Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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EDITORIAL

CSANZ COVID-19 Cardiovascular Nursing Care Consensus Statement: Executive Summary☆

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The Cardiac Society of Australia and New Zealand (CSANZ) Joint Position Statement of the Cardiovascular and Interventional Nursing Councils: COVID-19 Cardiovascular Nursing Care was prepared by an expert cardiovascular nursing writing group, comprising members of the Cardiovascular Nursing Council and Interventional Nurses Council of CSANZ, originally published online at www.csanz.edu.au and subsequently in *Heart, Lung and Circulation* [1]. This Editorial is an invited executive summary of the key issues

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Table 1 Key issues relevant to cardiovascular nursing care.

1. Reduce/minimise transmission of SARS-CoV-2 virus. Always wear the appropriate PPE.
2. Patients with pre-existing cardiovascular disease have higher morbidity and mortality due to SARS-CoV-2 virus.
3. Acute cardiovascular manifestations of SARS-CoV-2 virus include myocarditis, heart failure, arrhythmias, and myocardial infarction.
4. Be aware of delays in seeking care and avoiding health care during the pandemic.
5. Medications that have been examined to treat SARS-CoV-2 virus may be associated with long QT and arrhythmias.
6. Where possible, transition to remotely provided care, and adapt models of care and protocols in alignment with current Federal and State government recommendations.
7. Providing patient self-care management education relevant to COVID-19.
8. Early conversations regarding advanced care planning and end-of-life care are especially important.
9. Practise self-care for yourself and support self-care of your colleagues.

Abbreviation: PPE, personal protective equipment.

relevant to cardiovascular nursing care in Australasia during the current COVID-19 global pandemic (Table 1).

1. **Reduce or Minimise Transmission to Health Care Workers and to Non-Infected Patients**
   The Coronavirus-19 disease (COVID-19) pandemic is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) [2]. Health care workers are at increased risk of infection [3,4]. All possible precautions to reduce the risk of transmission to health care workers should be taken at all times, and the appropriate personal protective equipment (PPE) should be accessible and applied at all times.
   Patients with pre-existing cardiovascular disease have a higher morbidity and mortality due to SARS-CoV-2 and precautions must be taken to avoid transmission to this at-risk population.
   Guidance should be taken from resources produced by the National COVID-19 Clinical Evidence Taskforce [5], Australian Federal Government PPE Guidelines [6], the Australian Commission on Safety and Quality in Health Care Guidelines [7], the Australian and New Zealand Intensive Care Society Coronavirus Guidelines [8], Australian [9] or New Zealand Resuscitation Guidelines [10] and COVID-19 recommendations by the International Liaison Committee on Resuscitation (ILCOR) [11], and the Australian College for Emergency Medicine [12].
2. **Patients With Pre-Existing Cardiovascular Disease Have Higher Morbidity and Mortality**
   Population groups with higher rates of pre-existing cardiovascular disease, such as Indigenous people, and those in rural and remote areas are at higher risk of poor outcomes [13]. Older people, including those in aged care settings are at high risk of poor outcomes [14]. These communities and the local health care system may experience a disproportionate burden of severe and fatal cases of COVID-19.
3. **Acute Cardiovascular Manifestations of COVID-19**
   Cardiovascular sequelae of SARS-CoV-2 infection, resulting in acute cardiac injury may present as left ventricular (LV) dysfunction, ventricular arrhythmias, electrocardiograph (ECG) changes, elevated B-type natriuretic peptide (BNP) and elevated troponin and other cardiovascular biomarkers. Detailed discussion of the cardiovascular sequelae of SARS-CoV-2 infection is provided in the Cardiovascular Disease and COVID-19: Australian/New Zealand consensus statement [15].
   The nursing implications are that SARS-CoV-2 infection patients with cardiovascular sequelae may not be referred appropriately and in a timely way to cardiac services. Nurses must ensure that SARS-CoV-2 infection patients with cardiovascular sequelae receive timely and evidence-based cardiac care and secondary prevention management.
4. **Delays in Seeking Treatment During the Pandemic**
   Pre-hospital and emergency department data highlights a significant decline in emergency presentations for cardiovascular emergencies, including myocardial infarction, chest pain and stroke [16]. Significant declines in the rates of ST elevation myocardial infarction (STEMI) have been reported along with increases in out of hospital cardiac arrests [17].
   There are justifiable concerns that there will be a surge of cardiovascular patients who have been tolerating increasing symptoms at home and will, over the coming months, present with complications of untreated coronary disease, heart failure, arrhythmias, valvular heart disease and stroke [17].
5. **Medications Examined to Treat COVID-19 May Be Associated With Long QT and Arrhythmias**
   Early in the COVID-19 pandemic, trials of hydroxychloroquine, azithromycin to treat COVID-19 were established [18]. These medications can cause cardiac toxicity, specifically QTc prolongation and Torsades de Pointes, especially in patients with hepatic or renal impairment [15]. In May 2020, the Australian Therapeutic Administration (TGA) updated its advice stating, "Based on the latest international data, use of hydroxychloroquine to treat COVID-19 is strongly discouraged,

including in hospitalised patients, unless the patient is enrolled in a clinical trial which will have safety monitoring protocols and oversight by a Human Research Ethics Committee" [19].

