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Specialist Strategies for Improving Quality and Lowering Costs

AMA Pathways to Success
July 16, 2011

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In Summary:

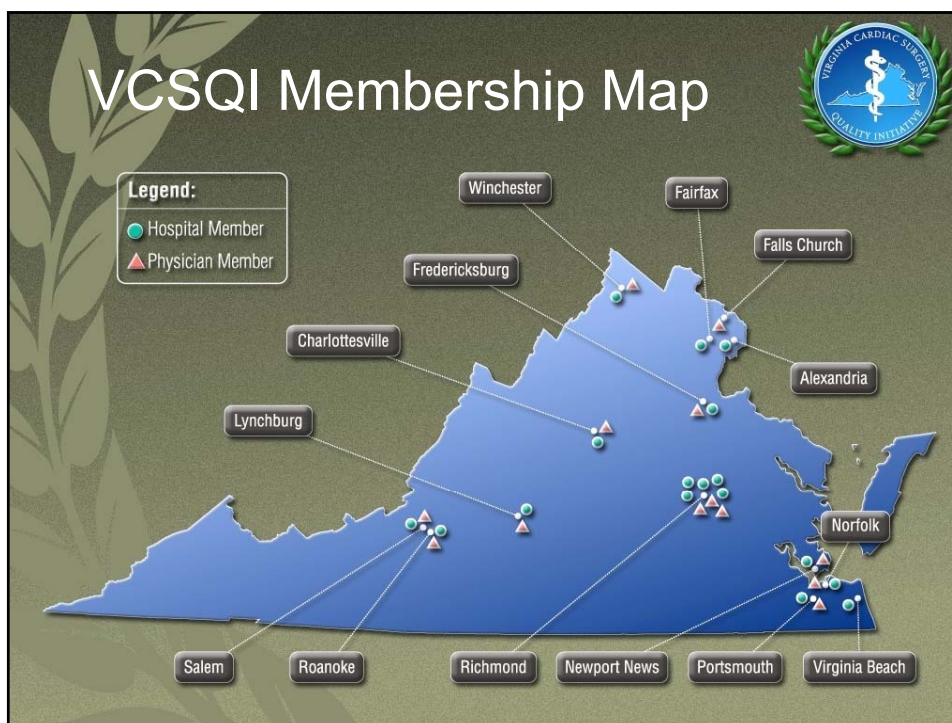


- Alternative payment methodologies to physicians and surgeons are now a reality
- Such payment models are increasingly based upon quality measures and outcomes rather than solely on volumes of cases
- Absolute requirement for physicians to define and determine quality measures within their specialty
- Surgeons are uniquely positioned to identify such quality indicators
- Requires physician champions to initiate such dialogue within and among each specialty
- Quality collaboratives within specialties are beneficial to benchmark outcomes, facilitate the implantation and adoption of specific protocols, and WILL reduce the cost of care

Strategic Building Blocks



- Collaborative structure
- Clinical/financial database *
- Data integrity
- Performance measures
- Cost estimation (tied to clinical)
- Dashboards (tied to decisions)
- Control of care processes *
- Incentive and savings models *
- * Landmine



The VCSQI Consortium

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- 17 hospitals & 13 cardiac surgical practices
- 99% of the state's open-heart procedures
- Semi-annual harvest meets STS data collection/ submission rules
- Blinded hospital IDs in data repository
- Quarterly meetings to review data/protocols

VCSQI's Purpose




Facilitate collaboration between hospitals and physicians to improve clinical quality across an entire state in programs of all sizes through data sharing, outcomes analysis, and process improvements

A Focus on Quality



A focus on quality contains costs in cardiac surgical care by lowering complications, improving efficiency, and reducing resource use


Data to Dashboard



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- 100% participation in STS National Database
- STS matched to UB-04 (>99%)
- ICD-9 charges in 21 categories
- RCCs 'normalize' charges
- Drill-down & 'what if' scenarios: P4P
- Track outcomes & costs (>60,000 cases): cost of comps.
- Protocols initiated and adopted: A-fib, Transfusion, Early Extubation, Renal Insufficiency

Study Population

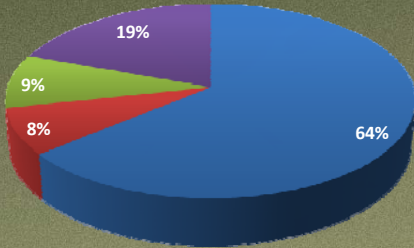


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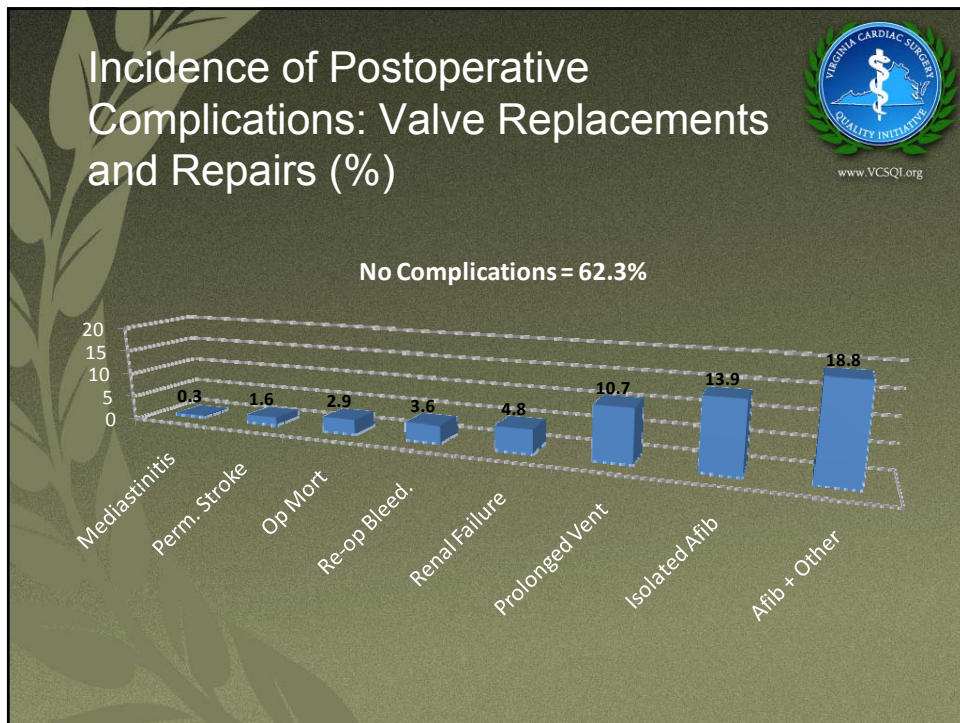
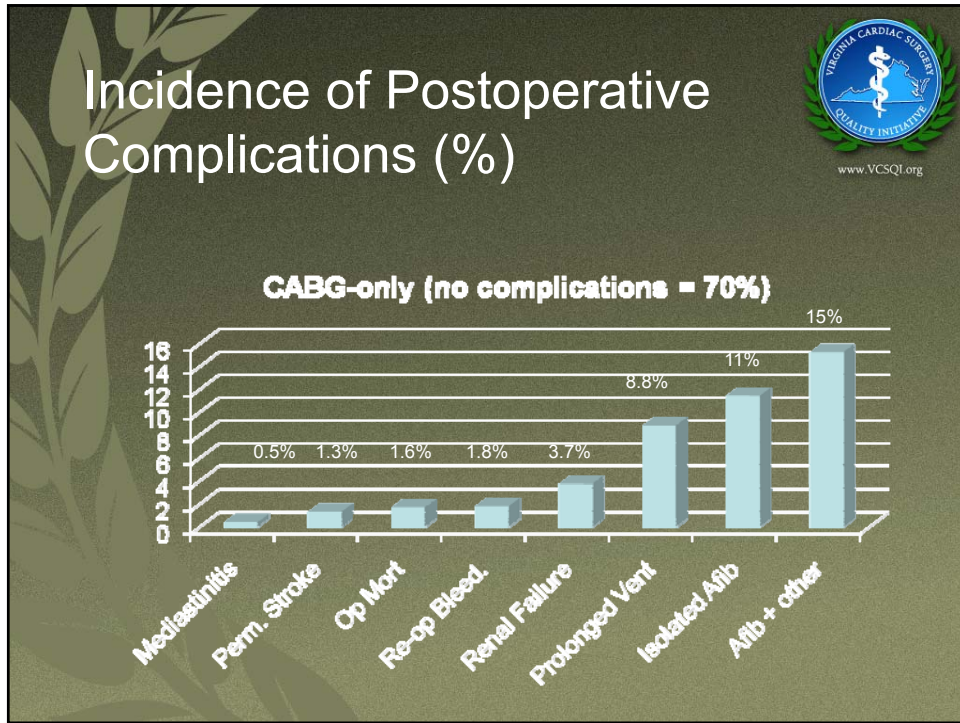
Date Range : 2004 – 2007
 Population : 31,006 (23,782 [76.7%] with Cost Data)

