

# The role of nurses in the multidisciplinary heart failure team: we are one but we are not the same

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In 1980 Eugene Braunwald defined heart failure (HF) as “a pathophysiological state in which an abnormality of cardiac function is responsible for the failure of the heart to pump blood at a rate commensurate with the requirements of the metabolising tissues”<sup>1</sup>. In 2021 Heart Failure Society of America, Heart Failure Association of the European Society of Cardiology, Japanese Heart Failure Society provided a first universal definition of HF as “a clinical syndrome with symptoms and/or signs caused by a structural and/or functional cardiac abnormality and corroborated by elevated natriuretic peptide levels and/or objective evidence of pulmonary or systemic congestion”<sup>2</sup>.

From a central pathophysiological viewpoint, HF represents a complex clinical syndrome resulting from structural and functional impairment of ventricular filling or ejection of blood that contribute to cause a chronically multi-systemic organ failure as consequence of both diffuse tissue hypoxia and hyper-compensatory activation of the sympathetic nervous system and the renin-angiotensin-aldosterone system (referred to as 'neurohormonal activation') that, although in the short-term restore cardiovascular homeostasis, chronically produce deleterious effects on the circulation and the myocardium<sup>3</sup>.

The global incidence and prevalence of HF have reached epidemic proportions and the overall prevalence of HF is increasing as primarily consequence of more effective therapies of myocardial infarction that allow patients to reach a longer life expectancy. The prevalence of symptomatic HF, in the general population of both

Europe and United States, ranges from 0.4% to 2%, rising exponentially with age and affecting 4% to 8% subjects over 65 years old<sup>4</sup>.

Although the progressively increase in HF prevalence, nowadays quadruple therapy with angiotensin receptor-neprilysin inhibitor (ARNI), beta-blockers, mineralocorticoid receptor antagonist, and sodium-glucose cotransporter 2 (SGLT2) inhibitors have dramatically improved the prognosis of HF patients, extending life-expectancy by 7.9 years in a 50-year-old and by 5.0 years in a 70-year-old patient<sup>5</sup>. As a consequence of the extraordinary results obtained with optimized pharmacological therapy, there are both the illusion and the risk that the management of this complex disease may be exclusively limited to the prescription of life-saving drugs, thereby transforming HF centres into mere prescribing clinics. However, the complexity in the management of patients with HF requires an effort beyond pharmacological prescription and requires integrated work between different professional figures in which nurses play a central role in management and monitoring this chronic and degenerative disease with high instability rate.

In fact, collaborative working between various professions is known to help patient care and improve outcomes as part of a patient-centred approach. HF optimal management requires diverse range of professionals, including physicians, nurses, paramedics, radiographers, echocardiographers, physiotherapists, exercise physiologists, dietitians and psychologists. Moreover, in order to achieve a high-quality

care at all stages of the HF treatment, shared decision making is crucial between healthcare professionals, patients and their families.

Within this multidisciplinary HF team, nurses are crucial in recognize triggers for clinical deterioration, assess and monitor HF symptoms and signs, manage the effective use of pharmacological and device therapies, recognize the importance of co-morbidity, identify the need of strategies in the management of advanced HF, such as mechanical circulatory support and heart transplantation. Moreover, nurses play a key role offering different “transversal” supports, beyond their merely healthcare skills, such as: medical education, provide self-care and lifestyle advice (including diet, exercise and travel), and coordinate and provide care at the end of life to the patient and their family (central figure). Nurses provide a wide range of services, including providing care across different setting (inpatient, outpatient, community care, the home and remotely), organising care services in both face-to-face and the remote evaluation. To support such advances the nurse requires a skill set that goes beyond their initial education and training, for that reasons European Society of Cardiology (ESC) in 2016 proposed an HF nurse curriculum aimed to facilitate nursing staff to play a central role within the HF team<sup>6</sup>. Figure 1 (adapted from Riley et al.) shows objectives, professional behaviours, knowledge and skills proposed by ESC for HF nurse curriculum that nowadays represent the “ten commandments” in the training of nurses specialized in the management of patients with HF.

Even scientific evidences support the high prognostic impact of nurse in HF management. In fact, high specialized nurse-driven interventions have been shown to improve the prognosis of patients with heart failure. In fact, a network meta-analysis including 53 randomized trials published in 2017, concluded that both disease-management clinics and home visits by nurses reduced all-cause mortality compared to usual care; home visits being most effective<sup>7</sup>. Moreover, the results of a meta-analysis including nineteen randomized controlled trials demonstrated the beneficial effects of nurse-driven pre-discharge interventions with a mean of 32% reduction of relative risk of HF re-admissions<sup>8</sup>.

