

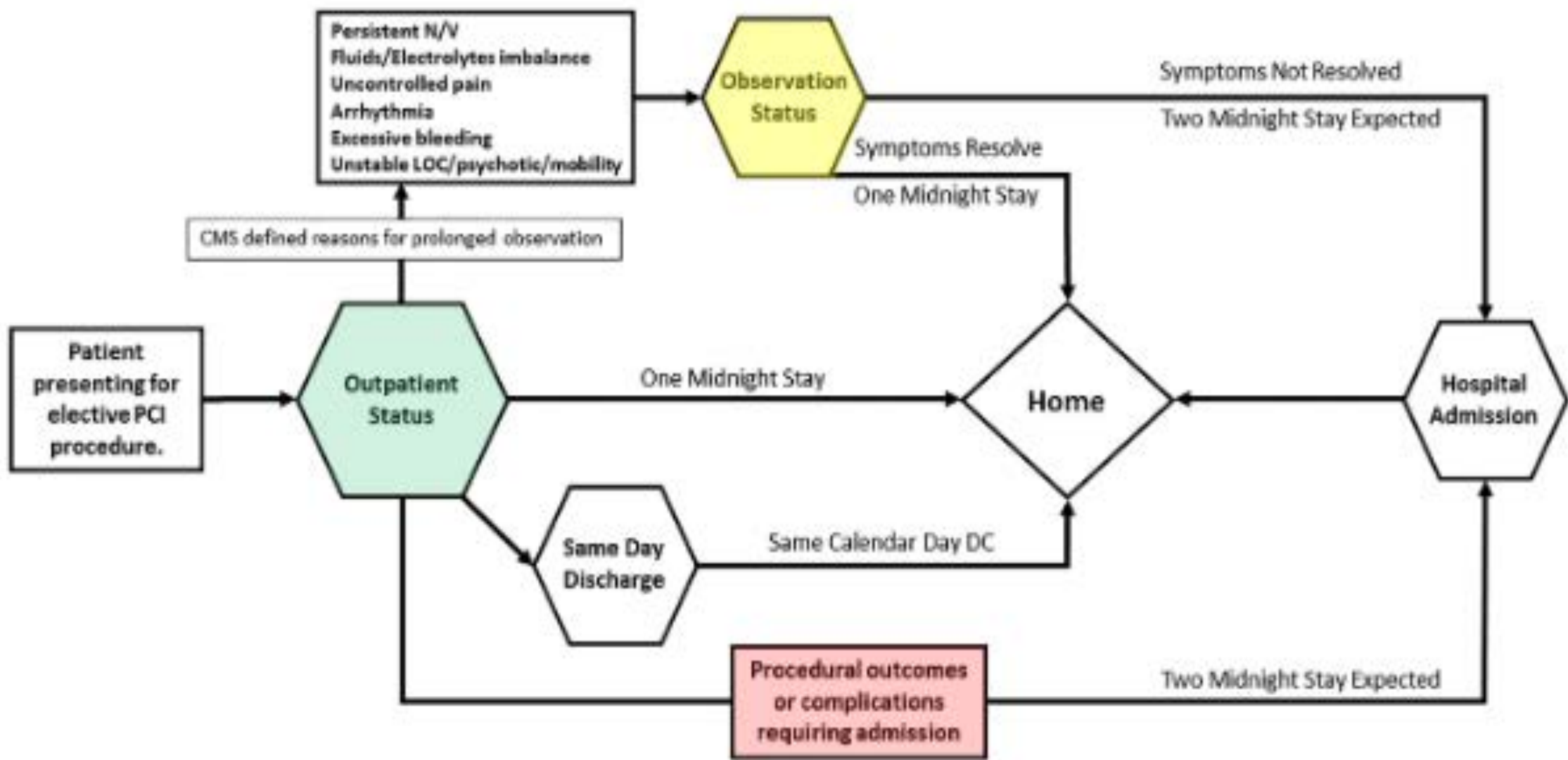
# TRAINING AND COMPETENCY FOR PCI IN ASC PREPARING FOR SAME DAY DISCHARGE FOR PCI

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# Same day discharge

- **1994** - 1st published experience from Amsterdam (*Br Heart J*)
- **2008** - 1st important US data (*Am Heart J*)
- **2011** - 1st data about older patients in (*JAMA*)
- **2013** - 1st meta-analysis (*JACC CI*)
- **2013** - 1st European consensus (*Eurointervention*)
- **2015** - Last edition of Topol *Textbook of Interventional Cardiology*
- **2018** - US consensus (*CCI*) and our *Position paper*





