

MANAGEMENT OF ADULTS WITH MODERATE TO SEVERE COVID-19

LEGEND

EBR: Evidence-Based Recommendation
CBR: Consensus-Based Recommendation
PP: Practice Point

Living
guidance

Not prioritised
for review

Setting of care

ADMISSIONS

- Manage people with moderate COVID-19 in hospital, when possible. **PP** [Taskforce]
- Manage people with severe COVID-19 in hospital or another facility that can provide the necessary level of care. **PP** [Taskforce]

Consider admission of people with likely or confirmed COVID-19 if they are haemodynamically unstable, hypoxaemic (SaO_2 on room air $\leq 92\%$), have comorbidities, or an unsuitable home environment. **PP** [Taskforce]

MANAGING RISK OF INFECTION

As per the current [national guidance on the use of personal protective equipment \(PPE\) in hospitals during the COVID-19 outbreak](#):

- use eye protection
- use P2/N95 respirators
- use other PPE as per NHMRC IPC recommendations

PP [Taskforce/ICEG; NHMRC]

Definition of disease severity

Moderate illness

Stable adult patient presenting with respiratory and/or systemic symptoms or signs. Able to maintain $\text{SpO}_2 > 92\%$ at rest (or above 90% for patients with chronic lung disease) with up to 4 L/min oxygen via nasal prongs.

Characteristics:

- fatigue, fever $> 38^\circ\text{C}$ or persistent cough
- clinical or radiological signs of lung involvement
- no clinical or laboratory indicators of clinical severity or respiratory impairment

Severe illness

Adult patients meeting any of the following criteria:

- respiratory rate ≥ 30 breaths/min
- $\text{SpO}_2 < 92\%$ at rest (note: in adults with darker skin pulse oximetry may underestimate severity of hypoxemia)
- arterial partial pressure of oxygen (PaO_2)/inspired oxygen fraction (FiO_2) ≤ 300

Testing and monitoring of inpatients

BASELINE TESTING AND DIAGNOSTIC WORK UP

In all people with suspected or confirmed COVID-19, perform haematology, biochemistry laboratory testing, a CXR and an ECG on admission. **PP** [Taskforce]

Investigate people with suspected or confirmed COVID-19 for influenza, CAP and other differential diagnoses as per usual practice. **PP** [Taskforce]

In cases of suspected COVID-19 that have not been confirmed by positive PCR, collect serum during the acute phase of the illness (preferably within the first 7 days of symptom onset); store and test the serum in parallel with convalescent sera collected 2 or more weeks after the onset of illness. **PP** [Taskforce/CDNA]

In cases where a strong clinical suspicion of COVID-19 remains after a negative SARS-CoV-2 PCR:

- continue isolation and treatment as for a provisional COVID-19 diagnosis;
- repeat SARS-CoV-2 PCR as soon as possible, adding a stool PCR if loose stool.

PP [Taskforce/ASID]

Whole genome sequencing of all COVID-19 cases should be undertaken. **PP** [CDNA]

MONITORING AND MARKERS OF CLINICAL DETERIORATION

Monitoring

CONSENSUS RECOMMENDATION

For people with COVID-19, monitor markers of clinical progression, such as rapidly progressive respiratory failure and sepsis, especially on days 5 to 10 after onset of symptoms. **CBR** [Taskforce]

In all people with suspected or confirmed COVID-19, perform ECG and haematology and biochemistry laboratory tests as clinically indicated to monitor for complications, such as acute liver injury, acute kidney injury, acute cardiac injury or shock. **PP** [Taskforce]

Only repeat CXR in people with suspected or confirmed COVID-19 if clinically indicated (e.g. in cases of clinical deterioration or recent intubation). **PP** [Taskforce/ASID]

Do not routinely perform CT scanning in people with suspected or confirmed COVID-19. **PP** [Taskforce]

Supportive care in hospital

GENERAL

In all people with suspected or confirmed COVID-19, anticipate complications such as arrhythmias, cardiac impairment, sepsis and multi-organ dysfunction, and address using existing standards of care. **PP** [Taskforce/ACEM]

Corticosteroids

RECOMMENDED

Use dexamethasone 6 mg daily intravenously or orally for up to 10 days (or acceptable alternative regimen) in **adults with COVID-19 who are receiving oxygen** (including mechanically ventilated patients). **EBR** [Taskforce]

The suggested regimen of corticosteroid use is 6 mg of dexamethasone (oral or intravenous) daily for up to 10 days. In patients for whom dexamethasone is not available, acceptable alternative regimens include: **EBR** [Taskforce]

- hydrocortisone: intravenous (50 mg), every 6 hours for up to 10 days
- prednisolone: oral (50 mg), daily for up to 10 days.

