COVID-19

Government of Western Australia
Department of Health

COVID-19 Guidelines for Neonatal Services

Version 5.3
14 June 2022

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Contents

Version Control and Approval

This document should be considered a 'live document' and will be reviewed and updated regularly in response to:

- New legislation or statutory directions;
- Changes in advice based on emerging evidence or national guidelines;
- Learnings from outbreak management locally, in other jurisdictions and internationally; or
- Stakeholder engagement and feedback.

Version	Notes	Date	Updated by:
V5.3	Review, updated case definitions and updated clinical feeding advice	14 June 2022	SHICC – Health Operations and COVID-19 Neonatal Working Group
V5.2	Updated advice on neonatal team attendance at delivery and birth	20 April 2022	COVID-19 Neonatal Working Group
V5.1	Updated advice on viral/bacterial filters following case review; recent literature & network discussion	4 April 2022	COVID-19 Neonatal Working Group
V5.0	Reviewed & updated following recent literature search/consultation with Eastern states NICUs/ National COVID-19 Clinical Evidence Task force/changes to isolation directions	14 February 2022	COVID-19 Neonatal Working Group
V4.1	Reviewed & Changes made to PPE	22 October 2021	SHICC – Health Operations
V4.0	Reviewed & nil changes	21 Dec 2020	SHICC – Health Operations
V4.0	Combined recommendations for unwell or minimal signs of COVID-19 in confirmed or suspected neonates (fig 2).	24 Aug 2020	COVID-19 Neonatal Working Group
V3.0	Updated background information	02 July 2020	SHICC – Health Operations
V2.0	Updated information highlighted in yellow	14 April 2020	COVID-19 Neonatal Working Group
V1.0	First publication Endorsed by Liz McLeod	30 March 2020	Child and Adolescent Health Service

Abbreviation of terms

BAU	Business as usual
CAHS	Child and Adolescent Health Service
CPAP	Continuous Positive Air Pressure
EC	Emergency Centre
ED	Emergency Department

EBM	Expressed Breast Milk
HSP	Healthcare Service Provider
ID	Infectious Diseases
IPPV	Intermittent Positive Pressure Ventilation
IPC	Infection Prevention and Control
IPU	Inpatient Unit
KEMH	King Edward Memorial Hospital
PPE	Personal Protective Equipment
NICU	Neonatal Intensive Care Unit
NPIR	Negative Pressure Isolation Room
PCC	Paediatric Critical Care
PCH	Perth Children's Hospital
PFR	Particulate Filter Respirator
PFU	Patient Flow Unit
RSI	Rapid Sequence Induction
SCN	Special Care Nursery
VMS	Visiting Midwifery Service

Purpose

These guidelines aim to outline procedures to:

- Minimise risk of mother-neonate COVID-19 transmission post-delivery, breastfeeding and neonatal care
- Manage and support neonates that are a COVID-19 positive, symptomatic or a close contact. Including providing a testing regime
- Support Neonatal/Paediatric teams managing neonates who are COVID-19 positive, symptomatic or a close contact with respect to staff safety, service provision both locally and at a state level.

Background

Coronaviruses are a large group of viruses that can cause illnesses ranging from a mild common cold to severe disease such as Severe Acute Respiratory Syndrome (SARS). The novel coronavirus disease (COVID-19) was identified in December 2019 and is caused by the SARS CoV-2 (SARS CoV-2).

For current up to date information regarding COVID-19 and the neonatal population regarding symptoms and treatment, please refer to Clinical care of children and adolescents with COVID-19: recommendations from the National COVID-19 Clinical Evidence Taskforce (Navarro et al, 2021; National COVID-19 Clinical Evidence Taskforce).

Current data indicates COVID-19 transmission occurs by person-to- person transmission in the form of respiratory droplets via direct and close contact with an infected person, indirectly via contaminated objects and surfaces, and importantly via aerosolisation of airborne particles which stay suspended in the air and travel greater distances and contribute to transmission. Further information can be found in the COVID-19 Infection Prevention and Control in Western Australian Healthcare Facilities

Aerosolisation frequently occurs in the neonatal healthcare setting, including during:

- Labour and birth of COVID-19 positive women
- Positive pressure respiratory support (including all forms of non-invasive ventilation)
- Intubation
- Open suctioning (including when testing for SARS CoV-2)
- Surfactant administration
- High frequency oscillatory ventilation
- Chest drain insertion and interruption of drainage system.

The incubation period ranges between one to 14 days, with screening and containment measures being the most effective in slowing the virus spread [1,2,3].

