Queensland Clinical Guidelines
Translating evidence into best clinical practice

Perinatal care of suspected or confirmed COVID-19 pregnant women
Flowchart: Triage and risk assessment of suspected or confirmed COVID-19 woman

Screen before arrival where possible (e.g. by phone)
Triage in location separate from usual admission routes
Recommend/provide surgical face mask at face-to-face assessment

Is self-quarantine indicated?

NO

YES

Inpatient hospital care indicated?

NO

YES

Routine/usual care

Self-quarantine/self-isolation

• Advise to return home using personal transport (not public transport or ride sharing options)

Ongoing antenatal care

• Resume usual antenatal care after 14 days symptom free or negative test result

• Arrange alternate mode of antenatal care while self-quarantined (if care cannot be delayed)

• Advise to telephone hospital if concerned

COVID-19

• Advise about standard hygiene precautions

• Provide information about COVID-19 (e.g. fact sheet)

Do not

• Go out to school/work/public areas or use public transport

Do

• Stay indoors at home

• Avoid contact with visitors

• Ventilate rooms by opening windows

• Separate self from other household members (where possible)

Testing criteria as at 25 March 2020

• Fever (≥ 38°C) or history of fever OR acute respiratory infection (shortness of breath, cough, sore throat)

AND

• Is a household contact of a confirmed case OR

• International travel within previous 14 days OR

• Close contact (previous 14 days) with confirmed case OR

• Healthcare worker with direct patient contact OR

• Cruise ship passenger or crew who have travelled in the 14 days prior to illness onset OR

• Hospitalised patient

• Other circumstances with public health implications

Notify maternity services ASAP

On admission/universal care

• Isolate

• Follow standard infection prevention and control

• Alert midwifery/obstetric/neonatal teams

• Consult with infectious diseases team

• Limit visitors to one constant support

• Symptomatic treatment as indicated

Retrieval/transfer

• COVID-19 positive alone not an indication

Antenatal

• Perform necessary medical imaging

• Fetal surveillance as clinically indicated

Birth

• Negative pressure room (if possible)

• Mode of birth not influenced by COVID-19 unless urgent delivery indicated

Co-location of mother and baby

• Co-location generally recommended

• Discuss risk/benefit with parents

• Determine need on individual basis (e.g. informed by disease severity, parental preferences, psychological wellbeing, test results, local capacity)

Feeding (breastfeeding or formula)

• Support maternal choice

Risk minimisation strategies

• Inform about hand hygiene, sneeze and coughing, face mask use, close contact, social distancing and precautions during baby care, sterilisation

CLOSE CONTACT (with confirmed or suspected case)

• More than 15 minutes face-to-face contact

• More than 2 hours in a closed space (including households)
Flowchart: Neonate of suspected or confirmed COVID-19 mother

Baby born to mother with suspected or confirmed COVID-19
(maternal COVID-19 is not itself an indication for nursery admission)

Perform clinical assessment

COVID-19 test
- First test 12–24 hours after birth
  - Consider second test 24 hours after first test
- Test if other clinical indications identified (e.g. becomes unwell)
- Collect nasopharyngeal and oropharyngeal on a single swab

Identify
- If additional care is indicated (i.e. other than routine newborn care)
- If additional care is indicated, can it be provided while baby co-located with mother

Risk minimisation
- Advise mother about importance of risk minimisation strategies

No

Nursery admission required?

Co-location with mother
- In isolation (if possible)
- Clinical surveillance with high index of suspicion for sepsis
- Support maternal feeding choice (including breastfeeding)
- Support risk minimisation during usual mother-baby interactions
- Aim for prompt discharge to self-quarantine/isolation with mother or another carer (if mother unwell)
- Delay routine follow-up until negative test returned

Admit to nursery
- Nurse in incubator
- In isolation (if possible)
- All usual clinical care as indicated
- Support maternal feeding choice

After care
- Discharge
  - Provide advice about:
    - When to seek assistance
    - Follow up and/or retesting
    - Expected clinical course
- Retesting for COVID-19
  - As clinically indicated (e.g. after mother returns negative test, to facilitate entry to general population, or as recommended by infectious diseases team)
  - Clearance requires two consecutive negative results, 24 hours apart

