

Women's, Children's & Adolescents' Services CAG

Neonatal Services

Response to Green Paper

The WACs CAG is pleased to provide a response to the Tasmanian Government's Green Paper in relation to Neonatal Services. There was consensus from the majority of WACS CAG members on the content of this submission. However, it is important to note that there was not universal consensus on the 'Recommendations for Workforce Requirement', specifically with regards to the recommendation that the role delineation of the maternity service at the Mersey Community Hospital be transitioned to Level 1 because of 'the lack of continuous and sustainable availability of timely neonatal/paediatric medical cover'. This recommendation is supported by the paediatricians and obstetricians (including the senior paediatricians and obstetricians in the Northwest), but is not supported by the midwifery representatives to the WACS CAG.

Service Profile

Current Service Overview

Based on the Service Descriptions provided in the draft Tasmanian Role Delineation Framework (TRDF) for Neonatal Services the CAG believes that the following levels of service are being provided in Tasmania:

- Royal Hobart Hospital (RHH) – Level 6
- Launceston General Hospital (LGH) – Level 5
- North West Regional Hospital (NWRH), Burnie – Level 4
- Mersey Community Hospital (MCH), Latrobe – does not meet the minimum Neonatal Service requirement of Level 3
- Scottsdale and Smithton – These centres do not meet the minimum Neonatal Service requirement of Level 3

The MCH does not meet requirements for Neonatal Services at Level 3 because of limitations in the level of Paediatric medical cover. The TRDF does not provide scope for Neonatology Services at Level 1 or 2.

The NWRH, Burnie, cares for a subgroup of stable preterm infants born at 32 and 33 weeks gestation that under the TRDF would generally require care at a centre providing Neonatal Service of at least Level 5.

The LGH cares for a subgroup of stable preterm infants born at 30 and 31 weeks gestation that under the TRDF would generally require care at a centre providing Neonatal Service at Level 6 (i.e. the RHH).

The RHH meets the requirements for Level 6, however it is important to note that Tasmania is unique in the Australian context, given that the neonatal intensive care unit at the RHH, which provides Level 6 Neonatal Services for the entire state, has also formally provided paediatric intensive care services for the state (for children up to 14 years of age) since 2007, as the Tasmanian Neonatal and Paediatric Intensive Care Unit (NPICU). The Tasmanian Newborn Emergency Transport Service (NETS) is also operated and staffed by the team at the NPICU (see separate NETS/PETS/PERS response).

Service Description – Levels 3 to 6

The WACS CAG has reviewed the service descriptions for the Neonatal Services in the TRDF for Levels 3 to 6 and feels that the descriptions are generally appropriate. We do however request modest changes (see recommendations below) based on the following:

Level 4

The NWRH, Burnie currently cares for low risk infants down to 32 weeks gestation. Higher risk mothers and infants at 32 and 33 weeks gestation are discussed with the RHH NPICU clinical team. Other clinical criteria are also specified as indications to discuss the care of a neonate with the clinical team at the RHH NPICU. The transfer of stable, well infants born at 32 and 33 weeks gestation at the NWRH is not required and would impose an additional burden on families through dislocation, and on the resources of Tasmanian medical transport services.

Level 5

The LGH currently cares for low risk infants down to 30 weeks gestation. Higher risk mothers and infants at 30 and 31 weeks gestation who are likely to require care in a Level 6 centre are discussed with the RHH NPICU clinical team. This guideline notes that this gestational age limit for the LGH applies to singleton infants without intrauterine growth restriction (IUGR), although does not specify the lowest gestation for these variances. The consensus between neonatal clinicians at the LGH and RHH is that the agreed lower threshold that is considered acceptable to deliver and potentially continue care at LGH in the setting of fetal growth restriction or multiple pregnancies is 32 weeks gestation.

Data on the outcome for babies inborn at 30 and 31 weeks gestation at the LGH (including those that ultimately required transfer to the RHH) and the RHH over a 10 year period, from 2004 to 2013, showed no significant difference in important adverse outcomes (air leak syndrome, severe intra-ventricular haemorrhage, length of hospital stay).

Other clinical criteria are also specified as indications to discuss the care of a neonate in any Tasmanian hospital with the RHH Neonatal and Paediatric ICU (NPICU), as follows:

- All infants born at less than 30 weeks gestation or less than 1200 g.