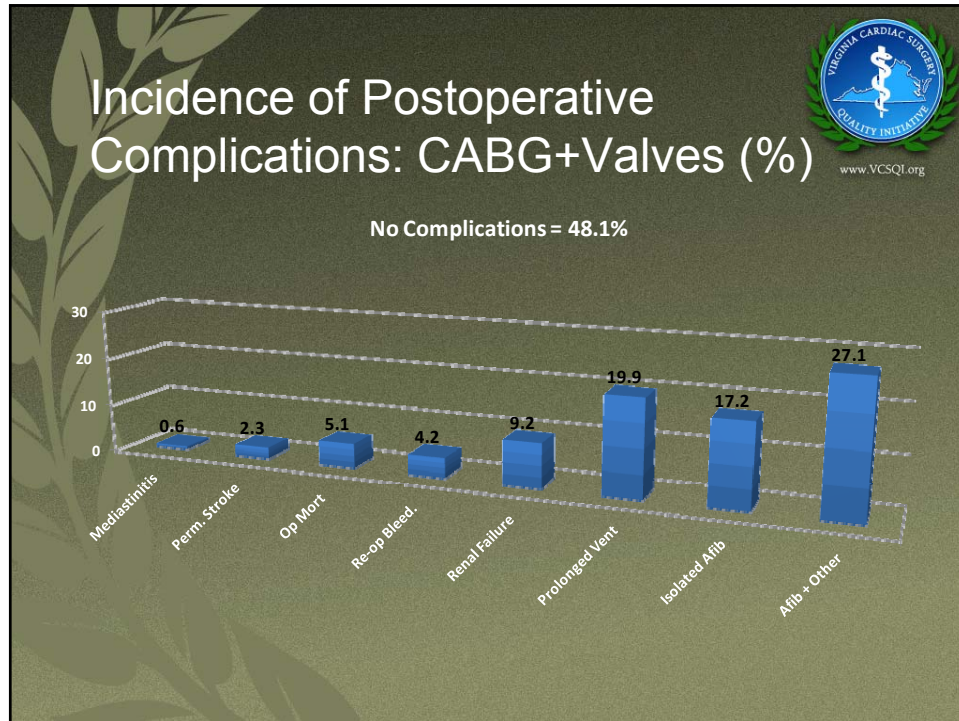
Procedure Volume

■ CABG-only
 ■ CABG/valve
 ■ Replacements & Repairs
 ■ Other



Procedure Type	Percentage
CABG-only	64%
CABG/valve	8%
Replacements & Repairs	9%
Other	19%





Cost Estimation

- Source: Uniform Bill (UB-04) at discharge
- All charges into 21 logical categories
- Hospital-specific cost-to-charge ratios applied to each category
- Total cost = sum of categories

Cost Categories Used to Summarize UB-04 Data in VCSQI Database



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- Regular Room / Step Down
- Intensive Care Unit/Critical Care Unit
- Pharmacy
- Intravenous Injections
- Respiratory Therapy
- Cardiac Catheterization Lab
- General Supplies
- Cardiac Diagnosis
- Therapies (Physical Therapy, Occupational Therapy, cardiac rehabilitation)
- Anesthesia
- Operating Room
- Radiology (including MRI & CT)
- Implants (Pacers, ICD, Valve)
- Emergency Room
- Laboratory
- Blood
- Recovery Room
- Dialysis
- Telemetry
- Other – Miscellaneous
- Peripheral Vascular Laboratory

Cost by Procedure



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Procedure	N	Avg. Cost	Median
CABG-Only	14,814	\$30.7 ± 24.5	\$24.4
CABG+Valve	1,822	\$47.5 ± 40.6	\$35.9
Valve	2,060	\$39.8 ± 51.8	\$28.8