Yes

Flowchart: F20.63-2-V1-R25
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<th>Description</th>
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</thead>
<tbody>
<tr>
<td>CPAP</td>
<td>continuous positive airway pressure</td>
</tr>
<tr>
<td>DNA</td>
<td>deoxyribonucleic acid</td>
</tr>
<tr>
<td>GDM</td>
<td>gestational diabetes mellitus</td>
</tr>
<tr>
<td>ICU</td>
<td>intensive care unit</td>
</tr>
<tr>
<td>LISA</td>
<td>less invasive surfactant administration</td>
</tr>
<tr>
<td>MERS</td>
<td>Middle Eastern respiratory syndrome</td>
</tr>
<tr>
<td>OGTT</td>
<td>oral glucose tolerance test</td>
</tr>
<tr>
<td>PPE</td>
<td>personal protective equipment</td>
</tr>
<tr>
<td>RESPChoR</td>
<td>full respiratory virus polymerase chain reaction (PCR)</td>
</tr>
<tr>
<td>SOMANZ</td>
<td>Society of Obstetric Medicine of Australia and New Zealand</td>
</tr>
<tr>
<td>SpO₂</td>
<td>peripheral capillary oxygen saturations</td>
</tr>
<tr>
<td>VTM</td>
<td>viral transport medium</td>
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Definitions

<table>
<thead>
<tr>
<th>Definition</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Close contact</td>
<td>In the context of time spent with a suspected or confirmed COVID-19 case, defined as: • More than 15 minutes face-to-face contact • More than 2 hours in a closed space (including households)</td>
</tr>
<tr>
<td>Coronavirus</td>
<td>Broad name for a type of virus.</td>
</tr>
<tr>
<td>Covid-19</td>
<td>The disease caused by SARS-CoV-2.</td>
</tr>
<tr>
<td>SARS-CoV-2</td>
<td>name of virus causing COVID-19 disease.</td>
</tr>
<tr>
<td>Self-isolation</td>
<td>Used to separate ill people from those who are healthy until they are declared recovered.</td>
</tr>
<tr>
<td>Self-quarantine</td>
<td>Used to restrict the movement of a well person who may have been exposed for the period when they could become unwell (duration 14 days for COVID-19).</td>
</tr>
<tr>
<td>Social distancing</td>
<td>Staying 1.5 metres from other people and avoiding close contact.</td>
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1 Introduction

There is limited data and evidence about the effects of COVID-19 during pregnancy. Information is current at the time of publication, but new information is emerging daily and this may affect recommendations. To help inform future care, specify COVID-19 positive and the gestation at diagnosis in the Perinatal Data Collection Medical Conditions: viral infections.

1.1 Background

Table 1. COVID-19

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Consideration</th>
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</table>
| Coronavirus                         | • Coronavirus is the broad name for a type of virus. There are different kinds of coronaviruses (e.g. severe acute respiratory syndrome (SARS), Middle Eastern Respiratory Syndrome (MERS))
  | • SARS-CoV-2 is the name of the virus (a type of coronavirus) first identified in late 2019
  | • COVID-19 is the disease caused by SARS-CoV-2                                                                                            |
| Onset                               | • Median time from onset to clinical recovery (non-pregnant cases)\(^1\)
  | • Mild cases approximately 2 weeks
  | • Severe or critical cases 3–6 weeks                                                                                                       |
| Transmission of COVID-19            | • Most likely spread from person to person through close contact with an infected person’s cough or sneeze or by touching objects or contaminated surfaces and then touching the mouth or face\(^2\)
  | • Vertical transmission has not been demonstrated in current data\(^3-5\)
  | • No detectable viral DNA found in amniotic fluid, serum, placenta or breast milk\(^3\)                                                  |
| Physiology of pregnancy and COVID-19| • Immunosuppression of pregnancy may impact severity of symptoms\(^6\)
  | • Due to physiological changes, when compared with their non-pregnant counterparts, pregnant women with lower respiratory tract infections may experience worse outcomes\(^1,7,8\) (e.g. preterm birth, fetal growth restriction and perinatal mortality)
  | • Increased oxygen demands of pregnancy may increase risk of respiratory compromise in infected pregnant women                           |

