

Coaching Patients Saves Lives and Money

Joshua Byrnes, PhD,^a Thomas Elliott, M H Econ,^b Margarite J. Vale, PhD,^c Michael V. Jelinek, MBBS, MD, FRACP,^{c,d} Paul Scuffham, PhD^a

^aCentre for Applied Health Economics & Menzies Health Institute Queensland, Griffith University, Brisbane, Australia; ^bQIMR Berghofer Medical Research Institute, Brisbane, Australia; ^cDepartment of Medicine, The University of Melbourne, Melbourne, Australia; ^dDepartment of Cardiology, St Vincent's Hospital, Melbourne, Australia

ABSTRACT

BACKGROUND: The Coaching On Achieving Cardiovascular Health (COACH) Program has been proven to improve biomedical and lifestyle cardiovascular disease (CVD) risk factors. The objective of this study was to evaluate the long-term impact of The COACH Program on overall survival, hospital utilization, and costs from the perspective of a private health insurer (payor), in patients with CVD.

METHODS: A prospective parallel-group case-control study design with controls randomly matched to patients based on propensity score. There were 512 participants with CVD engaged in a structured disease management program of 6 months duration (The COACH Program) who were matched to 512 patients with CVD who were allocated to the control group. The independent variables that estimated the propensity score were preprogram hospital admissions, age, and sex. The primary outcome was overall survival with secondary outcomes, including hospital utilization and cost incurred by the private health insurer. Mean follow-up was 6.35 years. Difference in overall survival between the 2 groups was estimated using a Cox proportional hazard ratio (HR) with difference in total cost estimated using a generalized linear model.

RESULTS: The COACH Program achieved a significant reduction in overall mortality (HR 0.70; 95% confidence interval [CI], 0.53-0.93; $P = .014$). There was an apparent dose-response effect: those who received up to 3 coaching sessions had no decrease in mortality (HR 1.02; 95% CI, 0.69-1.49; $P = .926$); those who received 4 or more coaching sessions had a substantial decrease in mortality (HR 0.58; 95% CI, 0.42-0.81; $P = .001$). Total cost to the health insurer was substantially lower in the intervention group (\$12,707 per person lower; $P = .078$). The reduction in total cost was significantly greater in those who received 4 or more sessions (\$19,418 per person; $P = .006$) and in males (\$18,947 per person; $P = .029$).

CONCLUSIONS: Those enrolled in The COACH program achieved a statistically significant decrease in overall mortality compared with usual care at 6.35 years. A substantive reduction in hospital costs was also observed among those who received The COACH program compared with those who did not, particularly in those who received 4 or more sessions and in males.

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Conflicts of Interest: JB, TE, and PS were independent consultants and have no conflicts of interest. MVJ is an honorary consultant to The COACH Program. MJV is the Director of The COACH Program. The COACH Program was provided to Bupa Australia's members by dietitians employed by Bupa Australia (Melbourne, Victoria, Australia). The data used in this study are owned by Bupa Australia and were collected by Bupa Australia as part of the usual business conduct.

Authorship: International Committee of Medical Journal Editors criteria for authorship read and met: JB, PS. Agree with the manuscript's results and conclusions: JB, TE, MJV, MVJ, PS. Designed the trial: JB, PS. Analyzed the data: JB. Collected (extracted) data for the trial: Raimundo Gomes. Enrolled participants: Bupa. Wrote the first draft of the paper: JB. Contributed to the writing of the paper: JB, TE, MJV, MVJ, PS. Oversight of trial integrity as Chief Investigator: PS.

Requests for reprints should be addressed to Margarite Vale, PhD, The COACH Program, PO Box 499, Camberwell, Victoria 3124, Australia.

