



Guide for general practitioners to inform shared decision making with patients around risk of severe illness related to COVID-19

This document is intended as a guide for general practitioners (GPs) to inform discussions with patients around individual risk related to COVID-19.

When a patient presents with concerns about their risk for severe COVID-19 illness you can help them develop a COVID-19 action plan that considers their wishes and priorities and helps them manage their risk and maintain a lifestyle that has quality and meaning. This process could include the following:

1. Considering the factors that may affect their risk of severe COVID-19 illness.
2. Helping the person define their risk.
3. Helping the person understanding how personal risk is impacted by:
 - a. the epidemiological context;
 - b. their activities and interactions; and
 - c. personal actions (COVID-19 vaccination, physical distancing and hygiene measures).
4. Helping the person develop their own risk management strategy.

Severe COVID-19 illness

COVID-19 is caused by the novel beta-coronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).[1] The majority of people infected develop a mild illness while a minority develop severe illness. Higher disease severity, as indicated by hospitalisation, admission to ICU, and death, has been associated with increased age and comorbidities.[2]

In Australia, current epidemiological data suggests that 13% of the total cases of COVID-19 notified are admitted to hospital. However, the rate of hospitalisation varies for different subgroups of the population. For example, the rate of COVID-19 hospitalisation in unvaccinated older individuals or those with comorbidities is approximately 30%-40%, while for children and adolescents it is less than 2%. The 13% 'headline' hospitalisation rate seen in Australia is lower than for many other

countries, with 16% of Canadian cases and 36% of cases in the EU/EEA hospitalised.[4]

Case fatality rates (CFR) show some variation worldwide. The global average CFR is 2.1%, which is similar to the rate in the UK of 2.0% and the US of 1.7%.[3] In Australia, the CFR is 2.7%.[2]

Vaccination

Real world studies have shown that COVID-19 vaccines available in Australia are up to 97% effective against hospitalisation from COVID-19.[6, 7] This protection against COVID-19 hospitalisation afforded by COVID-19 vaccination has also been demonstrated in older adults. Studies in the UK have reported effectiveness against COVID-19 hospitalisation after dose 1 of either Vaxzevria (COVID-19 Vaccine AstraZeneca) or Comirnaty (Pfizer COVID-19 vaccine) of 81% (95% CI 65-90) in people aged ≥ 80 years.[8, 9]

There is currently limited evidence regarding the effectiveness of COVID-19 vaccines for people who are immunocompromised. One preprint study examined both Comirnaty and Vaxzevria and found the estimated vaccine effectiveness in a general immunocompromised population in the UK against medically attended PCR-confirmed COVID-19 was 73.0% (95% CI 33.9-89.0) after 2 doses of Comirnaty and 74.6% (95% CI 18.7-92.1) after 2 doses of Vaxzevria.[10] Evidence from a retrospective, multicentre cohort study from Israel indicates that comorbidities were more common in COVID-19 hospitalised patients with vaccine breakthrough infections compared with the proportion of comorbidities seen in large case series on unvaccinated hospitalised patients.[11] However, there is still limited evidence regarding whether COVID-19 vaccines are less effective in patients with comorbidities than in patients with no comorbidities.

What factors are important when assessing individual risk of severe COVID-19 illness?

Age

Increasing age is the single most important factor for risk of severe COVID-19 disease. Both Australian and international data show that higher disease severity is associated with older age.[2, 12] The table below includes data from a large UK cohort study that looked at the risk of death in patients with COVID-19, among different age groups.

Hazard Ratios for in hospital COVID-19 death [4]

Age (years)	Increased risk (adjusted hazard ratio)	
50-59	1.0	(reference group)
60-69	x 2.09	(1.84 - 2.38)
70-79	x 4.77	(4.23 -5.38)
Over 80	x 12.64	(11.19 – 14.28)

A hazard ratio above one, such as 2.0, equates to 2.0 times higher risk compared to baseline.

