

ECHO IDAHO

Managing Heart Failure
in Primary Care

Managing Heart Failure for Special Populations

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Chris Longenecker, MD reported a financial relationship with Gilead Sciences as being on their Advisory Board on HIV. This relationship was deemed irrelevant in his role as a panelist in this series. None of the other planners or presenters for this educational activity have relevant financial relationship(s) to disclose with ineligible companies whose primary business is producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients.



University of Idaho
School of Health and Medical
Professions



Disclosures

- Chris Longenecker has served on an advisory board for Gilead Sciences. All relevant financial relationships have been mitigated.

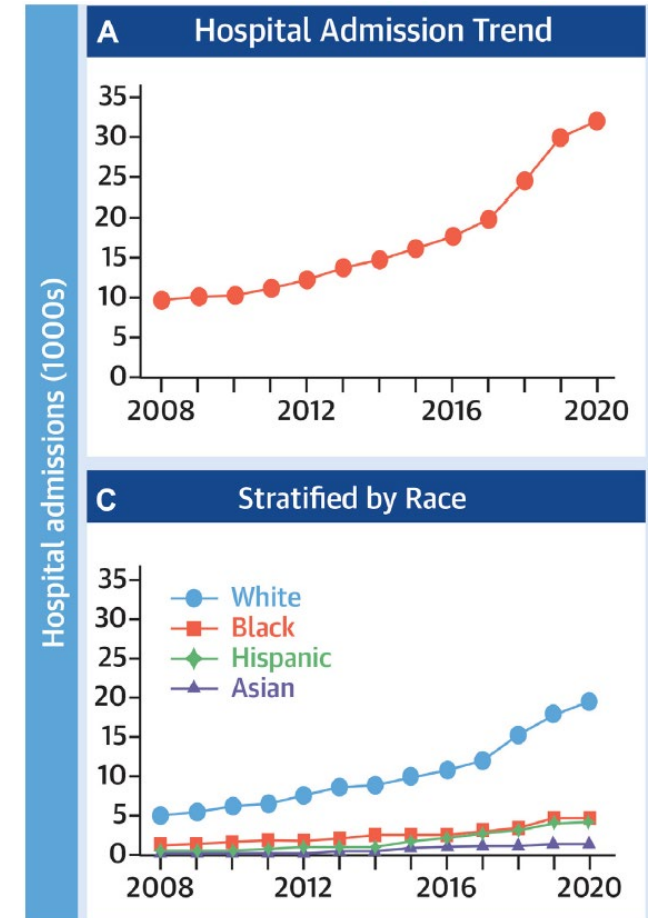
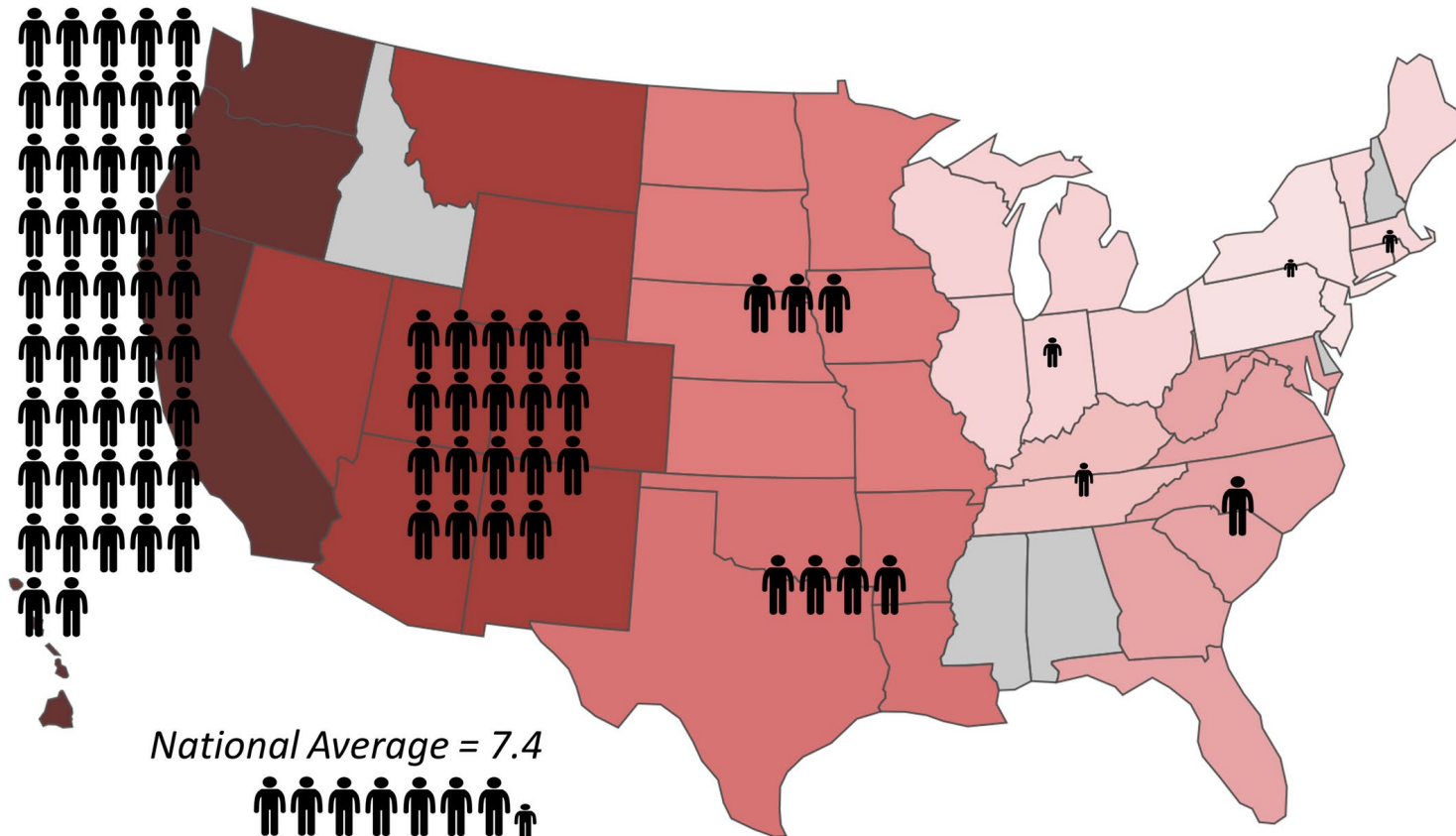
Learning Objectives

- Describe the epidemiology of methamphetamine associated heart failure and associated unique management challenges
- Identify opportunities to improve heart failure care for people living in rural areas
- Summarize the safety and efficacy of guideline directed medical therapy in older frail patients

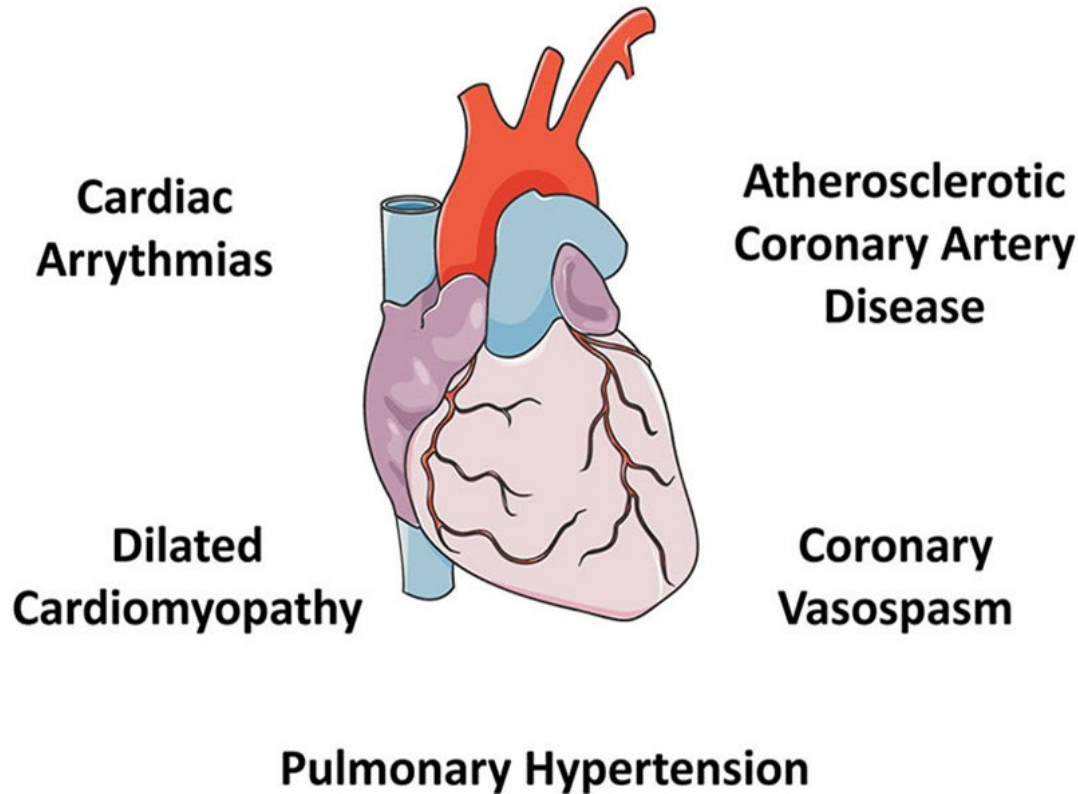
Methamphetamine Associated Heart Failure

