

Prehospital Trauma Arrest: A Regional Resource Utilization Initiative

Beth Broering, MSN, RN, CEN, CCRN, TCRN, CCNS, CAISS, FAEN

Karen Shipman, BSN, RN Kelley Rumsey, DNP, RN, Katherine Schulz, BSN, RN Allen Yee, MD, Michel Aboutanos, MD, MPH, VCU Medical Center; Mike Valdez, MSN, RN, HCA Healthcare; Tracey Jeffers, BSN, RN, Bon Secours Southside Medical Center; Amy Gulick, MSN, RN, Mary Washington Hospital



VCU Health™

Problem/Background

- VCU Trauma Center observed a significant number of patients with prehospital trauma arrest being transported to our trauma center and receiving substantial resuscitative efforts in the field that ultimately died
- We hypothesized that this was not unique to our Center and established collaborative efforts with our EMS Regional Council through the Central Virginia Trauma Coalition
- The ODEMSA EMS Alliance is one of 11 regional councils in Virginia, covering over 9000 square miles and provides direction and support to nearly 100 EMS agencies
- Within the Central Virginia Trauma Coalition*, there are two Level I, two Level II and one Level III state designated trauma centers

Methods

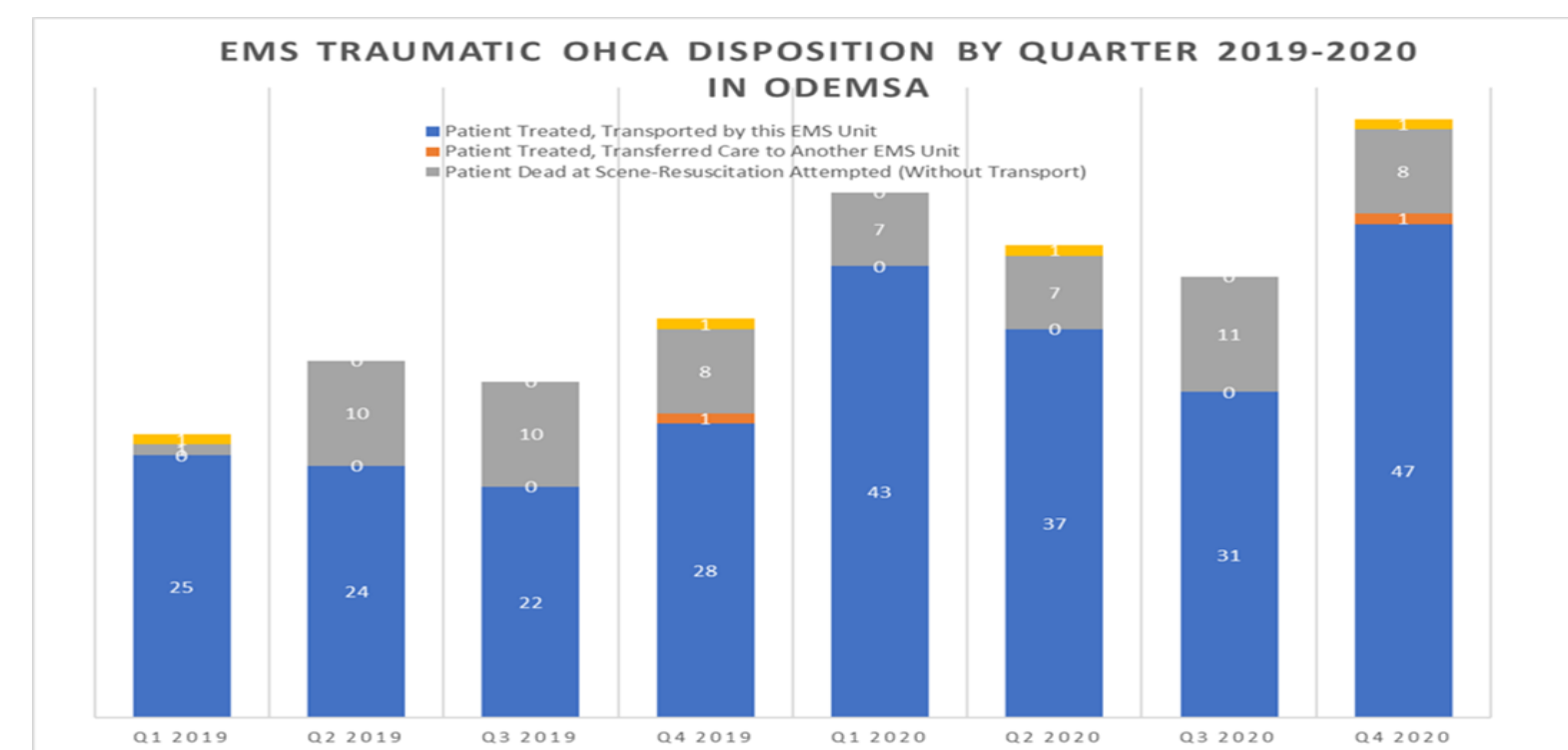
Outcomes data of patients transported to a trauma center with reported prehospital trauma arrest and aggregate data of EMS transports with a report of out of hospital cardiac arrest were analyzed in collaboration with the ODEMSA Performance Improvement Committee.



