Care of the unwell woman during pregnancy, birth and the postpartum period

Coronavirus (COVID-19) update 19 August 2020

In the changing coronavirus (COVID-19) environment, content is often being updated. To ensure you are aware of the most recent changes, all content updates and the date the document was last updated will be highlighted in yellow.

Who should read this?

Clinicians who care for women during the antenatal period, labour and birth, postnatal and neonatal period during the coronavirus (COVID-19) pandemic.

What is this document about?

This guidance provides you with information on what to consider regarding care of the woman who is suspected or confirmed to have coronavirus (COVID-19) during pregnancy, birth and the postpartum period.

This guidance should be adapted to your clinical circumstances, settings and service capability.

What are the key practice points for the care of a woman with suspected or confirmed coronavirus (COVID-19)?

- **Clinicians admitting the woman for care should seek support and advice early**
- Ensure early involvement of the multidisciplinary team, for example, Level 5/6 obstetric consultant, physician, Paediatric Infant Perinatal Emergency Retrieval (PIPER), ICU consultant, maternal fetal medicine specialist, paediatric consultant and neonatologist.
- Women who need oxygen at >4L/min to maintain SpO_2>94% are at increased risk of rapid respiratory deterioration.
- **For up-to-date guidance on personal protective equipment (PPE) in maternity and neonatal services, go to:** https://www.dhhs.vic.gov.au/coronavirus-disease-covid-19-ppe-maternity-and-neonatal-services

Location of care

The level of health service care is determined by maternal requirements and, if delivery is anticipated, neonatal requirements. Critical care for pregnant women should be provided locally / regionally where capability and capacity allows, unless the baby will require neonatal intensive care unit (NICU) or special care nursery requirements beyond local capability.

Interhospital transfer of women for coronavirus (COVID-19) disease should be arranged through calling 000 or Adult Retrieval Victoria (ARV): 1300 36 86 61. ARV will liaise with PIPER for advice on pregnancy-related transfer issues.

Referral and transfer of women and babies should be based on clinical need and within the current maternity and neonatal capability framework. A suspected or confirmed **coronavirus** (COVID-19) presentation is not a reason to transfer a woman unless capacity issues arise.

- Women with **mild disease severity** should be treated locally/regionally and observed closely for worsening respiratory symptoms. A low threshold for admission/transfer is advised for women with significant

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comorbidities, such as inadequately controlled diabetes, chronic renal or cardiopulmonary disease or immunosuppressive states.

- Women with **moderate, severe or critical disease severity** or who require **oxygen to maintain SpO2 >94%** should be transferred to a service with on-site adult intensive care unit and on-site or immediate access to maternity services.

Prior to transfer or referral

- Be aware that units may be affected by staff furlough and usual transfer pathways may be unavailable.
- Ensure there is a clear understanding of any expectations of the receiving service in relation to coronavirus (COVID-19) testing prior to transfer or referral for tests or investigations.
- In the event that a patient requires ECMO, discuss with the ECMO referral centre, and consider delivery prior to transfer or cannulation.

Outpatient management of pregnant women with confirmed coronavirus (COVID-19)

Key practice points

Ongoing outpatient care

- Pregnant women with confirmed coronavirus (COVID-19) who do not require admission will require an increased frequency of antenatal care – the woman's individual circumstances should guide the frequency of contact.
- Pregnant women discharged to home after admission for coronavirus (COVID-19) infection should receive follow-up twice weekly until admission for labour and/or birth. The woman's individual circumstances should guide the appropriate members of the multidisciplinary team to provide follow up.
- Postpartum women who have been admitted with coronavirus (COVID-19) infection require follow up in addition to routine postnatal care in the home. The woman's individual circumstances should guide the appropriate members of the multidisciplinary team to provide follow up.
- Consider what care may be able to be provided by telehealth.

Supporting physical distancing

- Supporting physical distancing is a key element in reducing staff furlough.
- Maintaining physical distancing is challenging for all staff – remember that, in the event of a colleague being confirmed as coronavirus (COVID-19) positive, 15 minutes contact with them across one week equals close contact.
- Consider options for providing alternative spaces for staff breaks, for example outdoor marquees with heaters.

