD 3	STD 4	STD 5	STD 6
Blackpool Teaching Hospitals NHS FT	95.8%	96.0%	98.7%	1.9%
Bolton NHS FT	80.4%	93.7%	92.5%	4.4%
East Lancashire Hospitals NHS Trust	96.4%	91.1%	95.3%	2.6%
Lancashire Teaching Hospitals NHS FT	94.8%	93.3%	99.4%	4.2%
Manchester University NHS FT	92.6%	95.9%	97.1%	3.6%
North Manchester (Pennine Acute Hospitals NHS Trust)	86.1%	91.9%	99.4%	4.3%
Not Stated	78.3%	92.9%	97.6%	2.3%
Oldham (Pennine Acute Hospitals NHS Trust)	75.6%	91.5%	98.2%	2.5%
Southport & Ormskirk Hospital NHS Trust	67.7%	90.6%	91.4%	5.2%
Stockport NHS FT	82.2%	95.7%	99.1%	3.4%
Tameside And Glossop Integrated Care NHS FT	89.1%	93.6%	99.4%	2.0%
University Hospitals of Morecambe Bay NHS FT	93.1%	94.5%	98.6%	4.3%
Wrightington, Wigan and Leigh NHS FT	26.5%	91.8%	98.0%	3.6%

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

Acceptable: ≥ 95% of second blood spot samples taken on day 21 to day 24

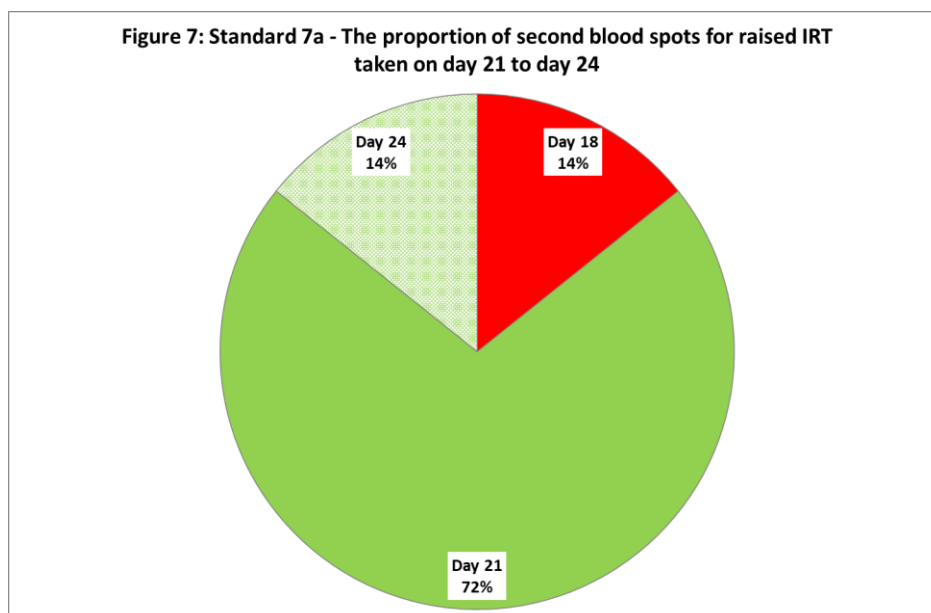
Achievable: ≥ 70% of second blood spot samples taken on day 21

From April 2021:

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

Standard 7a was met. During quarter 4 there were 7 repeats for raised IRT (CF inconclusive). Of these, 71% (5) were collected on day 21 and 86% (6) 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.



Q4 Table 2 - Standard 7a						
Child Health Department	Age at Collection of CF Inconclusive Repeat (days)			Grand Total	% collected day 21	% collected day 21-24
	18	21	24			
Central Lancs			1	1	0%	100%
East Lancs	1	1		2	50%	50%
Manchester		1		1	100%	100%
Salford		1		1	100%	100%
Stockport		1		1	100%	100%
Bury		1		1	100%	100%
Grand Total	1	5	1	7	71%	86%

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: ≥ 95.0% of second blood spot samples taken as defined

