Background
This is the third, updated action plan from SGMCN, endorsed as of 14/7/20, with new or revised sections compared to version 2 highlighted in yellow.

Essential facts

- Transmission of COVID-19 can occur 24 to 48 hours prior to symptom onset, during the illness, and up to 24 hours after symptoms have resolved. Viral shedding has been demonstrated for a median 20 days, and up to 35 days, after symptom onset.¹

- It is estimated up to 60% of population will become infected over the next 6 to 9 months.

- The incubation period is a median 5-6 days but can extend to 14 days and cases have been reported up to 24 days.

- Transmission occurs via droplet spread and direct contact with contaminated surfaces (fomites), although faecal shedding and blood borne virus have been demonstrated. The virus survives in aerosols for around 4 hours and on hard surfaces such as plastic for up to 3 days.²

- Transmission rate (or infectivity) ranges from 2.0 to 3.0 although physical distancing, strict border closures and more liberal testing and isolation of suspected cases appear to be reducing this infectivity rate.

- The most frequent symptoms are fever (85-98%), dry cough (80%), fatigue/myalgias (10%-40%), dyspnoea (3%-30%), and diarrhoea (<10%). Many patients will show lymphopenia and initial CXR may show bilateral patchy infiltrates, although CT chest scans may be more sensitive.

- Most cases of infection (80%) are mild and will not need hospitalisation, 10-15% are very sick and 2-5% will require ICU admission and ventilation.

- Illness reaches peak of severity at about day 7-10, and can cause cardiogenic shock, acute respiratory distress syndrome requiring ventilation, and acute kidney injury requiring dialysis. In severe cases, illness can last up to 3-4 weeks or longer, with prolonged stays in ICU.

- Severe cases and deaths are concentrated among older patients with co-morbidities, with cardiovascular disease, diabetes, chronic respiratory disease, and hypertension being the most frequent (in descending order) associated co-morbidities. There have been very few severe cases in children or pregnant women. Aboriginal and Torres Strait Islander people are also a high-risk group because of associated co-morbidities (see below).

- Case fatality rate ranges from 1% to 4% overall depending on the denominator of ascertained cases but rises with age to 8% in age group 70-79 years and to 15% in those >80 years. Men are more likely to die (2.8%) than women (1.7%). Patients admitted to ICU and ventilated have a mortality rate as high as 50%.

- There is no proven treatment for COVID-19 apart from dexamethasone in patients requiring respiratory support; otherwise care is supportive; a vaccine is unlikely to be available for at least another 12 months; and there is no herd immunity to this novel coronavirus. Remdesivir has some evidence of reducing time to recovery and may be considered in patients with severe COVID-19 on compassionate grounds.

- Our understanding of the pathophysiology of COVID-19 infection is evolving and a recent review


article provides the most recent information. Atypical, non-respiratory presentations of COVID-19 are also being increasingly reported, as summarised in a recent review.

Classification of cases

• COVID-19 cases are now classed as confirmed, probable (presence of high risk features) or suspected as follows:

  • **Confirmed case**
    A person who:
    i. tests positive to a validated specific SARS-CoV-2 nucleic acid test;
    OR
    ii. has the virus isolated in cell culture, with PCR confirmation using a validated method;
    OR
    iii. undergoes a seroconversion to or has a significant rise in SARS-CoV-2 neutralising or IgG antibody level (e.g. four-fold or greater rise in titre).

  • **Probable case**
    A person who:
    i. has not been tested, with fever (≥38°C) or history of fever (e.g. night sweats, chills) OR acute respiratory infection (e.g. cough, shortness of breath, sore throat) AND is a household contact (refer to Contact definition below) of a confirmed or probable case of COVID-19;
    OR
    ii. has detection of SARS-CoV-2 neutralising or IgG antibody AND has had a compatible clinical illness AND is a close contact (refer to Contact definition below) of a confirmed or probable case of COVID-19.

  • **Suspected case**
    A person who meets the following clinical AND epidemiological criteria:
    Clinical Criteria:
    Fever (≥37.5°C) or history of fever (e.g. night sweats, chills) OR acute respiratory infection (e.g. cough, shortness of breath, sore throat) OR loss of smell or loss of taste.
    Epidemiological criteria:
    In the 14 days prior to illness onset:
    i. Close contact5,6 (refer to Contact definition below) with a confirmed or probable case
    ii. International or interstate travel
    iii. Passengers or crew who have travelled on a cruise ship
    iv. Healthcare, aged or residential care workers and staff with direct patient contact
    v. People who have lived in or travelled through a geographically localised area with elevated risk of community transmission, as defined by public health authorities.

Other reported symptoms of COVID-19 include: fatigue, loss of smell, loss of taste, runny nose, muscle pain, joint pain, diarrhoea, nausea/vomiting and loss of appetite. Testing beyond the suspect case definition stated above may, based on the clinical and public health judgement of the treating clinician, include individuals with sudden and unexplained

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6 Coleman et al COVID-19: to be or not to be; that is the diagnostic question. Postgrad Med J 2020;96:392–398
onset of one or more of these other symptoms.

