# CTO Specialist Outcomes in Non-CTO PCI: Insights from BMC2

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#### **Disclosure of Relevant Financial Relationships**

I, Brett Wanamaker DO NOT have any relevant financial relationships to disclose.

Faculty disclosure information can be found on the app



# BMC2







- 50 PCI Facilities
- 350+ Operators
- ~28,000 PCIs/year

Do operators with CTO PCI experience perform differently compared to other colleagues in non-CTO PCI procedures?



"CTO Specialists" defined via PCI data 4/2018-3/2020

30-case threshold

#### 1:1 Matching

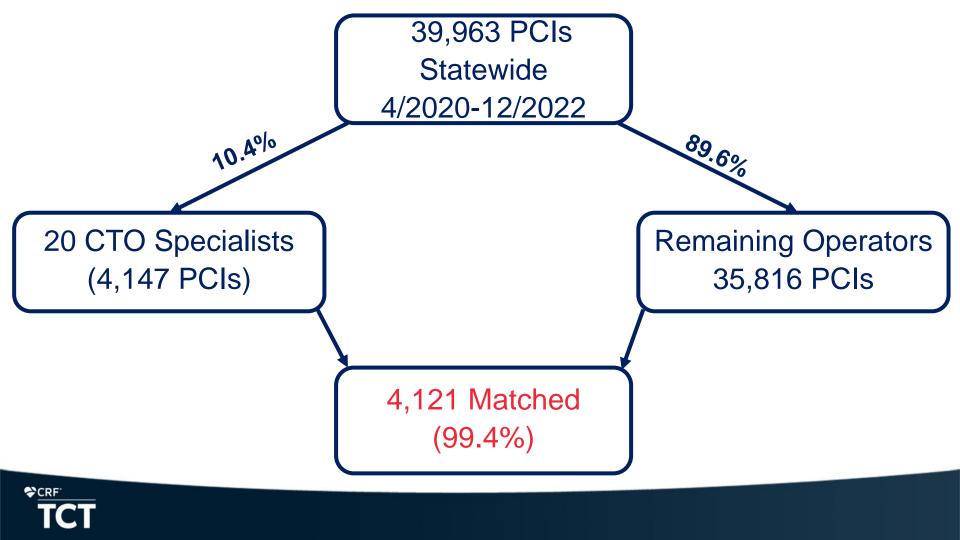
- -Patient comorbidities
- -Clinical presentation
- -Lesion location
- -Graft intervention



- IVUS/OCT
- Contrast use
- Radiation Use
- Kidney Injury
- Major Bleeding
- Mortality

CTO specialist vs. remaining operators' non-CTO PCI data compared 4/2020-12/2022





# **Selected Unmatched Comparisons**

	Non-CTO Specialist	CTO Specialist	Absolute Std. Diff.		
Lesion Location					
Left main	4.2%	11.1%	26%		
Prox LAD	21.8%	30.0%	19%		
Vein Graft	4.1%	4.1%	2.9%		
Patient characteristics					
Age (sd)	68± 11	69 ± 11	9.7%		
Male	67.3%	70.6%	7.1%		
GFR (sd)	74± 25	71± 25	18.3%		
Hx CHF	37.1%	46.1%	18.3%		
Hx DM	44.0%	44.4%	0.8%		



# **After Matching**

	Non-CTO Specialist	CTO Specialist	Absolute Std. Diff.		
Lesion Location					
Left main	10.8%	10.9%	0.2%		
Prox LAD	30.5%	29.9%	1.1%		
Vein Graft	3.9%	4.1%	1%		
Patient characteristics					
Age (sd)	69± 11	69 ± 11	2.3%		
Male	70.3%	70.5%	0.6%		
GFR (sd)	71± 25	71± 25	0.5%		
Hx CHF	44.9%	46.0%	2.1%		
Hx DM	45.2%	44.4%	1.6%		



# **Outcomes After Matching**

	Non-CTO	СТО			
	Specialist	Specialist	P-value		
Procedural Characteristics					
IVUS/OCT	31.4%	39.5%	<0.001		
Air Kerma (Gy)	1.02 [0.58, 1.71]	1.00 [0.58, 1.65]	0.281		
Air Kerma >3Gy	6.8%	5.9%	0.104		
Contrast (mL)	128 [100, 170]	110 [85,145]	<0.001		
Contrast >3x GFR	12%	6.8%	<0.001		
In-Hospital Outcomes					
Mortality	1.3%	1.2%	0.767		
AKI	2.4%	2.2%	0.619		
Major Bleeding	0.4%	0.3%	0.248		

No differences noted in procedural success



### Limitations

Inclusive definition of "CTO specialist"

 Many lesion characteristics could not be matched: calcification, bifurcation/angulation, prior PCI failure, etc.

 CTO operators with bulk of experience after 2019 not included in analysis



### **Conclusions**

- For non-CTO cases, operators with CTO experience were more likely to tackle left main and proximal LAD disease and treat patients with history of heart failure.
- After matching case and patient characteristics, CTO operators were more likely to employ intravascular imaging for PCI optimization. Contrast use was lower amongst operators with CTO experience.
- There was no difference noted in in-hospital mortality, AKI, or bleeding.



#### **THANK YOU**

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