NICE National Institute for Health and Care Excellence

NICE guideline

COVID-19 rapid guideline: managing COVID-19

NICE guideline
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Your responsibility

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

Local commissioners and providers of healthcare have a responsibility to enable the guideline to be applied when individual professionals and people using services wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Contents

This guideline replaces NG159, NG163, NG165, NG171, NG173, NG175, NG186, ES27, ES33 and ES34.

1 How to use this guideline

In response to the COVID-19 pandemic, NICE produced multiple rapid guidelines to support the health and social care system. We know that having different products can make it difficult for people trying to find guidance, so we have brought together NICE's published recommendations on managing COVID-19 into this single guideline. We hope users will find the content easier to find and use.

Many of the recommendations made early in the pandemic were based on the consensus of the guideline expert panels, so supporting information is limited. We have reviewed all content, using topic expert input and more recent evidence, and updated the recommendations where needed.

We aim to update these recommendations frequently in line with new evidence and will produce new recommendations where gaps are identified. We search and sift the evidence weekly to produce living recommendations that reflect the latest best available evidence.

We have developed this guideline using our methods and processes for guidelines developed during health and social care emergencies. For more details of the methods and processes used for this guideline, including details of the expert advisory panel members, see the methods and processes section.

Your responsibility

When using this guideline, follow the usual professional guidelines, standards and laws (including those on equalities, safeguarding, communication and mental capacity), as described in making decisions using NICE guidelines.

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families and carers or guardian. All problems (adverse events) related to a medicine or medical device used for treatment or in a procedure should be reported to the Medicines and Healthcare products Regulatory Agency using the Yellow Card Scheme.

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Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assessand reduce the environmental impact of implementing NICE recommendations wherever possible.

Using the guideline in MAGICapp

The guideline consists of 2 layers: recommendations and supporting information.

1. Recommendations

Recommendation for

A strong recommendation is given when there is high-certainty evidence showing that the overall benefits of the intervention are clearly greater than the disadvantages. This means that all, or nearly all, patients will want the recommended intervention.

Recommendation against

A strong recommendation against the intervention is given when there is high-certainty evidence showing that the overall disadvantages of the intervention are clearly greater than the benefits. A strong recommendation is also used when the examination of the evidence shows that an intervention is not safe.

Conditional recommendation for

A conditional recommendation is given when it is considered that the benefits of the intervention are greater than the disadvantages, or the available evidence cannot rule out a substantial benefit of the intervention while assessing that the adverse effects are few or absent. This

recommendation is also used when patient preferences vary.

Conditional recommendation against

A conditional recommendation is given against the intervention when it is judged that the disadvantages of the intervention are greater than the benefits, but when this is not substantiated by strong evidence. This recommendation is also used when there is strong evidence of both beneficial and harmful effects, but when the balance between them is difficult to determine. Likewise, it is also used when patient preferences vary.

Consensus recommendation

A consensus recommendation can be given for or against the intervention. This type of recommendation is used when there is not enough evidence to give an evidence-based recommendation, but the panel still regards it as important to give a recommendation.

2. Supporting information

Click on the recommendation to learn more about the basis of the recommendation. As stated, supporting information is limited for recommendations created early in the pandemic. Additional information will be added as recommendations are updated in light of new evidence.

Recommendations will have supporting information in some or all of the following areas:

Research evidence

The overall effect estimates and references to the studies.

Certainty of the evidence

- **High**: We are very sure that the true effect is close to the estimated effect.
- **Moderate**: We are moderately sure of the estimated effect. The true effect is probably close to this one, but there is a possibility that it is statistically significantly different.
- **Low**: We have limited confidence in the estimated effect. The true effect may be statistically significantly different from the estimated effect.
- **Very low**: We have very little confidence in the estimated effect. The true effect is likely to be statistically significantly different from the estimated effect.

Evidence to decision

Brief description of beneficial and harmful effects, certainty of evidence and considerations of patient preferences.

Rationale

Description of how the panel reached its decision.

Practical information

Practical information about the treatment and information on any special patient considerations.

Adaption

If a recommendation has been adapted from another guideline, this will provide further details.

Feedback

If you are logged in as a user, you can use the 'Feedback' option to comment on specific recommendations.

References

Reference list for the recommendation.

2 Introduction

Scope and purpose

This guideline is for health and care practitioners, and those involved in planning and delivering services. It provides guidance on managing COVID-19. The guideline makes recommendations about care in all settings for adults, children and young people with clinically diagnosed or laboratory-confirmed COVID-19.

Key questions

This section lists the key questions that the guideline addresses. These are a broad set of overarching review questions. Through our living approach, we will review the scope, and develop more specific review questions to address gaps in content and, where needed, additional review questions.

- What investigations should be carried out, and when, to determine the appropriate management of COVID-19 and any complications?
- What is the clinical effectiveness and safety of pharmacological and non-pharmacological treatments for acute symptoms and complications of COVID-19?
- How should symptoms and complications be managed?
- How, and how often, should people with COVID-19 be followed up?
- What palliative and end-of-life strategies are effective for people with COVID-19?

Areas to be excluded

The following areas are outside of the scope of this guideline and we will not look at evidence in these areas:

- procuring and distributing medicines and technologies, including vaccines
- procuring, distributing and using personal protective equipment
- procuring and distributing COVID-19 tests

- frequency of staff testing for COVID-19.

Acknowledgement

This work was done by NICE. The views expressed in this publication are those of the authors. We collaborated with the Australian National COVID-19 Clinical Evidence Taskforce based at Cochrane Australia, in the School of Population Health and Preventive Medicine at Monash University, to ensure appropriate development of the guideline, and acknowledge their contribution to identifying and reviewing the evidence for therapeutics.

3 Definition of disease severity

COVID-19 disease severity definitions according to the World Health Organization (WHO COVID-19 clinical management: living guidance)

Severity	Type	Definition
Mild disease		Patients with symptoms meeting the case definition for COVID-19 without evidence of viral pneumonia or hypoxia. See the WHO website for the most up-to-date case definitions. Presenting signs and symptoms of COVID-19 vary: • Most people experience fever (8% to 99%), cough (59% to 82%), fatigue (44% to 70%), anorexia (40% to 84%), shortness of breath (31% to 40%), myalgias (11% to 35%). Other non-specific symptoms, such as sore throat, nasal congestion, headache, diarrhoea, nausea and vomiting, have also been reported. • Loss of smell (anosmia) or loss of taste (ageusia) preceding the onset of respiratory symptoms have also been reported. • Additional neurological manifestations reported include dizziness, agitation, weakness, seizures or findings suggestive of stroke including trouble with speech or vision, sensory loss, or problems with balance when standing or walking. • Older people and people who are immunosuppressed in particular may present with atypical symptoms such as reduced alertness, reduced mobility, diarrhoea, loss of appetite, confusion and absence of fever. • Symptoms such as dyspnoea, fever, gastrointestinal symptoms or fatigue because of physiological adaptations in women who are pregnant, adverse pregnancy events or other diseases such as malaria, may overlap with symptoms of COVID-19. • Children may report fever or cough less frequently than adults.

Severity	Type	Definition
Moderate disease	Pneumonia	**Adolescents or adults** with clinical signs of pneumonia (fever, cough, dyspnoea, fast breathing) but no signs of severe pneumonia, including SpO2 90% or more on room air. **Children** with clinical signs of non-severe pneumonia (cough or difficulty breathing plus fast breathing or chest indrawing) and no signs of severe pneumonia. Fast breathing (in breaths per minute): under 2 months: 60 or more; 2 months to 11 months: 50 or more; 1 year to 5 years: 40 or more. While the diagnosis can be made on clinical grounds, chest imaging (radiograph, CT scan or ultrasound) may assist in diagnosis, and may identify or exclude pulmonary complications.
Severe disease	Severe pneumonia	**Adolescents or adults** with clinical signs of pneumonia (fever, cough, dyspnoea, fast breathing) plus 1 of the following: respiratory rate more than 30 breaths per minute; severe respiratory distress; or SpO2 less than 90% on room air. **Children** with clinical signs of pneumonia (cough or difficulty in breathing) plus at least 1 of the following: • Central cyanosis or SpO2 less than 90%; severe respiratory distress (for example, fast breathing, grunting, very severe chest indrawing); general danger sign: inability to breastfeed or drink, lethargy or unconsciousness, or convulsions. • Fast breathing (in breaths per minute): less than 2 months: 60 or more; 2 months to 11 months: 50 or more; 1 year to 5 years: 40 or more. While the diagnosis can be made on clinical grounds, chest imaging (radiograph, CT scan or ultrasound) may assist in diagnosis and identify or exclude pulmonary complications.