# Same-day PCI: Most Adverse Events Occur Within 6 Hours

2008

N=450 TR-PCI 2004-2007

## In-hospital Adverse Clinical Outcomes

Complications, n (%)	0-6 h	6-24 h	>24 h
Access site bleeding (minor)	11 (2.4%)	None	None
Access site bleeding (major)	None	None	None
Postprocedure infarction	8 (1.8%)	None	None
Repeat revascularization	4 (0.9%)	None	None
Ventricular tachycardia	1 (0.2%)	None	None
CABG	None	None	1 (0.2%)
Death	None	None	1 (0.2%)
Atrial fibrillation	None	None	1 (0.2%)
Stroke	None	None	1 (0.2%)

Jabara R, et al.<sup>[8]</sup> *Am Heart J* 2008



STATE-OF-THE-ART PAPER

## Same-Day Discharge Compared With Overnight Hospitalization After Uncomplicated Percutaneous Coronary Intervention

### A Systematic Review and Meta-Analysis

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*Quebec City, Quebec, Canada; Durham, North Carolina; Hershey and Scranton, Pennsylvania; Pilsen, Czech Republic; Chicago, Illinois; and Syracuse, New York*

**Objectives** This study sought to evaluate outcomes of same-day discharge (SDD) following percutaneous coronary intervention (PCI) versus overnight hospitalization (ON).

**Background** Although there are data on the safety and feasibility of SDD after PCI, ON continues to be prevalent.

**Methods** The Cochrane search strategy was used to search the PubMed database, EMBASE, and the Cochrane Library for relevant literature. Thirteen studies (5 randomized and 8 observational) of SDD after uncomplicated PCI versus ON met inclusion criteria. Data were pooled using a random effects model, and reported as odds ratios (OR) with their 95% confidence intervals (CI). The primary outcomes were incidence of total complications, major adverse cardiovascular events (MACE), and rehospitalization within 30 days after PCI.

**Results** A total of 13 studies, involving 111,830 patients were pooled. There was significant variation in the definition of outcomes across studies. For total complications, the strategy of SDD compared with ON after PCI had an estimated OR of 1.20 (95% CI: 0.82 to 1.74) in randomized and 0.67 (95% CI: 0.27 to 1.66) in observational studies. Similar results were found for MACE (randomized, OR: 0.99, 95% CI: 0.45 to 2.18; observational, OR: 0.59, 95% CI: 0.06 to 5.57) and rehospitalizations (randomized, OR: 1.10, 95% CI: 0.70 to 1.74; observational, OR: 0.62, 95% CI: 0.10 to 3.98) at 30 days post PCI.

**Conclusions** There is considerable heterogeneity across published studies comparing SDD with ON. This, coupled with the low event rate and wide corresponding CIs, suggest that an adequately powered multicenter randomized trial comparing SDD with ON would require a very large sample size (>17,000). Until such a trial is completed, SDD after uncomplicated PCI seems a reasonable approach in selected patients. (J Am Coll Cardiol Interv 2013;6:99–112) © 2013 by the American College of Cardiology Foundation



# Length of stay following percutaneous coronary intervention: An expert consensus document update from the society for cardiovascular angiography and interventions **2018**

## Abstract

Since the publication of the 2009 SCAI Expert Consensus Document on Length of Stay Following percutaneous coronary intervention (PCI), **advances in vascular access techniques**, stent technology, and antiplatelet pharmacology have facilitated changes in discharge patterns following PCI. **Additional clinical studies have demonstrated the safety of early and same day discharge** in selected patients with uncomplicated PCI, while reimbursement policies have discouraged unnecessary hospitalization. This consensus update: (1) clarifies clinical and reimbursement definitions of discharge strategies, (2) reviews the technological advances and literature supporting reduced hospitalization duration and risk assessment, and (3) describes changes to the consensus recommendations on length of stay following PCI (Supporting Information Table S1). These recommendations are intended to support reasonable clinical decision making regarding postprocedure length of stay for a broad spectrum of patients undergoing PCI, rather than prescribing a specific period of observation for individual patients.