All nurses who provide care to patients with cardiovascular disease (CVD) play a critical role in this area by:

- Continuing to reduce anxiety about future cures for COVID-19 and setting realistic expectations
- Providing education about the danger of CVD patients using off label medications, and
- Continuing to reiterate the safe and quality use of medications, and always seeking expert advice from their nurse, pharmacist or doctor.

6. **Adapting to New Models and Protocols for Cardiovascular Care**

Acute Care – Cardiac Catheterisation Laboratory (CCL)

For guidance on CCL, please refer to the CSANZ Consensus Guidelines for Interventional Cardiology Services Delivery During COVID-19 Pandemic [20] and the full CSANZ Joint Position Statement of the Cardiovascular and Interventional Nursing Councils: COVID-19 Cardiovascular Nursing Care [1].

Delays in transferring patients to and from the CCL may occur. Clinical teams should take time to make appropriate decisions and to prepare for safe transfer. It is essential that the availability and preparation of the CCL and CCL team is confirmed prior to transfer.

Australian PPE Guidelines [6] advise that patients with STEMI are risk stratified as medium to high risk for COVID-19, and the appropriate PPE standards should be maintained to minimise staff risk.

According to the CSANZ Consensus Guidelines for Interventional Cardiology Services Delivery During the COVID-19 Pandemic in Australia and New Zealand [20], at times when the CCL is unavailable, thrombolysis may be considered as an alternative if clinically indicated.

Outpatient and community management

The principal aim of management is to maintain contact with patients to keep them stable, monitoring for any signs of deterioration and manage adjustments to their care remotely via phone contact or where available, telehealth systems [21].

Clinical guidelines for the prevention, detection, and management of heart failure in Australia (2018) support the use of telemonitoring and structured telephone support for people with heart failure [22]. Atrial fibrillation guidelines also support the use of telehealth, preferably and where possible, within an integrated care approach [23].

Successful implementation of remote outpatient and community management requires:

- Assessment of the patient's access and skills to utilise information communication technology, and tools to assist with remote monitoring of the patient's condition.
- Protocols to assist clinicians with their phone or telehealth consultations.
- Recording of accurate and comprehensive documentation following each call/telehealth consultation.
- Providing follow-up calls to reassure patients as well as to keep them engaged and motivated in order to maintain their self-management (i.e. following instructions/using technology).
- Investigating what options exist for general practitioners (GPs) or community health services to assist with monitoring patients, pathology, general medical and nursing assessment.
- Familiarising your team with options available to accommodate regular medications, such as medication titration and home delivery of prescriptions and home-based pathology collection.

Cardiac rehabilitation

The CSANZ Optimising Secondary Prevention and Cardiac Rehabilitation for Atherosclerotic Cardiovascular Disease During the COVID-19 Pandemic Position Statement also provides information and detail regarding managing secondary prevention care [24].

Telehealth-delivered cardiac rehabilitation effectively reduces cardiac readmissions, total cholesterol, low-density lipoprotein and smoking and does so just as effectively as face-to-face programs.

7. **Providing Patient Self-Care Management Education Relevant to COVID-19**

Important aspects of self-care management education during the COVID-19 pandemic comprise:

Education to avoid treatment delay

Provide reassurance to the patient at every encounter, including:

- The importance of following health advice and attending all scheduled appointments, pathology tests and medical investigations.
- Not to hesitate to call 000 (111 in New Zealand) in an emergency.
- That the health care system is well placed to deal with chest pain, arrhythmias, heart attacks and strokes (and all other medical emergencies) at this time, and that delaying seeking treatment may have severe and possibly fatal consequences.
- That the health care system has taken necessary precautions to minimise the risk of infection from COVID-19, and that accessing health care is safe.

