HFSTATS SHEET

Current Use of and Effect of Guideline Directed Therapies in Outcomes

HFSTATS℠
HEART FAILURE SOCIETY OF AMERICA
ANNUAL REPORT

Table 1: Magnitude of Benefit of GDMT Demonstrated in Randomized Controlled Trials[1]

GDMT	RR Reduction in Mortality (%)	2 Year Mortality (%)	NNT for Mortality Reduction (Standardized to 36 mo)	RR Reduction in HF Hospitalization (%)
None	–	35	–	–
ARNi*	16	25	27	21
ACE inhibitor or ARB	17		26	31
Beta Blocker	35	16	9	41
MRA	30	12	6	35
SGLT2i	17	10	22	31

*Data for ARNi for substitution of ARNi for ACE inhibitor (or ARB).

ACEi = angiotensin-converting enzyme inhibitor; ARB = angiotensin receptor blocker; ARNi = angiotensin receptor - neprilysin inhibitor; GDMT: guideline directed medical therapy; MRA = mineralocorticoid receptor antagonists; NNT = number needed to treat; RR reduction = relative risk reduction; SGLT2I = Sodium-Glucose Cotransporter 2 Inhibitors

J Card Fail. 2023; 29 P1412-1415.

Table 2: Current Use of Guideline Directed Medical Therapy[3,4]

	GDMT							
	ACE/ARB/ ARNi	ARNi	ACEi/ ARB	ACEi	ARB	Beta Blocker	MRA	SGLT2i
Percentage of Patients on Treatment								
EVOLUTION-HF 2023		73%		55%	62%	75%	58%	77%
CHAMP-HF 2018	72%	13%	60%			67%	33%	
PINNACLE 2020	78%	9%		55%	28%	75%		
QUALIFY 2016				66%	22%	87%	69%	
ESC-HF 2013			92%	71%	24%	93%	67%	
BIOSTAT-CHF 2017			85%			90%		
Savarese et al. 2021		73%		45%	67%	76%	60%	
Percentage at ≥50% Target								
EVOLUTION-HF 2023		27%		18%	9%	24%	53%	
CHAMP-HF 2017		40%	44%	40%		54%	98%	
BIOSTAT-CHF 2017			53%			40%		
QUALIFY 2016				63%	40%	52%	99%	
Savarese et al. 2021		53%		28%	19%	30%	60%	
Percentage at Target								
EVOLUTION-HF 2023		28%		20%	7%	7%	5%	76%
CHAMP-HF 2017	17%	14%	18%			28%	77%	
QUALIFY 2016				28%	7%	15%	71%	
ESC-HF 2013				29%	24%	18%	31%	
BIOSTAT-CHF 2017			22%	27%	20%	12%		
Savarese et al. 2021		30%		15%	10%	12%	60%	

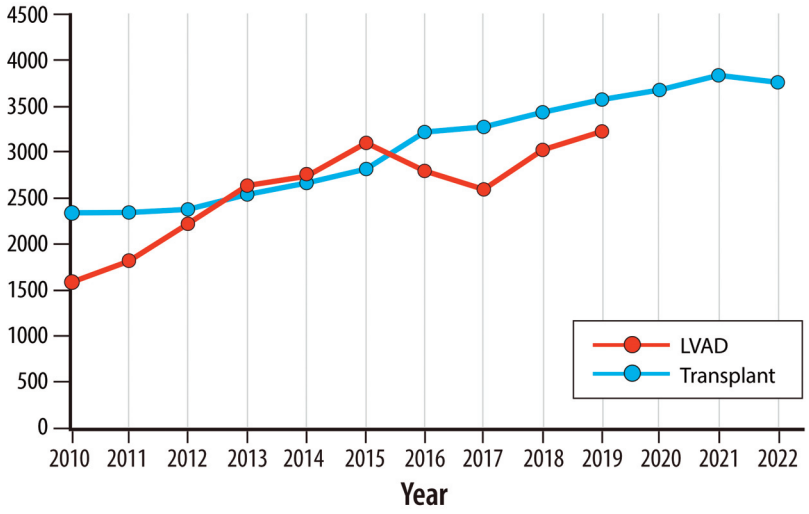
ACEi = angiotensin-converting enzyme inhibitor; ARB = angiotensin receptor blocker; ARNi = angiotensin receptor - neprilysin inhibitor; BIOSTAT CHF = A Systems Biology Study to Tailored Treatment in Chronic Heart Failure; CHAMP HF = Change the Management of Patients with Heart Failure; ESC – HF = European Society of Cardiology. Heart Failure; EVOLUTION HF = Utilization of Dapagliflozin and Other Guideline Directed Medical Therapies in Heart Failure Patients: A Multinational Observational Study Based on Secondary Data; MRA = mineralocorticoid receptor antagonists; PINNICLE HF = Practice Innovation and Clinical Excellence Registry; QUALIFY = Quality of Adherence to Guideline Recommendations for Life-Saving Treatment in Heart Failure Survey; SGLT2i = Sodium-Glucose Cotransporter 2 Inhibitors

J Card Fail. 2023; 29 P1412-1415.

