Provider line of sight table on report recommendations for submission to the funders	
Please can the provider complete the following details to allow for ease of access and rapid review	
Project and Title of report, including HQIP Ref. ***e.g., Ref. XXX, Project and report title***	**Ref 429, National Neonatal Audit Programme (NNAP), Summary report on 2023 data**
1. What is the report looking at/what is the project measuring?	The National Neonatal Audit Programme (NNAP) assesses whether babies admitted to neonatal units receive consistent high-quality care in relation to the NNAP audit measures that are aligned to a set of professionally agreed guidelines and standards. The NNAP also identifies variation in the provision of neonatal care at local unit, regional network and national levels. NNAP supports stakeholders to use audit data to stimulate improvement in care delivery and outcomes.
2. What countries are covered?	England, Wales, Scotland, and participating Crown Dependencies* *Currently, Noble hospital in the Isle of Mann is the only participate from a Crown Dependency.
3. The number of previous projects (e.g., whether it is the 4th project or if it is a continuous project)	The audit has been running annually since its inception in 2006. The RCPCH is currently contracted to deliver the NNAP to March 2025.
4. The date the data is related to (please include the start and end points – e.g., from 1 January 2016 to 1 October 2016)	Babies admitted to neonatal care between 1st of January and the 31st of December 2023, expect for the following measures: • Two-year follow up (Note: In 2023, this measure excludes Scottish neonatal units)
5. Any links to NHS England objectives or professional work-plans (only if you are aware of any)	

Please can the provider complete the below for each recommendation in the report

No.	Recommendation	Intended audience for recommendation	Evidence in the report which underpins the recommendation *(including page number)*	Current national audit benchmarking standard if there is one	Associated NHS payment levers or incentives'	Guidance available (for example, NICE guideline)	% project result if the question previously asked by the project (date asked and result). If not asked before please denote N/A. This is so that there is an indication of whether the result has increased or decreased and over what period of time
1	**National Health Service England** and health departments in the **Devolved Governments** should: • Ensure that **Neonatal Networks** with low rates of survival review their mortality data and develop locally	All neonatal networks (also involved: neonatal units, Network Boards, LMNS (and equivalent Boards), Trust/Health Board	• The proportion of babies born between January 2023 and December 2023 at 24 to 31 weeks gestational age who died before discharge/44 weeks postmenstrual age (PMA) is 6.4%. • Across networks, the observed proportion ranges from 3.3% to 8.2% ***Results at a glance - page 4***	NA	NA		This year the NNAP has moved to reporting mortality until discharge, or 44 weeks post-menstrual age (whichever occurs sooner), for a one-year cohort of babies. The data below shows previous years recalculated using the 2023 measure methodology to enable trending/ direct comparison. 2018* 6.4%

1 (continued)	prioritised improvement plans. Quality improvement activity should focus on best practices identified from **Neonatal Networks** exhibiting low mortality with particular attention given to differences in network structure, staffing, clinical governance, and clinical practices. • Review survival rates in very preterm infants and work with **The National Institute for Health and Care Research (NIHR)** to support future research investigating the reasons for the observed geographical variation in mortality.	Governance Boards, Maternity or Neonatal Safety Champions, Integrated Care Boards (ICB) and Specialised Commissioning.	• Neonatal unit mortality in very preterm infants in England, Scotland, Wales, and participating Crown Dependencies is: ○ Not improving. The one-year cohorts, shown for this report, demonstrate a relatively stable mortality trend between 2018 and 2023 (2018 - 6.4%, 2019 - 6%, 2020 - 6.6%, 2021 - 6.6%, 2022 - 6.5%, 2023 - 6.4%). ○ Similar to that seen in Australia, New Zealand[1] and Canada[2]. Neonatal unit mortality is known to vary within Europe[3]. ○ Dynamic. From 2018 to 2023, the mortality trend in several neonatal networks varied by over 2%, whereas others showed relative stability. ○ Up to twice as high in some neonatal networks compared to others in a way that is not explained by case mix and with the differences undiminished over time. ***Bullet Point 1 - Page 6*** • The NNAP Healthcare Improvement Strategy (2022-2025) introduced an improvement goal with the stated aim of "reducing the difference between the networks with the most negative and most positive treatment effect for				2019* 6.0% 2020* 6.6% 2021* 6.6% 2022 6.5% 2023 6.4% *Note: 2018-2021 does not include Scottish neonatal units. • In 2022, the overall difference in mortality treatment effect* was 3.8%. *Note: the difference between the networks with the most negative and most positive treatment effect for mortality until discharge home.

