

How Barnes Jewish Hospital Fundamentally Transformed PCI Care and Improved PCI Outcomes via Proactive 'Patient-Centered Care'

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Background

- Adverse outcomes after PCI have been considered difficult to impact
- Two-year longitudinal review of CathPCI Registry® data revealed consistently sub-optimal rates of risk-adjusted bleeding, Acute kidney injury (AKI), appropriate use and mortality

Methods

- We implemented and created the infrastructure for using NCDR CathPCI risk models at the point-of-care by incorporating ePRISM, a health IT solution in the clinical workflow of the cardiac cathlab
- We created an environment for strong nurse-physician collaboration, facilitated by leadership at all levels beginning from executive oversight to the point of care in the cathlab
- In tandem, we conducted Rapid Improvement Events for standardizing hydration protocols and understanding deficiencies in documentation
- We trained dedicated nurses to implement nurse-led risk stratification via ePRISM health IT software to estimate pre-procedure risk of bleeding, AKI, PCI appropriateness, and mortality, while providing physician guidance for bleeding avoidance strategies and contrast limit recommendations
- Established monthly review to analyze process and outcomes by CathPCI Registry data endpoint, in cycle of continuous quality improvement, with on-going monitoring for efficacy and compliance of process, executed by cathlab nurse manager, medical director, and quality team.