Neonatal COVID-19 Transmission

There are three recognised means of neonates being infected with COVID-19:

1. Congenital COVID-19 transmission: documented between 2-3% worldwide. However, there have been reports of transmission rates of up to 12%[4].
2. Intrapartum: where the neonate comes into maternal blood/faeces/secretions during birth – estimated 5% incidence[5].
3. Postnatal infection: Neonates become infected with COVID-19 through contact with asymptomatic and/or symptomatic virus carriers: these include caregivers, family members and medical staff. Therefore, medical staff should be vigilant in assessing

neonates born to infected mothers or who have been in contact with infected family members.

Neonatal COVID-19 Clinical Presentation

The symptoms of COVID-19 range from asymptomatic to severe respiratory and multi-organ failure in the general population and is highly transmissible. Infected neonates have remained stable with few worldwide reported severe emergency cases, symptoms have included fever, gastro-intestinal disturbance, lethargy and shortness of breath[2]. Given neonates have underdeveloped immune systems, they are considered susceptible to contracting the virus[6].

COVID-19 Disease severity classification for children and adolescents from the National COVID-19 Clinical Evidence Taskforce[7] can be seen in the table below:

Box 1 – Definitions of disease severity for children and adolescents with acute coronavirus disease 2019 (COVID-19)

Disease severity	Feeding, hydration, conscious state	Respiratory and vital signs	Oxygen requirement
Mild	• Normal or mildly reduced feeding	• No or mild upper respiratory tract symptoms OR • No or mild work of breathing	• No supplemental oxygen required to maintain Sp02>92%
Moderate	• Poor feeding, unable to maintain hydration without nasogastric or intravenous fluids, AND • Normal conscious state	• Moderate work of breathing, OR • Abnormal vital signs for age (tachycardia, tachypnoea) but does not persistently breach early warning (e.g. MET) criteria, OR • Brief self-resolving apnoea (infants)	• Requires low flow oxygen (nasal prongs or mask) to maintain Sp02>92%
Severe	• Poor feeding, unable to maintain hydration without nasogastric or intravenous fluids, OR • Drowsy or tired but easily rousable	• Moderate to severe work of breathing, OR • Abnormal vital signs for age (tachycardia, tachypnoea) with breaches of early warning (e.g. MET) criteria, OR • Apnoea needing support or stimulation (infants)	• Requires high flow oxygen at 2 L/kg/min to maintainSp02>92%
Critical	• Poor feeding, unable to maintain hydration without nasogastric or intravenous fluids, OR • Altered conscious state or unconscious	• Unable to maintain breathing or prevent apnoea without advanced modes of support, OR • Abnormal vital signs for age with persistent breaches of early warning (e.g. MET) criteria OR • Haemodynamically unstable without inotropic or vasopressor support, OR • Other organ failure	• Requires advanced modes of support to maintain oxygenation: ~ high flow nasal oxygen at >2 L/kg/min, OR ~ non-invasive ventilation, OR ~ intubation and mechanical ventilation, OR ~ extracorporeal membrane oxygenation

Figure 1: Management of COVID-19 positive, symptomatic or close contact neonates at vaginal or caesarean delivery