Seto et al. *Catheter Cardiovasc Interv* 2018

TABLE 4 Consensus recommendations for discharge following PCI

	YES	NO
	Expedited and same-day discharge requirements and milestones	Factors unfavorable for same-day discharge
Patient	Clinically stable	Chronic kidney disease requiring prolonged hydration
	At baseline functional and mental status	Decompensated CHF or fluid overload
	Baseline comorbidities (e.g., diabetes, CHF, COPD, PAD, ESRD) stable	Decompensated COPD
		Continuing angina
		Contrast reaction with ongoing symptoms
Procedure	Successful procedure, including: <ul style="list-style-type: none"> <li>• Single or multivessel PCI, proximal LAD, or bifurcation PCI</li> <li>• Uncomplicated CTO attempt</li> <li>• Regardless of number, length of stents used</li> </ul>	Angiographic complication (slow/no reflow, side branch closure, dissection, perforation) Inability to deliver stent/balloon angioplasty only Last remaining coronary artery PCI
	Adequate hemostasis	Bleeding complication
	Effective dual-antiplatelet therapy administered <ul style="list-style-type: none"> <li>• Pretreatment not required</li> </ul>	Vascular complication Large contrast volume
		Need for GP IIb/IIIa infusion
		Periprocedural MI
		Left ventricular support device used
		Large-bore (≥ 9 French) or brachial access
		Atherectomy
Program	Meets PCI program operational requirements for postprocedure care	Inadequate home support
	<ul style="list-style-type: none"> <li>• Adequate caregiver support</li> </ul>	No transportation home
	<ul style="list-style-type: none"> <li>• Patient and caregiver education</li> </ul>	Discomfort of patient, caregiver, or physician with same-day discharge
	<ul style="list-style-type: none"> <li>• Provision of P2Y12 inhibitor and medication instruction</li> </ul>	Inadequate access to emergency medical care following PCI
	<ul style="list-style-type: none"> <li>• Contact information and follow-up appointment</li> </ul>	



# What we do and require ?

## Before admission :

- Instructions - one page for the patient
- History - one page from his physician incl. echo and lab. results
- Admission - first two pts at 7 a.m., 3rd and 4th at 8.a.m. (CAG and PCI between 9 a.m.-noon)

## In the Lounge:

- Routine postprocedural care - minimal compression pressure á 20 min, compression time, hematoma measurement, final RBT, 1 hour ulnar compression in case of RAO
- Lunch at noon
- Fluid intake control - 1500 ml before discharge
- Patient satisfaction control by questionnaire
- Signatures before discharge about complete informations

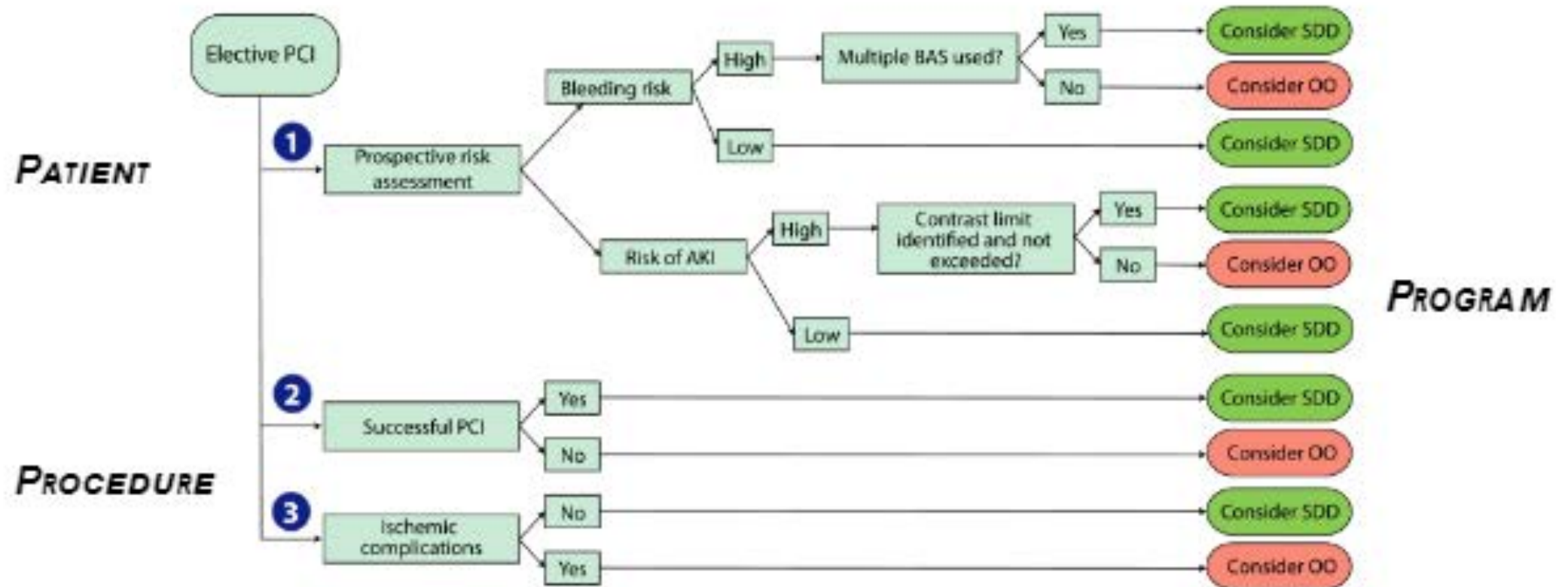
## After discharge:

- Discharge and overnight stay only with family member or close person
- In case of overnight complications - immediate phone contact to ICU



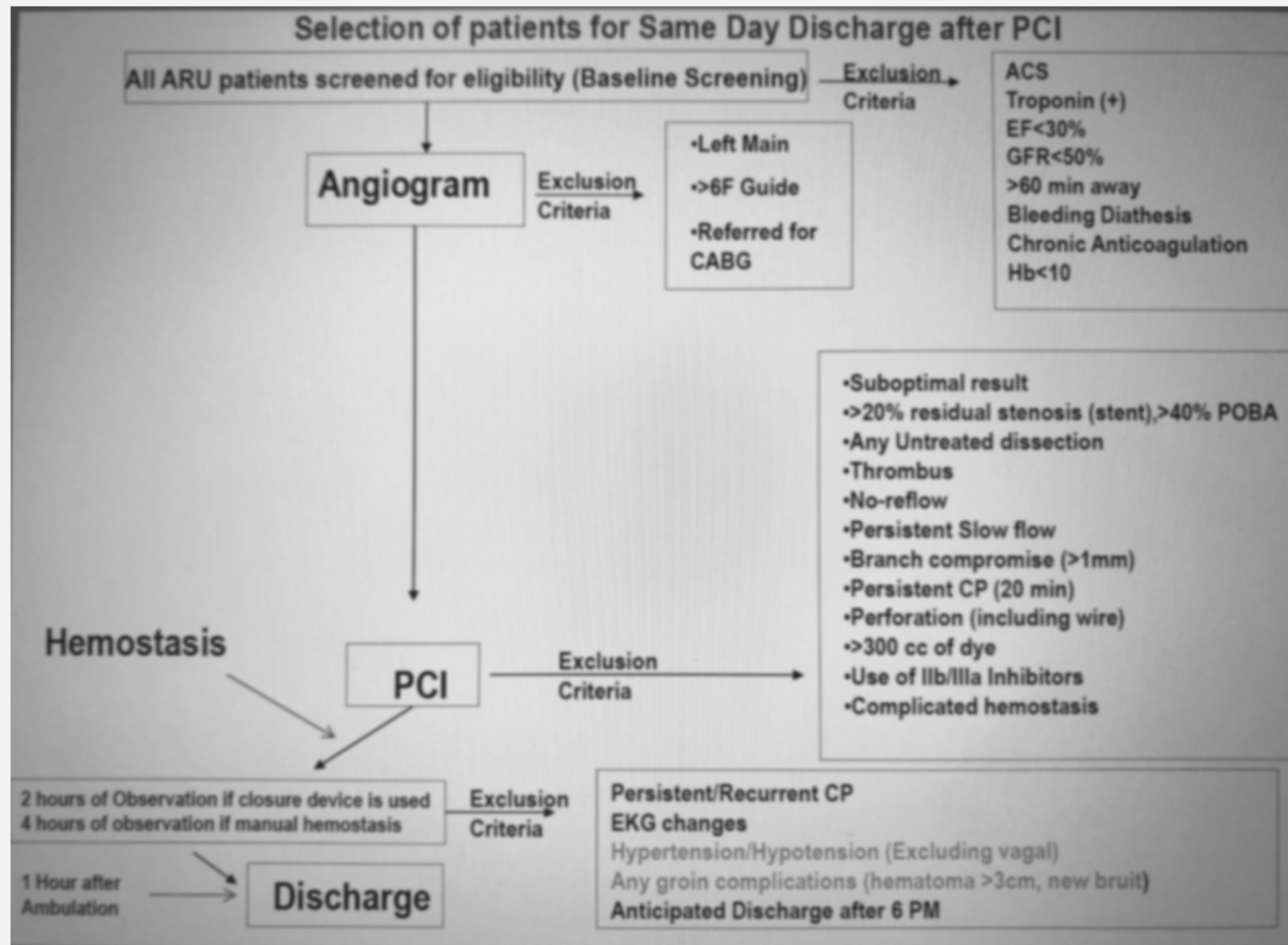
# Novel Patient-Centered Approach to Facilitate Same-Day Discharge in Patients Undergoing Elective Percutaneous Coronary Intervention