Methamphetamine use is an increasing cause of heart failure in the Western USA

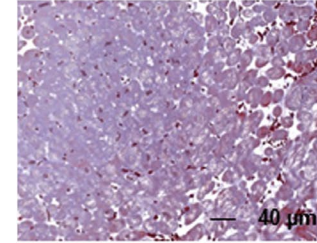
Methamphetamine-Associated Heart Failure (MethHF) Hospitalizations, Prevalence per 1,000 HF Hospitalizations



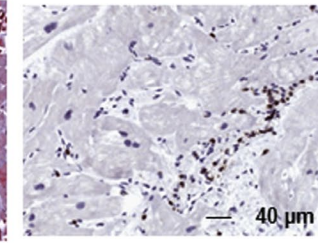
Methamphetamine damages the heart in multiple ways



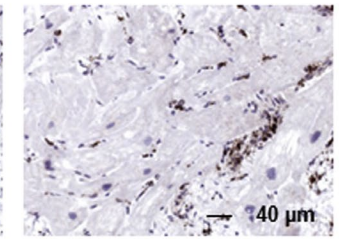
Masson-Trichrome



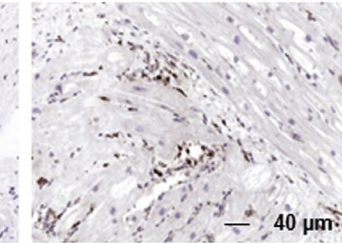
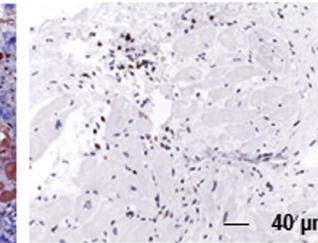
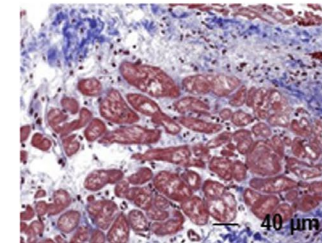
CD3+ T-cells



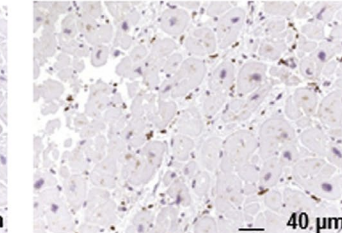
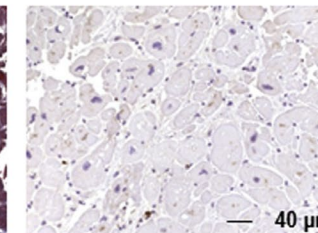
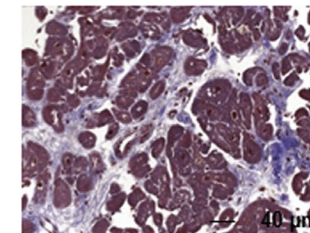
CD68+ Macrophages



Male patient, MA abuse for 2 years, improved LV-EF at follow up
Mild fibrosis and myocyte damage, severe inflammation

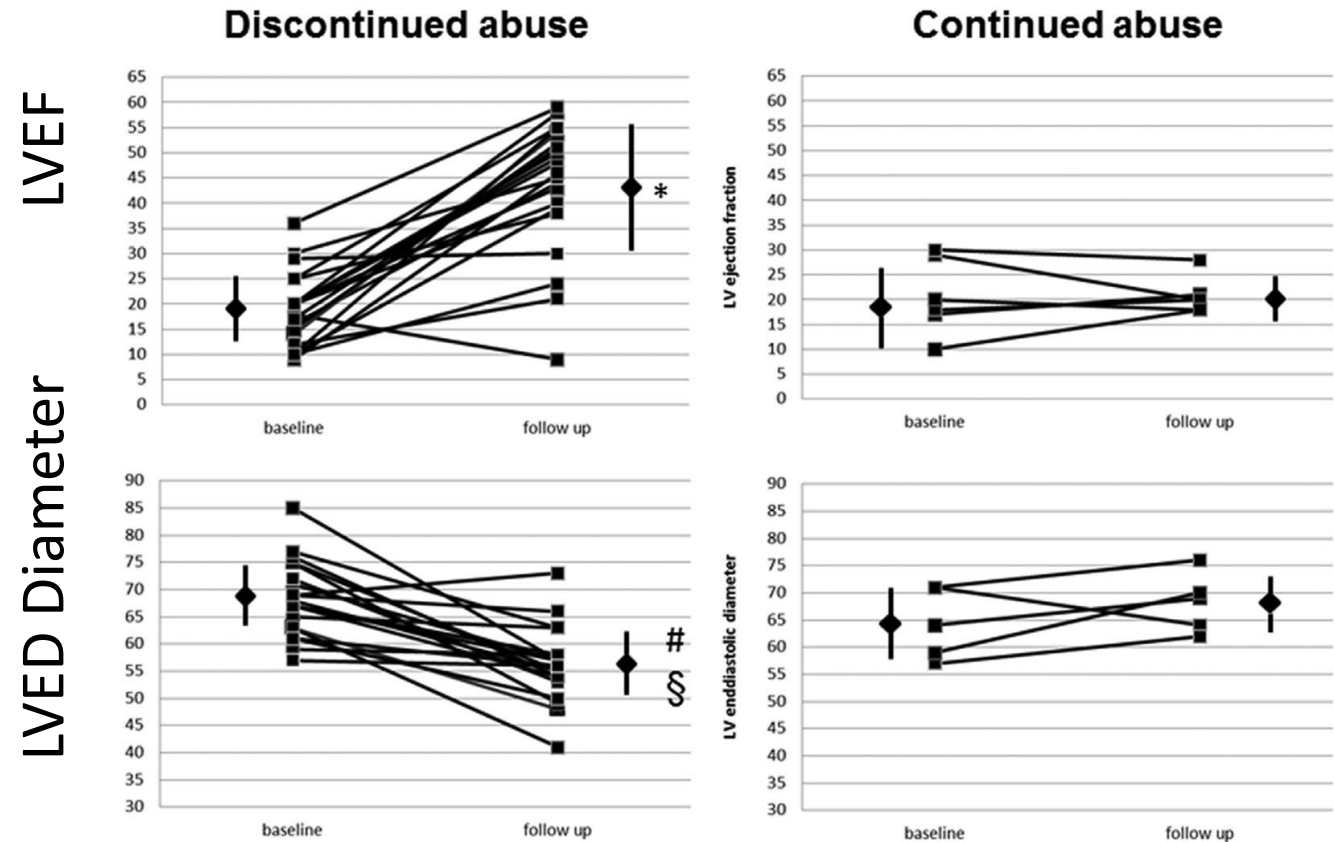
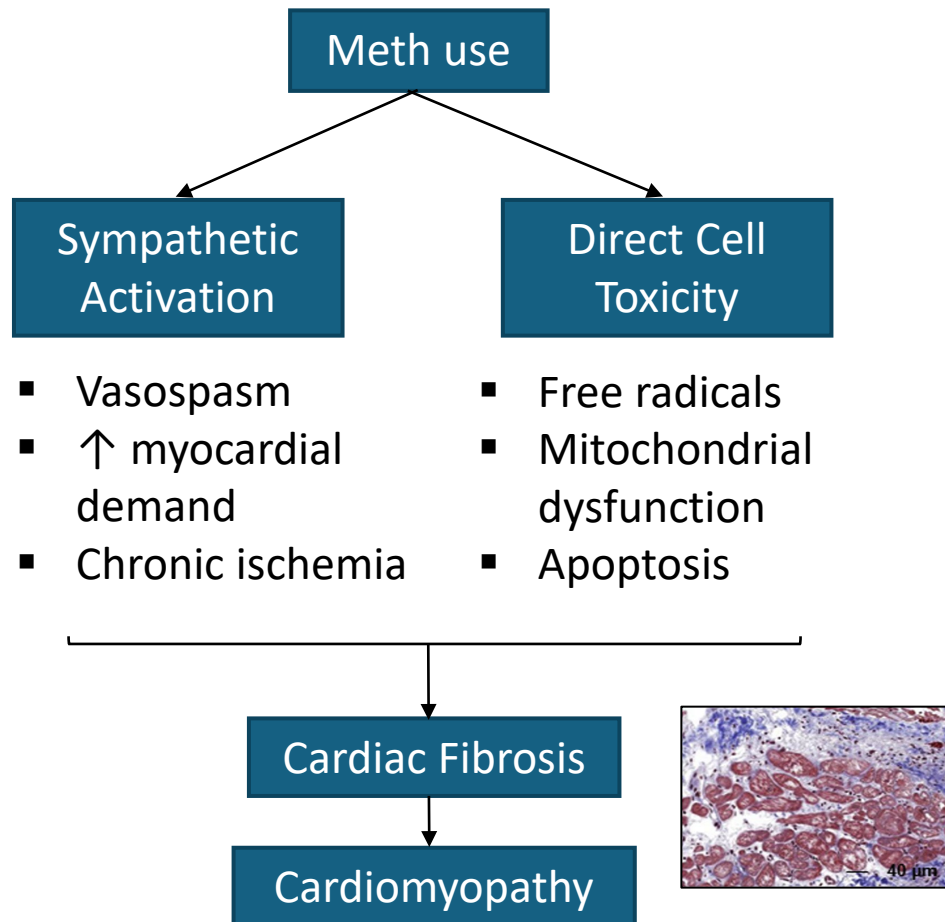


Male patient, MA abuse for 10 years, did not improve LV-EF at follow up
Severe fibrosis and myocyte damage, severe inflammation