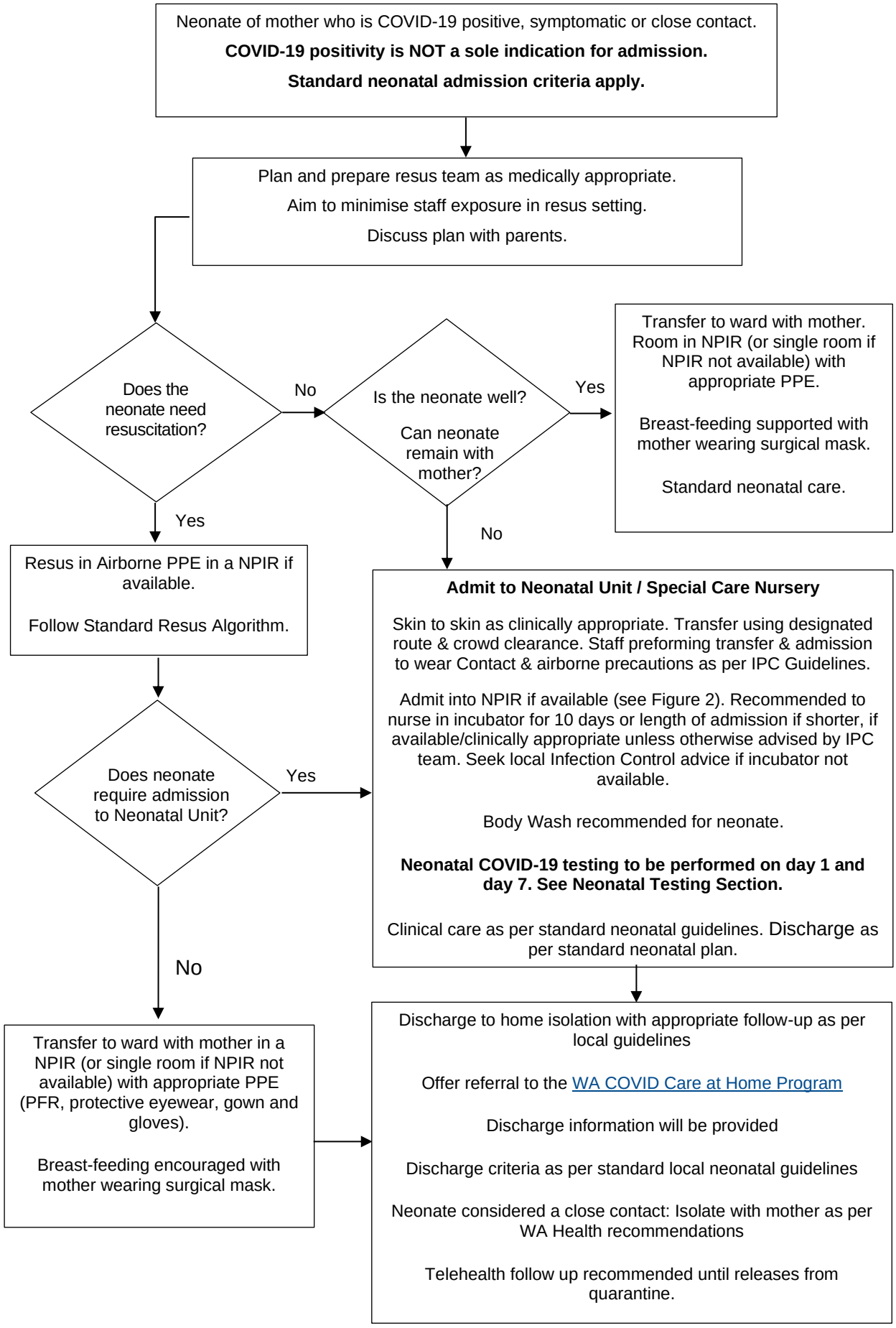
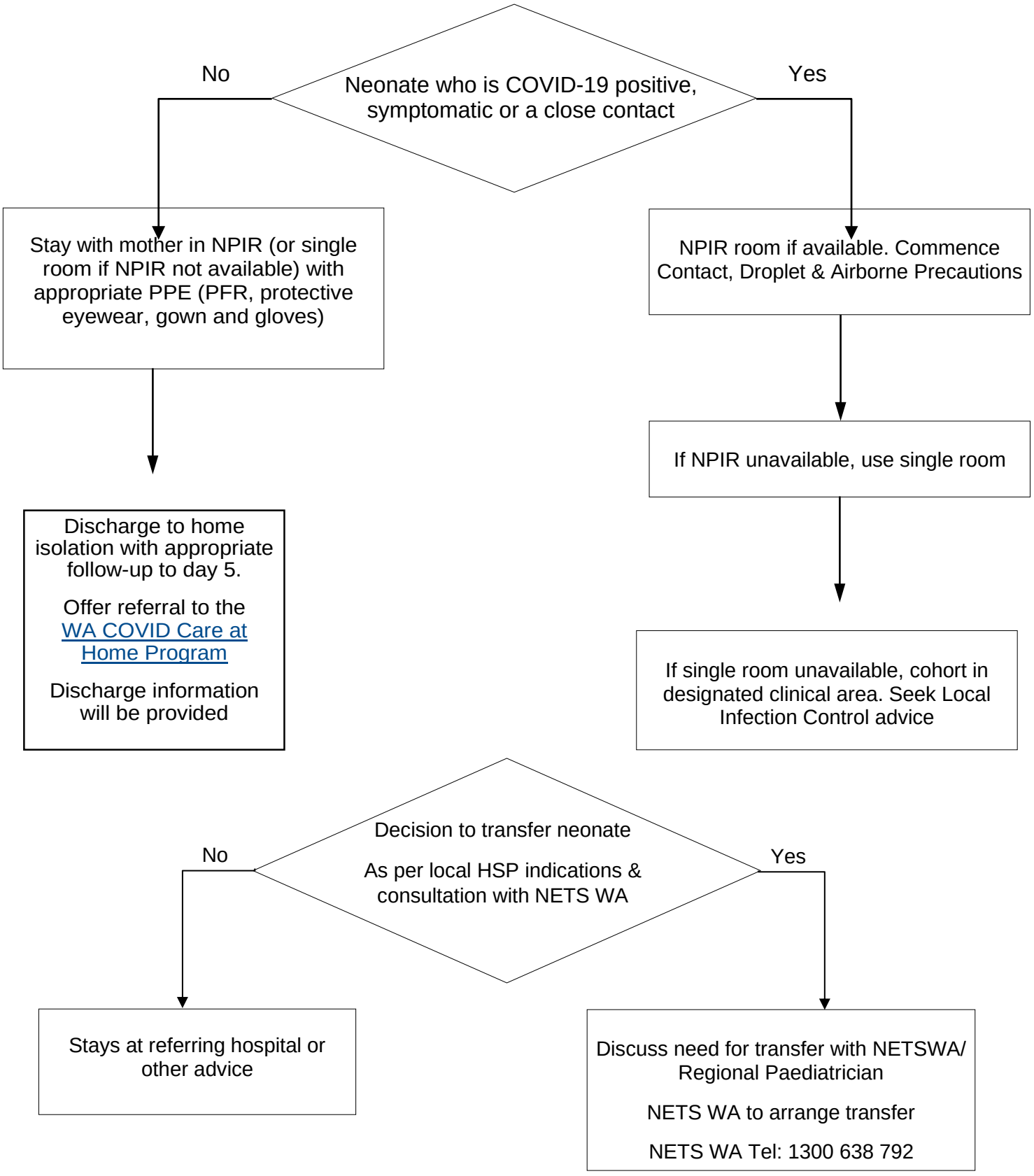