Related guidance

PPE in Maternity and Neonatal care: www.dhhs.vic.gov.au/coronavirus-disease-covid-19-ppe-maternity-and-neonatal-services

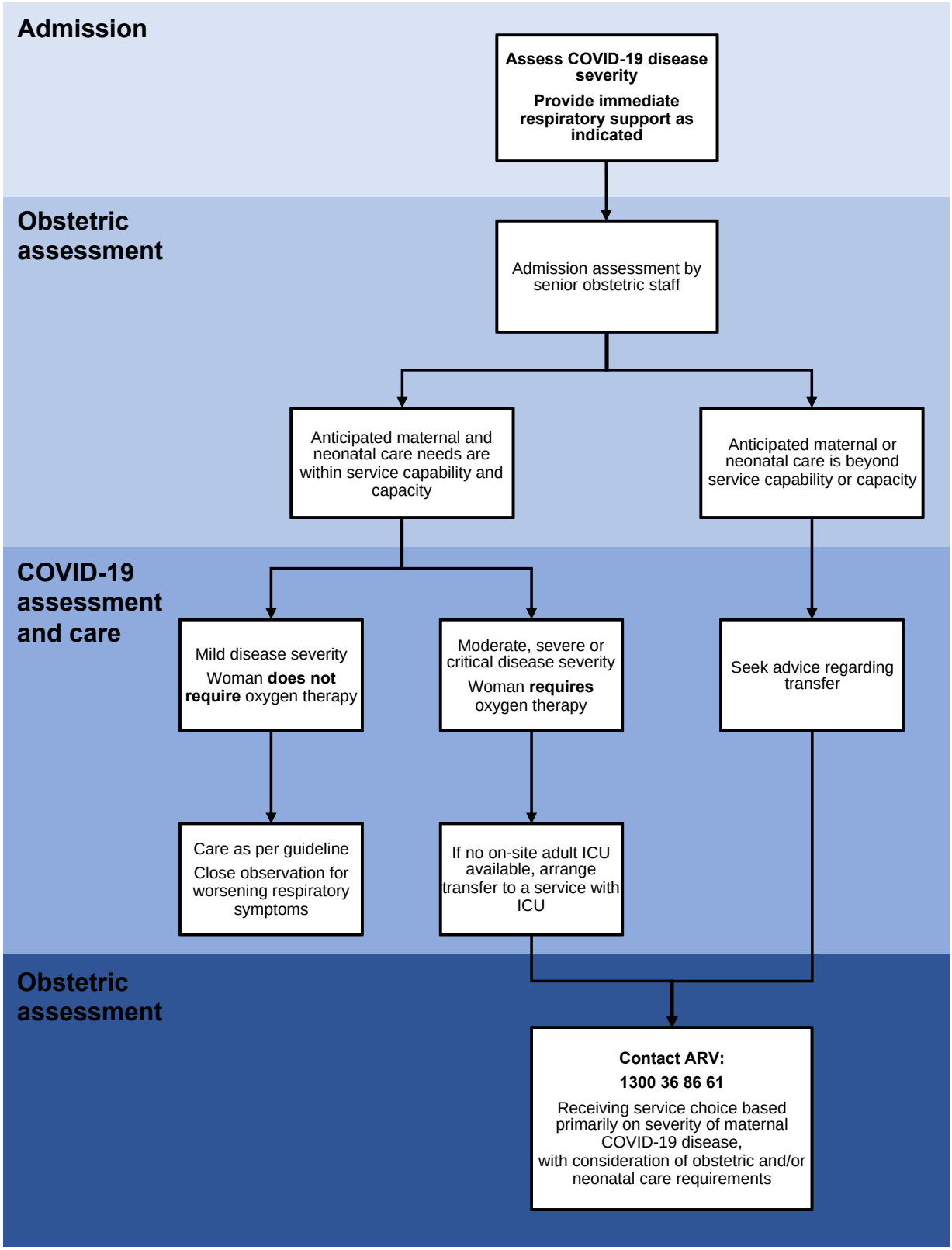
Physical distancing: https://www.dhhs.vic.gov.au/covid-19-guidance-physical-distancing-health-services

Cohorting: https://www.dhhs.vic.gov.au/coronavirus-covid-19-guidance-cohorting-and-isolation-patients-victorian-hospitals-during-covid-19

Healthcare worker movement: https://www.dhhs.vic.gov.au/minimising-risk-covid-19-transmission-through-healthcare-worker-movement-doc

Admission and referral for women with suspected or confirmed coronavirus (COVID-19).

