



# In-Hospital vs Out-of-Hospital Cardiac Arrest in Patients Presenting to Cardiac Intensive Care Units: From the Critical Care Cardiology Trials Network (CCCTN)



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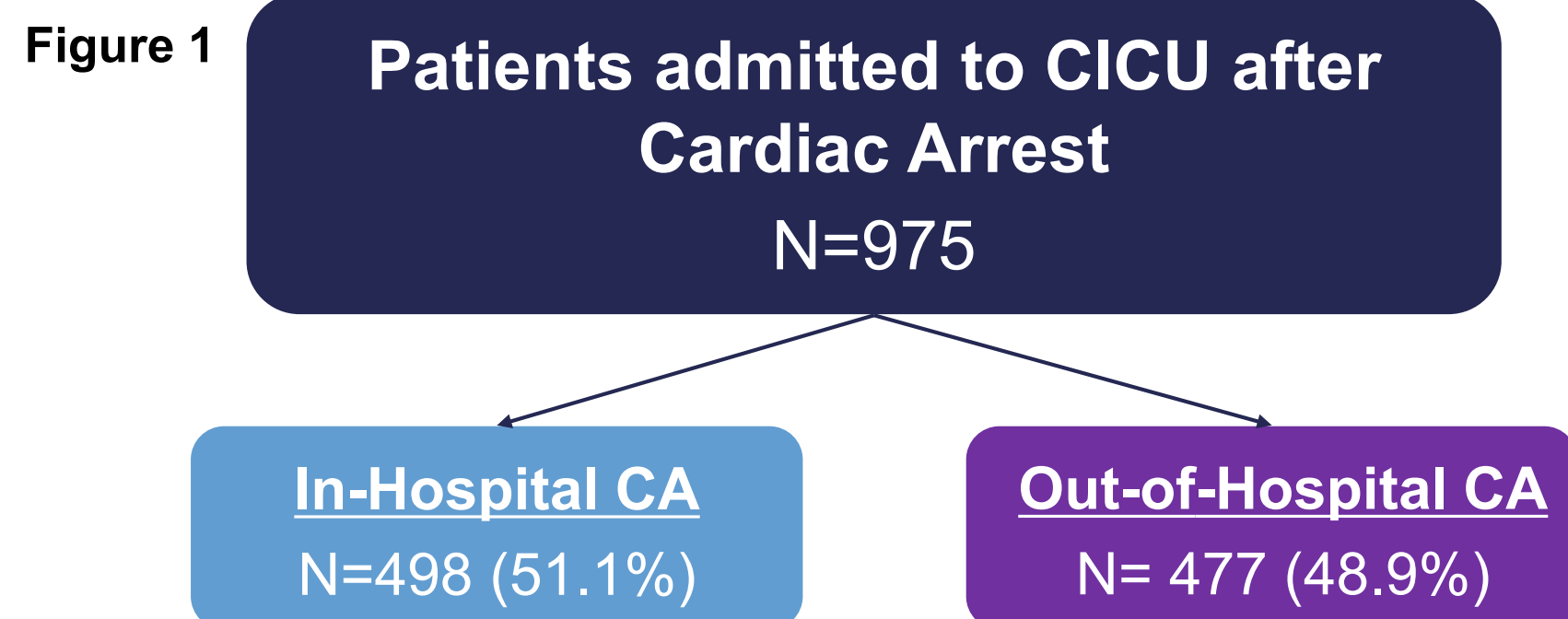
## BACKGROUND

- Cardiac arrest (CA) accounts for 9% of cardiac intensive care unit (CICU) admissions and is associated with high morbidity, mortality, and resource use
- We aimed to describe characteristics and outcomes of pts presenting to CICU's after CA

## METHODS

- The Critical Care Cardiology Trials Network (CCCTN) is an investigator-initiated multicenter network of tertiary CICUs in the US & Canada
- Participating centers (n=25) contributed data from consecutive admissions during 2-month annual snapshots between 9/2017 and 8/2019 (N=8240)
- We analyzed presenting characteristics, resource utilization, and outcomes of all patients presenting to CICU after CA
- Patients with initial CA after CICU admission were excluded
- Patients were stratified by in-hospital CA (IHCA) or out-of-hospital CA (OHCA) (Figure 1)

## RESULTS



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### Baseline/Presenting Characteristics