Figure 2: Management of COVID-19 positive, symptomatic or close contact neonates



Guidelines for COVID-19 positive, symptomatic or close contact mothers at delivery

Attendance in labour

Refer to the COVID-19 Guidelines for Maternity Services

Pregnancy & Perinatal Care

Refer to the National COVID-19 Clinical Evidence Taskforce

Care in labour

Refer to the COVID-19 Guidelines for Maternity Services and National COVID-19 Clinical Evidence Taskforce

Guidelines for COVID-19 positive, symptomatic or close contact neonates

For infection prevention and control management for COVID-19 positive case, symptomatic or close contact inpatients refer to the COVID-19 Infection Prevention and Control in Western Australian Healthcare Facilities guidelines.

Pre-delivery communication & planning

- Co-location with the neonate's mother is the preferred model of care.
- Neonates should only be admitted to a neonatal unit / special care nursery if they require designated neonatal care as per non-COVID-19 neonates, or if mother is too unwell to care for the neonate **AND** there are no other family care givers available.
- Neonatal team to be informed at point of maternal admission (or prior to) including location, maternal COVID-19 status, clinical state, standard neonatal risk factors.
- Neonatal resuscitation equipment for COVID-19 positive/symptomatic/close contacts deliveries checked daily (including resuscitaire and resuscitation consumables). Only essential neonatal equipment to be kept in designated delivery room / theatre.
- Prior to admission of positive / symptomatic / close contact COVID-19 pregnant patient Neonatal service to prepare designated neonatal admission room.
- Ensure local hospital Infection Prevention and Control/Infectious Diseases (IPC/ID) team is aware of admission.
- A healthcare professional capable of resuscitating a neonate should be available to be present if required at delivery wearing airborne precautions (PFR N-95, protective eyewear, hat, gown and gloves). Neonatal resuscitation, if required, can occur in same room as mother (NPIR if available).
- Neonatal team to counsel parents regarding delivery and neonatal management plans, this can be done via telephone rather than face-to-face.
- Prior to delivery Neonatal team to huddle, discuss clinical information relating to delivery, role of team members, and plan for delivery/resuscitation, means of communication in-out of delivery room, postnatal management plan including transfer

to NICU if required. Use of cognitive aids recommended.

Attendance at birth

- The Neonatal team is to attend designated birth suite in accordance with local hospital Birth Attendance Policy/Guideline.
- All members of the Neonatal team attending the birth are to don airborne PPE (N-95, hat, face shield/protective eyewear, gown and gloves) and use a PPE donning and doffing buddy system.
- Neonatal team should discuss the plan for the delivery with the midwifery/obstetric team. The Neonatal team are to inform the midwifery/obstetric team in the room that they are ready by stating “Donned & ready”.
- If there are no known neonatal risk factors & a Midwife is in attendance and who is neonatal resuscitation competent and is available to receive neonate then the:
    - Neonatal team can be called, allowing additional time to appropriately don airborne PPE if they are clinically required and remain outside the birthing room.
    - There should be clear communication from the internal to external clinical areas with the neonatal team to enter the birthing room immediately when asked.
    - The baby can be delivered and assessed by the attending midwife IF no maternal or neonatal complications.
- If there are known neonatal risk factors for resuscitation identified (other than COVID-19) then:
    - Neonatal attendance at delivery to follow local guidelines regarding attending births
    - The most clinically appropriate neonatal doctor accompanied with or without a neonatal nurse, wearing airborne and contact precaution PPR can enter the birthing room immediately prior to birth.
    - Other team members are to remain outside the birthing room, wear airborne PPE and use clear communication to establish if they are required to enter the birthing room immediately if needed.
    - Cord blood for Neonatal Blood Group and Direct Antiglobulin Test (DAT) when Mother is Rh negative or has an O positive blood group is recommended to assist neonatal discharge planning.

