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Trends and Characteristics Associated with the Risk of Re-hospitalization in Patients Discharged from the Hospital after Acute Myocardial Infarction

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BACKGROUND: Despite encouraging declines in short-term mortality in patients hospitalized with acute myocardial infarction (AMI), repeat hospitalizations among those discharged from the hospital after AMI remain a major clinical and public health concern. Few studies, however, have described the relatively contemporary magnitude, factors associated with, as well as decade long trends in repeat hospitalizations for cardiovascular disease (CVD) and other causes in patients discharged from the hospital after AMI.

METHODS: We reviewed the medical records of 6,018 residents of the Worcester (MA) metropolitan area who were hospitalized for AMI in 6 biennial periods between 1999 and 2009. Re-hospitalizations for any reason were recorded over a 2-year follow-up period.

RESULTS: The average age of our study population was 70.3 years and 56.4% were men. Overall, 48.1% of our sample had at least 1 re-hospitalization for any cause after hospital discharge for AMI over the 2-year follow-up period. Of these, 45.7% of the repeat hospitalizations were attributed to CVD, 42.1% were non-CVD related, and 10.6% were due to AMI. The frequency of re-hospitalizations due to any cause declined slightly between 1999 and 2009 from 47.1% to 45.4% , marginally increased in those with CVD (from 46.3% to 47.9%) or non-CVD causes (from 36.9% to 38.3%), while the proportion of patients re-hospitalized for AMI decreased from 16.9% in 1999 to 13.9% in 2009. Older patients, those who developed an NSTEMI, who had a history of selected CVD and Non-CVD comorbidities, and who had received a percutaneous coronary intervention were more likely to have been re-hospitalized during the 2-year follow-up period, as compared with those who were not re-hospitalized (Table 1).

CONCLUSIONS: The present results provide insights into the magnitude and causes of re-hospitalizations among patients discharged from the hospital after AMI .Risk of re-hospitalization after AMI was particularly high among older patients presenting with selected comorbidities.

Table 1: Characteristics of patients with any re-hospitalization after hospital discharge for AMI

	Any re-hospitalization (n=2,882) (%)	No re-hospitalizations (n=3,135) (%)
Age(mean, yrs)	71.4	69.2
Male	54.0	58.6
Initial AMI	58.4	69.9
NSTEMI	68.9	61.6
Medical History		
Atrial Fibrillation	16.2	11.7
Heart Failure	28.6	20.4
Hypertension	76.5	67.8
Stroke	13.0	10.7
Diabetes	39.0	28.9
Chronic Obstructive Pulmonary Disease	20.0	15.9
Chronic Kidney Disease	22.4	14.8
Physiologic variables		
Glomerular Filtration Rate (mg/dL), mean	56.0	59.2
Systolic Blood Pressure (mm Hg,) mean	143.9	139.4
Diastolic Blood Pressure (mm Hg), mean	76.6	78.0
>=3 cardiac medications	51.2	48.8
Percutaneous Coronary Intervention	60.0	40.0