- Without guideline-directed medical therapy (GDMT), the 2-year mortality rate of patients with HFrEF is estimated at 35%.[1]
- The magnitude of benefit of GDMT as demonstrated in randomized controlled trials is shown in Table 1.[2]
- Current use of GDMT in patients with HFrEF remains suboptimal, with only a low percentage of patients being treated with all the indicated medical therapies at target or maximally tolerated doses (Table 2).[3,4]
- Similarly, only 10%–12% of eligible patients receive implantable cardioverter-defibrillators or cardiac resynchronization therapy. It has been estimated that if there were optimal implementation of GDMT, an additional 100,000 deaths per year could be prevented in the US.[2]
- Despite the high prevalence of HF among Black and Hispanic populations, patients of color are frequently underprescribed GDMT.[5,6] Contributing factors to expanding gaps in health equity are:[5,7]
  - — Clinical inertia
  - — Financial toxicity
  - — Under-representation of minoritized patients in clinical trials
  - — Nontrustworthy medical systems
  - — Bias and structural racism
- Black and Hispanic patients are less likely to receive implantable cardioverter-defibrillators or cardiac resynchronization therapy than White patients.[8,9]
- Diagnostic and therapeutic approaches for structural cardiac disease and valvular heart disease are also not equitable across different races, ethnicities, and sex.[10]

- **Although there have been increases in the use of advanced therapies including durable mechanical circulatory support and cardiac transplantation (Fig. 1), and other recommended therapies such as structural interventions, the use of these therapies in indicated patients remains low.**

Figure 1: LVAD and Heart Transplant Volumes, 2010-2022



LVAD = left ventricular assist device. *J Card Fail.* 2023; 29 P1412-1415.

- **There are significant disparities and health inequities in access to and use of these advanced therapies. Women, Black, and Hispanic patients have lower rates of use of advanced therapies despite evidence of indications and benefit.**
- **Black individuals are receiving heart transplants at rates that are disproportionately lower than patients of other racial groups, particularly in the context of their higher mortality rate from HF.**
- **The overall ratio of receipt of heart transplant compared with HF mortality rate is lower in Black vs White populations and similar in Hispanic vs White populations.[11]**
- **Among states most populated with Black and Hispanic residents, the ratio of receipt of heart transplant compared with HF mortality is lower for Black vs White populations and Hispanic vs White populations.[11]**

References:

1. Yancy CW, Jessup M, Bozkurt B, Butler J, Casey DE, Drazner MH, et al. 2013 ACCF/AHA guideline for the management of heart failure: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol* 2013;62:e147–239.
2. Fonarow GC, Yancy CW, Hernandez AF, Peterson ED, Spertus JA, Heidenreich PA. Potential impact of optimal implementation of evidence-based heart failure therapies on mortality. *Am Heart J* 2011;161:1024–30.e3.
3. Savarese G, Kishi T, Vardeny O, Adamsson Eryd S, Bodega rd J, Lund LH, et al. Heart failure drug treatment-inertia, titration, and discontinuation: a multi-national observational study (EVOLUTION HF). *JACC Heart Fail* 2023;11:1–14.
4. Brownell NK, Ziaeian B, Fonarow GC. The gap to fill: rationale for rapid initiation and optimal titration of comprehensive disease-modifying medical therapy for heart failure with reduced ejection fraction. *Card Fail Rev* 2021;7:e18.
5. Ilonze O, Free K, Breathett K. Unequitable heart failure therapy for Black, Hispanic and American-Indian patients. *Card Fail Rev* 2022;8:e25.
6. Parwani P, Yancy CW. Sociodemographic disparities in the GDMT usage. *JACC Heart Fail* 2023;11:173–5.
7. Sukumar S, Wasfy JH, Januzzi JL, Peppercorn J, Chino F, Warraich HJ. Financial toxicity of medical management of heart failure: JACC review topic of the week. *J Am Coll Cardiol* 2023;81:2043–55.
8. Mwansa H, Barry I, Knapp SM, Mazimba S, Calhoun E, Sweitzer NK, et al. Association between the Affordable Care Act Medicaid expansion and receipt of cardiac resynchronization therapy by race and ethnicity. *J Am Heart Assoc* 2022;11:e026766.
9. Farmer SA, Kirkpatrick JN, Heidenreich PA, Curtis JP, Wang Y, Groeneveld PW. Ethnic and racial disparities in cardiac resynchronization therapy. *Heart Rhythm* 2009;6:325–31.
10. Ilonze O, Free K, Shinnerl A, Lewsey S, Breathett K. Racial, ethnic, and gender disparities in valvular heart failure management. *Heart Fail Clin* 2023;19:379–90.
11. Breathett K, Knapp SM, Carnes M, Calhoun E, Sweitzer NK. Imbalance in heart transplant to heart failure mortality ratio among African American, Hispanic, and White patients. *Circulation* 2021;143:2412–4.

All information, including graphics, tables, and text in this fact sheet are from the report published in the *Journal of Cardiac Failure*, and should be referenced as follows: *J Card Fail*. 2023; 29 P1412-1451

HFSA
HEART FAILURE SOCIETY OF AMERICA

For more information visit https://hfsa.org/hf-stats