International Journal of Population Data Science

Journal Website: www.ijpds.org

Automated Referral to Cardiac Rehabilitation following Coronary Artery Bypass Grafting is associated with limited improvements in program completion: a large cohort study

Hongwei Liu, H¹, Wilton, S¹, Southern, D¹, Knudtson, M¹, Maitland, A¹, Hauer, T², Arena, R³, Stone, J¹, Aggarwal, S¹, and Martin, B-J⁴

¹University of Calgary

²TotalCardiology™ Rehabilitation and Risk Reduction

³University of Illinois Chicago

⁴Stanford University

Introduction

Cardiac Rehabilitation (CR) reduces residual cardiovascular risk among patients who have received coronary artery bypass grafting (CABG) surgery. However, many patients do not attend and some are never referred. It is unclear whether automated referral is associated with improved CR completion rates.

Conclusion/Implications

Automated referral to CR is associated with increased referral rates but less dramatic increases in CR completion rates post-CABG. Given the significant improvement in survival associated with CR completion, further work is needed to improve CR referral, and more importantly, CR completion rates.

Objectives and Approach

Geographically inclusive databases were linked to assess the impact of automated referral on rates of referral to and completion of CR post-CABG. Automated referral to CR post-CABG was instituted in Calgary on July 1, 2007. All subjects receiving CABG in Calgary between January 1, 1996 and March 31, 2016 were enrolled in the study. The Alberta Provincial Project for Outcome Assessment in Coronary Heart disease (APPROACH) database, TotalCardiology-Rehabilitation (TC-R) database, and provincial vital statistics were linked using the unique Provincial Health Number available for each patient. The association between CR referral, completion, and survival was assessed using proportional hazard models.

Results

There were 28,100 patients referred to the CR program, of which 26,411 were linked to the APPROACH database for a 93.99% linkage rate. After excluding patients who did not receive CABG, a total of 8,118 patients were identified as the study population [mean age 66.2 (SD 10.2) years, 18.9% female] during the study period: 5,103 prior to implementation of automated referral, and 3,015 post-automation. Rates of referral increased from 39.5% prior to automation to 75.0% post-automation (p