Cost per thousand \$\$

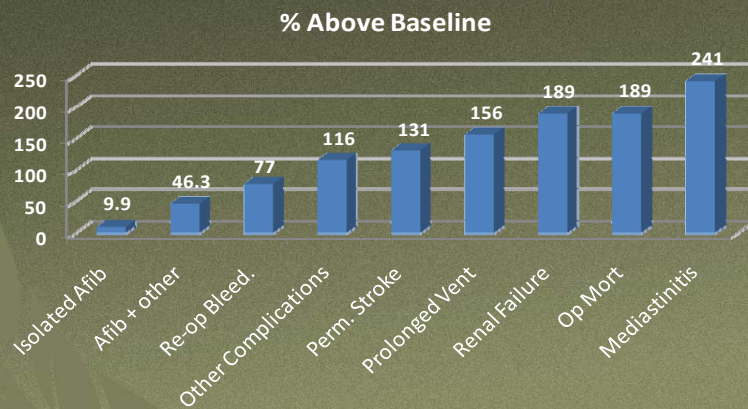
Additive Cost



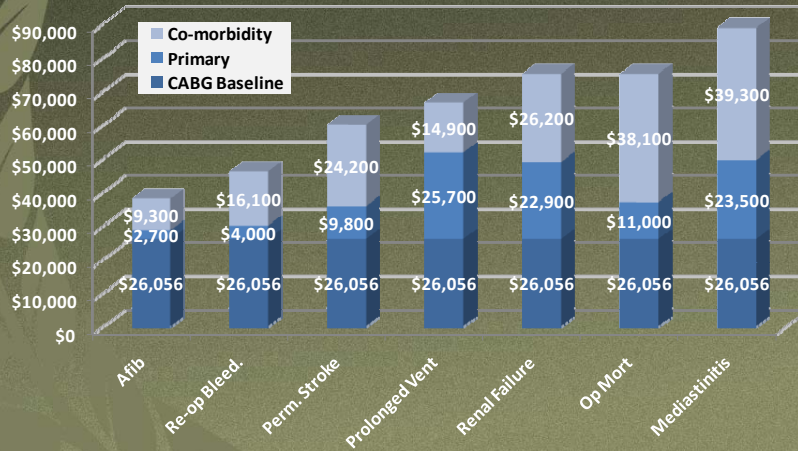
Defined as the difference between baseline cost (cases with no complications) and cases with selected complications

- Isolated complication (e.g., only 1)
- Primary and Secondary complications

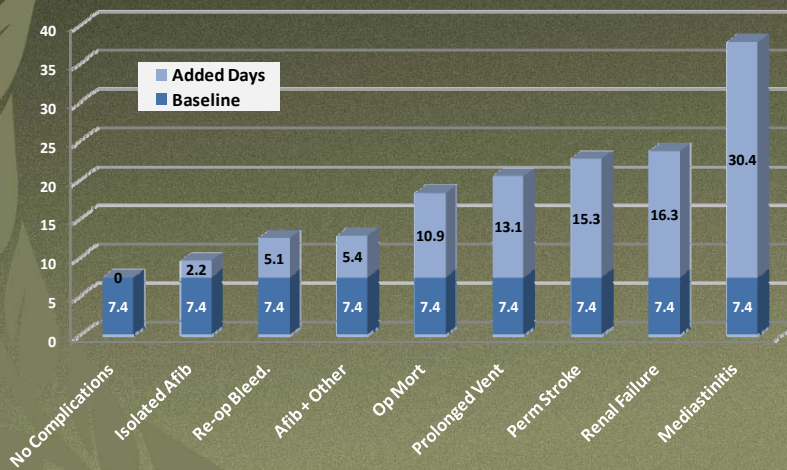
Percent Increase in Additive Costs, CABG only

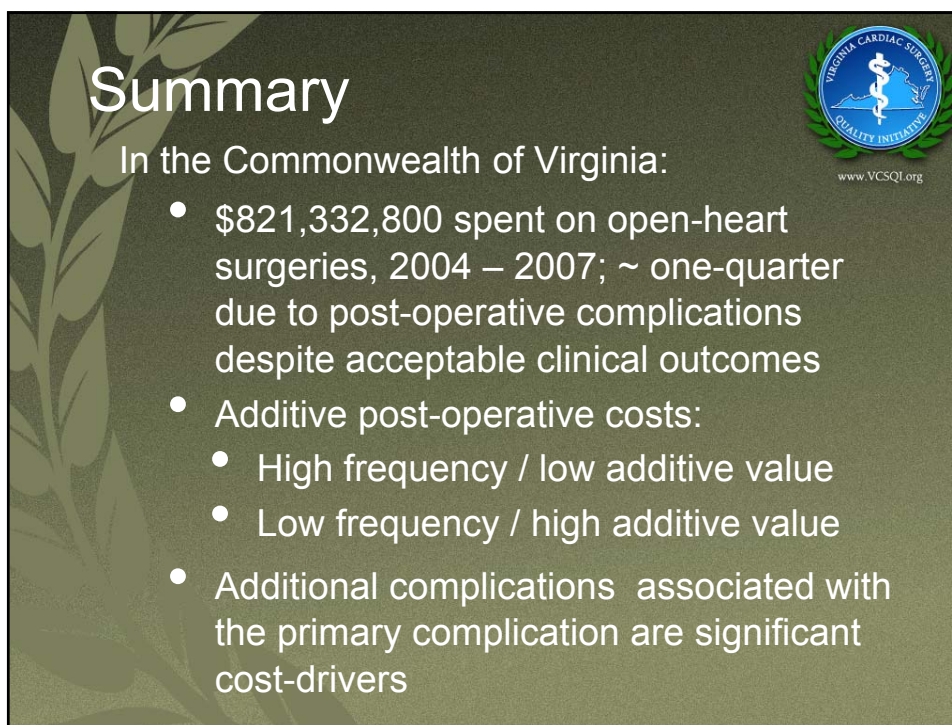
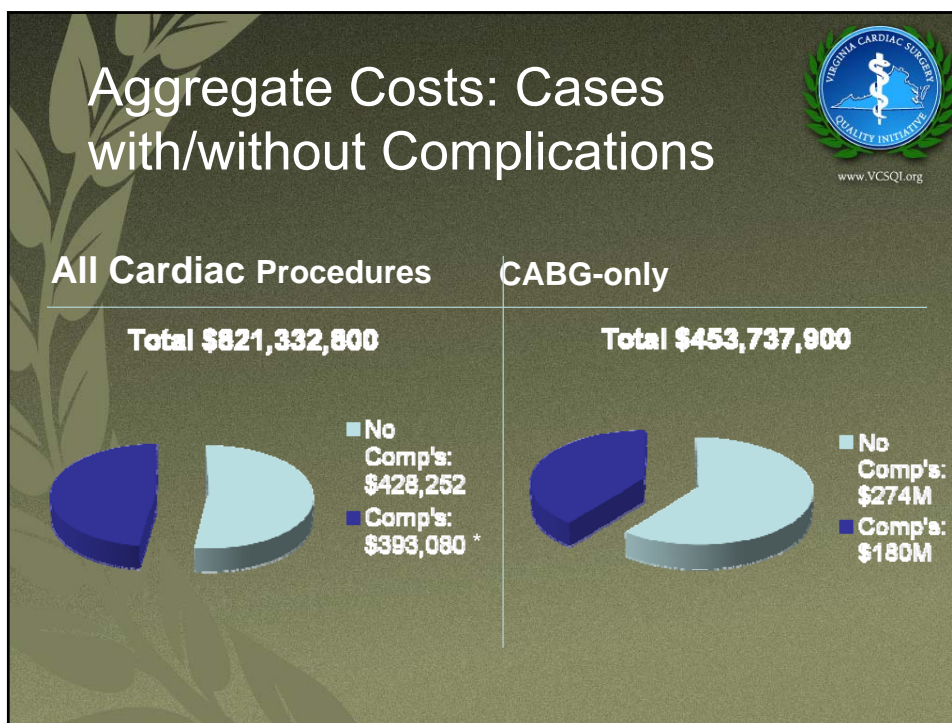


Additive Costs: Primary and Secondary Complications (CABG-only)



