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EDITORIAL

# How to Manage Heart Failure: New Guidelines 2018

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*'Never let success get to your head, never let failure get to your heart' – Anon*

The best way to manage heart failure is to prevent it. This is a major theme of a new set of guidelines from the National Heart Foundation of Australia and the Cardiac Society of Australia and New Zealand (see Box 1 summary) [1]. It replaces the 2011 update of the National Heart Foundation of Australia/Cardiac Society of Australia and New Zealand (NHFA/CSANZ) *Guidelines for the prevention, detection and management of chronic heart failure in Australia* [2].

Box 1

Summary. Guidelines for the Prevention, Detection and Management of Heart Failure in Australia 2018 [1]. New guidelines for the prevention and care of people with heart failure were developed jointly by the National Heart Foundation of Australia and the Cardiac Society of Australia and New Zealand and released in August 2018 after extensive evidence review and consultation with stakeholders. These comprehensive guidelines address every aspect of this complex clinical syndrome. They will be a useful source of information on best practice management to assist health professionals engaged in care of people with heart failure.

Nevertheless, heart failure currently affects at least 38 million people worldwide [3]. Survival rates are poor and vary depending on the type of heart failure. Only 50% of patients diagnosed with chronic heart failure will be alive five years later [4,5]. Population-based estimates of heart failure prevalence in Australia are limited [6,7]. In 2014, it was estimated that there were almost a half million people aged 18 years or more with heart failure; 2.1% of the adult population [8]. Furthermore, more than one in 10 persons of age 75 years and over in developed countries are afflicted with heart failure. In 2015–16, there were 173,000 hospitalisations where heart failure and cardiomyopathy were recorded as the main or additional diagnosis, representing 1.6% of all hospitalisations in Australia. It was the primary diagnosis in almost 40% of hospitalisations for heart failure and cardiomyopathy. In 2012–13, $641.7 million was spent on patients admitted with heart failure [9].

Most people with heart failure have comorbidities. The burden of comorbidity increases with age and may exacerbate the disease process and clinical severity of heart failure, impact on outcomes and interfere with optimal heart failure treatment. Comorbidity is usually associated with a worse prognosis. Common comorbidities include hypertension, ischaemic heart disease, atrial fibrillation, diabetes, kidney disease, obesity, airways disease, gout, arthritis, depression, and anaemia. This presents a challenge to contemporary guideline writers focussing on a single clinical syndrome such as heart failure. It has been well met in the present edition which comprehensively addresses the complexity inherent in conditions predominantly affecting older people.

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What has happened since 2011 to warrant an extensive review of the evidence and a rewrite of the guidelines? Key areas are listed in Table 1.

There are new drug classes—sodium glucose transporter 2 (SLGT2) inhibitors and angiotensin receptor neprolysin inhibitors. The former is supported based on new evidence for prevention of heart failure in people with type 2 diabetes. The latter is an additional treatment option for patients with persistent heart failure associated with a reduced ejection fraction already on full dose best practice medications.

Angiotensin converting enzyme (ACE) inhibitors, beta blockers and mineralocorticoid receptor antagonists remain cornerstone therapies for people with heart failure and reduced left ventricular ejection fraction (HFrEF). Additional treatment options in selected patients with persistent HFrEF include switching the ACE inhibitor to an angiotensin receptor neprilysin inhibitor, ivabradine, implantable cardioverter defibrillators, cardiac resynchronisation therapy, and atrial fibrillation ablation.

**Table 1 What is new compared to the 2011 Guidelines?**

**Prevention:**
- SGLT2 inhibitors in diabetes associated with cardiovascular disease

**Diagnosis and classification:**
- Clearer classification of HF based on ejection fraction
- New diagnostic algorithm
- Role of CTCA, CMR, bone scintigraphy and genetic testing in workup

**Pharmacological management:**
- New HFrEF management algorithm
- Recommendations for angiotensin receptor neprilysin inhibitor use
- Recommendations for HF with recovered ejection fraction

**Non-pharmacological (multidisciplinary) management:**
- Telemonitoring/ telephone support; nurse-led medication titration
- Exercise
- Palliative care

**Evidence update for devices, surgery and percutaneous procedures:**
- AF ablation
- Percutaneous valve procedures
- Cardiac resynchronisation therapy
- Implantable cardioverter defibrillators

**New sections**
- ''Nutraceuticals''
- Cardiotoxicity

Abbreviations: AF, atrial fibrillation; HFrEF, heart failure and reduced left ventricular ejection fraction; CTCA, computed tomography coronary angiogram; CMR, cardiac magnetic resonance; SGLT2, sodium-glucose transporter 2.

However, the major therapeutic advances have been confined to the subset of people with heart failure and reduced systolic function (HFrEF). Recommendations for the remainder who have heart failure but preserved ejection fraction (HFpEF) are based on supportive and symptomatic treatment pending further advances in research.

The diagnosis of heart failure has always been fraught given it is a clinical syndrome with many underlying causes and variable symptomatology. The diagnosis remains clinically based and dyspnoea is the cardinal symptom. Dyspnoea has many other causes and the diagnosis of heart failure is generally made with support from other findings on clinical examination, chest X-ray or other investigations. Health professionals now have guidance on how measurement of B-natriuretic peptide can assist and improve diagnostic accuracy if echocardiography is not immediately available. The echocardiogram has been fundamental to the assessment of heart failure to define cardiac structure and function and has been recommended in all subjects with a putative diagnosis of heart failure for some time. It plays a particular role in distinguishing between HFpEF and HFrEF following clinical diagnosis. Patients diagnosed with heart failure should then be classified according to their left ventricular ejection fraction (LVEF). The writing group chose a 50% LVEF cut-off to differentiate between HFrEF and HFpEF mainly for therapeutic reasons. This differs from the most recent European guidelines which add a 'mid-range' EF (HFmrEF) category where LVEF is in the range 40–50% [10]. Athough HFrEF and HFpEF have different clinical features and pathophysiology, there is no clear defining syndrome recognised or postulated for HFmrEF. Furthermore, although variability in LVEF measurement by echocardiography is improving, the EF range of only 10% is too narrow to confidently ascribe a new and separate group with current diagnostic test accuracy.

It is also unclear how introducing an 'mid-range' category would inform clinical management. Indeed, post-hoc analyses of the small number of patients with heart failure associated with a 'mid-range' LVEF evaluated in controlled trials suggest they may receive similar benefits from blockade of the renin–angiotensin system [11], beta blockers [12] and mineralocorticoid receptor antagonists (MRAs) [13] to patients with heart failure associated with an LVEF of less than 40%.

Therefore, the guidelines recommend that, following a clinical diagnosis of heart failure, an LVEF of 50% or more is HFpEF and an LVEF of less than 50% is HFrEF. Management follows accordingly. Changing the LVEF cut-off for HFrEF within the heart failure population does not increase the number of people diagnosed with heart failure.

HFrEF, where the EF has improved to more than 50% with treatment (so-called recovered HFrEF), should generally be considered and treated like HFrEF as the underlying cause is not believed to have changed.

The guidelines recognise that management of heart failure has moved far beyond just pharmacotherapy. Multidisciplinary disease management programs, proven to reduce mortality and rehospitalisation, have a major place in contemporary care