

Catalyzing and Rewarding Quality Improvement

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BCBSM PHA Incentive Model

- **Patient Safety 40%**
 - Culture of Safety (5)
 - Medication Safety Practices (5)
 - Patient Safety Practices (10)
 - Patient Safety Technology (15)
 - Diagnosis Specific Standing Orders (5)
- **Quality 50%**
 - Clinical Quality Indicators: JCAHO/CMS AMI/CHF/CAP/SIP Core indicators (45)
 - Voluntary Public Reporting (5)
- **Health of the Community 10%**

BCBSM PHA Incentive Model

- Incentive is for high performance on existing QI initiatives (potential 4% DRG add on)
- Modest impact as hospitals are already committed to optimizing performance in these areas
- Biggest contribution might be catalyzing link between CFO/CEO and QA staff



**Blue Cross Blue Shield of Michigan
Cardiovascular Consortium**

**Collaborative Quality Improvement Initiative
In Coronary Angioplasty**

Catalyzing Quality Improvement: Basic Principles

- **Focus on improving systems of care rather than on individual physician behavior**
 - **Physicians function in collaboration with others**
 - **Physicians' clinical decisions are likely to be optimized if systems are structured to prompt consideration of guidelines and safety concerns at the point of care**

Catalyzing Quality Improvement: Basic Principles

- **Incentives should go to physician groups not individuals**
 - physicians provide care in collaborative contexts
 - low “n” problem limits rigorous assessment of physicians’ performance
 - patients aren’t randomly distributed on determinants of compliance and severity
 - improving systems of care is likely to have a greater impact than educating or judging individual physicians

Catalyzing Quality Improvement: Basic Principles

- **In areas of care with scientific certainty regarding optimal practice, focus on key care processes known to yield good outcomes**
 - **Performance on Quality indicators (QI) from HEDIS, JCAHO/CMS can be the focus**
 - **Better yet, support systematic implementation of change efforts, such as the ACC GAP project, with performance on guideline-based QI's as part of the incentive program**

Catalyzing Quality Improvement: Basic Principles

- **In areas of care with multiple, acceptable, alternative treatment approaches, focus on encouraging systems of care to engage patients in deciding on a course of care**

Catalyzing Quality Improvement: Basic Principles

- **In areas of care which are highly technical, rapidly-evolving and regarding which scientific uncertainty exists**
 - **establish collaborative, inter-institutional, clinical data registries with coordinated CQI programs**

BMC2 OBJECTIVES

- **Establish multi-center registry of consecutive cases of PCI (1997)**
- **Develop risk adjustment models for fatal and non-fatal outcomes of PCI**
- **Analyze practice variation (comparative performance reports by hospital and operator)**
- **Data confidential, for QA/QI purposes**

BMC2 OBJECTIVES

- **Generate new learning linking processes and outcomes of care to help define optimal care**
- **Improve outcomes of PCI by collaboratively applying learning achieved in rapid-cycle continuous quality improvement efforts**
- **Engage clinical and administrative leaders as quality improvement champions**

Role of BCBSM

- **Use leverage to convene competitive hospitals**
- **Provide neutral ground for collaboration**
- **Provide resources for data gathering and analysis**
- **COE as catalyst for CQI**

Need for Collaboration

- **Variation in process and outcomes greater across hospitals than within hospitals**
- **Low rates of fatal and non-fatal outcomes requires study of link between process and outcome on a regional basis**
- **Clinically rich data needed for robust risk adjustment, without which comparative analysis is meaningless**

Areas of QI Focus

- **Standardizing care based on established guidelines**
 - e.g., aspirin, beta blockers, statins
- **Scientific examination of unanswered questions pertinent to links between processes and outcomes of care**
 - e.g., BMC2 demonstration that pre-procedure statins lower renal failure and mortality risk; risk factors and preventive measures for kidney failure requiring dialysis

**“Non Fatal” Adverse Outcomes:
Prevention of Nephropathy Requiring
Dialysis**

Objectives

- To determine the incidence of nephropathy requiring dialysis (NRD) after PCI in a large cohort of patients.
- To identify risk factors associated with NRD and develop a predictive rule to assist in identifying patients at risk for NRD.
- To determine the impact of NRD on in-hospital mortality after PCI.
- To prevent the occurrence of NRD after PCI



Nephropathy Requiring Dialysis

Incidence of NRD	0.6%.
Overall in-hospital mortality rate	1.5%
In-hospital mortality rate for NRD	39.4%.

N=9,241

Prevention of NRD after PCI

Aggressive hydration before contrast administration.

Determination of “maximum allowed contrast dose”

5cc x kg body weight/creatinine

Careful monitoring of contrast used.

Use of smaller catheters.