- **PCR positive tests in asymptomatic or pre-symptomatic persons**

  Jurisdictional enhanced testing regimens may identify asymptomatic or pre-symptomatic PCR positive cases in the community (i.e. not in quarantine or a high-risk outbreak setting). In such circumstances, the person is considered a confirmed case and should be isolated while the following steps are taken:

  1. Confirm veracity of the test in close liaison with the laboratory, if indicated depending on local epidemiology. In some cases this may involve re-running the test on an alternative platform, retesting, or testing at a reference laboratory.
  2. A thorough investigation of the past 3 months should be conducted to determine if the individual has recently had symptoms that are clinically compatible with COVID-19, or an epidemiological link can be identified. If historical symptoms are identified, then for the purposes of contact tracing, the duration of infectivity is regarded as commencing 48 hours prior to symptom onset.
  3. If no historical symptoms are identified, then for the purposes of contact tracing, the case is considered to have been infectious for 48 hours prior to the initial positive test.
  4. Regardless of whether historical symptoms have been identified, follow the case prospectively for 10 days, where feasible, after the initial test to determine if symptoms develop. If symptoms develop, the case is considered to have been pre-symptomatic and the case and contacts should be managed according to the time of symptom onset.

Patients identified as asymptomatic or pre-symptomatic may be released from isolation when they meet the relevant 'release from isolation' criteria (see below).

- **Populations at higher risk of developing severe COVID-19 with associated higher mortality risk, and who warrant higher intensity protection measures and, if PCR positive, closer monitoring (which may need to be in hospital) are:**
  
  - Aboriginal and Torres Strait Islander people 50 years and older with one or more chronic medical conditions.
  - People 65 years and older with chronic medical conditions (hypertension, heart failure, COPD, diabetes).
  - People 70 years and older.
  - People with compromised immune systems.

**Reducing transmission**

Transmission occurs via close contact (defined as face to face contact >15 mins or shared closed space for more than 2 hours) with an infected person. Transmission occurs by contact with droplets from an infected person’s cough or sneeze or touching fomites (doorknobs, tables, handrails, etc) which have such droplets on them and then touching mouth or face and inoculating mucosal membranes.

**Recommendations**

- Face to face contact of clinicians with community-living persons, especially those living in geographic locales which public health data indicate have a higher density of COVID-19 cases, should be minimised by use of telehealth or telephone consultations involving patients,\(^5\) or e-

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\(^5\) The federal government on 12/3/20 announced that temporary MBS and DVA items would be made available to allow doctors (including specialist physicians), nurses and mental health professionals to deliver services via telehealth, provided those services are bulk billed. These services will be available to patients in home isolation or quarantine due to coronavirus as well as to the following groups:

- people aged over 70,
- Aboriginal and Torres Strait Islander people aged over 50,
- people with chronic health conditions or who are immunocompromised,
- parents with new babies and
- people who are pregnant.
consultations involving general practitioners.

- Patients who present with probable or suspected COVID-19 and require hospitalisation should be admitted to a dedicated COVID-19 area staffed by personnel trained in personal protective equipment (PPE) and who have ready access to testing facilities. For patients who are moderately ill but do not have pneumonia or have uncontrolled coughing or sputum production, testing can be performed with contact and droplet precautions; otherwise full contact and airborne precautions should be undertaken.

- Patients with either confirmed COVID-19 or awaiting results of testing, and who are not sick enough to require hospitalisation, should be sent home and told to self-isolate until criteria are met to come out of isolation – they should not be admitted.
  - In cases where there may be concern about possible deterioration (eg older patients with co-morbidities), follow-up should be arranged through the patient’s usual general practitioner, or through a hospital-based outreach service (see below under Assessment and Management).
  - Patients who deteriorate and are confirmed as COVID-19 cases should be admitted directly to an inpatient bed where possible and bypass the emergency department so as to reduce exposure for staff and other patients.

- Patients with confirmed, probable or suspected COVID-19 who live in residential aged care facilities (RACF) and have advanced care plans or directives clearly stating a preference not to be hospitalised for acute illness, or who are severely disabled with poor quality of life (ie advanced dementia, terminal diseases, bed bound, fully dependent for all cares) should only be transferred to hospital if, after consulting ID or the public health unit, there is significant risk of an outbreak occurring in a facility as a result of that facility being unable to isolate sick patients and/or enact appropriate infection prevention and control measures.
  - Hospitalisation offers no intervention that will change the natural history of their illness and therefore constitutes futile care, subjects the patient to needless dislocation and disorientation as a result of the transfer from familiar environments, and substantially increases the risk of transmission to other inpatients.
  - Palliative care or emergency medicine outreach services (CARE-PACT or RADAR) should be deployed to assist RACF staff in the conservative management of patients if the decision is made for the patient to remain in the facility.

- Patients with confirmed, probable or suspected COVID-19 who require hospitalisation should be admitted to a dedicated ward, separate from other patients, that has isolation rooms with negative air pressure and where patients are managed using droplet and contact precautions.
  - Where such rooms are not available, then single rooms with ensuites should be used.
  - If these are not available, then cohorting of confirmed cases only in dedicated bays or pods should be undertaken, with probable or suspected cases receiving care in a separate bay or pod.
  - Place appropriate contact, droplet or airborne precaution signs, alcohol-based hand gel and PPE outside patients’ rooms (with a mechanism to allow for safe disposal of PPE items) to remind staff and visitors about the requirement for strict infection control procedures.

