

Clinical and Demographic Factors Among Patients Suffering Cardiac Arrest with Field Termination During the COVID-19 Pandemic

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Introduction

- Since the start of the COVID-19 pandemic, resuscitating and treating patients with out-of-hospital cardiac arrest (OHCA) has posed new challenges
- Following termination of resuscitation (TOR) rules have become more risky and even confusing for first responders
- Following modified TOR protocol can impact factors that affect patient OHCA survival
- TOR rates have measured higher in 2020 than in 2019 in many cities across the world (data is heavily dependent on location)
- Emergency department visits have decreased in the United States for nonspecific chest pain and acute myocardial infarction

Objectives

1. Determine if there are any associations between clinical and demographic factors and field termination due to cardiac arrest
 - a) Determine what these factors are
 - b) Determine if there are factors that are more predictive of cardiac arrest termination in the field
2. Determine if there has been an increase in the number of cardiac arrest with field termination during the COVID pandemic in New Orleans
3. Determine the frequency of comorbidities among patients that have experienced cardiac arrest during the COVID-19 pandemic

Methods

A retrospective analysis of patients was performed. We queried the NOLA EMS medical records for patients meeting study criteria and collected basic demographics, comorbidities, and information related to the code. Data was extrapolated to Redcap and analyzed using SAS 9.4. Correlations between variables were assessed utilizing Fisher's exact test. We also compared the number of DNR calls prior to and during the first six months of the COVID pandemic.

Eligibility Criteria

Inclusion Criteria:

- Anyone greater than or equal to the age of 18
- Anyone experiencing a cardiac arrest with field termination eliciting EMS activation prior to (January 1, 2019 – June 30, 2019) and during (January 1, 2020 – June 30, 2020) the COVID-19 pandemic

Exclusion Criteria:

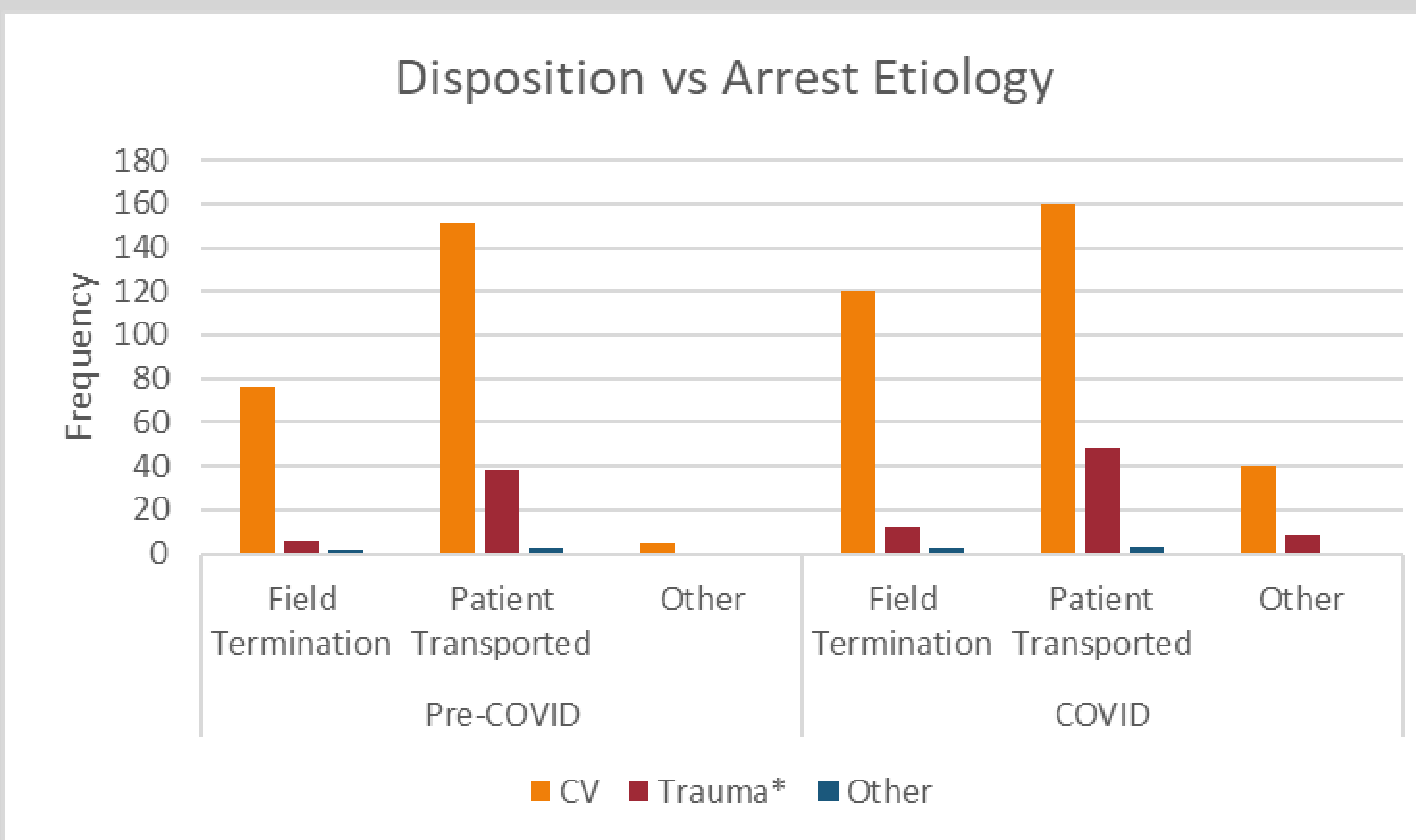
- Anyone younger than 18 years of age
- Anyone older than 18 years of age who did not experience a cardiac arrest with field termination eliciting EMS activation prior to (January 1, 2019 – June 30, 2019) and during (January 1, 2020 – June 30, 2020) the COVID-19 pandemic

