Title: Assessing Perfusion Performance with the Use of Quality Indicators

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Abstract:

Background: Clinical variation has been identified as a major cause of diminished outcomes. Quality improvement programs have been established using an evidence-based approach driven by published guidelines. Monitoring of performance against established metrics provides an opportunity to standardize care. This study describes the use of a database to assess performance.

Methods: A national database was established to assess perfusion performance and minimize unwanted variation. Multiple dashboards were generated that are populated utilizing a proprietary software program Case Documentation System. Databases are used in the SpecialtyCare Operative and Procedural Registry (SCOPE). Data fields are entered and Key Performance Indicators (KPI) were created. Tier One KPI are under direct control of the perfusionist and measured against target values.

Results: From January 1, 2017 through December 31, 2017, 18,854 first time CABG procedures were selected from 210 hospitals. Benchmarking threshold for Net Prime Volume (NPV) for the best performing group of facilities was 539 mL versus the population average of 742 mL. NPV of ≤ 900 mL for all programs was 81% with 3 out of 5 regions achieving that metric 98% of the time. Intraoperative packed red blood cell transfusion on cardiopulmonary bypass (CPB) ranged from an average of 15.6% to 0%, with a median of 11.1%. Additional Tier 1 KPI were as follows: Minimum cardiac index ≥ 1.8 L/minute/m2 during CPB of 98% with a target value of 90%; ACT ≥ 400 seconds during CPB at 99% with a target value of 90%; and lowest CPB base excess of -4 mEq at 96% with a target value of > 90%.

Conclusion: Quality improvement establishes assessment metrics to monitor performance and to demonstrate compliance. Results are displayed on dashboards that compare both individual and group performance against target values and benchmarked across several levels. Achievable clinical markers are associated with improved performance.