Amit P. Amin, MD, MSc; Patricia Crimmins-Reda, RN, BSN; Samantha Miller, RN, BSN; Brandon Rahm, MHA; Mary Caruso, RN; Andrew Piero, MHA; Brandy Dennis, RN; Marissa Pendegraft, RN; Katrina Sorensen, MS; Howard I. Kurz, MD; John M. Lassila, MD, PhD; Alan Zajarlas, MD; Richard G. Bach, MD; Hemant Kulkarni, MD; Jasvinder Singh, MD



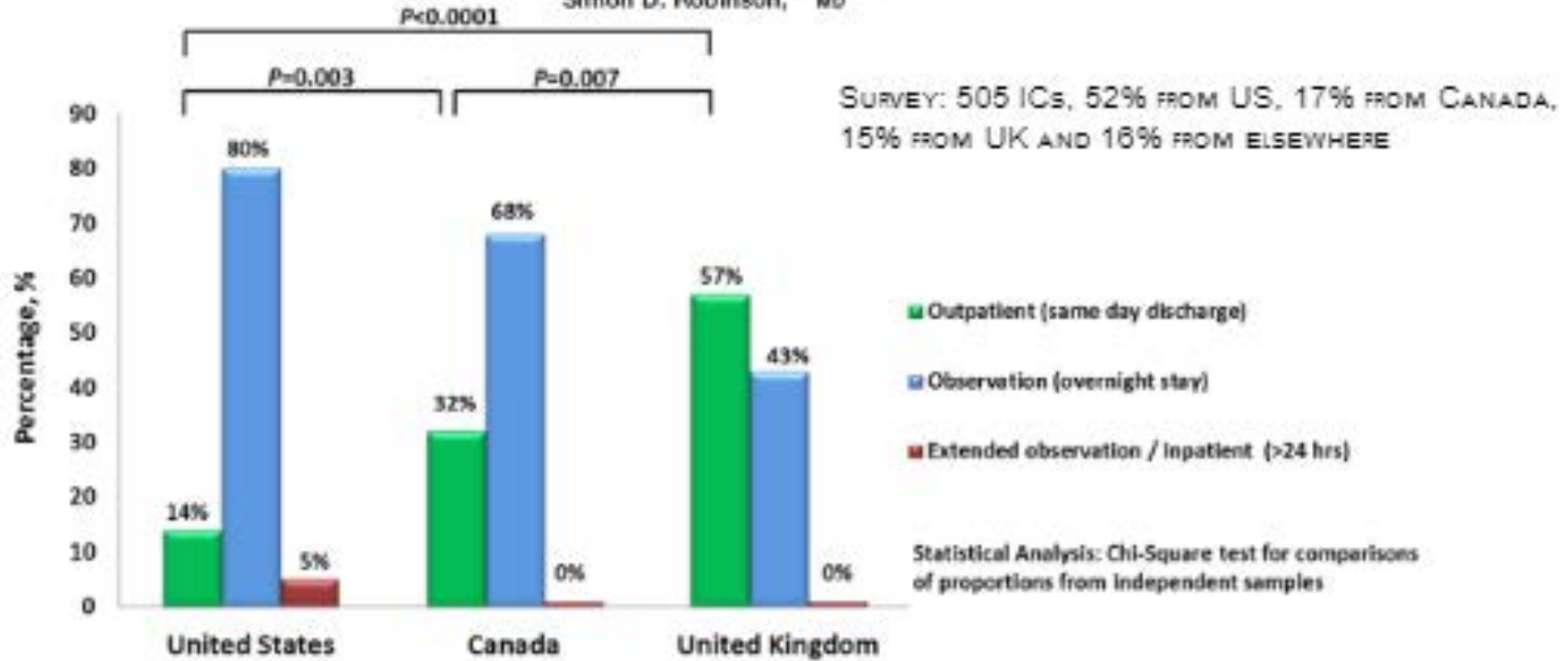
\$7331 LOWER/SDD PATIENT (P<0.001), SAVING AN ESTIMATED \$1.8 MILLION ANNUALLY

AMIN A ET AL J AM HEART ASSOC. 2018;7:E005733



# Variation in Practice and Concordance with Guideline Criteria for Length of Stay After Elective Percutaneous Coronary Intervention