Severity	Type	Definition
Critical disease	Acute respiratory distress syndrome (ARDS)	**Onset**: within 1 week of a known clinical insult (that is, pneumonia) or new or worsening respiratory symptoms. **Chest imaging** (radiograph, CT scan or ultrasound): bilateral opacities, not fully explained by volume overload, lobar or lung collapse, or nodules. **Origin of pulmonary infiltrates**: respiratory failure not fully explained by cardiac failure or fluid overload. Need objective assessment (for example, echocardiography) to exclude hydrostatic cause of infiltrate or oedema if no risk factor present. Oxygenation impairment in adults: • Mild ARDS: 200 mmHg less than PaO2/FiO2[1] 300 mmHg or less (with PEEP or CPAP 5 cmH2O or more)[2]. • Moderate ARDS: 100 mmHg less than PaO2/FiO2 200 mmHg or less (with PEEP 5 cmH2O or more)[2]. • Severe ARDS: PaO2/FiO2 100 mmHg or less (with PEEP 5 cmH2O or more) [2]. **Oxygen impairment in children**: note OI and OSI[3]. Use OI when available. If PaO2 is not available, wean FiO2 to maintain SpO2 97% or less to calculate OSI or SpO2/FiO2 ratio: • Bi-level (NIV or CPAP) more than or equal to 5 cmH2O via full face mask: PaO2/FiO2 300 mmHg or less or SpO2/FiO2 264 or less. • Mild ARDS (invasively ventilated): 4 ≤ OI < 8 or 5 ≤ OSI < 7.5. (OI greater than or equal to 4 and less than 8, or OSI greater than or equal to 5 and less than 7.5). • Moderate ARDS (invasively ventilated): 8 ≤ OI < 16 or 7.5 ≤ OSI < 12.3. (OI greater than or equal to 8 and less than 16, or OSI greater than or equal to 7.5 and less than 12.3). • Severe ARDS (invasively ventilated): OI ≥ 16 or OSI ≥ 12.3. (OI greater than or equal to 16, or OSI greater than or equal to 12.3).

Severity	Type	Definition
Critical disease	Sepsis	**Adults** with acute life-threatening organ dysfunction caused by a dysregulated host response to suspected or proven infection. Signs of organ dysfunction include: altered mental status, difficult or fast breathing, low oxygen saturation, reduced urine output, fast heart rate, weak pulse, cold extremities or low blood pressure, skin mottling, laboratory evidence of coagulopathy, thrombocytopaenia, acidosis, high lactate and hyperbilirubinaemia. **Children** with suspected or proven infection and 2 or more age-based systemic inflammatory response syndrome (SIRS) criteria[4], of which 1 must be abnormal temperature or white blood cell count.
Critical disease	Septic shock	**Adults** with persistent hypotension despite volume resuscitation, requiring vasopressors to maintain MAP 65 mmHg or more and serum lactate level of more than 2 mmol/litre. **Children** with any hypotension (SBP below fifth centile or more than 22 SD below normal for age) or 2 or 3 of the following: altered mental status; bradycardia or tachycardia (HR less than 90 bpm or more than 160 bpm in babies and heart rate less than 70 bpm or more than 150 bpm in children); prolonged capillary refill (more than 2 seconds) or weak pulse; fast breathing; mottled or cool skin or petechial or purpuric rash; high lactate; reduced urine output; hyperthermia or hypothermia.

1. If altitude is higher than 1000 m, then the correction factor should be calculated as follows: PaO2/FiO2 x barometric pressure/760.

2. When PaO2 is not available, SpO2/FiO2 315 or less suggests ARDS (including in non-ventilated patients).

3. Oxygenation index (OI) is an invasive measurement of the severity of hypoxaemic respiratory failure and may be used to predict outcomes in children. It is calculated as follows: percentage of fraction of inhaled oxygen multiplied by the mean airway pressure (in mmHg), divided by the partial pressure of arterial oxygen (in mmHG). Oxygen saturation index (OSI) is a non-invasive measurement and has been shown to be a reliable surrogate marker of OI in children and adults with respiratory failure. OSI replaces PaO2 with oxygen saturation as measured by pulse oximetry (SpO2) in the OI equation.

4. SIRS criteria: abnormal temperature (more than 38.5°C or less than 36°C); tachycardia for age or bradycardia for age if less than 1 year; tachypnoea for age or need for mechanical ventilation; abnormal white blood cell count for age or more than 10% bands.

4 Communication and shared decision making

Consensus recommendation

Communicate with people with COVID-19, and their families and carers, and support their mental wellbeing to help alleviate any anxiety and fear they may have. Signpost to charities and support groups (including NHS Volunteer Responders), to UK government guidance on the mental health and wellbeing aspects of COVID-19 and UK government guidance on supporting children and young people's mental health and wellbeing, and to Royal College of Paediatrics and Child Health resources for parents and carers.

Give people information in a way that they can use and understand, to help them take part in decisions about their care. Follow relevant national guidance on communication, providing information (including in different formats and languages) and shared decision making, for example, NICE's guideline on patient experience in adult NHS services.

The Royal College of Obstetricians and Gynaecologists has produced information on COVID-19 and pregnancy for pregnant women and their families.

Consensus recommendation

For adults with COVID-19, explain:

- that the typical symptoms are cough, fever, and loss of sense of smell or taste, but that they may also have breathlessness (which may cause anxiety), delirium (which may cause agitation), fatigue, headache, muscle aches and sore throat
- that other symptoms may be drowsiness (particularly in older people), poor appetite, and chest discomfort or pain
- that they and people in close contact with them or in the same household (including those caring for them) should follow the UK guidance on self-isolation and the UK guidance on protecting vulnerable people
- that they are likely to feel much better in a week if their symptoms are mild
- who to contact if their symptoms get worse, for example, NHS 111 online.

Consensus recommendation

For carers of people with COVID-19 who should isolate but are unable to (for example, people with dementia), signpost to relevant support and resources.

For example, the Alzheimer's Society has information on staying safe from coronavirus and reducing the risk of infection.

Consensus recommendation

For children and young people under 18 years with COVID-19, explain:

- that additional symptoms (to those found in adults) may include grunting, nasal flare, nasal congestion, poor appetite, gastrointestinal symptoms, skin rash and conjunctivitis
- that they and people in close contact with them or in the same household (including those caring for them) should follow the UK guidance on self-isolation and the UK guidance on protecting vulnerable people
- that they are likely to feel much better in a week if their symptoms are mild
- who to contact if their symptoms get worse, for example, NHS 111 online
- that the presence of fever, rash, abdominal pain, diarrhoea or vomiting may indicate paediatric inflammatory multisystem syndrome (PIMS)
- how and when to seek medical help if PIMS is suspected.

Consensus recommendation

In the community, consider the risks and benefits of face-to-face and remote care for each person. Where the risks of face-to-face care outweigh the benefits, remote care can be optimised by:

- offering telephone or video consultations (see BMJ guidance on Covid-19: a remote assessment in primary care for a useful guide, including a visual summary for remote consultation)
- cutting non-essential face-to-face follow up
- using electronic prescriptions rather than paper

- using different methods to deliver medicines to people, for example, pharmacy deliveries, postal services and NHS volunteers, or introducing drive-through pick-up points for medicines.

Consensus recommendation

When possible, discuss the risks, benefits and possible likely outcomes of the treatment options with people with COVID-19, and their families and carers. Use decision support tools (when available).

This will help people express their preferences about their treatment and escalation plans. Bear in mind that these discussions may need to take place remotely.

Consensus recommendation

For people with pre-existing advanced comorbidities, find out if they have advance care plans or advance decisions to refuse treatment, including do not attempt cardiopulmonary resuscitation decisions. Document this clearly and take account of these in planning care.

5 Assessment

5.1 In the community

5.1.1 Identifying severe COVID-19

Consensus recommendation

Use the following signs and symptoms to help identify people with COVID-19 with the most severe illness:

- severe shortness of breath at rest or difficulty breathing
- reduced oxygen saturation levels measured by pulse oximetry (see the recommendation on pulse oximetry levels that indicate serious illness)
- coughing up blood
- blue lips or face
- feeling cold and clammy with pale or mottled skin
- collapse or fainting (syncope)
- new confusion
- becoming difficult to rouse
- reduced urine output.

For signs and symptoms to help identify paediatric inflammatory multisystem syndrome (PIMS) temporarily associated with COVID-19, see the guidance on PIMS from the Royal College of Paediatrics and Child Health.

Consensus recommendation

When pulse oximetry is available in primary and community care settings, to assess the severity of illness and detect early deterioration, use:

- NHS England's guide to pulse oximetry in people 18 years and over with COVID-19

- oxygen saturation levels below 91% in room air at rest in children and young people (17 years and under) with COVID-19.

Be aware that different pulse oximeters have different specifications, and that some can under- or overestimate readings especially if the saturation level is borderline. Overestimation has been reported in people with dark skin.

Info box

Assessing shortness of breath (dyspnoea) is important, but may be difficult via remote consultation. Tools such as the Medical Research Council's dyspnoea scale or the Centre for Evidence Based Medicine's review of ways of assessing dyspnoea(breathlessness) by telephone or video can be useful.

The NEWS2 tool may be used in adults in addition to clinical judgment to assess a person's risk of deterioration. Note that use of NEWS2 is not advised in children or pregnant women. Although the NEWS2 tool is not validated for predicting the risk of clinical deterioration in prehospital settings, it may be a helpful adjunct to clinical judgement in adults. A face-to-face consultation should not be arranged solely to calculate a NEWS2 score.

Locally approved Paediatric Early Warning Scores should be used for children. When using early warning scores, ensure that readings are based on calibrated machines. Be aware that readings may be incomplete when doing remote consultations.

Consensus recommendation

For people with severe respiratory symptoms associated with COVID-19 (for example, suspected pneumonia) being managed in the community, see the recommendation on venous thromboembolism in hospital-led acute care in the community.

5.1.2 Care planning

Consensus recommendation

Discuss with people with COVID-19, and their families and carers, the benefits and risks of hospital admission or other acute care delivery services (for example, virtual wards or hospital at home teams).

Some benefits and risks may be similar for all patients (for example, improved diagnostic tests and access to treatments, or better contact with families in the community), but others may be personal to the individual (such as loss of access to carers who can anticipate needs well in someone unable to communicate themselves, or risks of spreading COVID-19).

Consensus recommendation

Explain that people with COVID-19 may deteriorate rapidly. Discuss future care preferences at the first assessment to give people who do not have existing advance care plans an opportunity to express their preferences.