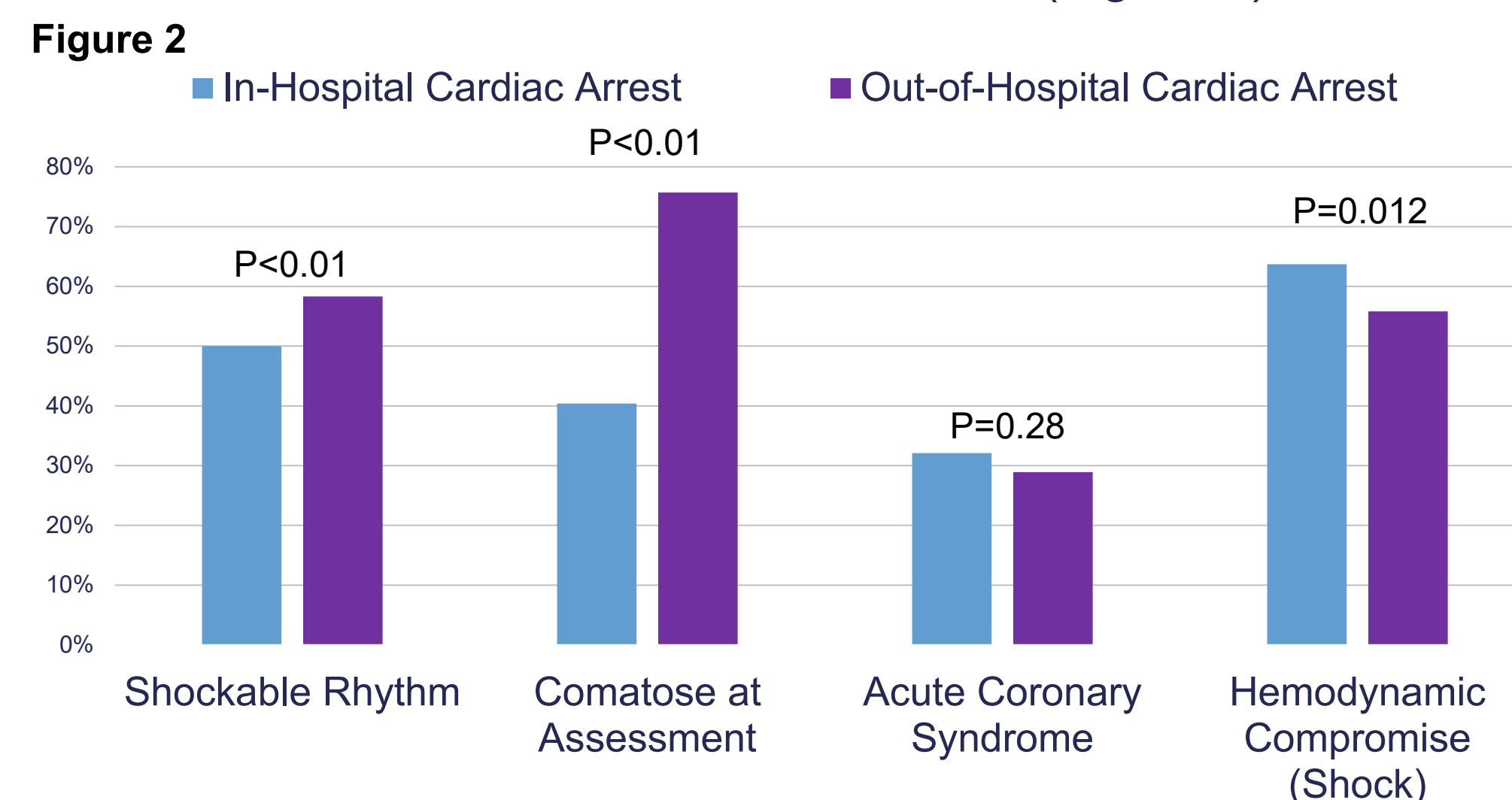
- Patients presenting to CICUs after IHCA have a greater burden of co-morbidities than those with OHCA (Table 1).

Table 1	IHCA N=498	OHCA N=477	P-value
<b>Baseline Characteristics</b>			
Age in yrs (25 <sup>th</sup> , 75 <sup>th</sup> )	66 (55,75)	62 (54,71)	0.002
Female	36.9%	33.5%	0.27
Ever smoker	49.0%	50.9%	0.019
CKD	27.9%	14.7%	<0.001
Active malignancy	10.6%	4.4%	<0.001
<b>CV History</b>			
Diabetes	37.3%	33.5%	0.21
Heart Failure	38.8%	24.7%	<0.001
Reduced EF	28.3%	18.7%	0.64
Ischemic cardiomyopathy	16.7%	9.2%	0.32
Non-ischemic CMP	10.0%	7.5%	0.38
Valvular heart disease	15.9%	6.3%	<0.001
Pulmonary hypertension	7.0%	1.3%	<0.001
Atrial fibrillation	27.5%	14.7%	<0.001
<b>Admission Parameters</b>			
SOFA, median (25 <sup>th</sup> , 75 <sup>th</sup> )	9 (5,13)	10 (6,12)	0.95

Data presented as % of total IHCA or OHCA pts, unless otherwise noted.