- Minimise movement of inpatients with confirmed, probable or suspected COVID-19 within wards and across the hospital.
  - Use of investigations or procedures requiring transportation of patients to other departments should be scrutinised very closely and wherever possible portable, bedside x-rays or ultrasound should be requested using designated equipment which is subject to cleaning.

Patients in the identified vulnerable groups can additionally see a health provider via telehealth for a non-COVID-19 matter if they have seen that provider face-to-face at least once in the previous 12 months.
- All blood collection and ancillary services should be managed within the dedicated ward.
- If patient transfer outside their room or ward is necessary, the patient should wear a surgical mask during transfer and adhere to respiratory hygiene and cough etiquette.
- Where possible, dedicated COVID lifts subject to regular disinfecting should be employed for transporting COVID-19 patients to and from ED or radiology.

- Minimise movement of staff within wards and across the hospital by having general medicine units that comprise medical, nursing and allied health staff housed in specific wards.
  - Minimise the numbers of outliers
  - Minimise rapid response team calls that involve general medicine staff by rigorous documentation of acute resuscitation plans and appropriate MET call criteria.
  - Segregate teams where possible (eg separate responsibilities for inpatients and outpatients and, where possible, do not mix these teams).

- Minimise inter-hospital transfers of suspected or confirmed COVID-19 cases unless care in a higher service capacity hospital is clinically indicated.

- Testing of healthcare workers for COVID-19 testing should occur if they have direct patient contact AND have fever (>37.5°C) OR respiratory symptoms (cough, sore throat, shortness of breath) OR history of fever (night sweats, chills). Persons with positive tests should self-isolate persons at least 14 days – (see subsequent sections on testing in Assessment and Management). Persons who do not meet criteria for testing but have respiratory symptoms should not come to work until their symptoms have resolved.

- All staff must practice strict personal and hand hygiene, apply cough etiquette, and use hand sanitisers after touching non-clinical items (phones, lift buttons, door handles etc.). Compliance with hand hygiene procedures should be regularly audited.
  - An adequate supply of hand sanitiser in high traffic areas of wards should be ensured.
  - Clinical staff should regularly clean personal items such as stethoscopes, mobile phones, keyboards, dictation devices, nametags, and lanyards with disinfectants or alcohol wipes.
  - Workstations, especially those that are shared, should be regularly disinfected with a detergent wipe
  - Signs and posters should be distributed throughout wards and placed in strategic locations in providing reminders and instructions on hand and respiratory hygiene and cough etiquette.
  - Avoid face-to-face gatherings for non-critical activities; reduce direct contact with other people – greet with a wave instead of a handshake or a hug.

- Regular (daily) targeted cleaning in public and shared spaces should be undertaken with a focus on hard surfaces, especially in (handrails, doorknobs, bed trays, chairs, etc).
  - This is preferably undertaken by dedicated cleaning staff, not nursing staff who will be occupied with clinical duties
  - Use of a neutral detergent followed by a disinfection solution (TGA-registered hospital grade disinfectant or 1000 ppm sodium hypochlorite) is recommended.

- Clinical staff caring for confirmed, probable or suspected COVID-19 should be dedicated personnel fully briefed in use of PPE and rotated so as to avoid fatigue from constantly changing PPE.
  - Implement droplet and contact precautions for mildly or moderately ill patients – these comprise surgical mask, long sleeve impermeable gown, gloves and protective eyewear or face shield.
o Implement airborne and contact precautions for patients with severe symptoms or pneumonia with productive or uncontrollable cough (associated with a high load of viral shedding) – these comprise negative pressure room if available, P2/N95 mask, long sleeve impermeable gown, gloves, protective eyewear or face shield (appendix 2).

o Male staff with facial hair will need to consider removing it if it prevents close fitting of masks (appendix 3).

o Records should be kept of staff training in PPE compliance and competency; only staff who have been trained in PPE usage should care for patients with COVID-19.

o Every nosocomial health care worker COVID-19 infection must be entered into the local incident management system as a sentinel event and should be managed as per established guidelines.

o Every observed breach in PPE usage should be recorded in the incident management system as an occupational health and safety risk. An assessment of the breach should be made and an infection control assessment performed as to whether the breach warrants a period of self-isolation. No blame should be apportioned to the individual as mistakes will inevitably occur in high-pressure environments.

- Non-essential staff such as food services staff, patient visitors, and medical students should not be allowed into areas housing confirmed or suspected cases of COVID-19 patients.
  o Restrict all patients in the hospital (COVID and non-COVID) to one visit per day for up to two hours, with no more than two people per visit.
  o People with any symptoms of COVID-19 should not visit a patient in hospital.

