IN-HOSPITAL CARDIAC ARREST FOLLOWING SURGERY:

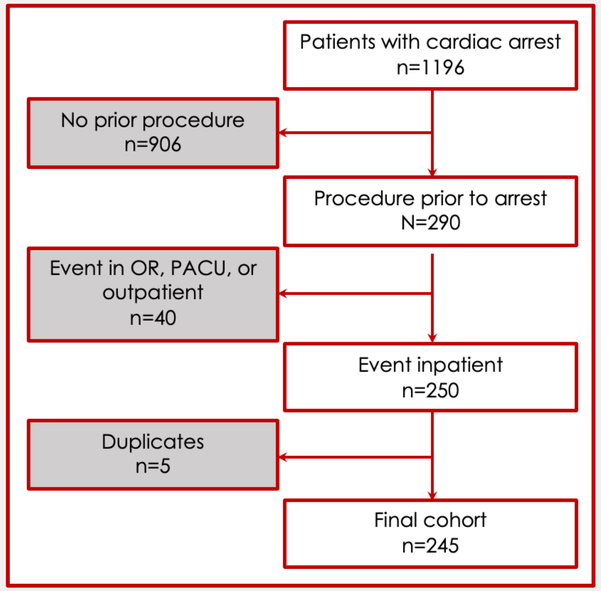
A SINGLE-CENTER, RETROSPECTIVE STUDY OF THE IMPACT OF CODE LOCATION ON MORTALITY

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INTRODUCTION

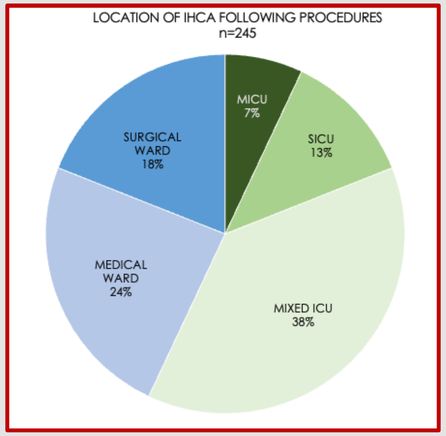
- Mortality rate following in-hospital cardiac arrest (IHCA) is consistently reported >60%.
- Most previous studies focus on entire hospital cohorts with little research on survival of IHCA in post op patients.

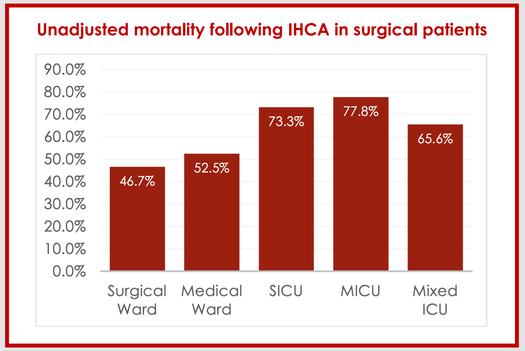
- **Hypothesis: Post-procedural care unit affects outcomes and can be a risk factor for death after IHCA.**



METHODS

- Demographics, clinical parameters, and event factors were collected for each patient
- Patients categorized by location of IHCA
- **Primary outcome: 30-day mortality**
- Univariate analysis done for all variables
- Backward stepwise MV logistic regression (cutoff p>0.2) used to evaluate effect of location on outcome adjusting for patient and event variables.





RESULTS

Patient characteristics	Ward N = 104	Surgical ICU N = 30	Medical ICU N = 18	Mixed ICU N = 93
Age	61 (16)	58 (15)	59 (16)	59 (15)
CCI	3 (2, 6.5)	2 (1, 4)	5.5 (3, 8)	4 (2, 7)
BMI	29 (8)	38 (11)	28 (7)	29 (7)
Trauma	6.7%	26.7%	0%	3.2%
Procedure characteristics				
ASA				
2	11.5%	0%	5.6%	1.1%
3	49.0%	33.3%	22.%	29.0%
4	38.5%	40.0%	61.1%	49.5%
5	1.0%	26.7%	11.1%	20.4%
Case classification				
Elective	46.2%	40.0%	22.2%	40.0%
Urgent	45.2%	36.7%	72.2%	21.5%
Emergent	8.7%	23.3%	5.6%	38.7%
Intraoperative transfusion	17.3%	33.3%	0%	29.0%
Code characteristics				
Code duration (minutes)	22 (13, 36)	25 (15, 91)	16 (8, 36)	23 (9, 46)
SOFA/MEWS prior to code*	2 (1,3)	8 (5, 10)	6 (3, 9)	7 (4, 10)
Initial rhythm				
Asystole	20.2%	50.0%	22.2%	20.4%
PEA	27.9%	30.0%	50.0%	46.2%
Ventricular tachyarrhythmia	22.1%	16.7%	22.2%	25.8%
Atrial tachyarrhythmia	24.0%	0%	5.6%	4.3%
NSR	3.9%	3.3%	0%	1.1%
Other	1.9%	0%	0%	2.2%
Volume status (L) at time of code	+2.4 (-0.5, 6.4)	+11.6 (2.0, 21.4)	+3.6 (0.3, 8.7)	+4.0 (0.2, 9.5)

*SOFA from ICU patients, MEWS from ward patients

Effect of Location on 30-day Mortality*

	Odds Ratio	95% CI
MICU vs SICU	2.74	0.42-17.9
Mixed ICU vs SICU	1.72	0.45-6.57
SICU vs all wards	0.97	0.29-3.26
MICU vs all wards	2.85	0.72-11.25
Mixed ICU vs all wards	1.45	0.67-3.15
Surgical vs medical ward	0.64	0.16-2.54

*calculated using a backward stepwise multivariate logistic regression adjusting for age, BMI, insurance, trauma, case classification, intraoperative transfusion, volume status, presenting rhythm, SOFA/MEWS score, CCI score, and code duration

DISCUSSION

- **Post-operative location does not impact mortality following IHCA in this study**

- Trend towards higher mortality in MICU
- Independent risk factors for mortality, which align with findings in previous studies, were ASA status, case classification, code duration, SOFA/MEWS score, and initial rhythm
- Limitations:
  - Study likely underpowered
  - No direct information on cause of arrest
- Future direction is to evaluate inpatient interventions to prevent IHCA and mortality following surgery

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