Male patient, MA abuse for 14 years, died
Severe fibrosis and myocyte damage, moderate inflammation

But the damage may be reversible with cessation or change in use pattern



Vulnerable population

- Young, usually <50 years old
- Men > Women
- Black > White
- Housing instability
- Uninsured/Medicaid
- More psychiatric disease
- Less medical comorbidities



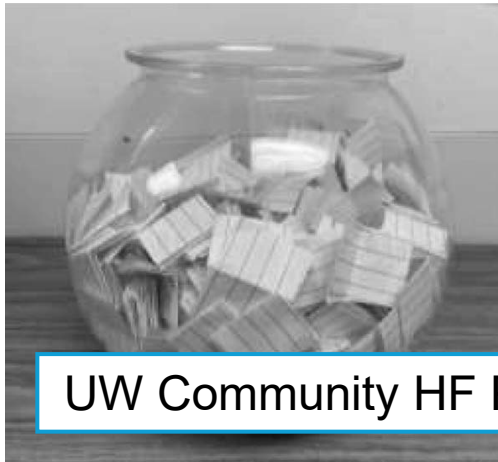
Contingency management might work for HF

ORIGINAL RESEARCH

OPEN

A Mixed-methods Evaluation of an Addiction/Cardiology Pilot Clinic With Contingency Management for Patients With Stimulant-associated Cardiomyopathy

Sarah Leyde, MD, Elizabeth Abbs, MD, Leslie W. Suen, MD, MAS, Marlene Martin, MD, Andreas Mitchell, MD, MPP, Jonathan Davis, MD, and Soraya Azari, MD



UW Community HF Program at Harborview Medical Center



Community-Based Outreach for MAHF Improves LVEF

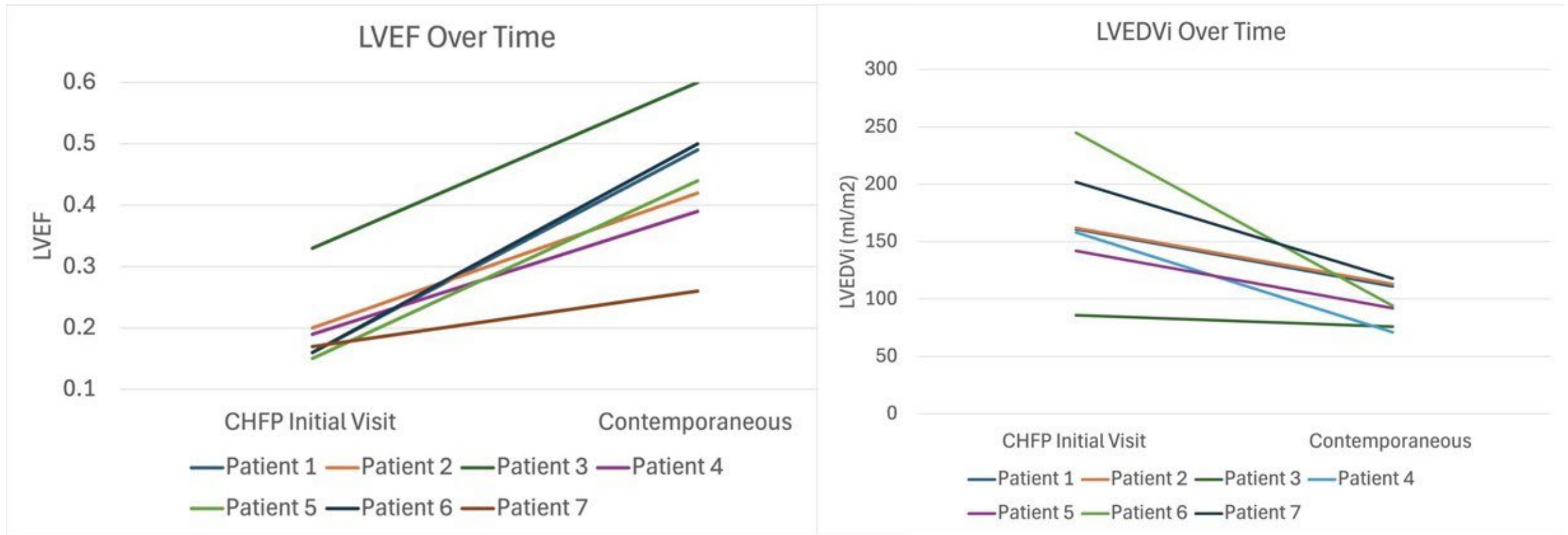


Figure 1: Change in left ventricular ejection fraction (LVEF) and left ventricular end diastolic volume indexed to body surface area (LVEDVi) as measured by echocardiography at patient's initial community heart failure visit and contemporaneously.

Does GDMT work for people living with meth heart failure?

- 50 yo man with history of HIV, DM, and methamphetamine use disorder
 - 2018 - Initial presentation decompensated HF (EF <20%, non-obs CAD)
 - Variable compliance with outpatient follow-up
 - 2021 - Cardioembolic stroke (LV thrombus)
- Care transferred to Harborview
 - HIV care @ MAX Clinic (low barrier to care clinic)
 - CVD care @ Harborview cardiology
 - HIV + CVD contingency management

Does GDMT work for people living with meth heart failure?

- Initial GDMT @ first HMC Cardiology
 - Losartan 25
 - No BB, MRA, or sGLT2i
- Next 12 months at HMC
 - 35 office visit encounters with cardiologist, RN, clinical pharmacist
- Current GDMT
 - Losartan 150
 - Metoprolol Succinate 100
 - Spironolactone 25
 - Empagliflozin 10

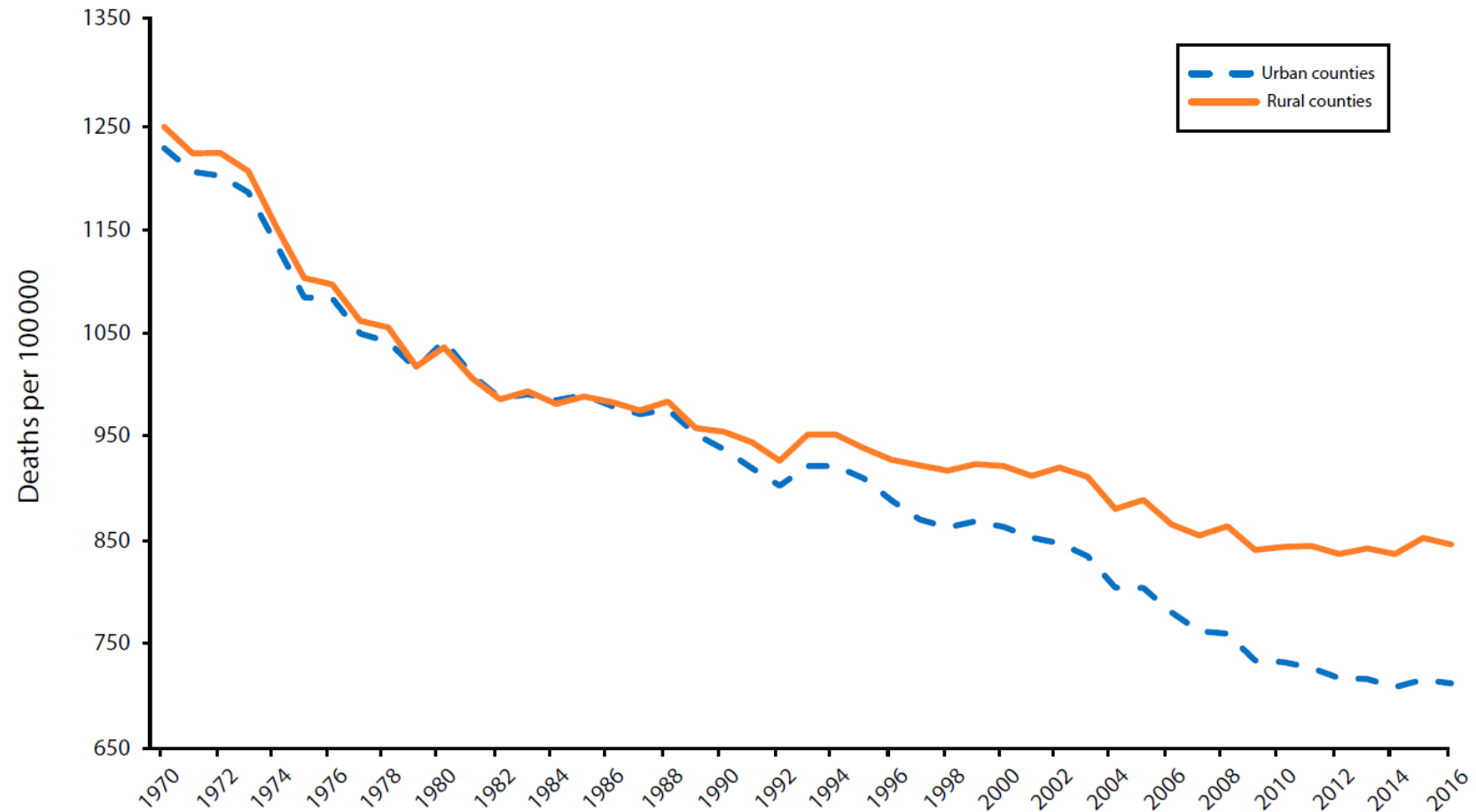
EF now
55%!

