Central Manchester University Hospitals NHS
NHS Foundation Trust

Newborn Screening Postal Audit

Audit Report December 2012

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Person(s) responsible for dissemination: Beverly Hird, Lesley Tetlow

Green	Amber	Red	Assurance Level
√			Full

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Central Manchester University Hospitals NHS
NHS Foundation Trust

Clinical Audit Outcomes Summary	Audit number	4057
Audit Title	Newborn Screening Postal Audit	

Aim

- To identify whether samples received by the Manchester newborn screening laboratory are adhering to the national standards described in 'Guidelines for Newborn bloodspot screening', specifically concerning timely sample despatch.

Standards

- 100% of samples should reach the laboratory within 4 days of sample collection
- 100% of samples should be despatched within 24 hours of collection
- Samples should not be delayed by batching them together for transport

Results

All bloodspot cards (1471) arriving to the newborn screening laboratory were considered over 6 days. During this audit period, 98.6% of samples reached the laboratory within 4 days of sample collection, with 95.9% of samples reaching the laboratory within 3 days. Only 76.1% of samples were despatched within 24 hours of sample collection which was predominantly a result of sample batching before despatch.

Action Plan		
Key Action	**Co-ordinator for action**	**Timescale**
To present findings to the Greater Manchester and South Cumbria/Lancs Newborn Bloodspot Screening Commissioning & Quality Management Groups	Beverly Hird, Lesley Tetlow	March 2013
Request development of local action plans via the Newborn Bloodspot Screening Commissioning & Quality Management groups	Group Chairs, Beverly Hird, Lesley Tetlow	March 2013
To educate service users via the Regional Service Improvement Manager about the importance of despatching samples within 24 hours of collection and the possible delays incurred in batching samples prior to despatch	Elaine Butters, Regional Service Improvement Manager	October 2013

What was the main matter(s) of concern this audit identified?
Batching of newborn screening samples is preventing timely despatch of samples within 24 hrs of collection.
Please identify the main benefit(s) to our patient, or to hospital process that are expected to result from the action plan of this audit
Timely despatch of newborn screening samples to the laboratory for analysis ensures that, in the case of a positive screening result, there is sufficient time for follow up and clinical referral.

Will there be a re-audit?	Yes	When will the re-audit take place?	Dec 2014

Introduction

The UK Newborn Screening Programme Centre (UKNSPC) issues standards and guidelines for newborn bloodspot screening to ensure a high quality screening service throughout the UK (accessed at http://newbornbloodspot.screening.nhs.uk/standards). Standard 4 relates to the timely despatch of samples, detailing how bloodspot cards should be despatched following collection, and the time frame in which these should arrive in the laboratory for analysis. The success of the screening programme depends heavily on timeliness to ensure the quality of blood spot samples for analysis and to ensure that, in the case of a positive screening result, there is sufficient time for follow up and clinical referral. As such, eliminating delays in bloodspot screening card transport to the laboratory is essential. We sought to determine whether the hospital Trusts served by the newborn screening laboratory at Royal Manchester Children's Hospital (RMCH) adhere to the standards set out by the UKNSPC referring to the timely despatch of samples, and how effectively the transport systems in place to deliver samples to the laboratory function. Data concerning the sample collection date versus date of arrival in the laboratory is also collected on a quarterly basis; therefore this audit represents only a snapshot in the collection of this information for newborn screening.

Aims

- To identify whether samples received by the Manchester newborn screening laboratory are adhering to the national standards described in 'Standards and Guidelines for Newborn bloodspot screening - August 2008', specifically concerning timely sample despatch.

Objectives

- To identify whether 100% of samples are despatched within 24 hours of being taken
- To identify whether samples are being delayed by batching them together for transport
- To identify the transport pathway taken from sample collection to arrival in the laboratory and any places where delays could be avoided

Standards

Standards and Guidelines for Newborn Bloodspot Screening August 2008 – UK National screening programme centre, Standard 4; Timely sample despatch. Accessed at http://newbornbloodspot.screening.nhs.uk/standards

Method

Newborn blood spot screening cards were audited on 6 separate days for the date of sample collection, date of sample posting (either by post mark or despatch date written on the envelope), number of samples in an envelope, the NHS number and the origin of samples (where they were collected and despatched from). 4 of the chosen audit days were mid-week ensuring samples which had been collected should also have been despatched within the same week, whilst the other 2 days were following weekends in order to determine whether this affected the transport of samples to the laboratory. All this information was collated in an excel spreadsheet and analysed to determine whether the despatch of samples adhered to the standards denoted by the UKNSPC.

Results

A. Sample Transport Pathways

Samples are delivered to the Newborn screening laboratory by one of 4 different transport methods, although there is overlap between these systems. Samples are despatched following collection either by Royal Mail postage, Courier delivery, Inter-hospital transport or in the case of CMFT in-patients, using the hospital pod system. Depending on their transport method, samples are either delivered to the central hospital post room, the central Biochemistry laboratory, reception on the 6th floor of St Mary's hospital where the newborn screening laboratory is located, or in the case of the hospital pod system directly into the newborn screening sorting room.

Throughout this audit the ***post room*** shall refer to the central postal sorting room of CMFT, the ***sorting room*** refers to the room within the newborn screening laboratory where samples are sorted for analysis, ***specimen reception*** refers to the reception on the 6th floor of St Mary's hospital adjacent to the newborn screening sorting room and the ***central laboratories*** refers to the Biochemistry laboratory which is located in a different building within the hospital Trust.

Envelopes containing samples are delivered to the sorting room throughout the day, and opened for card sorting by newborn screening laboratory staff in the early afternoon, ready for analysis the following day. The final sort is carried out at 8.30am the next day; i.e. the day of sample analysis, to ensure any samples delivered late the previous day are also included in the run. Samples arrive in the sorting room by a number of different methods (Figure 1) as described below:

- Samples which arrive by the pod system from within CMFT arrive directly to the pod terminal in the sorting room.