5.2 In hospital

Consensus recommendation

When a person is admitted to hospital with COVID-19, ensure a holistic assessment is done, including discussion about their treatment expectations and care goals:

- Document and assess the stability of underlying health conditions, involving relevant specialists as needed.
- Use the Clinical Frailty Scale (CFS) when appropriate, available from the NHS Specialised Clinical Frailty Network, to assess baseline health and inform discussions on treatment expectations.
- Use the CFS within an individualised assessment of frailty.
- Do not use the CFS for younger people, people with stable long-term disabilities (for example, cerebral palsy), learning disabilities or autism. Make an individualised assessment of frailty in these people, using clinical assessment and alternative scoring methods.
- Record the assessment and discussion in the person's medical records.

For assessment of paediatric inflammatory multisystem syndrome (PIMS), follow the guidance on PIMS from the Royal College of Paediatrics and Child Health.

Consensus recommendation

When making decisions about the care of children and young people under 18 years, people with learning disabilities or adults who lack mental capacity for health decision making, for example,

people with advanced dementia, see the NICE guideline ondecision-making and mental capacity.

Ensure discussions on significant care interventions involve families and carers as appropriate, and local experts or advocates.

6 Management

6.1 In the community

6.1.1 Care planning

Consensus recommendation

Put treatment escalation plans in place in the community after sensitively discussing treatment expectations and care goals with people with COVID-19, and their families and carers.

People with COVID-19 may deteriorate rapidly. If it is agreed that the next step is a move to secondary care, ensure that they and their families understand how to access this with the urgency needed. If the next step is other community-based support (whether virtual wards, hospital at home services or palliative care), ensure that they and their families understand how to access these services, both in and out of hours.

6.1.2 Managing cough

Consensus recommendation

Encourage people with cough to avoid lying on their backs, if possible, because this may make coughing less effective.

Be aware that older people or those with comorbidities, frailty, impaired immunity or a reduced ability to cough and clear secretions are more likely to develop severe pneumonia. This could lead to respiratory failure and death.

Consensus recommendation

Use simple measures first, including advising people over 1 year with cough to take honey.

The dose is 1 teaspoon of honey.

Consensus recommendation

Consider short-term use of codeine linctus, codeine phosphate tablets or morphine sulfate oral

solution in people 18 years and over to suppress coughing if it is distressing. Seek specialist advice for people under 18 years.

See the practical info table for dosages for treatments to manage cough in people 18 years and over.

Practical info: treatments for managing cough in people 18 years and over

Treatment	Dosage
Initial management: use simple non-drug measures, for example, taking honey	A teaspoon of honey
First choice, only if cough is distressing: codeine linctus (15 mg/5 ml) or codeine phosphate tablets (15 mg, 30 mg)	15 mg to 30 mg every 4 hours as required, up to 4 doses in 24 hours If necessary, increase dose to a maximum of 30 mg to 60 mg four times a day (maximum 240 mg in 24 hours)
Second choice, only if cough is distressing: morphine sulfate oral solution (10 mg/5 ml)	2.5 mg to 5 mg when required every 4 hours Increase up to 5 mg to 10 mg every 4 hours as required If the person is already taking regular morphine increase the regular dose by a third

Notes: See the BNF and MHRA advice for appropriate use and dosage in specific populations. All doses are for oral administration.

Consider the addiction potential of codeine linctus, codeine phosphate and morphine sulfate. Issue as an 'acute' prescription with a limited supply. Advise the person of the risks of constipation and consider prescribing a regular stimulant laxative.

Avoid cough suppressants in chronic bronchitis and bronchiectasis because they can cause sputum retention.

6.1.3 Managing fever

Consensus recommendation

Advise people with COVID-19 and fever to drink fluids regularly to avoid dehydration. Support

their families and carers to help when appropriate. Communicate that fluid intake needs can be higher than usual because of fever.

Consensus recommendation

Advise people to take paracetamol or ibuprofen if they have fever and other symptoms that antipyretics would help treat. Tell them to continue only while both the symptoms of fever and the other symptoms are present.

People can take paracetamol or ibuprofen when self-medicating for symptoms of COVID-19, such as fever (see the Central Alerting System: novel coronavirus - anti-inflammatory medications for further details of ibuprofen including dosage).

For people 18 years and over, the paracetamol dosage is 1 g orally every 4 to 6 hours (maximum 4 g per day). See the BNF and Medicines and Healthcare products Regulatory Agencyadvice for appropriate use and dosage in specific adult populations.

For children and young people over 1 month and under 18 years, see the dosing information on the pack or the BNF for children. Rectal paracetamol, if available, can be used as an alternative. For rectal dosage information, see the BNF and BNF for children.

6.1.4 Managing breathlessness

Consensus recommendation

Identify and treat reversible causes of breathlessness, for example, pulmonary oedema, pulmonary embolism, chronic obstructive pulmonary disorder and asthma.

For further information on identifying and managing pulmonary embolism, see the NICE guideline on venous thromboembolic diseases: diagnosis, management and thrombophilia testing.

Consensus recommendation

When significant medical pathology has been excluded or further investigation is inappropriate, the following may help to manage breathlessness as part of supportive care:

- keeping the room cool
- encouraging relaxation and breathing techniques, and changing body positioning

- encouraging people who are self-isolating alone to improve air circulation by opening a window or door.

If hypoxia is the likely cause of breathlessness:

- consider a trial of oxygen therapy
- discuss with the person, their family or carer possible transfer to and evaluation in secondary care.

Breathlessness with or without hypoxia often causes anxiety, which can then increase breathlessness further.

6.1.5 Managing anxiety, delirium and agitation

Consensus recommendation

Assess reversible causes of delirium. See the NICE guidance on delirium: prevention, diagnosis and management.

Consensus recommendation

Address reversible causes of anxiety by:

- exploring the person's concerns and anxieties
- explaining to people providing care how they can help.

Consensus recommendation

Consider trying a benzodiazepine to manage anxiety or agitation. See the practical info table for treatments for managing anxiety, delirium and agitation in people 18 years and over. Seek specialist advice for people under 18 years.

Practical info: treatments for managing anxiety, delirium and agitation in people 18 years and over

Treatment	Dosage
Anxiety or agitation and able to swallow: lorazepam tablets	Lorazepam 0.5 mg to 1 mg four times a day as required (maximum 4 mg in 24 hours) Reduce the dose to 0.25 mg to 0.5 mg in older people or those who are debilitated (maximum 2 mg in 24 hours) Oral tablets can be used sublingually (off-label use)
Anxiety or agitation and unable to swallow: midazolam injection	Midazolam 2.5 mg to 5 mg by subcutaneous injection every 2 to 4 hours as required If needed frequently (more than twice daily), a subcutaneous infusion via a syringe driver may be considered (if available) starting with midazolam 10 mg over 24 hours Reduce dosage to 5 mg over 24 hours if estimated glomerular filtration rate is less than 30 ml per minute
Delirium and able to swallow: haloperidol tablets	Haloperidol 0.5 mg to 1 mg at night and every 2 hours when required. Increase dose in 0.5 mg to 1 mg increments as required (maximum 10 mg daily, or 5 mg daily in older people) The same dose of haloperidol may be administered by subcutaneous injection as required rather than orally, or as a subcutaneous infusion of 2.5 mg to 10 mg over 24 hours Consider a higher starting dose (1.5 mg to 3 mg) if the person is severely distressed or causing immediate danger to others Consider adding a benzodiazepine such as lorazepam or midazolam if the person remains agitated (see dosages above)
Delirium and unable to swallow: levomepromazine injection	Levomepromazine 12.5 mg to 25 mg as a subcutaneous injection as a starting dose and then hourly as required (use 6.25 mg to 12.5 mg in older people) Maintain with a subcutaneous infusion of 50 mg to 200 mg over 24 hours, increased according to response (doses greater than 100 mg over 24 hours should be given under specialist supervision) Consider midazolam alone or in combination with levomepromazine if the person also has anxiety (see dosages above)

Notes: higher doses may be needed for symptom relief in people with COVID-19. Lower doses may be needed because of the person's size or frailty. The doses are based on the BNF and the Palliative

care formulary

At the time of publication (March 2021), midazolam and levomepromazine did not have a UK marketing authorisation for this indication or route of administration (see the General Medical Council's guidance on prescribing unlicensed medicines for further information).

See the BNF and MHRA advice for appropriate use and dosing in specific populations.

Seek specialist advice for people under 18 years old.

6.1.6 Managing medicines

Consensus recommendation

When supporting people with symptoms of COVID-19 who are having care in the community delivered by social care, follow the NICE guideline on managing medicines for adults receiving social care in the community. This includes processes for ordering and supplying medicines, and transporting, storing and disposing of medicines.

Consensus recommendation

When prescribing, handling, administering and disposing of medicines in care homes and hospices follow the NICE guidelineon managing medicines in care homes and the UK government COVID-19 standard operating procedure for running amedicines re-use scheme in a care home or hospice setting.

6.2 In hospital

6.2.1 Deciding when to escalate treatment

Consensus recommendation

Base decisions about escalating treatment within the hospital on the likelihood of a person's recovery. Take into account their treatment expectations, goals of care and the likelihood that they will recover to an outcome that is acceptable to them.

For support with decision making, see advice on ethics from the British Medical Association, ethical guidance from the Royal Collegeof Physicians and the General Medical Council advice on decision-making and consent.

Consensus recommendation

Ensure healthcare professionals have access to resources to support discussions about treatment plans (see, for example, decision-making for escalation of treatment and referring for critical care support, and an example decision support form).