- Contact of clinical staff with confirmed, probable or suspected cases of COVID-19 should be minimised as much as possible within limits necessary to ensure safety and quality of care.
  o Bundle as many tasks together as possible (e.g. if two people are required, ensure they can group and complete all necessary tasks at one entry. Blood samples can be drawn by clinicians once in the room instead of separate phlebotomists).
  o The frequency of observations should be reduced where safe to do so (eg q6hrly or q8hrly as opposed to q4hrly).
  o ECGs or other bedside investigations or observations such as urinalysis, fluid balance charts, and insertion or replacement of IV lines and IDCs should be avoided as much as possible. In some hospitals, staff keep IV pumps outside the patient room by using IV extension tubing to provide access to investigate alarms and change medication.
  o Medication rounds should be once daily which will require medical staff to switch all medications to once daily wherever possible. Reduce the number of medications by ceasing those no longer indicated or conferring greater risk of harm than of benefit.
  o Group activities such as physiotherapy in gyms or patient gatherings in common areas should be suspended.
  o Acute resuscitation plans should be finalised in all patients which stipulate circumstances under which CPR or other invasive life-support measures, which necessitate close contact between patient and staff, are not indicated.
  o Equipment used to conduct observations such as thermometers or pulse oximeters should be assigned to single patients and not used for other patients.

- Procedures which generate virus-containing aerosols must be avoided wherever possible.
  o Chest physiotherapy should be avoided in COVID-19 patients as respiratory infection is mostly associated with dry, non-productive cough and lower respiratory tract
involvement usually involves pneumonitis rather than exudative consolidation.

- In patients with co-existent COPD and mucus hypersecretion, short-duration chest physiotherapy should be limited to patients with significantly impaired cough reflex.
- Use of nebulisers, high flow oxygen through nasal prongs and bellows spirometry should be avoided and approval for their use sought from a consultant or unit director. Most patients with pre-existing asthma/COPD can be managed with metered dose inhalers and spacer devices.
  - If the delivery of nebulised drugs is necessary, then limit the number of staff present during the procedure to only those essential for patient care and support. Staff must adhere to contact and airborne PPE prior to undertaking the procedure. If this is required a negative pressure isolation room should be used if available.
  - Standard nasal prong oxygen or Hudson mask or non-rebreather mask, at flow rates of up to 15L/min, will be sufficient for most patients.
  - Formal respiratory function tests, induced sputum collections and use of non-invasive ventilation requires consultation with a respiratory physician.

Assessment and management

Diagnostic testing

Patients with suspected COVID-19 should have nasopharyngeal and oropharyngeal (throat) swabs performed by staff trained to properly perform these procedures in order to maximise the sensitivity of real-time PCR (RT-PCR) testing that is currently the diagnostic test of choice.

In patients who already have lower respiratory tract infection and have a productive cough, after they have rinsed their mouth with water, a deep cough sputum sample should also be expectorated directly into a sterile container.

RT-PCR testing has a turnaround time of about 16 hours. However, in patients with very recent onset of symptoms, RT-PCR tests may take up to 6 days to become positive, and hence the sensitivity of the initial test may be no more than 70%.

Recent reports suggest that combining RT-PCR testing with CT scans of the chest (which may reveal COVID-19 changes such as ground-glass opacities, multifocal patchy consolidation, and/or interstitial changes in peripheral distribution) may improve sensitivity up to 93%.6

Recommendations

- Ensure upper respiratory tract swabs are taken by personnel properly trained in the procedure and PPE use in order to maximise RT-PCR yield and reduce risk of transmission by generating cough and aerosol.

- Testing should be undertaken on any person with fever (≥38°C) OR history of fever (e.g. night sweats, chills) OR acute respiratory infection (e.g. cough, shortness of breath, sore throat) should be tested AND where no other clinical focus of infection or alternate explanation of the patient’s illness is evident.*

  - Note: In addition, testing is recommended for people with new onset of other clinical symptoms consistent with COVID-19** AND who are close contacts of a confirmed case of COVID-19; who have returned from overseas in the past 14 days; or who are healthcare or aged care workers.

*Clinical discretion applies including consideration of the potential for co-infection (e.g. concurrent infection with SARS-CoV-2 and influenza)

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**Headache, myalgia, stuffy nose, nausea, vomiting, diarrhoea**

- There is no need to test well persons who are in self-quarantine (ie persons who have returned from overseas after March 15) as a negative result will not reduce the required 14 days of quarantine and the test will remain negative until the person becomes symptomatic due to being infected.

- As patients with suspected COVID-19 may in fact be suffering from other viral syndromes, usual testing for influenza (GeneXpert) and, if indicated, other respiratory viruses should be undertaken.

- Repeat PCR testing after an initial negative test should be performed within 24-48 hours in certain select patients before the infection control precautions are removed:
  - High risk features include either likely exposure to SARS-CoV-2 virus, based upon the epidemiologic risk profile or significant clinical features suggestive of COVID-19, without another confirmed cause:
    - Epidemiologic risk: Close contact with confirmed case or high-risk travel OR healthcare worker directly involved in the management of COVID-19 patients.
    - Close contact has been redefined as face-to-face contact in any setting with a confirmed or probable case of COVID-19 for greater than 15 minutes cumulative over the course of a week, in the period extending from 48 hours before onset of symptoms in the confirmed or probable case OR sharing of a closed space with a confirmed or probable case for a prolonged period (e.g. more than 2 hours) in the period extending from 48 hours before onset of symptoms in the confirmed or probable case.
    - Clinical manifestations: Pulmonary infiltrates consistent with pneumonitis or ARDS on CXR or chest CT OR Type 1 respiratory failure OR evidence of marked inflammatory response: high CRP, D-dimer, LDH, ALT or ferritin.
    - All admitted patients being considered for repeat testing should be discussed with an ID physician on call.
    - As virus has been detected by RT-PCR testing applied to faecal and blood specimens, testing of specimens from multiple sites may improve sensitivity and reduce false-negative results.

