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At The Forefront of Care for Patients with Worsening Heart Failure:

New and Emerging Treatment Options

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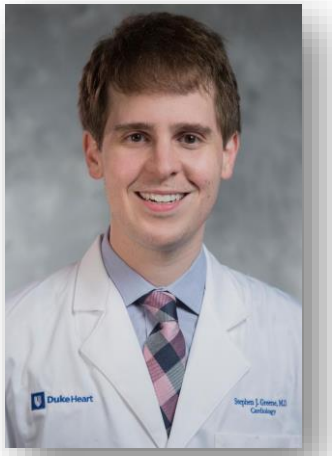
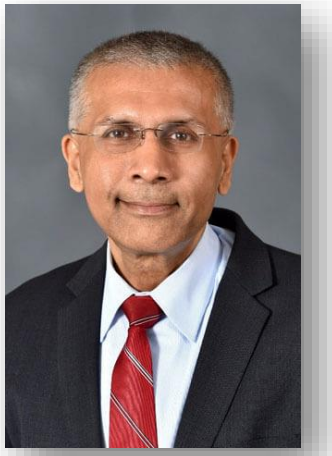
Faculty

Ileana L. Piña, MD, MPH, FAHA, FACC, FHFSA



Stephen J. Greene, MD

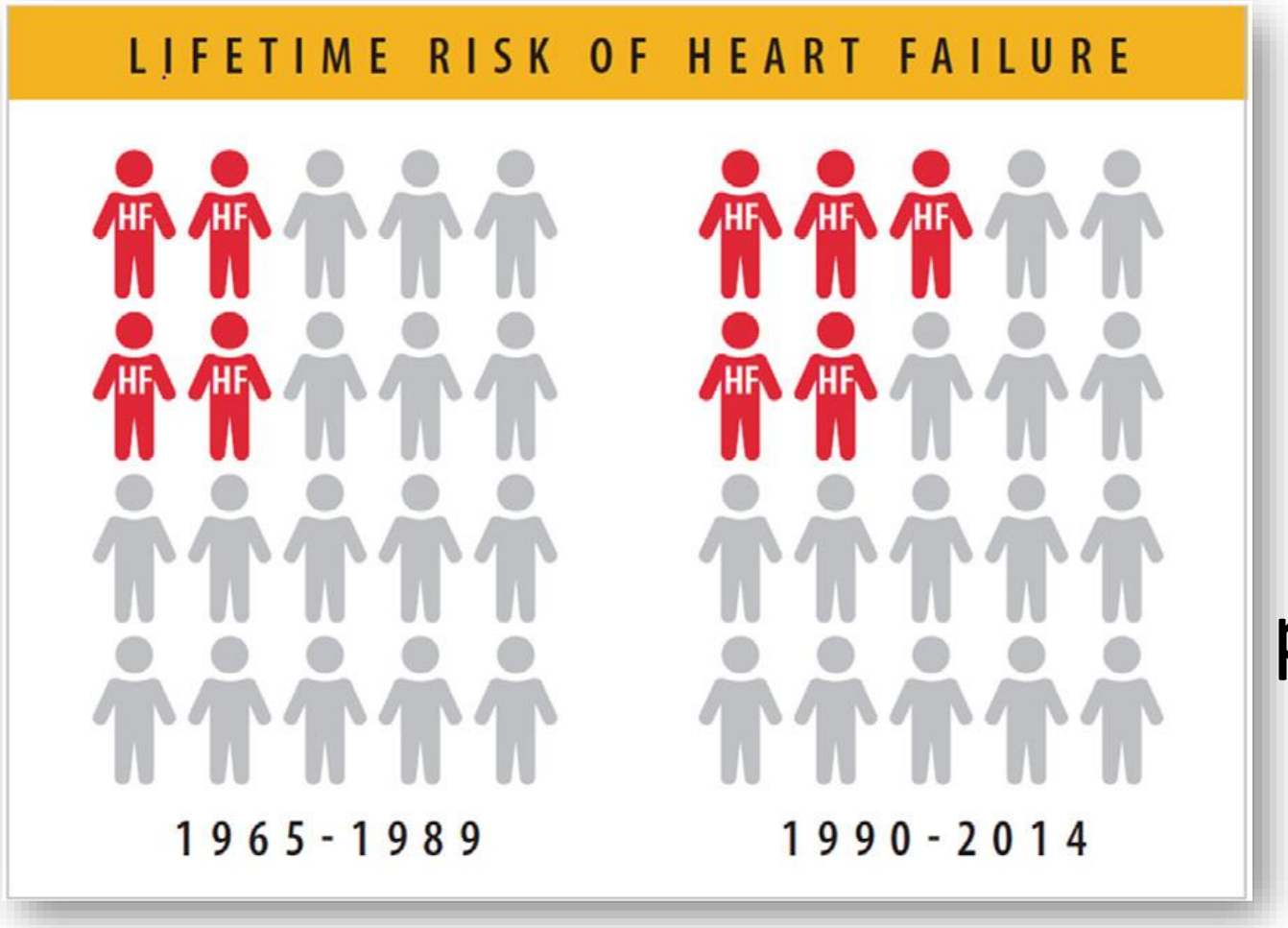


Javed Butler, MD, MPH, MBA

The Continuum of Risk in HF: Current State and Ongoing Gaps

Ileana L. Piña, MD, MPH, FAHA, FACC, FHFSA
The Robert Stein Chair of Quality
Professor of Medicine
Thomas Jefferson University
Chief Quality Officer
Senior Staff Fellow: Medical Officer
FDA, CDRH

Lifetime Risk



Lifetime risk of HF has increased to 24%

Approximately **1 in 4** persons will develop HF in their lifetime

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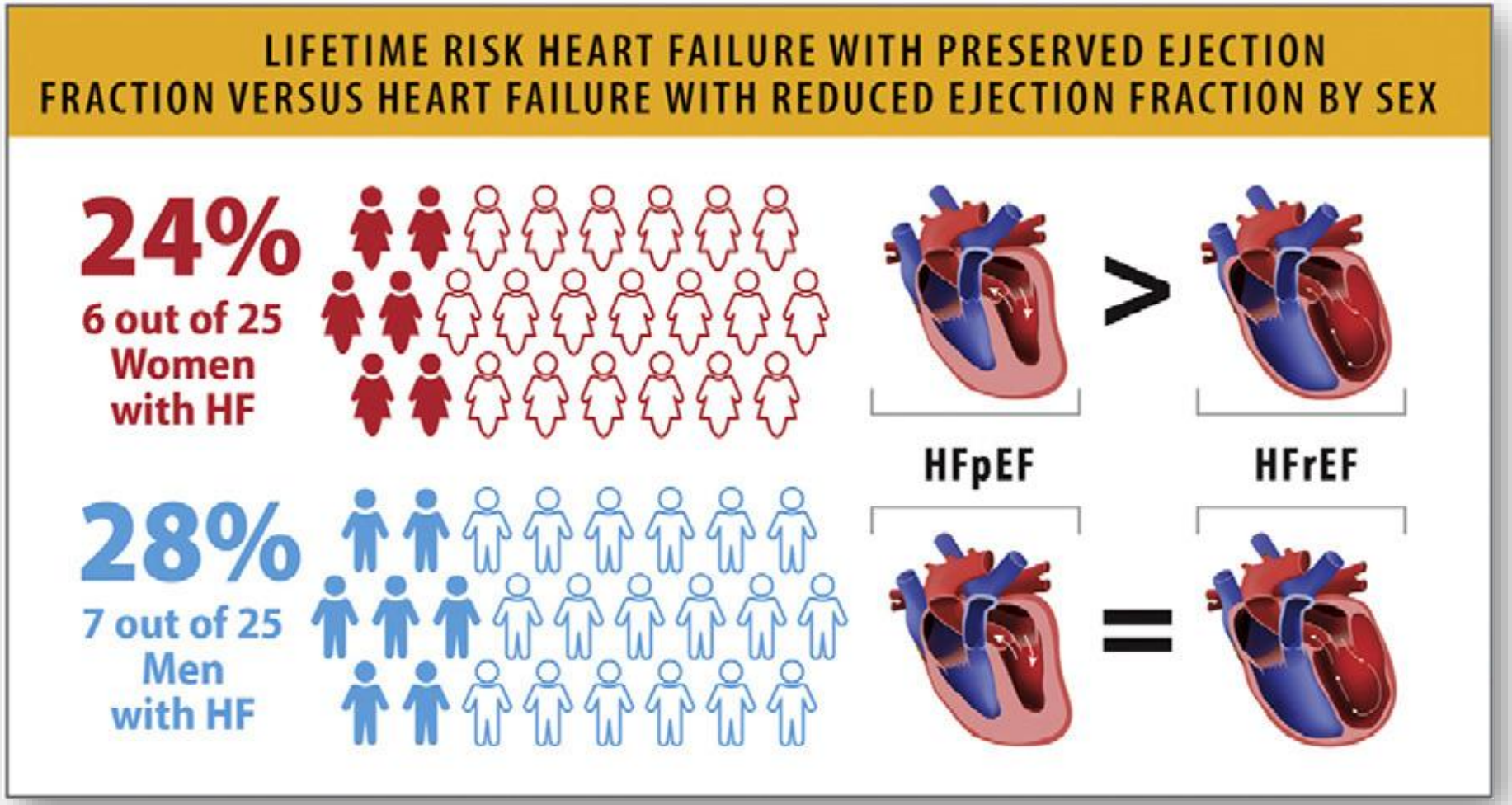
Lifetime risk of HFpEF vs. HFrEF by Sex



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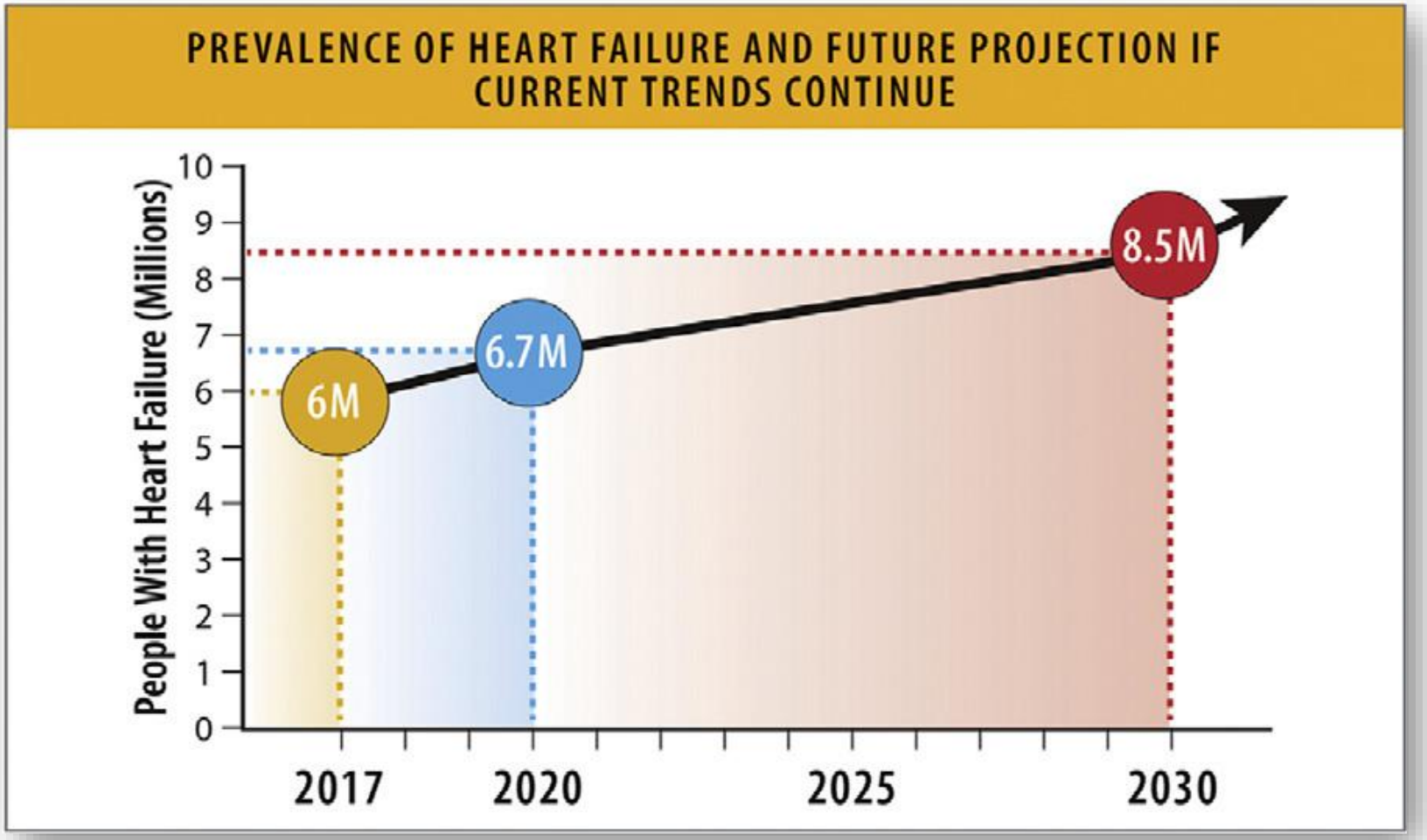
Prevalence of HF & Future Projection



~6.7 million Americans over 20 years of age have HF

Prevalence expected to rise to **8.5 million Americans** by 2030

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Prevalence across HF Stages

PREVALENCE ACROSS HF STAGES

	Stage 0 No HF/Risk	Stage A At-Risk	Stage B Pre-HF	Stage C HF	Stage D Advanced HF
Olmsted County (age ≥45 years)	32%	22%	34%	12%	0.2%
Framingham Heart Study (mean age: 51±16 years)	38%	36.5%	24.2%	1.2%	1.2%
Atherosclerosis Risk in Communities Study (age: 67-91 years)	5%	52%	30%	13%	
Pooled cohorts (MESA, CHS, ARIC) using updated 2023 definititions	16.7%	37.4%	43.2%	2.7%	2.7%

Stage A HF: ~33% of the US adult population is at-risk for HF

Stage B HF: 24-34% of the US population has pre-HF

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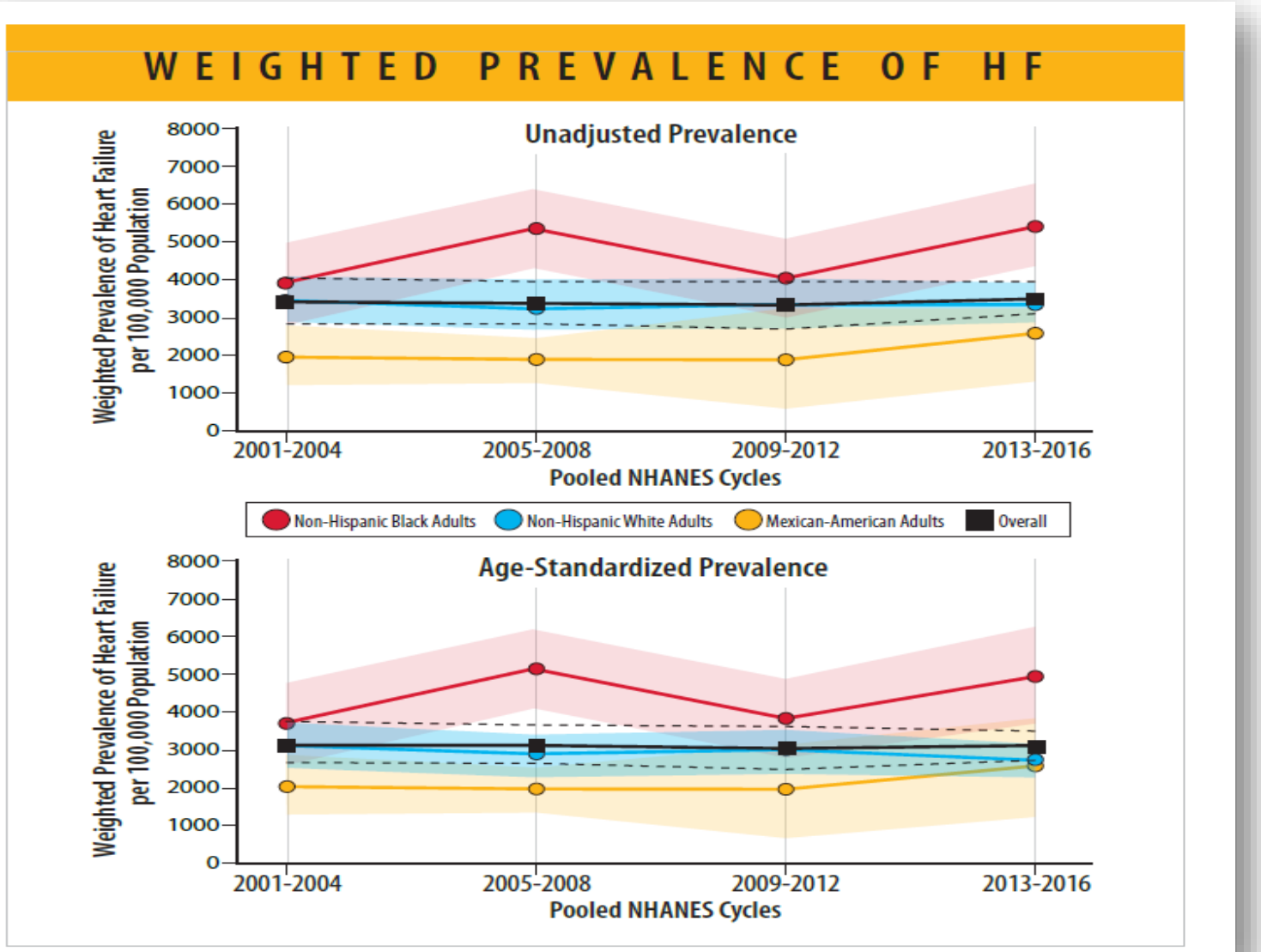
Prevalence of HF from pooled NHANEE by Race, Ethnicity and Age



The prevalence of HF has increased among **Black and Mexican American** individuals over time.