Consensus recommendation

Document referral to and advice from critical care services and respiratory support units in a standard format. When telephone advice from critical care or respiratory support units is appropriate, this should still be documented in a standard format (see an example of a tool for documentation).

6.2.2 Escalating and de-escalating treatment

Consensus recommendation

Start all advanced respiratory support or organ support with a clear plan of how it will address the diagnosis and lead to agreed treatment goals (outcomes).

Stop advanced respiratory support or organ support when it is considered that it will no longer result in the desired overall goals (outcomes). Record the decision and the discussion with the person (if possible), and their family and carers, or an independent mental capacity advocate (if appropriate).

Info box

NICE is reviewing evidence on respiratory support and further recommendations will be added in a future version of this guideline.

6.2.3 Delivering services in critical care and respiratory support units

Consensus recommendation

Trusts should review their management for people who are deteriorating strategy, and use of the track-and-trigger system (NEWS2 has been endorsed by NHS England and Improvement), to allow

for telephone advice rather than face-to-face review from critical care or respiratory support units when clinically appropriate. See the NICE guideline on acutely ill adultsin hospital for recommendations on identifying patients whose clinical condition is deteriorating or is at risk of deterioration.

See the Royal College of Physician's information on the place of NEWS2 in managing patients with COVID-19.

7 Therapeutics for COVID-19

7.1 Antibiotics

Info box

Antibiotics should not be used for preventing or treating COVID-19 unless there is clinical suspicion of additional bacterial co-infection. See the section on suspected or confirmed co-infection.

See also the recommendation on azithromycin in the section on therapeutics for COVID-19.

7.2 Azithromycin

Strong recommendation against

Do not use azithromycin to treat COVID-19.

7.3 Corticosteroids

Strong recommendation

Offer dexamethasone, or either hydrocortisone or prednisolone when dexamethasone cannot be used or is unavailable, to people with COVID-19 who:

- need supplemental oxygen to meet their prescribed oxygen saturation levels or
- have a level of hypoxia that needs supplemental oxygen but who are unable to have or tolerate it.

Continue corticosteroids for up to 10 days unless there is a clear indication to stop early, which includes discharge from hospital or a hospital-supervised virtual COVID ward.

Being on a hospital-supervised virtual COVID ward is not classed as being discharged from hospital.

Dosage in adults

Dexamethasone

- 6 mg orally once a day for 10 days (three 2 mg tablets or 15 ml of 2 mg/5 ml oral solution) or
- 6 mg intravenously once a day for 10 days (1.8 ml of 3.3 mg/ml ampoules [5.94 mg])

For people able to swallow and in whom there are no significant concerns about enteral absorption, prescribe tablets. Only use intravenous administration when tablets or oral solutions are inappropriate or unavailable.

Suitable alternatives

Prednisolone: 40 mg orally once a day for 10 days

Hydrocortisone: 50 mg intravenously every 8 hours for 10 days (0.5 ml of 100 mg/ml solution; powder for solution for injection or infusion is also available); this may be continued for up to 28 days for people with septic shock.

Dosage in pregnancy

Follow Royal College of Obstetrics and Gynaecology guidance.

Dosage for children with a greater than 44-week corrected gestational age

- **Dexamethasone**: 150 micrograms/kg (as a base) orally, nasogastrically or intravenously once a day for 10 days (max 6 mg)
- **Prednisolone**: 1 microgram/kg orally, nasogastrically or intravenously once a day for 10 days (max 40 mg; doses can be rounded as per routine clinical practice)

For people able to swallow and in whom there are no significant concerns about enteral absorption, prescribe tablets. Only use intravenous administration when tablets or oral solutions are inappropriate or unavailable.

For full details of adverse events and contraindications, see the summaries of product characteristics.

For children with a greater than 44-week corrected gestational age, follow the risk criteria set out in Royal College of Paediatric and Child Health guidance for assessing children admitted to hospital with COVID-19. For preterm babies with a corrected gestational age of less than 44 weeks, seek specialist advice.

Conditional recommendation against

Do not routinely use corticosteroids to treat COVID-19 in people who do not need supplemental oxygen, unless there is another medical indication to do so.

7.4 Remdesivir

Info box

Definitions

Invasive mechanical ventilation: any method of controlled ventilation delivered through a translaryngeal or tracheostomy tube, or other methods as defined by the Intensive Care National Audit & Research Centre definition of 'advanced respiratory support'.

Low-flow oxygen supplementation: oxygen delivered by a simple face mask or nasal canula at a flow rate usually up to 15 litres/min.

Conditional recommendation

Consider remdesivir for up to 5 days for COVID-19 pneumonia in adults, and young people 12 years and over weighing 40 kg or more, in hospital and needing low-flow supplemental oxygen.

The criteria for accessing remdesivir in the UK are outlined in NHS England's Interim Clinical Commissioning Policy on remdesivir for patients hospitalised with COVID-19 (adults and children 12 years and older).

For remdesivir use in pregnancy, follow the Royal College of Obstetrics and Gynaecology guidance on coronavirus (COVID-19) infection and pregnancy.

The marketing authorisation for remdesivir for COVID-19 does not include children under 12 years or weighing less than 40 kg.

Only in research settings

Do not use remdesivir for COVID-19 pneumonia in adults, young people and children who are in hospital and on high-flow nasal oxygen, continuous positive airway pressure, non-invasive mechanical ventilation or invasive mechanical ventilation, except as part of a clinical trial.

7.5 Tocilizumab

Info box

Definition

Invasive mechanical ventilation: any method of controlled ventilation delivered through a translaryngeal or tracheostomy tube, or other methods as defined by the Intensive Care National Audit & Research Centre definition of 'advanced respiratory support'.

Strong recommendation

Offer tocilizumab to adults in hospital with COVID-19 if all of the following apply:

- they are having or have completed a course of corticosteroids such as dexamethasone, unless they cannot have corticosteroids
- they have not had another interleukin-6 inhibitor during this admission
- there is no evidence of a bacterial or viral infection (other than SARS-CoV-2) that might be worsened by tocilizumab.

And they either:

- need supplemental oxygen and have a C-reactive protein level of 75 mg/litre or more, or
- are within 48 hours of starting high-flow nasal oxygen, continuous positive airway pressure, non-invasive ventilation or invasive mechanical ventilation.

In April 2021, the marketing authorisations for tocilizumab do not cover use in COVID-19. See NICE's information on prescribing medicines for more about off-label and unlicensed use of medicines.

The recommended dosage for tocilizumab is a single dose of 8 mg/kg by intravenous infusion. The total dose should not exceed 800 mg.

For tocilizumab use in pregnancy, follow the Royal College of Obstetrics and Gynaecology guidance on coronavirus (COVID-19) infection and pregnancy.

For full details of adverse events and contraindications, see the summaries of product characteristics for tocilizumab.

See NHS England's Interim Clinical Commissioning Policy on tocilizumab for hospitalised patients with COVID-19 pneumonia (adults) for further information.

Only in research settings

Consider tocilizumab for children and young people who have severe COVID-19 or paediatric inflammatory multisystem syndrome only if they are 1 year and over, and only in the context of a clinical trial.

7.6 Sarilumab

Info box

Definition

Invasive mechanical ventilation: any method of controlled ventilation delivered through a translaryngeal or tracheostomy tube, or other methods as defined by the Intensive Care National Audit & Research Centre definition of 'advanced respiratory support'.

Conditional recommendation

Consider sarilumab for adults in hospital with COVID-19 only if tocilizumab cannot be used or is unavailable. Use the same eligibility criteria as those for tocilizumab. That is, if all of the following apply:

- they are having or have completed a course of corticosteroids such as dexamethasone, unless they cannot have corticosteroids

- they have not had another interleukin-6 inhibitor during this admission
- there is no evidence of a bacterial or viral infection (other than SARS-CoV-2) that might be worsened by sarilumab.

And they either:

- need supplemental oxygen and have a C-reactive protein level of 75 mg/litre or more, or
- are within 48 hours of starting high-flow nasal oxygen, continuous positive airway pressure, non-invasive ventilation or invasive mechanical ventilation.

In April 2021, the marketing authorisations for sarilumab do not cover use in COVID-19. See NICE's information on prescribing medicines for more about off-label and unlicensed use of medicines.

The recommended dosage for sarilumab is a single dose of 400 mg by intravenous infusion.

For sarilumab use in pregnancy, follow the Royal College of Obstetrics and Gynaecology guidance on coronavirus (COVID-19) infection and pregnancy.

For full details of adverse events and contraindications, see the summaries of product characteristics.

See NHS England's Interim Clinical Commissioning Policy on sarilumab for critically ill patients with COVID-19 pneumonia (adults) for further information.

7.7 Colchicine

Strong recommendation against

Do not offer colchicine to people in hospital to treat COVID-19.

NICE is aware that there is newly published evidence on colchicine from the RECOVERY trial and this is being reviewed.

Only in research settings

Only use colchicine to treat COVID-19 in community settings as part of a clinical trial.

7.8 Low molecular weight heparins

For recommendations on the therapeutic use of low molecular weight heparins, see the section on venous thromboembolism(VTE) prophylaxis.

7.9 Vitamin D supplementation

For recommendations on vitamin D, see the NICE COVID-19 rapid guideline on vitamin D.

