



## PERSPECTIVES IN CARDIOLOGY

# Heart failure in numbers: Estimates for the 21st century in Portugal<sup>☆</sup>

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### KEYWORDS

Heart failure;  
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### Abstract

**Introduction and Objective:** Heart failure is a major public health problem that affects a large number of individuals and is associated with high mortality and morbidity. This study aims to estimate the probable scenario for HF prevalence and its consequences in the short-, medium- and long-term in Portugal.

**Methods:** This assessment is based on the EPICA (Epidemiology of Heart Failure and Learning) project, which was designed to estimate the prevalence of chronic heart failure in mainland Portugal in 1998. Estimates of heart failure prevalence were performed for individuals aged over 25 years, distributed by age group and gender, based on data from the 2011 Census by Statistics Portugal.

**Results:** The expected demographic changes, particularly the marked aging of the population, mean that a large number of Portuguese will likely be affected by this syndrome. Assuming that current clinical practices are maintained, the prevalence of heart failure in mainland Portugal will increase by 30% by 2035 and by 33% by 2060, compared to 2011, resulting in 479 921 and 494 191 affected individuals, respectively.

**Conclusions:** In addition to the large number of heart failure patients expected, it is estimated that the hospitalizations and mortality associated with this syndrome will significantly increase its economic impact. Therefore, it is extremely important to raise awareness of this syndrome, as this will favor diagnosis and early referral of patients, facilitating better management of heart failure and helping to decrease the burden it imposes on Portugal.

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**PALAVRAS-CHAVE**

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Século XXI;  
Portugal

**Insuficiência cardíaca em números: estimativas para o século XXI em Portugal****Resumo**

**Introdução e objetivos:** A insuficiência cardíaca é um problema grave de saúde pública que atinge um elevado número de indivíduos e está associada a mortalidade e morbidade elevadas. O presente estudo tem como objetivo estimar o cenário provável no que respeita à prevalência de IC em Portugal e respetivas consequências a curto, médio e longo prazo.

**Métodos:** A presente avaliação tem por base o projeto EPICA (EPidemiologia da Insuficiência Cardíaca e Aprendizagem) desenhado para obter estimativas de prevalência de insuficiência cardíaca crónica em Portugal continental, em 1998. Foram feitas estimativas de prevalência de insuficiência cardíaca, para indivíduos com idade superior a 25 anos, distribuídos por faixa etária e por sexo, recorreu-se aos dados do Censo 2011, desenvolvido pelo Instituto Nacional de Estatística.

**Resultados:** Baseados nas alterações demográficas esperadas, associadas a um envelhecimento marcado da população, iremos encontrar um número muito elevado de portugueses afetados por essa síndrome. Assumindo a manutenção das práticas clínicas atuais, estima-se que a prevalência de insuficiência cardíaca em Portugal continental aumente em cerca de 30% em 2035 e 33% em 2060, relativamente a 2011, com um número de 479 921 e 494 191 indivíduos afetados para 2035 e 2060, respetivamente.

**Conclusões:** Para além do elevado número de doentes esperado, estima-se que as hospitalizações e a mortalidade associadas à síndrome aumentem significativamente o impacto económico da IC. Nesse sentido, revela-se de extrema importância a consciencialização para a síndrome, o que facilitará o diagnóstico, a referenciamento precoce de doentes e uma melhor gestão da insuficiência cardíaca, diminuindo o peso da doença em Portugal.

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## Introduction

Heart failure (HF) is a serious public health problem that, despite advances in both pharmacological and non-pharmacological treatment and in the management of the condition, affects a significant number of people and is associated with high mortality and morbidity.<sup>1,2</sup> It is a clinical syndrome characterized by symptoms and signs caused by objective cardiac dysfunction.<sup>1</sup>

The main risk factors predisposing to HF among the general population include coronary artery disease, hypertension, hypercholesterolemia, diabetes, smoking and obesity.<sup>3</sup> The presence of multiple comorbidities is one of the main determinants of both prognosis and quality of life.<sup>4–6</sup>

Several studies have been published on the prevalence of HF. However, due to differences in populations and in the criteria used for both defining and diagnosing HF, the results obtained are divergent and there is a lack of agreement on estimates of prevalence and incidence of the syndrome.<sup>1,4</sup>

Nevertheless, the prevalence of HF in developed countries is estimated to be around 2% in the adult population, and the incidence data suggest that HF affects 5–10 people in every 1000 per year. Various studies have indicated that both frequency measures rise with advancing age.<sup>2,5</sup> In Portugal, the EPICA (Epidemiology of Heart Failure and Learning)

study suggested that the overall prevalence of chronic HF in the adult population was 4.36%, reaching 12.67% in those aged 70–79 years and 16.14% in those aged 80 and over.<sup>5</sup> The syndrome has a significant economic impact; in developed countries, the direct costs of HF account for about 2% of total healthcare budgets.<sup>3</sup> Globally, it is estimated that this figure amounted to 102 billion euros in 2012, in a sample that included 92.4% of all countries and 98.7% of the world's population at the time.<sup>7</sup>

With the aging of the Portuguese population, together with the increased survival of patients with coronary artery disease, the impact of the syndrome is expected to increase substantially.<sup>8</sup> This publication aims to assess and forecast the most likely prevalence scenario and the associated consequences if no measures are taken to reduce the impact of the syndrome in the coming years.

## Methods

### Terminology and study population

This assessment is based on the EPICA study,<sup>5</sup> data from the 2011 census and population projections for 2018, 2035, 2060 and 2080, using data from Statistics Portugal (INE, the National Institute of Statistics).

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