- Samples delivered by Royal Mail are sent to the Trust post room. The Trust receives 2 deliveries from Royal Mail per day, one at 8am and a further delivery between 12 noon and 2pm. Each delivery is sorted upon arrival by a group of at least 6 trained staff. The post room has separate pigeon holes for all main destinations within the hospital, including newborn screening. Deliveries are made within the hospital from the post room twice daily, once following the morning Royal mail delivery at 10am, and a further delivery at 2pm. The morning delivery will always be sorted and delivered to the relevant department within the hospital on the day of receipt of samples from Royal Mail, the afternoon delivery will also usually be delivered, although an occasional late and/or large delivery from Royal Mail may delay some post until the following morning inter-hospital delivery. Envelopes which are clearly labelled are easily sorted; any which do not have an obvious address will be put in the miscellaneous pigeon hole and sorted at the end of the day. Overall all Royal Mail samples will be delivered to the newborn screening sorting room in a maximum time frame of 24 hrs from arrival in the trust. All post within a pigeon hole is gathered together with an elastic band to prevent samples being lost en route to the destination. Post room staff recognise the pre-paid newborn screening envelopes and are aware of the importance of the samples contained within them. The same staff sorting

the post also carry out deliveries within the hospital and ensure newborn screening is one of the first destinations on their delivery route.

- Samples delivered by courier service are brought directly to specimen reception throughout the day. Specimen reception is manned from 9am to 5pm ensuring there is always someone to receive the samples. Since specimen reception is located adjacent to the newborn screening sorting room samples delivered this way are all passed directly into this room to await sorting. Some samples are occasionally delivered to central laboratories in error (discussed below).

- Samples transported by inter-hospital transport are delivered in the same way as those received by courier transport. Again these may occasionally be delivered to the central laboratories in error.

- Samples which are delivered to the central laboratories will be placed in a specific fridge for storage. A member of the newborn screening laboratory staff visits the central laboratories on a daily basis and will collect anything which is in the fridge. Samples are then taken across to the newborn screening laboratory for sorting and subsequent analysis. The maximum time samples may be awaiting delivery is 24 hrs as the fridge is checked daily.

- As samples arriving by courier transport and inter-hospital transport are delivered in the same way, and often come in similar envelopes, it can be difficult to differentiate between the two types of post. As such these transport systems shall be considered together during this audit.

- Some departments track the arrival of their bloodspot cards by using an audit sheet. This is completed in the sorting room by the member of staff sorting samples for analysis, and then faxed back as indicated.

- Delays can be incurred at any step during the process, as indicated in figure 1.

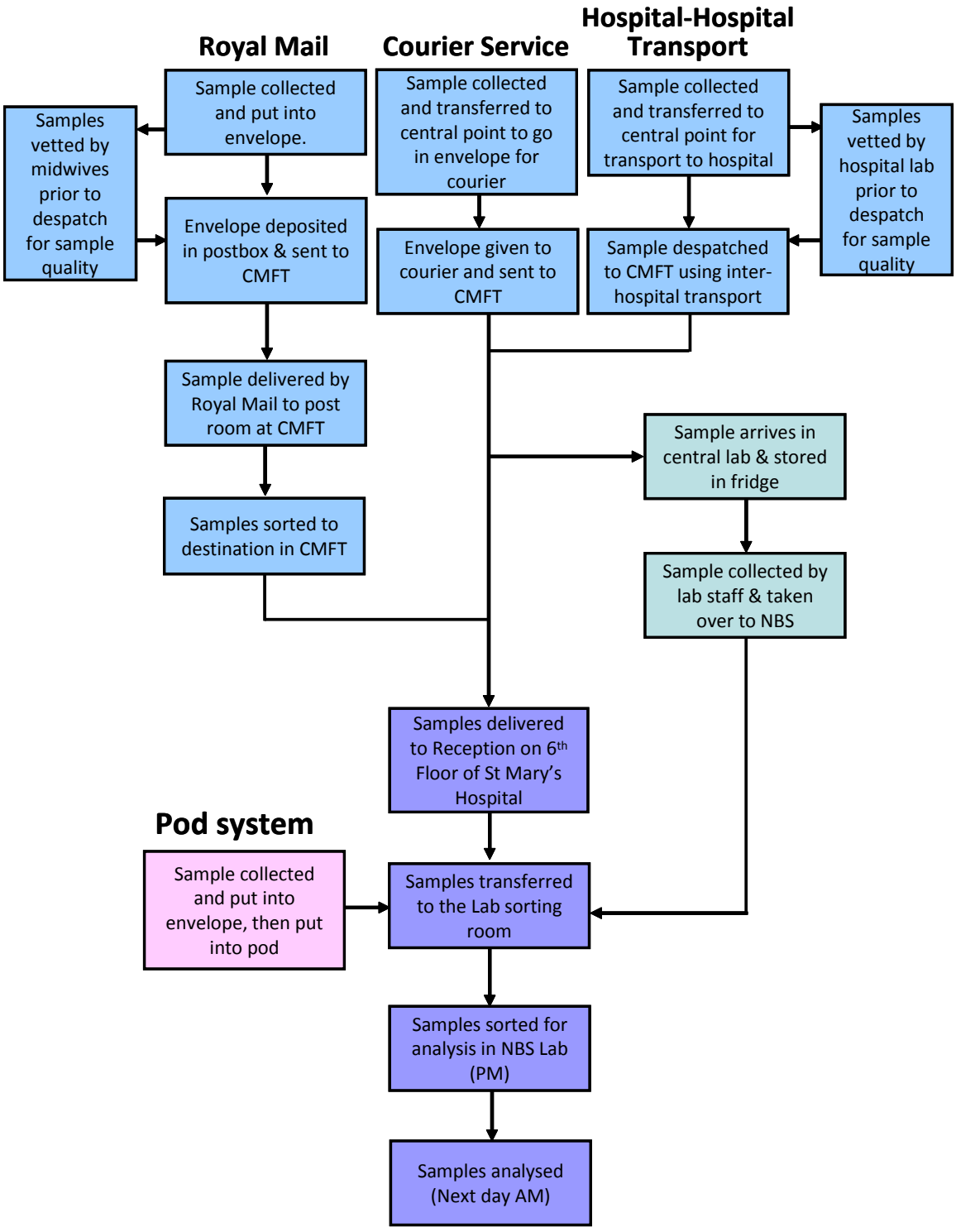

Figure 1. The different transport pathways of Newborn screening samples from the point of collection to the Newborn Screening Laboratory at RMCH. Each arrow indicates a step in the transport pathway which could be subject to delays.