* But elevated PA systolic pressure and RV dysfunction

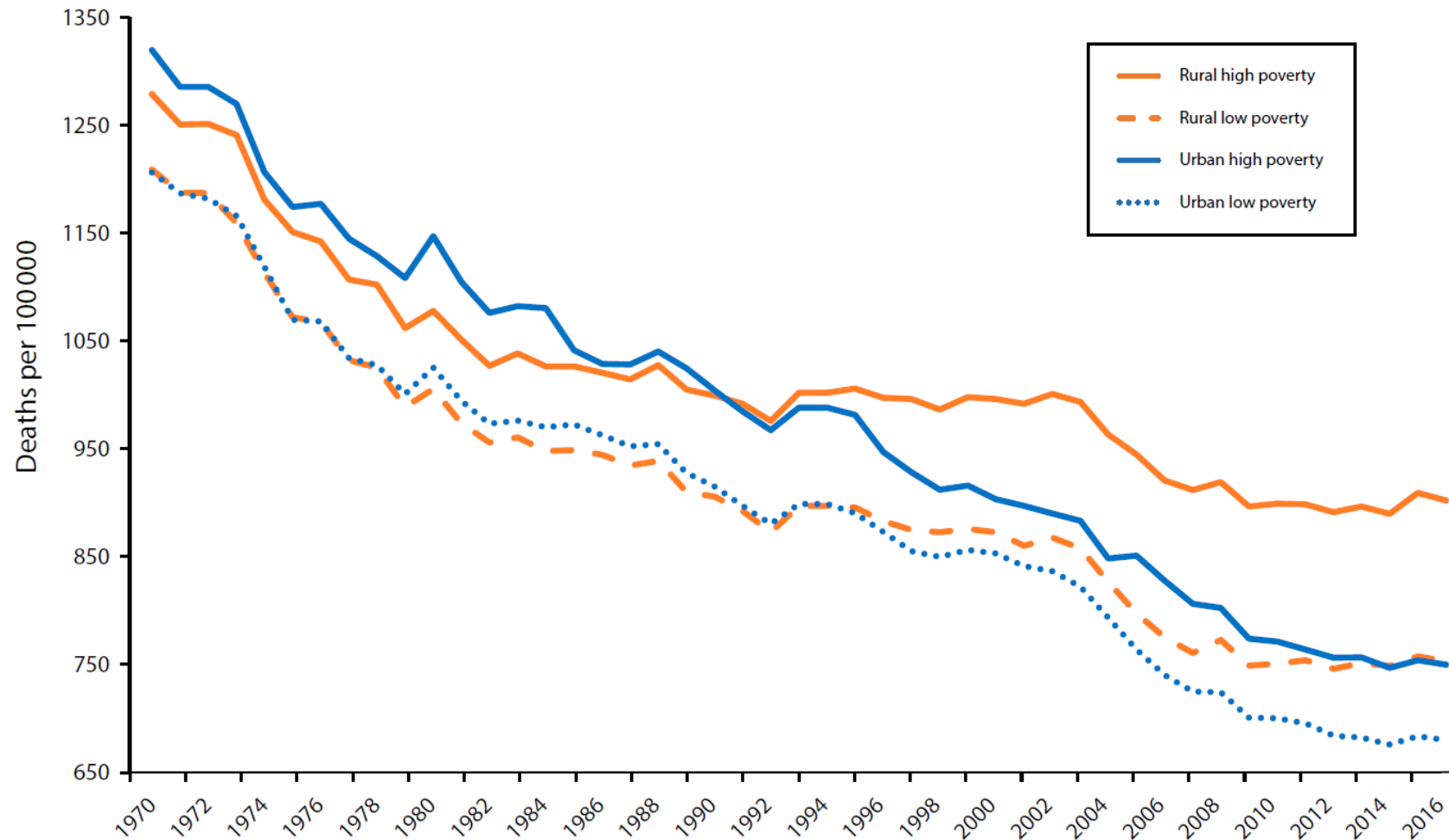
- * No recent HF hospitalization
- * On ART and engaged in HIV care
- * Meth use reduced but not completely

Living with Heart Failure in Rural Areas

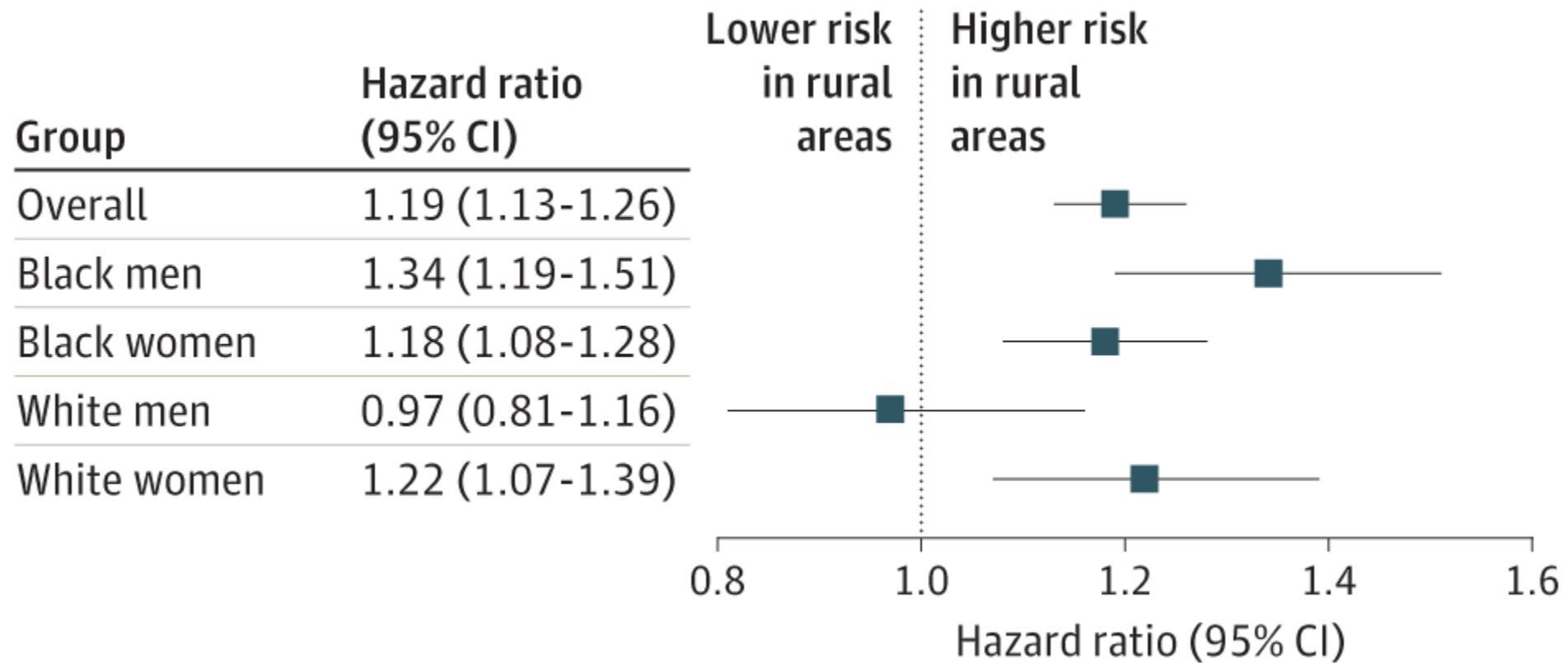
Rural vs. Urban Mortality Trends



Rural vs. Urban Mortality Trends



Rural vs. Urban Heart Failure Risk



Rural vs. Urban Heart Failure Risk

Table 3. Rurality-Associated Risk of Incident Heart Failure

Model	HR (95% CI)				
	Overall	Black men	White men	Black women	White women
1: Demographic data ^a	1.21 (1.15-1.28)	1.38 (1.24-1.53)	1.04 (0.89-1.22)	1.22 (1.12-1.32)	1.13 (1.01-1.28)
2: Biological ^b	1.17 (1.11-1.24)	1.30 (1.17-1.45)	0.98 (0.84-1.15)	1.18 (1.09-1.28)	1.13 (1.00-1.27)
3: Behavioral ^c	1.20 (1.13-1.27)	1.35 (1.20-1.52)	0.96 (0.81-1.14)	1.20 (1.10-1.31)	1.19 (1.05-1.36)
4: Sociocultural environment ^d	1.19 (1.13-1.26)	1.34 (1.19-1.51)	0.97 (0.81-1.16)	1.18 (1.08-1.28)	1.22 (1.07-1.39)

Abbreviation: HR, hazard ratio.

