



Cardiology

An estimated 50% of the 9 million veterans who receive care in the VHA have at least one cardiovascular disease, compared with 37% of civilians.¹ Overall, VA cardiovascular care often matches or exceeds community performance, with greater adherence to guideline recommended therapies and robust systems for monitoring, device management, and telecardiology that especially benefit rural and higher risk veterans.¹ Short-term mortality after diagnostic coronary angiography has been shown to be higher in community settings than in VHA facilities, underscoring the importance of coordinated transitions and follow up when care occurs outside the VA.² VA-based clinical management has had its challenges, such as poor early follow up after heart failure (HF) hospitalization, with many veterans seen later than guideline recommendations and with notable differences by sex, race, clinical profile, and facility.³ However, targeted VA quality improvement programs have been shown to improve a variety of intermediate outcomes, including strengthening cholesterol management, medication adherence, and guideline aligned therapy for atherosclerotic cardiovascular disease (ASCVD) and hypertension — although longer follow-up is needed to confirm effects on major clinical events.⁴

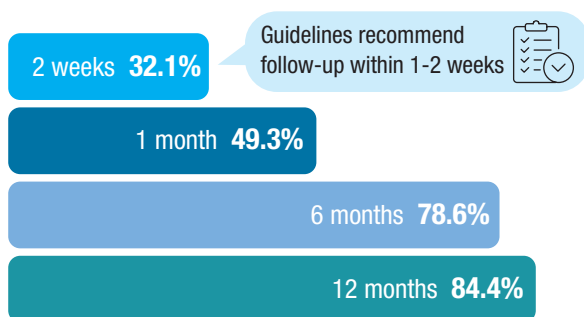
Follow-Up Care After Heart Failure Discharge From VHA³



Researchers analyzed EHR data for a cohort of > 10,000 veterans with > 100,000 HF-related hospitalizations in acute care VA hospitals (2018-2022), with follow up through 2023. One-year mortality risk at discharge was calculated with the MAGGIC HF risk model, which estimates risk of death over about 1-3 years.

Time to Cardiology Follow-Up Post-HF Hospitalization

Based on ≥ 1 year survivors



Probability of Follow-Up

By MAGGIC risk quintile

Follow-Up Rates	Risk Quintile by Follow-Up Time	
	Lowest Risk	Highest Risk
2-Week Follow-Up	30%	34%
1-Month Follow-Up	47%	51%

Based on ≥ 1 year survivors

Who is more or less likely to be seen?



More Likely

- ↑ Patients with HFrEF
- ↑ HF was primary admission diagnosis



Less Likely

- ↓ Black/unrecorded ethnicity
- ↓ Women



1-month follow-up rates ranged from **5% to 69% across VA facilities**, with a ~ **2-fold variation** in the likelihood of receiving timely follow-up between similar patients at two randomly selected facilities.

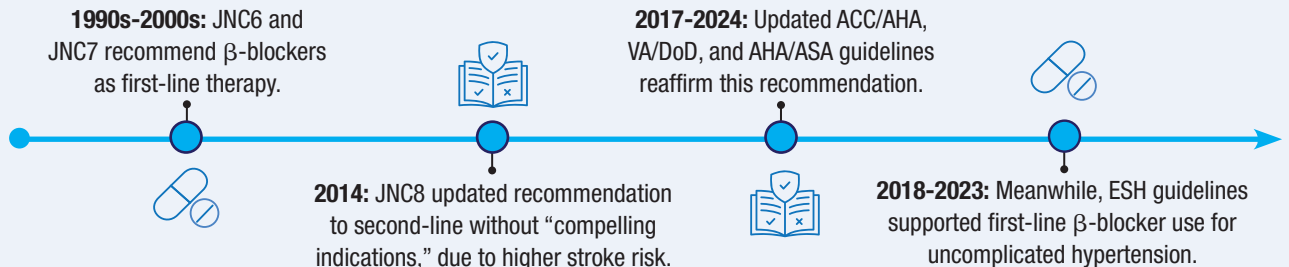
HFrEF, heart failure with reduced ejection fraction; MAGGIC score, Meta-Analysis Global Group in Chronic Heart Failure risk score.