Average Length of Stay in Days, CABG-only





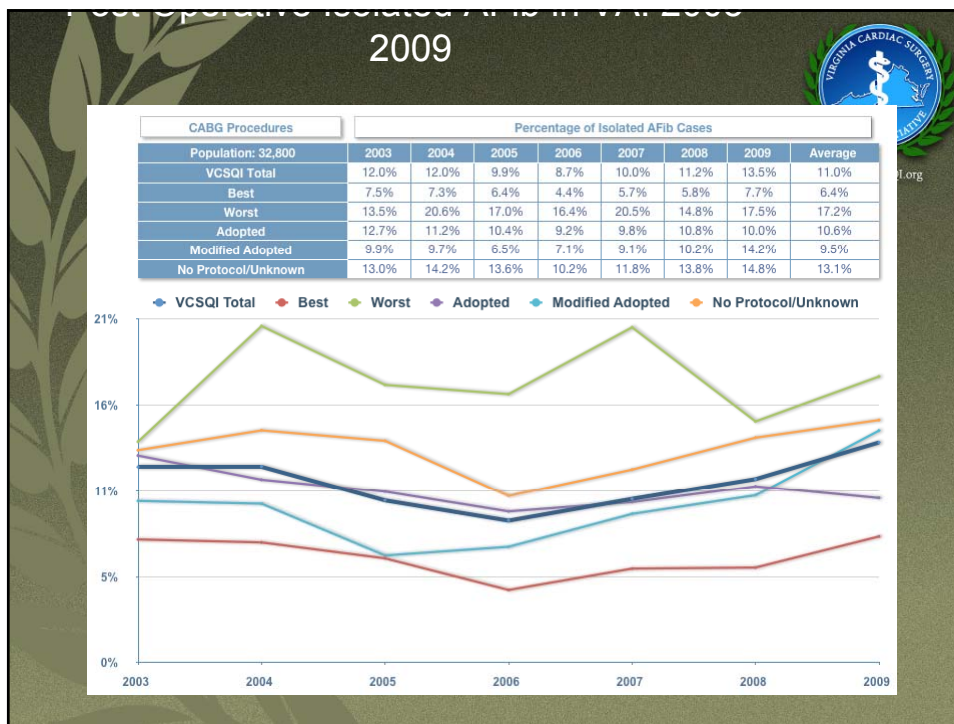
Focused Initiatives to Potentially Lower Complications and Reduce Costs

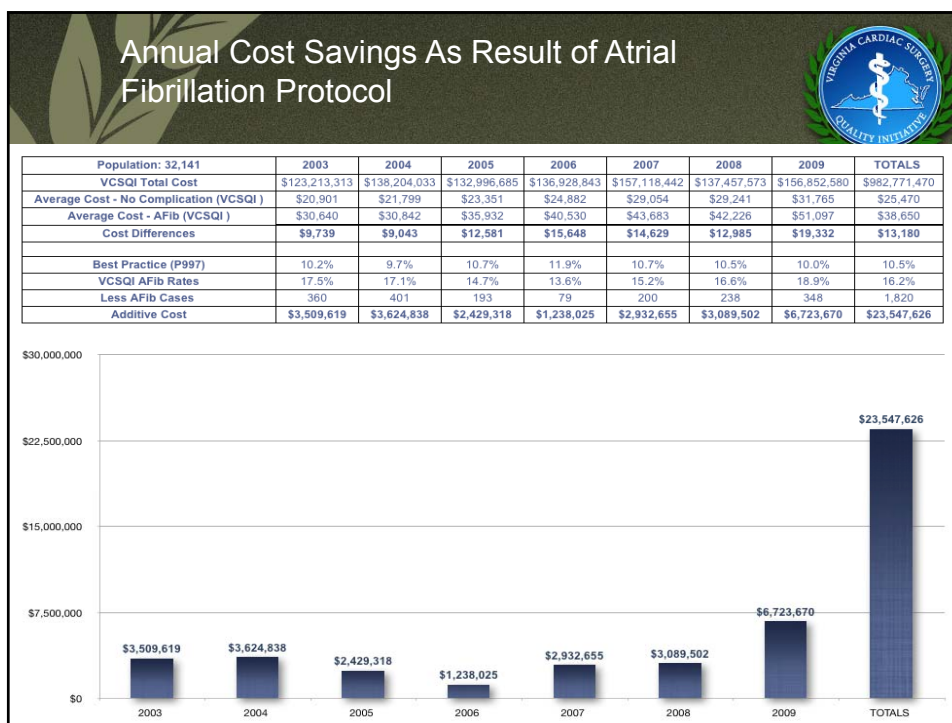


- Atrial Fibrillation
- Glucose Management
- Transfusion
- Early Extubation

Guideline for the Prevention and Treatment of Atrial Fibrillation

- **Prophylaxis**
- Amiodarone
- Start Amiodarone on all CABG and Valve patients if there is no history of allergy to Amiodarone or Iodine, chronic atrial fibrillation (Digoxin), pulmonary fibrosis or heart rate less than 50.
- Stop preop Zocor or Verapamil before starting Amiodarone
- Patients going to surgery within 3-5 days should receive 200 mg. t.i.d. (total daily dose of 600 mg.)
- Patients going to surgery within 48 hrs. should receive 400 mg. t.i.d. (total daily dose of 1200 mg.)
- Patients with no preop loading should receive 1200 mg. on the day of surgery
- All patients who were loaded preop should receive 200 mg. b.i.d. on the day of surgery
- Postop, all patients should receive 200 mg. b.i.d. till discharge
- At discharge, patients should receive 200 mg. daily for an additional 10 days
- Beta Blockade
- Start Propranolol 10 mg. p.o. q.i.d. on all CABG and Valve patients who have normal LV function and do not have severe asthma (active wheezing and/or on inhalers at home)
- Postop do not hold or discontinue the Propranolol unless native heart rate is less than 55. Continue Amiodarone if possible
- Continue atrial pacing during the postop period if needed
- On the day of discharge patients should be switched to their preop beta blocker or Lopressor 25 mg. b.i.d.





Transfusion in Coronary Artery Bypass Grafting is Associated with Reduced Long-Term Survival

Colleen Gorman Koch, MD, MS, Liang Li, PhD, Andra I. Duncan, MD,
Tomislav Mihaljevic, MD, Floyd D. Loop, MD, Norman J. Starr, MD, and
Eugene H. Blackstone, MD

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Background. Perioperative red blood cell (PRBC) transfusion has been associated with early risk for morbid outcomes, but risk related to long-term survival has not been thoroughly explored. Therefore, we examined the influence of PRBC transfusion and component therapy on long-term survival after isolated coronary artery bypass grafting after controlling for the effect of demographics, comorbidities, operative factors, and the early hazard for death.

Methods. The US Social Security Death Index was used to ascertain survival status for 10,289 patients who underwent isolated coronary artery bypass grafting from January 1, 1995 through June 28, 2002. The outcome measure was all-cause mortality during the follow-up period. Unadjusted survival estimates were performed using the Kaplan-Meier techniques. Survival curves for transfusion status were compared with the log-rank test. The parametric decomposition model was used for risk-

adjusted survival. A balancing score was calculated for each patient and forced into the final model.