1.2 Perinatal mental health

Table 2. Perinatal mental health

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Consideration</th>
</tr>
</thead>
</table>
| Context                 | • Pregnant women and their families are likely to experience heightened anxiety and stress related to the COVID-19 pandemic in the community\(^9,10\)
  | • Current limitations in the evidence about the effects of the disease in pregnancy and on the newborn are also likely to be significant stressors\(^9\)
  | • This can be assumed irrespective of personal COVID-19 status (negative, suspected, or confirmed)
  | • The long-term implications for mental health may lead to significant human and resource issues in the future |
| Strategies              | • Provide consistent information to women and their families\(^9\) (e.g. refer to Queensland Health sources [https://www.qld.gov.au/health/conditions/health-alerts/coronavirus-covid-19](https://www.qld.gov.au/health/conditions/health-alerts/coronavirus-covid-19))
  | • Adhere to usual/standard care recommendations (e.g. women centred care, respectful communication, consent and informed decision making)
  | • Refer to Queensland Clinical Guideline Standard care\(^17\)                                                                                  |
| Model of care           | • Support models of care that maximise continuity (e.g. midwifery continuity of care, case management, midwife navigator)                     |
| Domestic/family violence | • Maintain an awareness that domestic and family violence may increase in association with social isolation                                    |
  |                         | • Screen and refer as appropriate                                                                                                           |
| Follow-up               | • Offer referral to perinatal mental health support (e.g. social work, mental health teams, peer support groups)
  | • Liaise with community health practitioners (e.g. general practitioner) throughout the perinatal period                                     |
## 2 Risk management

Table 3. Containment and risk minimisation

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Consideration</th>
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</table>
| **Containment**               | • Aims to slow the spread of the virus, reduce peak demand on health care services and allow care to be provided to more women and their families during the outbreak\(^{12}\)  
  o Screen before arrival (e.g. by phone, telehealth)  
  o Triage in a location separate from usual hospital routes of admission or assessment  
  o Provide and recommend use of surgical face mask to woman at face-to-face contact |
| **Infection prevention and control** | • Follow Queensland Health recommendations and public alerts for infection prevention and control, isolation, specimen collection and use of personal protective equipment (PPE)\(^{13}\)  
| **PPE recommendation**        | • For routine maternity care (including labour and birth), use droplet, contact and standard precautions\(^{14}\)  
  o Surgical mask, long-sleeved fluid resistant gown, gloves and eye protection (face shield or goggles)  
  • For severe symptoms or during aerosol-generating procedures\(^{14}\) (such as intubation) use airborne, contact and standard precautions  
  o Fit checked P2 or N95 face mask, long sleeved fluid-resistant gown, gloves, eye protection (face shield or goggles) |
| **Risk minimisation strategies** | • Recommend and inform women and their families about:  
  o Hand-hygiene with soap and water for 20 seconds or with alcohol-based hand sanitiser/gel  
  o Face mask use  
  o Coughing and sneezing into elbow  
  o Social distancing (stay 1.5 metres from other people) and avoid close contact  
  o Using dedicated personal equipment and resources  
  o Cleaning and sterilisation of surfaces and equipment  
  o Rationale for visitor restrictions (to reduce the potential for spread of virus)  
  o Importance of risk minimisation strategies for postnatal baby care |
### 2.1 Risk assessment

Table 4. Risk assessment

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Consideration</th>
</tr>
</thead>
</table>
| Risk factors                  | • Signs and symptoms of acute respiratory infection  
  ○ After exposure: mean incubation 5–6 days, range 1–14 days
  • Close contact with a confirmed or suspected case  
  • Return from interstate or international travel within last 14 days  
  • Aboriginal and/or Torres Strait Islander women may be more severely impacted |
| Close contact                 | • More than 15 minutes face-to-face contact  
  • More than 2 hours in a closed space (including households)  