- Viral cultures and serological tests have no utility in diagnosis and should not be requested.
  - A serology specimen should however be collected during the acute phase of illness (preferably within first 7 days of symptom onset), stored and when serology testing does become available, it can be tested in parallel with convalescent sera collected 3 or more weeks after acute infection.

- Routine tests for acute pneumonia/pneumonitis should be performed where indicated, including bacterial cultures, acute and convalescent serology, urinary antigen testing and nucleic acid tests for respiratory pathogens, according to local protocols.

- CT should not be used to screen for, or as a first-line test to diagnose, COVID-19. A normal chest CT does not mean a person does not have COVID-19 infection - and an abnormal CT is not specific for COVID-19 diagnosis. A normal CT should not dissuade a patient from being quarantined or provided other clinically indicated treatment when otherwise medically appropriate.

- CT should be used sparingly and reserved for symptomatic patients with specific clinical indications for CT. Appropriate infection control procedures should be followed before scanning subsequent patients.

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7 Wang W, Xu Y, Gao R, et al. Detection of SARS-CoV-2 in different types of clinical specimens. JAMA Published online March 11, 2020

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• Facilities may consider deploying portable radiography units in ambulatory care facilities for use when CXRs are considered medically necessary. The surfaces of these machines can be easily cleaned, avoiding the need to bring patients into radiography rooms.

Clinical management

On presentation patients with confirmed or suspected COVID-19 will fall into three broad categories:

• Patients with mild illness with no risk factors (ie <65 years of age and no co-morbidities) who are unlikely to deteriorate and who can be managed in home isolation.

• Patients with moderate illness or those with risk factors (age >65 years, co-morbidities) who are at moderate risk of deterioration and require daily home follow-up, some of whom will deteriorate and later require admission around day 5 to 9 of the illness.

• Patient with severe symptoms and signs who require immediate admission.

Recommendations

• Patients with severe illness should be admitted to a dedicated ward (or if necessary ICU) under full isolation precautions pending confirmation of testing for COVID-19.

• Patients with moderate illness or risk factors may need to be admitted to a dedicated ward with precautions if they are frail or have multiple co-morbidities or are deemed unable to safely self-isolate at home.
  ○ Alternatively, assess the patient’s suitability for hospital in the home service.

• Patients with mild illness and no risk factors should be sent home and requested to self-isolate.

• For admitted patients, refer to advance care plans and establish ceilings of care with patients and families early in the admission, and update acute resuscitation plans and MET criteria accordingly. MET calls and CPR carry very high risk of staff contamination and infection and should be avoided wherever clinically possible.
  ○ In having such discussions, take care in avoiding assumptions that a person’s chronological age necessarily equates with frailty or health status. Careful consideration must be given to co-morbidities, underlying frailty, quality of life and anticipated lifespan when determining appropriate management.

• Involve palliative care teams in identifying and supporting patients and family in need of specialist palliative care.

Therapeutic interventions

On the basis of a recent RCT that is yet to be peer-reviewed, consider using IV or oral dexamethasone 6 mg daily for up to 10 days in adults with COVID-19 who are receiving oxygen (including mechanically ventilated patients). This trial showed reduction in mortality among patients requiring oxygen from 24.6% to 21.6% (age-adjusted rate ratio, 0.83 [95%CI, 0.74-0.92]). The benefit was greatest in patients with symptoms for more than 7 days and patients who required mechanical ventilation.

Remdesivir has been used on a compassionate use basis. The first preliminary results of a RCT of adults hospitalized with COVID-19 and who had evidence of lower respiratory tract involvement indicated IV Remdesivir for up to 10 days decreased recovery time (discharge or hospital discharge) from 15 days to 11 days. A separate RCT of hospitalised patients not requiring mechanical ventilation

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reported that 5 days of treatment was not different than 10 days in terms of clinical status on day 14.\textsuperscript{10} In both trials remdesivir was administered more than 5 to 7 days into the symptomatic illness and some commentators have suggested earlier administration may confer greater benefit.

There are no other proven therapeutic interventions for COVID-19, and any experimental or re-purposed drugs should only be administered as part of a clinical trial. Trials of several anti-retroviral drugs and hydroxychloroquine are currently under way. (See following references for more information).\textsuperscript{11}

**Discharge criteria**

Determining when patients can be discharged from hospital or released from isolation in reducing risk of further transmission is uncertain as RT-PCR tests may take up to 5 to 6 days to become negative despite resolution of symptoms and signs. In some cases, RT-PCR tests remain positive on repeat testing. However, the need to free up beds for incoming cases requires discharge as soon as the patient no longer requires acute hospital care.

**Recommendations**

- Requests for troponin or BNP assays should only be performed if acute MI or heart failure are being considered as diagnoses on clinical grounds. Requesting such assays for prognostic purposes related solely to COVID-19 is not indicated.

- Management should consist of supportive care and oxygen supplementation when needed.

- Corticosteroids are not recommended (with the exception of patients receiving dexamethasone as above) unless indicated for other reasons (bronchospastic exacerbation of COPD).

