Clinical Guideline

Document number: JHH_JHCH_0141

CLINICAL MANAGEMENT OF COVID-19 BY NEWBORN SERVICES

Sites where Local Guideline applies	NICU - John Hunter Children's Hospital (JHCH) JHH – Maternity Services
This Local Guideline applies to:	
Adults	No
Children up to 16 years	No
Neonates – less than 29 days	Yes
Target audience	Newborn and Maternity Service staff
Description	Infants admitted to mothers with suspected or confirmed diagnosis of COVID-19

Go to Guideline

Keywords	COVID-19, Newborn, JHCH,
Document registration number	
Replaces existing document?	No

Related Legislation, Australian Standard, NSW Ministry of Health Policy Directive or Guideline, National Safety and Quality Health Service Standard (NSQHSS) and/or other, HNE Health Document, Professional Guideline, Code of Practice or Ethics:

- NSW Health Policy Directive PD 2017_013 Infection Prevention and Control Policy
- NSW Health Policy Directive 2017_032 Clinical Procedure Safety
- HNELHD Policy Compliance Procedure PD 2019_020: PCP 1 Clinical Handover - ISBAR

Local Guideline note	This document reflects what is currently regarded as safe and appropriate practice. This guideline does not replace the need for the application of clinical judgment in respect to each individual patient. If staff believe that the guideline should not apply in a particular clinical situation they must seek advice from their unit manager/delegate and document the variance in the patients health record.

Date authorised	7th August 2020
Authorised by	JHCH Clinical Quality and Patient Care Committee (24th June 2020) & JHH Clinical Quality and Patient Care Committee
Contact person	Larissa Korostenski, Head of Newborn Services, JHCH
Contact details	Larissa.Korostenski1@health.nsw.gov.au
This document contains advice on therapeutics	No
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Note: Over time links in this document may cease working. Where this occurs please source the document in the PPG Directory at: http://ppg.hne.health.nsw.gov.au/

PURPOSE AND RISKS

Highly Infectious respiratory type illness and associated patient management require excellent infection prevention, surveillance and control measures. These measures need to be in place right from the start of the patient's hospital admission. In the event of a pandemic, escalation and surge plans may need to be activated to provide essential care in Neonatal Intensive Care and other areas.

Risks identified by this guideline:

• Potential risk of outbreak in the NICU of respiratory viruses, especially COVID-19

• Potential risk of morbidity and mortality to vulnerable groups as a consequence of acquiring COVID-19 in the healthcare facility.

• Potential for the health work force to acquire COVID-19 from the community or patients. This can have significant impact on health of health care workers.

Risk Category*:* Clinical Care & Patient Safety

GLOSSARY

Acronym or Term	**Definition**
NICU	Neonatal Intensive Care Unit

STAFF PREPARATION

It is mandatory for staff to follow relevant: "Five moments of hand hygiene", infection control, moving safely/safe manual handling, documentation practices and to use HAIDET for patient/carer communication: **H**and hygiene **A**cknowledge, **I**ntroduce, **D**uration, **E**xplanation, **T**hank you or closing comment.

Due to the continuously emerging situation, this Clinical Guideline will be regularly updated

GUIDELINE

This Guideline does not replace the need for the application of clinical judgment in respect to each individual patient.

This guideline is focused on the care of infants born to women with suspected or confirmed COVID-19 at the time of birth. It is based on the best available evidence at the time and will be reviewed as new evidence emerges.