SUPPORTIVE ANTI-INFECTIOUS THERAPY

In people with suspected or confirmed COVID-19 with signs and symptoms consistent with bacterial pneumonia, prescribe antibiotics according to local or national pneumonia guidelines.

Consider early de-escalation or cessation of antibiotics if bacterial pneumonia is excluded. **PP** [Taskforce/ASID]

In people with suspected or confirmed COVID-19 with onset of symptoms < 48 hours, request an influenza PCR test.

If disease is severe, consider prescribing oseltamivir 75 mg BD (or a renally adjusted dose). If the influenza PCR is negative, cease oseltamivir. **PP** [Taskforce/ASID]

Corticosteroids CONDITIONAL RECOMMENDATION AGAINST

Do not routinely use dexamethasone (or other corticosteroids) to treat COVID-19 in **adults who do not require oxygen**. **EBR** [Taskforce]

Corticosteroids may still be considered for other evidence-based indications in people who have COVID-19. **PP** [Taskforce]

Remdesivir CONDITIONAL RECOMMENDATION AGAINST

Do not start remdesivir in adults hospitalised with COVID-19 who require ventilation.

However, remdesivir should be continued with the appropriate dose and duration, **if it was started prior to requiring ventilation** (invasive or non-invasive mechanical ventilation and extracorporeal membrane oxygenation (ECMO)). **PP** [Taskforce]

Baricitinib CONDITIONAL RECOMMENDATION FOR

Consider using baricitinib for adults with COVID-19 who require supplemental oxygen, high-flow oxygen and/or non-invasive ventilation. **EBR** [Taskforce]

Casirivimab plus imdevimab (REGEN-COV)

Consider using casirivimab plus imdevimab in **seronegative patients hospitalised** with moderate to severe COVID-19. **EBR** [Taskforce]

Remdesivir

Consider using remdesivir for adults hospitalised with moderate to severe COVID-19 **who require oxygen but not ventilation**. **EBR** [Taskforce]

Sarilumab

Consider using sarilumab for the treatment of COVID-19 in **adults who require high-flow oxygen, non-invasive ventilation or invasive ventilation**. **EBR** [Taskforce]

Tocilizumab

Consider using tocilizumab for the treatment of COVID-19 in **adults who require supplemental oxygen**, particularly where there is evidence of systemic inflammation. **EBR** [Taskforce]

NOT RECOMMENDED**Aspirin****Azithromycin****Colchicine****Convalescent plasma****Hydroxychloroquine****Hydroxychloroquine plus****azithromycin****Interferon β -1a****Interferon β -1a plus lopinavir-****ritonavir****Lopinavir-ritonavir**

Do not use these medications for the treatment of COVID-19. **EBR** [Taskforce]

Disease-modifying treatments not recommended outside of clinical trials NOT RECOMMENDED

Do not use the following disease modifying treatments for the treatment of COVID-19 outside of randomised trials with appropriate ethical approval. **EBR** [Taskforce]:

- [Angiotensin 2 receptor agonist \(C21\)](#)
- [Anakinra](#)
- [Aprepitant](#)
- [Baloxavir marboxil](#)
- [Bamlanivimab](#)
- [Bamlanivimab plus etesevimab](#)
- [Bromhexine hydrochloride](#)
- [Budesonide](#)
- [Chloroquine](#)
- [Combined metabolic cofactor supplementation \(CMCS\)](#)
- [Comostat mesilate](#)
- [CT-P59 monoclonal antibody](#)
- [Darunavir-cobicistat](#)
- [Dutasteride](#)
- [Enisamium](#)
- [Favipiravir](#)
- [Fluvoxamine](#)
- [Human umbilical cord mesenchymal stem cells](#)
- [Immunoglobulin plus methylprednisolone](#)
- [Inhaled Interferon \$\beta\$ -1a](#)
- [Interferon \$\beta\$ -1b](#)
- [Interferon gamma](#)
- [Interferon-kappa + tff2](#)
- [Ivermectin](#)
- [Ivermectin plus doxycycline](#)
- [Intravenous Immunoglobulin](#)
- [Lenzilumab](#)
- [N-acetylcysteine](#)
- [Nitazoxanide](#)
- [Peginterferon lambda](#)
- [Recombinant human granulocyte colony-stimulating factor](#)
- [REGN COV2](#)
- [Ruxolitinib](#)
- [Sarilumab](#)
- [Sofosbuvir-daclatasvir](#)
- [Sotrovimab](#)
- [Sulodexide](#)
- [Telmisartan](#)
- [Tofacitinib](#)
- [Triazavirin](#)
- [Umifenovir](#)
- [Vitamin C](#)
- [Vitamin D \(calcifediol/cholecalciferol\)](#)
- [Zinc](#)
- [Other disease-modifying treatments](#)