Use of low osmolar contrast in high risk patients

BMC² POCKET GUIDE

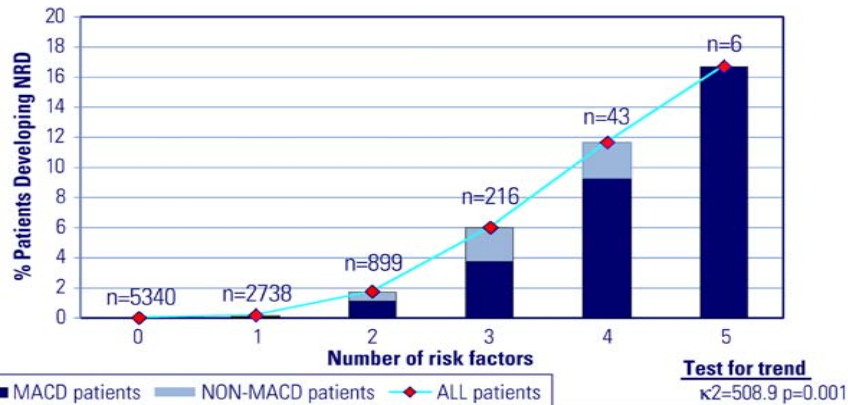
Risk prediction tool for nephropathy requiring dialysis and guidelines for prevention



High Risk Patient Characteristics For Contrast Nephropathy

- Diabetes
- Creatinine ≥ 2 mg/dl
- Peripheral vascular disease
- Cardiogenic shock
- Congestive heart failure

Incidence of NRD by the number of risk factors present separated by Maximum Radiographic Contrast Dose (MRCD) status



Incidence of nephropathy requiring dialysis (NRD) by number of risk factors present and the effect of exceeding a weight and creatinine adjusted Maximum Radiographic Contrast Dose (MRCD).

The risk factors for NRD include 1) Diabetes mellitus 2) Creatinine > 2 mg/dl 3) Peripheral Vascular Disease 4) Cardiogenic shock 5) History of congestive heart failure. Within each risk factor number group, the relative proportion of patients exceeding a weight and creatinine adjusted Maximum Radiographic Contrast Dose (MRCD) is represented by the darker bar.

Proposed Guidelines For High Risk Patients

- A) Aggressive hydration **before** contrast administration. Measuring the LVEDP or PCWP before contrast administration might help in further determining volume status. It is not uncommon to find low PCWP/LVEDP in patients who have been admitted for pre-procedure "I.V. Hydration".
- B) Determine "maximum allowed contrast dose" according to the following formula:

5cc x kg body weight/creatinine
- C) Avoid exceeding this amount. Use of biplane coronary angiography and avoidance of unnecessary images (i.e. left ventriculogram or other images) might help in minimizing total amount of contrast used.
- D) Consider staged procedures. When planning a staged procedure, current recommendations are to perform the second procedure several days after the first.
- E) Use of smaller catheters might help in decreasing amount of contrast.
- F) Use of low osmolar or non-ionic contrast might decrease the risk in high risk patients.
- G) In view of a recent study showing a significant benefit from acetylcysteine, and given its safety, consider acetylcysteine 600 mg bid on the day before and on the day of contrast administration (NEJM, 2000; 343: 180-184).

Accomplishments to Date

- **Trusting relationships**
- **Data elements and definitions (evolving)**
- **Database implementation: over 50,000 consecutive cases**
- **Quarterly comparative reports across hospitals/operators**
- **Risk adjustment models for mortality, LOS and non-fatal outcomes**

Accomplishments to Date

- Identification of risk factors for prognostication and predicting non-fatal outcomes
- Evidence based learning linking processes and outcomes of care
- Development of care management algorithms
- CQI interventions: demonstrable improvement in selected processes and outcomes of care
- ACC/AHA publications and presentations

Accomplishments to Date

- **Dramatic decreases in mortality rate (-27%), and in rates of complications, including AMI (-19%), CABG (-22%), renal failure (-57%)**
- **Cost savings of approximately \$8,000,000 annually per 10,000 cases, due to prevention of AMI, CABG and renal failure requiring dialysis**
 - **over \$8,000,000 statewide for participating hospitals, \$2,400,000 attributable to care of BCBSM members**

Lessons Learned

- **Blue leverage was key to convening competing providers and catalyzing effective, collaborative CQI**
- **Given appropriate information and incentives, competing providers can collaborate and rapidly improve the quality of care**
- **Incentives to rigorously evaluate and re-engineer care accomplish more than focusing on selected performance metrics**

Catalyzing Quality Improvement: COE as lever for change

- **Centers of Excellence Programs can serve as levers to optimize inpatient care**
 - **Inclusivity in data-registry-based CQI projects can catalyze regional quality improvement**
 - **Credentialing requirements selected to reflect high levels of performance on structure, process and outcome measures**
 - **Additional payments serve as rewards for achieving COE status**
 - **COE status is meaningful to consumers**

BCBSM Cardiac Centers of Excellence Program

- **Credentialing requirements**
 - hospital and operator volume
 - 24/7 staffing; timeliness to OR
 - performance on key QI's for AMI, CHF, CABG
 - systems for assuring appropriateness'
 - systems for continual self-assessment and improvement
 - approach to implementing guidelines to assure judicious use of new technology

BCBSM Cardiac Centers of Excellence Program

- **Credentialing requirements**
 - participation in collaborative, inter-institutional, clinical data registries with coordinated CQI programs for PCI (BMC2) and Cardiac Surgery (STS)
- **Reward for achieving COE status:**
 - 1% additional payment for cardiac DRG's
- **Incentive for all to participate in collaborative CQI project:**
 - additional payment sufficient to cover cost of data collection, auditing, analysis, and reporting

Future Expansion of BMC2 model

- **2004 Cardiac Surgery: Michigan STS using national STS registry + inter-institutional CQI**
- **NCCN: Breast Cancer data registry**
- **NSQIP: General and vascular surgery**
- **Bariatric Surgery**
- **Standardizing Stroke Care**
- **Standardizing Hospitalist Care**