The following diagram describes the admission and referral pathway for suspected or confirmed coronavirus (COVID-19) positive women.



Note: Adult Retrieval Victoria (ARV) involve PIPER in all referrals of pregnant women with symptomatic coronavirus (COVID-19) disease.

Clinical presentation of coronavirus (COVID-19) during pregnancy, birth and postpartum

Recent USA data shows that pregnant women who test positive for coronavirus (COVID-19) are more likely to need hospitalisation and admission to intensive care units than non-pregnant women. See Table 1 for classification of disease severity.

Critical illness may be more likely in later pregnancy, compared to early pregnancy. See Table 2 for common, less common and rare features of clinical presentation.

Key practice point

- Women with **moderate, severe or critical disease severity** or who require **oxygen to maintain SpO2 >94%** should be transferred to a service with on-site adult intensive care unit and on-site or immediate access to maternity services.

Table 1. Classification of disease severity

Mild Illness	No clinical features suggestive of moderate or severe disease. Characteristics: – no symptoms – or mild upper respiratory tract symptoms – or cough, new myalgia or asthenia without new shortness of breath or a reduction in oxygen saturation
Moderate Illness	Stable woman presenting with respiratory and/or systemic symptoms or signs Able to maintain oxygen saturation above 92% (or above 90% for women with chronic lung disease) with up to 4L/min oxygen via nasal prongs Prostration, severe asthenia, fever > 38℃ or persistent cough Clinical or radiological signs of lung involvement No clinical or laboratory indicators of clinical severity or respiratory impairment
Severe Illness	Women meeting any of the following criteria: – respiratory rate ≥ 30 breaths/min – oxygen saturation ≤ 92% at a rest state and/or arterial partial pressure of oxygen (PaO2)/ inspired oxygen fraction (FiO2) ≤ 300

Critical Illness	Women meeting any of the following criteria: Respiratory Failure: - SpO2 ≤ 90% on oxygen therapy (any amount) - occurrence of severe respiratory failure (PaO2/FiO2 ratio < 200) - respiratory distress or acute respiratory distress syndrome (ARDS) - Note: this includes patients deteriorating despite advanced forms of respiratory support (NIV, HFNO) OR patients requiring mechanical ventilation. **OR** Women requiring mechanical ventilation **OR** Other signs of significant deterioration: – hypotension or shock – impairment of consciousness – other organ failure

Table 2. Clinical presentation of coronavirus (COVID-19) in adults

Common features	Less common	Rare
Fever (85-90%)	Anosmia or taste aberration (30%)	Nausea
Cough (65-70%)	Myalgia/arthralgia (10-15%)	Vomiting
Fatigue (35-40%)	Headache (10-15%)	Nasal congestion (<10%)
Sputum production (30-35%)	Sore throat (10-15%)	Palpitations
Shortness of breath (15-20%)	Chills (10-12%)	Chest tightness
	Pleuritic chest pain	
	Diarrhoea	

Clinical management of coronavirus (COVID-19) during pregnancy, birth and postpartum

Individual assessment must consider maternal and fetal condition, gestation and potential for improvement following elective birth. The priority must always be the wellbeing of the mother.

Evaluation should consider potential differential diagnoses – symptoms of coronavirus (COVID-19) can overlap with symptoms of pulmonary embolism.

Suggested investigations

For women admitted with suspected and confirmed coronavirus (COVID-19), the following investigations are suggested:

On admission	Nasopharyngeal swab (only if needed to confirm diagnosis) Chest x-ray: consider if symptoms are consistent with coronavirus (COVID-19) FBE, LFTs, UEC, ECG Arterial blood gas: if requiring oxygen therapy
Ongoing monitoring	CT: not routine, a secondary diagnostic tool for patients with a negative swab but ongoing clinical suspicion for coronavirus (COVID-19). Venous blood gas

As indicated	Arterial blood gas: for hypoxaemia ECG: required if commencing medication that causes QT prolongation Blood cultures: if commencing antibiotics, or for ongoing temperature if non-coronavirus (COVID-19) pathology suspected BNP: if clinical picture suggests heart failure Troponin: if clinical picture suggests acute coronary syndrome

Oxygen therapy

Key practice points

- Women can deteriorate rapidly - close clinical monitoring is crucial.
- Degree of hypoxia can be greater than dyspnoea, with deterioration usually seen 5-10 days after onset of illness.
- Avoid nebulisers.

