

Type	Status	Revised
Analytics Accelerator	Custom Services	2019-October-15

Technical Description

The **CABG Surgery** Analytics Accelerator provides data and visualizations to improve best-practice care of patients undergoing CABG—supporting teams in their efforts to improve length of stay (LOS), prevent complications and readmissions, and lower costs.

Background

Organizations that choose to implement typically do so in response to these pressures:

- **The increasing complexity of the CABG patient population warrants improvement interventions targeting specific patient subpopulations.** While previous improvement efforts targeting CABG mortality were generally successful in lowering national in-hospital mortality rates, today candidates for CABG are older with more complex disease and more comorbidities. This makes CABG riskier and management more complex.
- **CABG readmissions are penalized by CMS.** To reduce readmissions and avoid penalties, hospitals will need to decrease the incidence of postoperative infection and adverse cardiac events.
- **Guideline adherence is far from optimal, especially for patient selection and post-discharge care.** Increasing provider adherence to guideline-recommended best practices—including selection of patients for CABG, cardiac rehabilitation, and post-discharge medications for secondary prevention—and following best practice for care transitions will improve outcomes and reduce readmissions.

Application Overview

Insight to guide assessment and intervention, measure impact, and improve outcomes related to CABG surgery

The **Coronary Artery Bypass Graft (CABG) Surgery Analytic Accelerator** provides data to guide improvement in the perioperative and post-hospital management and care of patients requiring CABG surgery. Typical implementations focus on ensuring readiness for surgery, improving infection prevention, adhering to a “Heart Team” management approach, and adopting standard best practices shown to reduce intraoperative complications.

Benefits and Features

- **Gain a rich and comprehensive view of the quality of care and its impact.** The application dashboard visualizes outcome and process metrics in an easy-to-consume, one-page summary. This allows you to see trends as they develop—and take timely action to address issues. The application also drives a focus on aspects of care that are targeted for improvement. Outcome metrics typically include mortality rate, readmission rate, length of stay (LOS), complications, and cost-per-case. Typical process metrics include percentage of eligible patients receiving all readiness-for-surgery care practices, percentage participating in shared decision-making, percentage receiving the appropriate antibiotic prophylaxis, and physician adherence to blood-management/transfusion protocol. The result? Your team understands the priorities and can help solve problems that stand in the way of improvement .
- **Start faster with meaningful, scalable clinical definitions.** The cohorts, definitions, and process measures that come with the accelerator are clinically relevant, standard, and meaningful across domains, ready for customization or adoption in your organization. Instead of spending months debating the definition of LOS or the parameters for average glucose, your teams can quickly begin improvement work. What's more, the work is scalable: you have only one source of truth to maintain as definitions change.
- **Do more than monitor: understand.** Detailed analytics of each bundle provide dynamic data exploration, real-time filtering, and drill-down to patient-level detail. A Comorbidities tab enriches understanding of the patient and the appropriateness of the care they receive. The application also provides export or print capability for the patient list, metric performance, etc. so you can share and follow up.
- **Compare and contrast.** A Compare tab lets you review patient and care variables—demographics, variation in care, performance in different units, etc.—to determine what's working and not working to improve outcomes. This feature also allows you to gauge the ROI of improvement work in particular areas: what could you achieve if every unit and provider standardized to match your best performance?

Intended Users

- Chief of Surgery
- Chief Quality Officer
- Chief Financial Officer
- Clinical directors
- Operational directors
- Clinical educators
- Cardiovascular Surgery service-line leadership and teams
- Supply chain managers
- Nursing leadership
- Clinical support services

Use Cases

- **The Chief of Surgery** in a large hospital system observes that the readmission rates have been steadily increasing over the past six months in patients undergoing CABG. What are the drivers of this trend? He uses the application to identify stroke and kidney injury as factors in readmission, and further explores whether patient risk is being consistently calculated before surgery and whether care plans reflect the needs of patients at higher risk. He shares the data with his team and together they determine a plan to improve.
- **A cardiologist** understands that readiness-for-surgery practices—e.g., optimizing glucose and hematocrit, patient participation in prehabilitation—may have a positive impact on length of stay (LOS), complications, and readmissions associated with CABG surgery. As improvement efforts are implemented, she and colleagues use the application to monitor these outcomes, understand the factors that affect them, and tune local processes and interventions for best results.

Data Sources

This product may leverage one or more of the following sources:

- EMR - Clinical
- Claims
- Finance/Costing
- Other:
Patient Satisfaction

Other clinical systems: anesthesia data system

Key Measures

- Mortality rate
- Complication rate
- Length of stay (LOS)
- Readmission rate
- Cost-per-case
- Patient satisfaction

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