These disease-modifying treatments should still be considered for other evidence-based indications in people who have COVID-19. **PP** [Taskforce]

OTHER TREATMENTS**VTE prophylaxis** CONDITIONAL RECOMMENDATION

Use prophylactic doses of anticoagulants, preferably low molecular weight heparin (LMWH) (e.g. enoxaparin 40 mg once daily or dalteparin 5000 IU once daily) in adults with moderate, severe or critical COVID-19 or other indications, unless there is a contraindication, such as risk for major bleeding. Where the estimated glomerular filtration rate (eGFR) (see below) is less than 30 mL/min/1.73m², unfractionated heparin or clearance-adjusted doses of LMWH may be used (e.g. enoxaparin 20 mg once daily). **EBR** [Taskforce]

For body weights outside 50-90 kg or heights outside 150-180 cm, calculate the BSA and multiply the eGFR by BSA/1.73. **PP** [Taskforce]

Increased-dose VTE prophylaxis CONDITIONAL RECOMMENDATION AGAINST

Do not routinely offer therapeutic anticoagulant dosing in adults with severe or critical COVID-19. There is no additional indication for therapeutic dosing for anticoagulants in adults with severe or critical COVID-19 beyond current standard best practice. **EBR** [Taskforce]

In all people with suspected or confirmed COVID-19, switch nebulisers to metered aerosols with spacers if possible. **PP** [Taskforce/ANZICS/ASID]

In people with suspected or confirmed COVID-19, consider alternative routes of administration for intranasal medicines, recognising that in some situations administration via the intranasal route may be a safer option for affected individuals and healthcare workers. **PP** [Taskforce/ACSQHC]

Oestrogen containing therapies

Consider stopping oral menopausal hormone therapy (MHT), also known as hormone replacement therapy (HRT), in women with mild or **moderate** COVID-19.

Before restarting oral MHT, review the indication for this. If MHT is continued, consider using a transdermal preparation. **PP** [Taskforce]

Stop oral menopausal hormone therapy (MHT) in women with **severe** or critical COVID-19.

Before restarting oral MHT, review the indication for this and consider transitioning to a transdermal preparation. **PP** [Taskforce]

In women with mild or **moderate** COVID-19, manage oestrogen-containing contraception as per usual care. **PP** [Taskforce]

In women who are receiving care in hospital for **severe** or critical COVID-19 and who are taking oestrogen-containing contraception, manage these medications as per usual care.

In women who stop or suspend contraception when they have COVID-19, restart contraception at the time of discharge or when acute symptoms have resolved. **PP** [Taskforce]

In people currently receiving gender-affirming oestrogen-supplementation and who contract COVID-19, the risks and benefits of continued or reduced oestrogen-supplementation must be assessed on a case by case basis. **PP** [Taskforce]

FLUID MANAGEMENT

In all patients with suspected or confirmed moderate to severe COVID-19, use a restrictive fluid management strategy, avoiding the use of 'maintenance' intravenous fluids, high volume enteral nutrition, and fluid bolus for hypotension. **PP** [Taskforce/ANZICS]

RESPIRATORY SUPPORT

In people with suspected or confirmed COVID-19 and a SaO₂ \leq 92% or significantly below baseline, initiate supplemental oxygen (1-4 L/min) via nasal prongs. **PP** [Taskforce/ASID]