Co-morbidities and other issues

While age is the factor most strongly associated with risk of severe COVID-19 illness, many chronic conditions appear to increase risk.[2, 4, 12] In some studies male gender has been shown to increase risk.[4, 12] Data from the UK also found that poverty was an independent risk factor not explained by co-morbidity or other risk factors.[4] The increased risk association with socioeconomic deprivation has been supported by data from France.[12]

First Nations peoples are thought to be at higher risk in public health emergencies. Aboriginal and Torres Strait Islander peoples may be at increased risk of severe disease and should be considered a priority population when assessing potential risk related to COVID-19.

Condition	Increased risk (95% confidence intervals) [4]	
No co-morbidities	1.00	(reference group)
Chronic heart disease	1.27	(1.20 – 1.35)
Rheumatoid/Lupus/Psoriasis	1.23	(1.12 – 1.35)
Controlled diabetes (HbA1c<58mmol/mol) (vs none)	1.50	(1.40 – 1.60)
Non-haematological cancer (<12mths) (vs none)	1.56	(1.26 – 1.89)
Liver disease	1.61	(1.33 – 1.95)
Other immunosuppressive condition	1.69	(1.21 – 2.34)
Kidney disease	1.72	(1.62 – 1.83)
Respiratory disease (excluding asthma)		

Condition	Increased risk (95% confidence intervals) [4]
Stroke/dementia	1.78 (1.67 – 1.90)
Obesity Class III ($\geq 40 \text{ kg/m}^2$) (vs none)	1.79 (1.79 – 1.93)
	2.27 (1.99 – 2.58)
Uncontrolled diabetes (HbA1c ≥ 58 mmol/mol) (vs none)	2.36 (2.18 – 2.56)
Haematological malignancy (vs none)	
Diagnosed 1-4.9 years ago	3.12 (2.50 – 3.89)
Diagnosed < 1 year ago	3.52 (2.41 – 5.14)
Organ transplant	4.27 (3.20 – 5.70)

Risk appears to increase with the number of comorbid conditions. The proportion of COVID-19 cases who reported one or more comorbid conditions increased with the level of care required, with 76% of ventilated cases reporting comorbid conditions.[5]

Condition (see list below)	Increased risk of (95% confidence intervals) [5]
No co-morbidities	1.0 (reference group)
One chronic condition	1.8 (1.16 – 2.77)
Two or more chronic conditions	2.6 (1.61 – 4.17)

Factors that do not appear to increase risk, or where the evidence is mixed or absent, include mild to moderate asthma, and controlled hypertension. There is a lack of reliable studies showing increased risk for these as independent factors, although there is variation across different countries. While it is considered likely that smoking increases risk, there is currently no robust data around this risk factor, but it may be a good time to raise smoking cessation.

Pregnant people with COVID-19 have a higher risk of certain complications compared to non-pregnant people of the same age with COVID-19, including about a 5 times higher risk of COVID-19 hospitalisation and a 2-3 higher risk of needing intensive care admission.[13, 14] COVID-19 during pregnancy also increases the risk of complications for the newborn, including premature birth and needing admission to a neonatal intensive care unit.[14]

Consider your patient's age and their condition/s and treatment to better define their risk.

My patient has factors that increase their risk of severe COVID-19 illness. How do I help them make decisions to manage their risk?

When your patient has factors that increase their risk of severe illness, you can help them characterise their personal risk and contextualise how this risk is modified by the local epidemiology, COVID-19 vaccination status of the individual and vaccination rates in the community and the activities they wish to undertake in the community.

Together you can develop a COVID-19 action plan that considers the patients' wishes and priorities and helps your patient manage risk and maintain a lifestyle that has quality and meaning. Encourage the patient to explore the benefits and advantages versus the risks and disadvantages of any choices that are open to them.

It is important to develop a COVID-19 action plan and review it regularly, with consideration of the epidemiological context.

Epidemiology: the case numbers

The number of cases of COVID-19 in the local community is the most important determinant of your patient's risk of exposure. Another consideration is the predominant variant of SARS-CoV-2. For example, the predominant variant may be more transmissible and may cause more severe disease than previous variants. These are important considerations in the assessment of risk. Those at increased risk need to stay up to date on cases in their community through their state or territory health department. If they are travelling, they should be aware of transmission rates at their destination. Further information on geographically localised areas with elevated risk of local transmission of COVID-19 can be found [here](#).

