



**O2** Acute and Stable Ischemic Heart Disease

**INFLUENCE OF AN ELECTRONIC MEDICAL RECORD BASED BLEEDING RISK CALCULATOR ON BLEEDING EVENTS, READMISSIONS AND COST FOLLOWING PERCUTANEOUS CORONARY INTERVENTION**

Poster Contributions  
Poster Hall, Hall A/B  
Saturday, March 10, 2018, 3:45 p.m.-4:30 p.m.

Session Title: Managing Patients With Stable Ischemic Heart Disease: A Multitude of Things to Consider  
Abstract Category: 02. Acute and Stable Ischemic Heart Disease: Clinical  
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**Background:** Bleeding events are the most common complication of percutaneous coronary interventions (PCI). We sought to develop an electronic medical record (EMR) based system to assess bleeding risk and decrease bleeding rates in PCI patients.

**Methods:** Utilizing the validated NCDR risk score, we developed an EMR based bleeding risk calculator (BRC) to determine individual bleeding risk prior to PCI which was integrated into the EMR on 2/9/2016. We performed a before and after analysis comparing pre-BRC PCIs (9/30/2014 to BRC launch) and post-BRC PCIs (BRC launch to 3/31/2017), specifically examining bleeding event rates, readmission rates and median direct cost per case. Bleeding definitions and exclusion criteria were per NCDR criteria.

**Results:** There were 1972 PCIs in the pre-BRC cohort and 1975 in the post-BRC cohort. Adherence to use of the BRC was 38.9%. As expected, there was a strong correlation between risk category and bleeding rates (Table 1). Bleeding events and readmissions were reduced only in patients whose provider calculated a risk score prior to PCI, driven by reductions in high-risk patients. Median direct cost per case was \$1,757 lower for patients whose provider used the BRC.

**Conclusion:** Implementation and use of an EMR based BRC can reduce bleeding events, cost and readmissions in post-PCI patients, especially those at high risk. Adherence to BRC use remains a challenge.

	Pre-BRC	Post-BRC						
		Overall			Non-Adherent		Adherent	
		Value	Value	p	Value	p	Value	p
n	1972	1975	-	1206	-	769	-	
Mean Age (years)	69.8	69.7	0.90	69.5	0.60	70.0	0.63	
Male	73.5%	74.7%	0.40	74.3%	0.61	75.3%	0.33	
Adherence to BRC prior to PCI (%)	N/A	38.9%	-	0%	-	100%	-	
<b>Bleeding Event Rate</b>								
High-Risk	12.1%	11.4%	0.72	14.1%	0.38	<b>5.5%</b>	<b>0.012</b>	
Intermediate-Risk	3.8%	2.7%	0.14	2.9%	0.30	2.4%	0.18	
Low Risk	0.7%	0.6%	1.0	1.1%	1.0	0.0%	0.57	
Overall	5.7%	4.7%	0.15	6.1%	0.71	<b>2.6%</b>	<b>0.01</b>	
<b>30-Day Readmission Rate</b>								
High-Risk	14.3%	12.8%	0.47	14.9%	0.78	<b>8.3%</b>	<b>0.04</b>	
Intermediate-Risk	7.6%	7.7%	0.89	7.4%	0.89	8.2%	0.68	
Low Risk	4.5%	4.9%	0.82	4.8%	0.89	5.0%	0.82	
Overall	8.9%	8.6%	0.68	9.3%	0.73	7.4%	0.20	
<b>Median Direct Cost per Case</b>								
Overall	\$12,025	\$12,056	0.51	\$12,901	0.0013	<b>\$11,144</b>	<b>0.0021</b>	