Results

Figure 1: ePRISM Clinical Workflow

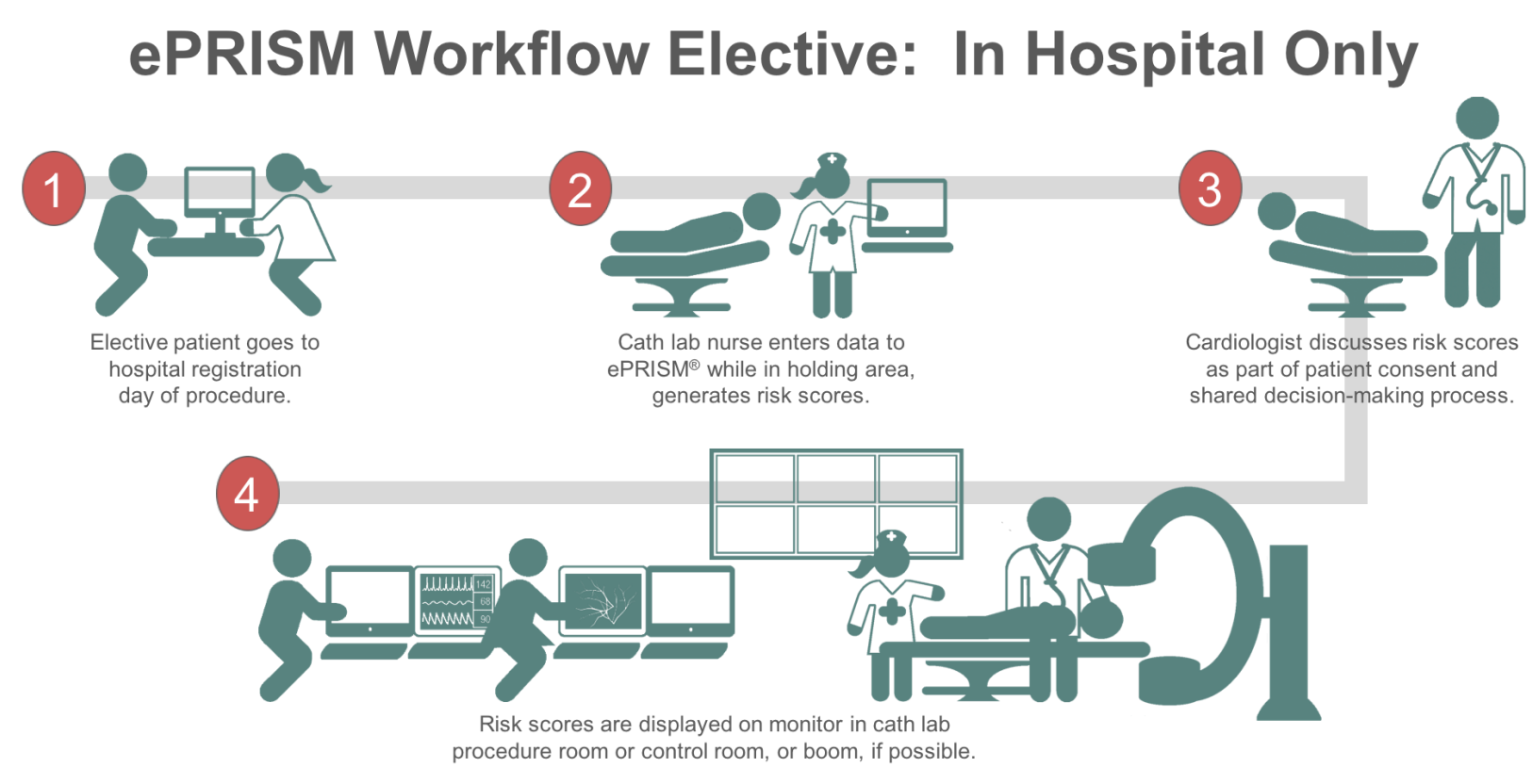
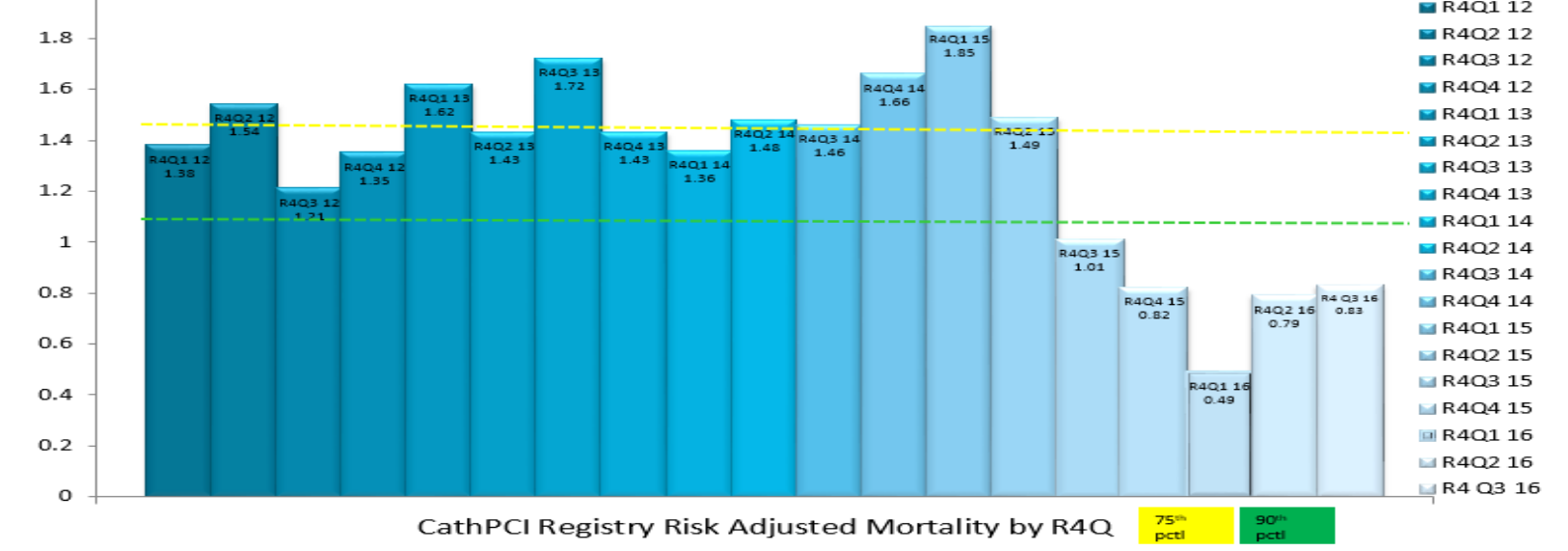