Results. Survival among transfused patients was significantly reduced as compared with nontransfused patients. The instantaneous risk of death displayed a biphasic pattern: a declining hazard phase from the time of the operation (early hazard) up until 6 months postoperatively and then a late hazard that continued out until about 10 years. Transfusion of red cells was associated with a risk-adjusted reduction in survival for both the early (0.34 ± 0.02 , $p < 0.0001$) and late phases (0.074 ± 0.016 , $p < 0.0001$).

Conclusions. Perioperative PRBC transfusion is associated with adverse long-term sequela in isolated CABG. Attention should be directed toward blood conservation methods and a more judicious use of PRBC.

(Ann Thorac Surg 2006;81:1650-7)

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Persistent Effect of Red Cell Transfusion on Health-Related Quality of Life After Cardiac Surgery

CARDI

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Fawzy G. Estafanous, MD, Floyd D. Loop, MD, and Eugene H. Blackstone, MD

Departments of Cardiothoracic Anesthesia, Quantitative Health Sciences, and Thoracic and Cardiovascular Surgery, and Division of Anesthesia and Critical Care, The Cleveland Clinic Foundation, Cleveland, Ohio

Background. Although red blood cell transfusion has been associated with an increase in early morbid outcomes and reduced long-term survival after cardiac surgery, its relationship to functional quality of life after surgery has not been previously explored. Our objective was to investigate the relationship between perioperative red blood cell and component transfusion and functional health-related quality of life 6 to 12 months after cardiac surgery.

Methods. Of 12,536 patients undergoing cardiac surgical procedures between May 1995 and January 1999, 7,321 completed a self-administered Duke Activity Status Index (DASI) survey preoperatively and least one follow-up survey at nominally 6 or 12 months postoperatively. The influence of baseline DASI, preoperative risk factors, clinical status, laboratory values, operative events, and postoperative morbidities on follow-up DASI were examined with ordinal regression modeling.

Results. After adjustment for preoperative DASI, demographic, cardiac and noncardiac comorbidity, type of surgery, postoperative complications, and interval between follow-up DASI, during which patients continued to improve ($p < 0.0001$), postoperative functional status after cardiac surgery was incrementally worse the more perioperative red cells ($p < 0.0001$) and platelets ($p = 0.02$) that had been transfused.

Conclusions. Red blood cell and platelet transfusion have an unintended persistently negative risk-adjusted effect on health-related quality of life after cardiac surgery that extends well beyond initial hospitalization. Reductions in functional recovery paralleled increasing units of red blood cells transfused.

(Ann Thorac Surg 2006;82:13-20)

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Ann Thorac Surg 2007;83:S27-S86



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Report From the STS Workforce on Evidence Based Surgery Perioperative Blood Transfusion and Blood Conservation in Cardiac Surgery: The Society of Thoracic Surgeons and The Society of Cardiovascular Anesthesiologists Clinical Practice Guideline*

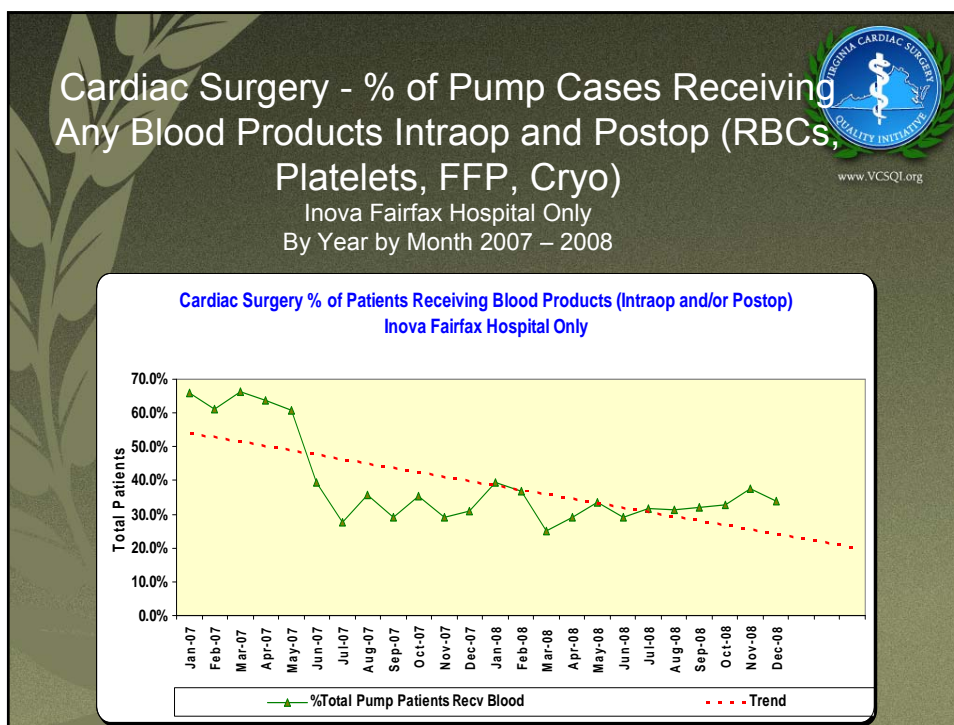
The Society of Thoracic Surgeons Blood Conservation Guideline Task Force, Victor A. Ferraris, MD, PhD (Chair)^{a,*,} Suellen P. Ferraris, PhD^a, Siby P. Saha, MD^a, Eugene A. Hessel, II, MD^a, Constance K. Haan, MD, MS^b, B. David Royston, MD^d, Charles R. Bridges, MD, ScD^c, Robert S.D. Higgins, MD^e, George Despotis, MD^f, Jeremiah R. Brown, PhD^g The Society of Cardiovascular Anesthesiologists Special Task Force on Blood Transfusion, Bruce D. Spiess, MD, FAHA (Chair)^h, Linda Shore-Lesserson, MDⁱ, Mark Stafford-Smith, MD^j, C. David Mazer, MD^k, Elliott Bennett-Guerrero, MD^l, Steven E. Hill, MD^m, Simon Body, MB, ChB