<table>
<thead>
<tr>
<th>Frequency* of reported symptoms¹</th>
<th>Asymptomatic infection to very severe manifestation reported in pregnant women¹,¹⁵</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sign/Symptom</td>
<td>Frequency (%) n=55,924*</td>
</tr>
<tr>
<td>Fever (&gt;38 °C)</td>
<td>87.9</td>
</tr>
<tr>
<td>Dry Cough</td>
<td>67.7</td>
</tr>
<tr>
<td>Fatigue</td>
<td>38</td>
</tr>
<tr>
<td>Sputum production</td>
<td>33.4</td>
</tr>
<tr>
<td>Shortness of breath</td>
<td>18.6</td>
</tr>
<tr>
<td>Muscle or joint pain</td>
<td>14.8</td>
</tr>
<tr>
<td>Sore throat</td>
<td>13.9</td>
</tr>
<tr>
<td>Headache</td>
<td>13.6</td>
</tr>
<tr>
<td>Chills</td>
<td>11.4</td>
</tr>
<tr>
<td>Nausea or vomiting</td>
<td>5</td>
</tr>
<tr>
<td>Nasal congestion</td>
<td>4.8</td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>3.7</td>
</tr>
</tbody>
</table>

*data from non-pregnant confirmed positive cases
### 2.2 Testing

Table 5. Testing

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Consideration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Indications</strong></td>
<td>• Follow CURRENT Queensland Health recommendations for testing   &lt;br&gt;• These are being updated frequently   &lt;br&gt;• Available at <a href="https://www.health.qld.gov.au/clinical-practice/guidelines-procedures/novel-coronavirus-qld-clinicians">https://www.health.qld.gov.au/clinical-practice/guidelines-procedures/novel-coronavirus-qld-clinicians</a>   &lt;br&gt;<strong>Current at 26 March 2020</strong>&lt;sup&gt;16&lt;/sup&gt;   &lt;br&gt;• Fever (≥ 38°C) or history of fever OR acute respiratory infection (shortness of breath, cough, sore throat) AND  &lt;br&gt;  o Is a household contact of a confirmed case OR  &lt;br&gt;  o International travel within previous 14 days OR  &lt;br&gt;  o Close contact (previous 14 days) with confirmed case OR  &lt;br&gt;  o Healthcare worker with direct patient contact OR  &lt;br&gt;  o Cruise ship passenger or crew who have travelled in the 14 days prior to illness onset OR  &lt;br&gt;  o Hospitalised patient  &lt;br&gt;• Other circumstances with public health implications</td>
</tr>
<tr>
<td><strong>Sample collection</strong></td>
<td>• Follow PPE recommendations for specimen collection  &lt;br&gt;  o <a href="https://www.health.qld.gov.au/clinical-practice/guidelines-procedures/novel-coronavirus-qld-clinicians">https://www.health.qld.gov.au/clinical-practice/guidelines-procedures/novel-coronavirus-qld-clinicians</a>  &lt;br&gt;• Collect a single nasopharyngeal and oropharyngeal swab (use same swab for both sites)&lt;sup&gt;17&lt;/sup&gt;  &lt;br&gt;  o Use viral transport medium (VTM) or Liquid Amies. Dry swabs not recommended&lt;sup&gt;17&lt;/sup&gt;  &lt;br&gt;• If productive cough, collect sputum (potentially contains highest viral loads)&lt;sup&gt;17&lt;/sup&gt;  &lt;br&gt;• If confirmed positive COVID-19, collect blood sample (for storage pending serological availability)&lt;sup&gt;17&lt;/sup&gt;  &lt;br&gt;• Include prioritisation requirements (e.g. unwell/symptomatic) to assist laboratory processing/prioritisation</td>
</tr>
<tr>
<td><strong>Request form</strong></td>
<td>• On pathology request form write: <em>Naso &amp; oropharyngeal swab for NCVPCR</em>  &lt;br&gt;• If suspicion of other respiratory virus (e.g. rhinovirus, influenza) also request GeneXpert test  &lt;br&gt;  o Add to pathology request form: <em>fluA&amp;B/RSV</em>  &lt;br&gt;• Reserve full respiratory panel (“RESPCR”) for:  &lt;br&gt;  o Those requiring admission or  &lt;br&gt;  o Where infection control decisions required (e.g. health workers, vulnerable groups including Aboriginal and/or Torres Strait Islander women)</td>
</tr>
</tbody>
</table>
### 2.3 Self-quarantine/isolation