- Do not prescribe hydroxychloroquine or anti-retroviral drugs unless such prescribing is part of a clinical trial.

- There is no evidence that ACE inhibitors, angiotensin receptor blockers or NSAIDs worsen the clinical course of COVID-19 so they should continue to be prescribed if indicated.

- In cases of secondary bacterial infection in at-risk patients with pre-existing chronic respiratory illness (ie increased amounts of purulent sputum), or in patients presenting with severe pneumonia, empirical antibiotic therapy and microbiological cultures are recommended according to current guidelines.

- Avoid overhydration in severely ill patients – indeed run them a little dry - as fluid overload may predispose to acute respiratory distress syndrome and need for ventilation.

- Older frail patients or those with advanced major organ failure or severe pre-existing respiratory disease are unlikely to do well with mechanical ventilation and should not be considered for admission to ICU. (Refer to the SGMCN guidance *Ethical decision-making during the COVID-19 pandemic*).

**Release from isolation**

The following information details the circumstances under which confirmed and probable cases can be released from isolation. Cases can be released from isolation if they meet the appropriate criteria in either point 1, 2, or 3 – whichever is applicable. Significantly immunocompromised cases can be released from isolation if they meet the appropriate criteria in point 1, 2, or 3 and the additional criterion in point 4.

- **Confirmed cases who are asymptomatic.**


The case can be released from isolation if at least 10 days have passed since the first respiratory specimen positive for SARS-CoV-2 by PCR was taken and no symptoms have developed during this period.

- **Confirmed or probable cases with mild illness who did not require hospitalisation.**

  The case can be released from isolation if they meet all of the following criteria:
  - at least 10 days have passed since the onset of symptoms; and
  - there has been resolution of all symptoms of the acute illness for the previous 72 hours

- **Confirmed or probable cases with more severe illness who have been in hospital.**

  a. **Confirmed and probable cases clinically ready for hospital discharge.**

     If the case is ready clinically for hospital discharge then they can be discharged to isolation at home or another facility.

     The case can be released from home isolation if they meet all of the following criteria:
     - at least 10 days have passed since hospital discharge; and
     - there has been resolution of all symptoms of the acute illness for the previous 72 hours

  b. **Confirmed and probable cases who will be remaining in hospital.**

     A case that remains in hospital can be released from isolation if they meet all the following criteria:
     - at least 10 days have passed since the onset of symptoms; and
     - there has been resolution of all symptoms of the acute illness for the previous 72 hours (see additional points below); and
     - the case has had two consecutive respiratory specimens negative for SARS-CoV-2 by PCR taken at least 24 hours apart at least 7 days from symptom onset.

- **Significantly immunocompromised persons.**

  In addition to meeting the appropriate criteria described in previous points, persons who are significantly immunocompromised and are identified as confirmed or probable cases must meet a higher standard requiring additional assessment. They can be released from isolation when they meet the following additional criterion:
  - PCR negative on at least two consecutive respiratory specimens collected at least 24 hours apart at least 7 days after symptom onset.

- **Additional points**

  1. Some people may have pre-existing illnesses with chronic respiratory signs or symptoms, such as chronic cough. For these people, the treating medical practitioner should make an assessment as to whether the signs and symptoms of COVID-19 have resolved.

  2. If individuals have a persistent post-viral cough with negative test results, they are eligible for release from isolation. If individuals with a persistent post-viral cough are persistently PCR positive, they can be managed as per note 4 below.

  3. If a case who meets these criteria is additionally swabbed and tests positive, then the
case can still be released from isolation based on current evidence from the literature and Australian public health experience that indicates these people are unlikely to be infectious.

4. In lieu of PCR negative test results, results with high cycle threshold (Ct) values may also be used to inform release from isolation for significantly immunocompromised persons, after discussion between the treating medical practitioner, the testing laboratory and public health. Viral culture, where available, may also be considered.

5. If the patient has a productive cough due to a pre-existing respiratory illness or other ongoing lower respiratory tract disease, then the sputum or other lower respiratory tract specimens must be PCR negative for SARS-CoV-2. Otherwise upper respiratory tract specimens (deep nasal and oropharyngeal swabs) must be PCR negative.

6. Routine PCR testing post-release from isolation is not recommended unless the person re-develops clinical features consistent with COVID-19. If there is recrudescence of symptoms, the person should be tested for SARS-CoV-2 and other relevant medical conditions and managed accordingly.

7. If a case is identified retrospectively through serology, clinical and public health judgment should be used in determining case management and whether or not a case requires isolation. If the case had a clinically compatible illness some time ago, it may not be necessary to isolate. If isolation is required, the case can be released from isolation when the appropriate criteria (above) is met.

8. Based on a review of current evidence, persons who fulfil the appropriate criteria above are not considered to be infectious. Cases returning to a high risk setting can be released from isolation based on the clinical criteria above and do not need to meet a higher standard or undergo additional assessment before going into any high-risk settings. This includes persons returning to work in a health care setting, living in a residential age care setting, or who regularly attend healthcare settings for any other reason. Note that for patients who are being transferred to another ward or hospital, they should remain in isolation with transmission-based precautions and appropriate PPE until the above criteria (point 3) is met.