Plans and risk strategies should change in response to changes in cases numbers in the area. You may wish to consider a COVID-19 action plan for your patient, so that if case numbers increase, activities and actions are modified to suit the change in exposure risk.

Even if cases remain low in your area you should advise your patients to protect their health by getting vaccinated against COVID-19, maintaining physical distancing, practising good respiratory and hand hygiene, downloading the COVIDSafe app, using QR check-in codes, getting the influenza vaccination, and staying at home and getting tested for COVID-19 if they have even mild cold or flu-like symptoms.

Activities and settings

It is important to remind your patients that regardless of the level of risk, if there are few cases in the community, they are unlikely to be exposed and the actual risk of severe COVID-19 is low.

However, when there are COVID-19 cases in the community, some types of activities, events and settings appear to increase the chance of contracting COVID-19. These include activities that:

- are in closed or indoor environments;
- have large numbers of people in close contact over an extended period (e.g. public transport at peak hour, weddings, protests or other large gatherings);
- require physical activity and close contact (e.g. dancing or contact sport);
- require vocalising in an indoor environment (e.g. choirs or singing in church);
- require sharing objects with others (e.g. utensils at a buffet);
- require sharing accommodation or amenities with others (e.g. cruise ships);
- are longer (the risk for exposure and transmission increases with time).

Even if local numbers of COVID-19 cases are low in your area, travel to an area with higher case numbers, or attendance at an event with groups or participants from other locations with higher case numbers, is likely to increase risk of exposure to COVID-19.

People need to consider all of their activities and the associated risks. Activities should be considered, modified, substituted (e.g. ride share rather than public transport) or avoided in a higher risk epidemiological environment.

At all times people at higher risk should maintain physical distancing, practise good respiratory and hand hygiene, use the COVIDSafe app, use QR check-in codes, and stay at home and get tested for COVID-19 if they have even mild cold or flu-like symptoms. People should be up to date with their vaccinations and should be aware of any public health advice or restrictions.

In situations that cannot be avoided (e.g. travelling to work on public transport) and where physical distancing cannot be maintained, people at risk could consider wearing a mask. See [Masks | Australian Government Department of Health](#).

Work and volunteer settings

It is important to remind patients that regardless of their individual level of risk, risk of exposure relates to the number of cases in the community and attributes of their work and workplace.

When there are cases in the community, employees may be higher risk of exposure in some workplaces may also pose an increased the risk of contracting COVID-19, either through:

- potential exposure to infected people, such as in health or aged care settings; and/or
- working conditions where physical distancing is difficult to maintain (e.g. working in the disability or aged care sector); and/or
- work with multiple face-to-face interactions with others; and/or

- working in a setting associated with increased transmission of the virus (e.g. meat processing).

Workplaces need to develop a COVIDSafe risk mitigation strategy in accordance with the approved code of practice [How to manage work health and safety risks \(2018\)](#).

People at increased risk of severe COVID-19 illness can still work or volunteer, particularly if vaccinated . It is important to discuss this with those at higher risk of severe COVID-19 illness and help inform a risk assessment for their workplace, including a COVID-19 action plan. This may involve consultation with their employer and should involve consideration of:

- the individual, their clinical situation and assessed risk of severe COVID-19 illness;
- the work and level of risk associated with their normal role;
- their workplace, is there a higher risk of exposure (see above for activities and settings with higher risk);
- their workplace, is there a higher risk of transmission (e.g. health care facilities, meat or food processing, other roles with close physical contact);
- the COVID-19 controls in place and the degree to which risk is mitigated; and
- additional COVID-19 controls that could be used to protect this worker.

People and workplaces need to consider risk related to their work activities and appropriate controls applied particularly in a higher risk epidemiological environment.

If there is uncertainty about the degree of risk, appropriate mitigations or other complexity, referral for assessment by an occupational physician may be appropriate.

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