

Program Evaluation of Cardiac Care Programs in the VHA

EXECUTIVE SUMMARY

As a requirement of the Government Performance and Results Act of 1993 (GPRA), the Department of Veterans Affairs (VA) conducted a formal evaluation of the provision of cardiac care within the Veterans Health Administration (VHA). Cardiac care was selected because it represents the largest set of diagnoses within the VA's health care system. The VA Office of Policy and Planning awarded the contract for this program evaluation to PricewaterhouseCoopers in 1999 as primary contractor, with both Harvard Medical School and The Lewin Group as subcontractors. PricewaterhouseCoopers continued to provide overall project management for this program evaluation through project completion; however, formal ownership of the contract was transferred to IBM Business Consulting Services in October 2002.

Overview of the Methods

The evaluation involved two primary sets of comparisons. First, we compared cardiac care and outcomes across Veterans Integrated Service Networks (VISNs) among VA patients of all ages. In order to benchmark care within the VA to that provided in the private sector, we also compared care received by elderly (age ≥ 65 years) male veterans to care received by a national sample of male Medicare beneficiaries.

Two clinical cohorts were developed. The first cohort—the acute myocardial infarction (AMI) cohort—included individuals that had an AMI, more commonly referred to as a heart attack. Within this cohort, we examined utilization associated with cardiac catheterization, percutaneous coronary interventions (PCI) (e.g., angioplasty), and coronary artery bypass graft (CABG) surgery and outcomes such as mortality and readmission. The second cohort—the PCI cohort—included individuals that underwent a percutaneous coronary intervention and who had *not* had an AMI or revascularization procedure (either angioplasty or bypass surgery) in the previous 90 days. Utilization and outcomes were also measured for the PCI cohort. Finally a number of measures to assess the level of cardiac health services provided within the VHA were examined.

Comparisons within the VA and between the VA and Medicare required adjustments for differences in patient characteristics across VISNs and between the two systems of care. Several case mix variables were included in the analytic models. These

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included demographic variables (age, gender, race), 37 clinical comorbid disease indicators derived from administrative data (e.g., diabetes, CHF, hypertension, etc.) and socioeconomic variables derived from the 1990 U.S. Census data (e.g., percent with college degree in zip code of residence, etc.). We used a propensity score approach to create a matched sample of VA and Medicare patients; to our knowledge no other study has attempted to use this approach on such large cohorts over so many years of study. This methodology might be useful in future clinical program evaluations.

Results for the AMI and PCI cohorts were presented in two major categories; the within VA analyses, which enabled valid comparisons to be made across VISNs and the Matched VA and Medicare analyses, which enabled valid comparisons to be made between the VA and private sector (Medicare) patients. For both of these categories, results were presented at the national and VISN level. As specified in the statement of work, all measures were evaluated at a 90 percent confidence level ($P < 0.10$). Facility level analyses could not be conducted due to the small number of patients in each facility for each cohort. Patients treated in fiscal years (October 1-September 30) 1997 to 1999, with an additional baseline year (fiscal year 1994) for the within VA analyses were studied.

Major Findings

Within VA AMI Results. Within the VA, cardiac procedure utilization increased over time, while the length of stay associated with an AMI admission decreased over time ($P < .10$). Readmission rates and long- and short-term mortality rates showed a slight decrease over time in the AMI cohort, although there were no statistically significant trends.

Matched Cohort AMI Results (Patients \geq 65 Years). Matched VA patients underwent significantly fewer procedures than similar patients treated in the private sector ($P < .001$). VA patients were also readmitted more often and had significantly higher short- and long-term mortality after a heart attack than similar patients treated in the private sector ($P < .001$).

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Level of Service. Elderly (65 years of age or older) VA patients traveled almost twice as far to the admitting hospital compared to Medicare patients (30 miles versus 15 miles). Approximately 8% of elderly VA patients were transferred to a different facility to receive a cardiac catheterization procedure (an average of 140-150 miles from their home).

Major Recommendations

Veterans treated for a heart attack within the VA traveled farther to their admitting hospital, received fewer procedures, and had higher mortality when compared to similar Medicare patients treated in the private sector. To further understand these results and identify appropriate programmatic implications, the VA should:

- Check 30-day mortality in the later years (FY 2000 – 2002) to determine if mortality continues to trend downward and check time periods *beyond* 30-day mortality to assess the efficacy of programs introduced in FY 1999 (e.g., diabetes management, hypertension management, etc.) to improve quality of care.
- Compare recent care provided in the VHA for patients with heart attack against clinical guidelines, particularly for cardiac catheterization utilization.
- Review extent to which VHA cardiac catheterization facilities operate at full capacity.
- Assess extent to which cardiac surgery schedules can accommodate urgent/emergent cases.
- Consider benchmarking the VHA against accepted guidelines (e.g., staffing ratios, use of intensivists, etc.) related to structure of care.
- Consider reducing long distances traveled by many veterans to arrive at VHA facilities.
- Examine post-heart attack care delivered in the outpatient setting (e.g., drug therapy and compliance, rehabilitation, specialist care).
- Consider implementing multiple and different interventions—designed by a group of VHA experts with outside consultants—across VISNs to evaluate potential benefits of various interventions.