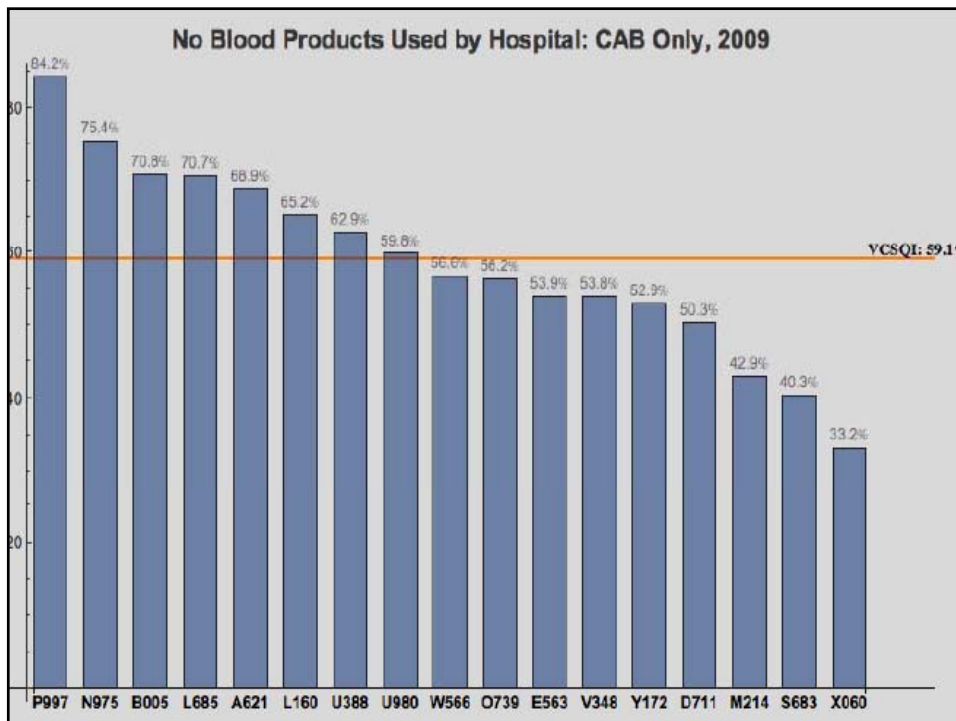
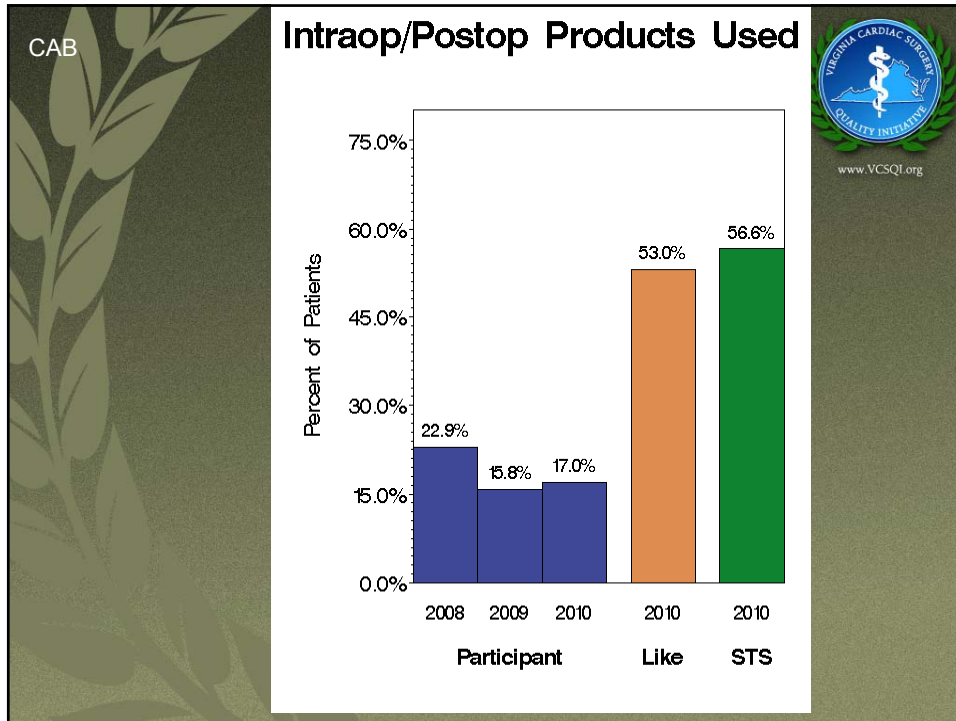



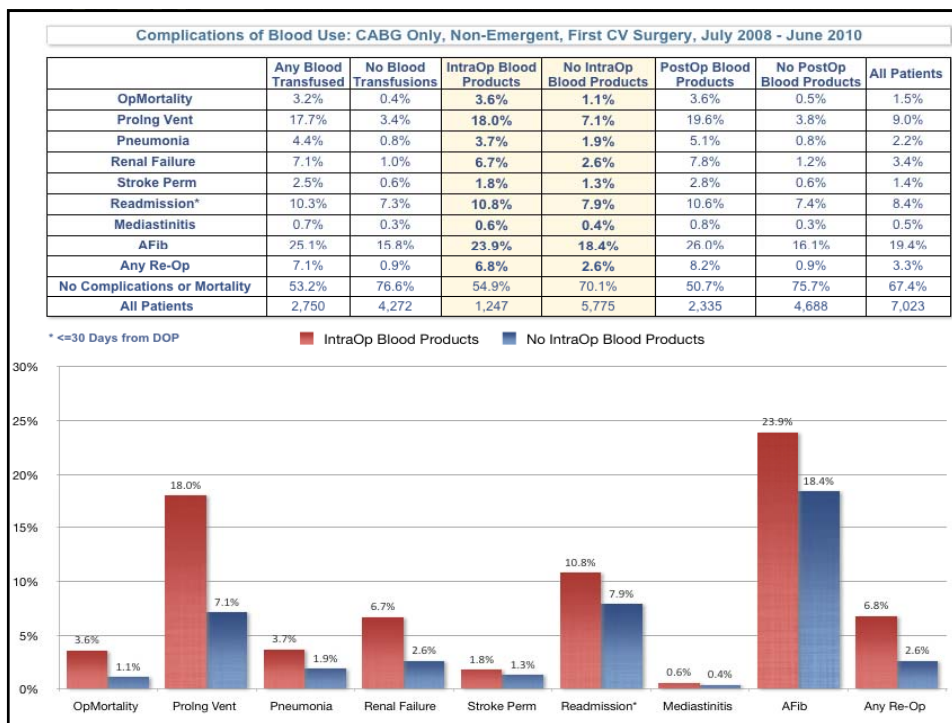
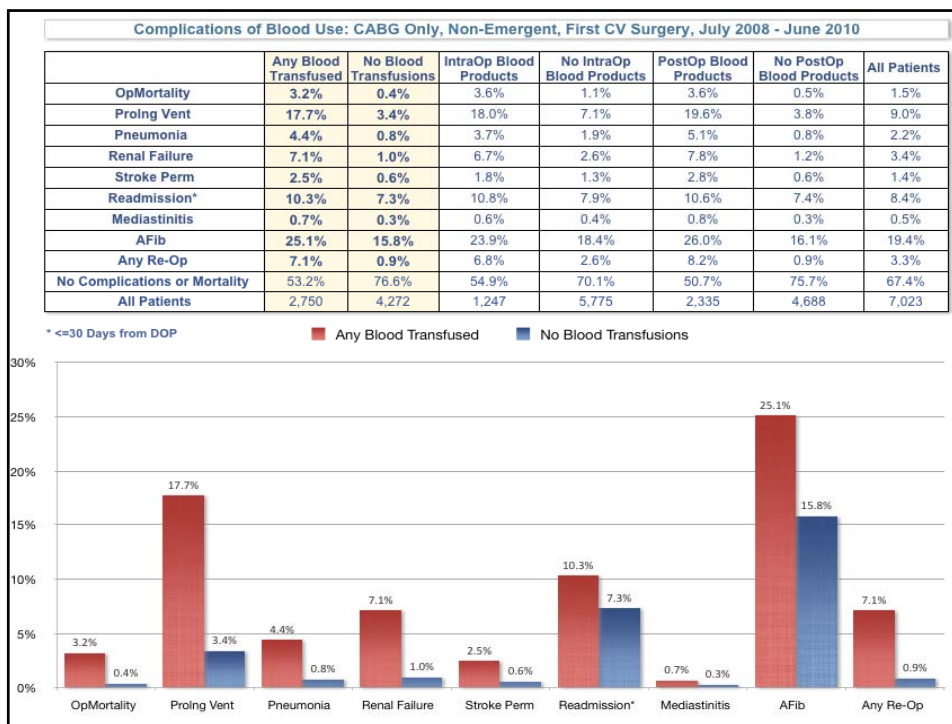
**Cardiac Surgery
 Blood Products Usage
 Inova Fairfax Hospital Only**