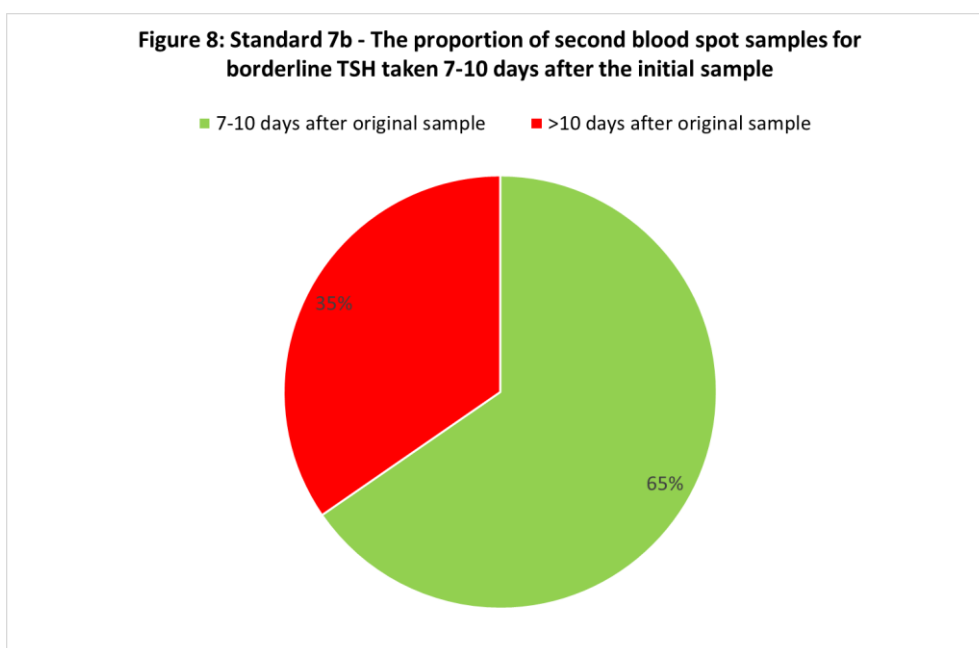
Achievable: ≥ 99.0% of second blood spot samples taken as defined

From April 2021:

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

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

Standard 7b was not 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	Number of days between original sample and collection of repeat sample											Grand Total	% collected 7-10 days after original sample
	5	6	7	8	9	10	11	13	14	15			
Blackpool Teaching Hospitals NHS FT				1	1	1				1		4	75%
Bolton NHS FT		2				1					1	4	25%
East Lancashire Hospitals NHS Trust					2							2	100%
Lancashire Teaching Hospitals NHS FT			1									1	100%
Manchester University NHS FT - SMH & RMCH			2	2		1						5	100%
Manchester University NHS FT - Wythenshawe					2	1		1	1			5	60%
North Manchester (Pennine Acute Hospitals NHS Trust)						1						1	100%
Oldham (Pennine Acute Hospitals NHS Trust)	1			1	1	1						4	75%
Stockport NHS FT						1	1					2	50%
Tameside And Glossop Integrated Care NHS FT												0	N/A
University Hospitals of Morecambe Bay NHS FT			1		1							2	100%
Wrightington, Wigan and Leigh NHS FT				2								2	100%
Grand Total	1	2	4	6	7	7	1	1	2	1	32	75%	

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

Acceptable: ≥ 95.0% of second blood spot samples taken as defined

Achievable: ≥ 99.0% of second blood spot samples taken as defined

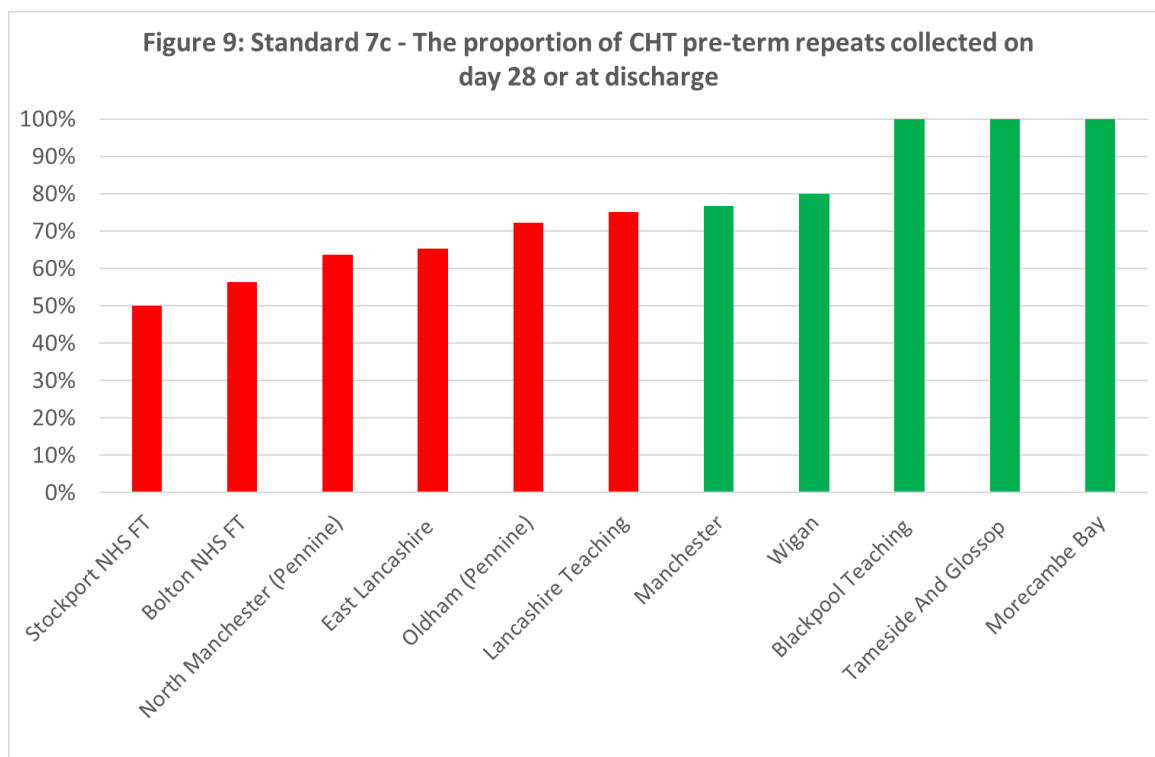
From April 2021:

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

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

During quarter 4, 146 CHT pre-term repeats were received (avoidable repeats and duplicates excluded). Performance by trust is displayed in figure 9. 72% were collected on day 28 or at discharge, 3% were collected too early (and required a further repeat) and 26% were collected after day 28.

Of note, 17 out of 38 babies with samples collected after day 28 had transfusions on days 25-28, which would account for the delayed sampling.



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 7 screen positive samples for CHT during quarter 4. All were referred within 3 working days.

There were 8 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 4.

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%	8	8	100%	Included 2 galactosaemia cases detected clinically and 1 MCADD detected on an early screen due to family history.
CHT (suspected on first sample)	Attend first clinical appointment by 14 days of age	Acceptable: 100%	2	2	100%	
CHT (suspected on repeat following borderline TSH)	Attend first clinical appointment by 21 days of age	Acceptable: 100%	4	5	80%	One baby seen on day 22 (repeat sample collected day 16).
CF (2 CFTR mutations detected)	Attend first clinical appointment by 28 days of age	Acceptable: ≥ 95.0% Achievable: 100%	3	3	100%	Plus 2 babies where lab has not yet been informed of date of assessment
HCU	Attend first clinical appointment by 28 days of age	Acceptable: ≥ 95.0% Achievable: 100%	0	0	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	0	0	N/A	
SCD	Attend first clinical appointment by 90 days of age	Attend first clinical appointment by 90 days of age	2	2	100%	Plus 1 baby where assessment not due until age 6 months (FSA).

Incidents

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

Incident Number	Incident Date	Incident Severity	Summary of incident	Further details	MFT or external	Lab/ Ward/ Maternity Unit
2184349	02/02/21	3 - moderate	Lab data entry error: sample matched to incorrect baby in IT system and not tested.	Twin records linked and one twin's sample not tested.	MFT	NBS Lab
2182364	17/03/21	3 - moderate	Blood spot labelling error: demographic sticker contained errors e.g. another baby's NHS number (some details correct)	Baby with same surname and date of birth living in a different part of the country.	MFT	Bolton Maternity Unit

Appendix

Quarter 4 2020-21: Standard 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	692	692	663	100.0%	95.8%
Bolton NHS FT	1441	1439	1159	99.9%	80.4%
East Lancashire Hospitals NHS Trust	1480	1479	1427	99.9%	96.4%
Health Visitor	156	154	5	98.7%	3.2%
Lancashire Teaching Hospitals NHS FT	1039	1038	985	99.9%	94.8%
Manchester University NHS FT	2378	2376	2203	99.9%	92.6%
North Manchester (Pennine Acute Hospitals NHS Trust)	1061	1058	914	99.7%	86.1%
Not Stated	46	46	36	100.0%	78.3%
Oldham (Pennine Acute Hospitals NHS Trust)	1375	1372	1040	99.8%	75.6%
Southport & Ormskirk Hospital NHS Trust	201	201	136	100.0%	67.7%
Stockport NHS FT	807	804	663	99.6%	82.2%
Tameside And Glossop Integrated Care NHS FT	662	662	590	100.0%	89.1%
University Hospitals of Morecambe Bay NHS FT	639	639	595	100.0%	93.1%
Wrightington, Wigan and Leigh NHS FT	823	821	218	99.8%	26.5%
Grand Total	12800	12781	10634	99.9%	83.1%