In conclusion, nurses play a multifaceted and pivotal role in managing patients with HF, their contributions encompass assessment, education, symptom management, and psycho-social support.

Teamwork with cardiologists and other healthcare professionals, combined with the integration of e-Health and telemedicine technologies, ensures a comprehensive and coordinated approach to HF management. Every team that treats and monitors patients with HF should invest in training highly specialized nurses since their contribution significantly improve outcomes and patient well-being. Taken together the above-mentioned considerations, a close collaboration between cardiologist and nurse is necessary to provide the optimal management of the complexity of HF, since, paraphrasing the words of a famous U2 song, “we are one, but we are not the same; we have to carry each other!”.

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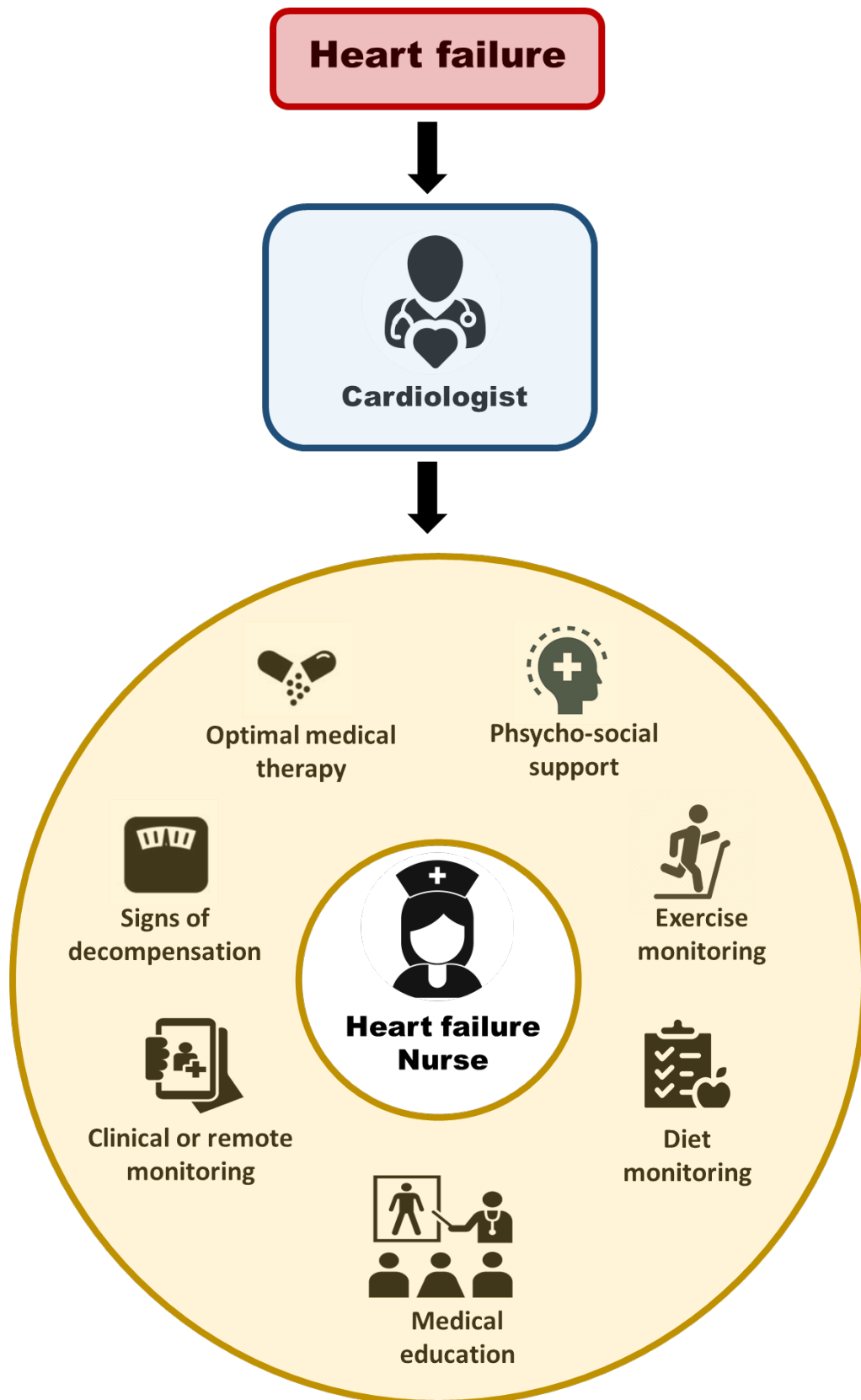


Figure 1.

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