8 Preventing and managing acute complications

8.1 Acute kidney injury (AKI)

Info box

In people with COVID-19, AKI:

- may be common, but prevalence is uncertain and depends on clinical setting (the Intensive Care National Audit andResearch Centre's report on COVID-19 in critical care provides information on people in critical care who need renal replacement therapy for AKI)
- is associated with an increased risk of dying
- can develop at any time (before, during or after hospital admission)
- may be caused by volume depletion (hypovolaemia), haemodynamic changes, viral infection leading directly to kidney tubular injury, thrombotic vascular processes, glomerular pathology or rhabdomyolysis
- may be associated with haematuria, proteinuria and abnormal serum electrolyte levels (both increased and decreased serum sodium and potassium).

Info box

In people with COVID-19:

- maintaining optimal fluid status (euvolaemia) is difficult but critical to reducing the incidence of AKI
- treatments for COVID-19 may increase the risk of AKI
- treatments for pre-existing conditions may increase the risk of AKI
- fever and increased respiratory rate increase insensible fluid loss.

8.1.1 Assessing and managing acute kidney injury (AKI)

Info box

The potassium binders patiromer and sodium zirconium cyclosilicate can be used as options alongside standard care for the emergency management of acute life-threatening hyperkalaemia (see NICE's technology appraisal guidance on patiromer and sodium zirconium cyclosilicate for treating hyperkalaemia).

Info box

For information on assessing and managing AKI, see the NICE guideline on acute kidney injury: prevention, detection and management.

For information on using intravenous fluids, see the NICE guideline on intravenous fluid therapy in adults in hospital and NICE guideline on intravenous fluid therapy in children and young people in hospital.

8.1.2 Follow up

Consensus recommendation

Monitor people with chronic kidney disease for at least 2 years after AKI, in line with the NICE guideline on chronic kidney disease in adults: assessment and management.

See guidance on care after hospital discharge in the Royal College of General Practitioners AKI toolkit.

8.2 Acute myocardial injury

8.2.1 Diagnosing acute myocardial injury

Consensus recommendation

For people in hospital with COVID-19 with signs or symptoms that suggest acute myocardial injury, measure high sensitivity troponin I (hs-cTnI) or T (hs-cTnT) and N-terminal pro B-type natriuretic peptide, and do an ECG.

Use the following test results to help inform a diagnosis:

- evolving ECG changes suggesting myocardial ischaemia
- an NT-proBNP level above 400 ng/litre
- high levels of hs-cTnI or hs-cTnT, particularly levels increasing over time.

Info box

Elevated troponin levels may reflect cardiac inflammatory response to severe COVID-19 rather than acute coronary syndrome.

8.2.2 Managing myocardial injury

Consensus recommendation

For all people with COVID-19 and suspected or confirmed acute myocardial injury:

- monitor in a setting where cardiac or respiratory deterioration can be rapidly identified
- do continuous ECG monitoring

- monitor blood pressure, heart rate and fluid balance.

Consensus recommendation

For people with a clear diagnosis of myocardial injury:

- seek specialist cardiology advice on treatment, further tests and imaging
- follow local treatment protocols.

Consensus recommendation

For people with a high clinical suspicion of myocardial injury, but without a clear diagnosis:

- repeat high sensitivity troponin (hs-cTnI or hs-cTnT) measurements and ECG monitoring daily, because dynamic change may help to monitor the course of the illness and establish a clear diagnosis
- seek specialist cardiology advice on further investigations such as transthoracic echocardiography and their frequency.

See also the management section for recommendations on care planning and recommendations on escalating and de-escalating treatment.

Info box

See the Medicines and Healthcare products Regulatory Agency's Drug Safety Update on erythromycin: caution required due to cardiac risks (QT interval prolongation); drug interaction with rivaroxaban.

8.3 Venous thromboembolism (VTE) prophylaxis

Info box

Definitions

Invasive mechanical ventilation: any method of controlled ventilation delivered through a translaryngeal or tracheostomy tube, or other methods as defined by the Intensive Care National Audit & Research Centre definition of 'advanced respiratory support'.

Hospital-led acute care in the community is defined as a setting in which people who would otherwise be admitted to hospital have acute medical care provided by members of the hospital team, often working with the person's GP team. They include hospital at home services and COVID-19 virtual wards.

Intermediate dose VTE prophylaxis is defined as the standard prophylactic dose of anticoagulant for people who are acutely ill and having medical care, given twice daily instead of once daily (and doubling of the usual daily dose).

Treatment dose is defined as the licensed dose of anticoagulation used to treat confirmed VTE.

8.3.1 In hospital

Consensus recommendation

For young people and adults with COVID-19 that is being managed in hospital, assess the risk of bleeding as soon as possible after admission or by the time of the first consultant review. Use a risk assessment tool published by a national UK body, professional network or peer-reviewed journal.

Consensus recommendation

Consider a treatment dose of a low molecular weight heparin (LMWH), unless contraindicated, for young people and adults with COVID-19 who:

- are likely to be in hospital for the next 3 days

- need supplemental oxygen and who are not yet receiving high-flow oxygen, continuous positive airway pressure, non-invasive ventilation or invasive mechanical ventilation.

Treatment should be for a minimum of 14 days or until discharge. Dose reduction may be needed to respond to any changes in a person's clinical circumstances. See the recommendation on people with COVID-19 who need high-flow oxygen, continuous positive airway pressure, non-invasive ventilation or invasive mechanical ventilation or palliative care.

For people with COVID-19 who do not need supplemental oxygen, follow the recommendations in the NICE guideline on venous thromboembolism in over 16s: reducing the risk of hospital-acquired deep vein thrombosis or pulmonary embolism.

In March 2021, the use of a treatment dose of a LMWH outside the treatment of confirmed VTE was an off-label use of parenteral anticoagulants. See NICE's information on prescribing medicines.

Consensus recommendation

For young people and adults with COVID-19 who are having supplemental oxygen and a treatment dose of a low molecular weight heparin (LMWH), and now need high-flow oxygen, continuous positive airway pressure, non-invasive ventilation or invasive mechanical ventilation or palliative care:

- reduce the dose of the LMWH to a locally agreed intermediate or standard dose
- reassess VTE and bleeding risks daily.

In March 2021, the use of intermediate or treatment doses of a LMWH for VTE prophylaxis were off-label uses of parenteral anticoagulants. See NICE's information on prescribing medicines.

Consensus recommendation

For young people and adults who are already receiving high-flow oxygen, continuous positive airway pressure, non-invasive ventilation or invasive mechanical ventilation and are on a standard prophylactic dose of a low molecular weight heparin (LMWH) for VTE prophylaxis:

- consider increasing anticoagulation to an intermediate dose
- reassess VTE and bleeding risks daily.

In March 2021, the use of an intermediate dose of a LMWH for VTE prophylaxis was an off-label

use of parenteral anticoagulants. See NICE's information on prescribing medicines.

Consensus recommendation

Do not base prophylactic dosing of heparin on levels of D-dimer.

Consensus recommendation

For young people and adults with COVID-19 who need supplemental oxygen and who progress onto high-flow oxygen, continuous positive airway pressure, non-invasive ventilation or invasive mechanical ventilation, only offer continuing a treatment dose of a low molecular weight heparin as part of a nationally approved clinical trial.

Consensus recommendation

For people at extremes of body weight or with impaired renal function, consider adjusting the dose of low molecular weight heparins in line with the summary of product characteristics and locally agreed protocols.

Consensus recommendation

For people who cannot have low molecular weight heparins (LMWHs), use fondaparinux sodium or unfractionated heparin (UFH).

In March 2021, LMWHs, fondaparinux sodium and UFH were off label for people under 18 years. See NICE's information on prescribing medicines.

Consensus recommendation

Start VTE prophylaxis as soon as possible and within 14 hours of admission.

Consensus recommendation

For people who are already having anticoagulation treatment for another condition when admitted to hospital:

- continue their current treatment dose of anticoagulant unless contraindicated by a change in clinical circumstances

- consider switching to a low molecular weight heparin (LMWH) if their current anticoagulant is not an LMWH and their clinical condition is deteriorating.

Consensus recommendation

If a person's clinical condition changes, assess the risk of VTE, reassess bleeding risk and review VTE prophylaxis.

Consensus recommendation

Organisations should collect and regularly review information on bleeding and other adverse events in people with COVID-19 having treatment or intermediate doses of pharmacological VTE prophylaxis.

Consensus recommendation

Ensure that people who will be completing pharmacological VTE prophylaxis after discharge are able to use it correctly or have arrangements made for someone to help them.

8.3.2 In hospital-led acute care in the community

Consensus recommendation

For people with COVID-19 managed in hospital-led acute care in the community settings:

- assess the risks of VTE and bleeding
- consider pharmacological prophylaxis if the risk of VTE outweighs the risk of bleeding.

8.3.3 People with COVID-19 and additional risk factors

Consensus recommendation

For women with COVID-19 who are pregnant or have given birth within the past 6 weeks, follow the advice on VTE prevention in the Royal College of Obstetricians and Gynaecologists guidance on coronavirus (COVID-19) in pregnancy.

Consensus recommendation

For children with COVID-19 admitted into hospital, follow the advice on COVID-19 guidance for

management of children admitted to hospital in the Royal College of Paediatrics and Child Health guidance.

8.3.4 Information and support

Consensus recommendation

Give people with COVID-19, and their families or carers if appropriate, information about the benefits and risks of VTE prophylaxis.

See the recommendations on giving information and planning for discharge in the NICE guideline on venous thromboembolism in over 16s, including information on alternatives to heparin for people who have concerns about using animal products.

Consensus recommendation

Offer people the opportunity to take part in ongoing clinical trials on COVID-19.