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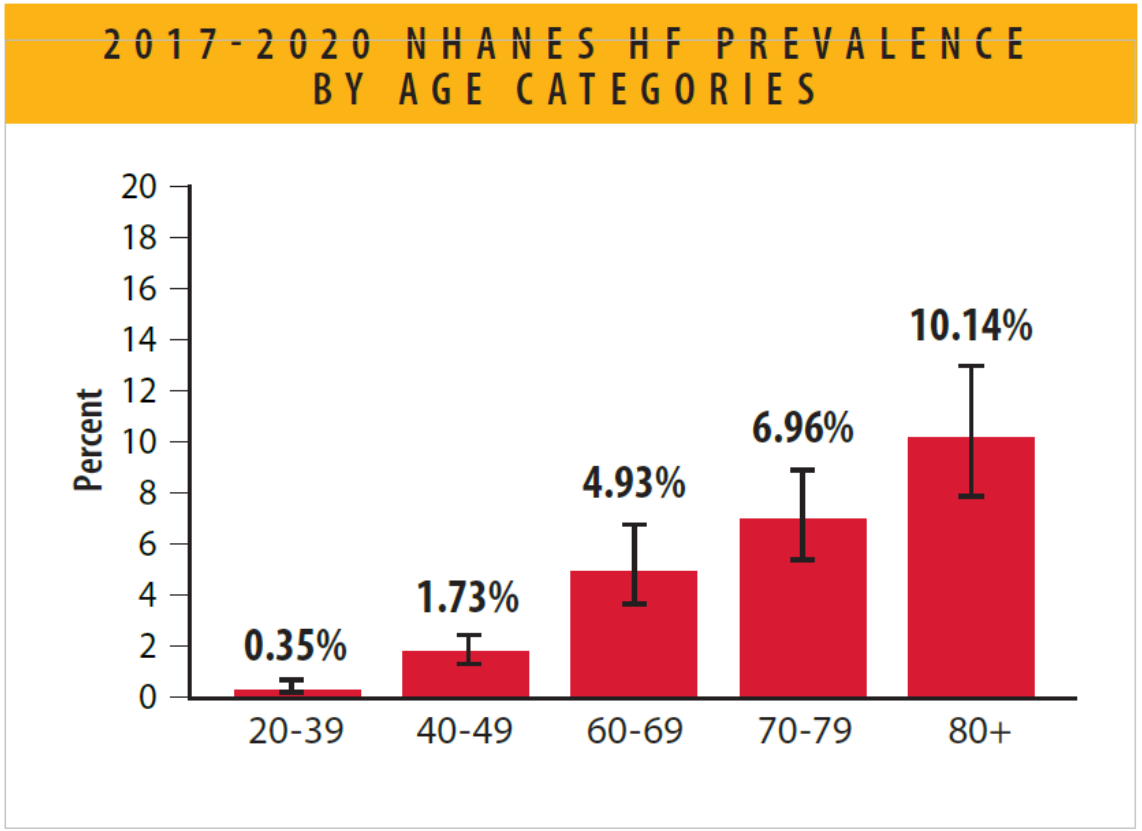
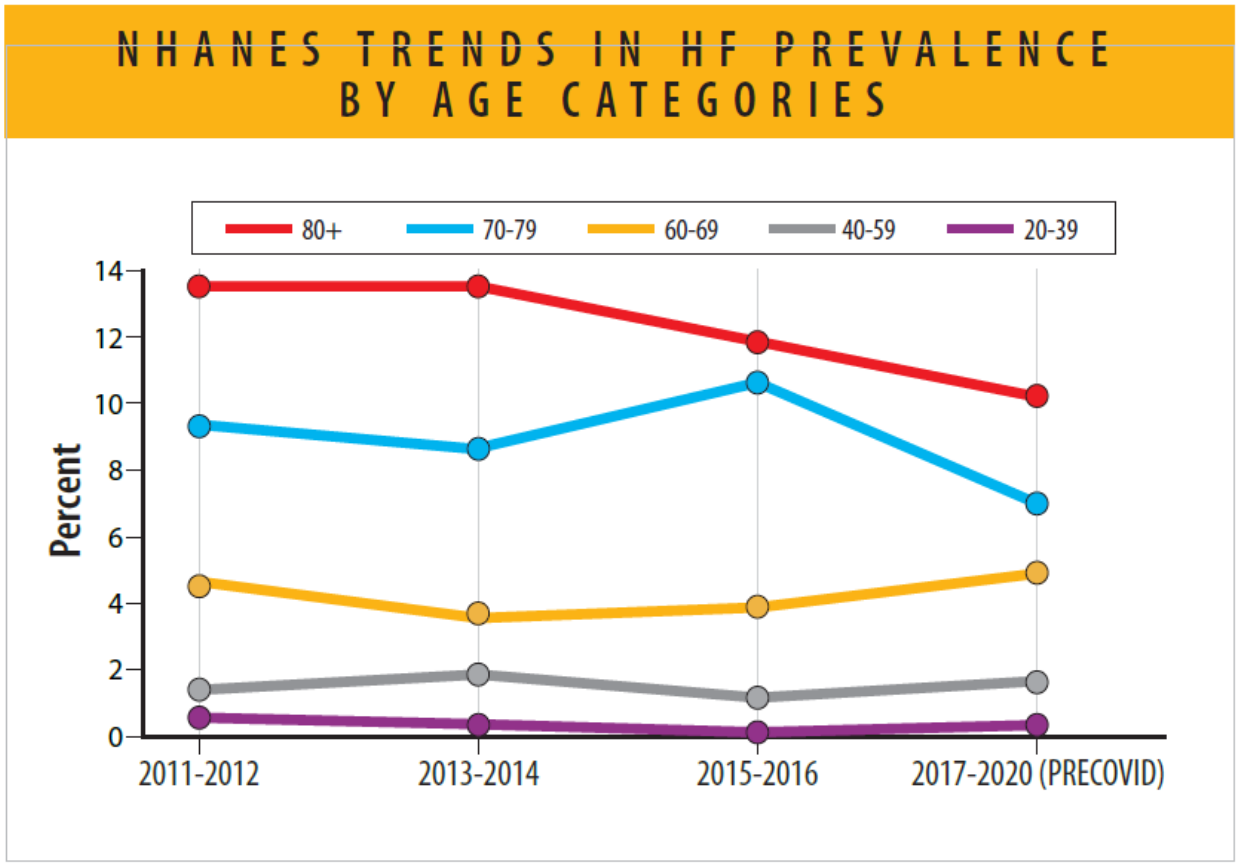
Heart Failure Prevalence by Age





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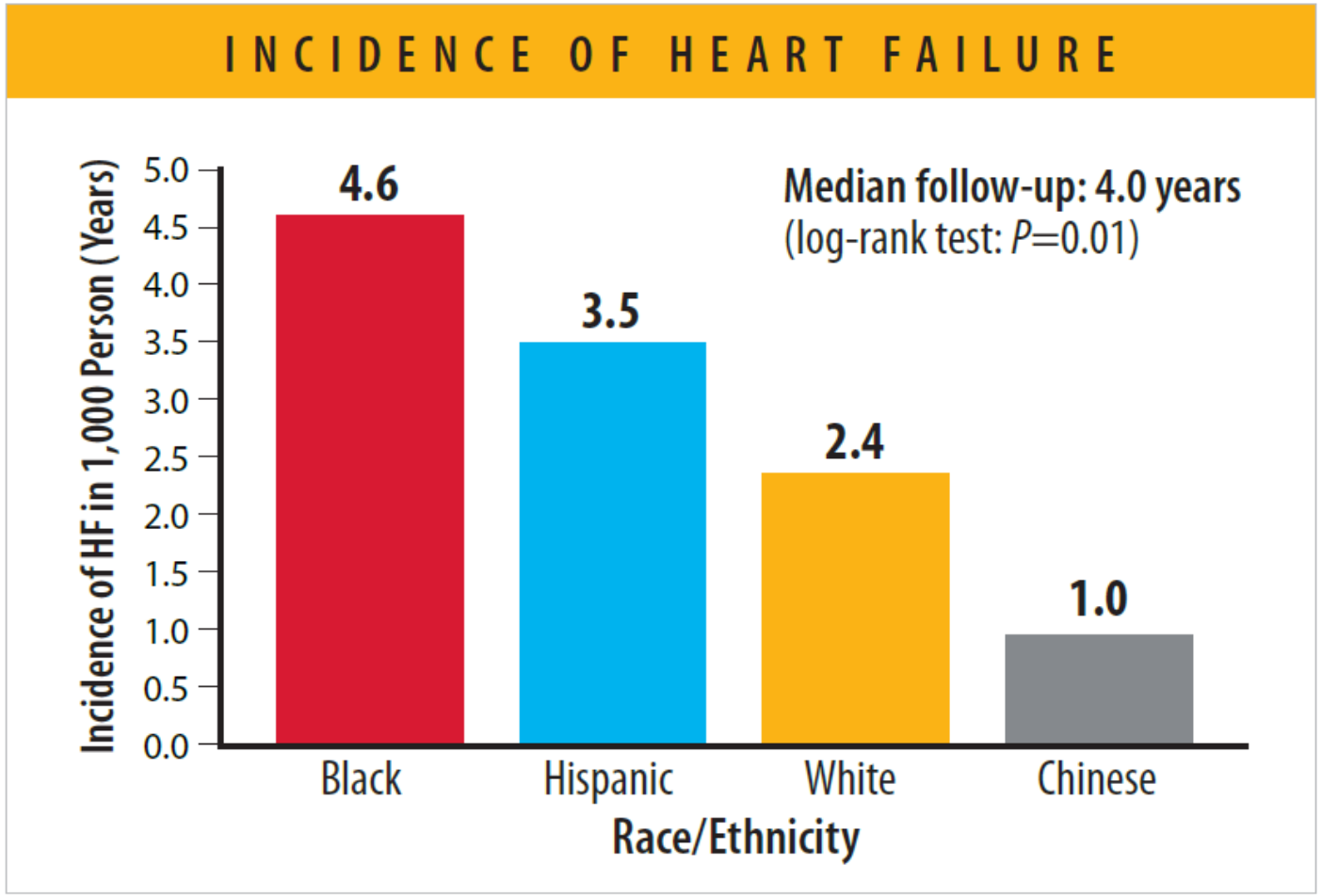
Incidence Rates by Race and Ethnicity in US



The incidence and prevalence of HF is **higher among Black individuals** compared with other racial and ethnic groups.

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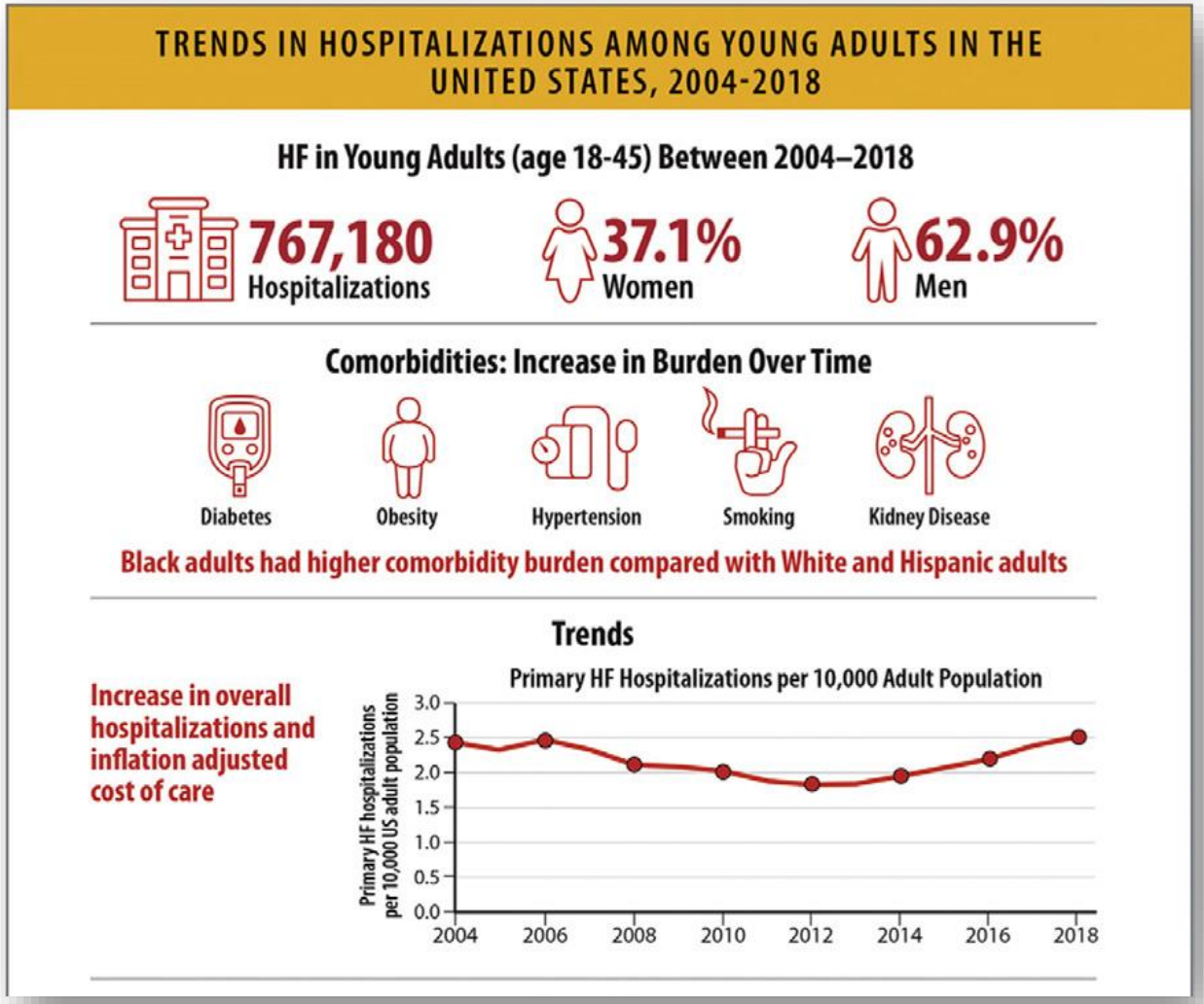
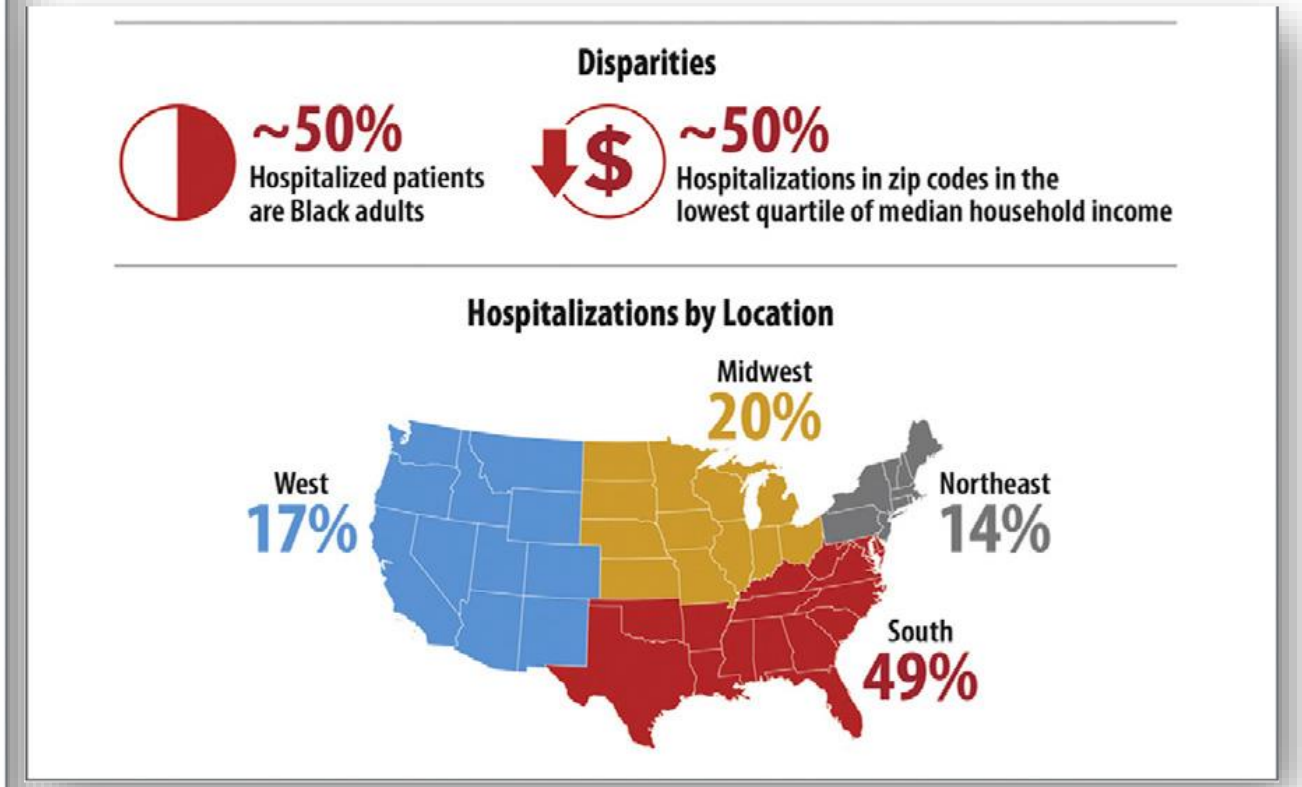
Young Adults





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Heart Failure Imposes a Huge Burden on Patients…and Caregivers

More than 64 million people worldwide are living with HF[1]

HF is one of the leading causes of hospitalization[2,3] and the **number 1 cause of hospitalization in patients aged ≥65 years**[4]

Hospital readmission rates after HHF are as high as **30%** within 90 days[5]

Approximately **30%** of patients who are hospitalized with HF **die within 1 year**[6]

1. GBD 2016 Disease and Injury Incidence and Prevalence Collaborators. *Lancet*. 2017;390(10100):1211-1259;
2. Blecker S, et al. *J Am Coll Cardiol*. 2013;61(12):1259-1267;
3. Ambrosy AP, et al. *J Am Coll Cardiol*. 2014;63(12):1123-1133;
4. Azad N, et al. *J Geriatr Cardiol*. 2014;11(4):329-337;
5. Fonarow GC, et al. *J Am Coll Cardiol*. 2007;50(8):768-777;
6. Shah KS, et al. *J Am Coll Cardiol*. 2017;70(20):2476-2486.

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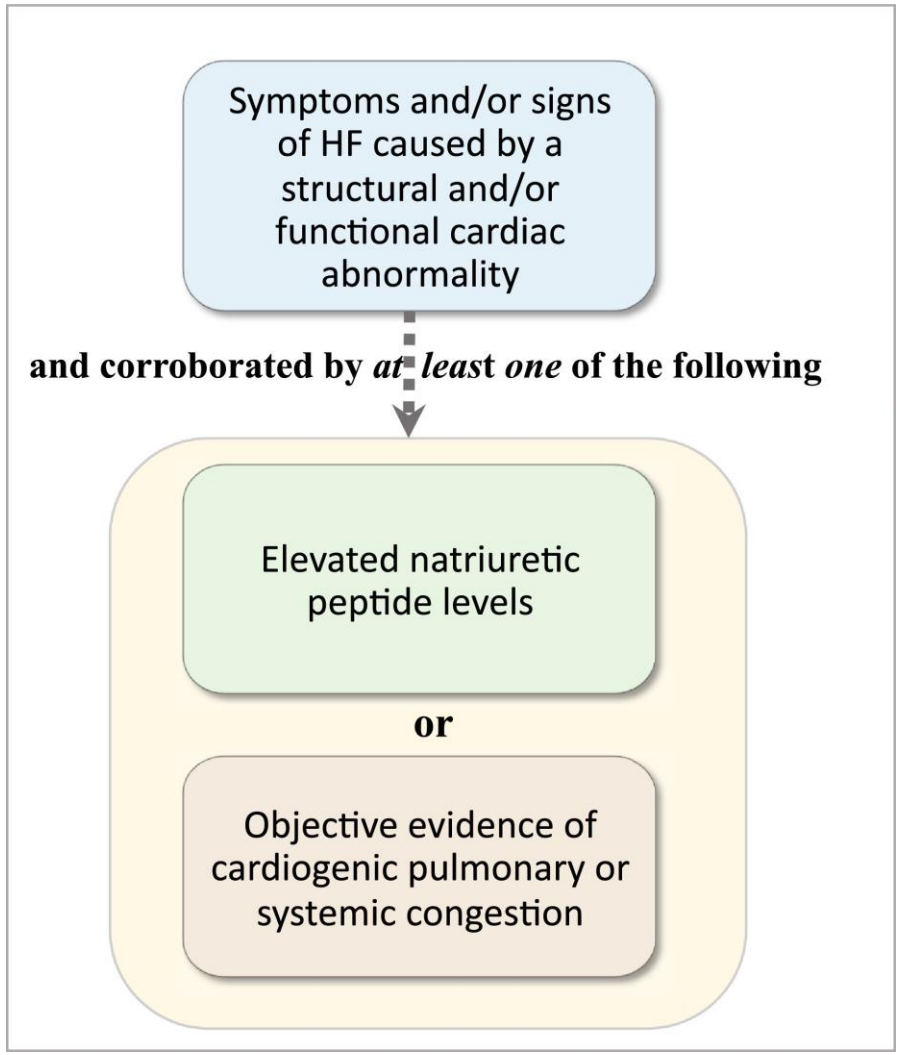
HHF = hospitalization for heart failure.