9. People who have recovered from COVID-19 and have been released from isolation based on the criteria above do not require COVID-19 testing if they are hospitalised for a non-COVID-19 related condition.

10. Persons who have been released from isolation should adhere to hygiene and physical distancing measures, as the extent of acquired immunity is unknown. If a recently recovered COVID-19 case becomes a close contact of a confirmed or probable case, they do not need to self-quarantine again. However, the recovered case should not attend high-risk settings until 14 days after the last unprotected contact with the confirmed case and should self-monitor for symptoms clinically consistent with COVID-19. If symptoms reappear, they should immediately self-isolate and be retested for SARS-CoV-2. If the recently recovered case is a household contact of a currently isolated case, particular care should be taken with regards to consistent hand hygiene. If the recently recovered case needs medical attention, they should follow the processes outlined for quarantined individuals. When more evidence becomes available on the duration of immunity, these recommendations may be amended.

11. Faecal sampling is not recommended as a standard test, however, it may be done for patients with gastrointestinal symptoms. For cases who do have faecal samples tested, and remain persistently PCR positive in these samples after all the release from isolation criteria (above) are met, further or extended precautions and exclusions should be implemented on a case-by-case basis.
12. All cases with diarrhoea should be advised not to prepare food for others until 48 hours after symptoms have resolved.

13. Cases who are employed in a role where there is an increased risk of onward transmission (e.g. healthcare workers, restaurant workers and food handlers), should be excluded from work until 48 hours after any symptoms of diarrhoea have resolved.

14. Cases with ongoing diarrhoea or faecal incontinence who may have limited capacity to maintain standards of personal hygiene should be isolated until 48 hours after the resolution of these symptoms.

15. Patients do not require repeat testing until they are PCR negative in faecal samples. It is recommended that people who remain persistently PCR positive in faecal samples use soap and water for hand hygiene. If this is unavailable, alcohol hand gel should be used. Education emphasising the importance of proper hand hygiene should be provided to all cases upon release from isolation.

16. Some patients remain PCR positive for up to 14 to 20 days after resolution of symptoms and such tests are thought to represent detection of fragments of viral nucleic acid rather than viable virus. There is little evidence to suggest these patients remain infectious, they do not require a further period of isolation, and further PCR testing is not necessary.

17. Some patients who were PCR negative at discharge may become PCR positive again on subsequent testing, but there is no evidence that, in the absence of symptoms, this represents re-infection, and hence repeat PCR testing after previous negative PCR should not be performed in the absence of a clear clinical indication.

Preserving service capacity
Managing increasing numbers of older patients with COVID-19, together with the expected increase in hospitalisations due to direct or indirect effects of seasonal influenza and other respiratory viruses during the winter months, will place considerable strain on existing service capacity. Triage and resource allocation decisions need to be made fairly and transparently using the ethical decision-making framework produced by SGMCN (see separate guidance document).

Recommendations
Staff resources
- In minimising loss of workforce due to their contracting or being exposed to COVID-19 with subsequent need for self-isolation, instruct staff to practice good hygiene and physical distancing and receive annual influenza vaccinations.
- Minimise further loss of workforce by requesting staff not to take recreational or conference leave during winter months of June, July and August.
- Increase workforce capacity by enabling consultants and registrars who may develop respiratory or other infectious illnesses to work from home using remote access to iemr (in digital hospitals) or using skype, facetime, Zoom or other electronic media (in non-digital hospitals).
- Increase workforce capacity by allowing part-time or sessional consultants and registrars to work more hours and maximise full time equivalent capacity. Similarly, recruit recently conferred consultants, current research fellows, locum practitioners and others looking for work into temporary contracts.
  - Junior medical staff and final year medical students could also be up-promoted according to need and levels of competency.
  - Nursing and allied health may need up-skill and up-promote junior staff and students in similar fashion.
- As elective surgery will be significantly curtailed because of the need to cohort displaced non-COVID medical patients into surgical beds, nursing and allied health staff working in surgical
wards, operating theatres, day procedure units, and pre-admission clinics should be redeployed to medical wards (although some may be redeployed to private hospitals to continue elective surgery on public patients under contract).

- A certain amount of re-training and up-skilling in acute medical care may be required which may take time and be difficult to operationalise.
- The same considerations apply – even more so – to surgical and anaesthetic staff who may be under-employed.

- Criteria have been issued from Queensland Health as to which staff members are more vulnerable to becoming seriously ill of they were to contract COVID-19 and who should therefore be exempt from participating in direct care of patients with confirmed, probable and suspected COVID-19:
  - Aged 70 years and older
  - Aged 65 years and older with one or more chronic medical conditions (see below).
  - Aboriginal and Torres Strait Islander person who is 50 years and older with one or more chronic medical conditions (see below)
  - Significantly immunocompromised or taking immunosuppression therapy
  - Have a medical condition and their doctor has advised in writing (provided a medical certificate) that they are at an increased risk and require work adjustment.