E-mail address: m.vale@unimelb.edu.au

INTRODUCTION

It is well established that improvement of disease risk factors and adherence to guideline-recommended medications in people with cardiovascular disease (CVD) is proven to retard the disease process, keep patients out of the hospital, and prolong life.¹⁻⁶ However, clinical practice consistently fails to follow evidence-based guidelines and achieve targets for modifiable disease risk factors. Risk factor control is inadequate despite high reported use of medications. This difference between guideline-recommended care and the care patients actually receive has been referred to as “the treatment gap” or “evidence-practice gap.”⁷⁻⁹

Adjunct systems to improve cardiovascular outcomes include cardiac rehabilitation programs and, more recently, disease management programs, “health coaching,” and telemedicine. These encompass a range of activities designed to mitigate the progression and impacts of health conditions¹⁰ and are widely popularized for their potential benefits.¹¹⁻¹³ However, there are a number of inadequacies in the adjunct systems: 1) despite a documented evidence-practice gap in CVD risk factor management, none of these strategies, other than The Coaching On Achieving Cardiovascular Health (COACH) Program, actually address the treatment gap. 2) The majority of these strategies are directed at improving lifestyle in an attempt to improve cardiovascular outcomes. The results of such programs are inconsistent. 3) Systematic reviews of these adjunct prevention programs are marred by inclusions of studies of different types of interventions, different patient mixes, and different measured outcomes—this results in a comparison of “apples and oranges.” 4) The duration of follow-up for interventions targeting CVD prevention is too short. Systematic reviews of exercise cardiac rehabilitation programs have compared outcomes for only 12 months post diagnosis,¹⁴ a relatively short time horizon given that the life expectancy of patients with CVD is over 15 years.¹⁵ Obviously, such a short follow-up of survival is insufficient for evaluation of an intervention to improve outcomes for patients with CVD.

The COACH Program is a standardized evidence-based coaching program delivered by telephone and mail to people with chronic disease over a period of 6 months. Delivered by trained health professionals, it is focused on closing the evidence-practice gap. It does this by identifying the “treatment gaps” in each patient’s management, explicitly informing patients of their specific gaps in treatment and then providing explicit advice on how to close the gaps and achieve national guideline-recommended target levels for their modifiable risk factors while the patients work with their usual

doctors. Each verbal coaching session is followed by a structured written report that summarizes the session.

The COACH Program has been proven to substantially reduce the treatment gap in the management of patients with CVD in 2 randomized controlled trials (RCTs).^{16,17} Follow-up studies of the Program operating in the “real world” show that The COACH Program maintains improvements long term;¹⁸ achieves greater benefit for socio-economically disadvantaged people than the more affluent;¹⁹ reaches people in remote locations where face-to-face programs are not feasible;²⁰ and is as effective in indigenous people as it is in nonindigenous people.²⁰

In 2008, Bupa Australia, a health benefits organization that has 4 million members throughout Australia, introduced The COACH Program to assist people with CVD to improve their outcomes. The objective of this study was to evaluate the long-term impact on survival, hospital utilization, and costs in patients with CVD between those who received coaching via The COACH Program and those who received usual care.

CLINICAL SIGNIFICANCE

- The COACH Program achieved a significant reduction in overall mortality of 5.1% over a mean follow-up of 6.35 years. The impact was greater in those who received 4 or more coaching sessions.
- There was a substantive net reduction in hospital costs of \$12,115 per coached patient.
- Total per-patient cost to the payor was significantly lower in those who received 4 or more coaching sessions (\$19,418) and in males (\$18,947).

METHODS

Trial Design and Participants

The trial participants were sourced nationally from Bupa Australia. Patients with claims evidence of diagnosis with CVD were identified and considered eligible for enrollment into the study. This evaluation was approved by Griffith University Human Research Ethics Committee (MED/34/15/HREC). Exclusion criteria for this study were: people with a diagnosis other than CVD, and people over the age of 85 years.

The participants in the intervention group received usual care plus The COACH Program, which comprised up to 6 coaching sessions over 6 months. In the control group, participants were not contacted; they received usual care.

Randomization and Matching

Between January 24, 2008 and July 5, 2010, participants who met the inclusion criteria were randomized to receive either The COACH Program intervention or not. Data extracts were randomized into either the “COACH” or “control” group using Excel-based function RANDBETWEEN (Microsoft Corporation, Redmond, WA). The randomization process was designed to provide an average randomization ratio of intervention to control participants of 1 COACH case to 5 cases not coached. None of the coaches had any involvement in the

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