

National Neonatal Audit Programme: Outlier management policy

Introduction

This document sets out the process for detection and management of outlier status in the National Neonatal Audit Programme (NNAP) for 2024 data. It follows the process set out in the [HQIP outlier guidance for England and Wales](#) and outlines where the NNAP takes steps that diverge from those outlined in that guidance.

Choice of performance indicators for outlier analysis

The performance indicators subject to outlier analysis are selected by the NNAP Methodology and Dataset Group and endorsed by the NNAP Project Board.

For the 2024 data year, the NNAP conducts low outlier analysis on the following measures at unit level:

- Is a mother who delivers a baby below 30 weeks gestational age given magnesium sulphate in the 24 hours prior to delivery?
- Does a baby born at less than 34 weeks gestational age have their cord clamped at or after one minute?
- Does an admitted baby born at less than 32 weeks gestational age have its first measured temperature of 36.5°C to 37.5°C within one hour of birth?
- Does a baby born at less than 30 weeks gestational age receive medical follow-up at two years gestationally corrected age (18-30 months gestationally corrected age range of acceptable ages)?
- Does an admitted baby born at less than 32 weeks gestational age meet the NNAP surveillance definition for necrotising enterocolitis (NEC) on one or more occasion?
- Does an admitted baby have one or more episodes of bloodstream infection, characterised by one or more positive blood cultures taken, after 72 hours of age?
- Does an admitted baby born at less than 32 weeks' gestational age develop bronchopulmonary dysplasia (BPD) or die?
- Does a baby born at less than 32 weeks' gestational age have a complete intraventricular haemorrhage scan within 28 days of birth? (Missing data outlier)
- Does a baby born at less than 31 weeks gestational age, or weighing less than 1501g at birth undergo the first ROP screening according to the guideline?
- Does a baby born at less than 34 weeks gestational age receive any of their own mother's milk in the first two days of life?
- Does a baby born at less than 32 weeks gestational age only receive non-invasive breathing support* during the first week of life?

For the 2024 data year, the NNAP will notify high outliers for the following measures:

- Does an admitted baby born at less than 32 weeks gestational age have its first measured temperature of 36.5°C to 37.5°C within one hour of birth?
- Is a mother who delivers a baby below 30 weeks gestational age given magnesium sulphate in the 24 hours prior to delivery?
- Does a baby born at less than 30 weeks gestational age receive medical follow-up at two years gestationally corrected age (18-30 months gestationally corrected age range of acceptable ages)?
- Does a baby born at less than 31 weeks gestational age, or weighing less than 1501g at birth undergo the first ROP screening according to the guideline?
- Does an admitted baby born at less than 32 weeks' gestational age develop bronchopulmonary dysplasia (BPD) or die?
- Does a baby born at less than 34 weeks gestational age have their cord clamped at or after one minute?
- Does a baby born at less than 34 weeks gestational age receive any of their own mother's milk in the first two days of life?

Detection of a potential outlier

The NNAP identifies outliers between 2 and 3 standard deviations below expected performance (known as alert level) and at 3 or more standard deviations below expected performance (known as alarm level).

The NNAP also identifies, for some measures, outliers between 2 and 3 standard deviations above expected performance (known as excellent) and at 3 or more standard deviations above expected performance (known as outstanding).

Outcomes are missing for some babies that satisfy the inclusion criteria for the analysis. In the outlier analysis, these babies are discarded; that is, no imputation is applied. The rate of non-response (frequency of missing entries) is evaluated and units and networks with exceptionally high rates are noted. A unit-level summary of the rates of non-response is also compiled.

The expected target, or comparison standard for outlier analysis, is set at the national mean rate. More information about comparison standard and developmental standard for each NNAP measure is available in the NNAP audit measures guide: <https://www.rcpch.ac.uk/work-we-do/clinical-audits/nnap/measures>

More information about outlier identification and the methodology used are available in the NNAP methodology and statistical analysis plan, available at: <https://www.rcpch.ac.uk/nnap-data-flow-methodology>

Management of a potential outlier

The NNAP follows the HQIP guidance for outlier management, however additionally it has chosen to inform neonatal networks of both alert and alarm level notifications to units within their network. It has also chosen to write to neonatal units and their respective neonatal networks to inform them of positive outlier status.

Table 1: Actions required for outliers at the alert level (>2 standard deviations from expected performance) & process for positive outlier notification.

Step	Action	Responsible person
1	<p>The Health Board/Trust designated lead will be informed of any alert level outliers. Alert level outlier status will be made clear in the annual reports and online tools.</p> <p>In England, NHSE and the CQC will not be informed of alert level outliers.</p> <p>In Scotland & Wales, the Scottish & Welsh Governments and HQIP will be informed of all outliers at the alert level.</p> <p>> Proceed to Stage 2</p>	RCPCH audit team
2	<p>The expectation is that Health Boards and Trusts should use 'alert' information as part of their internal quality monitoring process. They should review and investigate alerts in a proactive and timely manner, acting accordingly to mitigate the risk of care quality deteriorating to the point of becoming an alarm level outlier.</p>	<p>England = Healthcare provider lead clinician</p> <p>Scotland/Wales = Health Boards</p>
3	<p>The NNAP will notify the clinical lead and network managers of positive outlier status (Outstanding only). No further response will be required.</p>	

Table 2: Actions required for outliers at alarm level (>3 standard deviations from expected performance and for non-participation.