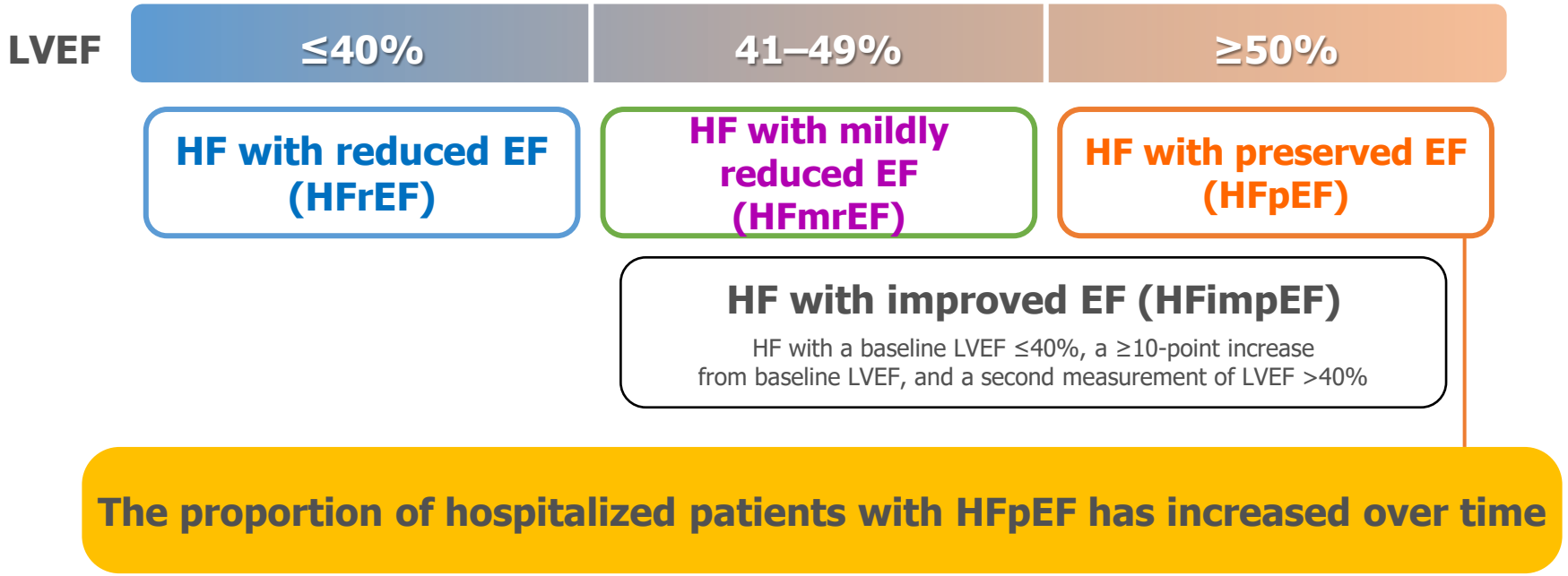


Heart Failure is a clinical syndrome with current or prior symptoms and signs caused by a structural and/or functional cardiac abnormality (as determined by an EF of<50%, abnormal cardiac chamber enlargement, E/E' of >15, moderate/severe ventricular hypertrophy or moderate/severe valvular obstructive or regurgitant lesion) and corroborated by at least one of the following:

- **Elevated natriuretic peptide levels**
- **Objective evidence of cardiogenic pulmonary or systemic congestion by diagnostic modalities, such as imaging (e.g., by chest X ray or elevated filling pressures by echo, or hemodynamic measurement (right heart cath, PA catheter)at rest or with provocation, (e.g., exercise)**

Journal of Cardiac Failure 2021 27387-413DOI: (10.1016/j.cardfail.2021.01.022).

The Universal Definition of Heart Failure Classifies the Different Phenotypes According to LVEF



EF = ejection fraction; LVEF = left ventricular ejection fraction.

Data from 1. Bozkurt B, et al. *Eur J Heart Fail.* 2021;23(3):352-380; 2. Oktay AA, et al. *Curr Heart Fail Rep.* 2013;10(4):401-410.

New Classification According to EF

HF with reduced EF (HFrEF):

HF with LVEF ≤ 40%

HF with mildly reduced EF (HFmrEF):

HF with LVEF 41-49%

HF with preserved EF (HFpEF):

HF with LVEF ≥50%

HF with improved EF (HFimpEF):

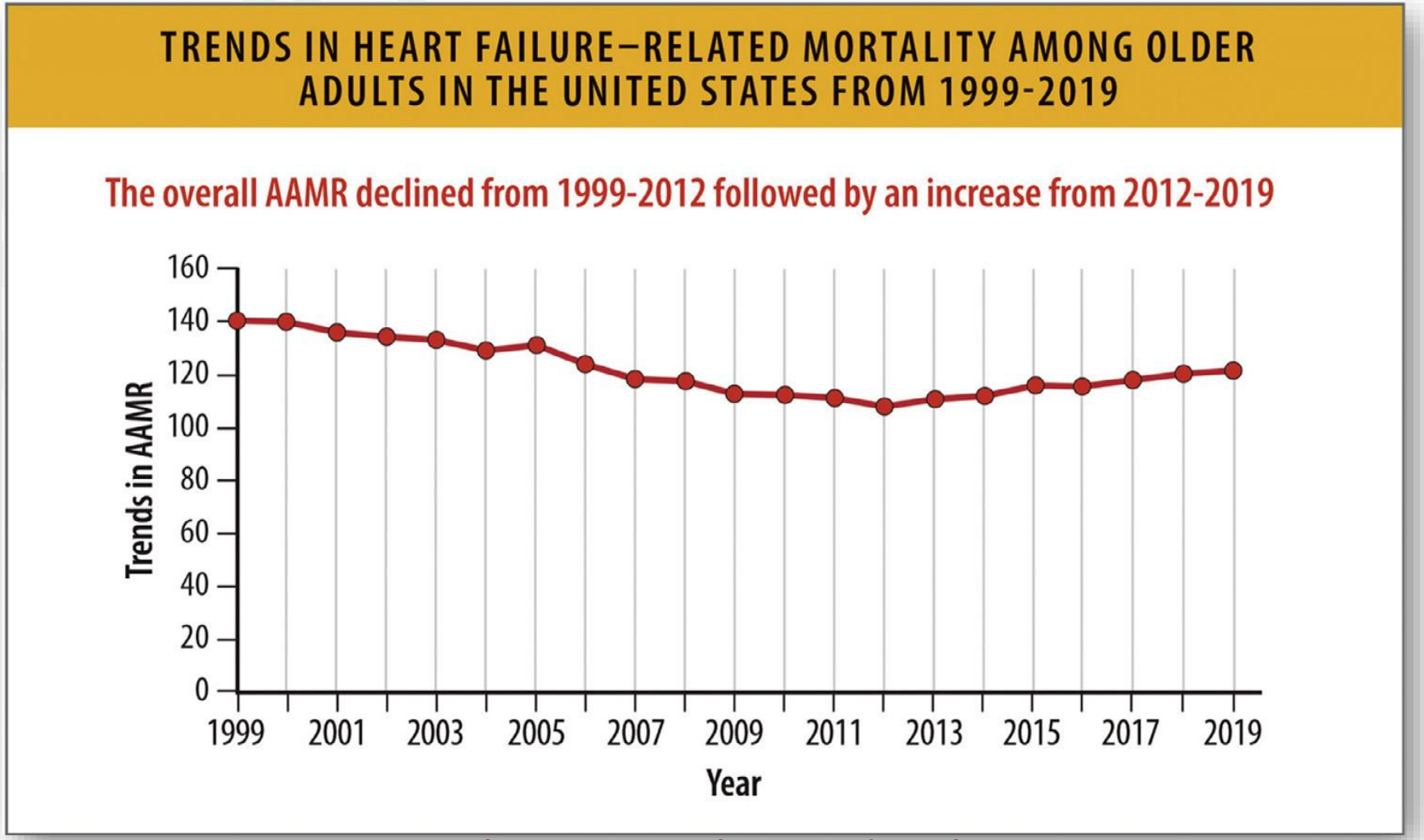
HF with a baseline LVEF ≤ 40%, a ≥ 10 point increase from baseline LVEF, and a second measurement of LVEF > 40%

Journal of Cardiac Failure 2021 27387-413DOI: (10.1016/j.cardfail.2021.01.022)

Classification of Heart Failure—Stages and NYHA

ACCF/AHA Stages of HF		NYHA Functional Classification	
A	At high risk for HF but without structural heart disease or symptoms of HF.	**None**	
B	Structural heart disease but without signs or symptoms of HF.	**I**	No limitation of physical activity. Ordinary physical activity does not cause symptoms of HF.
C	Structural heart disease with prior or current symptoms of HF.	**I**	No limitation of physical activity. Ordinary physical activity does not cause symptoms of HF.
		II	Slight limitation of physical activity. Comfortable at rest, but ordinary physical activity results in symptoms of HF.
		III	Marked limitation of physical activity. Comfortable at rest, but less than ordinary activity causes symptoms of HF.
D	Refractory HF requiring specialized interventions.	**IV**	Unable to carry on any physical activity without symptoms of HF, or symptoms of HF at rest.

HF-related Mortality



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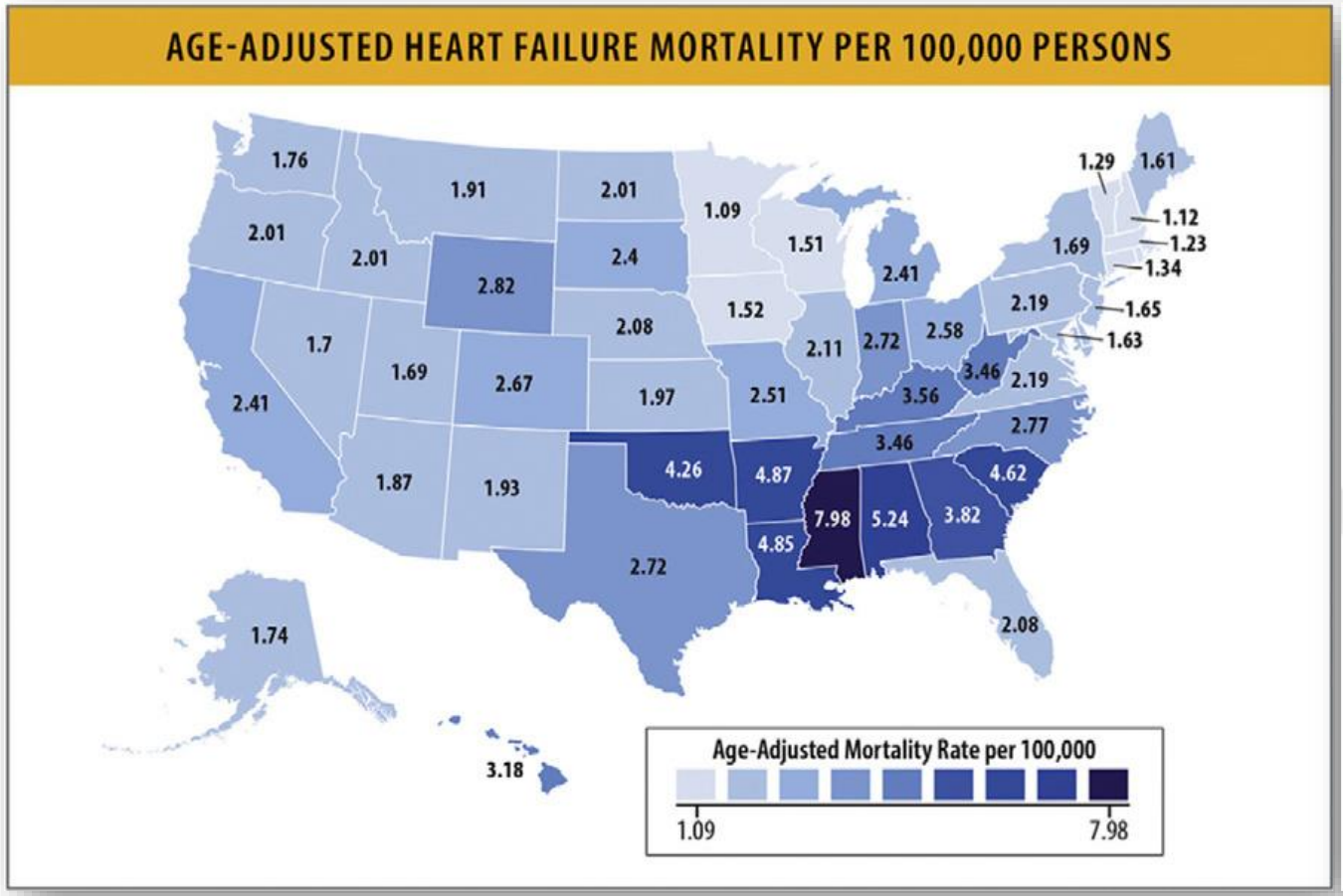
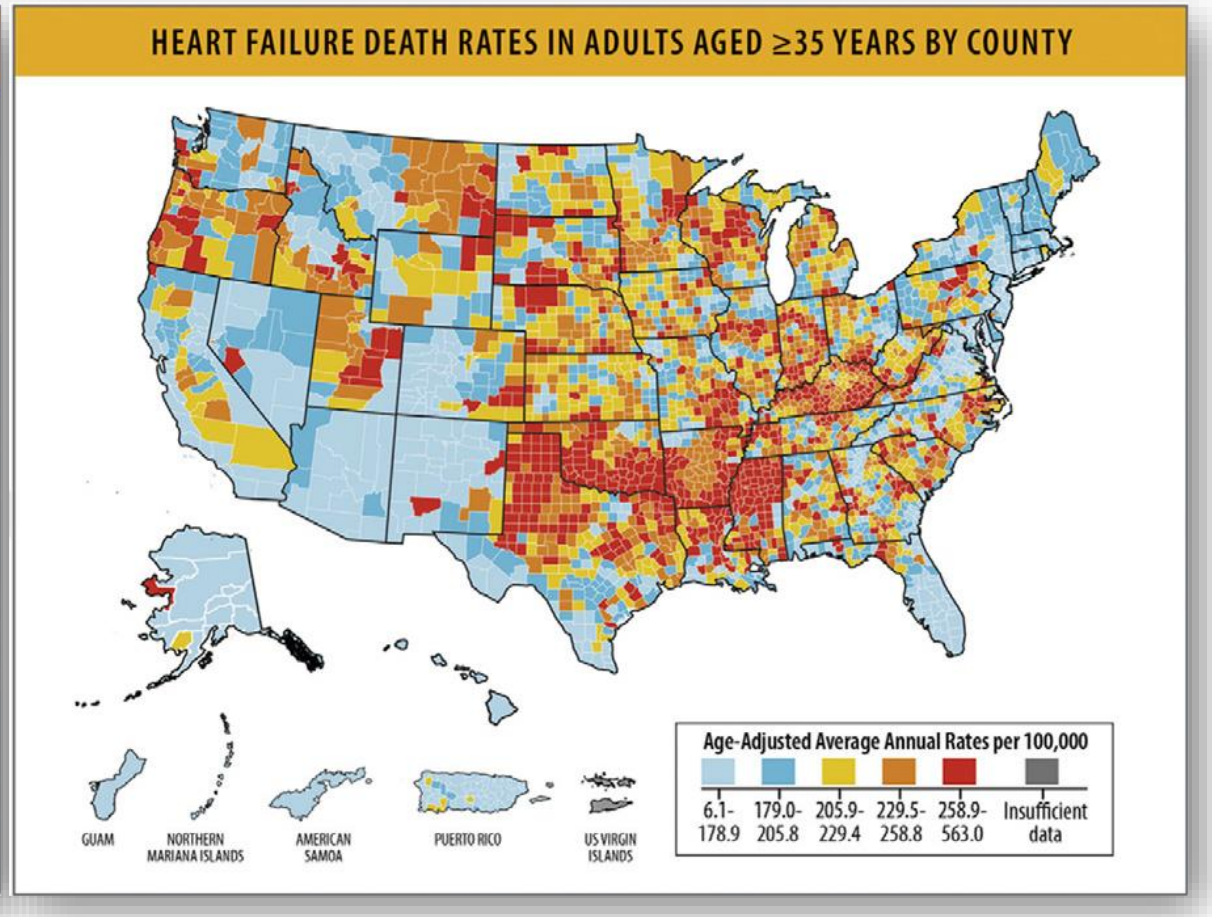
Mortality: Regional Differences