If oxygen saturation (SpO_2) <94%

- Commence low flow O2 via nasal prongs 1-4 L/min: target SpO_2 ≥94%
- If additional oxygen therapy is required, temporarily use a face mask at 6-10L/min or non-rebreather mask with reservoir at 10-15L/min while awaiting urgent medical review.

Urgent clinical review and decision regarding ICU referral (+/- intubation) if:

- woman fails to maintain SpO_2 ≥94% on 4L/min O2 via NP or
- respiratory rate >30 breaths/min

Oxygen saturation (SpO_2) monitoring

- Use a continuous oxygen saturation (SpO_2) monitoring probe for any woman requiring O2.
- For all women with coronavirus (COVID-19), check SpO_2 at least four-hourly.
- For any woman on high flow nasal oxygen (HFNO) or continuous positive airway pressure (CPAP), hourly SpO_2
- During labour check SpO_2 hourly.
- After any increase in oxygen therapy:
  - hourly SpO_2 check for at least 4 hours
  - then 2-hourly for 4 hours
  - then 4-hourly minimum thereafter

Venous thromboembolism (VTE) prophylaxis

Pregnant women in general are at an increased risk of VTE. Hospitalised pregnant women with an acute infective illness are at even greater risk.

Any women admitted with coronavirus (COVID-19) (antepartum or postpartum) should receive routine thromboprophylaxis:

- an exception is if birth is expected within 12 hours
- do not administer epidural and spinal injections within 12 hours of administration of thromboprophylaxis.

Pregnancy – All pregnant women admitted to hospital with coronavirus (COVID-19) infection should receive at least 14 days of thromboprophylaxis following discharge from hospital.

Self-isolation – Women self-isolating at home with mild coronavirus (COVID-19) infection should receive at least 14 days of thromboprophylaxis.

Postpartum – Postpartum women discharged after moderate/severe coronavirus (COVID-19) infection should receive four weeks of thromboprophylaxis.

If there is high clinical suspicion of a pulmonary embolus (PE), investigate promptly with computed tomography (CT) pulmonary angiograph (CTPA) imaging to confirm or exclude the diagnosis. A leg ultrasound alone excluding DVT is not sufficient to exclude PE.

Low dose aspirin should be ceased in any woman using this for obstetric reasons (e.g. high-risk pre-eclampsia).

Fetal surveillance

- Limited evidence suggests a risk of fetal compromise in pregnancies affected by coronavirus (COVID-19), with the possibility of fetal growth restriction (FGR).
- Consider ultrasound (US) if FGR is suspected and findings would impact on management plan.
- A full fetal assessment (ultrasound for biometry and fetoplacental Dopplers etc.) should be performed 14 days after presentation to document fetal growth.
- Achieving fetal surveillance in some settings (for example, ICU) and some circumstances (for example, quarantine and self-isolation) can be very challenging and care for these women will need to be individualised.

Women ≥ 28 weeks' gestation

- ensure continuous monitoring by cardiotocograph (CTG) during labour and birth
- perform a CTG daily for all admitted women
- commence continuous CTG monitoring in women who require > 4L oxygen/min, until review and development of management plan with a Level 5/6 Obstetrician (who may seek support from maternal fetal medicine specialist (MFM)/PIPER).

Women 23+0 to 27+6 weeks' gestation

Perform twice daily fetal heart rate (FHR) checks.

Corticosteroids for fetal lung maturity

Corticosteroids should be given where indicated < 34 weeks, unless administration of dexamethasone for treatment of coronavirus (COVID-19) is required. Urgent birth should not be delayed for their administration.

Corticosteroids after 34 weeks' gestation and repeat dose steroids are not recommended.

Consider blood glucose monitoring. Notify the endocrinology registrar or endocrinologist prior to administering corticosteroids for women who have gestational or pre-existing diabetes.

Magnesium sulfate for fetal neuroprotection

Magnesium should be given where indicated <30 weeks for fetal neuroprotection.

To reduce the risk of exacerbating respiratory function:

- administer the 4-gram loading dose over 60 minutes (instead of 20-30 minutes)
- no ongoing infusion.

For women with increasing oxygen requirements or where there may be renal dysfunction, the risk-to-benefit ratio should be considered before using magnesium for fetal neuroprotection

Indications for expediting birth

Current advice is to consider expediting birth for a coronavirus (COVID-19) positive pregnant woman once she requires >4L oxygen/min to maintain a target SpO2>94% and is at or greater than 28 weeks gestation.