**Chronic medical conditions are defined as:**
- chronic renal failure
- coronary heart disease or congestive heart failure
- chronic lung disease (severe asthma (for which frequent medical consultations or the use of multiple medications is required), cystic fibrosis, bronchiectasis, supplicative lung disease, chronic obstructive pulmonary disease, chronic emphysema)
- poorly controlled diabetes
- poorly controlled hypertension

**Outpatient clinics**
- Reduce outpatient clinics by:
  - deferring category 2 and 3 patients;
  - cancelling routine reviews where appropriate and redirecting patients back to their GP for review;
  - being selective in deciding which patients need to be brought back for clinic review after recent hospitalisation, and diverting patients, where appropriate, back to their GP for review.
  - substituting e-consultations with general practitioners where possible and teleconference (Skype, facetime, Zoom, Webex, Microsoft Teams, etc) or phone consultations with patients.

**Bed capacity**
- Free up as many medical beds as possible using the following strategies:
  - Identifying as many non-COVID-19 patients as possible who are eligible for discharge to Hospital in the Home services.
  - Reducing admissions of non-COVID-19 patients with chronic diseases who have a past history of frequent admissions (e.g. exacerbations of COPD or asthma, diabetes for stabilisation, recurrent heart failure).

- Such patients should be identified from hospital admission data at the local HHS level and nurse navigators and nurse practitioners within hospital- or community-based hospital avoidance or chronic disease management services mobilised to review such patients in the community and ensure they are receiving optimal management and home support.
• Patients’ usual general practitioners and community pharmacists should be notified of this intervention and asked to review such patients in optimising pharmacological and non-pharmacological management and vaccination status.
  o Requesting fast-track transfers of eligible patients to interim care beds and sub-acute rehabilitation or geriatric evaluation and management (GEM) beds. Bear in mind the capacity of geriatric rehabilitation services may become stretched due to increasing numbers of referrals of older COVID-19 survivors who have become deconditioned as a result of a prolonged illness, so eligibility criteria may need to more stringent.
  o Requesting fast-track ACAT assessments, QCAT hearings, and NDIS assessments and management plans.

• Accelerate uptake of advance care planning among older at-risk populations in hospital, community settings and RACFs so that advance care plans stipulate circumstances where hospitalisation or aggressive life-support interventions in hospital would constitute forms of futile and inhumane care and unnecessary use of hospital beds.
  o This requires increase in support and training documentation to clinicians working in hospital, general practice and RACFs, and recruitment of more ACP facilitators who can identify patients eligible for ACP and assist patients, families and clinicians in completing such plans.

Equipment and supply

• Stocktakes of current supplies of PPE, sanitisers, essential medicines and consumables, should be done centrally and distribution to individual facilities co-ordinated centrally based on current stock and anticipated need. Individual facilities should not be stockpiling these items as this will cause unnecessary interruptions to the supply chain.

• PPE needs to be conserved so limit to the absolute minimum the number of people involved in all clinical procedures to essential operators only, as determined by the specific procedure and infection control requirements. Re-use of PPE in low risk situations may be a better alternative than having no supply of PPE at all. Unnecessary use of PPE should be avoided, PPE training should use expired stock only, access to PPE should not be freely accessible to the public, and PPE should be appropriately rotated to avoid expired stock.
  o Consideration can be given to using alternative products:
    ▪ reusable gowns, including splash resistant gowns, are available in most hospitals and may be considered for use in certain areas that currently use single use items;
    ▪ the use of plastic aprons instead of long-sleeved disposable gowns where appropriate;
    ▪ the use of re-usable eye protection (eg goggles) instead of single use eye protection;
    ▪ the use of a full-face shield instead of a surgical mask for situations that are appropriate.

• Restrict single long supply dispensing of medications (regulation 42) to patients who are at high risk of major morbidity or death from contracting COVID-19 by attending hospital pharmacies - eg. immunosuppressed transplant or oncology patients.

• Continue to prescribe normal PBS supplies of medications (ie 4 weeks supply) to ensure equitable access to medicines. Individual facilities should consider delivery options that include contactless collection for high risk patients where feasible to preserve the supply chain of critical medicines.

• Check with central pharmacy and supply stores as to procurement and distribution procedures in the event that supply chains of PPE and medications (in particular) were to be disrupted or constrained and formulate criteria for prioritising their use.
Appendix 1. Resources consulted

Australian Department of Health


Queensland Health


World Health Organisation

https://www.who.int/westernpacific/emergencies/novel-coronavirus

CDC-USA:

Johns Hopkins Dashboard:
https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6
Appendix 2. Procedure for using PPE

Correct use of PPE
How to fit and remove personal protective equipment in the correct order

FIT IN THIS ORDER

1. Perform hand hygiene
2. Put on long sleeved fluid impervious gown
3. Put on appropriate mask i.e P2 (N95) or surgical mask
   – Refer to Quick Reference Infection Control Clinical Staff for decision on mask selection
4. Perform a fit check of the mask if wearing a P2 (N95)
5. Put on eyewear/face shield
6. Put on gloves

REMOVE IN THIS ORDER

1. Remove gloves
2. Perform hand hygiene
3. Remove gown
4. Perform hand hygiene
5. Remove protective eyewear/face shield
6. Perform hand hygiene
7. Remove Mask
8. Perform hand hygiene

For further information refer to your local Infection Control Unit.

VS Effective: 12:50pm, 13/03/2020

Queensland Government
Appendix 3. Facial hairstyles that may prevent close fitting masks