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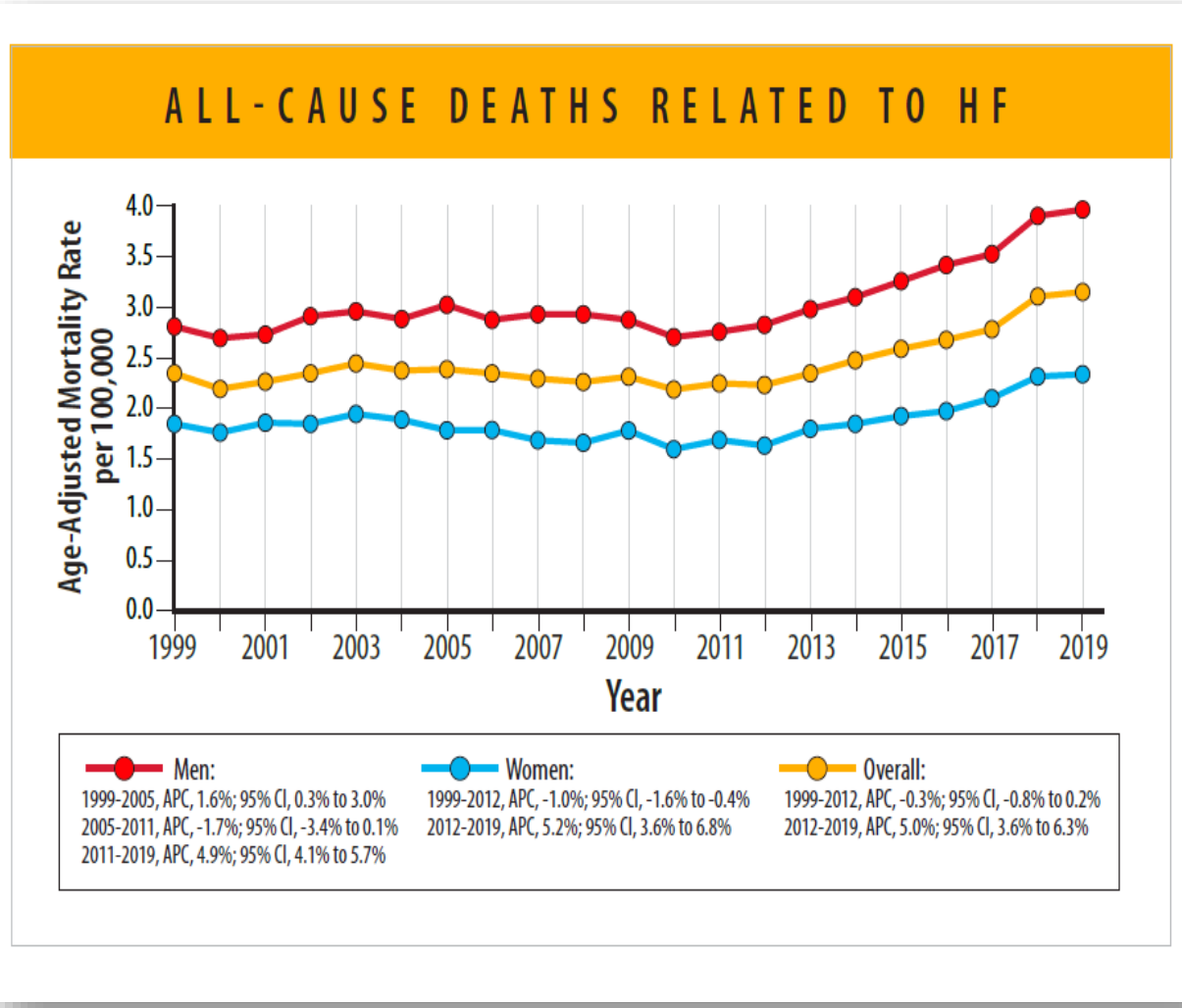
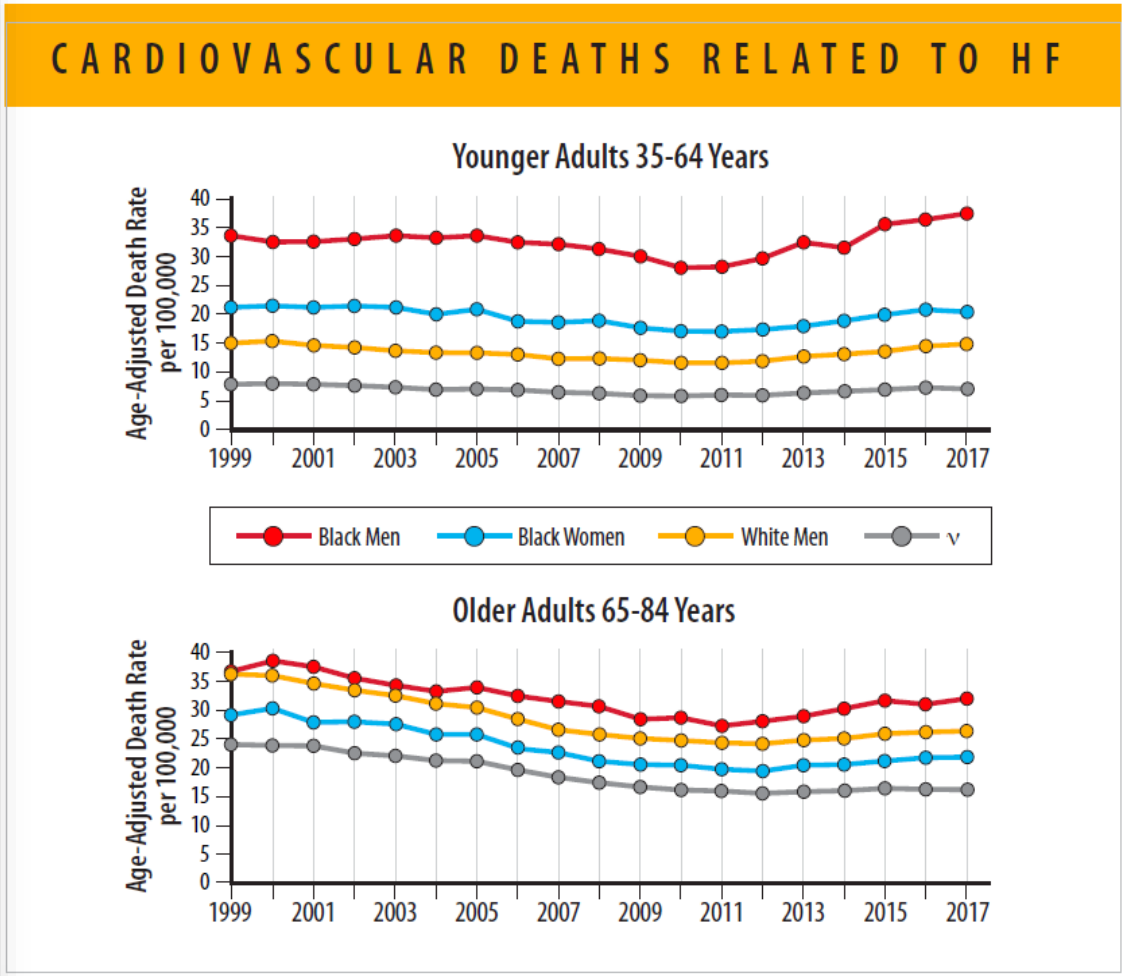
Deaths Related to HF: Sex and Race





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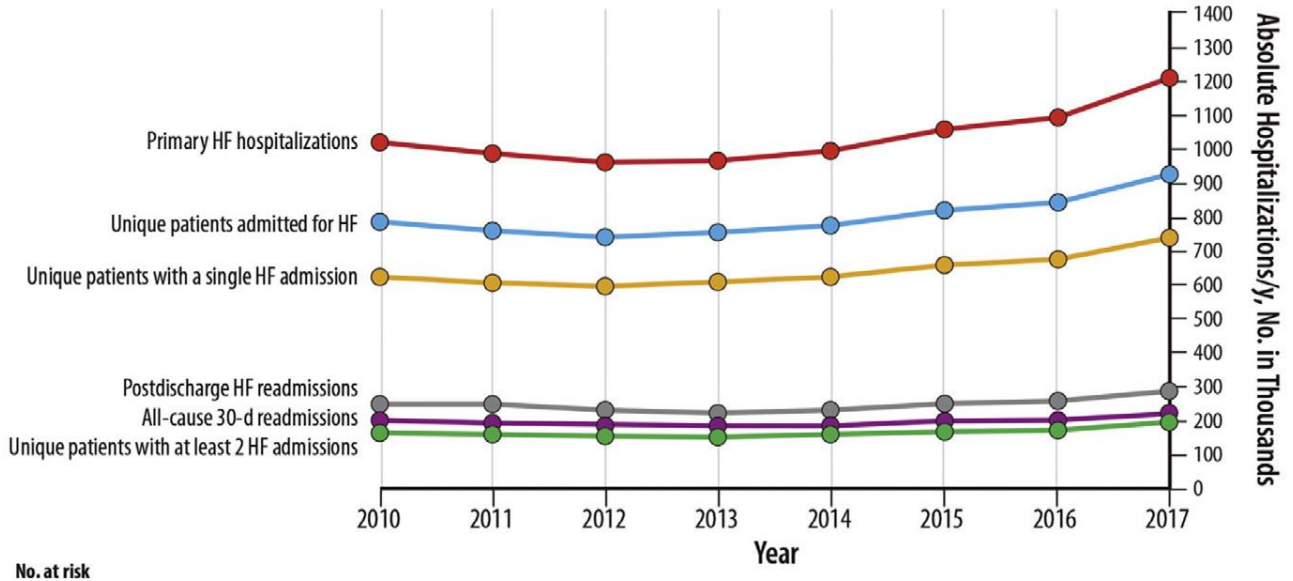
US Trends: HF Hospitalization

US TRENDS FOR OVERALL HEART FAILURE (HF) HOSPITALIZATIONS, UNIQUE PATIENT VISITS, AND POSTDISCHARGE HF READMISSIONS



No. at risk

Primary HF hospitalizations	1017475	985034	957509	962819	994099	1057652	1090348	1208334
Unique patients admitted for HF	776307	754532	735372	748456	769795	815499	837707	924066
Unique patients with a single HF admission	618462	602688	588451	603915	618575	653953	669875	736707
Postdischarge HF readmissions	241168	230503	222137	214362	224303	242152	252641	284269
All-cause 30-d readmissions	191819	187197	178884	176494	177448	189633	192684	214803
Unique patients with at least 2 HF admissions	157845	151844	146921	144541	151220	161546	167832	187359

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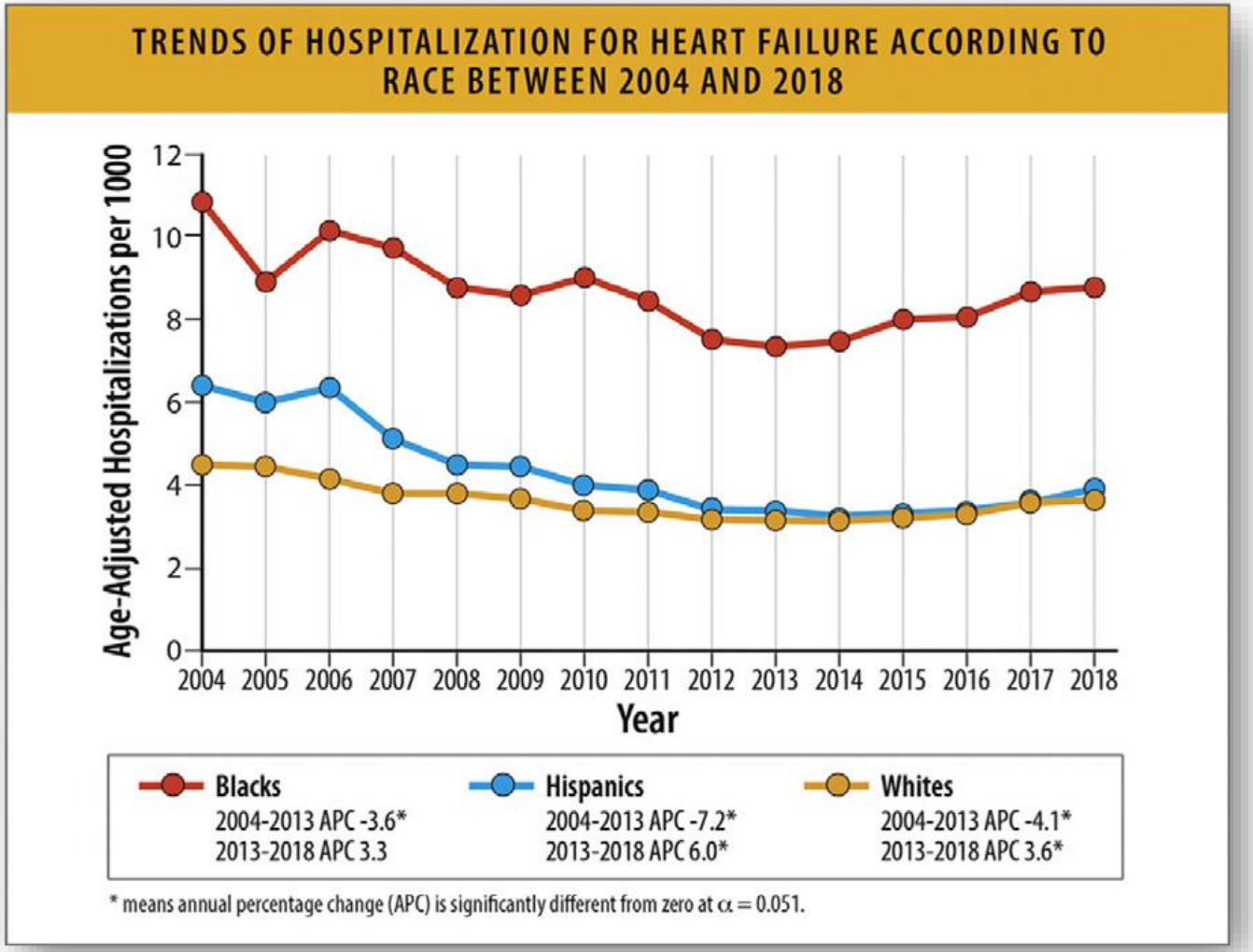
HF Hospitalization Trends by Race



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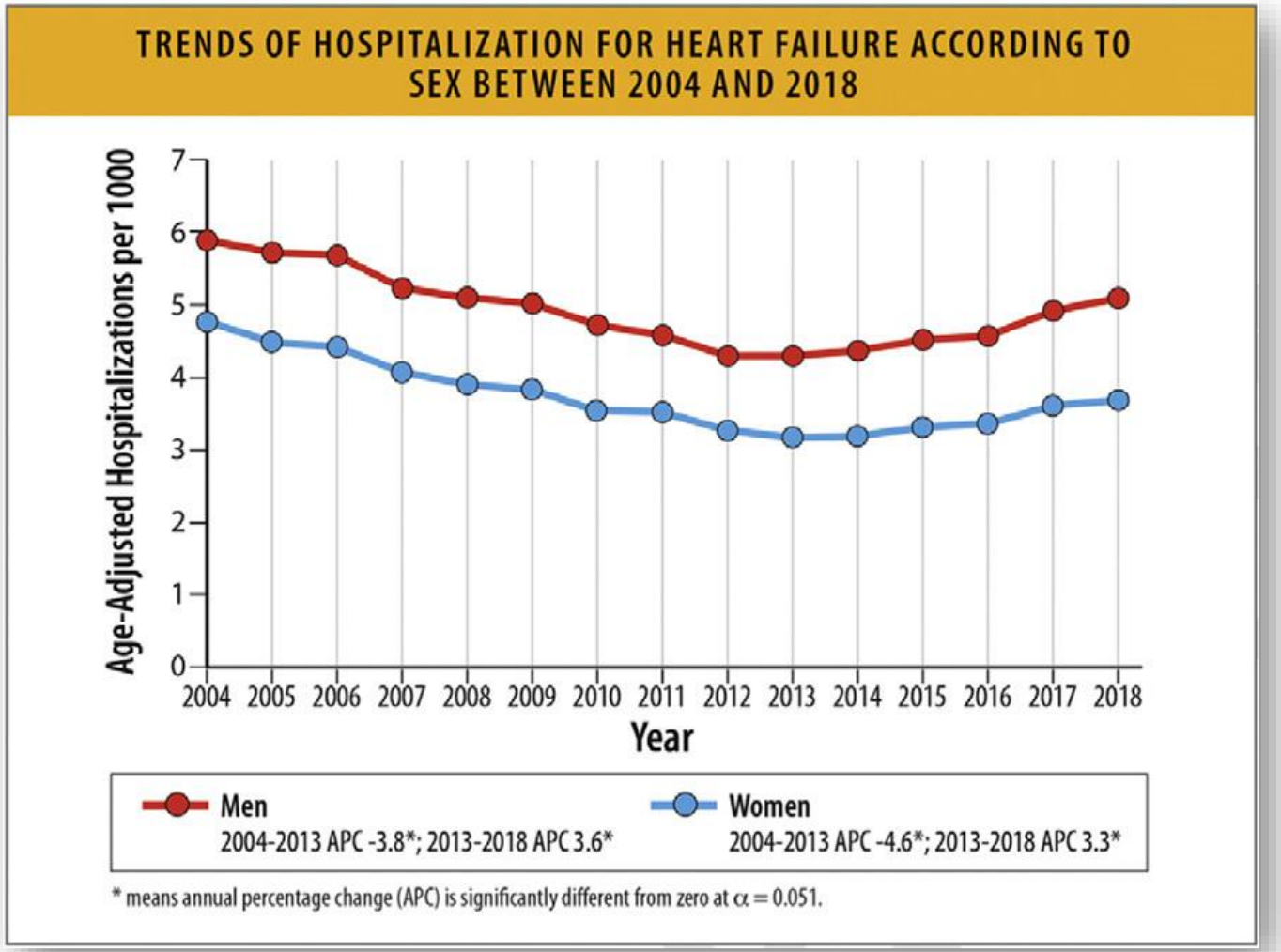
HF Hospitalization Trends by Sex



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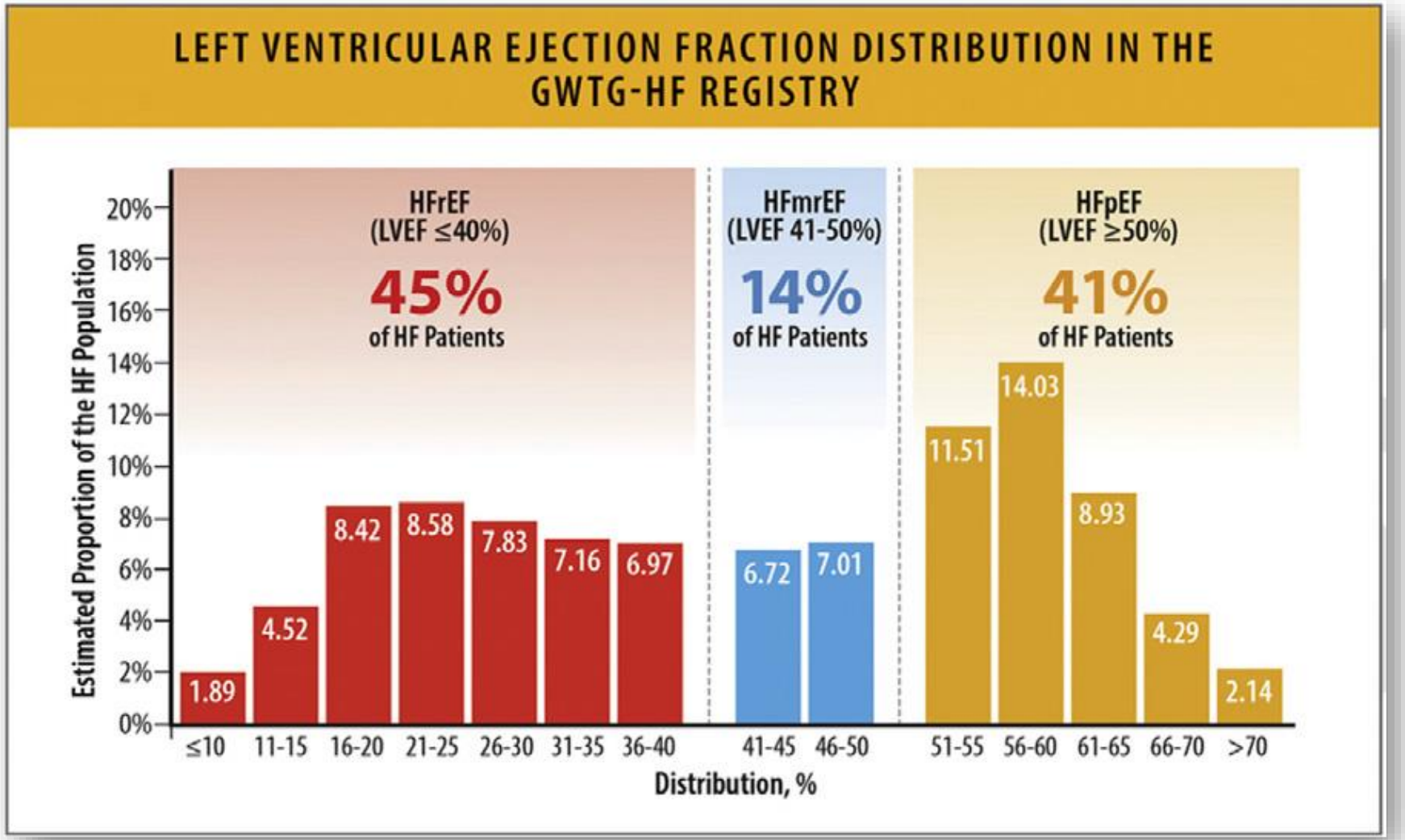
LVEF Distribution in HF Hospitalization