### CICU Presenting Characteristics

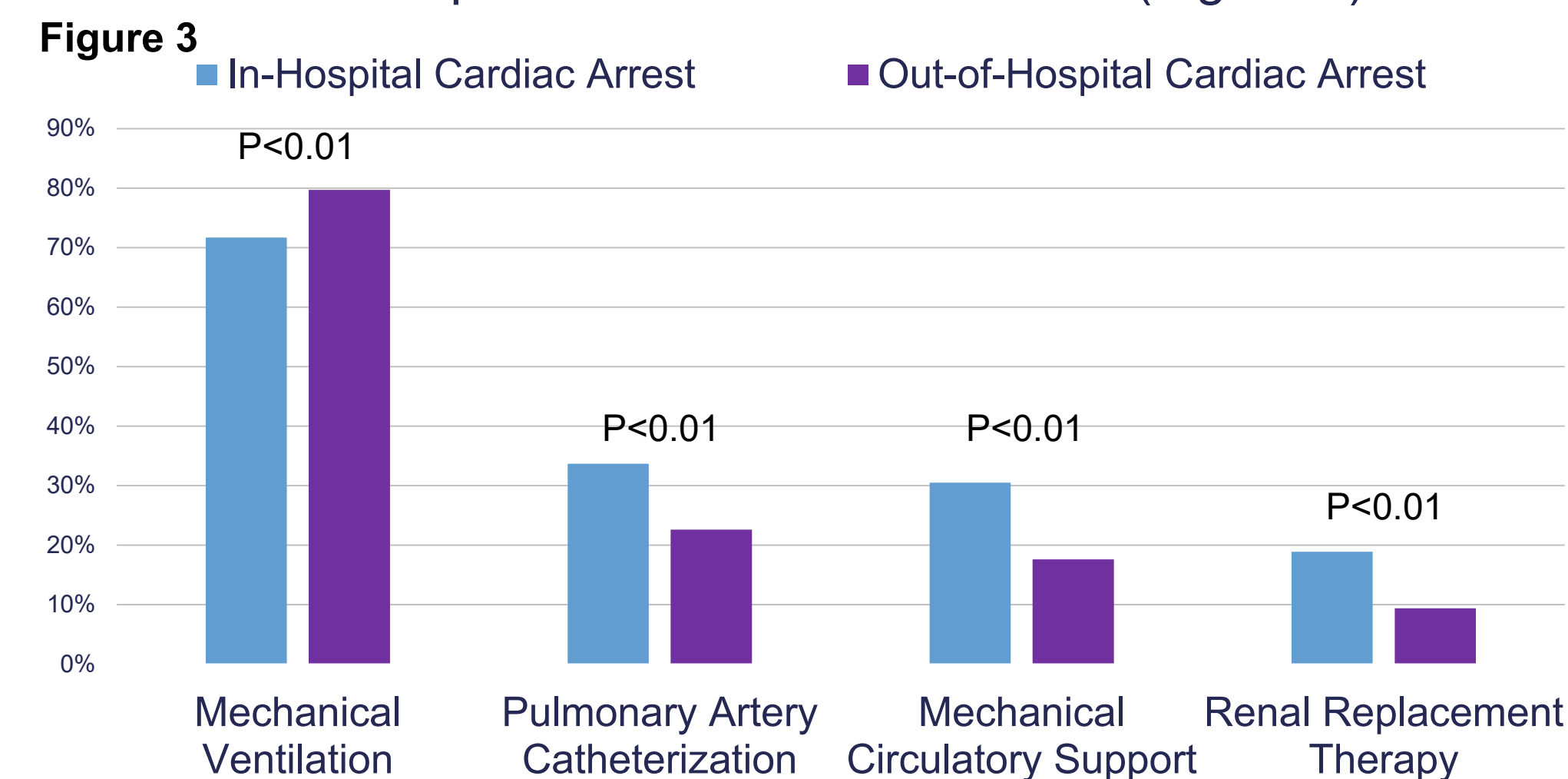
- Patients with OHCA more commonly had shockable rhythm and were comatose at initial assessment (Figure 2).