Stage	Working days	Description	Responsible person
1	10	<p>The process underpinning the analysis of the outlier metric data of identifying the 'alarm' outliers will be validated.</p> <p>A designation of potential outlier status will be annotated against identified units.</p> <p>> Proceed to Stage 2</p>	RCPCH Audit team
2	5	<p>Healthcare provider lead clinician informed about potential 'alarm' status and asked to identify any error or justifiable explanation(s). All relevant data and analyses should be made available to lead clinician.</p>	RCPCH Audit team
3	25	<p>Healthcare provider lead clinician to provide written response to the RCPCH audit team.</p>	Healthcare provider lead clinician
4	20	<p>Review of response from the clinical lead in the participating provider to determine if there is:</p> <p>'Alarm' status not confirmed:</p> <ul style="list-style-type: none">If it is confirmed that there was data error within the data originally supplied which was outside the control of the submitting unit. Re-analysis of accurate data may be considered and published if possible, depending upon timing and impact. But an indication <i>will</i> always be made stating that an outlier status is unlikely.	RCPCH Audit team

		<ul style="list-style-type: none">Data and results should be annotated within RCPCH audit records at this stage and within details of the provider's response and the subsequent reports online and any CQC slides generated. <p>'Alarm' status confirmed:</p> <ul style="list-style-type: none">If is confirmed that although the data originally supplied by the participating provider were inaccurate and analysis still indicates outlier status under exceptional circumstances mitigation messages can be annotated onto the online reporting. For example, equipment calibration failures or IT system errors. <p>Or</p> <ul style="list-style-type: none">It is confirmed that the originally supplied data were accurate, thus confirming the initial designation of outlier status. <p>> Proceed to <u>Stage 5</u></p>	
5	5	Contact healthcare provider lead clinician, prior to sending written notification of confirmed 'alarm' outliers to healthcare provider CEO and copied to healthcare provider lead clinician and medical director. For 'alarm' outliers, all relevant data, and statistical analyses, including previous response from the healthcare provider lead clinician should be made available to healthcare provider medical director and CEO.	RCPCH Audit team or healthcare provider lead clinician
		<div><div><p><u>For England</u></p><p>The outlier confirmation letter should also include the details in Step 7 below, and a request that the Trust engage with their CQC local team.</p><p>NNAP will notify the CQC (clinicalaudits@cqc.org.uk), using the outlier template, and include a copy of the project specific outlier policy, NHSE (england.clinical-audit@nhs.net), and HQIP associate director and project manager confirmed 'alarm' status.</p><p>All three organisations should confirm receipt of the notification.</p><p>The CQC will provide NHS England with a quarterly report of all alarm and alert level outliers that have been notified to CQC.</p></div><div><p><u>For Wales</u></p><p>NNAP will notify the Welsh Government (wgclinicalaudit@gov.wales) at the same time as the healthcare provider. NNAP will also notify the HQIP associate director and project manager.</p><p><u>For Scotland</u></p><p>NNAP will notify the Scottish Government (MaternalandInfantHealth@gov.scot) and the HQIP associate director and project manager.</p></div></div>	
6	Wales = 10 England = NNAP report publication date.	<div><div><p><u>For England</u></p><p>NNAP will proceed to public disclosure of comparative information that identifies healthcare providers as Alarm level outliers.</p><p>Healthcare providers who have an alarm status outlier investigation, that they or others have performed, will be published by the NCAPOP audit provider as an addendum or footnote.</p><p>Publication will not be delayed whilst waiting for such investigation to be completed. This can be added, online,</p></div><div><p><u>For Wales</u></p><p>Acknowledge receipt of the written notification confirming that a local investigation will be undertaken with independent assurance of the investigation's validity for 'alarm' level outliers, copying in the Welsh Government.</p><p>Healthcare provider CEO informed that the NNAP will publish information of comparative performance which will identify healthcare providers.</p></div></div>	RCPCH Audit team or healthcare provider CEO

		<p>when and if it subsequently becomes available.</p> <p>Conversely, if there has been no response from the healthcare provider concerning their alarm outlier status, that will be documented on the NCAPOP audit provider's website where this information is presented.</p>		
7	Determined by CQC and HIW	<p><u>For England</u></p> <p>The CQC advise that during their routine local engagement with the providers, their inspectors will:</p> <ul style="list-style-type: none"> • Encourage Trusts to identify any learning from their performance and provide the CQC with assurance that the Trust has used the learning to drive quality improvement. • Ask the Trust how they are monitoring or plan to monitor their performance. • Monitor progress against any action plan if one is provided by the trust. 	<p><u>For Wales</u></p> <p>The Welsh Government monitors the actions of organisations responding to outliers and takes further action as and when required. The Healthcare Inspectorate Wales (HIW) does not act as regulator and cannot take regulatory action in relation to NHS providers. However, HIW can request information on the actions undertaken by organisations to ensure safe services are being delivered. The Welsh Government can share information with HIW where appropriate and advise on the robustness of plans in place to improve audit results and outcomes.</p>	<p>England = CQC</p> <p>Wales = Healthcare Inspectorate Wales</p>
8	Wales = 15	<p><u>For England</u></p> <p>N/A</p>	<p><u>For Wales</u></p> <p>If no acknowledgement received, a reminder letter should be sent to the healthcare provider CEO, copied to Welsh Government and HQIP. If not received within 15 working days, Welsh Government notified of non-compliance in consultation with HQIP.</p>	RCPCH Audit team
9	Wales = NNAP report publication date.	<p><u>For England</u></p> <p>N/A</p>	<p><u>For Wales</u></p> <p>Public disclosure of comparative information that identifies healthcare providers through planned reporting and online reporting tools.</p>	RCPCH Audit team

If you have any questions about the NNAP outlier detection and management process, please contact the NNAP audit team via email: nnap@rcpch.ac.uk or via telephone: 020 3861 1910.