Neonatal Resuscitation

Resuscitation in a separate room to the delivery room if available, is recommended.

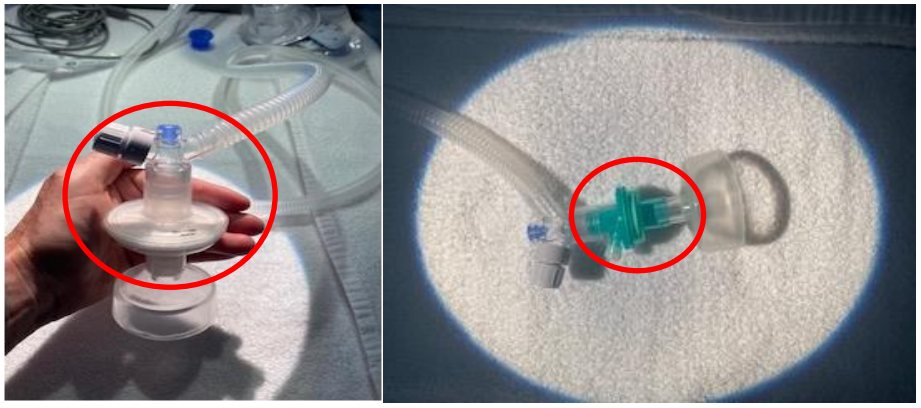
- If resuscitation is in the maternal delivery room where possible, the resuscitaire should be 2 metres away from the mother.
- Resuscitation of babies from COVID-19 positive, symptomatic or close contact mothers should follow standard neonatal resuscitation algorithm.
- Considerations regarding the number of neonatal team members, wearing of airborne precaution PPE should be followed including the use of a particulate filter respirator (PFR), protective eyewear and other PPE as required.
- A viral/bacterial filter should be considered when using a self-inflating/flow inflating

bag/circuits; Neopuff T piece & on the expiratory limb of ventilation circuits.

- **Use of viral / bacterial filter with T Piece resuscitator e.g. neopuff may result in a decrease in pressure delivery.** Staff should be vigilant when using a viral / bacterial filter during neonatal resuscitation, paying special attention to pressure delivery (PIP and PEEP) and chest wall movement.
- If there are concerns with pressure delivery or chest wall movement when using a viral / bacterial filter consider:
    - Increasing PIP to achieve adequate chest wall movement;
    - Removing filter and continuing resuscitation

- **Viral/bacterial filters are not to be used with neonatal bubble CPAP circuits.** Use of viral / bacterial filters on CPAP circuits (at any circuit location) result in excessive increase in circuit resistance impacting on effective PEEP delivery[8].

- Examples of viral/bacterial filter are:
    - Uni-Filter Junior, Disposable – Carefusion (fits neopuff/Bag-mask, expiratory limbs cpap and ventilator circuits)
    - DAR, Paediatric Neonatal Electrostatic Filter HME Small Single Use-COVIDIEN (small air dead space; fits neopuff/bag-mask/ventilator expiratory limbs.)
- Image below depicts Uni-Filter Junior (image 1) & DAR HME Filter attached to a Neopuff:



- Bag-Mask ventilation with a Laerdal self-inflating reservoir and viral/bacterial filter may theoretically generate less aerosols than using a NeoPuff T-piece. This is thought to be due to the bag-mask having a larger exhalation port than Neopuff. In general, bag-mask ventilation with either a Neopuff or self-inflating bag-mask generates less aerosols and air dispersion due to the smaller tidal volumes used[9].
- Delayed cord-clamping and skin to skin contact are permitted if neonate is well and remaining with mother in the post-natal period.

Postnatal care of the well neonate born to a COVID-19 positive, symptomatic or close contact mother

- Refer to Figure 1 for patient management pathway
- If neonate is well and does not require admission to a neonatal unit (as per standard neonatal admission criteria), neonate can remain with mother, both cared for in the same single room wearing clinically appropriate PPE
- Transfer baby in incubator if possible, to post-natal room
- Breastfeeding is to be encouraged
- Mother to wear surgical face mask when performing direct care or breastfeeding/feeding the neonate
- Recommended that mother wash her hands before feeding. Further information can be found: National COVID-19 Clinical Evidence Taskforce
- Mother to practice hand hygiene before and after handling the neonate.
- Mother to receive education on respiratory etiquette
- Staff to monitor neonate with observations as per routine standard newborn care.
- Prior to discharge: Child Health Nurse, Family General Practitioner and local neonatal/paediatric hospital team are to be informed
- Mother to be offered referral for neonate to the WA COVID Care at Home Program
- Follow-up of neonates born to COVID-19 positive, symptomatic or close contact mother should be performed frequently by experienced neonatal/paediatric healthcare professional. This can be done utilising telehealth
- Visiting midwifery services as per local HSP capabilities should be considered if available
- Mother-baby dyad isolation period will be guided by WA Health.