Quarter 4 2020-21: 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	2	642	18	0	0	7	0.3%	96.0%	2.7%	0.0%	0.0%	1.0%
Bolton NHS FT	2	1200	64	4	3	8	0.2%	93.7%	5.0%	0.3%	0.2%	0.6%
East Lancashire Hospitals NHS Trust	2	1238	86	16	1	16	0.1%	91.1%	6.3%	1.2%	0.1%	1.2%
Health Visitor	0	5	0	0	0	108	0.0%	4.4%	0.0%	0.0%	0.0%	95.6%
Lancashire Teaching Hospitals NHS FT	4	916	44	4	1	13	0.4%	93.3%	4.5%	0.4%	0.1%	1.3%
Manchester University NHS FT	2	2038	40	13	14	18	0.1%	95.9%	1.9%	0.6%	0.7%	0.8%
North Manchester (Pennine Acute Hospitals NHS Trust)	1	920	58	4	2	16	0.1%	91.9%	5.8%	0.4%	0.2%	1.6%
Not Stated	0	39	2	1	0	0	0.0%	92.9%	4.8%	2.4%	0.0%	0.0%
Oldham (Pennine Acute Hospitals NHS Trust)	5	1177	72	13	3	16	0.4%	91.5%	5.6%	1.0%	0.2%	1.2%
Southport & Ormskirk Hospital NHS Trust	0	173	7	1	0	10	0.0%	90.6%	3.7%	0.5%	0.0%	5.2%
Stockport NHS FT	0	739	29	0	1	3	0.0%	95.7%	3.8%	0.0%	0.1%	0.4%
Tameside And Glossop Integrated Care NHS FT	1	598	26	3	5	6	0.2%	93.6%	4.1%	0.5%	0.8%	0.9%
University Hospitals of Morecambe Bay NHS FT	2	569	24	0	3	4	0.3%	94.5%	4.0%	0.0%	0.5%	0.7%
Wrightington, Wigan and Leigh NHS FT	2	718	43	4	2	13	0.3%	91.8%	5.5%	0.5%	0.3%	1.7%
Grand Total	23	10972	513	63	35	238	0.2%	92.6%	4.3%	0.5%	0.3%	2.0%

Excludes samples with missing dates

Quarter 4 2020-21: Standard 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	667	676	98.7%
Bolton NHS FT	1301	1417	91.8%
East Lancashire Hospitals NHS Trust	1351	1417	95.3%
Health Visitor	112	126	88.9%
Lancashire Teaching Hospitals NHS FT	996	1002	99.4%
Manchester University NHS FT	2221	2304	96.4%
North Manchester (Pennine Acute Hospitals NHS Trust)	1025	1032	99.3%
Not Stated	41	42	97.6%
Oldham (Pennine Acute Hospitals NHS Trust)	1324	1352	97.9%
Southport & Ormskirk Hospital NHS Trust	163	197	82.7%
Stockport NHS FT	779	789	98.7%
Tameside And Glossop Integrated Care NHS FT	646	651	99.2%
University Hospitals of Morecambe Bay NHS FT	619	631	98.1%
Wrightington, Wigan and Leigh NHS FT	795	818	97.2%
Grand Total	12040	12454	96.7%
<i>Excludes day 0 'pre-transfusion' samples and samples with missing date of collection</i>			