[1] Report of the Australian and New Zealand Neonatal Network 2021. Available at: https://www.anznn.net/Portals/0/AnnualReports/Report%20of%20the%20Australian%20and%20New%20Zealand%20Neonatal%20Network%202021%20amended2.pdf

[2] The Canadian Neonatal Network (CNN) Annual Report 2022. Available at: https://www.canadianneonatalnetwork.org/portal/Portals/0/Annual%20Reports/2022%20CNN%20Annual%20Report.pdf

[3] Shah, Prakesh S et al. The International Network for Evaluating Outcomes of very low birth weight, very preterm neonates (iNeo): a protocol for collaborative comparisons of international health services for quality improvement in neonatal care. 2014. BMC paediatrics vol. 14 110.

1 (continued)			mortality until discharge home by 0.3% per year". No reduction has been seen. In 2023, the difference in mortality treatment effect was 3.9%, compared to 3.8% in 2022 and 2021. ***Bullet Point 2 - Page 6***				
2	**National Health Service England** and health departments in the **Devolved Governments** should ensure that **Neonatal Networks** work with their constituent units and are: • Regularly reviewing and addressing their rates of missing data for preterm brain injury (intraventricular haemorrhage, cystic periventricular leukomalacia, and post haemorrhagic ventricular dilatation) and necrotising enterocolitis. • Utilising the NNAP restricted access dashboard to validate these data in order that units and networks can develop quality improvement plans based on babies' outcomes.	NHS England and health departments in the Devolved Governments, Neonatology - Getting It Right First Time (GIRFT) and Specialised Commissioning.	• Bronchopulmonary dysplasia (BPD) – 31.5% of babies born at less than 32 weeks developed BPD. Network range: 25.69% to 39.1%. • Necrotising enterocolitis (NEC) - 5.5% of babies born at less than 32 weeks developed necrotising enterocolitis. Network range: 3.8% - 8.3%. • Bloodstream infection (BSI) - 4.3% of babies born at less than 32 weeks had growth of a clearly pathogenic organism. Network range: 1.9% - 9.6%. ***Results at a glance – Page 4.*** • The rates of complications relating to preterm birth and the management of preterm infants have not improved. This is clearest in the commonly occurring complication of bronchopulmonary dysplasia (BPD), which continues to rise despite recent clinical initiatives[4] (2021 - 30.2%, 2022 - 31.3%, 2023 - 31.5%). An example of such treatments is the use of non-invasive breathing support, which varies strikingly between neonatal units of the same type. The observed increase in the rate of BPD cannot be attributed to falling mortality or an increase in the number of the least preterm infants. The increase in rates	NA	NA	NICE Quality Standard [QS193]. Specialist neonatal respiratory care for babies born preterm.	• In 2022, 40% of babies born at less than 32 weeks developed Bronchopulmonary dysplasia (BPD) or died*. *Note: 2022 figure recalculated using the 2023 measure code to enable direct comparison. • In 2022, 3.2% of babies born at less than 32 weeks developed necrotising enterocolitis. • In 2022, the proportion of babies with growth of any clearly pathogenic organism was 5.4%. • In 2022, the proportion of babies born at less than 32 weeks gestational age with intraventricular haemorrhage grades 3 or 4 (IVH 3 or 4) was 7.5%, and the proportion with a combined outcome of IVH3/4 or death was 14.7%. • In 2022, the proportion of babies born at less than 32 weeks gestational age with cystic periventricular leukomalacia (cPVL) was 2.6% and the proportion with a combined outcome of cPVL or death was 10.1%.

[4] BAPM. Antenatal Optimisation for Preterm Infants less than 34 weeks. A Quality Improvement Toolkit. October 2020. Available at: https://hubble-live-assets.s3.amazonaws.com/bapm/redactor2_assets/files/843/AO_Toolkit_FULLTOOLKIT_11-2-21.docx.pdf