#### Table 6. Self-quarantine/isolation

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Consideration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Definitions</strong></td>
<td>• <strong>Self-quarantine</strong>&lt;br&gt;  o Used to restrict the movement of a well person who may have been exposed for the period when they could become unwell (duration 14 days for COVID-19)&lt;br&gt;  o <strong>Self-isolation</strong>&lt;br&gt;  o Used to separate ill people from those who are healthy until they are declared recovered</td>
</tr>
<tr>
<td><strong>When to recommend</strong></td>
<td>• <strong>Self-quarantine for 14 days</strong>&lt;br&gt;  o If return from interstate or international travel within previous 14 days, (even if COVID-19 test result negative)&lt;br&gt;  o If close contact with a confirmed positive COVID-19 within previous 14 days&lt;br&gt;  • <strong>Self-isolation</strong>&lt;br&gt;  o If confirmed positive COVID-19&lt;br&gt;  o Duration as specified in the CURRENT Communicable Disease Network Australia Guidelines for Public Health Units (frequent updates) available at <a href="https://www.health.qld.gov.au/clinical-practice/guidelines-procedures/novel-coronavirus-qld-clinicians">https://www.health.qld.gov.au/clinical-practice/guidelines-procedures/novel-coronavirus-qld-clinicians</a></td>
</tr>
<tr>
<td><strong>Advice for self-quarantine/isolation</strong></td>
<td>• <strong>Do not</strong>&lt;br&gt;  o Go out (e.g. to school work, public areas or use public transport)&lt;br&gt;  o Do not have visitors to the home&lt;br&gt;  • <strong>Do</strong>&lt;br&gt;  o Return home using personal transport (not public transport or ride sharing options)&lt;br&gt;  o Stay indoors at home&lt;br&gt;  o Avoid contact with all visitors&lt;br&gt;  o Separate self from other household members (use own bed, bathroom, towels, crockery and utensils)&lt;br&gt;  ▪ Self-quarantine: separation as much as possible&lt;br&gt;  ▪ Self-isolation: strictly avoid contact, or reside only with other positive cases&lt;br&gt;  o Ventilate rooms by opening windows&lt;br&gt;  o If directed by a doctor to leave the house (e.g. attend an appointment) wear a face-mask</td>
</tr>
<tr>
<td><strong>Antenatal care</strong></td>
<td>• If possible, delay routine appointments (e.g. antenatal education) until recommended duration of self-quarantine/isolation is complete&lt;br&gt;  • Resume usual antenatal care after self-quarantine/isolation complete&lt;br&gt;  • If antenatal care required during self-quarantine/isolation, assess individual needs to identify most suitable delivery method&lt;br&gt;  o Undertake in the home whenever possible (e.g. home visit, telehealth, phone contact) using PPE as required by delivery method&lt;br&gt;  • If pre-operative or specialised antenatal care cannot be delayed, individually assess the need for hospital admission&lt;br&gt;  • Advise to contact health professional if any concerns&lt;br&gt;  o Provide contact details including 13HEALTH (13 43 25 84) and for local hospital</td>
</tr>
<tr>
<td><strong>Postnatal care</strong></td>
<td>• Recommend mother and baby remain co-located in the home during self-quarantine/isolation&lt;br&gt;  • If required, consider alternate postnatal care in the home (e.g. telehealth, phone contact)</td>
</tr>
<tr>
<td><strong>Risk minimisation</strong></td>
<td>• Provide information about infection control practices that can prevent transmission of COVID-19&lt;br&gt;  o Refer to Table 3. Containment and risk minimisation&lt;br&gt;  • Provide information about COVID-19 (e.g. fact sheet)&lt;br&gt;  • Refer to Queensland Clinical Guideline: Parent information:&lt;br&gt;  o COVID-19 in pregnancy&lt;br&gt;  o COVID-19 and breastfeeding</td>
</tr>
</tbody>
</table>
3 Routine antenatal care