8.4 Suspected or confirmed co-infection

Consensus recommendation

Do not offer an antibiotic for preventing or treating pneumonia if SARS-CoV-2, another virus, or a fungal infection is likely to be the cause.

Antibiotics do not work on viruses, and inappropriate antibiotic use may reduce availability. Also, inappropriate use may lead to *Clostridioides difficile infection* and antimicrobial resistance, particularly with broad-spectrum antibiotics.

Info box

Evidence as of March 2021 suggests that bacterial co-infection occurs in less than about 8% of people with COVID-19, and could be as low as 0.1% in people in hospital with COVID-19. Viral and fungal co-infections occur at lower rates than bacterial co-infections.

Secondary infection or co-infection (bacterial, viral or fungal) is more likely the longer a person is in hospital and the more they are immunosuppressed (for example, because of certain types of treatment).

The type and number of secondary infections or co-infections will vary depending on the season and any restrictions in place (for example, lockdowns).

8.4.1 Identifying secondary bacterial pneumonia

Consensus recommendation

In hospitals or other acute delivery settings (for example, virtual wards), to help identify non-SARS-CoV-2 viral, fungal or bacterial pneumonia, and to inform decision making about using antibiotics, consider the following tests:

- a full blood count
- chest imaging (X-ray, CT or ultrasound)
- respiratory and blood samples (for example, sputum or a tracheal aspirate sample, blood culture; see Public Health England's COVID-19: guidance for sampling and for diagnostic laboratories)
- urine samples for legionella and pneumococcal antigen testing
- throat samples for respiratory viral (and atypical pathogen) polymerase chain reaction testing.

Info box

High C-reactive protein levels do not necessarily indicate whether pneumonia is due to bacteria or SARS-COV-2. Low C-reactive protein level indicates that a secondary bacterial infection is less likely.

Consensus recommendation

Do not use C-reactive protein to assess whether a person has a secondary bacterial infection if they have been having immunosuppressant treatment.

Info Box

There is insufficient evidence to recommend routine procalcitonin testing to guide decisions about antibiotics. Centres already using procalcitonin tests are encouraged to participate in research and data collection.

Procalcitonin tests could be useful in identifying whether there is a bacterial infection. However, it is not clear whether they add benefit beyond what is suggested in the recommendation on tests to help differentiate between viral and bacterial pneumonia to guide decisions about antibiotics. The most appropriate threshold for procalcitonin is also uncertain.

8.4.2 Antibiotic treatment in the community

Consensus recommendation

Do not offer an antibiotic for preventing secondary bacterial pneumonia in people with COVID-19.

Consensus recommendation

If a person has suspected or confirmed secondary bacterial pneumonia, start antibiotic treatment as soon as possible. Take into account any different methods needed to deliver medicines during the COVID-19 pandemic (see the recommendation on minimising face-to-face contact in communication and shared decision making).

Info Box

For antibiotic choices to treat community-acquired pneumonia caused by a secondary bacterial infection, see the recommendations on choice of antibiotic in the NICE antimicrobial prescribing guideline on community-acquiredpneumonia.

Consensus recommendation

Advise people to seek medical help without delay if their symptoms do not improve as expected, or worsen rapidly or significantly, whether they are taking an antibiotic or not.

Consensus recommendation

On reassessment, reconsider whether the person has signs and symptoms of more severe illness (see the recommendationon signs and symptoms to help identify people with COVID-19 with the most severe illness) and whether to refer them to hospital, other acute community support services or palliative care services.

8.4.3 Starting antibiotics in hospital

Consensus recommendation

Start empirical antibiotics if there is clinical suspicion of a secondary bacterial infection in people with COVID-19. When a decision to start antibiotics has been made:

- start empirical antibiotic treatment as soon as possible after establishing a diagnosis of secondary bacterial pneumonia, and certainly within 4 hours
- start treatment within 1 hour if the person has suspected sepsis and meets any of the high-risk criteria for this outlined in the NICE guideline on sepsis.

8.4.4 Choice of antibiotics in hospital

Info Box

To guide decision making about antibiotics for secondary bacterial pneumonia in people with COVID-19, see the NICE guideline on pneumonia (hospital acquired): antimicrobial prescribing.

Consensus recommendation

When choosing antibiotics, take account of:

- local antimicrobial resistance data and
- other factors such as their availability.

Consensus recommendation

Give oral antibiotics if the person can take oral medicines and their condition is not severe enough to need intravenous antibiotics.

Consensus recommendation

Consider seeking specialist advice on antibiotic treatment for people who:

- are immunocompromised
- have a history of infection with resistant organisms
- have a history of repeated infective exacerbations of lung disease
- are pregnant
- are receiving advanced respiratory support or organ support.

Consensus recommendation

Seek specialist advice if:

- there is a suspicion that the person has an infection with multidrug-resistant bacteria and may need a different antibiotic or
- there is clinical or microbiological evidence of infection and the person's condition does not improve as expected after 48 to 72 hours of antibiotic treatment.

8.4.5 Reviewing antibiotic treatment in hospital

Consensus recommendation

Review all antibiotics at 24 to 48 hours, or as soon as test results are available. If appropriate, switch to a narrower spectrum antibiotic, based on microbiological results.

For intravenous antibiotics, review within 48 hours and think about switching to oral antibiotics (in line with the NICE guideline on pneumonia (hospital-acquired): antimicrobial prescribing)

Give antibiotics for 5 days, and then stop them unless there is a clear indication to continue (see the recommendation on when to seek specialist advice).

Consensus recommendation

Reassess people if their symptoms do not improve as expected, or worsen rapidly or significantly.

9 Discharge, follow up and rehabilitation

NICE is reviewing evidence on follow up, discharge and rehabilitation. More recommendations will be added in a future version of the guideline.

For follow up and rehabilitation for people who have either ongoing symptomatic COVID-19 or post-COVID-19 syndrome, see the NICE guideline on the long-term effects of COVID-19.

10 Palliative care

10.1 Principles of care

For people who are nearing the end of their life, see:

- The NICE guideline on care of dying adults in the last days of life: this includes recommendations on recognising when a person may be in the last days of life, communication and shared decision making.
- The NICE guideline on end of life care for adults: service delivery: this includes recommendations for service providers on systems to help identify adults who may be at the end of their life, providing information and advanced care planning.
- The NICE guideline on care and support of people growing older with learning disabilities: this includes recommendations on accessing end-of-life care services, person-centred care, and involving families and support networks in end-of-life care planning.

10.2 Medicines for end-of-life care

Consensus recommendation

Consider an opioid and benzodiazepine combination. See the practical info table for managing breathlessness in the last days and hours of life for people 18 years and over with COVID-19 who:

- are at the end of life and
- have moderate to severe breathlessness and
- are distressed.

Consider concomitant use of an antiemetic and a regular stimulant laxative. Seek specialist advice for children and young people under 18 years.

Practical info: treatments in the last days and hours of life for managing breathlessness for people 18 years and over

Treatment	Dosage
Opioid	Morphine sulfate 10 mg over 24 hours via a syringe driver, increasing stepwise to morphine sulfate 30 mg over 24 hours as required
Benzodiazepine if required in addition to opioid	Midazolam 10 mg over 24 hours via the syringe driver, increasing stepwise to midazolam 60 mg over 24 hours as required
Add parenteral morphine or midazolam if required	Morphine sulfate 2.5 mg to 5 mg subcutaneously as required Midazolam 2.5 mg subcutaneously as required (See the BNF for more details on dosages)
Special considerations	Consider concomitant use of an antiemetic and a regular stimulant laxative Continue with non-pharmacological strategies for managing breathlessness when starting an opioid Sedation and opioid use should not be withheld because of a fear of causing respiratory depression

Notes: higher doses may be needed for symptom relief in people with COVID-19. Lower doses may be needed because of the person's size or frailty. The doses are based on the BNF and the Palliative care formulary

Info Box

For more recommendations on pharmacological interventions and anticipatory prescribing, see the NICE guideline on care ofdying adults in the last days of life and prescribing information in the BNF's prescribing in palliative care.

Consensus recommendation

For people with COVID-19 who are out of hospital, when prescribing and supplying anticipatory medicines at the end of life:

- Take into account potential waste, medicines shortages and lack of administration equipment by prescribing smaller quantities or by prescribing a different medicine, formulation or route of administration when appropriate.
- If there are fewer health and care staff, you may need to prescribe subcutaneous, rectal or long-acting formulations. Family members could be considered as an alternative option to administer medications if they so wish and have been provided with appropriate training.

Consensus recommendation

For people with COVID-19 who are out of hospital, consider different routes for administering medicines if the person is unable to take or tolerate oral medicines, such as sublingual or rectal routes, subcutaneous injections or continual subcutaneous infusions.

11 Research recommendations

What is the effectiveness and safety of standard-dose compared with intermediate-dose pharmacological venous thromboembolism (VTE) prophylaxis for people with COVID-19, with or without additional risk factors for VTE?

Suggested PICO (Population, Intervention, Comparator, Outcome)

P: patients 16 years and over being treated for COVID-19 pneumonia in hospital or the community who have:

- no additional risk factors for VTE
- additional risk factors for VTE

I: intermediate dose:

- low molecular weight heparins (LMWH)
- unfractionated heparin (UFH)
- fondaparinux sodium
- direct-acting anticoagulant
- vitamin K antagonists

C: standard-dose:

- LMWH UFH
- fondaparinux sodium
- direct-acting anticoagulants vitamin K antagonists antiplatelets

O:

- incidence of VTE
- mortality (all-cause, inpatient, COVID-19 related)
- admission to critical care (including use of advanced organ support)
- serious adverse events such as major bleeding or admission to hospital

What is the effectiveness and safety of extended pharmacological venous thromboembolism (VTE) prophylaxis for people who have been discharged after treatment for COVID-19?