Figure 2: ePRISM risk stratification output

Lab Values	Date / Time	Bleeding	2/23/17 12:26	Mortality	2/23/17 12:26
Serum Creatinine	2.00	2/23/17 12:26	3.83%	1.26%	
Hemoglobin	11.8	2/23/17 12:26			
GFR	47.59	2/23/17 12:26			
Weight (lbs)	250	2/23/17 12:26			
Platelets	125,000	2/23/17 12:26			
Ejection Fraction	15%	2/23/17 12:26			
AUC -Unstable Angina/Non-STEMI		2/23/17 12:24	Patient is at High Risk of AKI		
<input type="checkbox"/> 1 or 2 vessel disease, no pLAD <input type="checkbox"/> 1 vessel disease, pLAD <input type="checkbox"/> 2 vessel disease, pLAD <input type="checkbox"/> 3 vessel disease, no LM <input type="checkbox"/> CTO 1 vessel, no other disease		Appropriate Appropriate Appropriate Appropriate Appropriate			

Table 1: PCI in-hospital Risk Adjusted mortality by R4Q



Results Continued

Table 2: PCI in-hospital Risk Adjusted bleeding events by R4Q

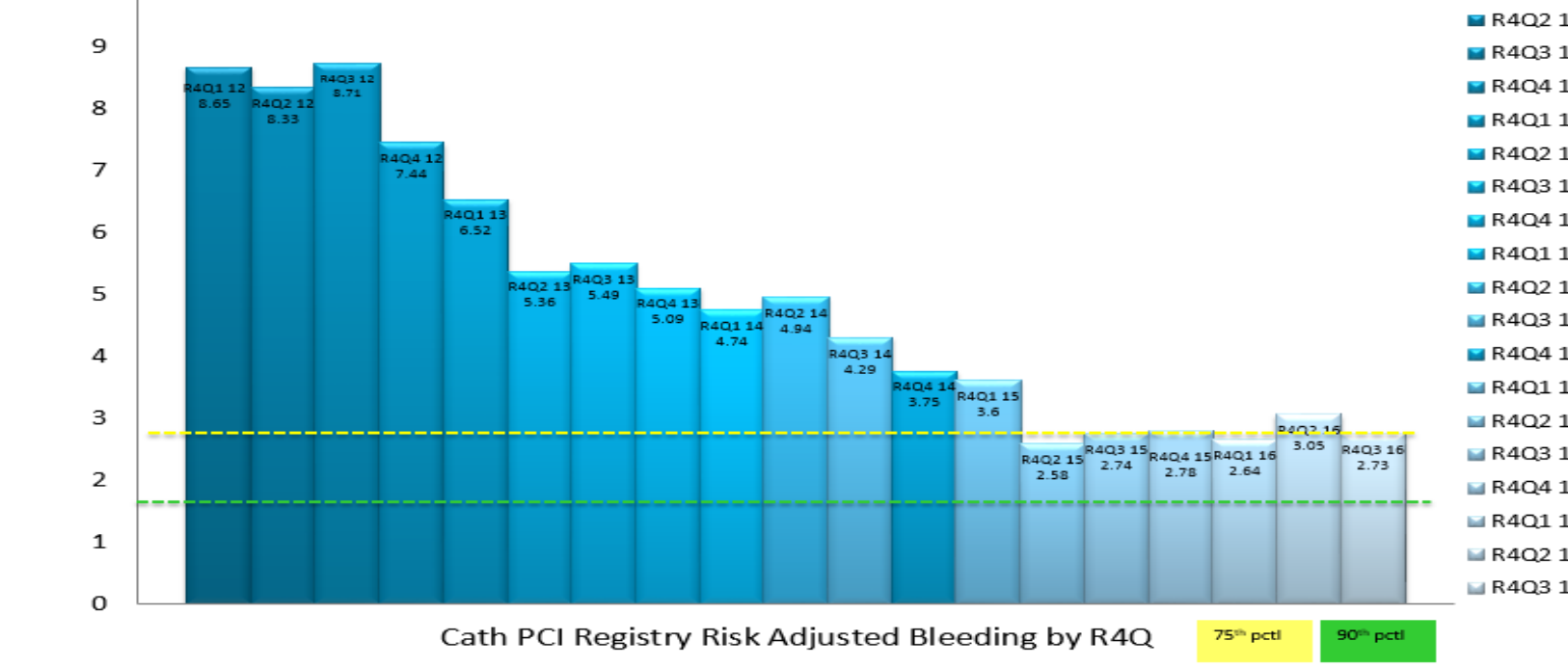


Table 3: PCI in-hospital Risk Adjusted AKI events by R4Q

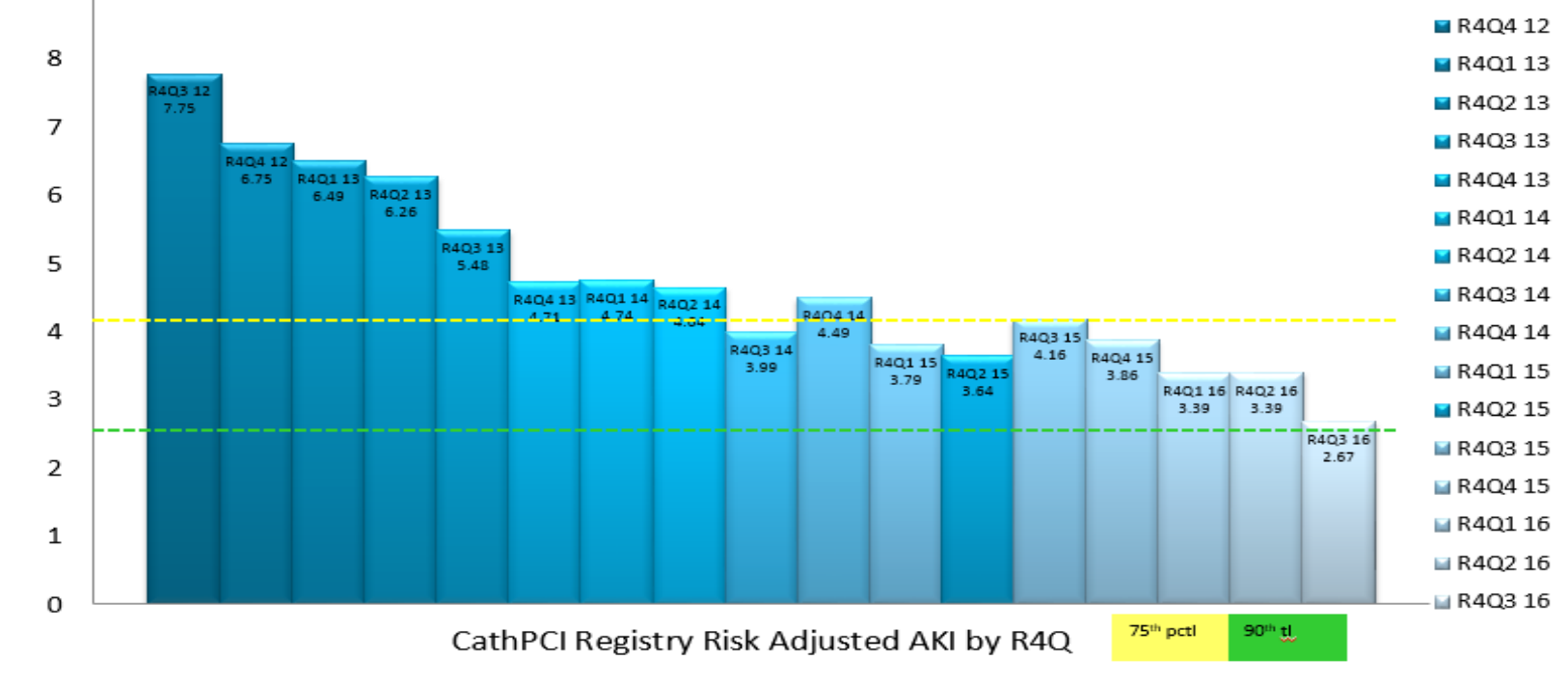
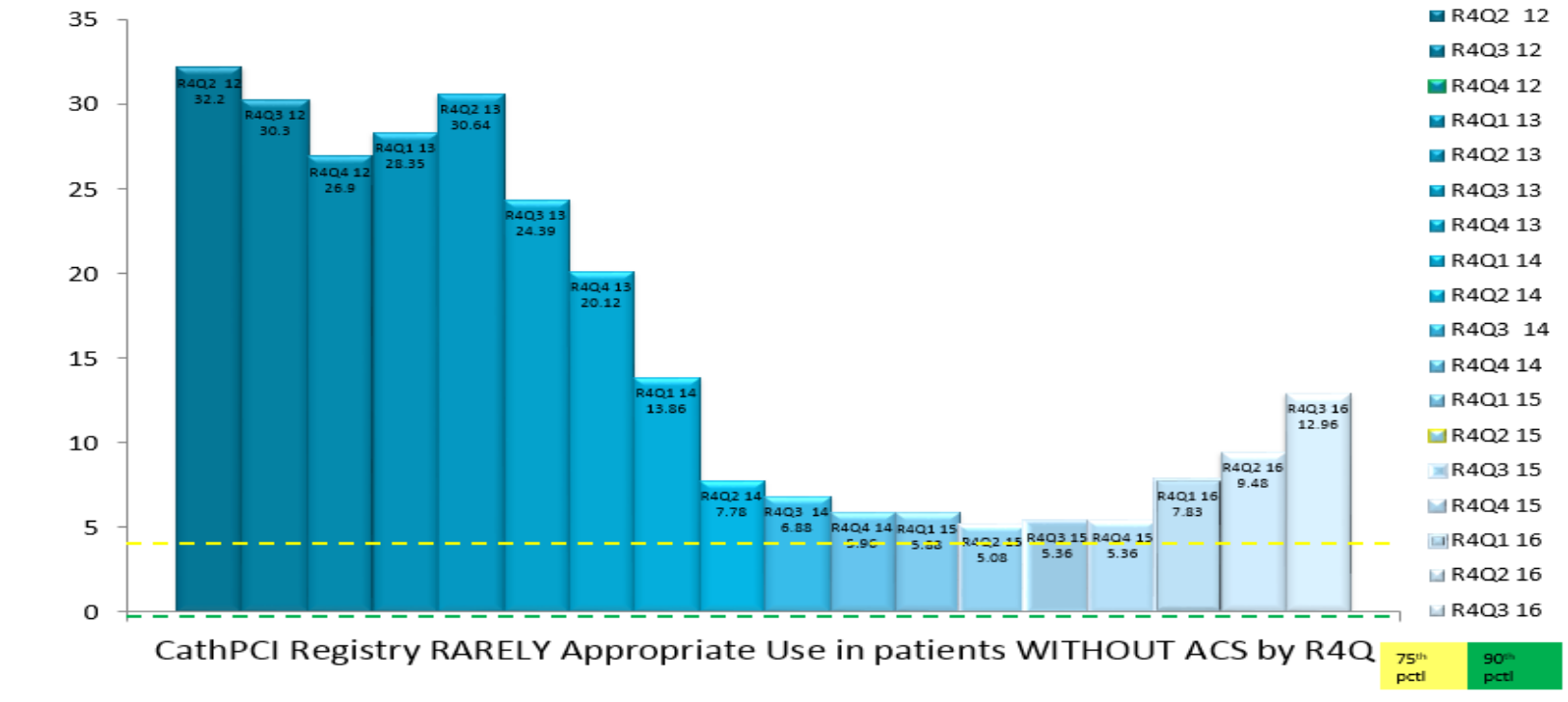


Table 4: PCI Appropriate Use in Patients WITHOUT ACS: Proportion of evaluated PCI procedures that were RARELY appropriate by R4Q



Conclusion

- Our patient-centered approach recognizes the patient as our most important stakeholder, and acknowledges that healthcare is not a 'one size' fits all
- BJH fundamentally changed PCI care and outcomes by implementing a nurse-led, 'patient-centered' approach which led to a remarkable improvement in outcomes, mitigated patient risk, improved quality of care, improved severity of illness documentation, created stronger physician-nursing collaboration
- The development of a physician-nurse shared leadership structure created the solid foundation for current and future process improvement

Disclosures

Amit Amin, MD, MSc: National Center for Advancing Translational Sciences of the NIH; National Cancer Institute of the NIH; AHRQ; Medicines Company; Terumo; AstraZeneca.
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