- Between 23 and 28 weeks it may be appropriate to expedite birth, but care must be individualised and incorporate multidisciplinary counselling.
- When women reach this level of oxygen support, they have been found to be at increased risk of rapid respiratory deterioration and delivery can assist with subsequent maternal care requirements.
- Women should be positioned in the left lateral decubitus position with a > 30-degree tilt to minimise aortocaval compression from the gravid uterus. Alternating prone positioning with lateralisation is recommended.
- In the event that a patient requires ECMO, discuss with the ECMO referral centre, and consider delivery prior to transfer or cannulation.
- If maternal respiratory function is deteriorating, caesarean section is generally the mode of birth necessary.
- Develop a plan for timing and location of birth with a Level 5/6 obstetrician or MFM specialist, in conjunction with the medical and/or ICU team.

Immediate postnatal care

Post birth, judicious fluid management is required to avoid postpartum fluid overload.

A rapid deterioration in respiratory function in the immediate post-partum period has also been reported and may be more common than antenatally.

Medications for treating coronavirus (COVID-19) in pregnant women

There are limited treatment options with adequate data to support routine use in pregnant women infected with coronavirus (COVID-19). Treatment needs to be considered on a case-by-case basis by a multidisciplinary team.

Dexamethasone	For pregnant women requiring oxygen, consider treatment with 6 mg dexamethasone IV or oral for up to 10 days. Corticosteroids should not be prescribed for coronavirus (COVID-19) in pregnant women who do not require oxygen, unless otherwise indicated (promoting fetal lung maturity, asthma exacerbation, autoimmune disease etc).
Remdesivir, interferon, convalescent plasma	Disease modifying treatments such as remdesivir, interferon and convalescent plasma should ideally be used in the context of a clinical trial.
Hydroxychloroquine	Hydroxychloroquine is not recommended for treatment of coronavirus (COVID-19).
Aspirin	It is unclear if aspirin used for the prevention of pre-eclampsia has any impact on the severity or progression of disease. Aspirin can safely be ceased for the duration of disease and recommenced once the woman is well, if deemed necessary.
Antibiotics	Coronavirus (COVID-19) viral pneumonia can be complicated by secondary bacterial infection. Consider the addition of antibiotics if there is evidence of bacterial infection or additional risk factors including underlying lung disease, marked neutrophilia, or need for ICU admission.

More information on coronavirus (COVID-19) maternity and neonatal care

For more coronavirus (COVID-19) Maternity and neonatal care guidance, go to:
https://www.dhhs.vic.gov.au/clinical-guidance-and-resources-covid-19 and click on the Maternity and newborn tab.

- Coronavirus disease (COVID-19): Maternity and neonatal care guidance for clinicians
- Coronavirus disease (COVID-19): Preparing for obstetric and neonatal emergencies
- COVID-19 Pregnancy triage, assessment and care flowchart
- COVID-19 Labour and birth care flowchart
- COVID-19 Attendance at birth and NICU/SCN care flowchart
- COVID-19 Post-natal care flowchart
- COVID-19 Guidance for neonatal resuscitation in suspected or confirmed cases of COVID-19

Further information

- For Victorian updates: https://www.dhhs.vic.gov.au/coronavirus
- For information for healthcare services: https://www.dhhs.vic.gov.au/health-services-and-professionals-coronavirus-covid-19
- For national updates: health.gov.au/news/latest-information-about-novel-coronavirus
- For international updates: who.int/westernpacific/emergencies/novel-coronavirus
- https://www.rcpch.ac.uk/resources/covid-19-guidance-paediatric-services#working-in-neonatal-settings
- World Health Organization (WHO) resources: who.int/health-topics/coronavirus

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To find out more information about coronavirus and how to stay safe visit DHHS.vic – coronavirus disease (COVID-19) - https://www.dhhs.vic.gov.au/coronavirus
If you need an interpreter, call TIS National on 131 450

For information in other languages, scan the QR code or visit DHHS.vic –Translated resources - coronavirus (COVID-19) - https://www.dhhs.vic.gov.au/translated-resources-coronavirus-disease-covid-19

For any questions

Coronavirus hotline 1800 675 398 (24 hours)

Please keep Triple Zero (000) for emergencies only

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