- Infants with respiratory distress requiring, or potentially requiring, mechanical respiratory support.
- Infants requiring other forms of intensive care (those with cardiovascular instability, severe infection, major metabolic disturbances, seizures, etc.)

Level 6

Tasmania is unusual in the Australian context, given that the neonatal intensive care unit at the RHH, which provides Level 6 Neonatal Services for the state, has also formally provided paediatric intensive care services for the state (for children up to 14 years of age) since 2007, as the Tasmanian Neonatal and Paediatric Intensive Care Unit (NPICU). The NPICU provides neonatal services at level 6 for the majority of critically ill newborns in Tasmania, with the exception of some with conditions requiring quaternary level intervention at the Royal Children's Hospital, Melbourne (e.g. oesophageal atresia, critical congenital heart disease requiring surgery). Some high level paediatric intensive care interventions (e.g. initiation of renal replacement therapy, ECMO) and certain specialist surgical procedures (e.g. cardiac surgery) necessitate transfer of a small number of paediatric patients to the RCH Melbourne. Intensive care support for older adolescents is occasionally provided by the adult ICU teams at RHH and LGH.

In addition to providing support for critically ill neonates and children requiring general paediatric surgical care, the RHH NPICU also provides the necessary paediatric intensive care support for certain surgical subspecialty conditions and procedures (e.g. for neurosurgery and plastic surgery). Specifically with regard to plastic surgery for cleft lip and palate in infants under 12 months of age, it is now largely accepted that any such procedures that may put the airway at risk should be performed in a centre supported by a paediatric intensive care unit.

We make the following recommendations to improve the service description.

Recommendation

1. Level 4: That those mothers at risk of delivery of an infant at 32 and 33 weeks gestation at a Level 4 centre (i.e. NWRH, Burnie) deemed at higher risk of neonatal morbidity (e.g. multiple pregnancy, fetal growth restriction) should be discussed with a Level 6 centre (i.e. the RHH NPICU clinical team) with a view to in-utero transfer, should it be safe to do so, to a unit of Level 5 or 6 as appropriate. Infants at 32 and 33 weeks gestation who are unwell/unstable after delivery at a Level 4 centre should be discussed with a Level 6 centre (i.e. the NETS team at the RHH NPICU) for consideration of transfer to a unit of an appropriately higher service level (Level 5 or 6). Mothers threatening delivery at, or infants born at less 32 weeks gestation, should be discussed with the RHH NPICU clinical team with a view to transfer, if at a viable gestation.
2. Level 5: That those mothers at risk of delivery of an infant at 30 and 31 weeks gestation at a Level 5 centre (i.e. LGH) deemed at higher risk of neonatal morbidity (e.g. multiple pregnancy, fetal growth restriction) should be discussed with a Level 6 centre (i.e. the RHH NPICU clinical team) with a view to in-utero transfer, should it

be safe to do so. Infants at 32 and 33 weeks gestation who are unwell/ unstable after delivery at a Level 5 centre should be discussed with a Level 6 centre (i.e. the NETS team at the RHH NPICU) for consideration of transfer to a Level 6 unit. Mothers threatening delivery at, or infants born at less 30 weeks gestation, should be discussed with the RHH NPICU clinical team with a view to transfer, if at a viable gestation.

3. Level 6: In the Tasmanian context the requirements for providing a Paediatric Intensive Care Service should be formulated (i.e. a separate role delineation framework for paediatric intensive care).
4. Surgery in infants under 12 months of age that may put the airway at risk (e.g. cleft palate surgery) should be performed in a centre supported by a paediatric intensive care unit.

Service Requirements – Levels 3 to 6

The service requirements specified for Levels 3-6 are generally appropriate.

Recommendations for service requirements

1. Level 5, LGH

- Current demand on level 5 nursery beds is at critical point. Frequently the LGH unit works at overcapacity. This frequently blocks both transfer back from high cost, high acuity RHH beds (level 6 to 5). It is likely that services requiring a high level of care (level 5) but stopping short of full on NICU will increase at LGH along role delineation lines. This service can be provided by general paediatricians with an interest in neonatology but would require sustainable funding.

2. Level 6, RHH:

- In the Tasmanian context it should be noted that the RHH NPICU must provide an on-site paediatric intensive care unit (PICU) in addition to NICU services.