Table 7. Maternity care

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Consideration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vaccination</td>
<td>• Recommend routine vaccinations for whooping cough and influenza to pregnant women</td>
</tr>
<tr>
<td></td>
<td>• Analysis of Queensland data suggests that if fasting blood glucose (FBG) is less than 4.6 mmol/L, approximately 95% of women will have a normal oral glucose tolerance test (OGTT)</td>
</tr>
<tr>
<td></td>
<td>• Therefore, to support social distancing recommendations and reduce the need for prolonged attendance at laboratories, the following is recommended</td>
</tr>
<tr>
<td></td>
<td><strong>All women</strong> (irrespective of COVID-19 status)</td>
</tr>
<tr>
<td></td>
<td>• If clinical features of concern emerge during pregnancy (e.g. macrosomia, fetus accelerating through centiles, other concerns), then recommend usual screening and GDM management* as indicated</td>
</tr>
<tr>
<td>Oral glucose tolerance test (OGTT) and GDM during COVID-19 pandemic</td>
<td><strong>First trimester</strong> (irrespective of COVID-19 status)</td>
</tr>
<tr>
<td></td>
<td>• If risk factors, perform HbA1c</td>
</tr>
<tr>
<td></td>
<td>o Provide GDM management* according to result (diagnose GDM if HbA1c is 41 mmol/mol or more (5.9%))</td>
</tr>
<tr>
<td></td>
<td>o No OGTT in first trimester</td>
</tr>
<tr>
<td></td>
<td><strong>At 24–28 weeks gestation</strong> (irrespective of COVID-19 status) if:</td>
</tr>
<tr>
<td></td>
<td>• FBG is 4.6 mmol/L or less</td>
</tr>
<tr>
<td></td>
<td>o OGTT not required</td>
</tr>
<tr>
<td></td>
<td>o Continue usual maternity care</td>
</tr>
<tr>
<td></td>
<td>• FBG is 5.1 mmol/L or greater</td>
</tr>
<tr>
<td></td>
<td>o OGTT not required</td>
</tr>
<tr>
<td></td>
<td>o Provide usual GDM management*</td>
</tr>
<tr>
<td></td>
<td>• FBG between 4.7 and 5.0 mmol/L</td>
</tr>
<tr>
<td></td>
<td>o OGTT required</td>
</tr>
<tr>
<td></td>
<td>o Provide care as per OGTT result and GDM management*</td>
</tr>
<tr>
<td></td>
<td><strong>GDM management</strong>: as per Queensland Clinical Guideline <em>Gestational Diabetes</em>(^{21})</td>
</tr>
</tbody>
</table>
## 4 In-hospital maternity care

### Table 8. In hospital maternity care

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Consideration</th>
</tr>
</thead>
</table>
| **On admission**| - Follow Queensland Health recommendations and public alerts for inpatient infection prevention and control, isolation, specimen collection and PPE use  
  - To the extent possible: use single rooms, negative pressure rooms, keep confirmed cases in same multi-bay  
  - Alert obstetric/midwifery/neonatal/infectious diseases teams of admission |
| **Visitors**     | - Limit number of visitors\(^\text{18}\) to minimise the potential for virus spread (and to conserve PPE)  
  - No hospital visiting by a confirmed positive COVID-19 person  
  - Advise women about the need and rationale for visitor restrictions to facilitate advance planning and manage expectations for care  
  - During labour and birth, recommend one constant support person visiting/present (i.e. not rotating visits between multiple people)  
  - Consider individual circumstances as required (e.g. compassionate needs, cultural safety) |
| **Retrieval or transfer** | - Suspected or confirmed COVID-19 alone is not an indication for retrieval or transfer  
  - If transport or retrieval required, inform RSQ of suspected or confirmed COVID-19 status  
  - Follow usual protocols/processes/criteria for transfer or retrieval |
| **Treatment**    | - Currently no proven antiviral treatment\(^\text{1}\)  
  - Treatment (e.g. anti-pyretic medicines, anti-diarrheal medicines, ICU admission) is directed by signs and symptoms, and severity of illness\(^\text{22}\)  
  - Monitor and maintain fluid and electrolyte balance\(^\text{22}\)  
  - Minimise maternal hypoxia  
  - Oxygen therapy as indicated\(^\text{23}\) to maintain target SpO\(_2\) of 92–95\%\(^\text{24}\)  
  - Use PPE as recommended for aerosolised procedures  
  - Consult with infectious diseases/microbiology regarding empiric antibiotic therapy for superimposed bacterial pneumonia\(^\text{22}\)  
  - In the current absence of specific treatment recommendations, refer to [SOMANZ guidelines for investigation and management of sepsis in pregnancy\(^\text{25}\)](https://www.somanz.org.au/) |
4.1 Inpatient antenatal care

