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## Recent National Trends in Acute Myocardial Infarction Hospitalizations in Medicare

### *Shrinking Declines and Growing Disparities*

**To the Editor:**

Studies reporting steep declines in acute myocardial infarction (AMI) hospitalization rates through 2007 have

found lesser declines among blacks.<sup>1-4</sup> Although subsequent studies have reported continuing—albeit less steep—declines overall through 2011,<sup>5</sup> racial differences in declines have not been closely examined. Therefore, we looked at trends in AMI hospitalization rates among elderly Medicare beneficiaries over the 10-year period 2002 to 2011, focusing specifically on whether the post-2007 declines are also more modest for blacks than for whites, potentially reflecting a growing gap in care.

Using the Centers for Medicare and Medicaid Services 100% sample Medicare Provider Analysis and Review files linked to Medicare Denominator files, we compared trends in hospitalizations with a principal discharge diagnosis of AMI (410.xx, excluding 410.x2) for black and white Medicare beneficiaries ages 65 and older, with fee-for-service coverage between January 2002 and December 2011. We calculated annual AMI hospitalization rates per 100,000 beneficiary-years, adjusted to the age–sex distribution of the 2007 Medicare population. We examined time trends using multivariable Poisson regression, reporting annual changes in AMI hospitalization rates as incidence rate ratios (IRRs) with 99% confidence intervals (CIs; eAppendix; <http://links.lww.com/EDE/A908>).

Over 10 years, AMI hospitalization rates declined 36.6% among whites (from 1,057 per 100,000 beneficiary-years in 2002 to just 670 in 2011), with average declines of 5.1% per year (IRR: 0.949; 99% CI = 0.948, 0.950). Declines were

more modest among blacks, with AMI hospitalization rates dropping 26.4% (from 966 per 100,000 in 2002 to 711 per 100,000 in 2011); the average annual decline for blacks, 3.4% (IRR: 0.966; 99% CI = 0.964, 0.968), was only 2/3 that for whites. Rates of decline slowed for both blacks and whites in the latter part of the study period, to 4.1% per year for whites (IRR: 0.959; 99% CI = 0.958, 0.961), but only 2.7% (IRR: 0.973; 99% CI = 0.967, 0.979) for blacks between 2007 and 2011. Strikingly, although AMI hospitalization rates were initially 9% lower among blacks than whites in 2002 (blacks: 966 per 100,000 beneficiary-years vs. whites: 1,057), the rates crossed over around 2007, and were 6% higher for blacks by 2011 (blacks: 711 vs. whites: 670; see Figure and eAppendix; <http://links.lww.com/EDE/A908>).

Our finding that declines in AMI hospitalization rates among blacks continue to lag those in whites raises important questions for policy and clinical practice. It is unlikely that blacks in 2002 were more heart-healthy than their white peers; therefore, the lower AMI hospitalization rates for blacks at that time may have been due to problems with symptom recognition, mistrust of the healthcare system, or inequities in access.<sup>6-8</sup> If such barriers have been reduced, with blacks increasingly likely to be hospitalized when they have an AMI, our results may—paradoxically—reflect improvements in their quality of care. Nonetheless, our findings suggest that blacks continue to have more difficulty accessing care and have benefited less from the national cardiovascular health initiatives that have been so effective for whites. To the extent that primary and secondary prevention efforts are more successfully disseminated among whites, quality improvement initiatives could be contributing to increased health disparities in AMI prevalence.

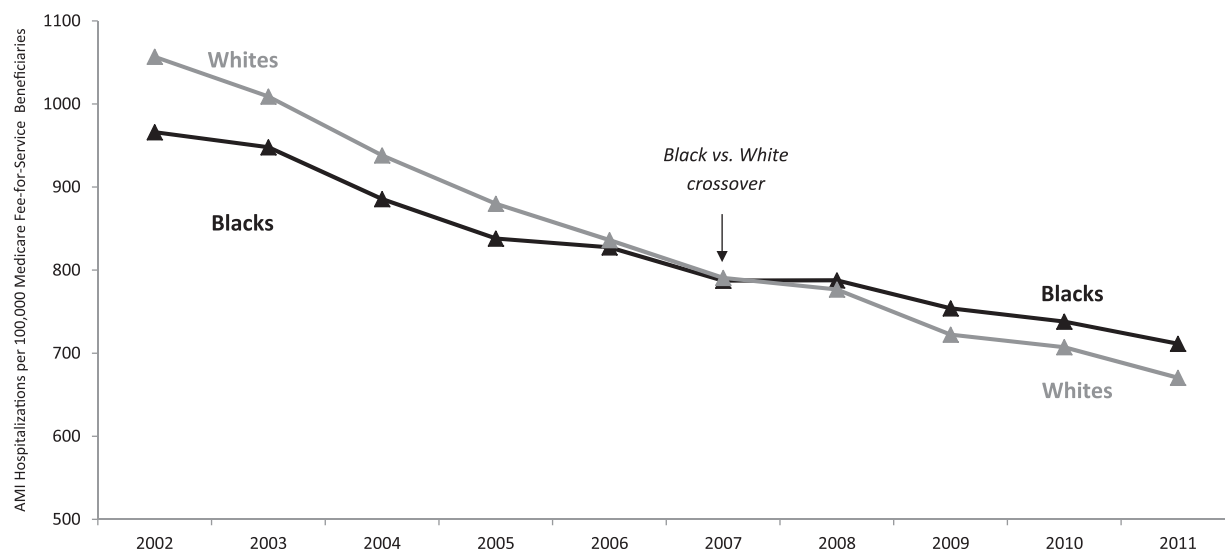
In conclusion, over the 10-year period 2002–2011, the benefits of reductions in AMI hospitalizations through aggressive cardiovascular risk factor management may be slowing overall, with even smaller declines for blacks resulting in a crossover;

Research supported by P01AG031098 from the National Institute of Aging, UL1TR000161 from the National Center for Research Resources, and 5U01HL05268-04 from the National Heart, Lung, and Blood Institute.

The authors report no conflicts of interest.

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ISSN: 1044-3983/15/2604-0e46  
DOI: 10.1097/EDE.0000000000000298



Year	2002-2006 <sup>a</sup>					2007-2011 <sup>a</sup>					Relative Decline (%)			Annual Decline (%) <sup>b</sup>		
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2002-2011	2002-2006	2007-2011	2002-2011	2002-2006	2007-2011
White	1,057	1,009	938	880	836	791	777	722	707	670	-36.6	-20.9	-15.2	5.1	6.1	4.1
Black	966	948	886	838	827	787	788	754	738	711	-26.4	-14.3	-9.7	3.4	4.2	2.7

<sup>a</sup> Annual AMI hospitalizations per 100,000 Medicare FFS beneficiary-years (beneficiaries age 65+)  
<sup>b</sup> Average annual decline, calculated as 1-IRR; all reported IRRs significant at P < 0.0001

**FIGURE.** Declines in AMI hospitalization rates<sup>a</sup>: blacks versus whites.

AMI hospitalization rates, which had been lower for blacks than for whites in 2002, were comparable in 2007 and higher by 2011. The causes of this growing disparity should be elucidated.

**ACKNOWLEDGMENTS**

The authors would like to thank William Jesdale, PhD, for advice on using Poisson regression and for thoughtful comments on an earlier version of this manuscript; and David Hoaglin, PhD, for advice on checking assumptions in statistical models.

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