

Evolution of Coronary Bypass in New York State Over 22 Years of the Mandatory Cardiac Surgery Reporting System 1990-2012

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Introduction:

Audited, mandatory reporting of coronary bypass surgery (CABG) results in New York State (NYS), USA since 1989 became public after "Freedom of Information" litigation by a newspaper. Annual reports addressing other cardiac surgery and then percutaneous interventions (PCI) followed.

Methods:

Analysis of NYS annual reports, including institution specific data (Beth Israel (BI))

Results:

PCI techniques were introduced and volumes grew rapidly; PCI: CABG ratio is 9.9 BI vs NYS 5.7 (2010). NYS CABG volumes fell 50% but mortality decreased from 2.49% - 1.58% despite higher predicted risk in more recent CABG cohorts. Off- pump revascularization flourished then declined as putative advantages were not confirmed. Re-operative CABG declined; acute surgical intervention was supplanted by PCI and CABG early after acute MI is now uncommon. Current NYS important risk factors for CABG mortality (ODDS RATIO>1.5) include only age, Peripheral Vascular disease, Renal Failure and Ejection Fraction <40%. Female gender, diabetes, reoperation and aortic calcification are no longer statistically significant risks. Now 50% of BI CABG patients are diabetic (up from 33%) High-risk patients migrating (to other states) or being refused CABG were reported.

While NYS IMA use is 93. 5%, multiple arterial grafts are used in only 17% (VS BI 65%) We now use Radial artery grafts (harvested open till 2000 thereafter endoscopically) in 75% of CABG; our studies confirmed superior patency (VS vein grafts) unaffected by endoscopic harvest.

Conclusion:

Trends identified in NYS likely influence practice in other locations, though benefits of public reporting remain controversial. Despite clear guidelines, PCI: CABG ratio varies widely and multiple arterial grafting remains uncommon at most centers, suggesting some patients are denied evidence-based benefits of optimal surgical revascularization. Low CABG mortality across NY State makes the risk-adjusted hospital survival metric inadequate to assess the full impact of incremental improvements in CABG.