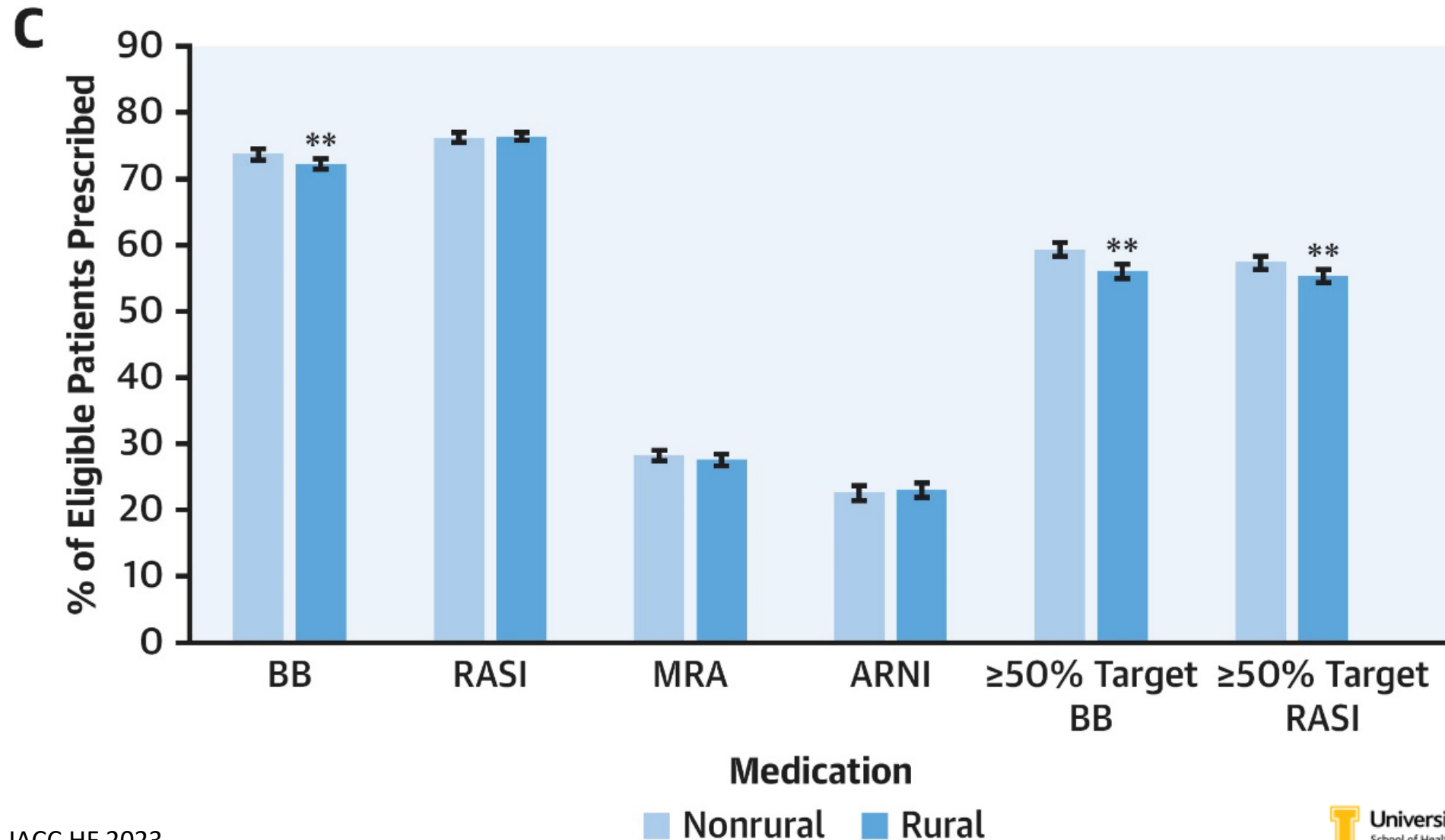
^a Model 1 (demographic data): age, sex, and race and ethnicity.

^b Model 2 (biological): model 1 adjustments plus hypertension, diabetes, coronary disease, hyperlipidemia, stroke, depression, and body mass index.

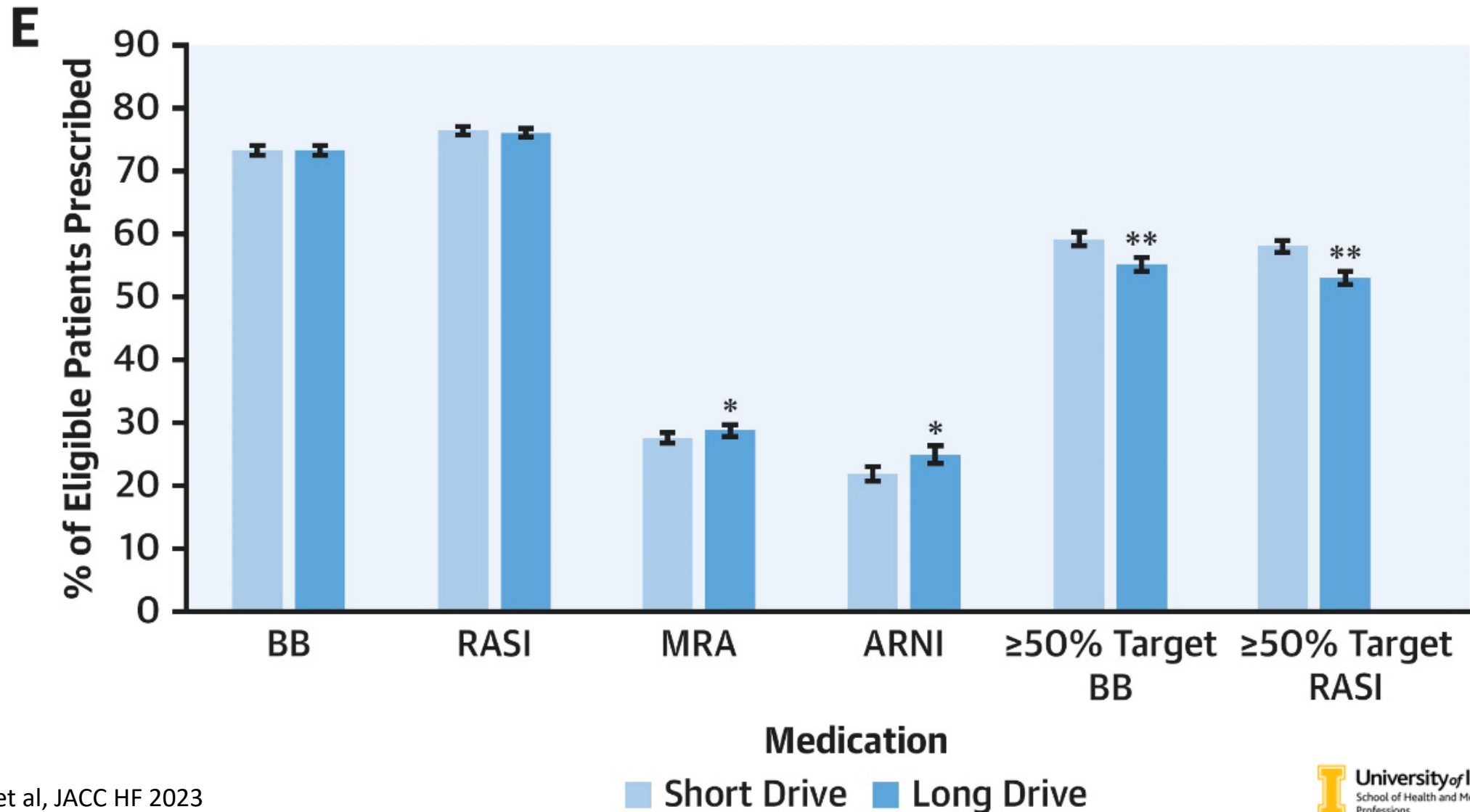
^c Model 3 (behavioral): model 2 adjustments plus smoking status, healthy eating index, and physical activity (metabolic equivalent, h/d, and time sitting, h/d).

^d Model 4 (sociocultural environment): model 3 adjustments plus income, education, and marital status.

