

CHERP Policy Brief

VOLUME 4, ISSUE III: SPRING 2008

Short-term and Long-term Racial Disparities in VA and non-VA Hospital Outcomes

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Context: Understanding how hospital outcomes for common conditions differ for white and black patients will help to determine better targets for interventions to ameliorate disparities.

Background

Contrary to observations from many other settings, black patients in VA hospitals have been shown to have better 30-day mortality outcomes than white patients. Because these results surprised many, Volpp and Polsky et al used VA data to confirm this mortality advantage for six Agency for Healthcare Research and Quality (AHRQ) hospital quality indicators: heart attack (AMI), stroke, hip fracture, congestive heart failure (CHF), gastrointestinal bleeding (GI bleed) and pneumonia. They also eliminated VA hospital site, co-morbid conditions, and changing mortality rates over time as potential sources of the observed outcome differences between white and black veteran patients. In addition, the investigators negated the idea that population characteristics among those who are treated in VA hospitals, such as younger age of black veterans or higher socioeconomic status of white veterans, explains differences in mortality by race. They did find that the survival advantage among black veterans being treated in VA hospitals for the six conditions applied only to those over age 65; among younger veterans, black patients had lower mortality rates only for CHF.

This issue of the CHERP Policy Brief focuses on a subsequent project in which the investigators extended their research in two ways: 1) they looked beyond the VA health care system for evidence of similarly patterned racial differences in mortality for the six conditions and 2) they lengthened the timeline of their research and evaluated mortality rates at 30 days and 2 years.

Methods

The investigators used combinations of Medicare and VA inpatient data from 1998 to 2002 to examine 30-day and 2-year mortality among US-residing black and white elderly male Medicare or VA enrollees, aged 65 and older, who were hospitalized with a principal diagnosis of AMI; stroke, hip fracture, CHF, GI bleed or pneumonia.

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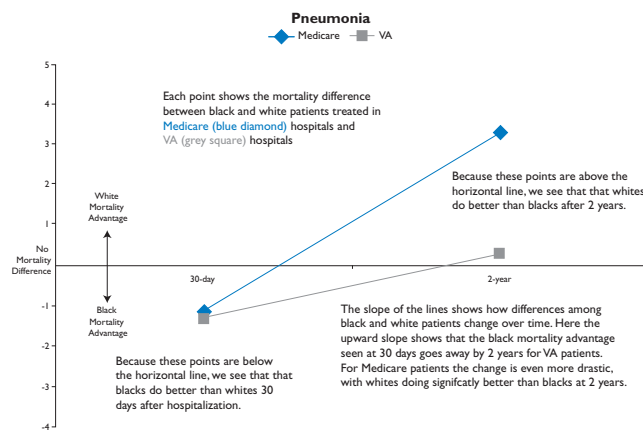
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Results

- Black male patients made up 8.5% of the 3,656,951 Medicare hospitalizations between 1998 and 2002 and 17.8% of the 155,529 VA hospitalizations in the same time period.
- Patient characteristics were similar in the VA and Medicare research samples. Compared to white patients, black patients tended to be younger and live in zip codes with lower average educational attainment and lower median household income. In terms of health, black patients had more co-morbid conditions on average, with a higher prevalence of conditions such as hypertension and diabetes.
- Among Medicare patients, after adjustments for differences in co-morbid conditions, socioeconomic variables, and hospital site, blacks had significantly lower 30-day mortality than whites for all of the conditions except AMI. Black VA patients had better 30-day adjusted mortality outcomes than their white counterparts for all six conditions.