Suggested PICO (Population, Intervention, Comparator, Outcome)

P: patients 16 years and over who have been discharged after treatment for COVID-19 pneumonia
I: extended (2 to 6 weeks) pharmacological VTE prophylaxis with standard-dose:

- low molecular weight heparins
- unfractionated heparins
- fondaparinux sodium
- direct-acting anticoagulant
- vitamin K antagonists

C: no extended pharmacological VTE prophylaxis O:

- incidence of VTE
- mortality (all-cause, inpatient, COVID-19 related)
- serious adverse events such as major bleeding or admission to hospital

What is the effectiveness and safety of a treatment dose with a low molecular weight heparin (LMWHs) compared with a standard prophylactic dose for venous thromboembolism (VTE) prophylaxis in young people

under 18 years with COVID-19?

Suggested PICO (Population, Intervention, Comparator, Outcome)

P: patients 18 years and under who have COVID-19 pneumonia I: treatment-dose LMWH C: standard prophylaxis with LMWH O:

- incidence of VTE
- mortality (all-cause, inpatient, COVID-19 related)
- admission to critical care (including use of advanced organ support)
- serious adverse events such as major bleeding or admission to hospital

Does early review and referral to specialist palliative care services improve outcomes for adults with COVID-19 thought to be approaching the end of their life?

Suggested PICO (Population, Intervention, Comparator, Outcome)

P: patients with a confirmed diagnosis of COVID-19 in hospital or community approaching the last days of life I: early referral to specialist palliative care services (for example, in the last days of life) C: late referral (for example, within the final day of life) or no referral O:

- quality of life
- changes to clinical care
- patient or carer satisfaction (feeling supported)
- identification and/or achievement of patient wishes such as preferred place of death

12 Equality considerations

12.1 Equalities impact assessment during scoping - draft scope

Is the proposed primary focus of the guideline a population with a specific communication or engagement need, related to disability, age or other equality consideration?

No

Have any potential equality issues been identified during the check for an update or during development of the draft scope and, if so, what are they?

There is potential for recommendations to exacerbate inequalities, if individual circumstances are not acknowledged. Protected characteristics and assumptions about individual circumstances need to be considered:

Sex

Public Health England's report on disparities in the risk and outcomes of COVID-19 indicated that diagnosis rates of COVID-19 are higher in women under 40 years and men over 60 years. There are higher death rates from COVID-19 in men (nearly 60%) than women, and men make up a higher proportion of intensive care unit admissions (70% of admissions). This could mean that people in these groups may be at higher risk of poorer outcomes.

Age

Public Health England's report on disparities in the risk and outcomes of COVID-19 highlighted that both diagnosis of COVID-19 and mortality are more likely as age increases (people 80 years or over are 70 times more likely to die than those under 40 years). Older people are more likely to be frail, and have comorbidities and underlying health conditions. These factors mean that people in these groups are at higher risk of poorer outcomes.

Older people may find it more difficult to access many services, including using digital technology to

access remote consultations. This may increase the risk of them not being able to access appropriate services and care. Older people may need support from carers (both paid and unpaid) for both remote and face-to-face consultations, again this may increase the risk of them not being able to access the appropriate care. For some medications, different doses may be needed for older people. Whenever medication dosing is referred to, this should be used with information in the BNF.

Ethnicity

Public Health England's report on disparities in the risk and outcomes of COVID-19 identified that people from black, Asian and minority ethnic groups are at higher risk of getting COVID-19, more likely to have severe symptoms because of the infection and at higher risk of poorer outcomes. The highest age-standardised diagnosis rates of COVID-19 per 100,000 population are in people from black ethnic groups.

Survival analysis in people with confirmed COVID-19 (after accounting for sex, age, deprivation and region) indicated that people with a Bangladeshi family background have twice the risk of death compared with white British people. It also found that people with a Chinese, Indian, Pakistani, other Asian, Caribbean or other black family background had 10% to 50% higher risk of death compared with white British people. Emerging evidence suggests that excess mortality from COVID-19 is higher in black, Asian and minority ethnic groups. Individuals from black African or black Caribbean family backgrounds may have the highest risk.

Poorer outcomes in black, Asian and minority ethnic groups have been linked to several potential factors. These include higher rates of comorbidities that have been associated with COVID-19 mortality (such as cardiovascular disease, obesity and diabetes) in some black, Asian and minority ethnic populations. They also include a person's occupation (for example, over-representation in key worker roles in health and social care), and pre-existing socioeconomic factors such as housing conditions that could affect a person's ability to maintain infection control and prevention measures.

People from black, Asian and minority ethnic groups may feel marginalised, have experienced racism or have had previous experiences with a culturally insensitive health service that could create barriers to engagement with those services. This could mean that people in these groups may be at higher risk of poorer outcomes.

Disability

The scope of the guideline includes consideration of communication and shared decision making.

For effective communication and shared decision making, specific consideration may need to be given to:

- people with a learning disability (including autism)
- people with a physical impairment (for example, a visual impairment or disability affecting communication)
- people with cognitive impairment (for example, mild or fluctuating dementia)
- people with a mental health issue.

The section on how to use this guideline states that it should be used alongside usual professional guidelines, standards and laws (including equalities, safeguarding, communication and mental capacity).

Socioeconomic factors

People who live in more socially deprived areas may be more likely to live in overcrowded housing and have occupations that might make them more at risk of being exposed to COVID-19.

Some people may not have access to the equipment needed to take part in digital consultations. Depending on where a person lives, they may not have access to home delivery services (for example, if they live in a rural area).

Gender reassignment

None identified.

Pregnancy and maternity

Not all medications are appropriate for people who are pregnant or breastfeeding. Whenever medication dosing is referred to, this should be used with information in the BNF.

Religion or belief

Not all medications are acceptable to people of certain religions because of the products being animal derived. Whenever medication dosing is referred to, this should be used with information in the BNF.

Sexual orientation

None identified.

Other definable characteristics

Examples are:

- refugees
- asylum seekers
- migrant workers
- people who are homeless.

For people whose first language is not English, there may be communication difficulties, especially for effective shared decision making and minimising risk of infection.

It is recognised that people who are homeless, refugees, asylum seekers and migrant workers may be living in deprived areas (including overcrowded accommodation), which may mean they are more likely to be exposed to COVID-19.

People from these groups may also be less likely to be able to access services.

What is the preliminary view on the extent to which these potential equality issues need addressing by the panel?

The guideline will need to address the potential equality issues by looking at data from studies either focused on the groups identified or looking at subgroup data. No groups will be excluded from the population.

The scope of this guideline does not include specific review of situations in which people lack mental capacity to make their own decisions about healthcare at that point in time. NICE has produced guidance on decision making and mental capacity to help health and social care practitioners:

- support people to make their own decisions as far as possible
- assess people's capacity to make specific health and social care decisions

- make specific best-interest decisions when people lack capacity, and maximise the person's involvement in those decisions.

12.2 Equalities impact assessment during scoping - final scope

Have any potential equality issues been identified during review of the draft scope, and, if so, what are they?

Yes. In addition to those outlined in section 12.1 on the equalities impact assessment on the draft scope, the following issues were identified. No changes were made to the scope on the basis of these issues.

Age

Some older people or people who are very frail may receive 'over-treatment' and this could remove them from familiar carers and surroundings.

Disability

A person's mental health can influence their health-seeking behaviours and how they manage their physical health conditions.

Gender reassignment

There may be an interplay between sex hormones in trans people. It is unknown whether sex differences in COVID-19 outcomes are due to genetics, hormonal issues or social factors.

Pregnancy and maternity

There has been an increased rate of maternal death since the start of the COVID-19 pandemic. It has also been reported that COVID-19 infection during pregnancy increases the risk of preterm birth, which is in turn linked to increased elective delivery and ventilation.

Race

There have been reports of vaccine hesitancy in people from black, Asian and minority ethnic groups. Given people in these groups are at risk of worse outcomes with COVID-19, vaccine hesitancy may further increase inequalities in outcomes.

Religion or belief

No further issues identified.

Sex

During the COVID-19 pandemic, women have had barriers to accessing in vitro fertilisation services, contraception and abortion care. Also, there have been increasing inequalities because of the lack of information being provided about alternative options.

Sexual orientation

Some people may feel marginalised because of their sexual orientation, so may have barriers to care because of their differing family or community structures.

Socio-economic factors

No further issues identified.

Were any changes to the scope made as a result of consultation to highlight potential equality issues?

No.

Have any of the changes made led to a change in the primary focus of the guideline which would require consideration of a specific communication or engagement need, related to disability, age, or other equality consideration? If so, what is it and what action might be taken by NICE or the developer to meet this need? (For example, adjustments to panel processes, additional forms of consultation

No. The equalities issues identified have not led to a change in the primary focus of the guideline.

12.3 - Equalities impact assessment during guideline development

Have the potential equality issues identified during the scoping

process been addressed by the panel, and, if so, how?

In the scoping process, a range of potential equality issues were identified. These have been addressed as follows:

Age

At scoping it was highlighted that older people with COVID-19 are at higher risk of poorer outcomes.

It was also noted that older people may have difficulties in accessing services, including using digital technology to access remote consultations, and that they may need carer support to access remote and face-to-face consultations. It is recommended in the communication and shared decision making section that, in the community, the risks and benefits of face-to-face and remote care should be considered for each person. This should allow issues such as an individual's ability to access remote care to be taken into account.