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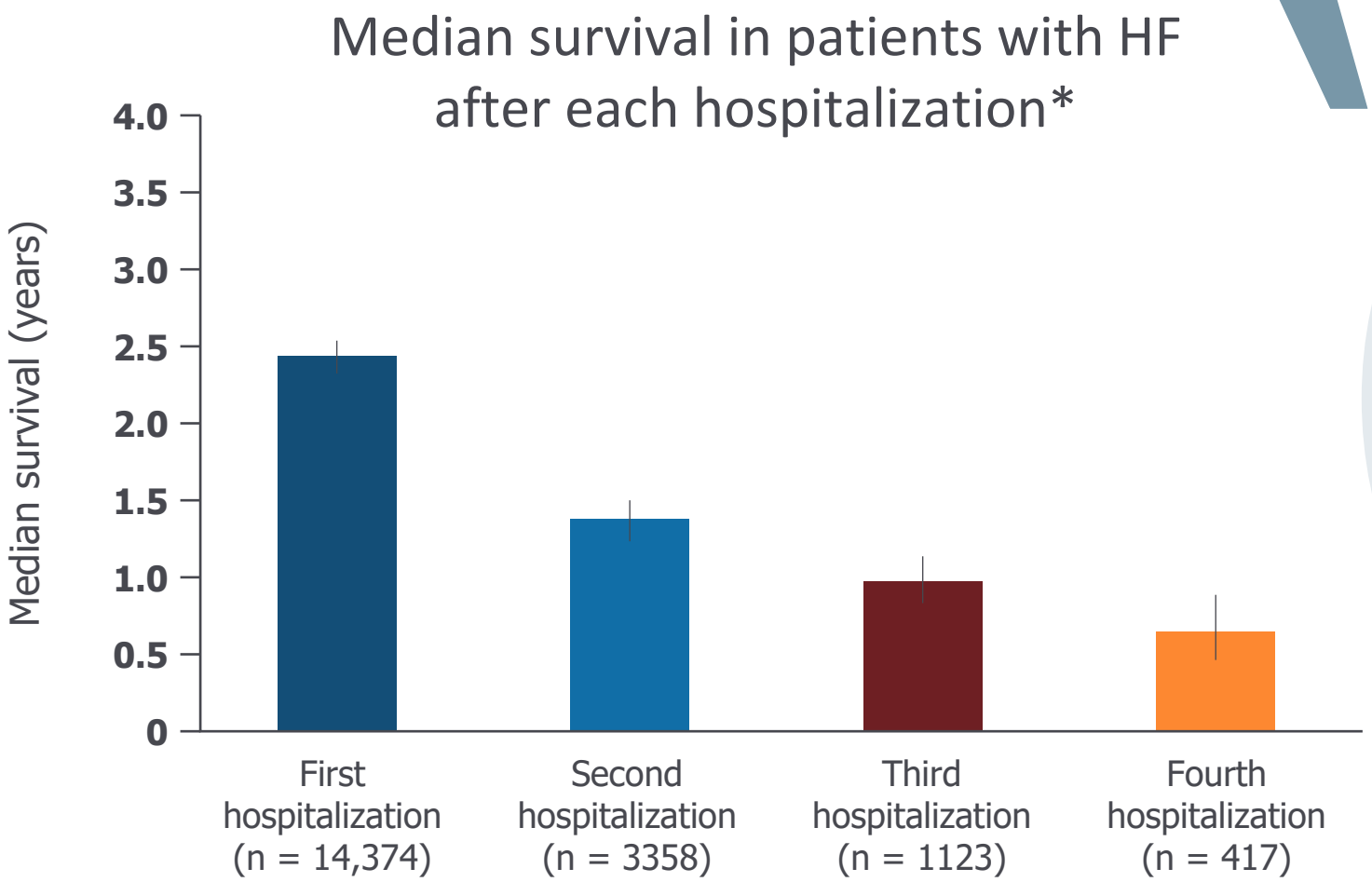
Hospitalization Is a Marker of Risk



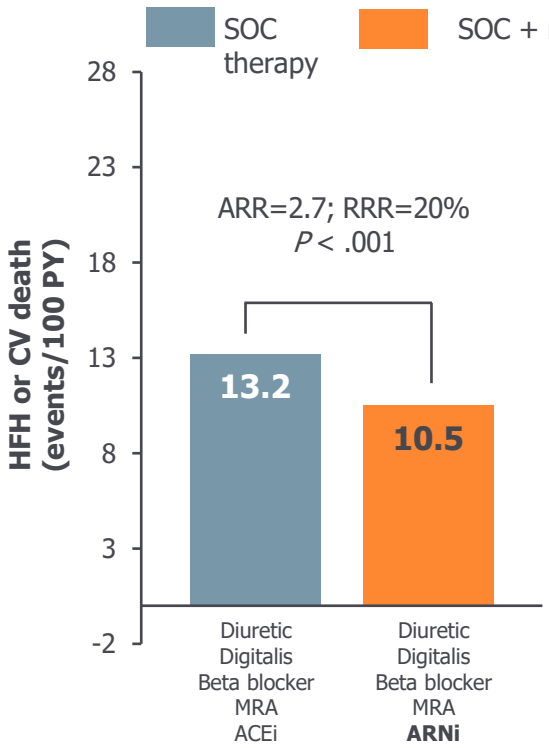
It's a time to stop and think about what we're doing because what you've been doing isn't working any longer.

*After the initial worsening HF event, each subsequent event becomes longer in duration and is separated by shorter intervals.

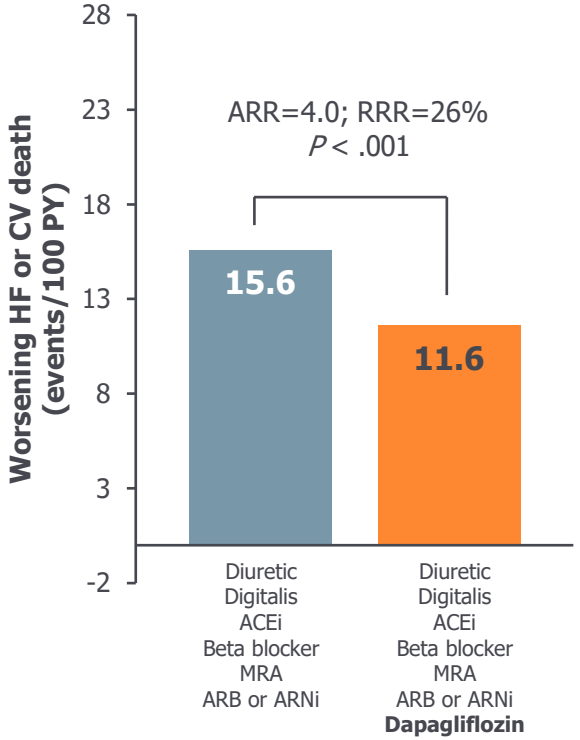
Setoguchi S, et al. Am Heart J. 2007;154:260-264.

Residual Risk Remains Despite the Use of HF Medications

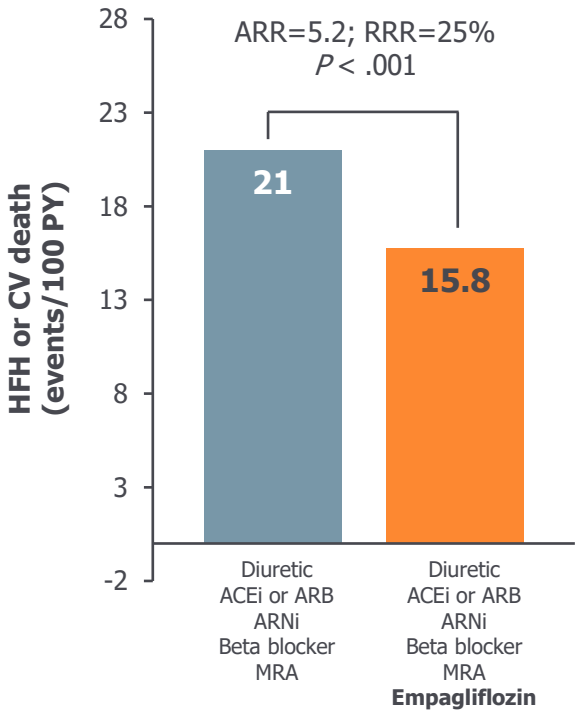
PARADIGM-HF (2014)[a,b]



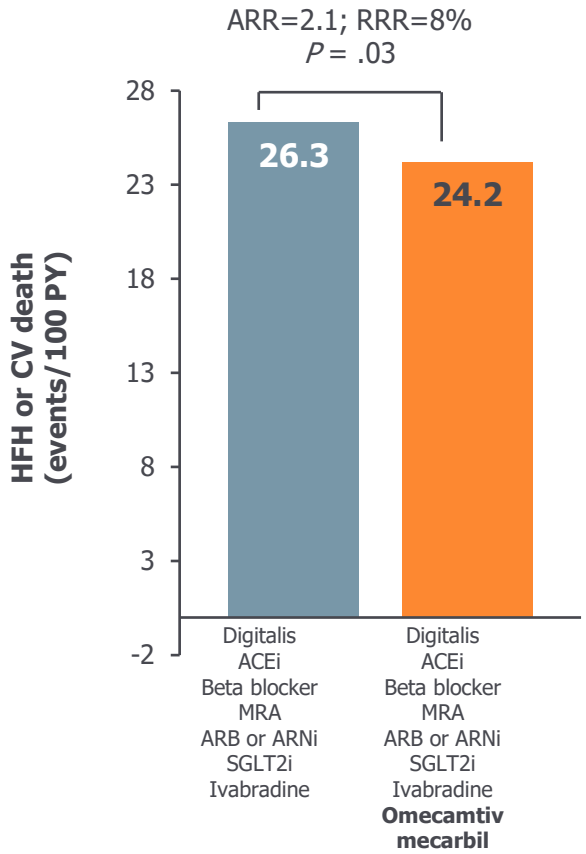
DAPA-HF (2019)[b,c]



EMPEROR-Reduced (2020)[b,d]



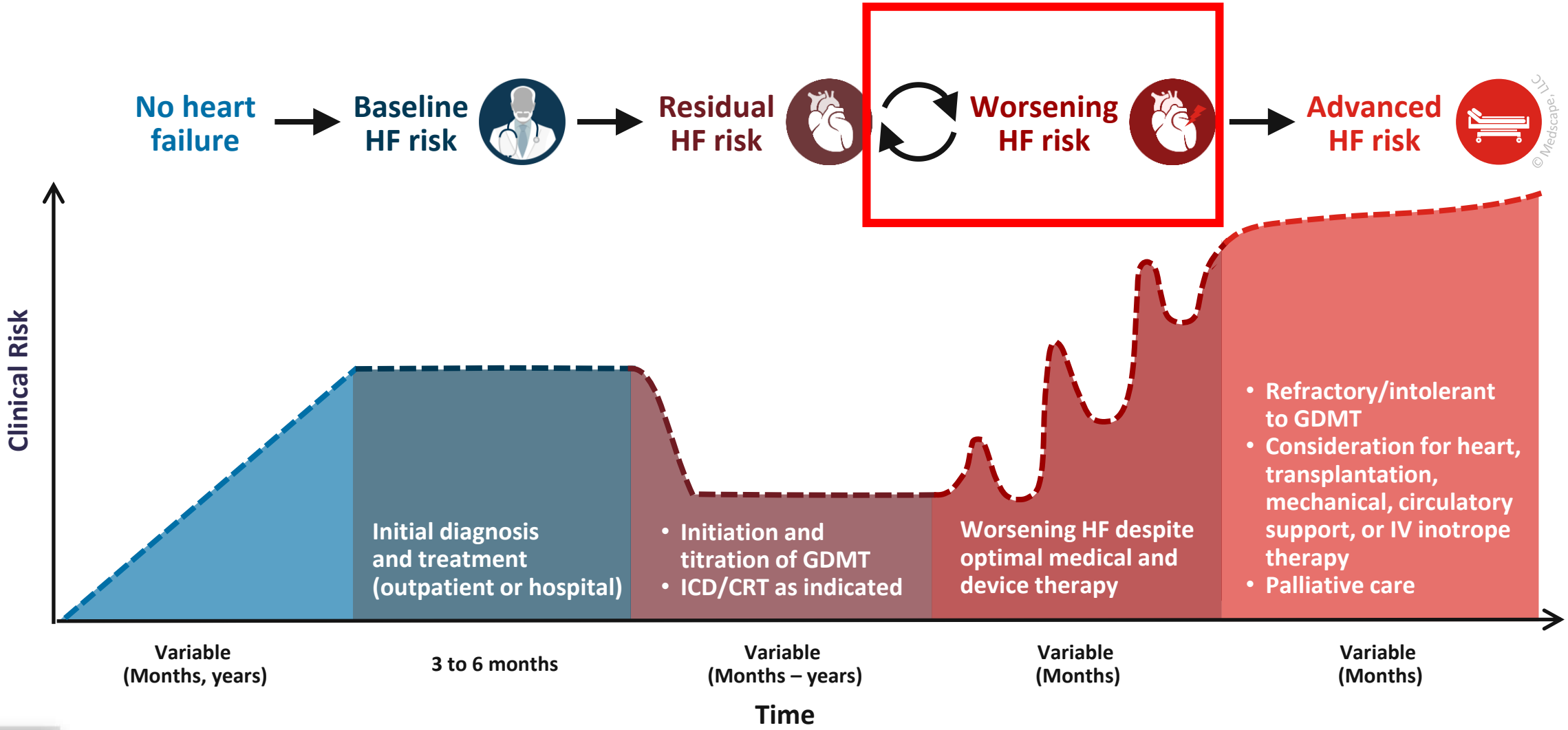
GALACTIC-HF (2020)[e,f]



ACEi, angiotensin-converting enzyme inhibitor; ARB, angiotensin receptor blocker; ARNi, angiotensin receptor–neprilysin inhibitor; ARR, absolute rate reduction; MRA, mineralocorticoid receptor antagonist; PY, patient-years; RRR, relative risk reduction; SGLT2i, sodium–glucose cotransporter 2 inhibitor; SOC, standard of care.

a. McMurray JJV, et al. N Engl J Med. 2014;371:993–1004; b. Butler J, et al. Eur J Heart Fail. 2020;22:1991–1993; c. McMurray JJV, et al. N Engl J Med. 2019;381:1995–2008; d. Packer M, et al. N Engl J Med. 2020;383:1413–1424; e. Teerlink JR, et al. N Engl J Med. 2021;384:105–116; 6. Teerlink JR, et al. Eur J Heart Fail. 2020;22:2160–2171.

Heart Failure Is a Progressive Condition



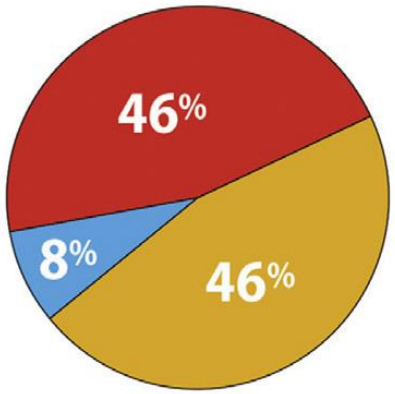
CRT, cardiac resynchronization therapy; GDMT, guideline-directed medical therapy; HF, heart failure; ICD, implantable cardioverter defibrillator; IV, intravenous.

Greene SJ, et al. Circ Heart Fail. 2020;13:e007132.

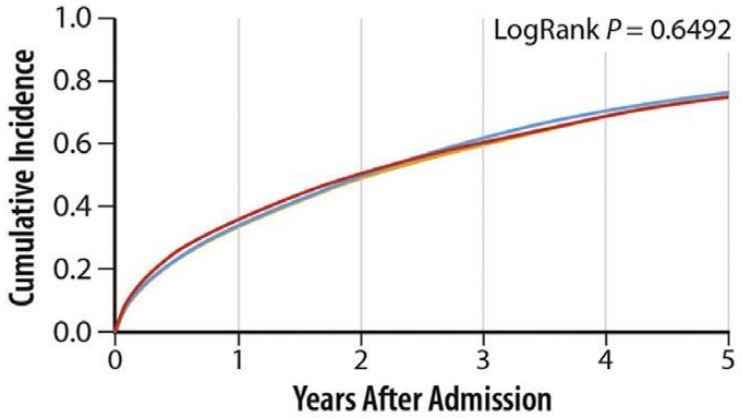
5-yr Outcomes after HF Hospitalization

5-YEAR OUTCOMES IN PATIENTS HOSPITALIZED WITH HF WITH PRESERVED, BORDERLINE, AND REDUCED EF

Heart Failure



5-Year Mortality



HFpEF (EF ≥50%) HFbEF (EF 41-49%) HFrEF (EF ≤40%)

Outcomes: 5-Year Event Rates (%)

	Mortality	Readmission	CV Readmission	HF Readmission	Mortality/Readmission
HFrEF	75.3	82.2	63.9	48.5	96.4
HFbEF	75.7	85.7	63.3	45.2	97.2
HFpEF	75.7	84.0	58.9	40.5	97.3