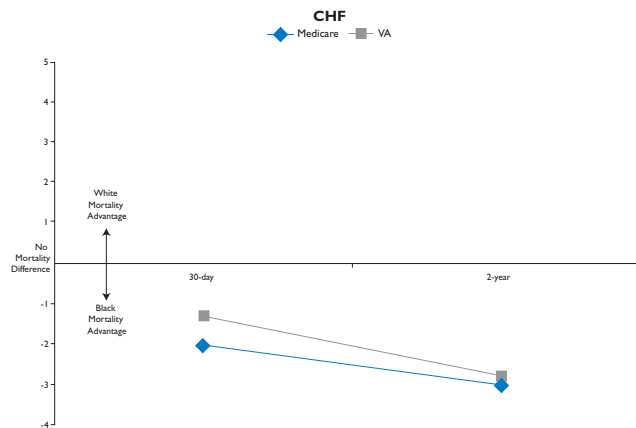
Figure 1: Differences in adjusted percentage mortality rates at 30 days and 2 years for blacks compared to whites among VA and Medicare patients hospitalized for pneumonia from 1998-2002.



All points represent statistically significant ($p < .5$) racial differences in outcomes except 2-year mortality for pneumonia among VA patients.

- At 30 days after admission for pneumonia, black VA and Medicare hospitalized patients had better mortality outcomes than similarly-hospitalized white patients.
- At 2 years after admission for pneumonia, relative mortality outcomes for blacks in both settings got worse, but not to the same degree. At 2 years, VA-hospitalized black and white pneumonia patients fared almost equally. But among Medicare patients, white patients had better mortality outcomes than black patients.

Figure 2: Differences in adjusted percentage mortality rates at 30 days and 2 years for blacks compared to whites among VA and Medicare patients hospitalized for CHF from 1998-2002.