β-Blocker Prescribing for Veterans With Hypertension⁵

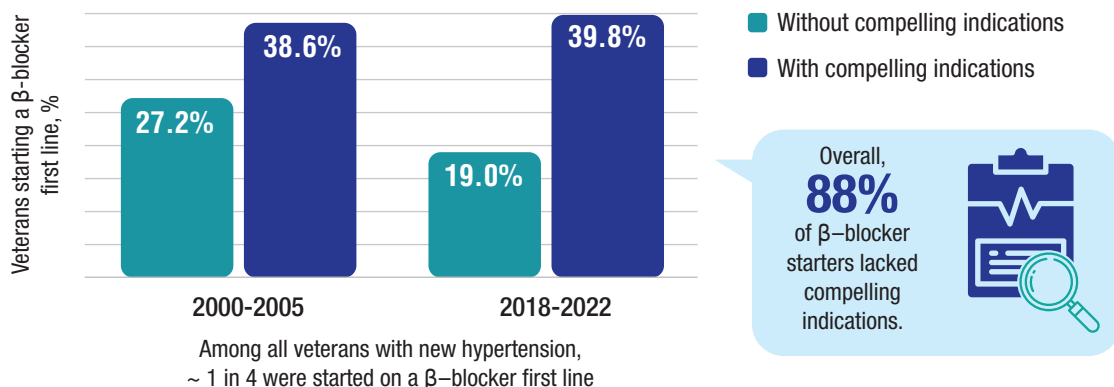


In a national VA cohort, about 3.1 million veterans initiated antihypertensive therapy over a 23-year period. Researchers found that β-blockers are still commonly chosen as first-line therapy for new hypertension, despite guidelines limiting them to patients with specific compelling indications.

Guideline Recommendations

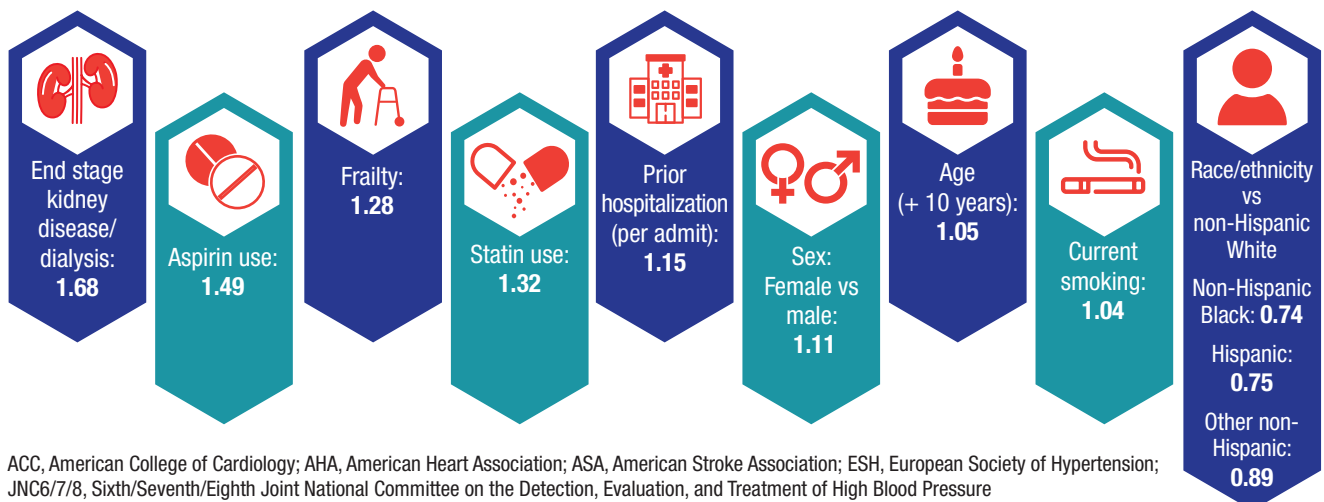


First-Line β-Blocker Initiation Among Veterans With New Hypertension, by *Compelling Indication Status, 2000–2005 vs 2018–2022