Care of the Neonate requiring admission to NICU or SCN

- Refer to Figures 1 and 2 for patient management pathways for neonates who are clinically unwell, preterm or small for gestation
- Neonates who require admission to NICU or SCN (either due to being unwell or preterm) are permitted to have skin to skin contact with the mother as clinically appropriate prior to transfer
- If the neonate requires admission to the NICU or SCN they are to be transferred by staff wearing a clean set of PPE that is donned just before transfer
- For transfer of neonates requiring respiratory support such as Neopuff, bag and mask, CPAP or invasive ventilation, contact and airborne PPE precautions are to be used
- For transfer of neonates who are stable and not requiring respiratory support, transfer the neonate in an incubator (if possible) with staff in a clean set of airborne precaution PPE
- The transfer route should be pre-planned and used for each transfer
- The transfer team should include staff to perform a forward scout role to open doors, clear obstacles and crowds
- The transfer team is to perform crowd control en-route to the NICU or SCN
- Admit the neonate into a NPIR if available, if a NPIR is not available then admit the

neonate to a single room and keep the door closed. If a single room is not available, then cohort the neonate in a designated isolated area away from other non-COVID patients (see Figure 2)

- The neonate is to remain in an incubator for the duration of the quarantine period, if available and clinically appropriate
- All admitted COVID-19 positive, symptomatic or close contact neonates should have cutaneous monitoring (as available) such as O_2 Saturations, heart rate; non-invasive blood pressure and temperature
- Use of laminated charts for in-room use should be considered
- The neonate should be washed to reduce risk of fomite spread, ensuring thermoregulation is maintained.
- Discussion regarding management and potential need for transport should be considered via NETS WA
- Standard neonatal care as per local guidelines and capabilities should continue to be provided
- See visitor guidelines for Neonates who are COVID-19 positive.
- However, there may be exceptional circumstances, such as when a neonate requires end of life care, where hospitals should allow a visitor on compassionate grounds, while taking into consideration the risk and benefits to all individuals involved. Refer to the COVID-19 Public hospital visitor guideline for further information
- If patient needs critical care beyond the capabilities of the delivery hospital, call NETS WA (Tel: 1300 638 792) to discuss neonatal retrieval.

COVID-19 Testing in the Neonate

- For neonates born to a mother who is a positive COVID-19 case, a negative test(s) should not be used to de-isolate the neonate if it is still within the incubation period.
- A neonate from a COVID-19 positive mother admitted to NICU or SCN is considered a close contact until 7 days after the mother is suitable for de-isolation
- SARS-COV 2 Testing is an Aerosol generating procedure and should ideally be performed in a NPIR or single room if available
- When testing a neonate all staff must be wearing contact, droplet and airborne PPE (transmission-based precautions)
- Neonates of COVID-19 positive, symptomatic or close contact mothers admitted to NICU or SCN should be tested at Day 1 and Day 7 of life.
- Testing for SARS-COV-2 should use a single dry nasopharyngeal small paediatric FLOQ® swab.
- The following process should be used when testing a neonate:
    - Measure the distance from the nose to the ear to provide an estimate of the distance to insert the swab
    - The swab should be inserted once into the nasopharynx by directing the swab in line with the nasal floor
    - Once the swab has been inserted, leave for a few seconds to absorb secretions and then rotate on withdrawal

    - Re-sheath swab following collection
    - Do NOT pour transport medium into the sheath as it is not designed to hold liquid
    - Place the specimen into a plastic specimen bag for transport to PathWest
- Consultation with local ID/Clinical Microbiology Teams is recommended
- Neonates of COVID-19 positive mothers requiring admission to NICU or SCN must remain under COVID-19 precautions for a 7-day period despite negative tests, unless suitable for discharge or advised otherwise by the IPC team
- If Day 1 and Day 7 COVID-19 test is negative **AND NO** clinical symptoms attributable to COVID-19 **AND NOT** requiring positive pressure respiratory support, the neonate may exit NPIR / single room. Recommended to remain nursed in an incubator if clinically feasible.
- Routine testing of neonates born to COVID-19 positive mothers who do not require NICU or SCN admission can be tested at local team discretion at either 48 hours of life or at discharge
- Neonates can be discharged into the care of family at any point (irrespective of neonate's COVID-19 status) when clinically suitable. They will be required to complete a quarantine period starting from the last day of infectivity of the mother or inhabitant care giver. Isolation must continue at home under the supervision of the local public health unit until the neonate meets the criteria for release as determined in the CDNA Guidelines. Seek Department of Health (Tel: 13 COVID) advice regarding post-discharge isolation period
- If symptomatic or close contact mother, admission test is negative, then no further COVID precautions or testing is required for the neonate