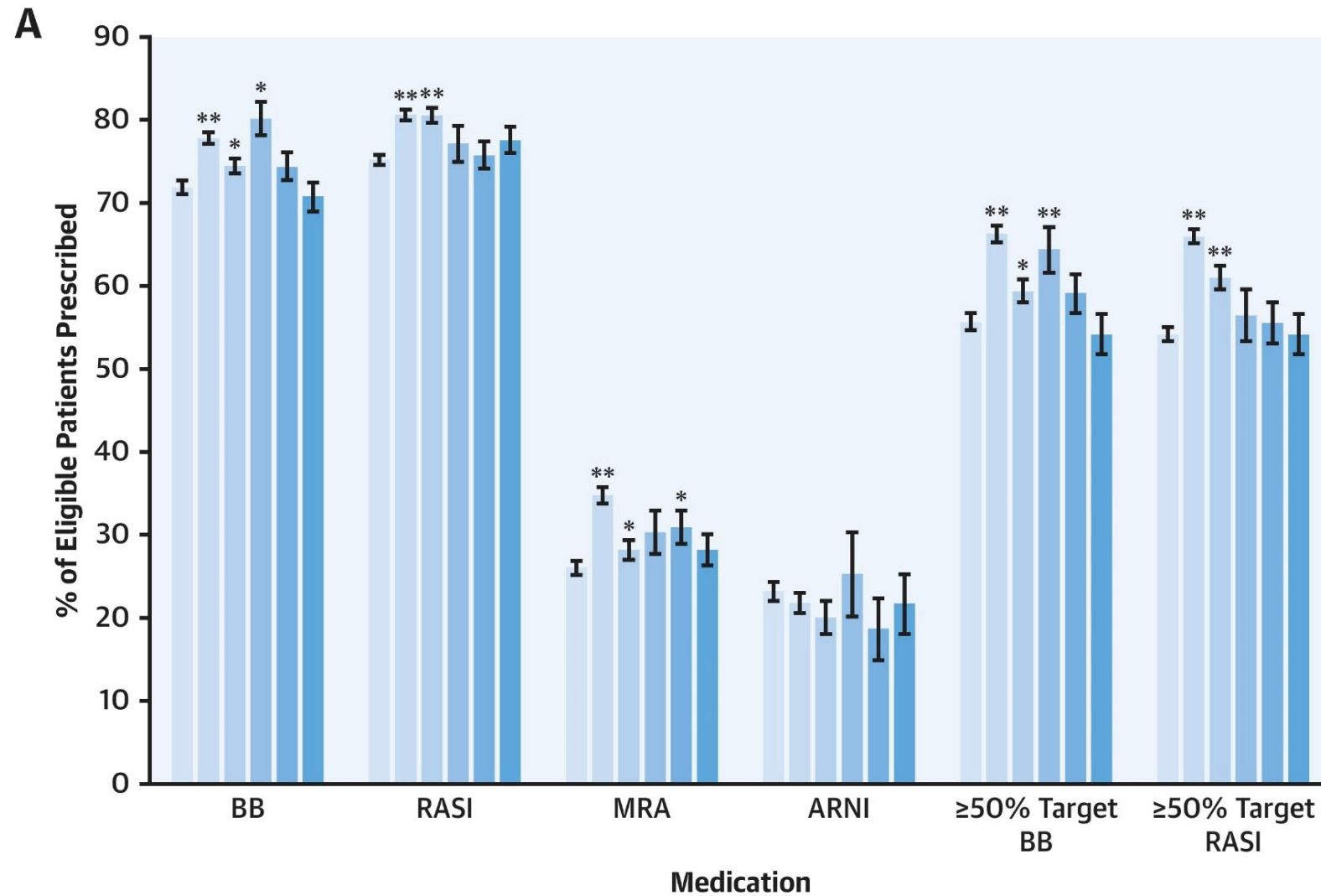
Rural-Urban Disparities in GDMT



Rural-Urban Disparities in GDMT

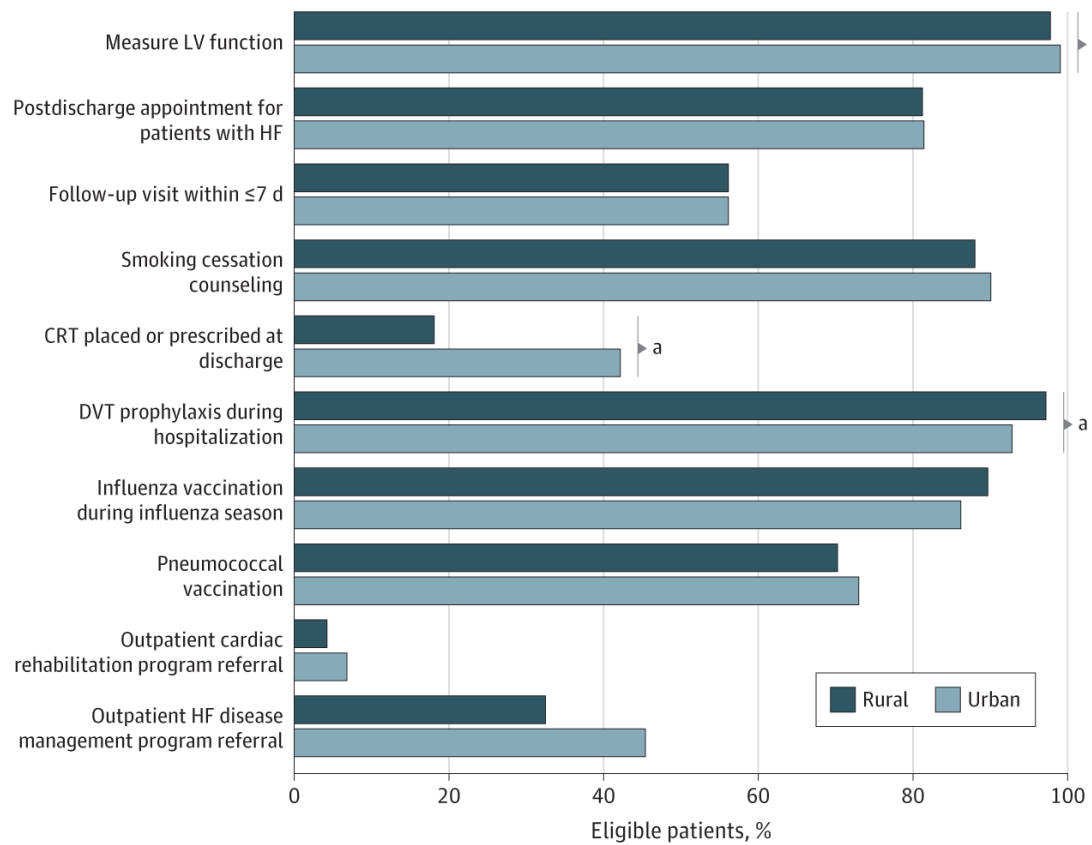


Rural/Urban Disparity > Race/Ethnicity

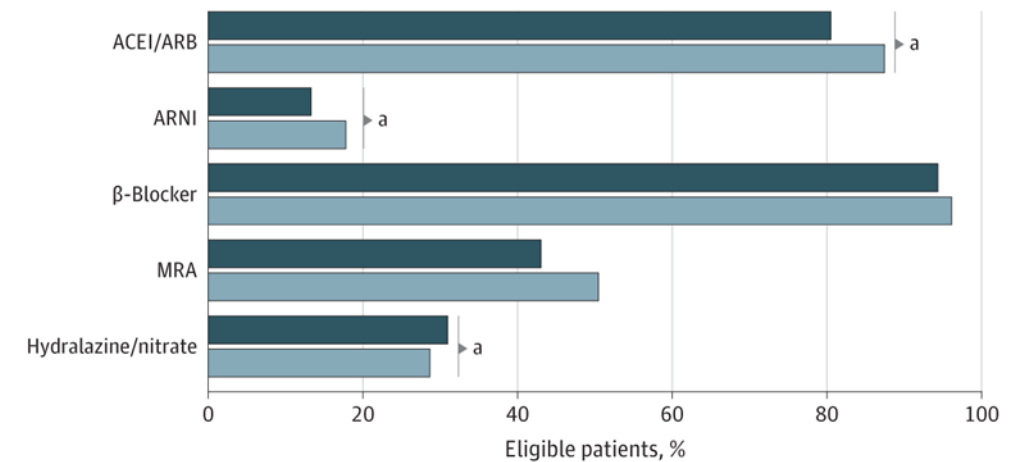


HF Quality Metrics Worse in Rural Hospitals

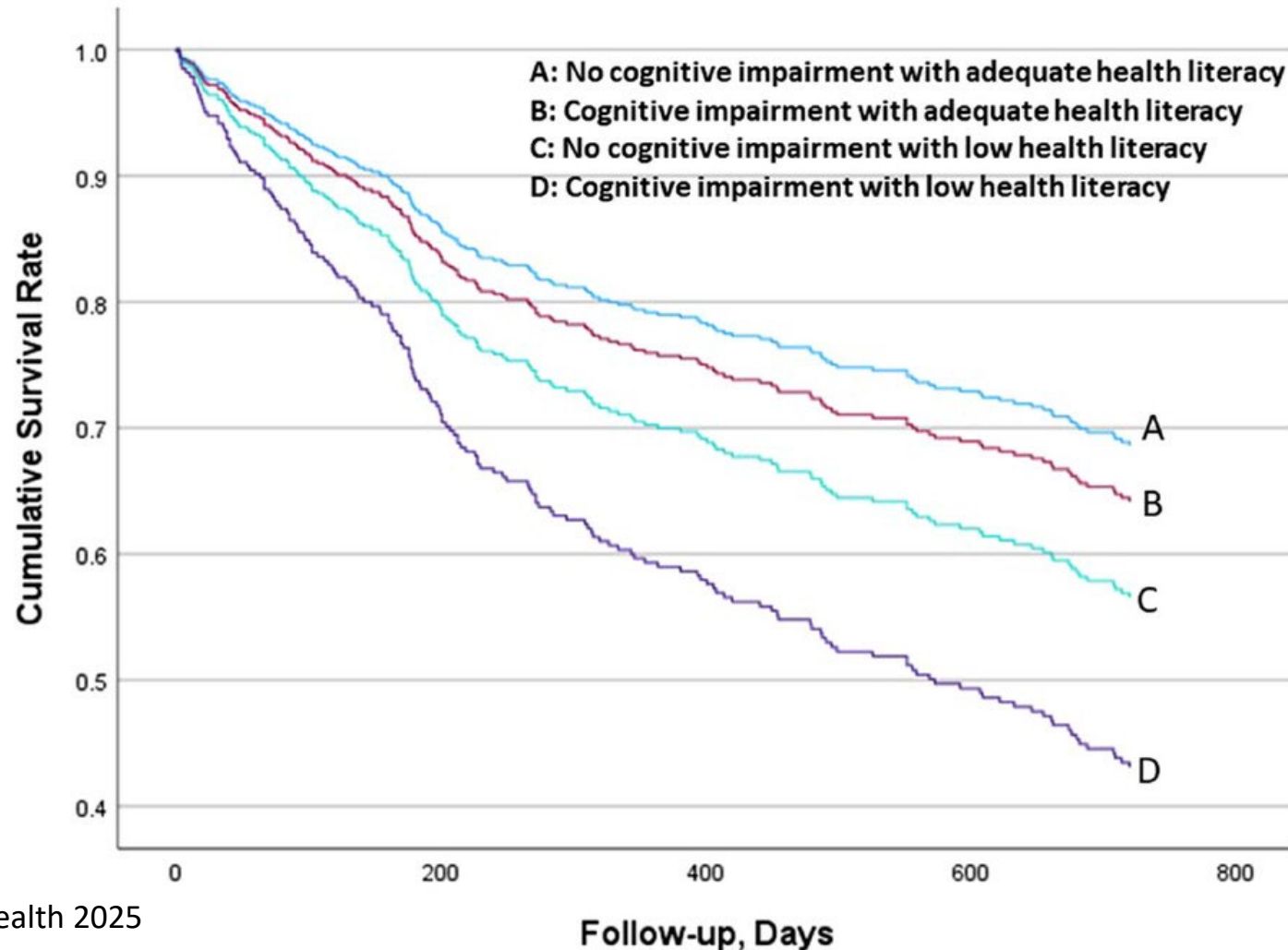
A GWTG-HF quality measures



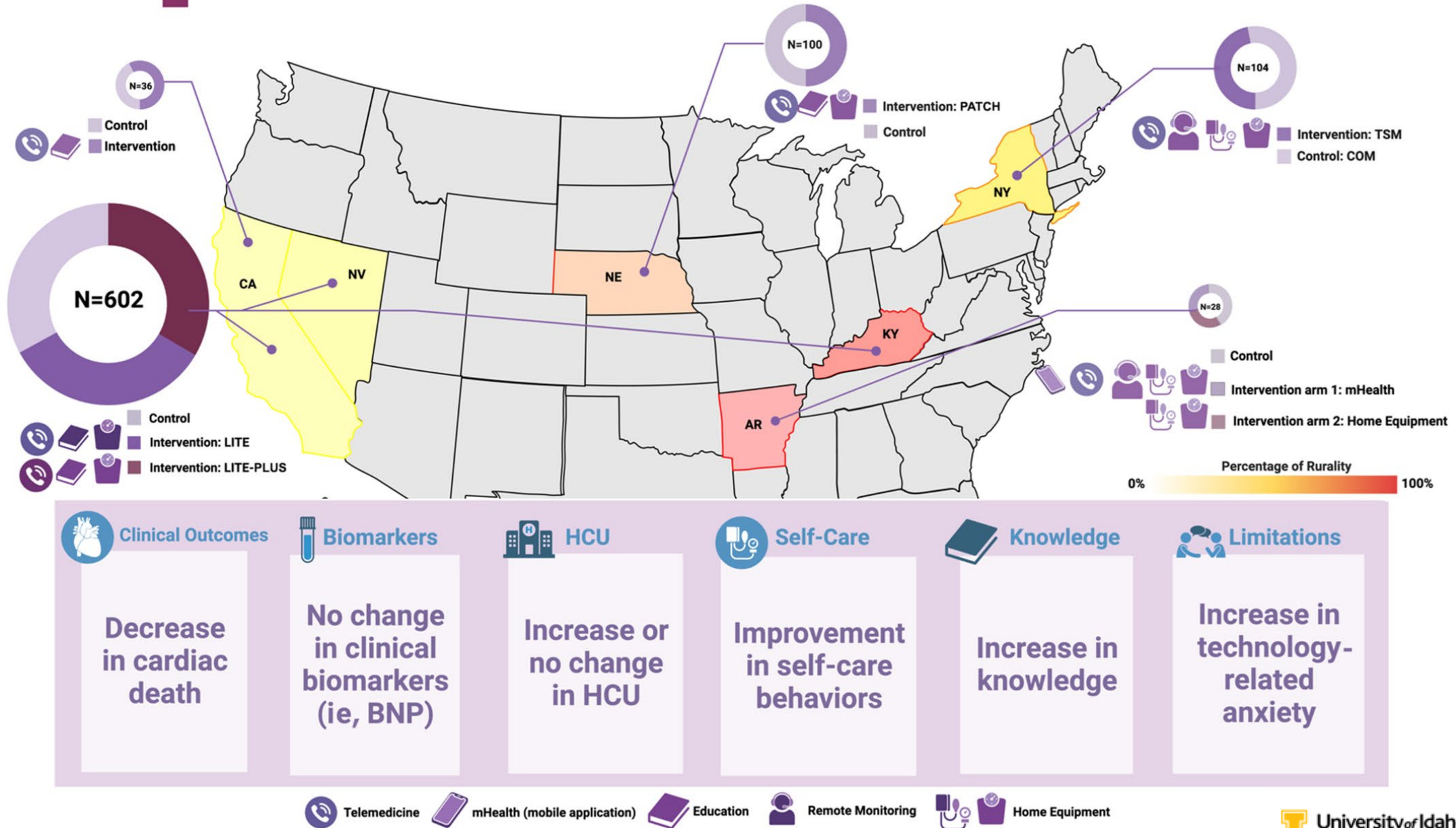
B GDMT prescriptions



Rural Heart Failure Outcomes Relate to Cognitive Impairment and Health Literacy



Digital Health Intervention in the Rural United States