A.1. Post Room

Samples were audited for one day during the audit period to see if there was any delay in the sorting and delivery of samples from the post room to departments within the hospital. The post room was visited before the arrival of the large morning delivery from Royal Mail, received soon after 8am. The pigeon hole for newborn screening was empty prior to this delivery. All envelopes were then sorted, with the newborn screening envelopes easily identifiable. The sort was completed by 9.20am and all samples from within the newborn screening pigeon hole were gathered into an elastic band and put on the delivery trolley for one of the delivery rounds. This batch of envelopes was received within the sorting room soon around 10.15am, all still contained in an elastic band. All expected envelopes were received i.e. all those which were received by the post room during the morning were then received by the sorting room directly. The afternoon delivery contained considerably fewer newborn screening samples. Again these were received by the sorting room, and the pigeon hole for newborn screening in the post room was empty by the end of the day.

B. Results from Standard 4

Standard 4 is divided into 8 subsections which are indicated by the headings below. Each section represents part of the process ensuring that bloodspot samples on newborn screening cards reach the laboratory in a timely manner for analysis. During the audit period a total of 439 envelopes were received containing 1471 bloodspot cards for analysis. The average of 3.4 samples per envelope is in keeping with the requirement for a maximum of 5 samples to be included in a pre-paid envelope due to postage restrictions.

1. Core standard: 100% of samples should be received by the laboratory within 4 days of sample collection

Whilst the core standard of the guideline suggests samples should be received within 4 working days of sample collection, there is an accompanying developmental standard stating that 100% of samples should be received within 3 working days of sample collection. The number of working days taken for a sample to arrive in the laboratory was calculated for each bloodspot card as it arrived in the laboratory. Results are shown in the graph below (Figure 2). This data is also collected as part of the quarterly figures meaning this figure represents only a snapshot of time and is not as reliable as the larger dataset of the quarterly figures.

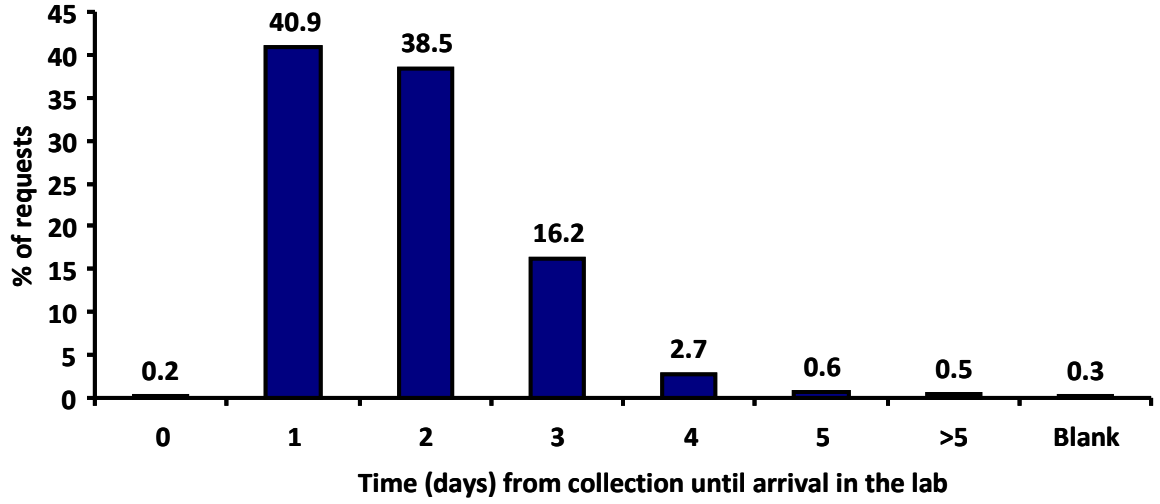

Figure 2. Time taken (in days) for samples to arrive in the laboratory following collection. *The percentage of samples in each category is indicated above the column. The column labelled blank indicates samples which did not have a date of collection on the bloodspot card.*

98.6% of samples reached the laboratory within 4 working days of sample collection, as required by the core standard, with 95.9% of samples arriving within 3 days of sample collection. 0.3% of samples did not have a sample collection date recorded, therefore making it difficult to determine the length of time taken for samples to reach the laboratory. Of those 1.1% of samples which took longer than 4 days to arrive in the laboratory, reasons included samples being batched up with those collected at a later date (77% of late samples) and samples being posted late following collection (8% of late samples). 15% of late samples were, according to the date written on the envelope, posted on the same day as collection implying a delay with the Royal mail postal service used by these samples, although there is no way to prove this.

In order to identify if there is any significant difference in the time taken for samples to arrive in the laboratory by different transport methods, samples were further categorised into those delivered by Royal Mail and those delivered by Courier or inter-hospital transport (Figure 3). A larger proportion of samples delivered by courier or inter-hospital transport were received within 1 day of sample collection (53.1% versus 26.3%). However, there was little difference in the percentage of samples received within 4 working days of sample collection (99.1% of courier samples versus 98.9% of Royal Mail samples). A marginal increased number of courier samples were received within 3 days of sample collection (96.9%) compared to those received from Royal mail (91.5%).