NEONATAL CARE IN BIRTH SUITE/OPERATING SUITE

- Maternity team will notify Newborn Services of every suspected or confirmed mother with COVID-19.
- The neonatal paediatric team should attend the birth as clinically required and follow usual attendance procedure. Where possible Maternity team to notify NICU 30 minutes prior to anticipated birth. A team member with experience in neonatal advanced life support to attend.
- Preferably prior to birth, maternity and/or neonatal teams to discuss co-location of mother and infant in the maternity COVID-19 area (preferably done by the most senior clinician available) with the mother. *Parent information sheet to be used to assist discussions.*
- When deciding suitability for co-location the disease severity and the likelihood of deterioration, maternal preference, psychological wellbeing, test results, local capacity and other clinical criteria need to be considered.
- The benefits of co-location for maternal-infant bonding and establishment of breast feeding should be balanced against the potential risks of horizontal transmission of SARS-CoV-2 from mother to the newborn infant. It is unlikely that an infected newborn will become unwell, but there is limited data to make strong recommendations. The options of co-location or temporary mother-baby separation (until mother's transmission-based precautions are discontinued) should be discussed with each family prior to birth where possible. Temporary separation needs to be carefully considered as it may impede early bonding and establishment of lactation. If the decision is for temporary separation, this needs to occur at birth. Document discussion in mother's notes and involve Aboriginal Liaison Officers for Aboriginal and Torres Strait Islander families.
- Neonatal attendant to attend birth in appropriate PPE which would include fluid resistant long-sleeved gown, gloves, P2/N95 respirator & eye protection as Aerosoll Generatng Procedures may be used.
- Assess and resuscitate infant as per usual protocols (in theatre set up resuscitaire > 1.5m away) or in separate area in birth suite or > 1.5 m from maternal bed. Minimise equipment on resuscitaire to essential items and place extra equipment anticipated to be required in double sealed plastic bags.
- In most circumstances, when mother and newborn are both able to be cared for in isolation, and admission to NICU is not required for another medical issue, co-location can occur in the maternity orange/red zone.
- When co-locating, use precautions to minimise droplet spread (see algorithm 1) as there is a risk of transmission to the newborn baby through secretions and contact with contaminated hands. Breastfeeding is encouraged: https://www.health.nsw.gov.au/Infectious/covid-19/Documents/COVID-19-guidance-faqs-infant.pdf
- Isolation, infection prevention and transmission based precautions must be implemented for the infant for at least 14 days in the hospital setting or at home if mother is confirmed to have COVID-19.
- Maintain high index of suspicion for signs of sepsis/unwell baby as it remains uncertain if vertical transmission can occur.

- If admission to NICU is required at birth (for example due to prematurity) or from maternity orange/red zone (for example infant becomes symptomatic with respiratory symptoms or hypoglycaemia) infant to be transported in closed isolette by NICU staff in PPE according to clinical care requirements.
- All staff health workers to wear PPE appropriate to the care they are providing:

Contact plus Droplet: gloves, fluid resistant long sleeved gown, surgical face mask, protective eyewear (goggles or face shield)

Contact plus Airborne (aerosol generating procedures): gloves, fluid resistant long sleeved gown, P2/N95 respirator, protective eyewear (goggles or face shield)

ADMISSION TO NEONATAL INTENSIVE CARE

- An infant born to a mother with suspected or confirmed COVID-19 alone (i.e. no other neonatal criteria) is not an indication for admission to NICU unless temporary separation has been agreed. Temporary separation should continue until the mother's transmission-based precautions are discontinued or upon maternal request (when mother able to resume care of infant by co-location).
- Admit infant to designated orange/red zone in Neonatal Intensive Care, that is, room 5, 6 and 7.
- Wash/clean infant as soon as practical within isolette, ensuring maintenance of body temperature in preterm infants.
- Clean outside of isolette and change linen as infant will remain in isolette that was used for transportation to NICU.
- Mothers should be encouraged and supported to express breastmilk. Provide information to mothers who are expressing milk for their infants in NICU. (refer to guideline once endorsed by MoH)
- Respiratory support to be provided as per clinical requirement. For intubation and surfactant administration, continuous positive airway pressure (CPAP), and delivery of High Flow, staff are required to follow contact and airborne precautions. Preferably, if available, the negative pressure room should be allocated to infants requiring respiratory support.
- Nurse infants in isolette with doors closed.
- If infants of mothers with suspected or confirmed diagnosis of COVID-19 are cohorted in room 6, nurse in isolette with doors closed and > 1.5 m between isolettes.
- If possible, provide 3 separate areas for care:
    - Proven neonatal COVID-19
    - Suspected neonatal COVID-19/close contact (an infant born to a mother with suspected or
    - confirmed COVID-19, pending test in infant)
    - No risk or suspicion of COVID-19
- If infant is admitted to NICU as mother is too unwell or unable to care for her baby, a daily risk assessment should take place to consider the ongoing suitability of the location of the infant. Another option is care in the maternity COVID-19 area in a single room by a suitable alternative carer (not a close contact or a suspect for COVID-19).