Table 9. Antenatal care while inpatient

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| Clinical surveillance   | • In addition to usual maternal and fetal antenatal observations, monitor SpO₂  
                          |   o Maintain index of suspicion for bacterial pneumonia  
                          |   o Fetal surveillance as clinically indicated  
                          |   o Delay investigations/procedures that require the woman to be transported out of isolation whenever it is clinically safe |
| Medical imaging         | • Do not delay necessary medical imaging because of concerns about fetal exposure
                          |   o Apply radiation shield over the gravid uterus  
                          |   • Ultrasound scan for fetal wellbeing as indicated and after resolution of acute symptoms  
                          |   • If positive COVID-19 result occurs in first trimester, consider a detailed morphology scan at 18–24 weeks  
                          |   o Currently no data about the risk of congenital malformation with COVID-19 infection acquired in first or second trimester  
                          |   o In the setting of maternal fever in general, there is mixed data about the risk of congenital abnormalities during embryogenesis |
| Threatened preterm labour | • No current evidence to alter usual indications/recommendations for:  
                          |   o Antenatal corticosteroids  
                          |   o Magnesium sulfate  
                          |   o Tocolytics |

4.2 Labour and birth

Table 10. Labour and birth

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| Mode and setting        | • A positive COVID-19 result without other indications is not an indication to expedite birth  
                          |   • Decision for mode of birth not influenced by positive COVID-19 result (unless urgent birth indicated)  
                          |   • No evidence that water immersion/birth is contraindicated
                          |   o Consider the potential for loss of PPE integrity during emergency procedures and/or evacuation from water  
                          |   • Inform neonatal team of plans for birth as soon as possible  
                          |   • Use a negative pressure room (if possible) for labour and birth  
                          |   • If elective caesarean section or induction of labour is planned, individually assess urgency  
                          |   • If birth cannot be delayed, consider hospital admission with required infection control and prevention precautions |
| Fetal monitoring        | • Discuss with women the options for fetal monitoring in labour  
                          |   • Recommend continuous electronic fetal monitoring as fetal distress has been reported  
                          |   • Until further information available, avoid fetal scalp electrode monitoring and fetal blood sampling (consistent with recommendations for other maternal infections) |
| Pain relief             | • No evidence that neuraxial blockade is contraindicated  
                          |   • Discuss neuraxial blockade before/early in labour to minimise need for general anaesthesia if urgent birth required (intubation is considered an aerosol high risk procedure)  
                          |   • Use nitrous oxide only if single patient microbiological filter (of less than 0.05 μm pore size) is available for the breathing system  
                          |   o Nitrous oxide use is not considered an aerosol high risk procedure |
| Intrapartum care        | • Routine maternal observations plus oxygen saturations  
                          |   • No evidence that delayed cord clamping increases risk of infection to the newborn  
                          |   • Manage placental tissue as per usual infectious human tissue protocols |
### 4.3 Postnatal care