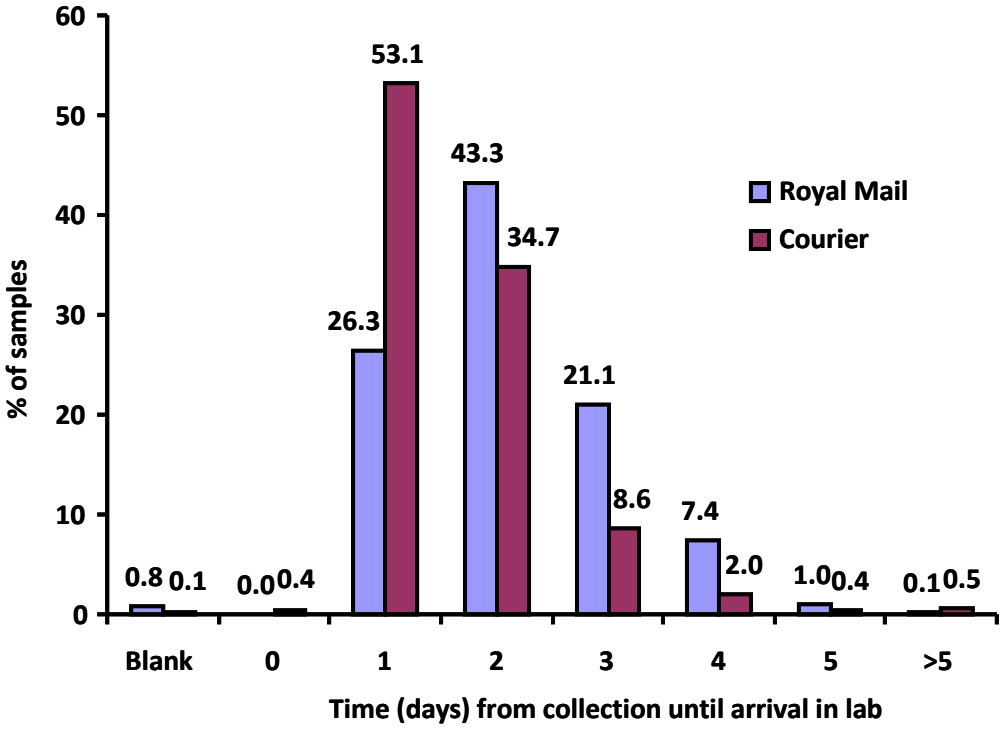

Figure 3. Time taken (in days) for samples to arrive in the newborn screening laboratory. *Samples are divided into those delivered by Royal Mail and those sent by courier transport. The percentage of samples arriving in each time frame is indicated at the top of the bar chart.*

The time taken for samples to reach the laboratory was further divided by the hospital of birth (Figure 4). Only one hospital trust (Westmorland) achieved the developmental standard of 100% of samples arriving in the newborn screening laboratory within 3 days, and this corresponded with only 6 samples. All samples from Furness General, Ormskirk and District and Royal Lancaster hospitals were received within 4 days of sample collection. In all cases at least 93% of samples were received by the newborn screening laboratory within 4 days of sample collection.

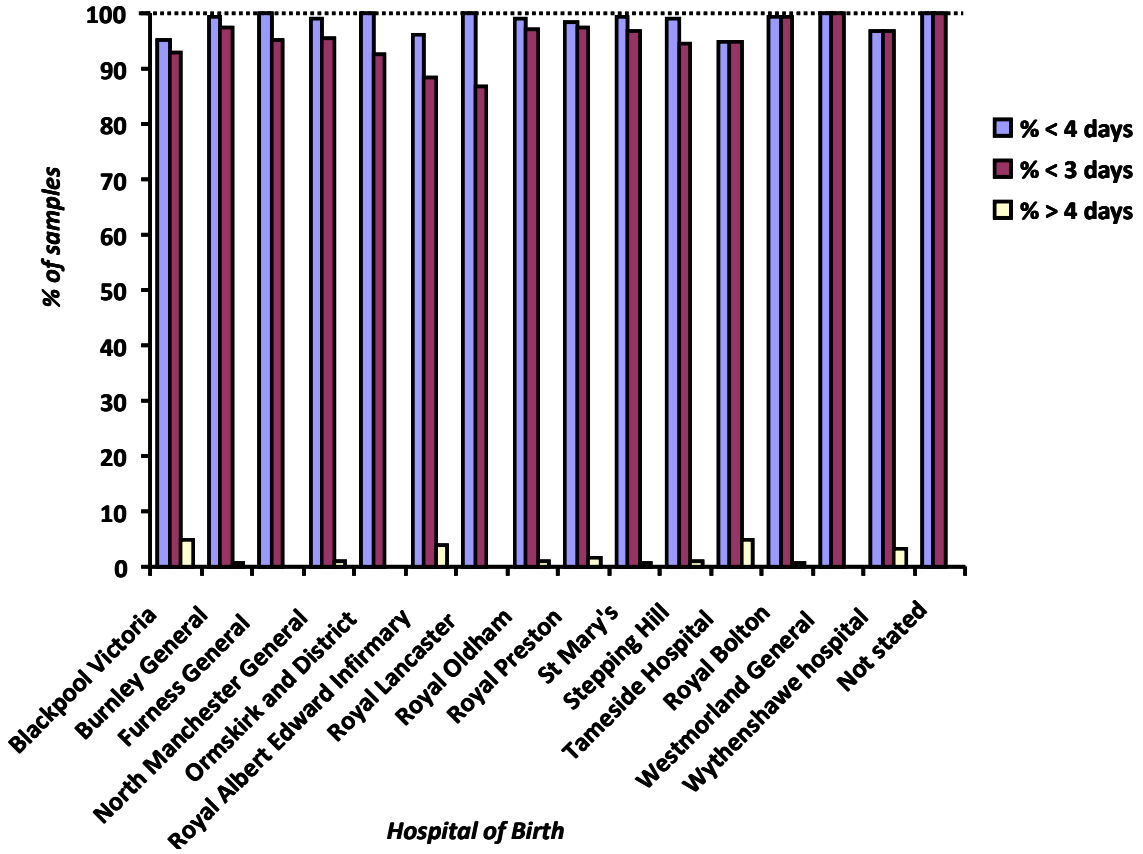

Figure 4. Time taken (in days) for samples to arrive in the newborn screening laboratory. *Samples are divided into the hospital of birth and indicate the percentage of samples from this district which were received within the desired time frame of 4 days, the developmental standard time frame of 3 days and outside of 4 days. Please see appendix 4 for the total numbers.*

2. Samples should be despatched within 24 hours of being taken, ideally on the same day as collection.

The second sub-section of the timely despatch standard requires 100% of samples to be sent within 24 hours of collection (Figures 5 and 6).