CURRENT NEONATAL TESTING CRITERIA

- Routine testing of asymptomatic infants is not recommended.
- Indications for testing in the neonatal period may include:
    - A Suspected horizontal transmission leading to symptomatic infection (e.g. fever, acute respiratory illness not otherwise explained) from a COVID-19 positive parent/ caregiver/household contact, healthcare worker, or where transmission is suspected in a particular setting such as a ward cluster.
    - Suspected congenital infection / vertical transmission (e.g. congenital pneumonia in an infant born to a mother with suspected / proven COVID-19)
- National Testing Criteria:

https://www1.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-novel-coronavirus.htm

- Testing of an infant swabbed for COVID-19 MUST NOT interfere with the usual assessment and management of the presenting clinical issue. In the case of resuscitation, appropriate application of PPE is the first priority.
- If there is an indication for testing, the minimum sampling should be a combined nose and throat swab (single swab for both sites) for SARS-CoV-2 PCR. If infant intubated, collect endotracheal aspirate for testing.
- Subsequent testing to be guided by microbiologist.
- Discuss with microbiologist as to whether other specimens such as cord/neonatal blood, urine or faeces should be tested based on evidence and test availability.

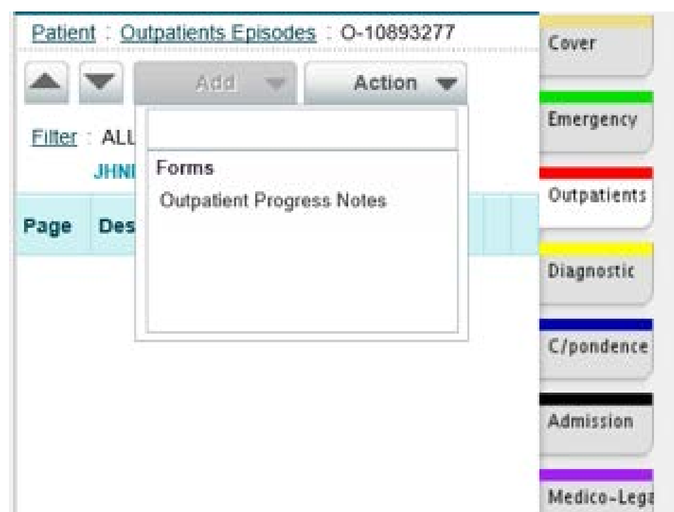
VISITATION TO NEONATAL INTENSIVE CARE

- Medical teams required to consult on neonates care are to only enter isolation room if necessary and must use appropriate PPE.
- Visitors are not allowed, unless extenuating circumstances and must fulfil the following criteria:
    - NO acute respiratory symptoms or fever AND no overseas travel in past 14 days AND no close contact with confirmed case (including mother).
- Mother who is SARS-Co-V-2 positive (or any parent / caregiver meeting isolation criteria) is NOT to visit infant in Newborn Care until released from isolation/ transmission based precautions (specified by Communicable Disease Network Australia)- https://www1.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-novel-coronavirus.htm)

Advise women about the need and rationale for visitor restrictions to facilitate advance planning and manage expectations for care.

DISCHARGE OF INFANT OF SUSPECTED OR CONFIRMED COVID-19 MOTHER

- Well infants can be discharged home when medically appropriate to an appropriate caregiver. This includes the mother, if well enough for discharge, and temporary separation period has either completed or is not occurring or with an alternate caregiver. This will be determined on a case by case basis, but alternative caregiver would have no acute respiratory illness or fever and not a close contact of a confirmed case.
- An infant born to a mother with suspected or confirmed COVID-19 is considered a close contact of the mother (even if separated from the mother at birth) and requires 14 days of quarantine, infection prevention and control precautions. This is irrespective of a negative test result for the infant within the 14 days of quarantine. For infants who have been admitted and being discharged from NICU, this follow up will be done by the Neonatal Fellow for Special Care via telehealth on a daily basis. Over the weekend, if there is no fellow on duty, the neonatologist on call will conduct the follow up telehealth call. A spreadsheet will be developed for infants discharged from NICU to record infants requiring daily follow up. Infants who are being discharged home from maternity orange/red zone, will be followed up daily by Maternity Services.
- On discharge, the ward clerk needs to be notified and will make follow up telehealth appointments to cover the follow up period. Each day, the telehealth call should be documented in DMR. The user enters a note under the correct date in the outpatient tab (red) by adding a new outpatient progress note.



- Clinical monitoring should continue for 14 days until precautions are complete and caregivers should be educated regarding indications for readmission and possible course of disease. Most commonly reported is respiratory symptoms requiring readmission at one to three weeks of age. Location for readmission is guided by the guideline: *Neonatal patients in ED, PICU, Paediatric Wards at JHCH and at home on Home Midwifery Service (HMS)*
- Ensure discharge summary is completed.

