Using System-level Aggregated STS Registry Quality Measures in Coordination with Cost Data to Improve Blood Product Utilization and Cost Reduction Without Compromising Quality

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Purpose:
To improve quality and reduce cost across a geographically diverse national healthcare system using a structured review of system aggregated STS Quality measures in coordination with local and system level Cardiovascular Service Line structures.

Methods:
The formation of a system level Cardiac Surgery Affinity Group drove Quality Improvement work. This group developed a simple blood transfusion reduction guideline document for isolated CABG procedures that was distributed to 35 cardiac surgery programs across 10 markets. All centers participate in the STS database and STS data is aggregated at the system level, drillable to individual surgeon, for Cardiac Surgery Affinity Group review. Transfusion reduction discussions occurred in January 2018 and final guidelines were approved by the CV Surgery Affinity Group in March 2018. STS quality metrics and cost data were collected between November 2017 to April 2019.

Results:
Over 4,800 annual isolated CABG operations were performed and reviewed at the market, facility, and surgeon level by the Cardiac Surgery Affinity Group. Blood transfusion rates remained steady during the baseline period between March 2017 and February 2018. With the approval and distribution of Transfusion Reduction Guidelines through the system service line structure in March 2018, blood transfusion rates steadily decreased from a system-wide rolling 12-month average of 37.49% in March 2018 to 32.48% through March 2019, including a high-volume facility decreasing from 49.42% to 32.72%. Blood utilization cost per case decreased 14.6% comparing March 2018 to March 2019 and the direct cost per case for isolated CABG decreased 7.3% over the same period. There were no significant differences in mortality or stroke rates during the study period.

Conclusions:
A CABG blood transfusion reduction guideline document can be safely instituted across 35 cardiac surgery programs, resulting in significant blood transfusion rate and CABG cost reduction. This collaborative improvement process was made possible by developing a system service line structure and performing monthly cost and STS Registry Quality measure reviews.