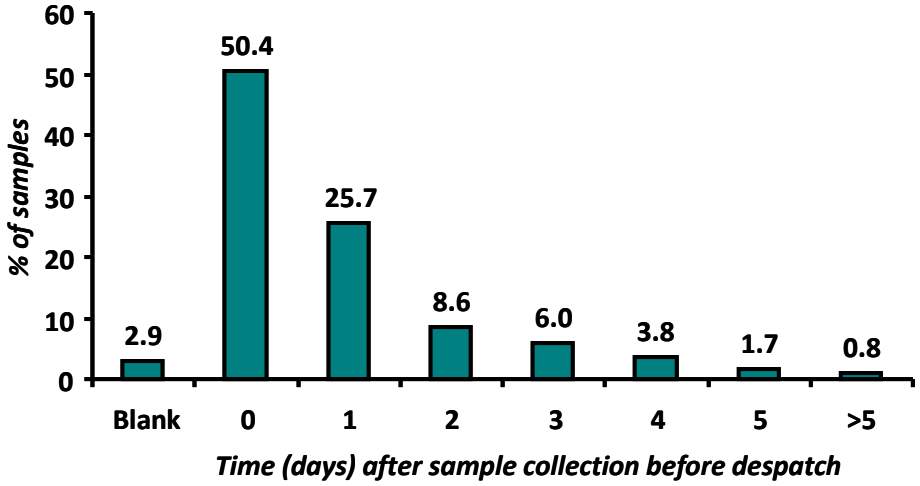

Figure 5. The time taken (in days) from sample collection to despatch. *The percentage of samples is indicated at the top of each bar. Where the time taken to despatch is unknown, samples are included in the blank category.*

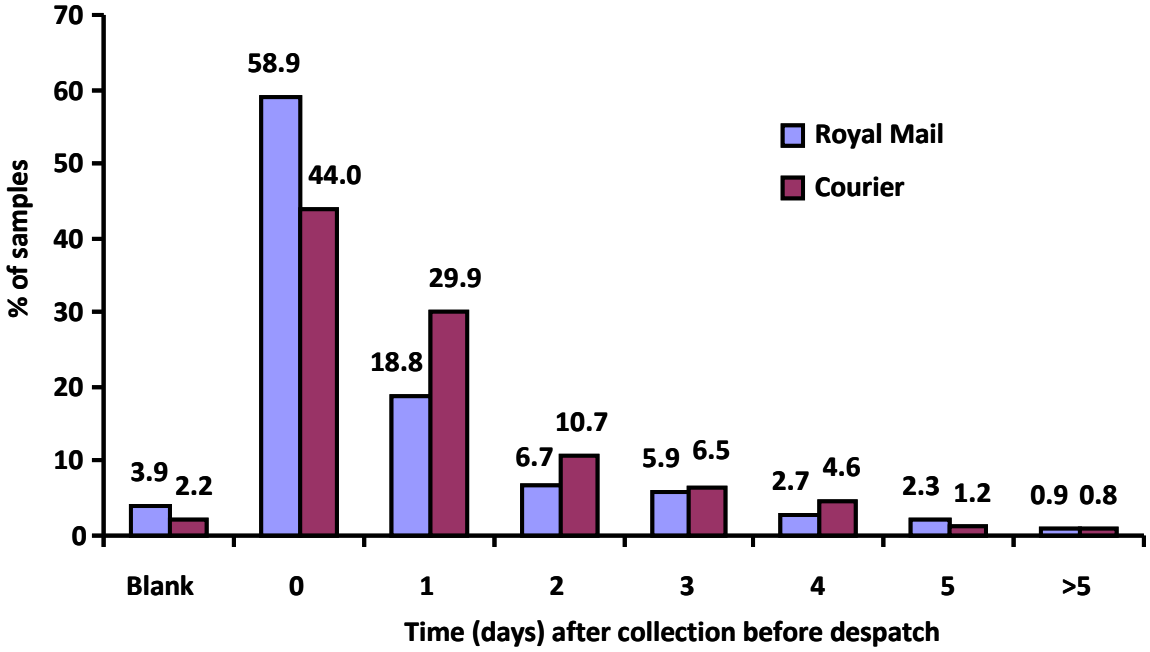

Figure 6. The time taken (in days) from sample collection to despatch, divided by type of transport. *Samples were divided into those delivered by Royal Mail and those delivered by Courier/Inter-hospital transport with the time taken for samples to be despatched indicated in days post collection. The percentage of samples in each category is indicated by the number at the top of the bar. Where the time taken to despatch is unknown, samples are included in the blank category.*

As shown in Figure 5, the date of despatch could not be identified for 2.9% of samples due to the lack of despatch date on the envelope. 76.1% of samples were posted within 24 hours of sample collection, with just over half of samples (50.4%; Day 0) posted on the day of collection. However, 20.9% of samples were posted more than 24 hours after sample collection, failing to adhere to the standard and preventing the timely arrival of samples to the laboratory. Samples were further considered following division into type of post (Royal Mail versus Courier/Inter-hospital transport; Figure 6). A significantly higher proportion of samples posted using Royal Mail were sent on the day of collection(58.9%), as recommended by the standard, as opposed to samples which were sent by courier service (44.0%). When considering the number of samples delivered within 24 hrs of collection, rather than on day 0 specifically, the difference between the sample transport systems decreased, although a greater number of samples were still sent in this time frame by Royal Mail instead of Courier/Inter-hospital transport (77.7% vs. 73.9%).

Samples were also divided into the hospital of birth (Figure 7). Only samples from births at Westmorland general were all despatched in less than 24 hrs, and this equated to only 6 samples. In the case of other hospitals, the majority of samples were always despatched within 24 hrs, although a proportion were also despatched later than this.