It is recommended that obstetric, midwifery, neonatal, clinical microbiologists, infection prevention and control staff regularly review the plan for birth, postnatal care and discharge of an admitted women with suspected or confirmed COVID-19 and her infant. This plan must include support for the women and her partner or support person. It is also recommended that an alternative family member is identified who may need to take responsibility as primary caregiver of the baby.

IMPLEMENTATION, MONITORING COMPLIANCE AND AUDIT

The clinical guideline will be:

- Circulated to General Managers and Sector Managers.
- Circulated to the clinicians via Tiered Neonatal Network/Newborn Services and Children, Young People and Families Services and the Women's Health and Maternity Network.
- Made available on the intranet (PPG) and HNEKidshealth website.
- Presented at facility units meetings and tabled for staff to action

APPENDICES

Appendix 1: Mother Suspected/Symptomatic or Confirmed COVID-19

Appendix 2: Asymptomatic Mother with risk factors

Appendix 3: NICU Team – Operating Theatre – Mother Suspected/Confirmed COVID-19

Appendix 4: NICU Team – Birth Suite– Mother Suspected/Confirmed COVID-19

Appendix 5: Dedicated Route to Follow

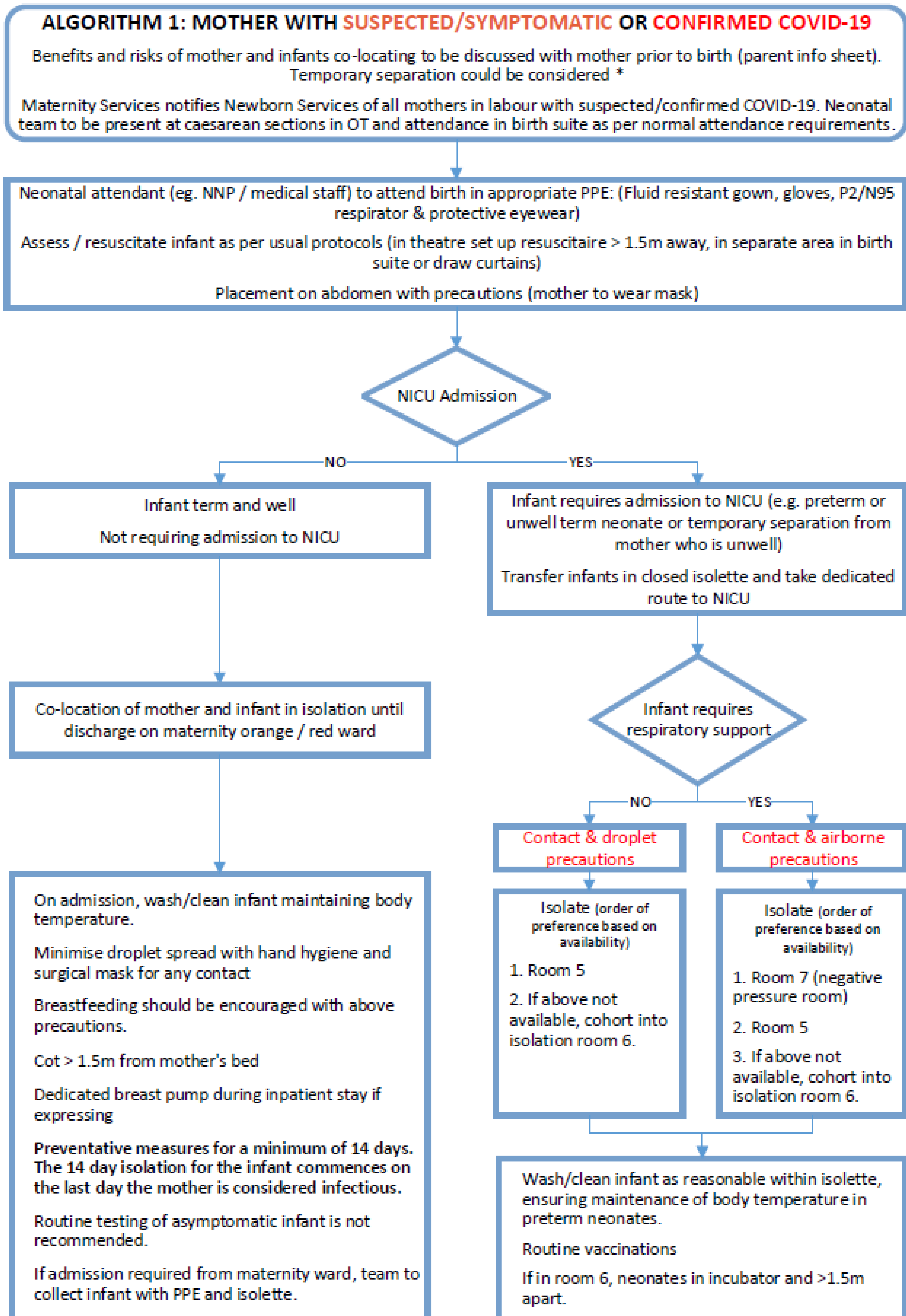
REFERENCES

1. NSW Health Guidance for Neonatal Services. https://www.health.nsw.gov.au/Infectious/covid-19/Pages/covid-19-neonatal-services.aspx
2. Management of newborn infants born to women with suspected or confirmed COVID-19. Prepared by the Neonatal COVID-19 Advisory Group for NSW and ACT.
3. Queensland Clinical Guidelines: Maternity care for mothers and babies during COVID-19 pandemic. https://www.health.qld.gov.au/__data/assets/pdf_file/0033/947148/g-covid-19.pdf
4. Interim Advice to Public Health Units https://www1.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-novel-coronavirus.htm
5. PHLN Guidance on Laboratory Testing for SARS-CoV-2 https://www.health.gov.au/sites/default/files/documents/2020/03/phln-guidance-on-laboratory-testing-for-sars-cov-2-the-virus-that-causes-covid-19.pdf
6. Principles of Airway management in COVID-19 https://asa.org.au/covid-19-updates/
7. The Australian and New Zealand Intensive Care Society (ANZICS) COVID-19 Guidelines https://www.health.nsw.gov.au/Infectious/diseases/Documents/anzics-covid-19-guidelines.pdf