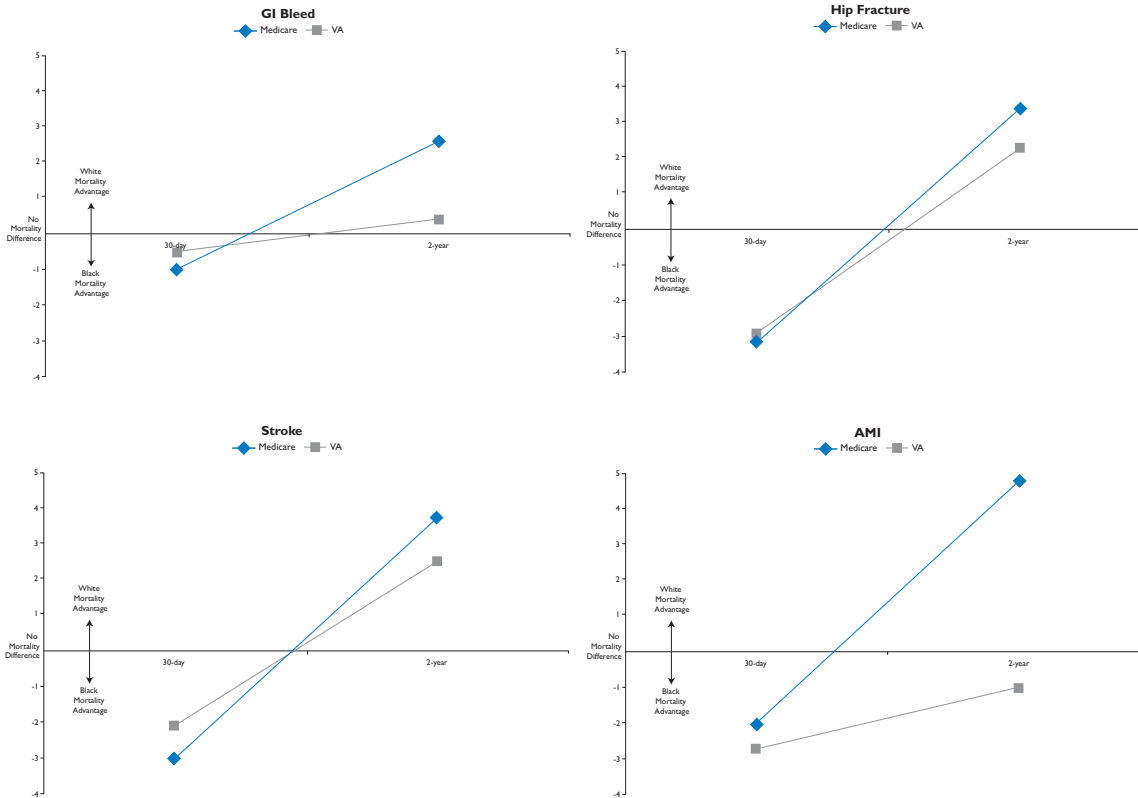


All points represent statistically significant ($p < .5$) racial differences in outcomes.

- At 30 days after admission, mortality rates for black patients hospitalized for CHF in VA and Medicare hospitals were relatively better than those of similarly-hospitalized white patients.
- At 2 years after admission, mortality outcomes for blacks in both settings remained better than those of similarly-hospitalized white patients.

At 30 days after admission for five of the six conditions, racial patterns in mortality outcomes were similar in VA and non-VA hospital settings, with black patients having a survival advantage.

Figure 3: Racial differences in adjusted percentage mortality rates at 30 days and 2 years for blacks compared to whites among VA and Medicare patients hospitalized for GI bleed, hip fracture, stroke and AMI from 1998-2002.



All of the points represent statistically significant ($p < .5$) racial differences in outcomes except 30-day AMI mortality among Medicare patients and 2-year mortality for GI bleed and hip fracture among VA patients.

- For patients hospitalized with GI bleed, hip fracture, stroke or AMI, at 30 days after admission, the relative differences in mortality for white and black patients generally favored black patients and were similar across Medicare and VA hospitalized patients. After 2 years, among Medicare patients, the relative differences in mortality between black and white patients reversed, with a comparatively higher percentage of black patients dying after being hospitalized for any of these conditions.
- Among VA patients, the 2-year trends were less consistent. The relative advantage in short-term mortality outcomes for black patients hospitalized for one of the four conditions remained for AMI. It decreased slightly for GI bleed and disappeared for hip fracture and stroke, with white VA hospitalized patients having better mortality outcomes after two years.

Implications

Better 30-day relative mortality rates for black patients compared to white patients exist in VA and non-VA hospitals and remain unexplained at this time. However, increases in comparative mortality rates for black patients subsequent to the initial 30 days after discharge from both hospital settings suggest that factors unrelated to hospital care, such as social support, quality of ambulatory care, or access to prescription drugs, play important roles in longer term mortality rates. Medical system efforts to reduce racial disparities may need to focus on post-hospital care and environmental factors.

The integrated health care delivery system of the VA may attenuate racial disparities in health by mitigating the environmental factors that contribute to mortality for up to two years after hospitalization.

Among Medicare patients, relative to the mortality outcomes for whites, mortality outcomes for blacks deteriorated over time until black Medicare patients had worse 2-year mortality rates for all conditions except CHF.

In contrast, among VA patients, the relative decline in mortality outcomes for blacks was less marked and statistically significant only for hip fracture and stroke.

This issue of the CHERP Policy Brief was based on the following publications: Polsky D, Jha AK, Lave J, Pauly MV, Cen L, Klusaritz H, Chen Z, Volpp KG. *Short- and Long-Term Mortality after an Acute Illness for Elderly Whites and Blacks*. Health Serv Res. 2008 Mar 17 Epub; and Volpp KG, Stone R, Lave JR, Jha AK, Pauly M, Klusaritz H, Chen H, Cen L, Brucker N, Polsky D. *Is thirty-day hospital mortality really lower for black veterans compared with white veterans?* Health Serv Res. 2007 Aug;42(4):1613-31.

Policy briefs seek to contextualize and analyze the research publications of CHERP investigators. Christine Weeks edits the CHERP Policy Brief. Contact the editor via email: Christine.Weeks@va.gov.

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