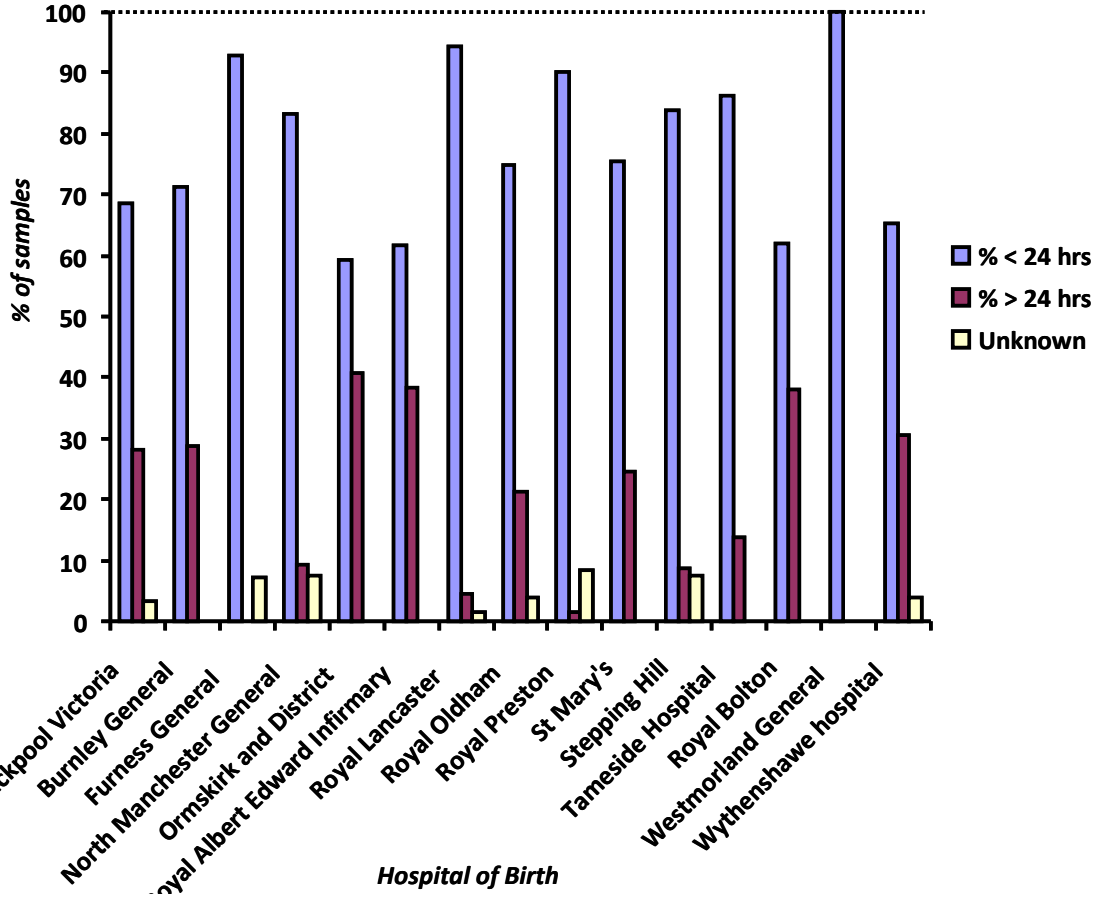

Figure 7. The time taken (in days) from sample collection to despatch, divided by hospital of birth. *Samples should be despatched to the laboratory within 24 hrs of collection and the proportion of samples sent in this time frame is indicated for each hospital trust. Please see Appendix 5 for the total numbers.*

3. Where postal methods are used, samples should be sent by first class post in pre-paid, clearly identifiable screening envelopes

Royal mail post was used to deliver almost half of samples (48.3%) to the laboratory. The vast majority of samples which were received by post were sent in clearly identifiable pre-paid envelopes (93.6%). Those which are not sent in pre-paid envelopes (5.3%) were instead sent in plain envelopes, with a sticker denoting the newborn screening laboratory address. Samples were received from births at Stepping Hill, Wythenshawe, Royal Preston, Royal Lancaster and Blackpool Victoria hospitals in plain envelopes. The greatest number of plain envelopes were received from births at Blackpool Victoria hospital, although this still only equated to 8 samples. Each of the areas sending samples in non-pre-paid envelopes also send samples in pre-paid envelopes, suggesting that it is only when these are unavailable that they make use of their own envelopes. Although not pre-paid, these envelopes continue to be easily identified due to the typed address and do not delay sorting within the post room.

The standard also advises for samples to be sent by first class Royal Mail post to avoid unnecessary delays within the postal system. The vast majority of posted envelopes were received by first class post (99.3%), although two samples were sent second class. In one case the envelope took 2 days to reach the screening laboratory; the other sample took 4 days in the postal system to reach the laboratory. These results indicate that second class post can indeed cause unnecessary delays in delivery of bloodspot cards for analysis.

4. Where the target cannot be met through current postage systems, alternative despatch mechanisms must be implemented.

A number of areas chose to deliver their bloospot cards to the newborn screening laboratory by methods of transport other than Royal Mail. 51.7% of samples arrived by courier/inter-hospital transport whilst 48.3% arrived by Royal Mail. Due to the envelopes used and the transport systems taken by samples within the hospital, it is difficult to differentiate between courier and inter-hospital transport deliveries. As such these shall be considered as one group.

Considering both modes of transport (Figure 8), there are clear differences between the time taken from despatch for samples to arrive in the laboratory. The most efficient way of receiving samples into the laboratory is evidently through courier/inter-hospital transport (95.8% of samples received next day). Considerably fewer samples delivered by Royal Mail arrived next day (35.9%), with a similar number of samples arriving 2 days (29.4%) and ≥ 3 days (27.4%) post despatch.

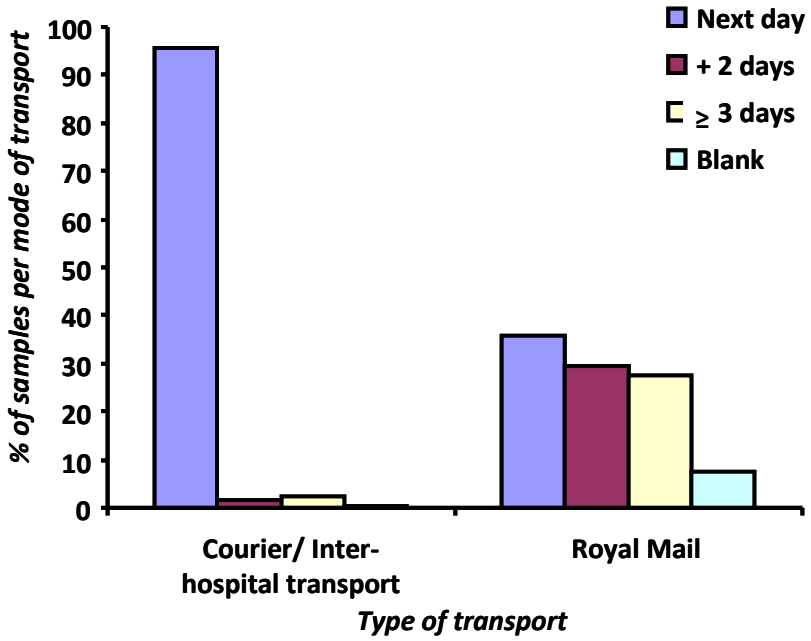

Figure 8. Arrival of samples in the laboratory following use of either Courier/Inter-hospital transport or Royal Mail transport. *Samples were divided into those which arrived the following day, or those which take 2 or more days to arrive.*