2 (continued)			of BPD is not seen in the babies affected by the most serious forms of BPD such as ventilation at term equivalent. Striking variations in rates of BPD continue to be observed between units and neonatal networks. ***Bullet Point 4 - Page 6/7.***				
			• Serious preterm brain injury was identified in 9.0% of very preterm babies nationally (572 of 6,390). 6.6% and 2.6% of very preterm infants had IVH 3, 4 and cystic periventricular leukomalacia (cPVL). Research indicates that preterm brain injury represents 40% of the total number of serious brain injuries recorded in infancy, itself part of a wider government ambition (England and Wales) to reduce all avoidable harm by 50% . Despite the existence of an agreed surveillance definition and established reporting mechanisms, rates of data completeness remain a serious concern (for example five neonatal networks had missing data rates that ranged from 22.7% to 55.8% for IVH). A high proportion of missing data, wide inter-unit variation in the rates of missing data and the fact that overall, the data suggests that one in ten babies did not receive relevant imaging within a week of birth, implies that measurement of progress towards the national ambition may be seriously undermined by data quality issues. ***Bullet Point 5 - Page 7.***				
2 (continued)			• Rates of necrotising enterocolitis (NEC) are not yet falling in a sustained and credible way. 5.5% (385 of 6,967) of babies born at less than 32 weeks gestational age met the NNAP				

			surveillance definition of NEC. 88% of units provided assurance that their 2023 data were accurate, but as with preterm brain injury measurement of this serious complication of preterm birth is compromised by poor data quality. ***Bullet Point 6 - Page 7.*** • Rates of bloodstream infection in very preterm infants show tentative signs of an overall decrease (2023 - 4.4%, 2022 - 5.4%). The rigour of such a finding will be enhanced by forthcoming data linkage projects. ***Bullet Point 7 - Page 7.***				
3 3 (continued)	In order for perinatal teams to identify and implement the necessary perinatal interventions at the earliest opportunity, the **Departments of Health** in England, Wales, Scotland, and participating Crown Dependencies should: • commission public health campaigns aimed at raising public and professional awareness of the nature and importance of the signs and symptoms of preterm labour and the effectiveness of clinical interventions. • work with relevant manufacturers and distributors to address supply chain challenges in the delivery of	The Departments of Health in England, Scotland, Wales, and participating Crown Dependencies.	• 79.6% of babies born at less than 27 weeks were born in a centre with a NICU on site. Network range: 61.6% to 89.9%. • 62% of babies born at less than 34 weeks received their mother's milk in the first 2 days of life. Network range: 41.4% to 78.3%. ***Results at a glance – Page 4.*** • 68.3% (9,031 of 13,227) of babies born at less than 34 weeks' gestation had deferred cord clamping (DCC). In 2022, the proportion was 60.4%, indicating a striking 7.9% improvement over the past year. Many neonatal units are now delivering deferred cord clamping at or above the levels observed in the clinical trials that demonstrated reduced neonatal mortality after preterm birth[5]. In contrast to practice in some of the trials, less than 7% of babies had deferred cord clamping of more than two minutes, likely reflecting a literal	70% of babies born at less than 34 weeks had deferred cord clamping (DCC). 90% of mothers who delivered a baby at less than 30 weeks gestational age receiving antenatal magnesium sulphate. Timeliness and normal temperature should be met for at least 90% of babies. 60% of babies born at less than 34 weeks receiving their mother's milk in	Linked to Maternity Incentive Scheme, safety action 6, Saving Babies Lives v3	NICE guideline [NG25], Preterm Labour and Birth NHS England, Neonatal Critical Care Service Specification UNICEF UK. The Baby Friendly Initiative	• In 2022, 52% of mothers who delivered a baby between 23- and 33-weeks gestational age received a full course of antenatal steroids within one week prior to delivery. • In 2022, 76.3% of babies had a temperature measured on time which was within the normal range. • In 2022, 60.4% of babies born at less than 34 weeks gestation had deferred cord clamping (DCC). • In 2022, 85.6% of mothers who delivered a baby at less than 30 weeks gestational age received antenatal magnesium sulphate. • In 2022, 79% of babies born at less than 27 weeks were born in a centre with a NICU on site. • In 2022, 49% of babies born at less than 34 weeks

[5] Tarnow-Mordi, William *et al*. Delayed versus Immediate Cord Clamping in Preterm Infants. The New England journal of medicine vol. 377,25 (2017): 2445-2455.