Trials are needed in special populations, including children and adolescents, pregnant and breastfeeding women, older people living with frailty and those receiving palliative care. Until further evidence is available, do not use other disease-modifying treatments in these populations unless they are eligible to be enrolled in trials. **PP** [Taskforce]

Escalation of care

HOSPITALS WITH ICU

Urgently refer people with suspected or confirmed COVID-19 to intensive care if they are haemodynamically unstable, have rapidly worsening tachypnoea or hypoxaemia, or require $\geq 40\%$ FiO₂ to maintain SaO₂ $\geq 92\%$ (or acceptable saturations in those with lower baselines).
PP [Taskforce/ASID]

HOSPITALS WITHOUT ICU

Consider the need for early transfer of people with suspected or confirmed COVID-19 to a higher-level facility with an ICU.
PP [Taskforce/ASID]

When preparing for transfer of people with suspected or confirmed COVID-19, consider infection control implications and whether intubation is required prior to transfer, as per local retrieval team policies.
PP [Taskforce/ASID]

For details of high level respiratory support see the **RESPIRATORY SUPPORT FOR SEVERE TO CRITICAL COVID-19** Clinical Flowchart

Discharge planning

People with suspected or confirmed COVID-19 who are clinically ready for hospital discharge should stay in home isolation after discharge until:

- at least 14 days have passed since onset of symptoms; AND
- there has been resolution of fever and respiratory symptoms of the acute illness for the previous 72 hours.
- in people with a confirmed case of a SARS-CoV-2 variant of concern PCR testing should be undertaken on day 12-13. **PP** [Taskforce/CDNA]

People with suspected or confirmed COVID-19 with an incomplete resolution of symptoms but who are clinically ready for hospital discharge should stay in home isolation after discharge until:

- at least 14 days have passed since onset of symptoms; AND
- there has been substantial improvement in symptoms of the acute illness (including resolution of fever for the previous 72 hours); AND
- the person has had two consecutive respiratory specimens negative for SARS-CoV-2 by PCR taken at least 24 hours. **PP** [Taskforce/CDNA]

In patients with severe COVID-19 offer appropriate rehabilitation to optimise recovery, including early hospital rehabilitation. Plan transition of care to the community, including handover to general practice.
PP [Taskforce]

Follow up care

- Assist people to connect to a GP if they do not have one.
- When the acute phase of the illness has resolved, and the patient is mobile, undertake a comprehensive review to assess their ongoing and rehabilitation needs.
- Review medications that were stopped or started.

PP [Taskforce]

Sources

- ACEM** – Australasian College for Emergency Medicine Clinical guidelines for the management of COVID-19 in Australasian emergency departments. V5.0, 23 December 2020. <https://acem.org.au/Content-Sources/Advancing-Emergency-Medicine/COVID-19/Resources/Clinical-Guidelines>
- ACSQHC** – Australian Commission on Safety and Quality in Health Care. COVID-19 Position Statement - Managing fever associated with COVID-19 (Revised 29 April 2020). Managing intranasal administration of medicines for patients during COVID-19 (Revised 19 May 2020)
- ANZICS** – The Australian and New Zealand Intensive Care Society (ANZICS) COVID-19 Guidelines. V3.0, 20 October 2020. https://www.anzics.com.au/wp-content/uploads/2020/10/ANZICS-COVID-19-Guidelines_V3.pdf
- ASID** – Interim guidelines for the clinical management of COVID-19 in adults. Australasian Society for Infectious Diseases (ASID). V1.0, 20 March 2020
- CDNA** – Coronavirus Disease 2019 (COVID-19) Communicable Diseases Network Australia (CDNA) National Guidelines for Public Health Units. V4.7, 24 June 2021. <https://www1.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-novel-coronavirus.htm>
- National COVID-19 Clinical Evidence Taskforce** – Australian guidelines for the clinical care of people with COVID-19. <https://app.magicapp.org/#/guideline/L4Q5An>
- National COVID-19 Clinical Evidence Taskforce/ICEG** – Australian guidelines for SARS-CoV-2 infection prevention and control of COVID-19 in healthcare workers V1.0. <https://app.magicapp.org/#/guideline/ERWdzj>
- NHRMC** – Australian Guidelines for the Prevention and Control of Infection in Healthcare (2019) <https://www.nhmrc.gov.au/about-us/publications/australian-guidelines-prevention-and-control-infection-healthcare-2019>