Objectives
Derive 30-day readmission prevalence for rural veterans with CHF ($N = 11,334$) and AMI ($N = 4,714$), and examine the effect of demographic and health-care factors, including post-discharge VA health service use, on these readmissions.

Background
- Congestive heart failure (CHF) affects an estimated five million Americans, and about 550,000 are diagnosed with CHF annually. CHF is the principal cause of death for approximately 400,000 persons annually in the United States.\(^1\)
- Acute myocardial infarction (AMI) also levies a heavy toll on the health of Americans, affecting 7.9 million persons and causing 158,000 deaths in 2004.\(^2\)
- Hospital readmissions, costly and often wasteful, may indicate poor in-hospital care; insufficient discharge planning; and uncoordinated transition care or inadequate post-discharge care or both.\(^3, 4, 5, 6\)
- The Medicare Payment Advisory Commission has recommended public reporting of hospital-specific readmission rates, with CHF and AMI as priority conditions.
- In response to this recommendation, the Centers for Medicare and Medicaid developed 30-day risk-standardized readmission measures for CHF and AMI designed to measure and improve patient-care quality and decrease costs.\(^7\)

Key Findings
- Timely follow-up visits to a primary care provider or cardiologist are fundamental to reducing risk of readmission and should be encouraged as part of discharge planning.
- Elderly veterans residing in rural areas may be more susceptible to delayed treatment of CHF complications because of transportation challenges and, thus, poorer access to VA care.
- Veterans who use an ER for outpatient services within 30 days of discharge should be monitored closely because this might indicate the presence of higher condition severity or the receipt of care that is not optimally suited for managing chronic conditions like CHF or both;
- Older, rural veterans with CHF warrant special attention by VA medical staff for comprehensive discharge planning and follow-up care with primary care providers who are familiar with the patients, their medical histories, health conditions, and current treatment regimens.
Results

Prevalence of Avoidable 30-Day Readmissions

- Of the 11,334 rural veterans hospitalized with CHF, 16.8% were readmitted.
- Of the 4,714 rural veterans hospitalized with AMI, 14.9% were readmitted.

Use of VA Facilities for Outpatient Services within 30 Days of Discharge

- About two percent of CHF and AMI patients used the emergency room (ER) for outpatient services.
- Fifty-two percent of patients with CHF used primary care.
- Forty-six percent of patients with AMI used primary care.
- Twenty-two percent of patients with CHF used cardiology.
- Thirty-one percent of patients with AMI used cardiology.
**Avoidable Readmissions**

- The number of readmissions was reduced by more than half for CHF patients that saw a primary care physician, and by about three fourths for AMI patients.
- The number of readmissions was reduced by nearly half for CHF patients who saw a cardiologist, and by two thirds for AMI patients.
- ER use for outpatient services nearly doubled the risk for CHF or AMI readmission.

**Demographics**

- Being aged 65 and older, having low income or a disability, or having a long hospital stay slightly increased the chance of AMI readmission.
- Older veterans or those with low income or disability status had less of a reduction in their chance of CHF readmission if they saw a primary care provider.
- Veterans with low income or disability status had slightly higher risk of readmission even when they saw a primary care provider within 30 days of discharge.

**Methods**

- We analyzed VA Patient Treatment File data (October 2005 to September 2007) via 3M Potentially Preventable Readmission grouping software to identify 30-day readmissions for CHF and AMI that may have resulted from deficiencies in the process of care.
- Veterans were classified as rural if their residential zip code area was located in a non-metropolitan statistical area.
- We studied 11,334 rural veterans with CHF and 4,714 rural veterans with AMI. Logistic regression was used to examine the effect of demographic and health-care factors on readmissions. Adjusted rates were estimated from these results.
References


