4.2.11 In terms of acuity, network data[7] available to the team had indicated that COCH has a significantly higher proportion of late gestation admissions (over 37 weeks) than other local units - 10.73% compared with 5.69% average for the 22 units, and this had been raised for several years. The 2015-6 data available in October showed the figure had fallen to 7.8%, lower than two other units in the region. A number of possible reasons for the higher level had been suggested including the transitional care arrangements, differences in obstetric approach, reluctance to discharge, low thresholds to transfer in or inexperienced medical staff but the increasing trend towards the network norm was commendable and monitoring should continue.

4.2.12 The Network had concluded that too many IC days were occurring outside the NICUs than recommended in the BAPM 2014 standards. There is a longer term network plan to reduce the number of IC-cot-days in LNUs.

4.2.13 Given that the unit will have been running for some months at Level 1 before any reinstatement of the IC cots, the staff must be supported to maintain their intensive care skills. This could be by temporary rotation to a Level 3 unit or simulation scenarios. Given nurses attend larger tertiary centres when undertaking the ITU specialist neonatal course as 'students' this should be feasible but requires a robust yet supportive HR system to ensure honorary contracts and paperwork are in place.

Recommendation: The organisation should ensure maintenance of skills of neonatal nursing and medical team to ensure that return to level two can be safely managed. Rotation of staff to level three units should be explored

4.3 Does the unit have clear and engaged leadership and good team working?

Yes, generally but there were some areas where communications could be strengthened.

4.3.1 The Review team found extremely positive relationships amongst the various teams that contribute to the neonatal unit. The consultants appeared to be a cohesive group who were proud of the unit and how well they worked together, for example in developing and agreeing clinical guidelines. The senior nurses were very strong as a team and provided appropriate challenge to the medical staff and support to nursing colleagues. The more junior nurses and doctors all spoke highly of the atmosphere on the unit and the accessibility of other staff to assist with questions and clinical advice. The neonatal / paediatric team was reported by other Trust staff to have `far fewer problems than others` and seem to get on well with each other and the nurses.

4.3.2 There were, however, some historical issues around senior level decision making. Some nurses reported that external escalation was not always as timely as it could have been, and nurses did not feel empowered to participate. Although the nurses work to a relatively traditional model, they reported that they will support escalation more "vigorously" depending upon which consultant or locum is on duty. This is not

[7] ODN activity and demand data 1st January 2014-31st March 2015

death in December 2015 also exposed inadequate liaison between COCH clinicians and the transport team. There appears to be no formal mechanism or process for joint M&M review across the network for infants who have been transferred between units, and no mechanism to trigger closure of a unit when it has reached capacity.

Recommendation: Clarify between network and commissioners the arrangements for multi-site investigations and timely implementation of actions

Recommendation: The network should develop a policy for temporary closure of a unit to admissions due to capacity concerns

4.5.10 The COCH team works naturally with Arrowe Park NICU and is considering working more closely together (see3.14). Where neonates may require surgery (e.g. swollen abdomen) there is some confusion about the protocol with some clinicians contacting the surgical team at Alder Hey immediately, and others talking through the situation with the neonatologists in LWH or Arrowe Park first. These pathways were explored in a surgical review in April 2016 which made six recommendations for service providers and five for the network including a communication improvement plan and a single surgical model to reduce confusion and delays.

4.6 Are there any identifiable common factors or failings that might in part or in whole explain the apparent increase in mortality in 2015 and 2016?

4.6.1 The Review team considered carefully the various pieces of evidence and the overview provided of the cases in question (set out in Appendix 4). The unit took 11% of network admissions but experienced 13% of the deaths in 2015. The consultants had explored a number of factors themselves but not in a systematic way nor following sound governance and root cause analysis processes, and the involvement of the network clinical governance group had been relatively supervisory, working on the summaries of cases rather than examining each in detail .

4.6.2 A number of recommendations have been included in this report which draw out areas of non-compliance with standards or where practice might be improved. To summarise,

- Staffing levels are inadequate; when mapped to the actual activity and acuity of a LNU under the BAPM standards, both from a nursing and a medical perspective.

- Escalation of concerns to tertiary units for advice or transport was sometimes delayed and network agreement to encourage a lower threshold for escalation and discussion is required.

- Most of the infants had undergone a Post Mortem from one of the three perinatal pathologists at Alder Hey but these did not include systematic tests for toxicology, blood electrolytes or blood sugar since the infants died in hospital