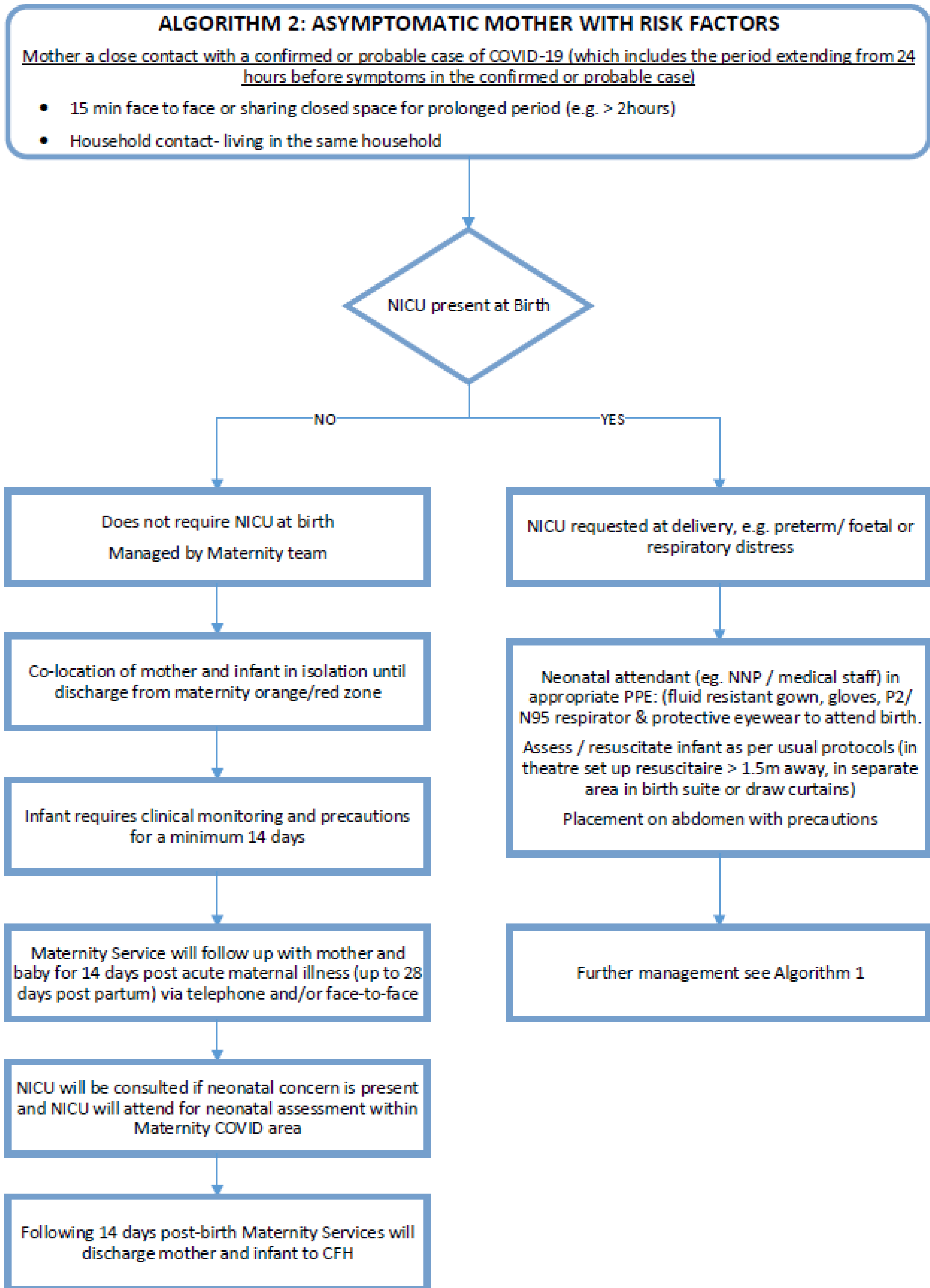
FEEDBACK

Any feedback on this document should be sent to the Contact Officer listed on the front page.

APPENDIX 1: ALGORITH1: MOTHER SUSPECTED/SYMPTOMATIC OR CONFIRMED COVID-19



APPENDIX 2: ASYMPTOMATIC MOTHER WITH RISK FACTORS



APPENDIX 3: NICU TEAM – OPERATING THEATRE – MOTHER SUSPECTED/CONFIRMED COVID-19

NICU TEAM CALLED TO OT FOR CAESAREAN SECTION OF A MOTHER SUSPECTED/ CONFIRMED COVID

↓

Medical team member to dress in surgical scrubs as normal

Go to PPE station 1 and take appropriate PPE to theatre

If a definite admission to NICU, take isolette and neonatal nurse: if < 32 weeks, take Giraffe isolette, otherwise take the Drager isolette

↓

Leave NICU through main doors

↓

Walk along hospital street and enter operating suite via the main door and proceed to the nominated theatre

↓

Outside of theatre don PPE, enter theatre with isolette and plug it in to heat

↓

Resuscitate as per usual on resuscitaire, placed as far away as possible from mother

Once stable and if requires NICU admission, transfer newborn into Giraffe or Drager isolette

If neonate does not require admission to NICU, transfer midwife to transport infant in a cot as per usual procedures

APPENDIX 4: NICU TEAM – BIRTH SUITE– MOTHER SUSPECTED/ CONFIRMED COVID-19

NICU TEAM CALLED TO BIRTH SUITE OF A MOTHER SUSPECTED/CONFIRMED COVID