*Compelling indications: Aortic aneurysm and/or disease, angina, atrial fibrillation and/or arrhythmia, chronic liver disease and/or cirrhosis, HFrEF, myocardial infarction, coronary revascularization

Likelihood for β-Blocker Initiation, Prevalence Ratios in patients without compelling indications



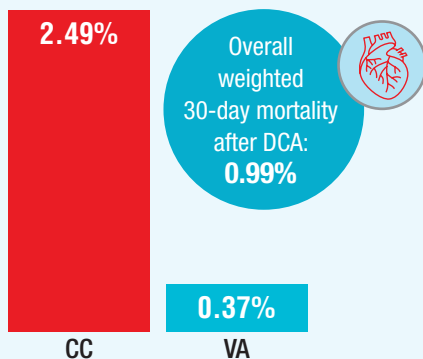
ACC, American College of Cardiology; AHA, American Heart Association; ASA, American Stroke Association; ESH, European Society of Hypertension; JNC6/7/8, Sixth/Seventh/Eighth Joint National Committee on the Detection, Evaluation, and Treatment of High Blood Pressure

Short-Term Mortality After Diagnostic Coronary Angiography²



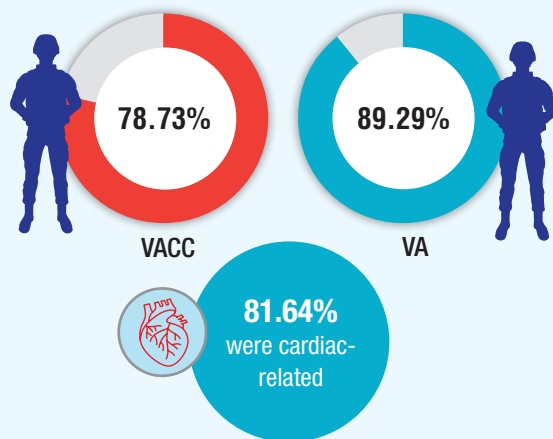
A study compared short-term mortality after diagnostic coronary angiography (DCA) in VA facilities and in VA community care (CC) settings. Patients were matched by baseline characteristics: age, race, rurality, distance to nearest VA primary care site, history of ischemic heart disease, history of valvular disease, procedure fiscal year, insurance status, and Elixhauser Comorbidity Index.