Breastfeeding for a COVID-19 positive, symptomatic or close contact mother

- Mothers who are COVID-19 positive, symptomatic or close contacts should be encouraged to breastfeed their babies. Refer to the following for further guidance:
    - COVID-19 Guidelines for Maternity Services
    - National COVID-19 Clinical Evidence Taskforce
- Expressed milk should be supported. The mother should be advised to:
    - Perform hand hygiene prior to expressing breast milk
    - Wear a face mask throughout expressing
    - Wipe outside of EBM container with disinfectant wipe and allow to dry
    - Use a dedicated breast pump.

Visitors to Neonatal Units

- Neonatal Units should review their visitor guidelines to minimise the number of visitors in the nursery, in line with the Department of Health's COVID-19 Public hospital visitor guideline
- Parental presence with non-COVID-19 neonates is to be supported as much as possible. The use of masks will facilitate this and are to be encouraged
- Mothers and partners who are COVID-19 positive, symptomatic or close contacts (and their partners) should not be allowed into the Neonatal Unit to visit their baby.

Refer to the COVID-19 Public hospital visitor guideline for further information

- However, there may be exceptional circumstances, such as when a neonate requires end of life care, where hospitals should reconsider this guideline on compassionate grounds, while taking into consideration the risk and benefits to all individuals involved.

Retrievals and inter-hospital transfer

- COVID-19 positive, symptomatic or close contact status alone is not an indication for transfer or retrieval of a neonate
- If a neonate requires an inter-hospital transfer, the decision whether a neonatal retrieval is required will be made via NETS WA call conferencing (Tel: 1300638 792)
- If the neonate requires tertiary care, retrievals will proceed as per normal
- Staff should follow current PPE practice for neonate retrievals of patients with viral disease.

Clinical Management of the sick neonate born to a COVID-19 positive or symptomatic Mother

- Neonates considered as COVID-19 positive, symptomatic or close contacts are likely to experience respiratory symptoms due to conventional neonatal pathologies (hyaline membrane disease, respiratory distress syndrome, sepsis, pneumothoraces etc.) as opposed to a direct result of COVID-19 symptomatology.
- COVID-19 positive, symptomatic or close contact neonates with respiratory distress should receive standard appropriate respiratory support for the clinical condition and severity[7]
- Neonates requiring neonatal intensive care or SCN intervention should be managed as per accepted local clinical care guidelines. If transfer to another NICU is required inform NETS WA at earliest opportunity.
- The use of high flow nasal oxygen (HFNO) or non-invasive ventilation (NIV e.g. CPAP) is permitted despite these being classed as Aerosol Generating Procedures (AGPs).
- Neonates who are being treated on a COVID-19 pathway and require the use of HFNO or NIV should be cared for in a NPIR. If an NPIR is not available, then they should be managed in a single patient room (see figure 2) where possible
- Neonates that test negative on Day 7, have no evidence of respiratory distress and do not require respiratory support can exit the NPIR room however must remain in an incubator for a total of 10 days if clinically feasible unless otherwise advised by the IPC team
- If the neonate is suitable for discharge at any point this should still occur (including prior to Day 7 test) as per local neonatal discharge criteria.
- All staff must be fully vaccinated, respirator mask (N-95) fit tested and wear contact & airborne precaution PPE
- A viral/bacterial filter should be fitted to the expiratory limb of HFNO/CPAP/ventilator circuit
- The use of COVID-19 specific pharmacological therapies should only be commenced following consultation with Tertiary Infectious Disease/Clinical Microbiology Teams.

Neonatal Intubation for positive, symptomatic or close contact COVID-19 neonates

- Intubation if required, is recommended to be performed in a NIPR. Intubation should be performed by the most senior doctor present to ensure highest success rate with least number of attempts
- Videolaryngoscopic intubation is recommended over direct laryngoscopy if available, clinically suitable and if operator is trained in its use[10]

- Intubation of the neonate with a videolaryngoscope should be performed in a closed Humidicrib where possible
- Consideration should be given to the use of RSI for intubation. The use of RSI medication pre-intubation may result in a more successful, efficient intubation.

Emergency Department presentations of COVID-19 neonates

- Mothers and neonates requiring readmission for neonatal or obstetric care who are COVID-19 positive, symptomatic or close contacts are advised to phone ahead of their arrival with the receiving hospital to follow attendance protocols
- Refer to the COVID-19 Infection Prevention and Control in Western Australian Healthcare Facilities guidelines.