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W. Peter Klinke,<sup>1</sup> MD, Imad J. Nadra,<sup>1,4</sup> MD, Anthony Della Siega,<sup>1,4</sup> MD, and  
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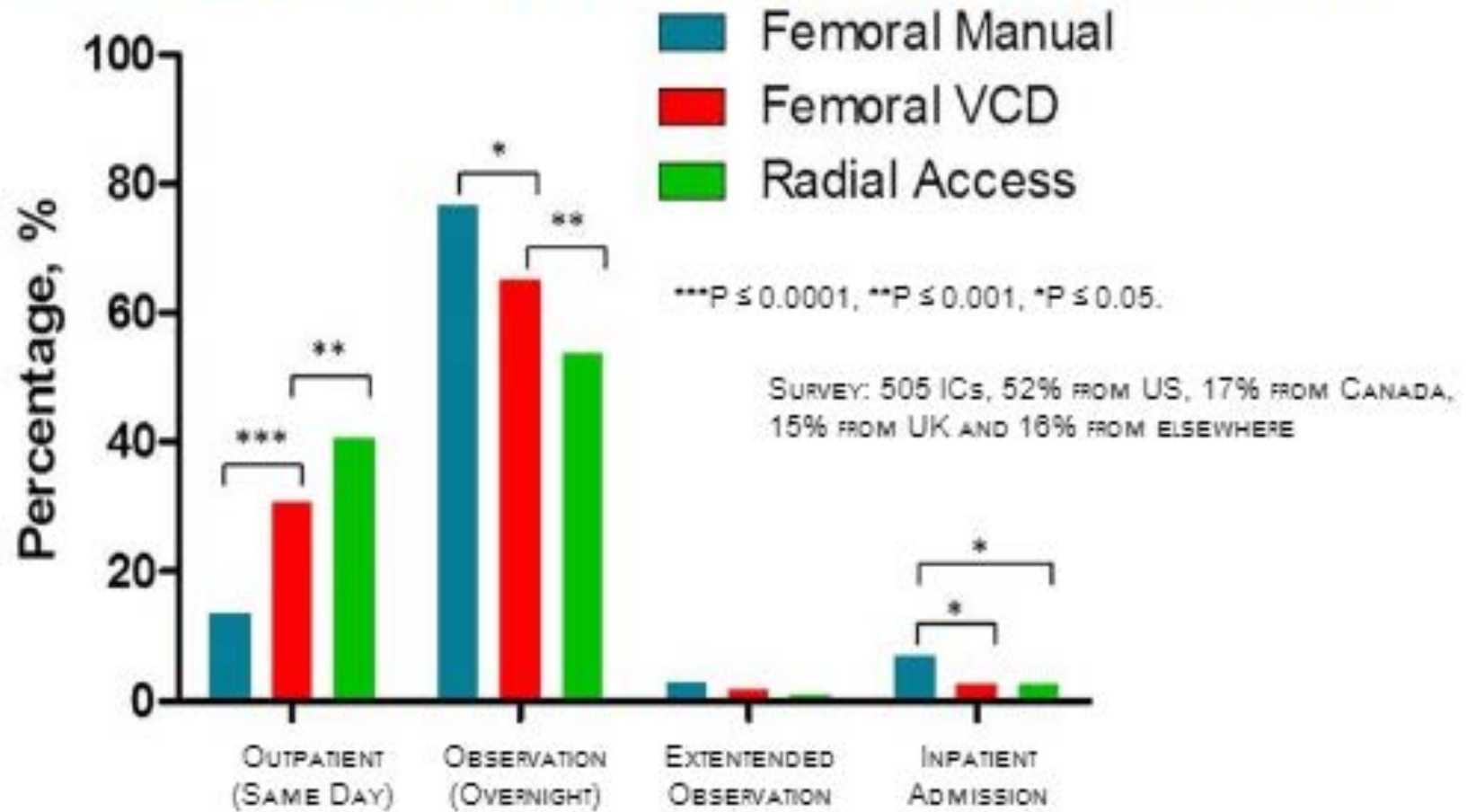


59% WERE NOT AWARE OF ANY GUIDANCE OR STATEMENTS FOR DEFINING APPROPRIATE LENGTH OF STAY AFTER PCI

DIN JN ET AL. CCI 90:715-722 (2017)



# LOS AFTER ELECTIVE PCI ACCORDING TO ACCESS SITE



DIN JN ET AL. CCI 90:715-722 (2017)



# WHAT ARE THE CONCERNS POST PCI POST-PCI?

- **ISCHEMIC COMPLICATIONS**
    - **STENT THROMBOSIS**
    - **MI**
  - **BLEEDING & VASCULAR COMPLICATIONS**
  - **DEATH**
  - **READMISSION**
  - **LENGTH OF STAY**
  - **COSTS**
- **WHY DO WE KEEP PATIENTS OVERNIGHT?**
    - **LATE IN THE DAY**
    - **This is the way we've ALWAYS DONE IT**