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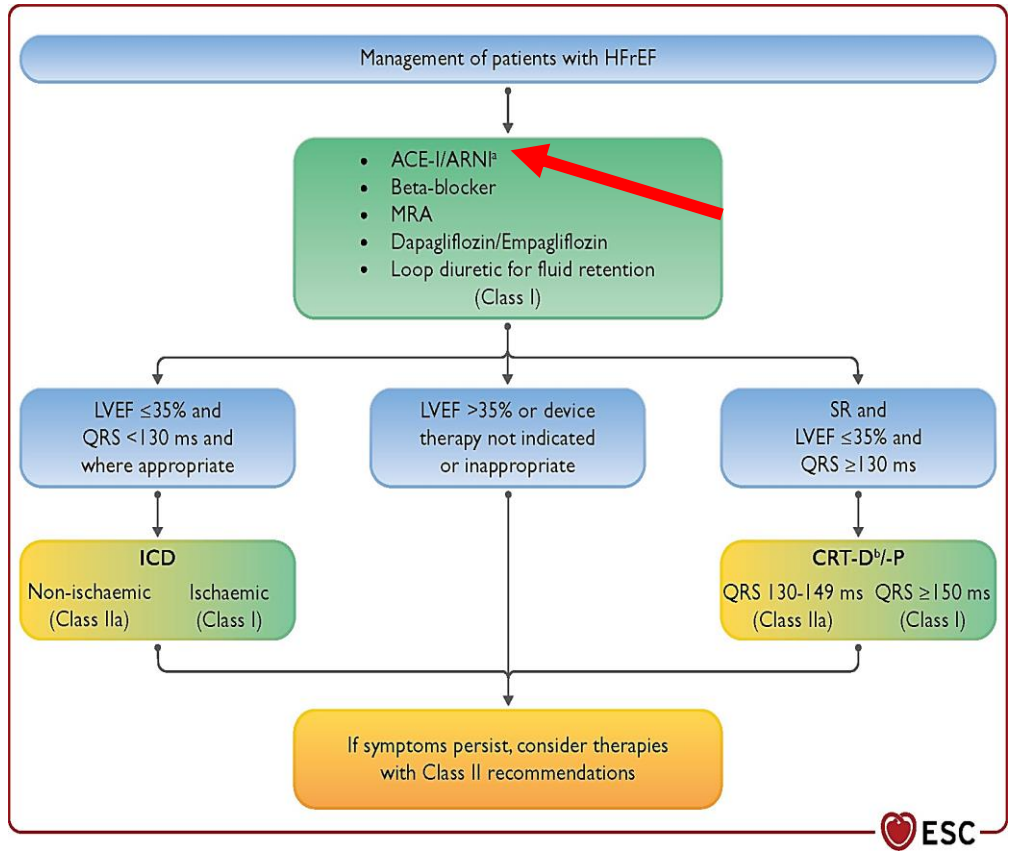
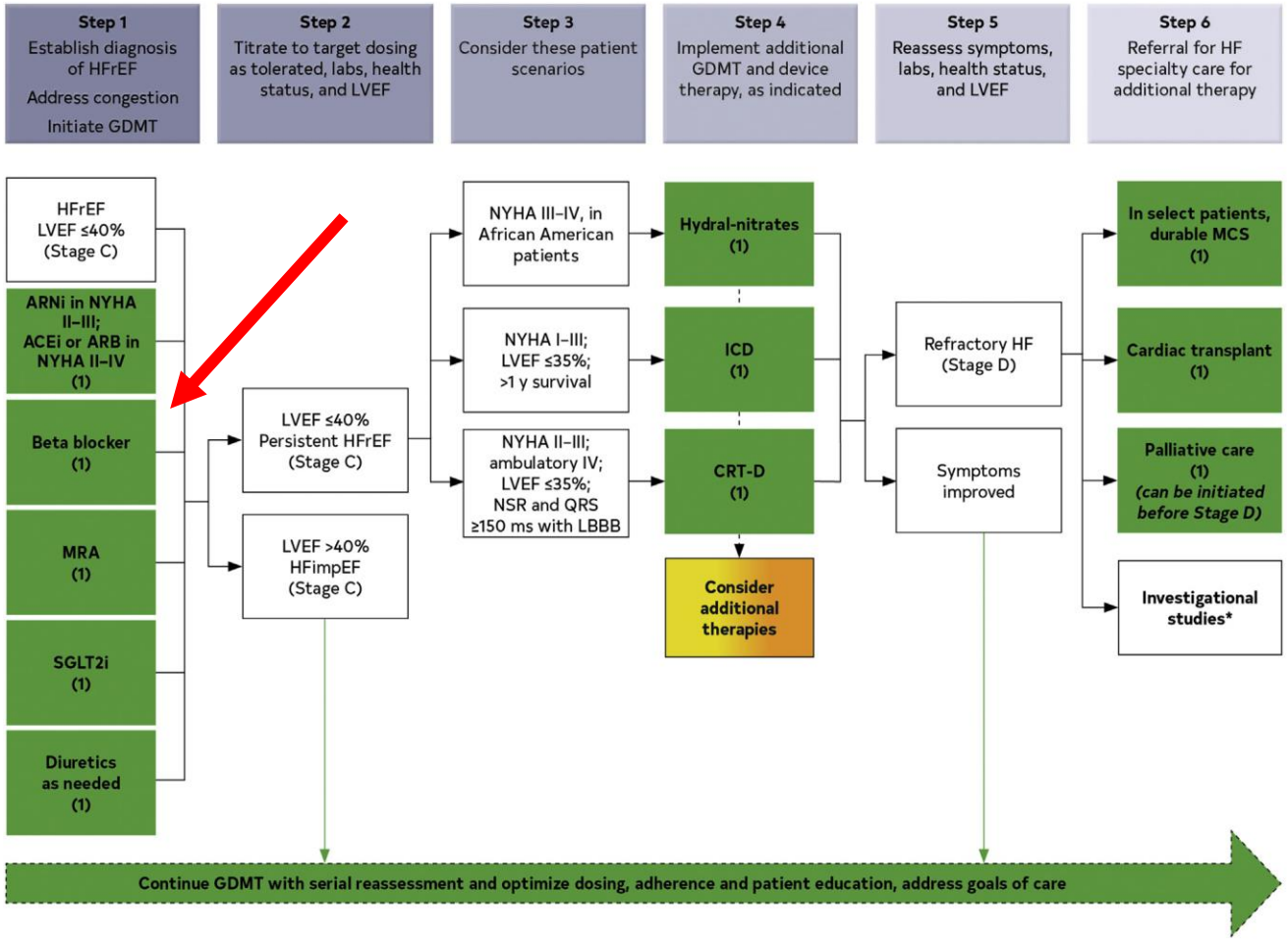
GDMT for HFrEF

Therapeutic Algorithm of Class I Therapy Indications for a Patient With Heart Failure With Reduced Ejection Fraction[a]



Treatment of HFrEF Stages C and D[b]

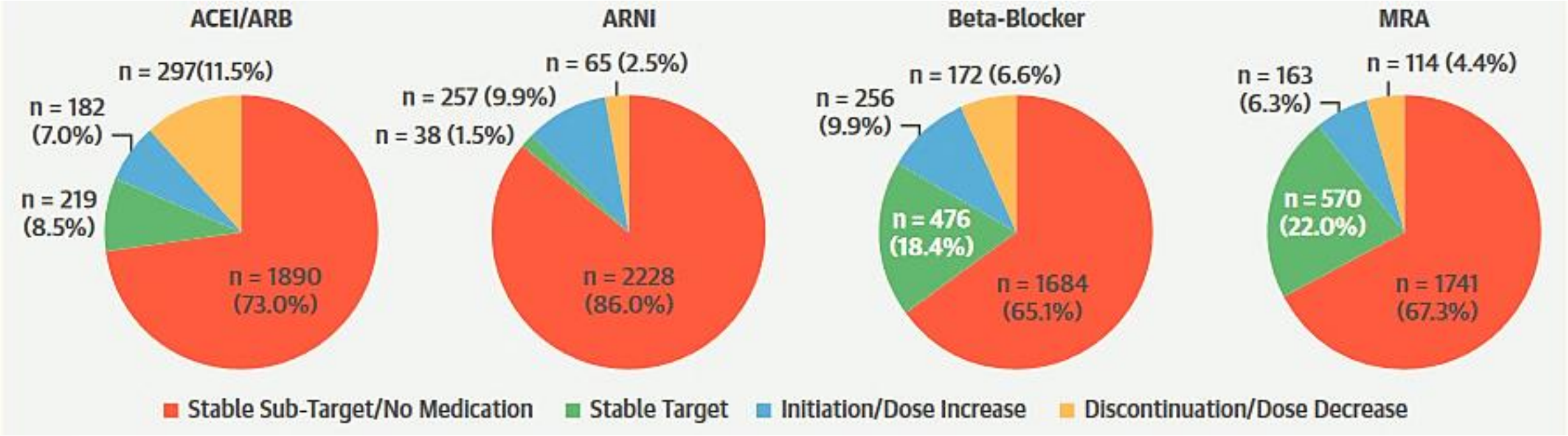


COR, class of recommendation; CRT, cardiac resynchronization therapy; GDMT, guideline-directed medical therapy; ICD, implantable cardioverter-defibrillator; hydral-nitrates, hydralazine and isosorbide dinitrate; LBBB, left bundle branch block; MCS, mechanical circulatory support; LVEF, left ventricular ejection fraction; NSR, normal sinus rhythm; SGLT2i, sodium-glucose cotransporter 2 inhibitor.

a. McDonagh TA, et al. Eur Heart J. 2021;42:3599–3726; b. Heidenreich P, et al. J Cardiac Fail. 2022;145:1-e167.

~80% of Patients With Chronic HF Are Either Not on Target Dose, or RAAS Inhibitor Therapy Has Been Down-Titrated or Discontinued

- The CHAMP-HF registry comprises 2588 United States outpatients with chronic HFrEF who are receiving ≥ 1 oral medication
- At baseline 658 (25%), 525 (20%), 287 (11%), and 45 (2%) patients were receiving target doses of MRA, beta-blocker, ACE inhibitor/ARB, and ARNi therapy, respectively



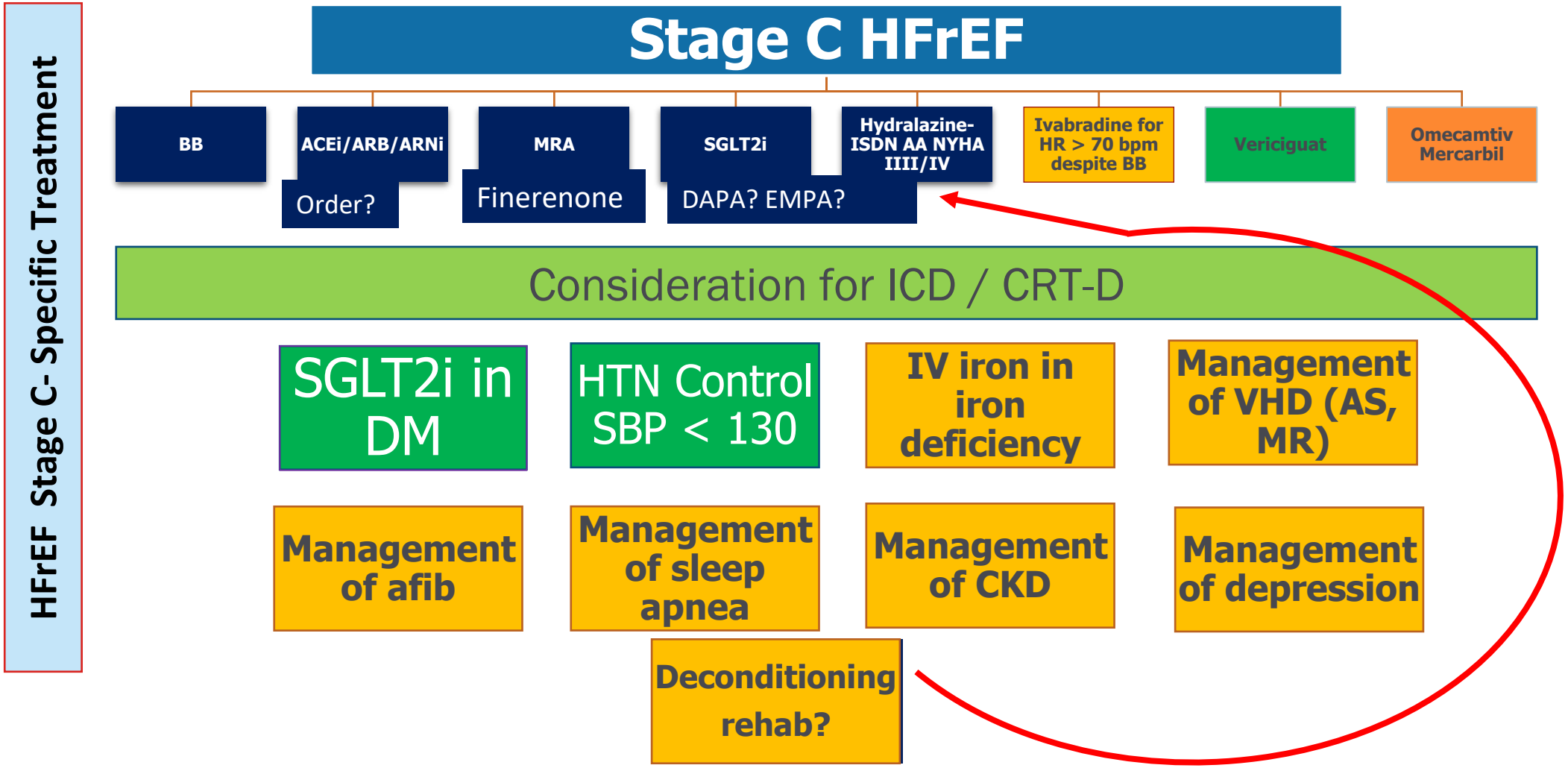
Greene SJ, et al. J Am Coll Cardiol. 2019;73:2365-2383.

Barriers to Prescribing GDMT

- Lack of standard protocols; enforcement
- Gaps in provider knowledge; inertia; "I know what to do!"
- Warnings, precautions, adverse effects; hypotension, fear of "AKI", hyperkalemia
- Suboptimal transitions of care

AKI = acute kidney injury.

Specific Treatment of Comorbidities:
Is it Time for "Precision"?



AA, African American; AS, aortic stenosis; BB, beta blocker; CKD, chronic kidney disease; CRT-D, cardiac resynchronization therapy with defibrillator; DM, diabetes mellitus; HTN, hypertension; ICD, implantable defibrillator; ISDN, isosorbide dinitrate; IV, intravenous; MR, mitral regurgitation; SBP, systolic blood pressure; VHD, valvular heart disease.

Heidenreich P, et al. Circulation. 2022;145:e895-e1032.

Summary and Looking Ahead

- Earlier intervention
- New targets
- New agents without mortality reduction
- New mechanisms, different perspective
- Better refine patient population, e.g., biomarkers
- Recognize the worsening HF patient
- Recognize the residual risk
- Mechanisms of kidney protection: importance of kidney protection
- Transition from acute to chronic
- Still plenty to do!

Expert opinion Ileana L. Piña, MD, MPH

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Experts Dialogue

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New and Emerging Agents for Worsening Heart Failure

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Disclosures: Amgen, AstraZeneca, Bayer AG, Boehringer Ingelheim, Bristol Myers Squibb, Corcept, Corteria, CSL Vifor, Cytokinetics, Eli Lilly, Lexicon, Merck, Novartis, Novo Nordisk, Otsuka, PharmaIN, Pfizer, Roche Diagnostics, Sanofi, scPharmaceuticals, Sumitomo, Tricog Health

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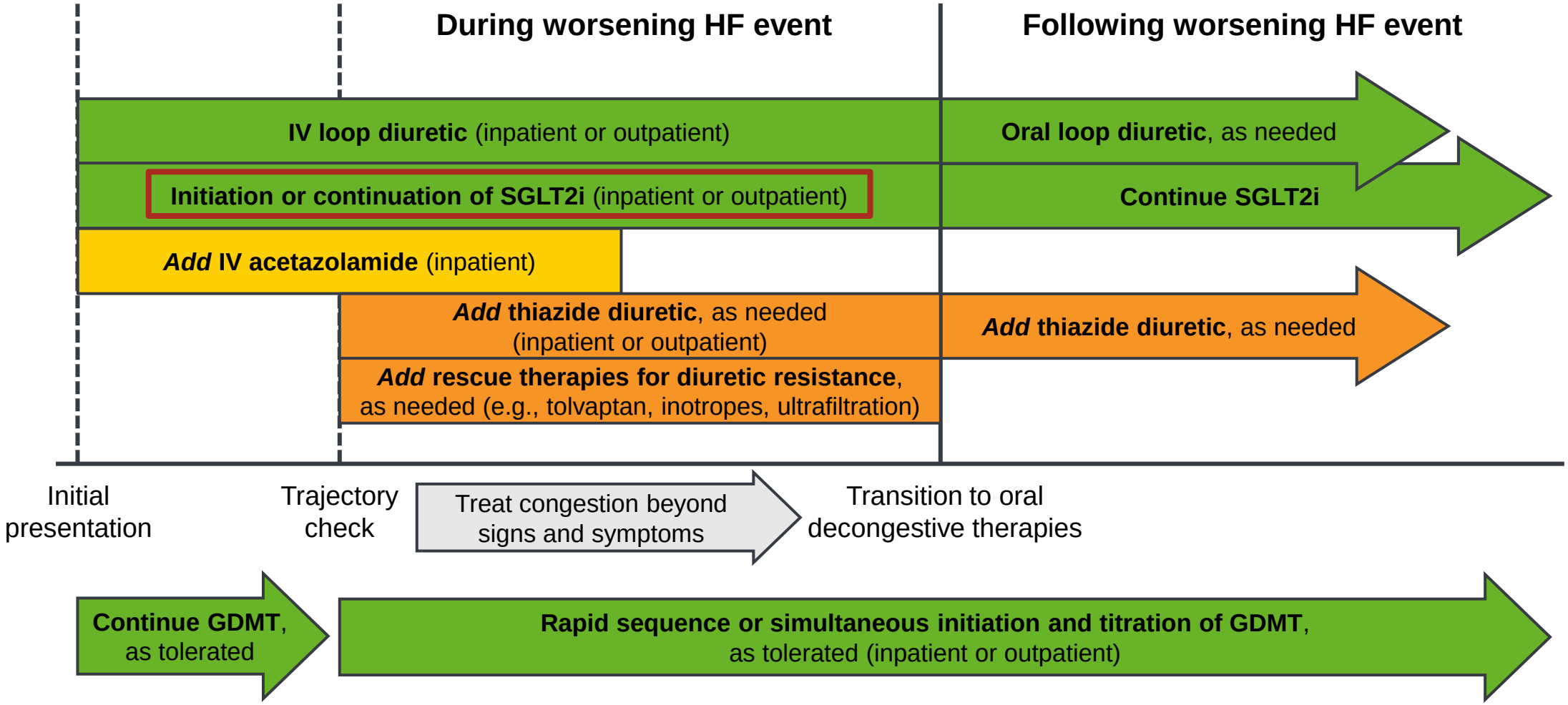
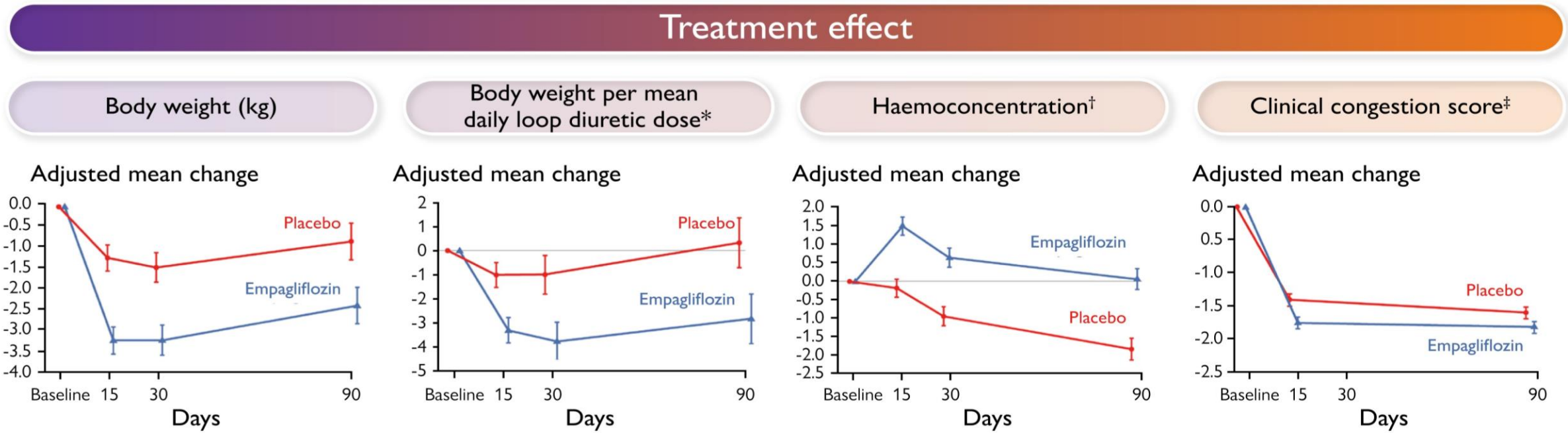
Sodium Glucose Co-transporter Inhibitors (SGLTi)