## RESULTS (cont.)

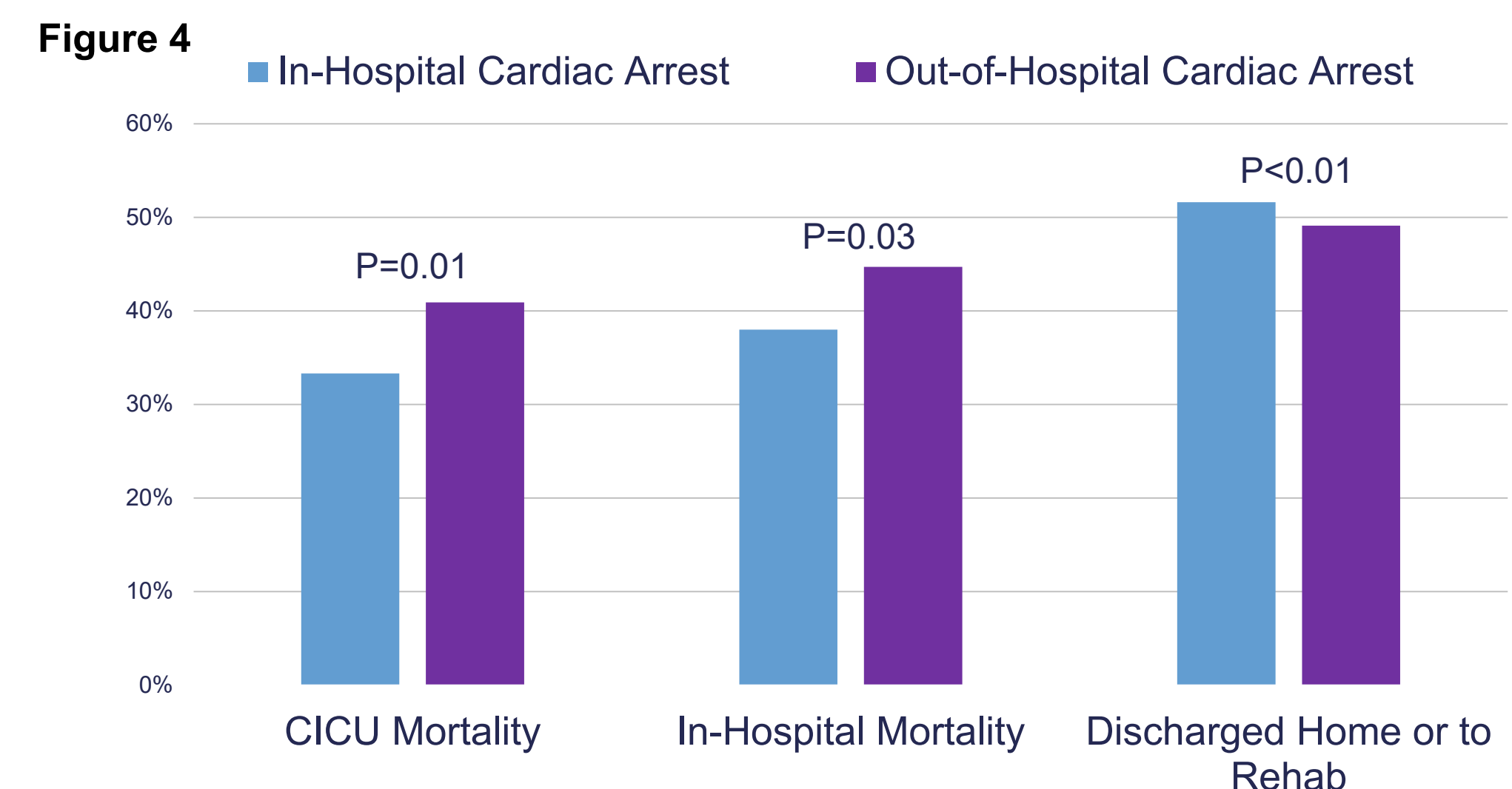
### CICU Resource Utilization after Cardiac Arrest

- Although use of cath, IV vasoactive rx, and arterial line placement was similar, other advanced ICU rx was used more often in patients with IHCA vs OHCA (Figure 3).