30-Day Mortality After DCA



Cardiac-Related Deaths Within 30 Days

Among all deaths within 30 days



Increased 30-Day Mortality With VA Community Care

Compared to VA settings; Based on adjusted odds ratios



All-cause:
6.9x



Cardiac-related:
6.1x



Non-cardiac-related:
13.5x



With HF:
6.6x



Without HF:
7.2x



With valvular
disease: **7.5x**



Without valvular
disease: **6.7x**

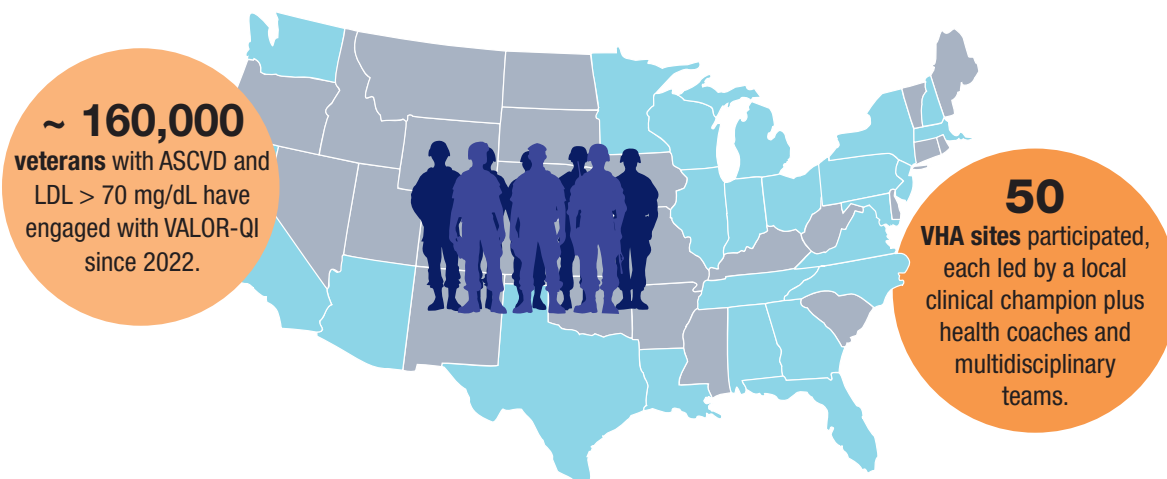


30-day mortality after DCA was low overall, but higher for veterans whose procedures were performed in CC compared with VA. This finding was true across all-cause, cardiac-related, and non-cardiac-related deaths, including patients with HF or valvular disease.

Improving LDL Cholesterol in Veterans With ASCVD⁴



VALOR-QI (Veterans Affairs Lipid Optimization Reimagined-Quality Improvement) — a collaboration between the VHA and the American Heart Association — is a program designed to address cardiovascular health barriers and actively reach at-risk veterans through integrating healthcare coaches, multidisciplinary teams, targeted outreach, optimized prescribing, and patient enhanced education.



Barriers and Intervention Model



Poor medication adherence



Gaps in cholesterol education and lifestyle support for veterans and clinicians



VA staffing and workflow constraints



Why LDL Matters



- ✓ Heart disease and stroke are leading causes of death among veterans. In a contemporary VA cohort undergoing diagnostic coronary angiography, about **two-thirds** of veterans with ASCVD had elevated LDL prior to the angiographic procedure.
- ✓ Lowering LDL to **< 70 mg/dL** reduces chances of another heart attack or stroke and may reduce health care costs.



After 24 months...

34%
of veterans with
ASCVD and LDL > 70
lowered LDL to
< 70 mg/dL.

Equating to a **32% increase** in those
meeting this LDL goal

Average LDL reduction: **15.9 mg/dL**



*Among veterans aged
≥ 75 years, 36% achieved
LDL < 70 mg/dL.*

Medication Use and Adherence



Cholesterol-lowering
medication use

78%

88%

Medication
adherence

65%

77%

■ Baseline

■ After Intervention

Quality and Access: VHA vs Community Cardiovascular Care¹



The VHA remains the benchmark for high-quality cardiovascular care. CHOICE and MISSION Acts expanded community care primarily for convenience and travel distance, but VHA care continues to set the standard. Additional programs focus on maintaining quality, safety, and equity, particularly for rural veterans.

