HEART FAILURE

With EJECTION FRACTION >40%

Improving Management

of HFpEF and HFmrEF

HFmrEF, heart failure with mid-range ejection fraction; HFpEF, heart failure with preserved ejection fraction.

Heart failure with preserved ejection fraction is an increasingly prevalent condition with alarming morbidity and mortality rates

Yet proven treatment options are limited, making HFpEF a growing population health concern[1-3]

In the United States, **~50% of patients die within 5 years** of HF diagnosis[4]

Incidence rates are increasing, with HFpEF making up more than half of all HF cases[1,5]

Among US patients with HF[5]*:

- **36%** have **HFrEF**
- **8%** have **HFmrEF**
- **57%** have **HFpEF**

According to data from the Framingham Heart Study[1]:

- **HFpEF** Incidence increased **37%**
- WHILE
- **HFrEF** Incidence decreased **30%**

over a 30-year period†

HFpEF incidence rates are outpacing those of HFrEF due to[6]:

- **Increased life expectancy**
- **Epidemic of cardiac and non-cardiac comorbidities**
- **Increased clinical recognition of HFpEF**

HFpEF disproportionately impacts women and the elderly[7,8]

Women outnumber men by a ratio of ~2:1‡ and a majority of patients are **>65 years of age**[7,8]

DESPITE A NOTABLE RISE IN ITS PREVALENCE OVER TIME

There are fewer guideline-directed medical therapies for HFpEF, with most recommendations currently in classes 2a and 2b[3]

*According to a large observational analysis of data collected from 2008 to 2016 by the Veradigm Cardiology Registry® (formerly the ACC's NCDR PINNACLE Registry®). Percentages total greater than 100% due to rounding.[5]

†HF prevalence data for 894 outpatients with new onset HF from the community-based Framingham Study over 3 decades (1985-2014). LVEF categories were defined as HFrEF (EF <40%), HFmrEF (EF 40-<50%), and HFpEF (EF ≥50%).[1]

‡Based on a community surveillance study of 2,762 incident HF cases between 2000 and 2010 in the population of Olmsted County, Minnesota. HFrEF was defined by an EF <50% and HFpEF was defined by an EF ≥50%. EF data were missing in 21.6% of cases. Among patients with available EF measurement, 1,089 had HFpEF, with women accounting for 701 HFpEF cases and men accounting for 388 HFpEF cases across the 10-year study period.[7]

ACC, American College of Cardiology; EF, ejection fraction; HF, heart failure; HFrEF, heart failure with reduced ejection fraction; LVEF, left ventricular ejection fraction; NCDR, National Cardiovascular Data Registry.

HFpEF is associated with a staggering economic burden, driven by high rates of hospitalizations, readmissions, and deaths

Patients with HFpEF have high rates of hospitalizations — the largest driver of medical costs[2,9-12]

Annually, among US patients with HF as a primary diagnosis, there are[9]:

~1.1 million
ED visits

980,000
Hospitalizations

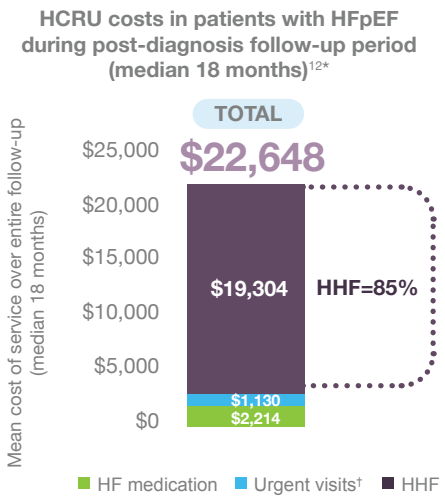
84,000
Deaths

Hospitalizations for heart failure (HHF) comprise the largest component of direct medical costs associated with HF[11]

$11B
Estimated annual costs for **HHF** in the US

$7,860 to $10,551
Mean cost per **HHF** among patients with **HFpEF**

HHF comprised 85% of HCRU in patients with HFpEF[12]



Patients hospitalized with HFpEF have high rates of readmission and death[2]

20%
readmitted within 30 days of hospital discharge[2]

>50%
readmitted within 1 year of hospital discharge[2]

35%
5-year survival rate post HHF[2]

Without additional interventions to treat HFpEF, medical costs associated with this condition are expected to increase by >70% by 2030[13‡]

*According to a 2021 retrospective, claims-based study. Patients were indexed on date of first/earliest claim with a HF diagnosis code. Variable follow-up extended from indexing until the earliest loss of medical/pharmacy eligibility or end of study period, ranging from 0 to 71 months.[12]
†Urgent HF visits were defined as emergency department visits with HF as the primary diagnosis.[12]
‡Percentage increase calculated based on projected increase in medical costs for HF in the United States from 2020 to 2030.[13]

ED, emergency department; HCRU, health care resource utilization.

Limited clinically proven treatment options and underutilization of GDMT underscore a critical need for improved management of HFpEF and HFmrEF

Current guideline-recommended treatment options for both HFmrEF and HFpEF are limited—particularly among Class I options[3]

AHA/ACC/HFSA guidelines: Recommendations for chronic HF (2022)

Drug type	HFrEF (EF ≤40%)	HFmrEF (EF 41%-49%)	HFpEF (EF ≥50%)
Diuretics	Class I (as needed)	Class I (as needed)	Class I (as needed)
SGLT2i	Class I	Class IIa	Class IIa
ARNi/ARB	Class I	Class IIb	Class IIb*
ACEi	Class I	Class IIb	
MRA	Class I	Class IIb	Class IIb*
BB	Class I	Class IIb	

Class I (strong) Class IIa Class IIb (weak)

GDMT in the HFpEF real-world patient population is underutilized, particularly as compared with HFrEF[14]

Real-World Utilization of Guideline-Directed Medical Therapies[14†]

	Diuretics	SGLT2i	ARNi/ARB	ACEi	MRA	BB	No GDMT
For patients with HFrEF:	59%	25%	48%	23%	30%	80%	3%
For patients with HFpEF:	65%	13%	33%	N/A‡	15%	N/A‡	21%

Class I (strong) Class IIa (moderate) Class IIb (weak)

Optimized implementation of GDMT and a multimodal therapeutic approach may improve outcomes in HFpEF[14]

*Greater benefit in patients with LVEF closer to 50%.
†Utilization data from January 2023 to December 2023.
‡Not recommended for use in HFpEF in the 2022 AHA/ACC/HFSA Heart Failure Guideline.[3]

ACEi, angiotensin-converting enzyme inhibitor; ARB, angiotensin receptor blocker; ARNi, angiotensin receptor-neprilysin inhibitor; BB, beta blocker; GDMT, guideline-directed medical therapy; HFSA, Heart Failure Society of America; MRA, mineralocorticoid receptor antagonist; SGLT2i, sodium-glucose cotransporter 2 inhibitor.

HFpEF poses a high clinical and economic burden but has limited treatment options, resulting in an urgent unmet need

Recent data suggest escalating prevalence and alarming morbidity and mortality rates in HFpEF[1,2]

This immense clinical burden is resulting in high healthcare costs, which are predominately generated by hospitalizations[10]

As there are limited clinically proven options to treat HFpEF, additional treatment options are essential to stem the rising hospitalization rates and associated costs[3,10]

There is a key opportunity to improve outcomes in patients with HFpEF via a multimodal treatment regimen with GDMT[14]

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