Quarter 4 2020-21: Standard 6 by Trust

Status code and description of avoidable repeat	Blackpool Teaching Hospitals NHS FT	Bolton NHS FT	East Lancashire Hospitals NHS Trust	Lancashire Teaching Hospitals NHS FT	Manchester University NHS FT	North Manchester (Pennine Acute Hospitals NHS Trust)	Not Stated	Health Visitor	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)	2	3	1	4	1	1	0	0	5	0	0	1	2	3	23
0302: too soon after transfusion (<72 hours)	0	2	4	0	9	0	0	0	5	0	0	0	0	0	20
0303: insufficient sample	6	38	19	21	38	21	1	4	8	3	6	7	15	14	201
0304: unsuitable sample (blood quality): incorrect blood application	3	7	5	6	12	5	0	3	8	5	12	2	2	4	74
0305: unsuitable sample (blood quality): compressed/damaged	0	2	2	5	6	4	0	1	1	0	5	0	0	1	27
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	3	2	0	8	3	0	0	3	0	0	2	4	1	26
0308: unsuitable sample: NHS number missing/not accurately recorded	0	2	1	1	1	2	0	1	3	0	3	0	0	2	16
0309: unsuitable sample: date of sample missing/not accurately recorded	2	1	6	4	10	7	0	0	3	2	0	0	1	3	39
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	0	0	0	0	1	0	0	0	1	0	0	2
0312: unsuitable sample: >14 days in transit, too old for analysis	0	0	0	0	0	0	0	0	1	0	0	0	2	0	3
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	13	56	36	41	76	43	1	10	32	10	26	13	26	28	411
Number of first samples received/babies tested	671	1285	1366	985	2134	1007	44	143	1291	193	772	639	603	784	11917
Avoidable Repeat Requests Rate	1.9%	4.4%	2.6%	4.2%	3.6%	4.3%	2.3%	7.0%	2.5%	5.2%	3.4%	2.0%	4.3%	3.6%	3.4%
<i>Transfusion Repeats are not included in the Avoidable Repeat calculation</i>															

Quarter 4 2020-21: Standard 6 by Current Hospital

Status code and description of avoidable repeat	Burnley General Hospital	Royal Bolton Hospital	Blackpool Victoria Hospital	Furness General Hospital	North Manchester General Hospital	Not in hospital	Ormskirk & District General	Royal Albert Edward Infirmary	Royal Blackburn Hospital	Royal Lancaster Infirmary	Royal Manchester Childrens Hospital	Royal Oldham Hospital	Royal Preston Hospital	Stepping Hill Hospital	St Mary's Hospital, Manchester	Tameside General Hospital	Wythenshawe Hospital	Grand Total
0301: too young for reliable screening (≤ 4 days)	0	2	0	0	0	18	0	0	0	0	0	2	1	0	0	0	0	23
0302: too soon after transfusion (<72 hours)	3	2	0	0	0	1	0	0	0	0	0	5	0	0	9	0	0	20
0303: insufficient sample	7	3	3	0	0	165	0	2	0	0	0	2	4	2	7	0	6	201
0304: unsuitable sample (blood quality): incorrect blood application	3	7	1	0	3	37	3	1	0	0	0	3	1	6	4	0	5	74
0305: unsuitable sample (blood quality): compressed/damaged	0	1	0	0	0	23	0	0	0	0	0	0	0	3	0	0	0	27
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	1	0	0	0	16	0	1	0	2	0	0	0	0	3	1	2	26
0308: unsuitable sample: NHS number missing/not accurately recorded	0	2	0	0	0	13	0	1	0	0	0	0	0	0	0	0	0	16
0309: unsuitable sample: date of sample missing/not accurately recorded	3	0	0	0	0	33	0	1	0	0	0	0	0	0	2	0	0	39
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	0	2	0	0	0	0	0	0	0	0	0	0	0	2
0312: unsuitable sample: >14 days in transit, too old for analysis	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	3
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	13	16	4	0	3	309	3	6	0	2	0	8	6	11	16	1	13	411
Number of first samples received/ babies tested	119	163	77	7	75	10577	14	65	1	23	9	143	117	89	286	30	122	11917
Avoidable Repeat Requests Rate	10.9%	9.8%	5.2%	0.0%	4.0%	2.9%	21.4%	9.2%	0.0%	8.7%	0.0%	5.6%	5.1%	12.4%	5.6%	3.3%	10.7%	3.4%
<i>Transfusion Repeats are not included in the Avoidable Repeat calculation</i>																		

Quarter 4 2020-21: Standard 7c

Trust	Number of Pre-term CHT second samples collected:				% Prem repeats collected on day 28 or at discharge
	Early	On time	Late	Total	
Blackpool Teaching Hospitals NHS FT		8		8	100%
Bolton NHS FT		9	7	16	56%
East Lancashire Hospitals NHS Trust	1	15	7	23	65%
Health Visitor			1	1	0%
Lancashire Teaching Hospitals NHS FT		12	4	16	75%
Manchester University NHS FT	1	23	6	30	77%
North Manchester (Pennine Acute Hospitals NHS Trust)		7	4	11	64%
Oldham (Pennine Acute Hospitals NHS Trust)	1	13	4	18	72%
Stockport NHS FT		3	3	6	50%
Tameside And Glossop Integrated Care NHS FT		3		3	100%
University Hospitals of Morecambe Bay NHS FT		4		4	100%
Wrightington, Wigan and Leigh NHS FT		8	2	10	80%
Grand Total	3	105	38	146	72%