The panel also noted that some older people or people who are very frail could potentially receive 'over-treatment', which could remove them from familiar carers and surroundings. In the section on care planning in the community, it is recommended to discuss with people with COVID-19, and their families and carers, the benefits and risks of hospital admission or other acute care delivery services (such as virtual wards, hospital at home teams). This should allow individualised decisions to be made that can take account of personal preferences to be cared for with familiar people in their usual surroundings.

It is noted that NEWS2 should not be used in children. This has been noted in the section on identifying severe COVID-19 in the community. The panel recommended the use of locally approved paediatric early warning scores in children.

Sex

It has been reported that there are higher death rates from COVID-19 in men than women and that men comprise a higher proportion of intensive care unit admissions. While this guideline does not make specific recommendations based on sex, the guideline allows for consideration of individual characteristics and risk factors in planning care. For example, in the section on assessment in hospital the guideline recommends that, on admission to hospital, a holistic assessment should be completed.

It was also noted that, during the COVID-19 pandemic, women have experienced barriers to

accessing in vitro fertilisation services, contraception and abortion care. The provision of these services are outside the scope of this guideline.

Gender reassignment

It was noted during scoping that there may be an interplay between sex hormones in trans people and it is not known if sex differences in COVID-19 outcomes are due to genetic, hormonal or social factors. The panel did not make specific recommendations based on gender reassignment.

Sexual orientation

Some people may feel marginalised due to their sexual orientation and therefore may have barriers to care due to their differing family or community structures. No recommendations were made specific to sexual orientation.

Ethnicity

Emerging evidence suggests that excess mortality due to COVID-19 is higher in black, Asian and minority ethnic groups. The guideline does not make specific recommendations according to ethnicity. However, alongside the recommendation relating to theuse of pulse oximetry it is noted that overestimation has been reported in people with dark skin.

There have been reports of vaccine hesitancy in people of from black, Asian and minority ethnic groups. Given that these groups are at risk of worse outcomes with COVID-19, vaccine hesitancy may further increase inequalities in outcomes. Vaccine uptake is outside the scope of this guideline.

Disability

Regarding communication and shared decision making, specific consideration may need to be given to people with a learning disability, people with physical impairments, people with cognitive impairment, and people with mental health issues. The section oncommunication and shared decision making recommends communicating with people with COVID-19, their families and carers to alleviate any fear or anxiety. This recommendation also advises to provide people with information in a way that they can use and understand, and to follow national guidance on communication, providing information (including in different formats and languages) and shared decision making. The guideline also recommends involving families and carers where appropriate to support discussions relating to care and shared decision making.

We state that this guideline should be used alongside usual professional guidelines, standards and laws (including equalities, safeguarding, communication and mental capacity).

It has also been noted that a person's mental health can influence their health-seeking behaviours and how they manage their physical health conditions. As above, the guideline recommends involving families and carers in discussions relating to care where appropriate.

Socioeconomic factors

People who live in more socially deprived areas may be more likely to live in conditions and have occupations that may increase the risk of being exposed to COVID-19. No recommendations were made based on levels of social deprivation, living conditions or occupation.

Some people may not have access to equipment needed for remote consultations. It is recommended in the section on communication and shared decision making that, in the community, the risks and benefits of face-to-face and remote care should be considered for each person. This should allow issues such as an individual's ability to access remote care to be considered.

Depending on where a person lives (for example in rural areas), they may have difficulty accessing home delivery services. The guideline recommends optimising remote care where appropriate, such as pharmacy deliveries, postal services, NHS volunteers and introducing drive-through pick up points for medicines. Providing a range of potential options may support access in different geographical areas. The guideline also covers use of anticipatory medicines at end of life. It is noted that, if there are fewer health and care staff, differing formulations may be prescribed and family members may be able to support administration of medications if they wish and have been provided with appropriate training.

Pregnancy and maternity

At scoping, increased rates of maternal death and an increased risk of preterm birth during the COVID-19 pandemic were highlighted. No recommendations were made specifically on pregnancy.

It is noted that NEWS2 should not be used when pregnant. This has been noted in the relevant recommendation under identifying severe COVID-19.

As not all medications are appropriate for people who are pregnant or breastfeeding, whenever medication dosing is referred to, this should be used with information in the BNF.

Religion or belief

Not all medications are acceptable to people of certain religions due to the products being animal derived.

Other definable characteristics

For people whose first language is not English, there may be communication difficulties, especially relating to shared decision making and minimising risk of infection. The section on communication and shared decision making recommends communicating with people with COVID-19, their families and carers to alleviate any fear or anxiety. This recommendation also advises to provide people with information in a way that they can use and understand, and to follow national guidance on communication, providing information (including in different formats and languages) and shared decision making.

People who are homeless, refugees, asylum seekers and migrant workers may be living in deprived areas (including overcrowded accommodation) and so may be more likely to be exposed to COVID-19 and may also experience difficulties in accessing services. No recommendations were made specific to people who are homeless, refugees, asylum seekers and migrant workers.

Have any other potential equality issues (in addition to those identified during the scoping process) been identified, and, if so, how has the panel addressed them?

Disability

The panel identified that children and young people under 18 years, or people with learning disabilities, may need additional consideration around capacity and decision making because of the isolated nature of treatment. The panel agreed that a recommendation should be added stating that, when making decisions about care of children and young people under 18 years, people with learning disabilities or adults who lack mental capacity for health decision making, the NICE guideline on decision making and mental capacity should be referred to. It was also recommended to ensure that discussions on significant care interventions involve family and carers, as appropriate, and local experts or advocates. The panel noted that infection prevention and control, including self-isolation, may be more challenging for some groups of people, including those with dementia or learning disabilities. A recommendation has been added to advise that, for carers of people with COVID-19 who should isolate but are unable to, relevant support and resources should be signposted to (for example, Alzheimer's society has information on staying safe from coronavirus and reducing the risk of infection).

Ethnicity

It was noted that pulse oximeters can be less accurate in people with dark skin, especially at the borderline range of 90% to 92%. Information about this has been added to the recommendation to

alert healthcare practitioners to this.

Religion or belief

The panel identified that, for people who do not use animal products, honey would not be appropriate for cough. No change was made to this recommendation.

Do the preliminary recommendations make it more difficult in practice for a specific group to access services compared with other groups? If so, what are the barriers to, or difficulties with, access for the specific group?

No. None identified.

Is there potential for the preliminary recommendations to have an adverse impact on people with disabilities because of something that is a consequence of the disability?

No.

Are there any recommendations or explanations that the panel could make to remove or alleviate barriers to, or difficulties with, access to services identified, or otherwise fulfil NICE's obligation to advance equality?

Not applicable.

13 Methods and processes

Development

This guideline was developed using the methods and process in our interim process and methods for guidelines developed in response to health and social care emergencies.

Structure

The guideline structure follows the main themes and overarching questions set out in the scope. Existing NICE COVID-19 rapid guidelines and international guidelines were reviewed to inform further subsections. The structure was designed to allow flexibility to refine, remove or add sections in future iterations within a living approach. The guideline includes disease severity definitions that are in line with WHO definitions and approved by the NICE expert advisory panel. These are used to inform severity-specific recommendations where applicable.

Mapping of existing content

We compiled a list of all recommendations in the COVID-19 rapid guidelines that were relevant to the scope of this guideline. These recommendations were added to the appropriate section in the draft structure of the new guideline. After NICE technical and clinical quality assurance of this mapping work, the recommendations were transferred to the relevant part of the structure on the publishing platform MAGICapp.

After the initial mapping, the structure was refined. The NICE expert advisory panel identified gaps in coverage and any recommendations that should be changed. The panel were also asked whether any of the recommendations from the rapid guidelines could be removed, if no longer relevant, due to new emergent evidence or due to recommendations being context specific and therefore bound to a particular time in the pandemic. Any changes to recommendation content were based on the consensus view of the expert advisory panel.

Therapeutics for COVID-19

Reviewing the evidence

As there is a need for prompt guidance on therapeutics for managing COVID-19, NICE is collaborating with other guideline development teams to produce evidence reviews. NICE has

reused data from the National Australian COVID-19 clinical evidence taskforce for some recommendations. At the time of publication (March 2021), no specific literature searches were carried out for the therapeutics section of the guideline.

The use of evidence provided by the National Australian COVID-19 clinical evidence taskforce is achieved through the sharing of RevMan files, which the NICE team use to populate the evidence summary section and GRADE profiles for a review.

Because therapeutics for managing COVID-19 is an emerging area, data provided by other guideline developers may be supplemented with additional trial results that the NICE COVID-19 team have access to. Relevant trials are identified through NICE's Rapid C-19 initiative. On occasion, NICE may be given access to trial data before publication in a peer review journal (academic in confidence data). Data extraction and risk of bias will be carried out in line with the interim process and methods for guidelines developed in response to health and social care emergencies. Where academic-in-confidence data is used, this will be described in the evidence to decisions summary for that section of the guideline. As this is a living guideline, trial results from academic in confidence data will be revisited when published and reconsidered by the expert advisory panel.

All evidence reviews are quality assured before they are presented to the expert advisory panel. For reviews generated by the National Australian COVID-19 clinical evidence taskforce, the expert advisory panel will assess the relevance and applicability to the UK context, which will feed into the considerations for developing the recommendations.

Expert advisory panel members and declarations of interest

Declarations of interest (DOI) were recorded according to the 2019 NICE conflicts of interest policy. For a list of panel members and corresponding DOI registry for this guideline see the NICE guideline page on managing COVID-19.

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