Discharge planning and post discharge care of neonates who areCOVID-19 positive, symptomatic or close contacts

- Follow usual criteria for discharge
- Liaise with Infection Prevention and Management or Public Health Unit regarding discharge plans
- Offer referral to the WA COVID Care at Home Program
- Provide education to family regarding possible course of Neonatal COVID-19 (see page 1 of guideline) and steps to reduce risk of transmission to the newborn infant
- Ensure adequate breast milk supply and infant feeding is established and successful prior to discharge
- Consideration should be given to the need for an appropriate hospital admission length for the mother and baby to account for logistical challenges of follow-up in the community
- Cord blood should be sent for Blood Group & DAT where mother is Rhesus negative or Maternal Blood group O positive. If cord blood was not sent at birth, send neonatal blood sample prior to discharge
- Standard neonatal cardiac screening and jaundice screen should be performed prior to discharge
- Guthrie Newborn Screening to be performed at 48 hours after birth either as in-patient or in the community by local healthcare Visiting Midwifery Service
- Weight check should be undertaken prior to discharge, if weight loss is nearing 10% of birth weight the newborn should not be discharged
- The newborn hearing screen may be deferred until after the post-isolation period is completed. This may be performed in an out-patient setting
- Home visiting service is to wear appropriate PPE as per local guidelines
- Notify community health care providers e.g. child health nurse, GP of discharge and follow up care
- Local consideration needs to be given to common neonatal problems such as
    - Breastfeeding, jaundice and psychosocial support for postpartum care in self-isolation/quarantine and how/where this will be managed
- Recommended principles for post-hospital discharge follow-up for neonates who are either positive neonates or those born to positive COVID-19 mothers includes:

    - Frequent telehealth review by Neonatal/Paediatric clinician. Consider the COVID-19 guidelines for outpatient services
    - Low threshold for medical review if any clinical signs of infection
    - Visiting Midwifery Services or Hospital in the Home (HITH) programs be used to follow-up mother and baby as per local guidelines and HSP capability.
- Release from isolation for a COVID-19 positive mother should follow the latest release from isolation criteria specified by Communicable Disease Network Australia (CDNA SoNG) and will be determined by the Public Health Unit
- Parents, at discharge, should be reminded about attending their baby's routine immunisations on time and bringing their baby for a medical review by their family doctor or at the emergency department if they have any concerns that their baby is not well.

Appropriate designated healthy caregiver for discharged newborns

- In the event that neither mother nor father are able to care for the neonate due to illness, an alternative caregiver for the neonate after discharge will be determined on a case by case basis in consultation with the parents
- This person would ideally meet the following criteria:
    - up-to-date COVID-19 vaccination status
    - have no symptoms of an acute respiratory illness or fever
- A risk assessment can be conducted in discussion with the local Public Health Unit, and/ or ID/IPC teams if required.

Acknowledgements

These guidelines are based on the current available knowledge of the transmission of coronaviruses and may change as more evidence becomes available specifically regarding COVID-19.

The Department of Health wishes to acknowledge the following guidelines upon which these Guidelines was based:

- Queensland Health Department, *COVID- 19 Guidance for Maternity Services*[11]
- Guideline Royal College of Obstetricians and Gynaecologists, *Coronavirus (COVID-19) Infection in Pregnancy* Guidelines[12]
- Centre for Disease Control and Prevention*, Interim Considerations for Infection Prevention and Control of Coronavirus Disease 2019 (COVID-19) in Inpatient Obstetric Health Care Settings* Guidelines[13]*.*

We would also like to acknowledge the expertise provided by the following individuals:

- A/Prof Louise Owen, Consultant Neonatologist, COVID-19 Lead, Neonatal Intensive Care, The Royal Womens' Hospital, Melbourne
- Dr Larissa Korostenski, Head of Newborn Services (Medical), Newcastle Children's Hospital, Newcastle, NSW
- Dr Melissa Luig, Head of Department, NICU, Westmead Hospital, Wentworthville, NSW.
- These guidelines have been developed to be used in conjunction with the Department of Health's COVID-19 Guidelines for Maternity Services [14] and should be considered in conjunction with the WA Health COVID-19 Framework for System Alert and Response[15] .

Resources

- COVID-19 Guidelines for Maternity Services
- COVID-19 Infection Prevention and Control in Western Australian Healthcare Facilities
- COVID-19 Guidelines for Outpatient Services
- CDNA Series of National Guidelines Coronavirus Disease 2019 interim advice to public health units
- National COVID-19 Clinical Evidence Taskforce
- COVID-19 Public Hospital Visitor Guidelines
- WA Health COVID-19 Framework for System Alert and Response

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