

Hospital 30-Day, All-Cause, Risk-Standardized Mortality Rate (RSMR) Following Coronary Artery Bypass Graft (CABG) Surgery

Evidence: Summary of the Empirical Data

Mortality is the primary negative outcome associated with a surgical procedure. Many aspects of peri-operative care, intra- and peri-operative practices, and several aspects of post-operative care, including prevention of and response to complications and coordinated transitions to the outpatient environment, have been shown to impact CABG mortality. A number of recent studies have demonstrated that improvements in care can reduce 30-day mortality rates.

Figure 1. CABG Mortality Logic Model



The goal of this measure is to improve patient outcomes by providing patients, physicians, and hospitals with information about hospital-level, risk-standardized mortality rates following isolated CABG procedures. Measurement of patient outcomes, including mortality, allows for a broad view of quality of care that encompasses more than what can be captured by individual process-of-care measures. Complex and critical aspects of care, such as communication between providers, prevention of and response to complications, patient safety, and coordinated transitions to the outpatient environment, all contribute to patient outcomes but are difficult to measure by individual process measures. The goal of outcomes measurement is to risk-adjust for patients' conditions at the time of hospital admission and then evaluate patient outcomes. This mortality measure was developed to identify institutions whose performance is better or worse than what would be expected based on their patient case mix and therefore promote hospital quality improvement and better inform consumers about the quality of care.

Several studies have examined the improvements in care that can reduce 30-day mortality rates following isolated CABG procedures. For example, a 2021 study using the National Readmission Database found that high-volume hospitals were associated with reduced odds of mortality compared to low-volume hospitals (Hadaya et al. 2021). Also, a 2021 study evaluated if 30-day mortality following

adult cardiac surgical operations remains an appropriate outcome. It found that 11.2% of deaths occurred after 30-days, and 98.4% (n=242) of deaths were attributable to the index operation showing that the current definition of mortality remains appropriate in the modern era (Chan et al. 2021).

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