If a definite admission to NICU and time allows, take isolette and neonatal nurse: if < 32 weeks, take Giraffe isolette, otherwise take the Drager isolette.

↓

Medical staff member to don PPE at station 2 (outside staff room adjacent to room 5) and enter MADU via doors adjacent to room 5. Procced to room 7 or 8.

↓

Resuscitate as per usual on resuscitaire, placed as far away as possible from mother or delivery room next door if available

If neonate requires admission to NICU, call assistant (wearing PPE) to bring giraffe isolette for transfer to NICU if not already there

↓

Follow dedicated route:
Neonatal team will be walking from room 7 or 8 through MADU (COVID area) and into the doors that connect NICU to Birthing Centre adjacent to NICU room 5

↓

Enter allocated space for admission, admit and stabilise infant

Exit room

Doff PPE outside room

APPENDIX 5: DEDICATED ROUTE TO FOLLOW

If going to NICU:

NICU team to walk through doors that connect Operating Theatre to Birth Suite, down corridor, turn left and walk through MADU (COVID area) and through the doors that connect NICU to Birthing Centre adjacent to room 5

Enter allocated space for admission, admit and stabilise infant.
Exit room.
Doff PPE outside room
Medical team member to leave area.

Transportation Pathway to NICU

for baby's require admission who are born to pending or COVID POSITIVE woman.

Red arrow indicates pathway to NICU from OT and Rm 7

Tier 2 Room 7, 8 and MADU single rooms for COVID Pos women