5. Despatch of blood spot screening cards should not be delayed in order to batch cards together in one envelope

Although there is a fairly even split between the number of samples which arrive by Royal mail versus the number of samples which arrive by Courier/Inter-hospital transport, a larger number of samples arrive per envelope for the Courier/Inter-hospital transport route. This is partly the nature of current Royal Mail costs limiting the number of samples per pre-paid envelope to 5.

Analysing whether samples were batched before despatch by the different transport mechanisms revealed that 17.2% of total royal mail samples were contained in envelopes with samples collected at least 24 hrs apart. Batching was especially prevalent with samples delivered by courier/inter-hospital transport with 61.8% of total courier samples being contained in envelopes containing samples collected at least 24 hrs apart. Since samples should be despatched within 24 hrs of collection, batching of samples prior to delivery is introducing delays in despatch.

6. The health professional taking and posting the samples should record both the sample date and the posting/despatch date. In the event that a sample is delayed/missing this information may be required to audit the process as part of ongoing quality improvements.

Although a large proportion of envelopes were labelled with the date of despatch 8% of envelopes were not. Currently this information is not considered crucial as it is not recorded during sample processing. However, the date of posting is valuable information in the event of unnecessary delays in the postal system. It should also be noted that 0.3% of newborn bloodspot cards did not have a sample collection date. Whilst this is subsequently addressed within the newborn screening laboratory, admin time is required to find out the collection date.

7. Samples should not be posted in hospital internal mail if this process delays the sample reaching the laboratory

As already considered in an earlier section the use of inter-hospital mail did not prevent the arrival of samples to the laboratory, indeed in some cases the use of inter-hospital mail speeded up sample delivery. However, whilst the rapid delivery of samples via inter-hospital post appeared reliable, the use of other hospital laboratories to batch samples for posting slowed down the despatch of samples.

8. Delay in transport of the sample to the laboratory may cause deterioration of the sample, samples that take in excess of 14 days between the sample being taken and arrival at the laboratory should be reported.

Samples which take in excess of 14 days from sample collection to arrival in the laboratory are noted and a new sample is requested.

9. PCTs should have failsafe mechanisms to ensure that standards are compiled with and alternative postal mechanisms are used in times of postal strike.

Currently only approximately half of samples are delivered to the newborn screening laboratory by way of Royal mail post. In conditions of a postal strike these samples could be sent by the reliable transport systems already used of courier delivery and/or inter-hospital transport.

Discussion

The success of the newborn bloodspot screening programme is heavily dependent on the timely despatch of samples post collection and subsequent arrival of samples in the screening laboratory for analysis. This audit used standard 4 of the UKNSPC guidelines regarding newborn screening to identify how transport systems for newborn bloodspot cards operate in the areas served by the Manchester newborn screening laboratory.

One of the core sections of this screening standard is for all samples to be delivered to the screening laboratory within 4 days of sample collection. 98.6% of samples reach the laboratory within this time frame, with 95.9% of samples achieving the developmental standard and arriving within 3 days. This data does, however, only reflect the small sample size of the audit period; larger datasets are considered in the quarterly report. The main reason for samples failing to arrive in time is due to delayed despatch as a result of sample batching. The method of transport used for samples to arrive in the laboratory had little effect on the number arriving within 4 days of sample collection (Royal Mail; 98.9%, versus Courier/Inter-hospital transport; 99.1%), although more samples sent by courier/inter-hospital transport were able to arrive within 3 days of sample collection (96.9% versus 91.5%).

Although the majority of samples do arrive within 4 days of sample collection, delays were still identified in the time taken for samples to be despatched to the newborn screening laboratory. A further core standard is the timely despatch of samples within 24 hours of collection, preferably on the day of collection. Only 76.1% of samples were despatched within the desired 24 hour time frame, with only 50.4% of samples despatched on the recommended day of collection. A significantly greater number of Royal Mail samples were despatched on the day of collection versus those samples sent by Courier/Inter-hospital transport (58.9% versus 44.0%). However when samples despatched within the whole 24 hr period post sample collection were considered, there was a much smaller difference between Royal Mail and Courier/Inter-hospital transport (77.7% versus 73.9%).

48.3% of samples are delivered by Royal Mail with almost all of these (93.6%) sent in pre-paid envelopes. All envelopes which arrive within the Trust by Royal Mail are sorted efficiently, with no problems identified in the onward delivery of samples to the newborn screening laboratory. This finding suggests that the pre-paid newborn screening envelopes are an effective way of despatching samples to the Manchester newborn screening laboratory in a timely manner. The greater proportion of samples sent by Royal Mail on the day of sample collection is indicative of the ease of using this transport system, allowing midwives in the community to put samples into any post box as soon as possible.

Considering the time taken for samples to arrive in the laboratory from the day of despatch rather than the day of sample collection revealed that those samples delivered by courier/inter-hospital transport were much more likely to arrive the next day (95.8%), than samples delivered by Royal Mail (35.9%). Samples from Royal Mail took anything from next day to 3 days to arrive in the laboratory post despatch. Although almost all courier/inter-hospital transport samples arrived in the laboratory the following day, a much greater proportion of these samples were batched with other samples collected on different days i.e. >24 hrs apart (61.8%), compared to Royal Mail (15.2%). The intended use of pre-paid Royal Mail envelopes is for direct despatch of samples following collection. However, the batching of some samples prior to Royal Mail despatch does indicate that some areas use pre-paid envelopes in a different way to that intended, collecting samples together prior to despatch.