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| Co-location of mother and baby | • Co-location of well mother and well-baby is recommended  
  o Determine need on individual basis considering for example, disease severity, parental preferences, psychological wellbeing, test results, local capacity, other clinical criteria  
  • Support vigilant risk minimisation strategies (e.g. hand hygiene, use of face mask) during feeding and other close mother-baby interactions |
| Risk minimisation               | • Provide information and education about risk minimisation strategies during usual mother-baby interactions (e.g. skin to skin, holding, cuddling, nappy change, feeding)  
  o Refer to Table 3. Containment and risk minimisation  
  • Discuss risks and benefits of close contact versus postnatal separation with parents (including discharge home of well-baby before unwell mother)  
  • Consult with clinical experts as required |
| Feeding choice                  | • Provide usual support for maternal feeding preferences; including for breastfeeding  
  o No detectable viral DNA found in breast milk to date  
  • Provide dedicated equipment (e.g. breast pump) and follow usual sterilisation recommendations  
  • Milk bank: pasteurisation destroys other coronaviruses, but it is unknown if this applies to SARS-CoV-2  
  o May affect supply or availability of pasteurised donor human milk |
## 5 Newborn care

Table 12. Baby of suspected/positive COVID-19 mother

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| **Risk assessment**        | • Maintain high index of suspicion for signs of sepsis/unwell baby  
  o No cases of vertical transmission have been confirmed\(^3\)\(^5\) although COVID-19 has been identified in babies born to COVID-19 positive mothers\(^3\)\(^5\)  
  o As babies are known to be significant shedders of respiratory viruses\(^3\)\(^6\), a confirmed COVID-19 positive baby requires full infection control precautions (including stools) |
| **Neonatal care in birthing suite** | • Assign a dedicated neonatal team member to attend the birth\(^3\)\(^7\) according to usual clinical indications (i.e. not required for reason of COVID-19 positive mother alone)  
  • Consider if neonatal stabilisation/resuscitation outside of the birthing room/theatre is appropriate (to minimise staff exposure)  
  • If entry to the birthing room/theatre is required, use full PPE  
  • Where feasible, transport baby between locations in the facility in a closed system |
| **Respiratory support**     | • High risk activities (associated with aerosol dispersion) require full PPE use\(^3\)\(^7\)  
  o Intubation and less invasive surfactant administration (LISA)  
    ▪ Use in-line suction with endotracheal tubes if possible  
  o Continuous positive airway pressure (CPAP) and high flow therapies  
  • Where feasible, nurse babies requiring respiratory support in an incubator |
| **Neonatal testing**        | • Overseas expert clinicians have expressed concern about low sensitivity of the test (i.e. number of false negatives), but less concern with the specificity of the test (false positives)\(^3\)\(^8\), therefore a positive result may be more clinically informative than a negative result  
  • First test 12–24 hours after birth (earlier is likely to reflect maternal infection)  
  o Consider second test 24 hours after first test to confirm result  
  o Collect nasopharyngeal and oropharyngeal swab (single swab for both sites)  
  o Refer to Table 5. Testing  
  • Undertake subsequent testing as indicated (e.g. if baby becomes unwell, after maternal negative result, or as recommended by infectious disease team)  
  • Clearance requires two consecutive negative tests 24 hours apart |
| **Admission to nursery**    | • COVID-19 positive mother alone (i.e. no other neonatal criteria), is not itself an indication for admission to a neonatal nursery\(^3\)\(^9\)  
  • Perform clinical assessment after birth as per usual protocols  
  • Assess if required care can safely be provided during co-location with mother (preferred option\(^3\)\(^9\))  
  • Follow usual clinical criteria, processes and protocols relevant to admission |
| **Neonatal surveillance**   | • Maintain high index of suspicion for signs of sepsis/unwell baby  
  • Provide post discharge advice about indications for readmission and possible course of disease\(^4\)\(^0\)  
  o Most commonly reported are respiratory symptoms requiring readmission 1–3 weeks after discharge  
  o Delay routine follow-up as required (e.g. hearing screen) |
References


38. Neonatal clinical experts (including Dr Pieter Koorts and Dr Guan Koh). Multi-national neonatal teleconference between Italy, China and Australia. March 19 2020.
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