Education to reduce the risk of infection

It is important to educate all cardiovascular patients, their families, and carers, about the importance of taking all possible steps to reduce the risk of infection of the patient with COVID-19:

- State and federal public health recommendations and advice should be strictly followed by the patient and all individuals who have contact with them. Follow and adhere to public health advice/orders regarding wearing of masks.
- Adhere to government advice regarding isolation and social distancing (especially maintaining 1.5m

physical distance). Avoid unnecessary contact with people other than those in your household.
- Wash hands thoroughly with soap and water for at least 20 seconds, frequently throughout the day, and especially after contact with potential sources of transmission. Soap and water and thorough washing is preferable to alcohol hand gels (which are suitable to use if soap and water are unavailable).
- Be aware of possible symptoms of COVID-19 (for patient and household members) and seek testing without delay and isolate at home whilst waiting for test results

Education to support and strengthen self-care management

- Self-care advice for cardiovascular patients during the COVID-19 pandemic is provided by the Heart Foundation in Australia (www.heartfoundation.org.au) and New Zealand (www.heartfoundation.org.nz).
- Organise flu vaccine early and, if recommended, pneumococcal vaccine.
- Ensure patient has access to adequate supply of regular medications and make arrangements for repeat prescriptions and delivery of medications.
- Ensure patient and carers/family are well informed regarding signs and symptoms of deterioration as well as how to self-monitor the patient's condition daily.
- Highlight the importance of adhering to a healthy diet to maintain health, avoid frailty and malnutrition. Assess the patient's plan for accessing healthy food and meal preparation and refer early to local meal delivery organisations when necessary, especially vulnerable patients who may be at risk of malnutrition.
- Advise patient to avoid alcohol and seek support if alcohol intake increases.
- Encourage smoking cessation for the patient and any household members. Smoking increases the risk of contracting COVID-19 and contributes to worse outcomes for people with COVID-19 [25]. Quitting smoking delivers health benefits in the short- and long-term. Refer the patient to Quitline 13 78 48 (AUS) or 0800 778 778 (NZ). The Cochrane Collaboration has curated a special collection of Cochrane Reviews on effective options for quitting smoking during the COVID-19 pandemic (www.cochrane.org).
- Provide support and information regarding mental health support. Individuals who are experiencing emotional distress can access psychology services through Medicare, when they have a GP care plan developed.
- Encourage patients to only seek advice from recognised health care professionals and high quality sources of information online (Heart Foundation and State and Federal public health websites, including Health Direct www.healthdirect.gov.au).

8. **End of Life Care, Palliative Care and Advance Care Planning**

COVID-19 highlights the urgent need for people with pre-existing CVD to have crucial end of life goals of care conversations with their partner and family, particularly in regards to the extent of the active, life-prolonging treatment they wish to receive, if clinically indicated (i.e. cardio-pulmonary resuscitation [CPR] and/or invasive or non-invasive ventilation).

Patients and their family may not be aware that hospitals are either restricting or not allowing visitors to hospitals for all patients, not just those hospitalised with COVID-19. This fact may have significant implications for the type of care that patients who are elevated risk of mortality wish to receive and this should be clearly communicated [26]. There are a number of helpful resources about initiating and documenting goals of care conversations on the COVID-19 CareSearch (www.caresearch.com.au).

9. **Self-Care for Nursing Staff**

- Follow local, state and federal advice and protocols regarding mask wearing when working in a clinical or health care setting or providing care in any setting. A higher level of PPE (N95 mask/P2 mask, goggles/eye protection, face shield, gown and gloves) should be adhered to when providing care to patients who are at risk of or potential/suspected/confirmed cases of COVID-19.
- Remember to always use appropriate PPE (including P2/N95 masks and face shields when appropriate): your health, safety and wellbeing is paramount. Ensure training and competency in putting on and removing PPE for yourself and colleagues. Removal of PPE presents a high risk of exposure and all caution must be taken to reduce risk of exposure when removing PPE.
- Follow and adhere to public health advice/orders regarding wearing a mask when out of the house.
- If unwell, don't attend your workplace. Get tested and isolate yourself until you receive your test result.
- Self-isolate if you are notified as a close contact of a case or are advised by your employer or public health official that you need to self-isolate.
- Organise flu vaccination for yourself and for your team.
- Report any possible COVID-19 symptoms you may experience at the first indication and follow your local health services' recommendations regarding testing and isolation.
- Discuss risk minimisation and working arrangements with your manager if you are a health care worker at high risk of complications from COVID-19.
- Take regular breaks, have a healthy balanced diet, and ensure adequate rest.
- Support your team and build positive relationships in your workplace.
- Seek support to maintain mental health, especially work stress, exhaustion, and anxiety.

- Reach out to your colleagues in other hospitals or professional bodies for support and information.

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