# **SAME-DAY DISCHARGE**

## **WHY?**

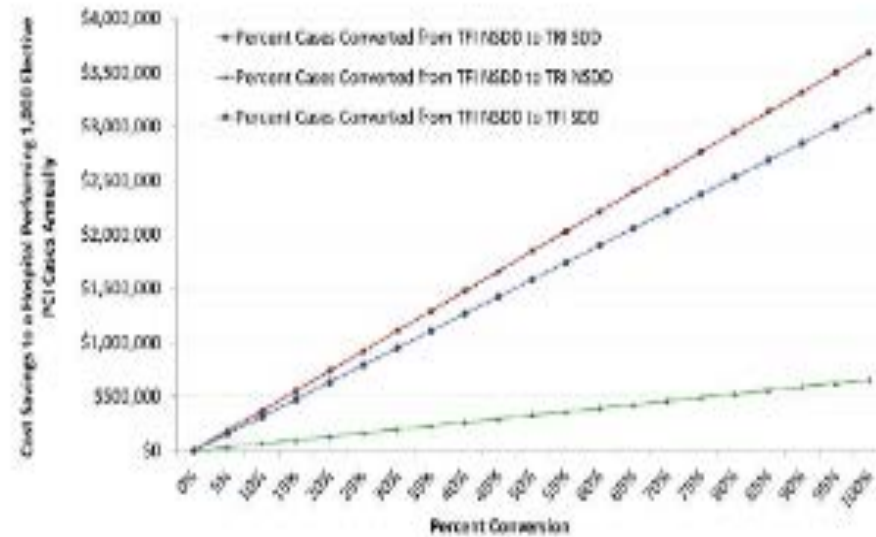
- **PCI CENTERS THAT OBSERVE THEIR OUTPATIENT PCIs IN THE SAME BEDS AS OTHER INPATIENTS MAY REALIZE ADVANTAGES WITH SAME-DAY DISCHARGE**
  - **FREES UP THE BED FOR OTHER PATIENTS WHO NEED THAT LEVEL OF CARE**
- **PCI CENTERS THAT ARE MAJOR REFERRAL DESTINATIONS MAY REALIZE ADVANTAGES WITH SAME-DAY DISCHARGE**
  - **INCREASES BED AVAILABILITY FOR TRANSFER PATIENTS WHO REALLY NEED INPATIENT CARE**
  - **INCREASED MARGINS WITH A BUNDLED PAYMENT FOR PCI**
  - **AVOIDING RAC AUDITS FOR INPATIENT BILLING**
- **SELECTED PATIENTS MAY WISH TO SPEND THE NIGHT AT HOME RATHER THAN IN THE HOSPITAL**



## Costs Associated With Access Site and Same-Day Discharge Among Medicare Beneficiaries Undergoing Percutaneous Coronary Intervention