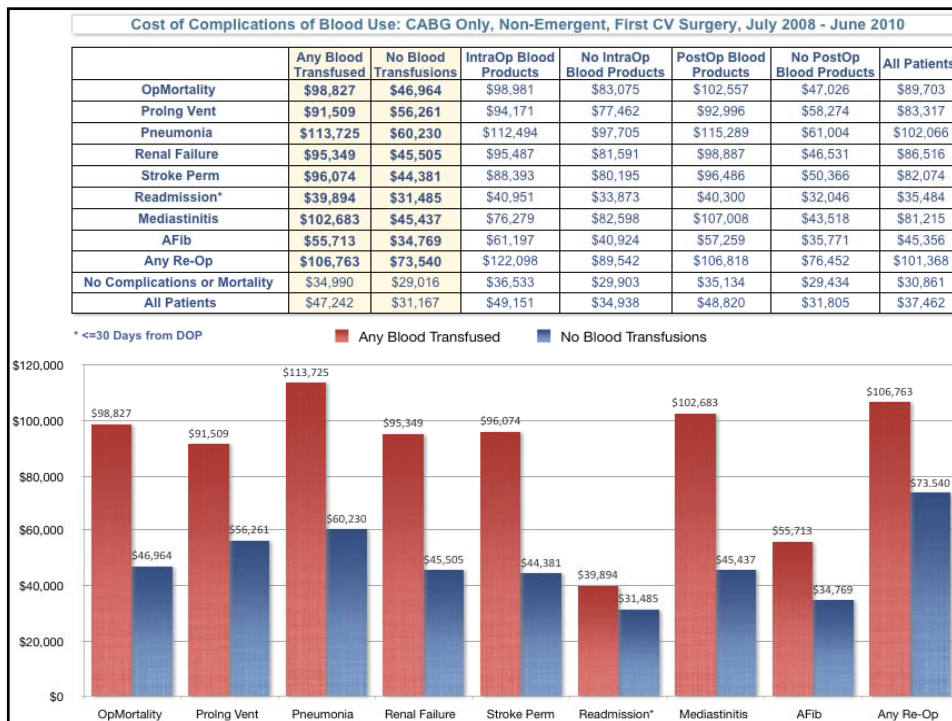
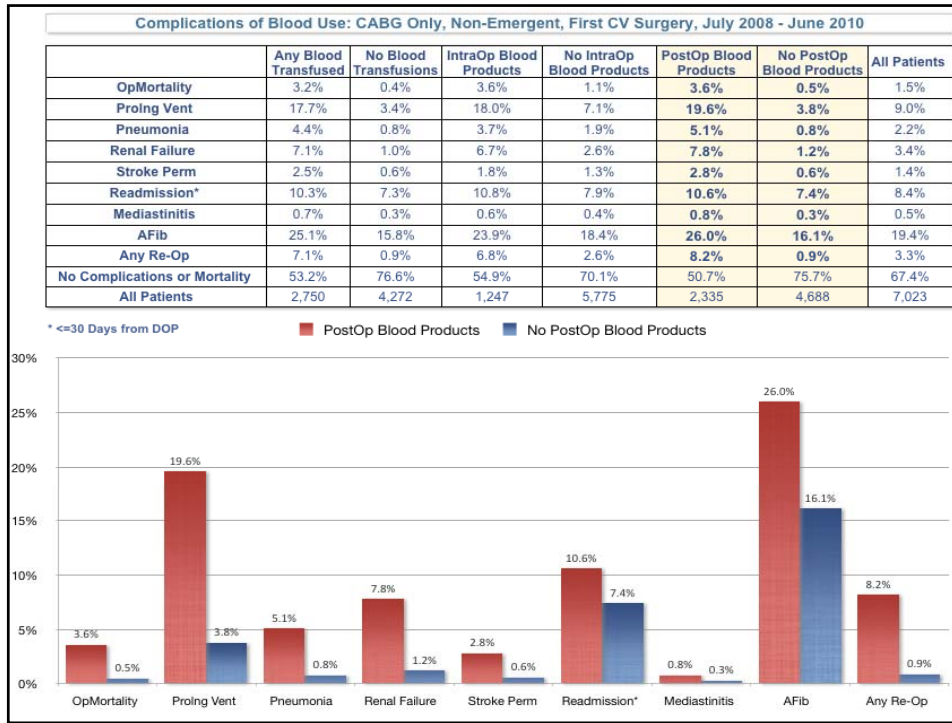
Q1-2007 through Q4-2010

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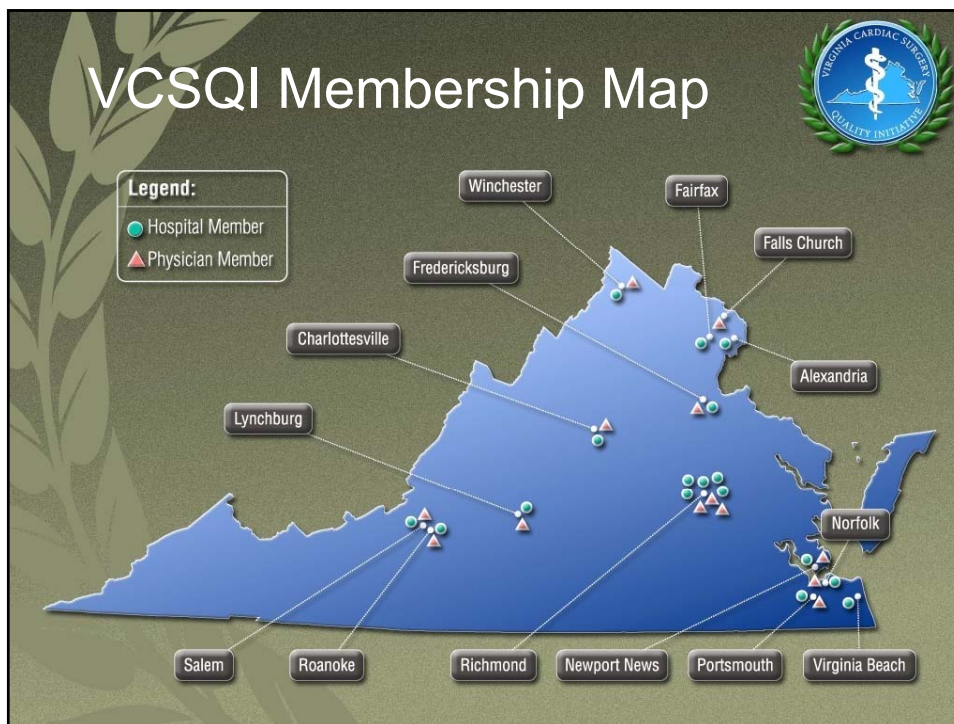
Difference in cost of care of study population undergoing CABG between transfused and non-transfused groups for the two year interval:

\$44,000,000



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**Modeling Relationships
between Pay for
Performance & Quality
Improvement: VCSQI
Experience**



Insurer Contracts with VCSQI for P4P – 2006

PROCESS Indicators:
 Beta Blockers PreOp
 Dschg meds(B-block, ACE, Antiplatelets, Antilipids)
 IMA Rate

OUTCOME Indicators:
 Any Re-operation
 Prolonged Vent
 O/E CABG Mortality

* Includes NQF process & quality measures

Insurer Contracts with VCSQI for P4P – 2006




- High and Low Thresholds for Process and Outcome Measures agreed upon between VCSQI members and Insurer
- Based upon STS Benchmarks for each category
- Points Allocated to each Measure with Payment increase to MDs based upon Total Number of Points

P4P Thresholds



Op. Mortality	High	$\leq 1.32\%$
	Low	$\leq 2.20\%$
Surgical ReExpl	High	$\leq 2.30\%$
	Low	$\leq 3.30\%$
Prolonged Vent	High	$\leq 6.40\%$
	Low	$\leq 8.30\%$
IMA Rate	High	$\geq 90\%$
	Low	$\geq 80\%$

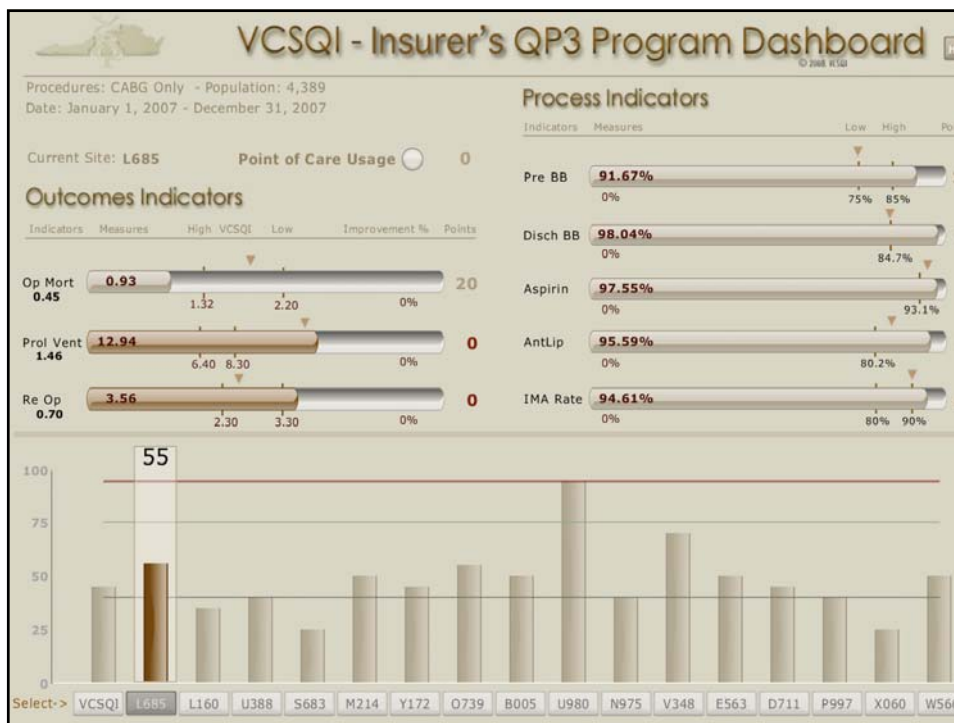
P4P Thresholds (cont'd)




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PreOp B-Blocker	High	≥85%
	Low	≥75%
Discharge Medications		
Anti-platelet	High	≥93.2%
B-Blocker	High	≥85.8%
Anti-lipid	High	≥81.5%

* Points based on reaching 2 of 3 or 3 of 3






**2002-2004: VCSQI
Submits Unsolicited
Demonstration to CMS**

Approved by HHS Secretary Tommy
Thompson-Dec. 2004

Presented at STS Annual meeting by Sec.
Thompson-Jan.2005


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**Key elements of CMS
Demonstration for Cardiac
Surgery**

- Alignment of Cardiac Surgeons, Cardiologists, Subspecialists, Hospitals providing CABG, Valve Replacement/repairs w/without Cath.
- Global pricing methodology developed within each participating provider group
- Rates for DRGs agreed upon with CMS-providers with risk methodology established
- Episode of care for surgical procedures extended to 90 days
- Incentives created within Demonstration for improved quality associated with decreased costs


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• OIG Cautions VCSQI – CMS Demo
May Violate Stark / CMP Laws due to
Incentive Structure – 2006

• This Demonstration served as a model
for the recently approved ACE
Demonstration from CMS in Cardiac
Surgery and Orthopedics (Joint
Replacement)-Texas, Oklahoma, New
Mexico, Colorado

• All recognized Key elements included



What is the Future of Collaborations?

- Regional collaborations focused
on cost and quality
- Physician - Hospital
collaborations
- Physician – Payor collaborations
- Provider – Payor collaborations

PEERS



- Michigan Society of Thoracic & CV Surgeons Quality Collaborative
- Washington's Clinical Outcomes Assessment Program (COAP)
- NNE Cardiovascular Disease Study Group

Pitfalls in P4P or Demonstration Methodology



- Despite financial alignment, there remains distrust of each provider of others, PHYSICIAN BUY-IN
- Billing and cost accountability remains unique to each patient, no uniform system in place for providers and/or insurers
- Often there are unacceptable time delays in reimbursement to providers
- Significant infrastructure required by all participants to account for each bill-not covered by insurers borne solely by providers
- Post acute care costs are relevant-no consensus as to coverage of care and by whom

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- Such payment models are increasingly based upon quality measures and outcomes rather than solely on volumes of cases
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QUALITY

THE RACE FOR QUALITY HAS NO FINISH LINE-
SO TECHNICALLY IT'S MORE LIKE A DEATH MARCH.

www.despair.com



www.VCSQI.org