	quantitative fetal fibronectin testing kits.		adoption of published guidance. A small number of neonatal units can be identified as low outliers in the proportion of babies who get DCC (alarm threshold). These and other units may perceive barriers to wider use of DCC that are not appreciated in higher use units. ***Bullet Point 2 - Page 8.***	the first 2 days of life. 85% of babies born at less than 27 weeks born in a centre with a NICU on site.			received their mother's milk in the first 2 days of life.
3 (continued)			• 52.9% (6,090 of 11,518) of mothers who delivered a baby between 23- and 33-weeks gestational age received a full course of antenatal steroids within one week prior to delivery. Antenatal steroids are acknowledged to be the most powerful influence on the survival and wellbeing of preterm infants. Changes in their use are difficult to interpret reliably from the 2023 NNAP data. This is in part due to the lack of balancing measures and in part due to concerns that any apparent improvement in adherence to the existing measure may simply reflect a measurement driven trend to administer antenatal steroids with a shorter than recommended dosage interval. The NNAP has developed a dataflow to address the latter problem. ***Bullet Point 3 - Page 8.*** • 85.1% (3,317 of 3,897) of mothers who delivered a baby at less than 30 weeks gestational age received antenatal magnesium sulphate. This represents a small decrease from 2022 data (0.5%) and remains below the new developmental standard (90%). While it is not likely that all eligible women can receive magnesium sulphate due to the				

			emergency nature some preterm labour, further increases in aggregate usage can likely be achieved by examining and learning from cases where administration did not occur, particularly in centres with below average adherence. ***Bullet Point 4 - Page 8.*** • 80.4% (10,000 of 12,441) of babies had a temperature measured on time and within the normal range. This data represents a continuation of the trend of year-on-year improvement in the proportion of babies admitted with a normal temperature and may be attributable to national perinatal improvement programmes[6]. ***Bullet Point 5 - Page 8/9.*** • There has not been any significant improvement in the proportion of the most premature babies delivered in the most appropriate hospitals (2023 - 79.6%, 2022 - 79.0%). As with timely administration of antenatal steroids and administration of magnesium sulphate, early recognition of symptoms and signs of preterm labour will be central in facilitating further improvement. ***Bullet Point 6 - Page 9.***				
4	**Neonatal Networks** should ensure that their constituent	All neonatal networks	• Over three quarters of babies born at less than 34 Weeks' gestation did not		Linked to Maternity Incentive	NICE guideline [NG25], Preterm Labour and Birth	N/A - Optimal perinatal care composite metric introduced in 2023.

[6] Maternal and Neonatal Safety Improvement Programme (MatNeoSIP), Perinatal Excellence to Reduce Injury in Premature Birth (PERIPrem), and the Scottish Patient Safety Programme (SPSP).

	units are using the NNAP restricted access dashboard to review their rates of optimal perinatal care delivery, identifying instances of non-adherence, and implementing quality improvement activities in response to them.	(also involved: neonatal units, Network Boards, LMNS (and equivalent Boards), Trust/Health Board Governance Boards, Maternity or Neonatal Safety Champions).	receive an optimal care journey. Whilst there is encouraging improvement in this metric across most regions there remains significant variation between neonatal units and networks. ***Bullet point 1 - Page 8.***		Scheme, safety action 6		
5	**Neonatal Networks** should work with their constituent units and encourage them to	All neonatal networks	• 95.2% of parents had a documented consultation with a senior member of	100% of parents having a documented consultation with a senior			• In 2022, 95.9% of parents had a documented consultation with a senior member of the neonatal

	use the monthly data available in the NNAP restricted access dashboard to identify cases where optimal parental partnership in care did not occur. These data will support neonatal units to enhance their delivery of family centred care.	(also involved: neonatal units, Network Boards, LMNS (and equivalent Boards), Trust/Health Board Governance Boards, Maternity or Neonatal Safety Champions).	the neonatal team within 24 hours of their baby's admission. • 38.7% of baby care days had a consultant-led ward round with at least one parent included. ***Results at a glance – Page 4.*** • For more than one neonatal unit admission in twenty, there is no record of parents being seen by a senior member of staff with 24 hours. This poor adherence represents a small decline (0.3%) since this measure was last subject to outlier identification in 2020. This highlights the known challenges in maintaining improved quality and further suggests that outlier identification may support efforts to maintain adherence, which has implications for this audit and perinatal quality improvement generally. ***Bullet point 2 – Page 9/10.*** • 38.7% of baby care days had a consultant-led ward round with at least one parent included (264,824 days of a possible 683,717 days). There is wide variation in the proportion of consultant ward rounds with parental involvement. Adherence at neonatal network level ranged from 26.5% to 68.6% and even more strikingly unit level adherence ranged from 3.3% to 99%. There may be differential interpretation or implementation of this measure in neonatal units. ***Bullet point 3 – Page 10.***	member of the neonatal team within 24 hours of their baby's admission.			team within 24 hours of their baby's admission. • In 2022, 47.2% of baby care days had a consultant-led ward round with at least one parent included.