Future demand

The Tasmanian live birth rate has remained stable at around 6000 per annum in recent years and is not expected to increase rapidly. Survival of critically unwell newborns, in particular those born extremely preterm, has improved in recent decades thus increasing the demand on neonatal intensive care units, the complexity of their care, and for their care requirements post discharge.

It is important to note that the NPICU at the RHH is the only unit providing neonatal intensive care support at Level 6 for the state and is geographically isolated from the Victorian Level 6 units. To transport a sick newborn or child interstate from Tasmania for

reasons of lack of capacity is a best avoided for obvious high risk clinical reasons. Demand for neonatal services is by its nature unpredictable. It is provided on an acute or emergent basis (i.e. not elective) and surges in activity resulting in the unit reaching or exceeding neonatal nursing staffing capacity are not uncommon. As such it needs to be staffed and resourced appropriately such that surges in patient numbers and acuity can be safely and sustainably accommodated. External reviews have recommended the continuation of the provision of Level 6 Neonatal Intensive Care services in a single unit in the state. An external review also recommended the provision of a paediatric intensive care service co-located with the Level 6 Neonatal Service to make best use of staff and resources.

Workforce Requirements – Levels 3 to 6

Level 3

3. The description of the Workforce Requirement in relation to the need for ‘medical practitioner with credentials in neonatal resuscitation’ requires more detail (see recommendations below).
4. The lead Tasmanian paediatric and neonatal clinicians, including in the Northwest, have expressed a long-standing concern that the MCH, Latrobe, has restricted access to adequate neonatal medical (paediatrician) cover, and hence is not currently meeting the TRDF guidance for a Level 3 Neonatal Service. The after-hours paediatrician on-call for neonatal resuscitation and other neonatal emergencies at the MCH, is often based in Burnie which is *at least* 40 minutes driving distance from the MCH. A neonatal service at Level 3, as per the TRDF, includes in its workforce requirements an ‘*on-site medical practitioner with credentials in neonatal resuscitation on-call 24 hours and available within 30 minutes of hospital*’. The driving time of at least 40 minutes for a paediatrician to travel from Burnie to Latrobe is considered too long a response time to provide safe and sustainable newborn emergency care. It is established that the potential need for advanced newborn resuscitation cannot be predicted with certainty before birth. Whilst uncommon, babies born in a low risk setting still require timely back-up support by an experienced paediatric clinician when major resuscitation is needed. This has been a long-standing concern and is unlikely to be remedied in the foreseeable future.
5. Concerns have been expressed by past and current senior paediatric clinicians in the Northwest that the above on-call arrangement has had, and will continue to have an adverse effect on the ability of the NWRH and MCH hospitals to recruit and retain full-time staff specialist paediatricians because of the travel distance from Burnie to Latrobe for unexpected emergencies. This paediatric staffing arrangement is not sustainable and contributes to the need to employ locum paediatricians.

Recommendations for Workforce Requirement

1. **Level 3:** That additional detail be added to better describe the Level 3 workforce requirement for ‘*On-site medical practitioner with credentials in neonatal resuscitation on-call 24 hours and available within 30 minutes of hospital*’. This should also explicitly define such a medical practitioner as having ‘credentials in advanced neonatal resuscitation and the necessary skills in post-resuscitation assessment, stabilisation,

and potential referral for emergency retrieval to a centre at the appropriate higher service level’.

2. **MCH:** Due to the lack of continuous and sustainable availability of timely neonatal/paediatric medical cover (as outlined above) it is recommended that the Maternity service should transition to a service where there is no planned birthing (i.e. Level 1 Maternity Services: see separate Maternity Services submission), but with strong support and retention of Maternity staff and expertise to enable a continuation of service at that level.
3. **Level 3 and above:** As an addition to the work force requirement we recommend the addition of access to the following, as an adjunct to those centres conducting neonatal follow-up clinics:
 - i. Infant/child neuropsychology services, for cognitive/developmental assessment and management of at risk and symptomatic infants
 - ii. Occupational therapy, for those with rehabilitation needs
 - iii. Paediatric medical rehabilitation service for those requiring specific medical intervention and surveillance
 - iv. Access to perinatal mental health services
4. **Level 5 - LGH**

That in line with the increased workload (number and acuity) across paediatrics/neonatology as a whole, in line with revisions of role delineation changes (reduction of scope at MCH and NWRH) – we recommend that the service at LGH that the be adequately and sustainably funded – in particular:

 - i. Expansion of nursery from 9 to 12 funded beds (frequently overcapacity)
 - ii. Further 4.0 FTE neonatal nursing staff to accommodate increase and to aid in provision of back-transfers from level 6 unit and to lower level units, local educators and support for state-wide policy development
 - iii. Further 1.0 FTE Consultant Paediatrician with interest in neonatology to support increased workload as per role delineation and support state-wide policy development
 - iv. Further 1.0 FTE Paediatric registrar to support increased workload of regional referrals as per role delineation
 - v. Review of provision of local allied health services for long term graduates of NICU.
5. **Level 6, NPICU:** In addition to the workforce requirement for Level 6 as described in the TRDF, and in consideration also of the provision of paediatric intensive care services in the Tasmanian context of a combined neonatal and paediatric ICU (NPICU), we recommend the addition of the following to the workforce requirements:
 - i. Neonatal/Paediatric fellows (senior neonatal/paediatric registrars): the RHH NPICU has been accredited by Royal Australasian College of Physicians Specialist Advisory Committee (SAC) in Neonatology/Perinatology to train 2 advanced trainees in Neonatology. Two are currently employed but we are only securely funded to employ one. These advanced trainees are required to fulfil the TRDF requirements for clinical service provision, including the Newborn Emergency Transport Service, and for teaching, training, and research.

- ii. Data collector for reporting to national benchmarking organisations (i.e. specifically the Australian and New Zealand Neonatal Network, and the Australian and New Zealand Paediatric Intensive Care Registry), and to provide data for audit and research purposes to support the 'active research role'.
- iii. Neonatal and paediatric intensive care nurse educators
- iv. Intensive care equipment nurse
- v. Specialist paediatric intensive care RNs
- vi. Paediatric Intensive Care Specialists (2)
- vii. Appropriate Neonatal and Paediatric Intensive Care consultant cover at 5 FTE. In principle approval has been received at RHH CEO level, based on a business case comparing consultant staffing levels at the RHH NPICU with similar sized units elsewhere in Australia, for 5 FTE consultant cover for the NPICU, in order to provide a safe and sustainable level of service for neonatal and paediatric intensive care, as well as to properly manage and operate the Newborn Emergency Transport Service. The RHH NPICU currently receives funding for consultants at 4.2 FTE.
- viii. Dedicated team allocated and resourced to 'provide consultation and leadership for emergency neonatal transport'. (please see separate NETS/PETS submission)

Support Service Requirements – Levels 3 to 6

The support service requirements specified for Levels 3-6 are generally appropriate.

Recommendation

1. **Level 6, RHH NPICU:** for the provision of paediatric intensive care Level 6 adult intensive care support is sometimes required.
2. **Level 6, RHH NPICU:** for the provision of Level 6 neonatal and paediatric intensive care, Level 6 pharmacy services are required. This is consistent with the pharmacy service level for paediatric medicine, paediatric surgery and adult intensive care.

Tasmanian Clinical Service Profile Considerations

Gaps, issues or barriers that need to be considered to ensure the successful implementation of the Tasmanian Clinical Service Profile (TCSP)

The WACS CAG identified the following factors that need to be considered for the successful implementation of the TCSP:

- Where significant changes are required it is important that there is clear communication of issues to healthcare workers and the community. The emphasis should be on the primacy of optimising patient outcomes in a sustainable way.
- Continuing support of the CAGs ability to provide advice to the DHHS and maintain links across the state.
- Barriers of silo mentality within health and between differing government departments needs to be broken down. E.g. Neonatal care cannot be considered in isolation but must be integrated with general paediatrics, allied health, and ambulance (transport) services. Increases to neonatal care will have flow on for a prolonged period of time beyond the neonatal period.

Integration of services across regions/hospital campuses:

The WACS CAG provided the following responses on how best to ensure the proper integration of services across regions/hospital campuses:

- Facilitation of communication (education/audit/research/clinical care) between units with high level videoconferencing facilities
- Facilitation of state-wide sharing of resources: e.g. avoiding unit specific funding for statewide education programmes such as the Neoresus programme (newborn resuscitation programme)
- Facilitate statewide development and sharing of newborn care guidelines, where applicable, via a statewide guideline development and approval system, and a specialty specific common website
- Improvements in newborn emergency transport service resourcing and response times (see separate NETS/PETS submission).