Two main transport systems are used for samples to reach the newborn screening laboratory at RMCH; Royal Mail posting and Courier/Inter-hospital transport. There was a negligible difference between the number of samples received by the newborn screening laboratory within 4 days of

sample collection for the two methods of transport; however there were distinct differences between these two transport routes when considering the other points of the standard.

Royal Mail delivery has the advantage of allowing midwives to despatch samples almost immediately and the vast majority arrive in the laboratory within 4 days of sample collection. No problems were identified with the transport of Royal Mail samples through CMFT, although Royal Mail samples were found to take anything from 1 to 3 days to arrive in the trust following despatch suggesting first class next day delivery of these envelopes is not guaranteed. The timely arrival of these samples in the laboratory therefore relies on timely despatch following sample collection. Just over half of samples were sent using courier/inter-hospital transport. This relies upon samples collected in the community all reaching a central point in order to be sent in to the laboratory together. As such a much greater number of these samples were found to be batched with others collected at least 24 hrs apart, compared to Royal Mail, and a significantly lower number of samples were despatched on the day of collection, compared to Royal Mail. However, these samples almost all arrived in the newborn screening laboratory within 24 hrs of despatch, therefore ensuring that samples were received within 4 days of sample collection.

Action Plan

Action Plan		
Key Action	**Co-ordinator for action**	**Timescale**
To present findings to the Greater Manchester and South Cumbria/Lancs Newborn Bloodspot Screening Commissioning & Quality Management Groups	Beverly Hird, Lesley Tetlow	March 2013
Request development of local action plans via the Newborn Bloodspot Screening Commissioning & Quality Management groups	Group Chairs, Beverly Hird, Lesley Tetlow	March 2013
To educate service users via the Regional Service Improvement Manager about the importance of despatching samples within 24 hours of collection and the possible delays incurred in batching samples prior to despatch	Elaine Butters, Regional Service Improvement Manager	October 2013
What was the main matter(s) of concern this audit identified?		
Batching of newborn screening samples is preventing timely despatch of samples within 24 hrs of collection.		
Please identify the main benefit(s) to our patient, or to hospital process that are expected to result from the action plan of this audit		
Timely despatch of newborn screening samples to the laboratory for analysis ensures that, in the case of a positive screening result, there is sufficient time for follow up and clinical referral.		
Will there be a re-audit?	Yes	When will the re-audit take place? Dec 2014

Appendix 1 – Data Collection Tool

N/A

Appendix 2 – Assurance levels for Clinical Audit

For each clinical audit undertaken, an assurance rating is reported for each standard measured.

Step 1:
Each standard is given a rating of red, amber or green depending on how high, or low, it measured.

Calculation of individual ratings against standard	
Colour	Standard % measure
	95% and above
	75% to 94%
	74% and below

Step 2:
Once each standard has been rated an overall level of assurance for the audit project can be determined using the matrix below.

Assurance Level	Calculation of assurance
Full	To be used when each standard has achieved a score of 95% or above and is rated Green
Significant	To be used when there are only Green and Amber rated findings (although where there are a significant number of Amber rated findings, consideration will be given as to whether in aggregate the effect is to reduce the assurance level given)
Limited	To be used when there is a small ratio of Red and Amber to Green rated findings
Very Limited	To be used when the ratio of Red rated findings are greater than the Amber and Green

The appropriate level of assurance will be decided following a discussion between the clinical audit lead, or leads, and the clinical audit department.

In the event that a decision cannot be reached, the Trust Clinical Audit Committee has the final word.

The assurance level and a summary of the how the standards were rated then sits on the front page of the report, as can be seen above on Page 1.

Appendix 3 – Dissemination list

For all Trust-Wide audits, copies of the completed report must be sent to the following:

- All Divisional Directors
- All Divisional Clinical Effectiveness Leads
- Head of Nursing
- Clinical Audit Department (via Facilitator for Division)
- Clinical Audit Sponsor
- Members of the clinical audit project team (if any)

For all Divisional audits copies of the completed report must be sent to the following:

- Clinical Head of Division
- All Directorate Managers
- Lead Nurse for Division
- The Divisional Clinical Effectiveness Lead
- Clinical Audit Department (via Facilitator for Division)
- Clinical Audit Sponsor
- Members of the clinical audit project team (if any)

For all local audits, copies of the completed report must be sent to the following:

- The Divisional Clinical Effectiveness Lead
- Clinical Audit Department (via Facilitator for Division)
- Clinical Audit Sponsor
- Members of the clinical audit project team (if any)

Appendix 4

Time taken for samples to arrive in the newborn screening laboratory. *Samples are divided into the hospital of birth and indicate the number of samples from this district which were received within the desired time frame of 4 days, the developmental standard time frame of 3 days and outside of 4 days.*

Hospital of Birth	< 4 days	< 3 days	> 4 days
Blackpool Victoria	80	78	4
Burnley General	183	179	1
Furness General	41	39	0
North Manchester General	106	102	1
Ormskirk and District	27	25	0
Royal Albert Edward Infirmary	25	23	1
Royal Lancaster	68	59	0
Royal Oldham	98	96	1
Royal Preston	187	185	3
St Mary's Hospital	187	182	1
Stepping Hill	89	85	1
Tameside Hospital	57	57	3
Royal Bolton	130	130	1
Westmorland General	6	6	0
Wythenshawe hospital	120	120	4
Not stated	16	16	0

Appendix 5

The time taken from sample collection to despatch, divided by hospital of birth. *Samples should be despatched to the laboratory within 24 hrs of collection and the number of samples sent in this time frame is indicated for each hospital trust.*

Hospital of Birth	< 24 hrs	> 24 hrs	Unknown
Blackpool Victoria	61	25	3
Burnley General	131	53	0
Furness General	38	0	3
North Manchester General	89	10	8
Ormskirk and District	16	11	0
Royal Albert Edward Infirmary	16	10	0
Royal Lancaster	65	3	1
Royal Oldham	74	21	4
Royal Preston	173	3	16
St Mary's Hospital	141	46	0
Stepping Hill	77	8	7
Tameside Hospital	19	3	0
Royal Bolton	82	50	0
Westmorland General	6	0	0
Wythenshawe hospital	81	38	5