Approach to Decongestive Therapy for Worsening HF



Greene SJ et al. *J Am Coll Cardiol* 2023

SGLT2i results in early and sustained decongestion, incremental to background loop diuretic therapy

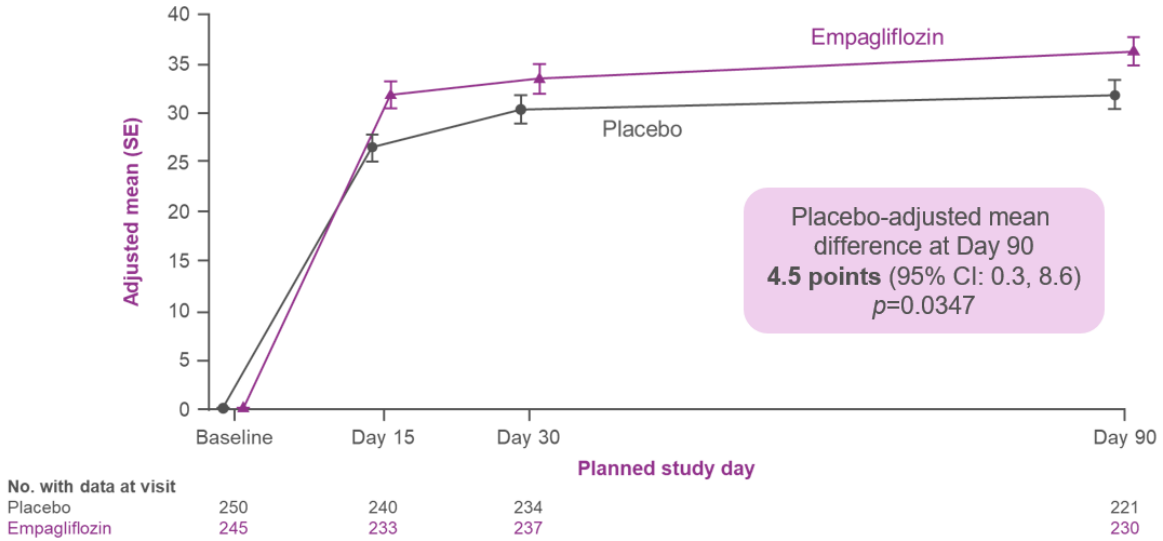


Adjusted difference:
-2.0 kg at Day 15

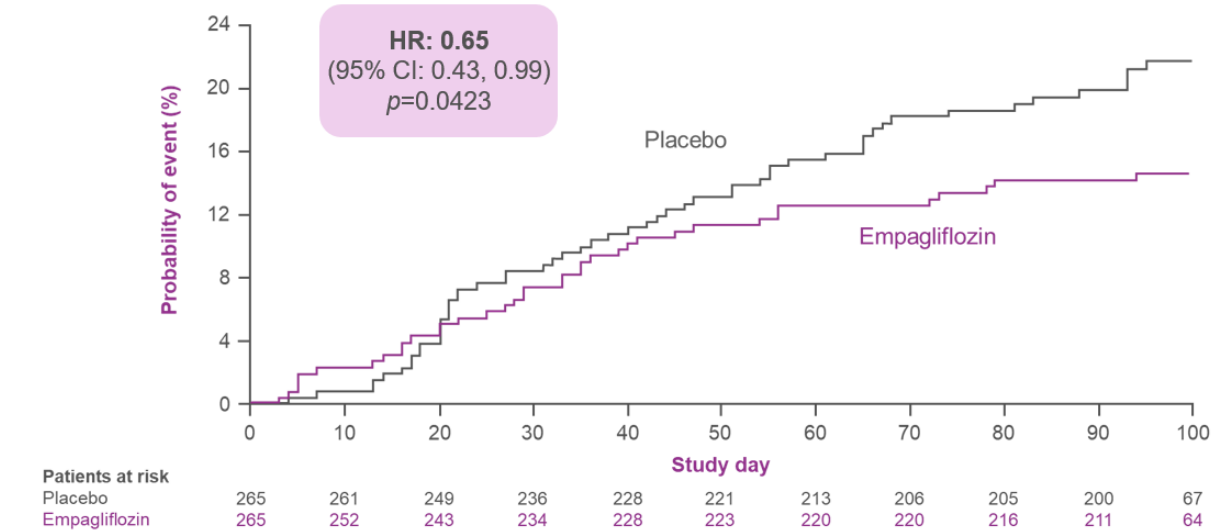
Biegus J et al. *Eur Heart J* 2023

But don’t forget….SGLT2i in EMPULSE also showed:

Secondary endpoint: change in KCCQ-TSS at Day 90



Time to all-cause death or first HFE*



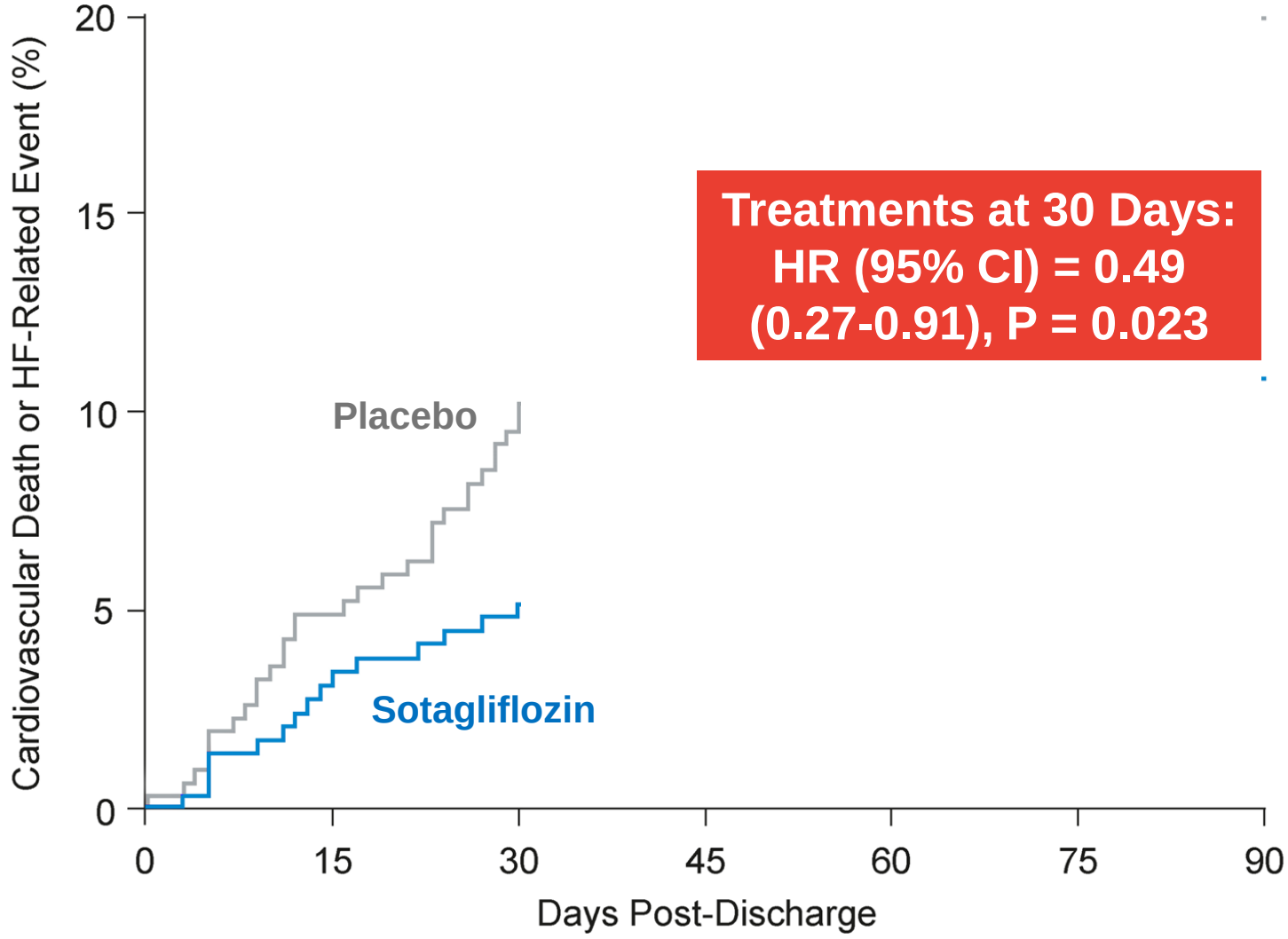
Early, sustained, incremental improvement in symptoms

Significant reduction in post-discharge death and readmission

…and numerically fewer adverse events with SGLT2i than placebo

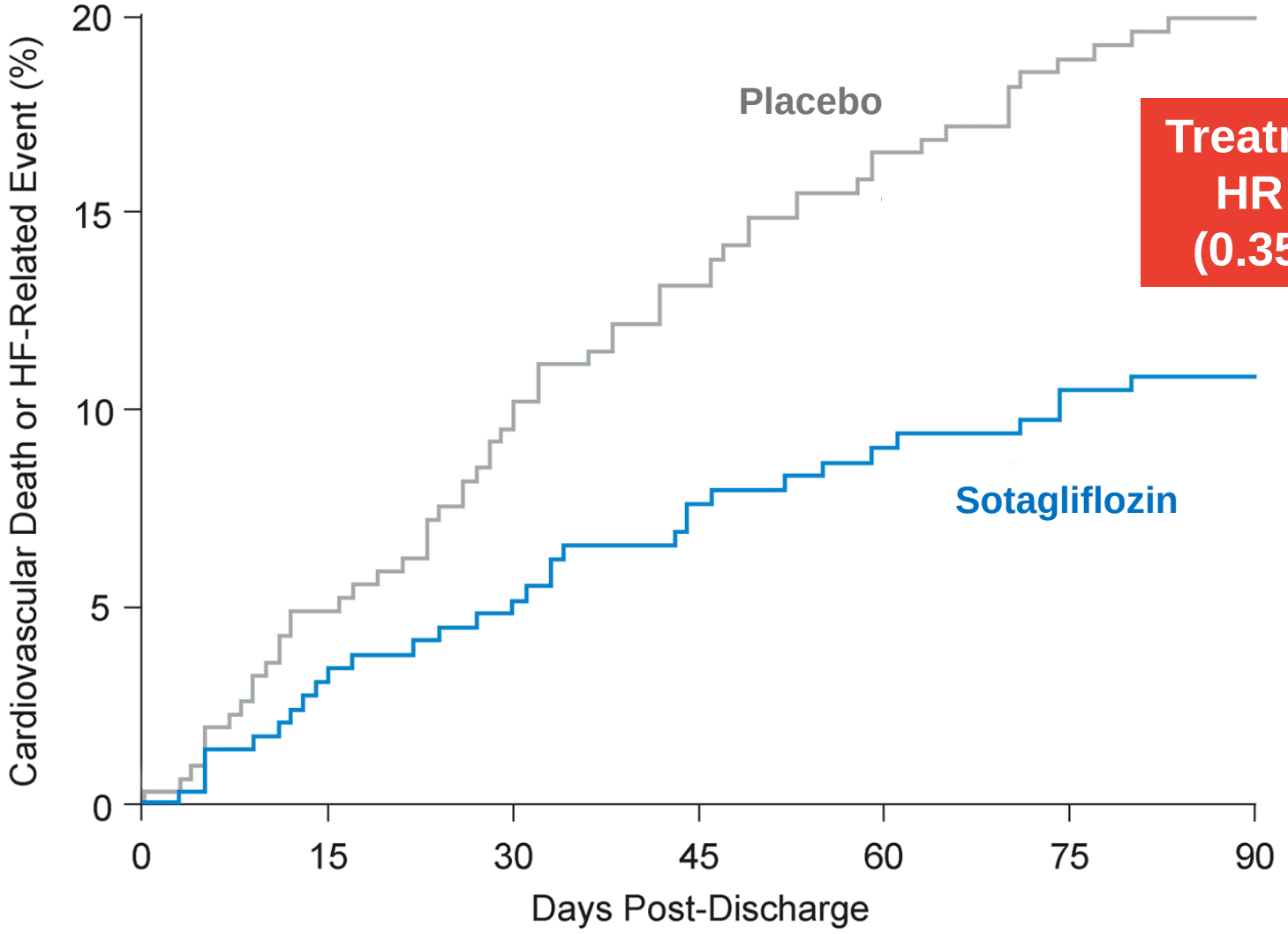
Kosiborod MN et al. *Circulation* 2022; Voors AA et al. *Nat Med* 2022

SOLOIST-WHF:
CV Death and HF-Related Events 30 Days Post Discharge



Pitt B et al. *JACC Heart Fail*. 2023 Aug;11(8):879-889.

SOLOIST-WHF:
CV Death and HF-Related Events 90 Days Post Discharge

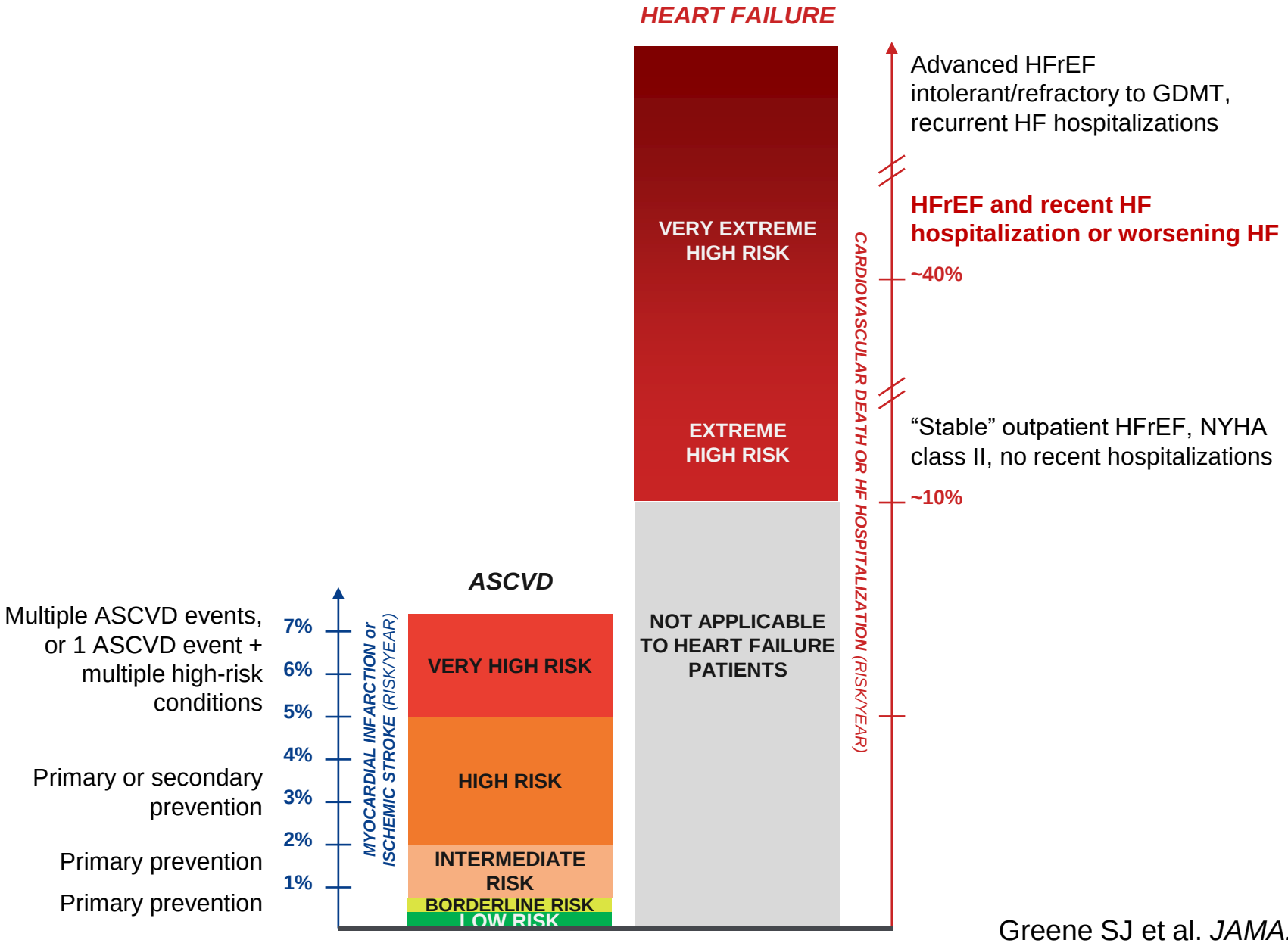


Treatments at 90 Days:
HR (95% CI) = 0.54 (0.35-0.82), P = 0.004

Pitt B et al. *JACC Heart Fail*. 2023 Aug;11(8):879-889.

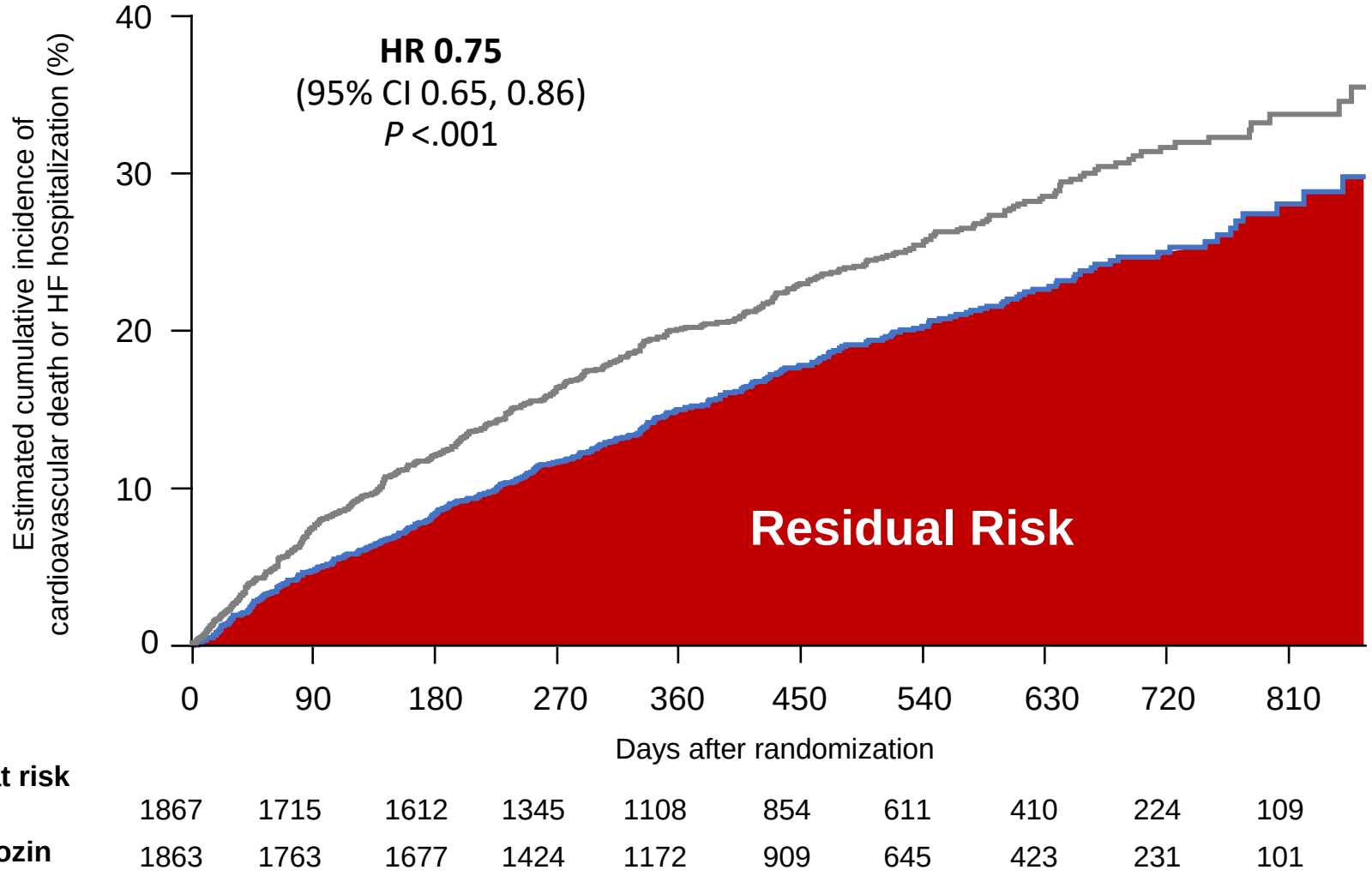
Thinking Beyond Quadruple Therapy for Worsening HF

Heart Failure Risk in Context



Greene SJ et al. *JAMA.* 2021;326:2261-62.