Eligibility for Community Care



Service not
offered at VHA



Wait time > 28 days for
needed specialty care

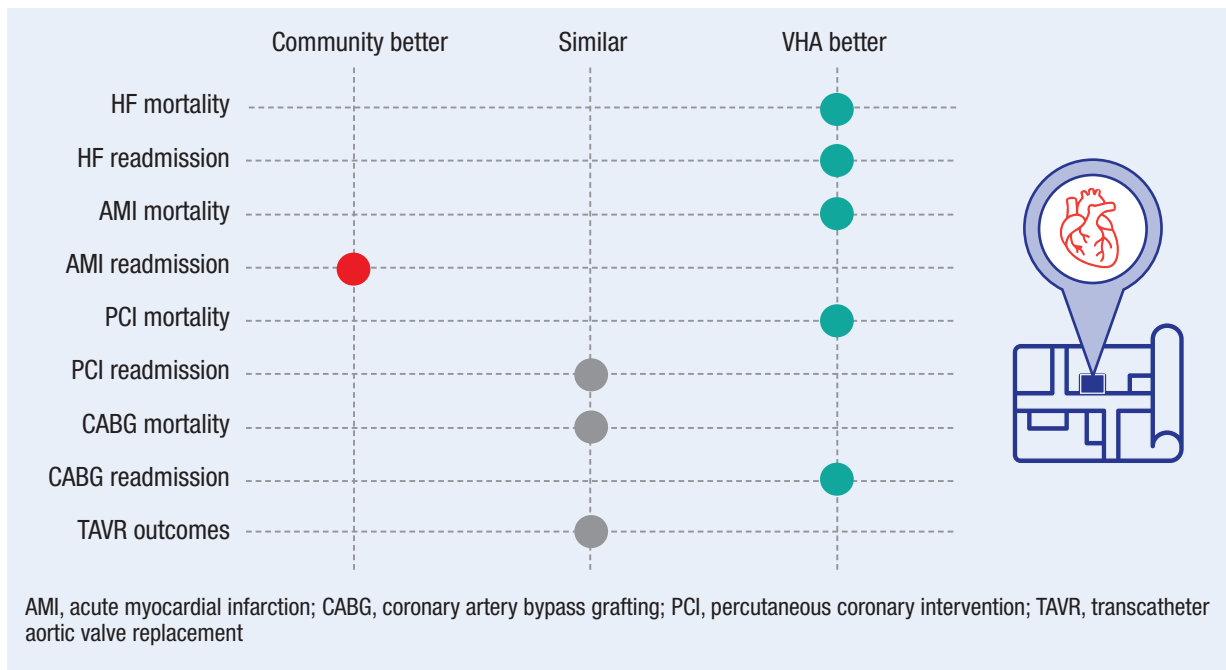


Travel distance > 60 minutes
for specialty care



Veterans must also meet basic VA enrollment authorization requirements.

VHA vs Community Cardiovascular Outcomes



Risk Factor Management



Statin use after AMI/PCI 71%-75% in VHA; similar to Medicare



Diabetes and hypertension: better medication and blood pressure control in VHA



More veterans reach LDL < 70 mg/dL in VHA

Access and Wait Times



Wait times: VHA often shorter than community



Rural veterans are more likely to use community care, but **37%** still wait > 30 days for some services.

CHOICE Act, Veterans Access, Choice, and Accountability; MISSION Act, Veterans Affairs Maintaining Systems and Strengthening Integrated Outside Networks

ASCVD Risk Prediction for Veterans⁶



A study evaluated how well the Predicting Risk of Cardiovascular Disease Events (PREVENT) model predicts 10-year ASCVD risk compared with the prior gold standard — pooled cohort equations (PCE) — in a cohort of about 2.5 million veterans in the VHA.

Baseline Risk Profile



Median BMI:
29.4 kg/m²



SBP:
130 mm Hg



LDL-C:
106 mg/dL



eGFR:
85.6 mL/min/1.73 m²



Antihypertensive use:
49.1%



Lipid-lowering therapy:
35.8%

eGFR, estimated glomerular filtration rate; LDL-C, low-density lipoprotein cholesterol; SBP, systolic blood pressure

ASCVD Outcomes



10-year follow-up: **212,942** ASCVD events
(0.9% per year)



Risk Prediction Comparison

PCE



Predicted 10-Year Risk
13.1%



Discrimination (C Index)
0.672



Calibration Slope
0.36

Overestimates risk in modern VA populations. Veterans' observed event rates were much lower than PCE predictions

PREVENT



Predicted 10-Year Risk
6.6%



Discrimination (C Index)
0.696

Statistically significantly higher discrimination vs PCE at sorting high-risk and low-risk patients.



Calibration Slope
1.04

Excellent calibration; predicted risk closely tracks observed ASCVD events

PREVENT vs PCE: What's New?

PCE Inputs (legacy)

- Age, sex, race
- Total cholesterol, HDL-C
- SBP, BP treatment
- Diabetes
- Smoking

Additional PREVENT Inputs

- BMI
- Kidney function (eGFR; may include albuminuria in full model)
- Contemporary cohorts with broader CVD endpoints and more diverse populations, improving calibration in modern practice

Key Takeaways: PREVENT

- ✓ More accurate in modern veterans
- ✓ Better calibration to support shared decision making
- ✓ Incorporates kidney function and BMI, capturing cardiovascular–kidney–metabolic risk more completely than PCE