Results: Basic Demographics

		Pre-COVID		COVID	
		n=	%	n=	%
Age, mean		59.9		58.2	
Race	White	75	27.08	89	24.38
	Black	194	70.04	255	69.86
	Hispanic	2	0.72	12	3.29
	Asian/other	6	2.17	9	2.47
Gender	Male	178	64.03	231	62.1
	Female	100	35.97	141	37.9
Arrest Etiology	Cardiovascular	232	83.15	320	81.42
	Trauma, etc. *	44	15.77	68	17.3
	Other	3	1.08	5	1.27
Disposition	Field Termination	83	29.75	134	34.1
	Patient Transported	191	68.46	211	53.69
	Other	5	1.79	48	12.21

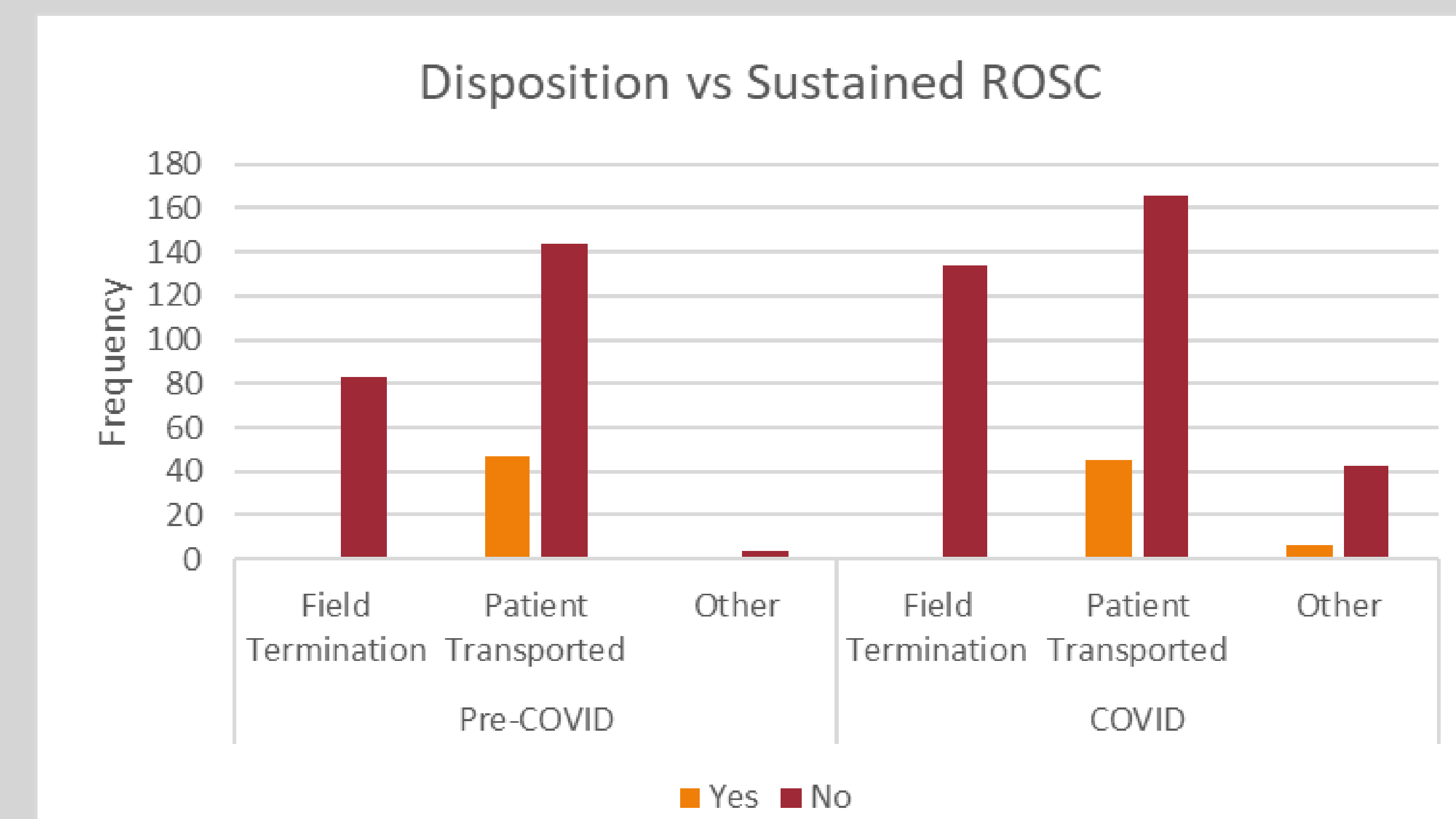
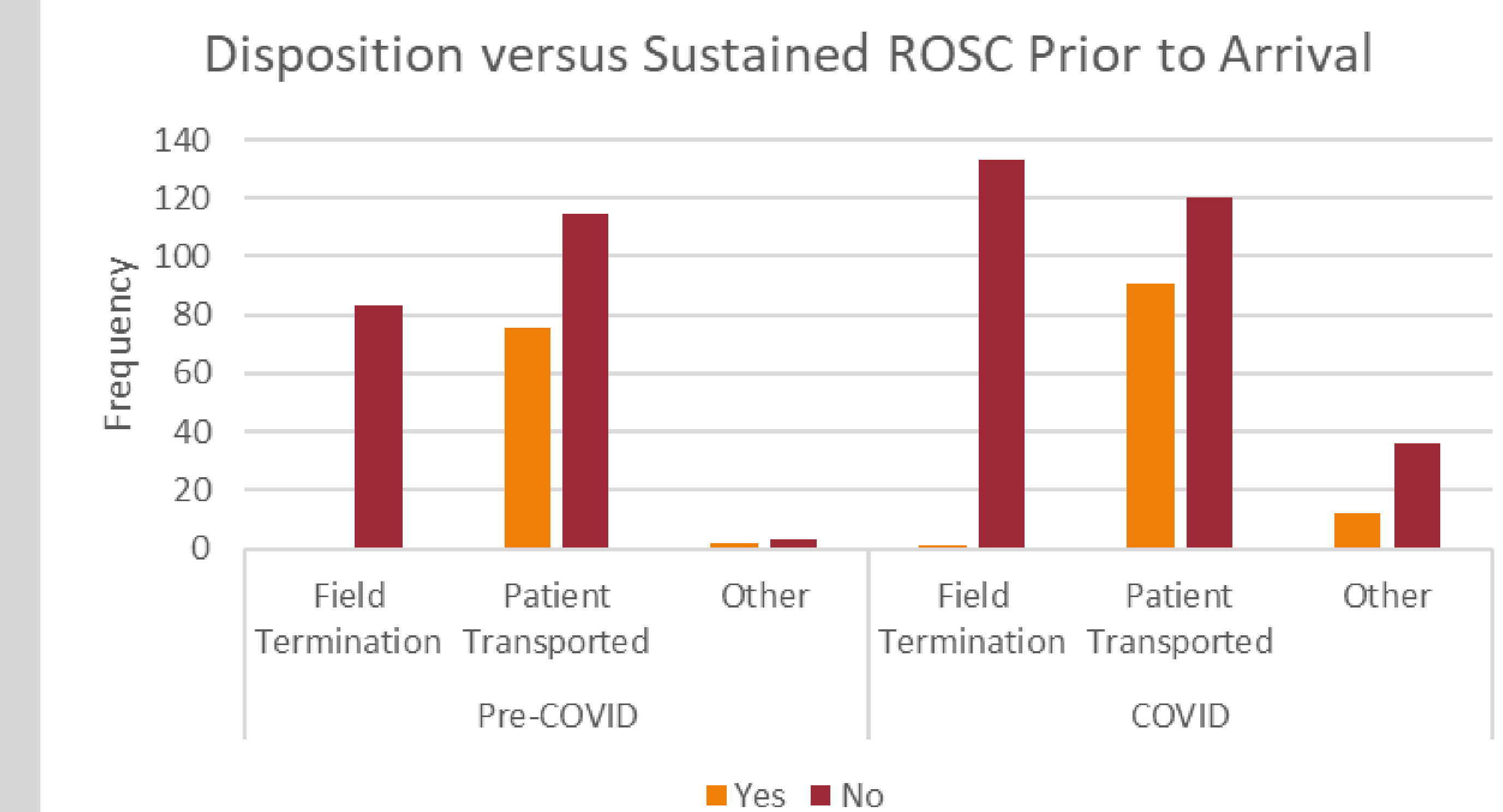
*Trauma, exsanguination, drowning, and overdose

Results:



In the cases analyzed from 2020 during the COVID-19 pandemic, a statistically significant relationship was found between the disposition of the cardiac arrest and the etiology of the arrest, with a p value of 0.0114.

Results:



In the cases analyzed in both 2019 and 2020, a statistically significant relationship was found between the disposition of the cardiac arrest and achievement of sustained return of spontaneous circulation (ROSC), both prior to EMS arrival and during the incident.

Conclusions

- Achieving return of spontaneous circulation in the field following cardiac arrest had a strong impact on whether or not the incident was terminated in the field
- The etiology of the cardiac arrest greatly determined whether the cardiac arrest incident was terminated in the field or whether the patient was transported to a hospital
- Greater investigation is necessary to explore the exact determinants in these relationships
- Other factors of the incidents, such as demographics, postal code, hospital destinations, and health insurance should be explored