

# Improving Adherence to Coronary Heart Disease Secondary Prevention Medication Guidelines at a Community Hospital

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*Using a two-period group randomized study, we tested whether a technology assisted pharmacist intervention improved physician adherence to coronary heart disease (CHD) secondary prevention medication guidelines. After an observation period, physician practices were randomized to intervention or control arms. In the intervention arm, alerts prompted a pharmacist to communicate with the responsible physician about secondary prevention medications. The intervention significantly improved the proportion of patients discharged on appropriate secondary prevention medications.*

## Introduction

We previously reported<sup>1</sup> that at an academic medical center, a technology assisted pharmacist intervention improved physician adherence to CHD secondary prevention guidelines for prescribing aspirin,  $\beta$ -blockers, ACE-inhibitors and lipid lowering therapy.<sup>2</sup> In this study, we tested whether this approach is generalizable to a non-academic, community hospital setting.

## Methods

The study was conducted between 7 Nov 2004 and 20 Jan 2006. Patients with elevated troponin-I levels were identified using a real-time clinical database, and a clinical pharmacist was notified via a secure web site. In Period 1, the study pharmacist confirmed the diagnosis of CHD and noted patient and medication level exclusions for secondary prevention, but did not intervene. Physician practices were then randomized to intervention or control groups (Period 2). Patients in control practices continued to receive usual care, while the physicians in intervention practices received pharmacist recommendations regarding secondary prevention medications. Appropriate therapy was defined as a prescription at discharge for all four secondary prevention medication classes, or a valid exclusion for prescribing the medication.

Differences in control and intervention groups were tested using a mixed model (GLIMMIX, SAS, Cary, NC).

## Results

Impact on the composite endpoint of the proportion of patients discharged on appropriate secondary prevention medications is shown in (Table1). The mixed model is shown in Table 2. There was a significant temporal effect on the composite outcome ( $P<0.0001$ ). The intervention also had a statistically significant impact ( $P=0.0008$ ).

**Table 1. Proportion of patients discharged on appropriate secondary prevention therapy**

| Group        | Period   | N   | %  |
|--------------|----------|-----|----|
| Control      | Period 1 | 363 | 69 |
|              | Period 2 | 344 | 73 |
| Intervention | Period 1 | 380 | 64 |
|              | Period 2 | 392 | 82 |

**Table 2. Mixed Model Statistic**

| Effect       | <i>P</i> |
|--------------|----------|
| Period       | <0.0001  |
| Group*Period | 0.0008   |

## Conclusions

The intervention in this randomized trial improved the use of aspirin,  $\beta$ -blockers, ACE-inhibitors and statin therapy in patients with CHD at a community hospital. The intervention had two components: an automated system to notify a clinical pharmacist and academic detailing of physicians by a clinical pharmacist.

## References

- Noirot LA, Blickensderfer A, Christensen E. et. al. Implementation of an automated guideline monitor for secondary prevention of acute myocardial infarction. Proceedings / AMIA Annual Symposium: 562-6, 2002.
- AHA/ACC Guidelines for Preventing Heart Attack and Death in Patients with Atherosclerotic Cardiovascular Disease: 2001 Update. Circulation. 2001;104:1577-1579.

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