Residual Risk in HFrEF Despite Quadruple Therapy



Patients at risk										
Placebo	1867	1715	1612	1345	1108	854	611	410	224	109
Empagliflozin	1863	1763	1677	1424	1172	909	645	423	231	101

Placebo Event rate= 21.0/100 patient-years

Empagliflozin Event rate= 15.8/100 patient-years

Rate of CV Death or HF Hospitalization: 15.8/100 patient-years

Despite Background Quadruple Therapy

100% SGLT2i
95% BB
89% ACEI/ARB/ARNI
71% MRA

Packer M et al. *New Engl J Med.* 2020;383:1413-24.
Greene SJ et al. *J Am Coll Cardiol.* 2023;82:559-71.

Vericiguat
(Soluble Guanylate Cyclase Stimulator)

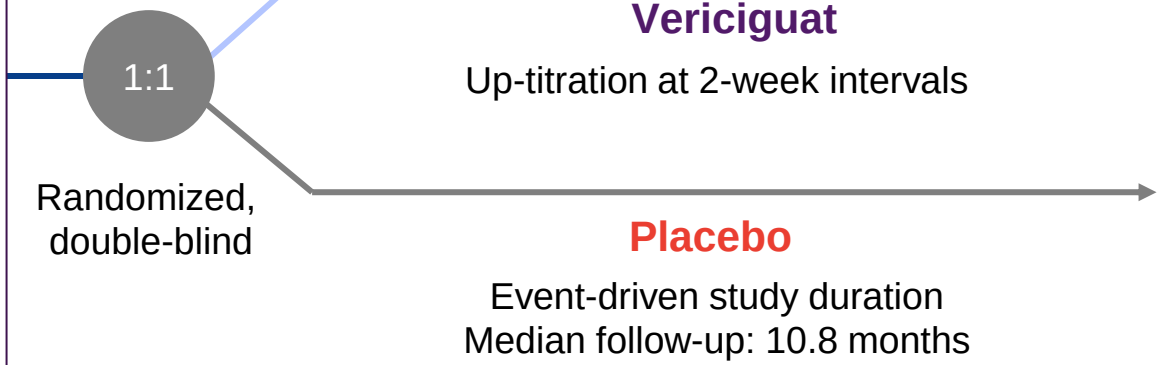
VICTORIA Phase III: Study Design[1,2]

Primary objective: To evaluate the efficacy of vericiguat in comparison with placebo against a background of contemporary HF therapies in increasing the time to first occurrence of the composite of CV death or HFH

N=5050

Symptomatic chronic HFrEF population:

- EF <45%
- Chronic HF with NYHA class II–IV
- Receiving HF SOC*
- Prior HFH within 6 months or outpatient IV diuretic for HF within 3 months
- Elevated natriuretic peptides
- SBP ≥100 mm Hg
- eGFR ≥15 mL/min/1.73 m^2



Primary endpoint: Time to first occurrence of composite of CV death or HFH

Secondary endpoints:

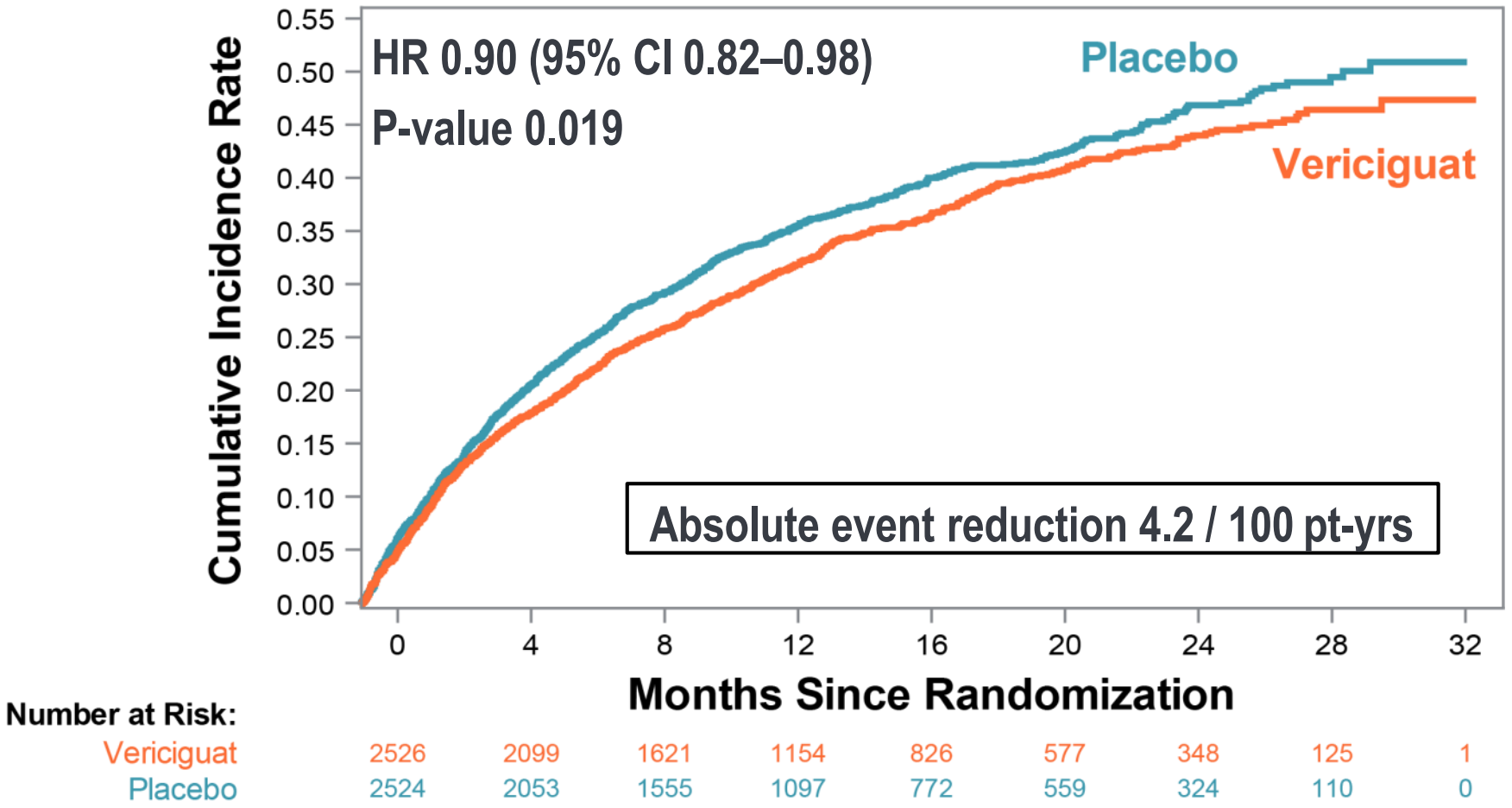
- Time to CV death
- Time to first HFH
- Time to total (first and recurrent) HFHs
- Time to total first occurrence of composite of all-cause mortality or HFH
- Time to all-cause mortality
- Safety and tolerability

*Note: All subjects received standard HF treatment following locally relevant guidelines, such as ACCF/AHA and ESC Guidelines for the Management of Heart Failure

ACCF, American College of Cardiology Foundation; AHA, American Heart Association; CV, cardiovascular; EF, ejection fraction; eGFR, estimated glomerular filtration rate; ESC, European Society of Cardiology; FDA, Food and Drug Administration; HF, heart failure; HFH, heart failure hospitalization; HFrEF, heart failure with reduced ejection fraction; IV, intravenous; NT-proBNP, N-terminal pro B-type natriuretic peptide; od, once daily; QoL, quality of life; SBP, systolic blood pressure.

1. Armstrong PW, et al. *JACC Heart Fail.* 2018;6(2):96-104; 2. Armstrong PW, et al. *N Engl J Med.* 2020;382(20):1883-1893.

Primary Composite Endpoint: CV Death or First HF Hospitalization



Armstrong PW et al. NEJM 2020

2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure

Other pharmacological treatments indicated in selected patients with NYHA class II–IV heart failure with reduced ejection fraction (LVEF ≤ 40%)

Soluble guanylate cyclase receptor stimulator		
Vericiguat may be considered in patients in NYHA class II–IV who have had worsening HF despite treatment with an ACE-I (or ARNI), a beta-blocker and an MRA to reduce the risk of CV mortality or HF hospitalization.[141]	IIb	B

2022 AHA/ACC/HFSA Guideline for the Management of Heart Failure

A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines

COR	LOE
2b	B-R

In selected high-risk patients with HFrEF and recent worsening of HF already on GDMT, an oral soluble guanylate cyclase stimulator (vericiguat) may be considered to reduce HF hospitalization and cardiovascular death.

McDonagh TA et al. *Eur Heart J.* 2021;42:3599-3726.
Heidenreich PA et al. *J Am Coll Cardiol.* 2022;79:e263-421.

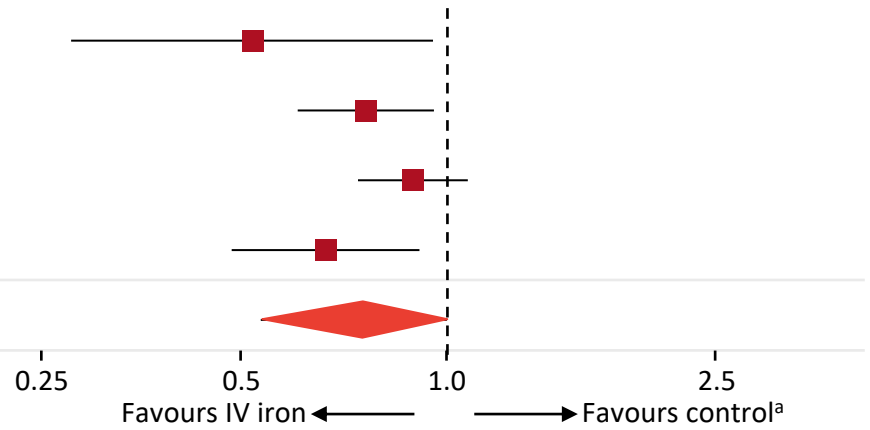
Intravenous Iron

Sensitivity Analysis (3 FCM Studies + IRONMAN)
Total HF Hospitalizations + CV Death

Censored at 52 weeks

Study	Rate ratio (95% CI)
CONFIRM-HF	0.51 (0.28–0.95)
AFFIRM-AHF	0.76 (0.60–0.96)
HEART-FID	0.89 (0.74–1.07)
IRONMAN	0.66 (0.48–0.91)
Overall	**0.76 (0.53–1.00)**

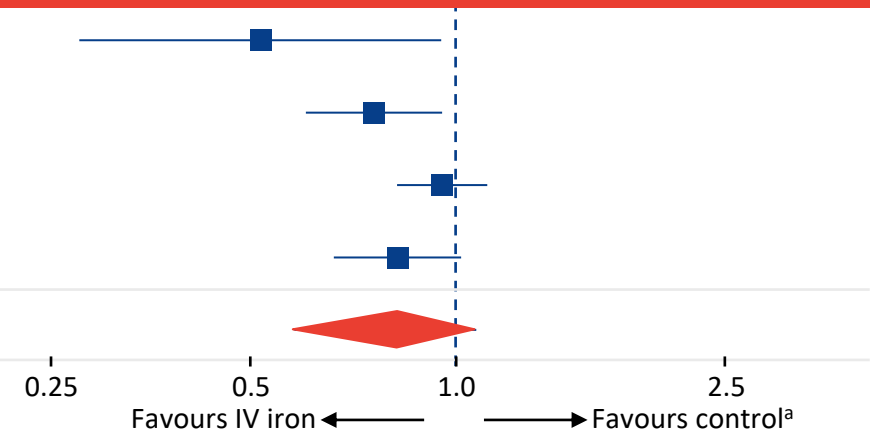
Tau=0.16 (95% CI: 0.00–0.53)



All data
1 year
1 year
1.9 years (median)
2.7 years (median)

Study	Rate ratio (95% CI)
CONFIRM-HF	0.51 (0.28–0.95)
AFFIRM-AHF	0.76 (0.60–0.96)
HEART-FID	0.96 (0.82–1.11)
IRONMAN	0.82 (0.66–1.02)
Overall	**0.82 (0.58–1.07)**

Tau=0.16 (95% CI: 0.00–0.53)



[a]Placebo or standard of care. Standardized trial level analyses were performed using the semiparametric LWYY model, including treatment and region as factors. Analysis used Bayesian random-effects meta-analysis.
CI=credible interval; CV=cardiovascular; FCM=ferric carboxymaltose; HF=heart failure; IV=intravenous.

Ponikowski P et al. Eur Heart J. 2023

Medical Therapy for Worsening HFrEF

Oral therapy

Step #1:

Rapid sequence or simultaneous initiation of disease-modifying therapies

Quadruple therapy

ARNI*	BB	MRA	SGLT2i	Vericiguat

Quintuple therapy with vericiguat

- Prioritize initiating low doses to maximize tolerability
  - However, STRONG-HF demonstrated that initiation of medium doses can be considered in select patients
- Prioritize initiating multiple/all medications prior to dose escalation of any one medication

Step #2:

Dose escalation of oral therapies, as tolerated

Quadruple therapy

↑ ARNI*	↑ BB	↑ MRA	Continue SGLT2i	↑Vericiguat

Quintuple therapy with vericiguat

- Goal to achieve maximally tolerated or target doses of all eligible GDMT within 4–6 weeks
- Prioritize dose escalation of BB, as tolerated, given strongest dose-response data
- Dose escalation may require multiple visits; consider including virtual/remote visits to facilitate rapid titration
- Serial laboratory monitoring of kidney function, serum potassium and NT-proBNP during titration to confirm safety

IV therapy

IV iron

Among patients with iron deficiency#

Strength of recommendation and benefit	
	Proven to improve HF outcomes, including mortality Foundational therapy to be utilized in all eligible patients, as tolerated
	Proven to improve HF outcomes other than mortality Therapy should be strongly considered, as tolerated

*ACEi/ARB is strongly recommended when use of ARNi is not feasible.
Ferritin <100 µg/l, or 100–299 µg/l with transferrin saturation <20%.

Greene SJ et al. *J Am Coll Cardiol.* 2023;82:559-71.

Management of Worsening HF with Reduced EF

- **Rapid sequence or simultaneous initiation of quadruple medical therapy** is **the foundational strategy** for improving outcomes for worsening HFrEF.
  - start all without significant delay or prior to hospital discharge, as tolerated
  - top priority is at least low doses of all 4 medications
- **Worsening HFrEF is an extreme risk condition, with substantial residual risk even with quadruple medical therapy.** Additionally, some patients cannot tolerate or are ineligible for ≥1 component of quadruple therapy.
- **Early up-front use of vericiguat and IV iron**, in combination with simultaneous/rapid sequence optimization of quadruple medical therapy (i.e., **quintuple medical therapy**), can be considered to further reduce the high residual risk of worsening HFrEF.

Greene SJ et al. *J Am Coll Cardiol.* 2023;82:559-71.

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Management of Patients with Worsening Heart Failure

Patient Case & Panel Discussion

Javed Butler, MD MPH MBA

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Disclosures: Abbott, American Regent, Amgen, Applied Therapeutic, AskBio, Astellas, AstraZeneca, Bayer, Boehringer Ingelheim, Boston Scientific, Bristol Myers Squibb, Cardiac Dimension, Cardiocell, Cardior, CSL Bearing, CVRx, Cytokinetics, Daxor, Edwards, Element Science, Faraday, Foundry, G3P, Innolife, Impulse Dynamics, Imbria, Inventiva, Ionis, Lexicon, Lilly, LivaNova, Janssen, Medtronics, Merck, Occlutech, Owkin, Novartis, Novo Nordisk, Pfizer, Pharmacosmos, Pharmain, Prolaio, Regeneron, Renibus, Roche, Salamandra, Sanofi, SC Pharma, Secretome, Sequana, SQ Innovation, Tenex, Tricog, Ultromics, Vifor, and Zoll

Outpatient Clinic Visit

- 64 yr. old male come for a clinic visit 2 weeks post-discharge from the hospital for decompensated HF.
- Was treated with IV diuretics
  - lost 5 lbs. and was discharged.
- History of HFrEF, LVEF during hospitalization was 32%
  - EF unchanged from one done 2 year ago.
- Now have class II symptoms.

History (2)

- Past History
  - IHD, MI with 2v PCI 4 years ago
  - Hypertension
  - Diabetes
  - Chronic Kidney Disease
  - Dyslipidemia
- Primary prevention ICD placed 1 year ago
- Smoker, but stopped at the time of MI

Medications

- ASA
- Clopidogrel
- Enalapril 5mg
- Carvedilol 12.5 bid
- Spironolactone 12.5 qod
- Furosemide 40 bid
- Metformin 500 bid
- Atorvastatin 80qd
- Linagliptin 5mg qd

Evaluation

- Blood Pressure 104/70 mmHg
- Heart Rate 71 bpm
- RR 16
- Body Mass Index 29
- JVP - 8cm (difficult to assess)
- Chest - clear
- CVS - S1S2 soft MR, no S3S4
- Abdomen – no HSM or ascites
- Legs – trace to 1+ edema

Evaluation (2)

- Laboratory values
- Na+ 144
- K+ 5.0
- eGFR 32
- Hgb 11.8
- TSH and iron indices normal
- HbA1c 7.4
- NTproBNP 1486
- ECG – NSR, QRS 110msec
- CXR (in hospital) – ICD lead
- Echo (in hospital) – LVEDD 6.0, LVEF 32%, RV normal, MR 2+

Management Options

What would you do first?
What would you do overall?
How many visit would you take to achieve your goal?
How frequently will you see this patient?

1. Increase enalapril
2. Switch to ARNI
3. Increase Beta blocker
4. Add ivabradine
5. Add SGLT2i
6. Increase MRA
7. Increase diuretics
8. Add vericiguat
9. Refer for Mitraclip
10. Add K+ binder

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