ReciPROcal Innovations to Improve Cardiovascular CARE in Rural America



ruralprocare.org



ADOPT-HF

Take Charge of Your
Heart Health

ADOPT-HF: A Digital Health Intervention to Improve GDMT in Rural Communities

- Adaptation of an app developed at Stanford and also tested in Brazil
- “Self-managed” adaptations made to allow patients & caregivers control over data entry
- New patient education videos created

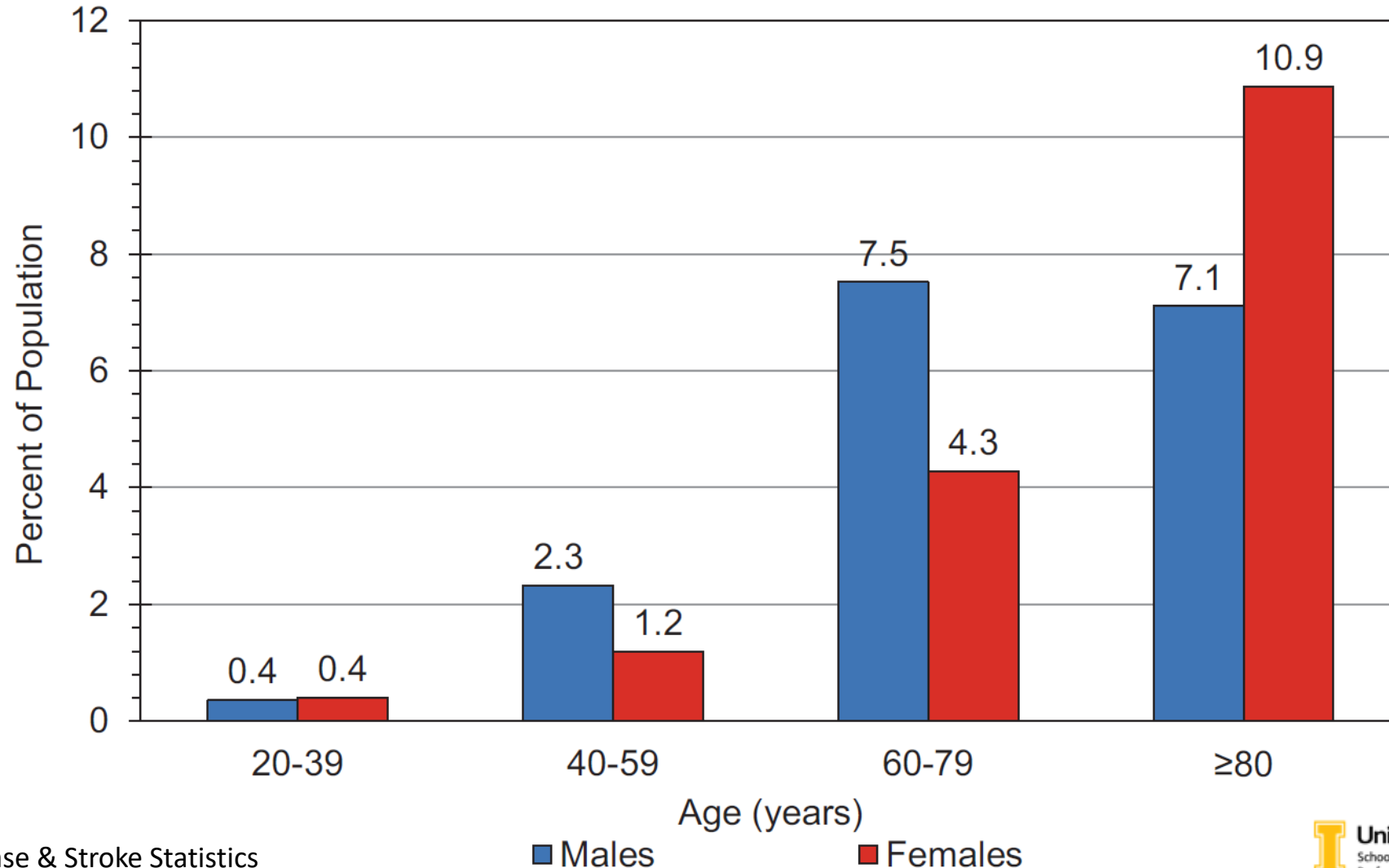
<https://www.youtube.com/@UWGlobalHealth/videos>