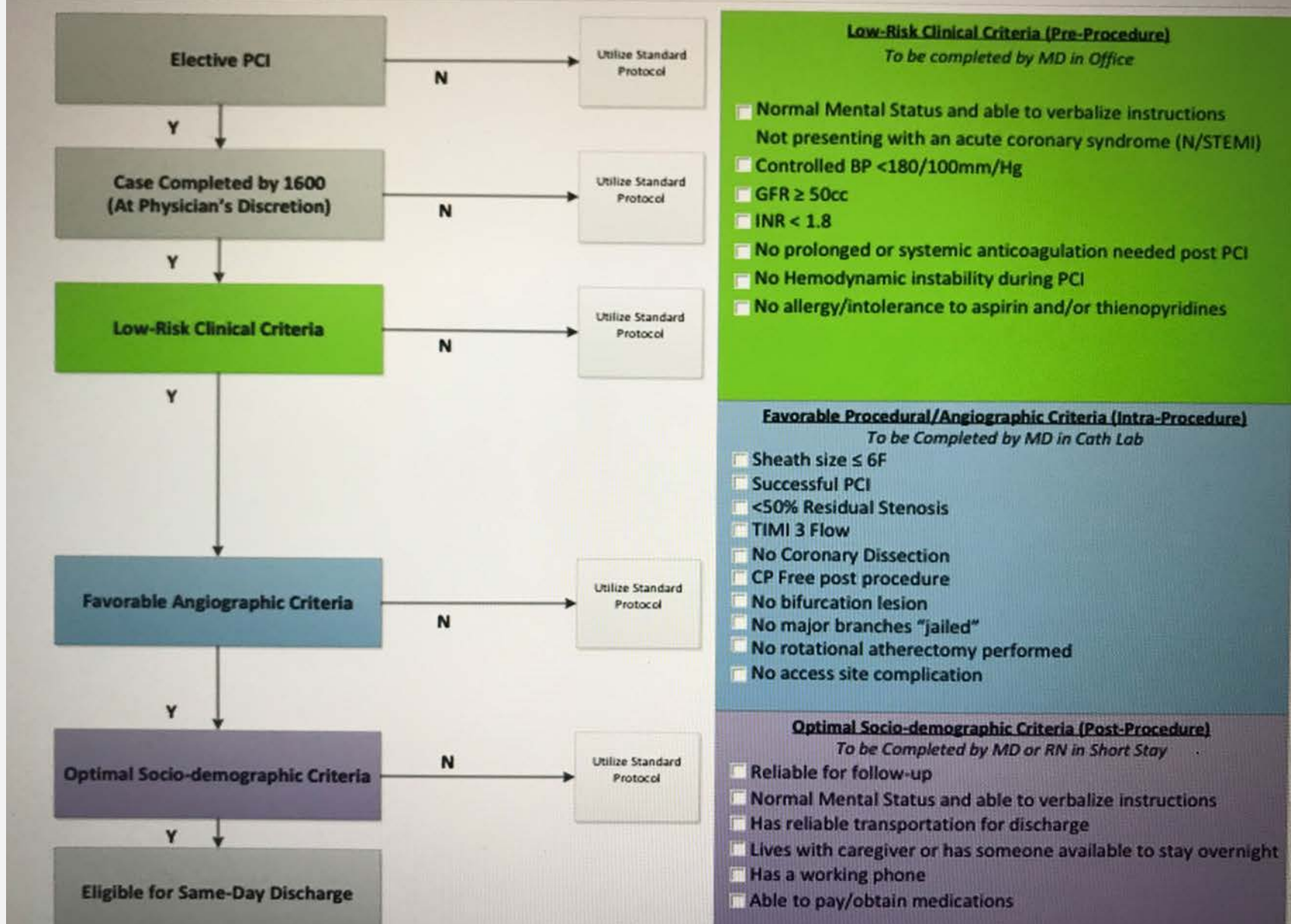
- TRI costs \$916 LOWER COMPARED WITH TFI
- SDD costs WERE \$3,500 LOWER THAN NSDD costs
- TRI + SDD cost ~\$3,700 LESS THAN THE CURRENT, MOST FREQUENTLY USED PATHWAY OF TFINSDD

COST SAVINGS TO A HOSPITAL PERFORMING 1,000 ELECTIVE PCIs/YEAR WHEN CONVERTING FROM TFI NSDD TO EITHER TRI SDD, TFI SDD, OR TRI NSDD



AMIN A. ET AL. J AM COLL CARDIOL INTV 2017;10:342-51







# DETERMINING LOS AFTER PCI: THE THREE Ps

## • PATIENT

- CLINICALLY STABLE
- AT BASELINE FUNCTIONAL MENTAL STATUS
- STABLE COMORBIDITIES (COPD, DM, CKD)
- FLUID STATUS
- PERSISTENT ANGINA
- CONTRAST REACTION

## • PROCEDURE

- SINGLE VS. MULTIVESSEL PCI
- UNCOMPLICATED CTO
- ADEQUATE HEMOSTASIS
- DAPT
- ANGIOGRAPHIC COMPLICATION
- BLEEDING
- NEED FOR BAIL OUT GPI
- LV SUPPORT USED
- LARGE BORE ACCESS

## • PROGRAM

- ADEQUATE CAREGIVER SUPPORT
- EDUCATION
- DAPT PROVISION
- CONTACT INFO AND F/U APPT
- TRANSPORTATION
- RELUCTANCE FROM PATIENT, FAMILY OR PHYSICIAN
- INADEQUATE ACCESS TO EMERGENCY MEDICAL CARE

SETO A ET AL. CCI 2018;1-15.

# Conclusion

## Optimal conditions for outpatient coronary angiography and PCI in 2018 :

- Transradial approach in experienced radial center
- Dedicated infrastructure - Lounge
- Careful patients selection
- Adequate information before and after PCI
- Dedicated and trained nursing and medical staff

**Then SDD is definitely recommended for majority of selective stable patients**



THANK YOU



OEIS 7<sup>TH</sup> ANNUAL NATIONAL  
SCIENTIFIC VIRTUAL MEETING

September 25, 2020

