

## Effect of Insurance Coverage on Prescribing Patterns Following Heart Attack

McCormick D, Gurwitz JH, Savageau J, Yarzebski J, Gore JM, Goldberg RJ. Differences in discharge medication after acute myocardial infarction in patients with HMO and fee-for-service medical insurance. *J Gen Intern Med* 1999;14:73-81.

### Study Overview

**Objective.** To assess the impact of fee-for-service (FFS) versus health maintenance organization (HMO) medical insurance coverage on prescription of aspirin,  $\beta$  blockers, and calcium channel blockers to patients at the time of hospital discharge following an acute myocardial infarction (AMI); and to describe the pattern of prescription of these therapies over time relative to insurance type.

**Design.** Prospective, population-based study known as the Worcester Heart Attack Study.

**Setting and participants.** 933 patients younger than 65 years of age who were covered by either FFS or HMO medical insurance and treated for a validated AMI in 1986, 1988, 1990, 1991, or 1993 and survived to discharge from any of the 16 community and tertiary care hospitals in the Worcester, MA, metropolitan area.

**Main outcome measures.** Receipt of aspirin,  $\beta$  blockers, and calcium channel blockers at the time of hospital discharge following an AMI as determined by hospital medical record review.

**Main results.** There were no significant clinical or demographic differences between the HMO and FFS cohorts. Between 1986 and 1993, the percentage of patients with HMO insurance among all patients grew from approximately 25% to nearly 60%. During these years, use of aspirin in all patients increased from approximately 20% to nearly 80%, use of  $\beta$  blockers increased from 42% to approximately 75%, and use of calcium channel blockers decreased from approximately 55% to less than 30%.

After adjustment for study year and demographic and clinical characteristics, the odds ratios for receipt of aspirin,  $\beta$  blockers, and calcium channel blockers for patients with HMO coverage compared with FFS were 1.05 (95% confidence interval [CI], 0.77 to 1.44), 1.32 (95% CI, 0.98 to 1.76),

and 0.72 (95% CI, 0.54 to 0.96), respectively. Examination of the use of these agents over time suggests that decreases in the use of calcium channel blockers and increases in the use of  $\beta$  blockers observed between 1986 and 1993 occurred more rapidly for HMO than for FFS patients.

### Conclusion

Use of aspirin and  $\beta$  blockers was comparable among HMO and FFS patients, and use of calcium channel blockers was lower among HMO patients. Adoption of prescribing practices supported by the medical literature was more rapid for HMO patients than for FFS patients.

### Commentary

HMO patients were just as likely as FFS patients to receive beneficial medications (aspirin and  $\beta$  blockers) and were less likely to receive ineffective medications (calcium channel blockers) at hospital discharge for AMI. Inasmuch as none of the hospitals admitted only HMO patients, it is noteworthy that there were statistically significant differences in the use of calcium channel blockers and positive trends in the use of aspirin and  $\beta$  blockers. Time trends overall in the post-AMI discharge use of aspirin,  $\beta$  blockers, and calcium channel blockers were in accord with evidence-based practice guidelines [1], and the trends were observed to be steeper and therefore more positive among HMO patients.

### Applications for Clinical Practice

Randomized controlled trials have clearly shown the benefits of aspirin and  $\beta$  blockers and the lack of benefit of calcium channel blockers for secondary prevention following AMI [2,3]. This study showed that HMOs were able to adopt these evidence-based prescribing practices more rapidly than FFS systems, suggesting that managed care organizations may be better able to react to findings in the medical literature regarding outcomes of medications or other health care interventions.