### Mortality and Discharge after Cardiac Arrest

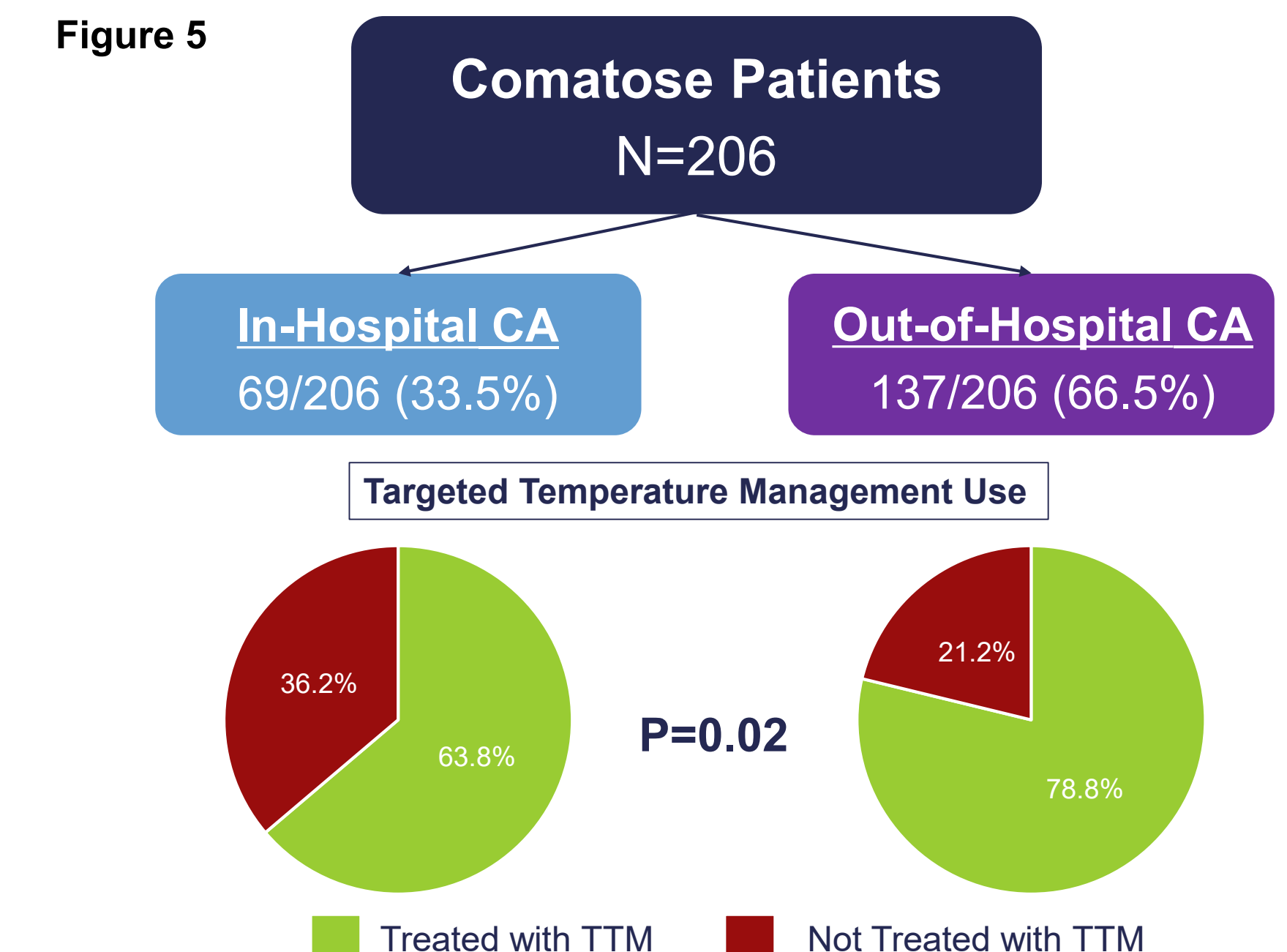
- Patients with IHCA had lower CICU and in-hospital mortality compared to patients with OHCA (Figure 4).
- Patients with IHCA were more likely to be discharged home or to rehab than patients with OHCA



## RESULTS (cont.)

### Targeted Temperature Management in Comatose Patients after Cardiac Arrest

- Among comatose patients (N=206), TTM use was more common after OHCA than after IHCA (Figure 5)
- Among all comatose patients not treated with TTM (N=54), the most common reason for TTM deferral was clinician decision (35.1%) followed by goals of care status (22.2%)



## CONCLUSIONS

- Half of pts presenting to CICU's w/ CA had IHCA with a greater burden of comorbidities than those with OHCA
- Relative to comatose survivors after OHCA, targeted temperature management may be underused after IHCA
- Patients with OHCA have worse outcomes than those with IHCA, possibly due to multiple contributors such as longer time before resuscitation efforts begin