HF Management in Older and Frail Patients



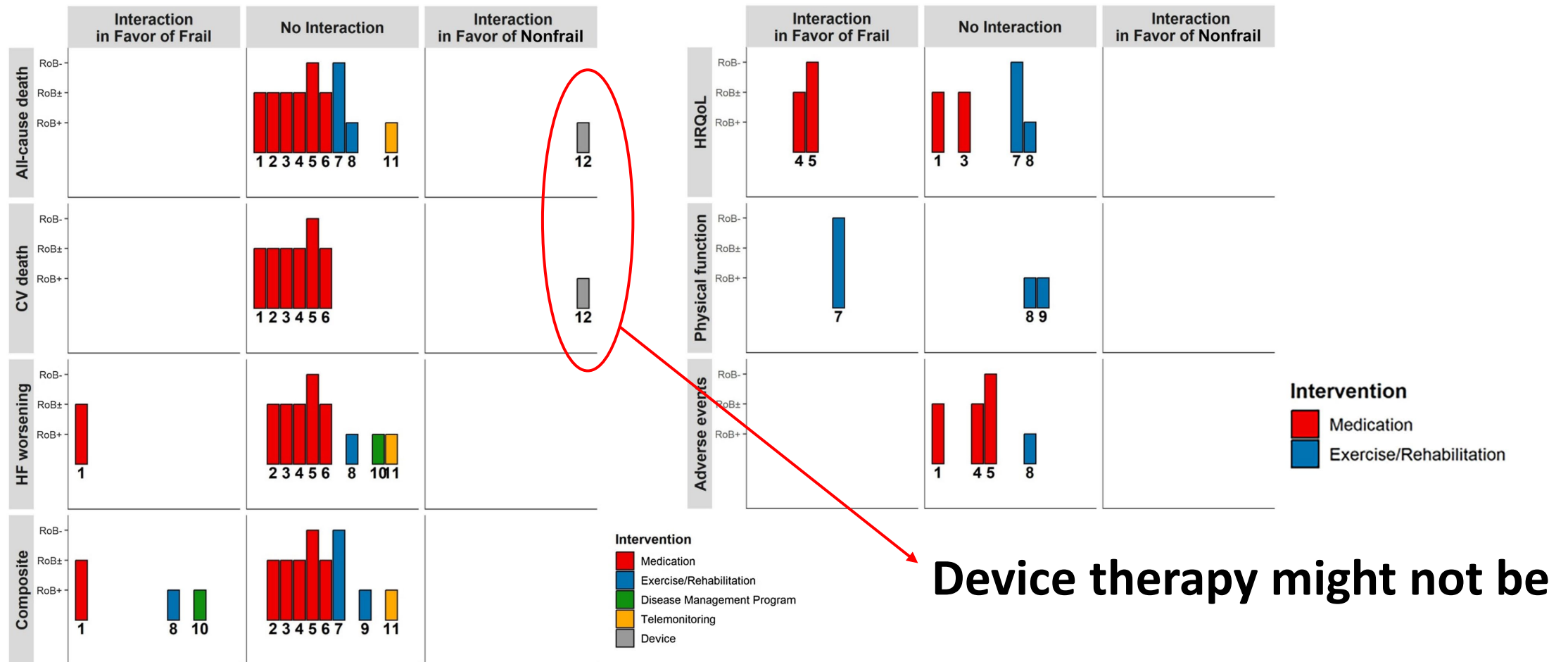
Prevalence of HF Among US Adults



GDMT is Safe and Effective in Frail Patients

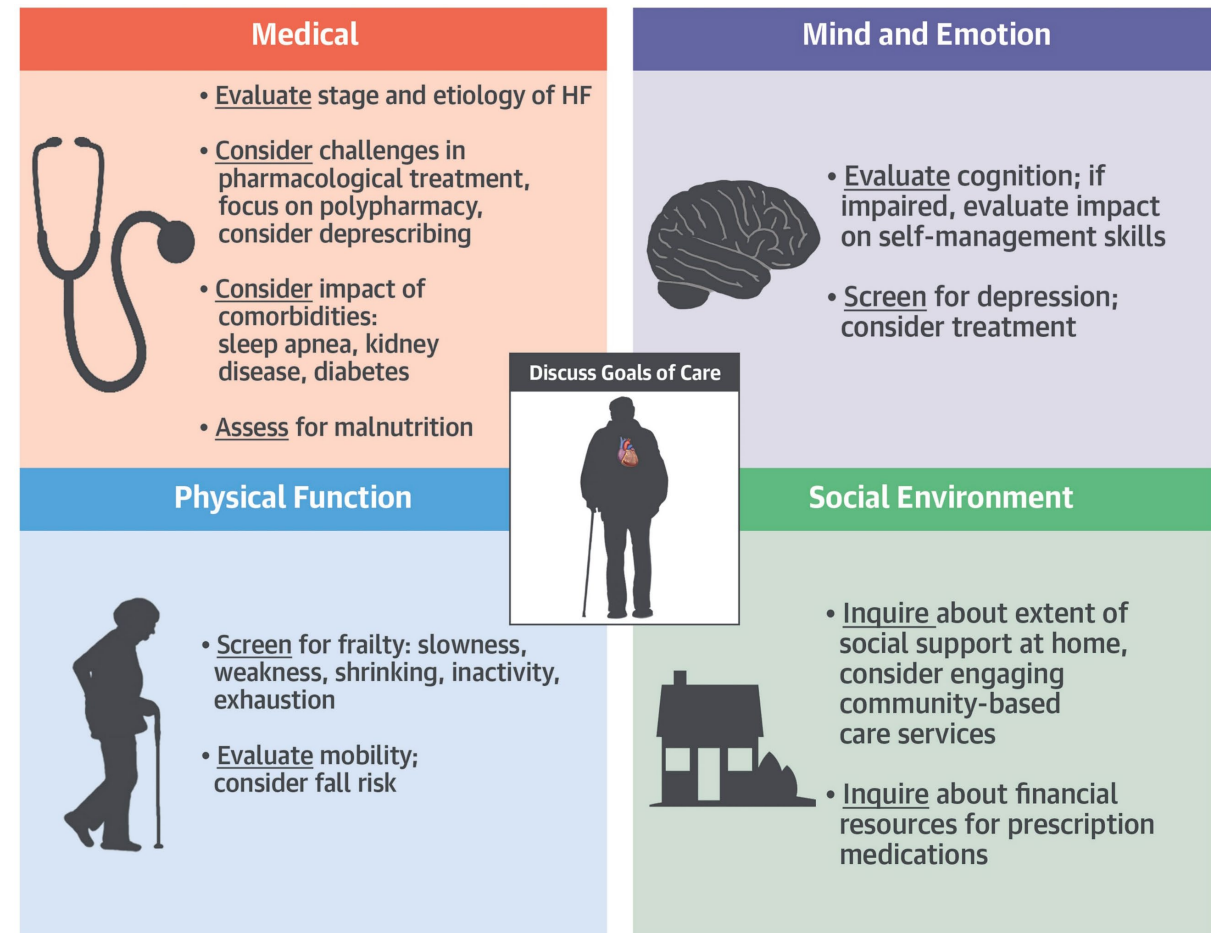
	<u>Study ID</u>	<u>D1</u>	<u>D2</u>	<u>D3</u>	<u>D4</u>	<u>D5</u>	<u>Overall</u>		
1	Butt, JACC 2022 ¹⁷	+	+	+	+	!	!	+	Low risk
2	Dewan, EHJF 2020 ¹⁸	+	+	+	+	!	!	!	Some concerns
3	Coats, J Cachexia Sarcopenia Muscle 2024 ¹⁹	+	+	+	+	!	!	-	High risk
4	Butt, Ann Int Med 2022 ²⁰	+	+	+	+	!	!		
5	Butt, Circ 2022 ²¹	+	+	+	+	+	+	D1	Randomisation process
6	Sanders, Eur J Heart Fail. 2018 ²²	+	+	+	+	!	!	D2	Deviations from the intended interventions
7	Pandey, JAMA 2023 ²³	+	+	+	+	+	+	D3	Missing outcome data
8	Pandey, Circ 2023 ²⁴	!	+	+	-	!	-	D4	Measurement of the outcome
9	Mudge, JAGS 2021 ²⁵	+	!	+	-	!	-	D5	Selection of the reported result
10	Pulignano, J Cardiovasc Med 2010 ²⁶	+	+	+	-	+	-		
11	Yun, Eur J Intern Med. 2021 ²⁷	+	+	+	-	!	-		
12	Segar, JACC: Heart Failure 2024 ²⁸	+	-	+	+	!	-		

GDMT is Safe and Effective in Frail Patients



Additional Management Considerations in Older Adults with Heart Failure

- EF is preserved in 2/3 of older adults with HF
- Low-income, social isolation, and lack of caregiver support associated with poor outcomes
- Higher prevalence of orthostasis & autonomic dysfunction
- High prevalence of comorbidity
- Creatinine as a marker of renal function less reliable



Key Points

- **Methamphetamine use is highly prevalent in the Western US and is commonly associated with heart failure and pulmonary hypertension.**
 - Reduction or cessation of use– together with GDMT– can improve heart function.
- **Rural-Urban disparities exist in heart failure risk, care, and outcomes.**
 - Novel approaches are needed to improve access to care
- **GDMT is safe and effective even in frail older individuals**
 - Device therapy might not be
 - A multi-disciplinary domain management approach can be useful

References

1. Schurer S, Klingel K, Sandri M et al. Clinical Characteristics, Histopathological Features, and Clinical Outcome of Methamphetamine-Associated Cardiomyopathy. JACC Heart Fail 2017;5:435-445.
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6. Nijskens CM, Handoko L, Remmelzwaal S, Ziesemer KA, Muller M. Efficacy and Safety of Heart Failure Treatment According to Frailty Status: A Systematic Review. J Am Heart Assoc 2025;14:e042367.
7. Gorodeski EZ, Goyal P, Hummel SL et al. Domain Management Approach to Heart Failure in the Geriatric Patient: Present and Future. J Am Coll Cardiol 2018;71:1921-1936.