Results

- For the study period (Jan 2019-Dec 2020), EMS had contact with an average of 32 traumatic cardiac arrest patients per quarter in the ODEMSA region. Despite arrest, (77%) of patients were transported.

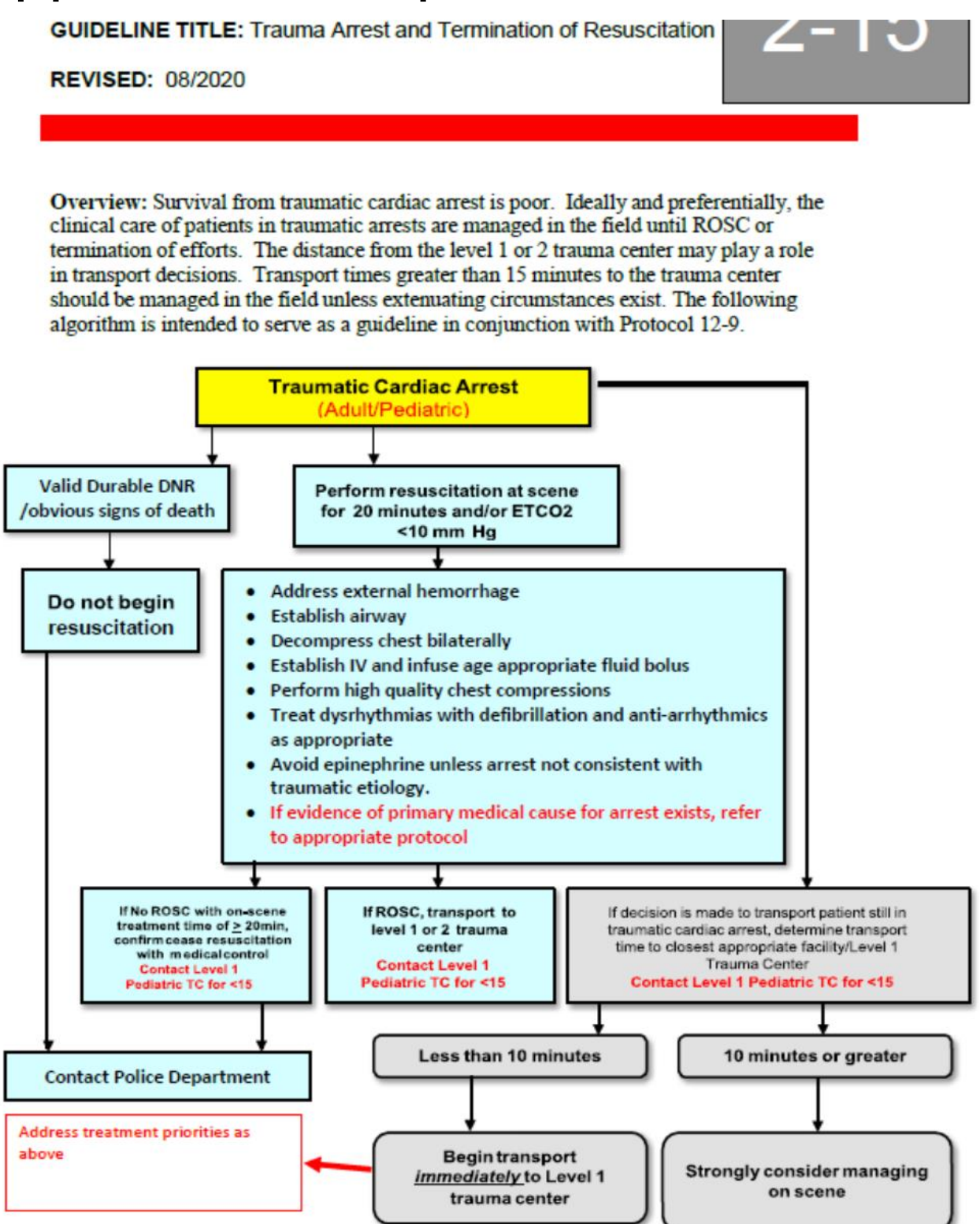
Quarter	Blunt	Penetr	Burn	Unknown	Total	All OHCA
Q1 2019	24	2	1	1	28	437
Q2 2019	25	8	0	2	35	439
Q3 2019	22	7	0	4	33	472
Q4 2019	27	6	2	4	39	560
Q1 2020	28	18	1	3	50	674
Q2 2020	38	6	1	2	47	707
Q3 2020	33	7	1	1	42	695
Q4 2020	32	18	1	6	57	757



- There were 235 patients with reported prehospital cardiac arrest by the region's trauma registries. Data was analyzed by the trauma type (Blunt, Penetrating, Burn, Other) and types of resuscitative interventions provided in the prehospital environment.
 - MOI: 62% blunt; 34% penetrating; 4% burns or other mechanisms (drowning/hanging)
 - > 90% of patients arrived to the ED with CPR in progress
 - 65% were pronounced dead in the ED
 - Overall survival: < 2%

Protocol

The Regional Prehospital Trauma Arrest Protocol was developed and approved for implementation effective July 1, 2021



Conclusion

- Regional trauma center collaboration can result in improved guidance for prehospital care
- Resource utilization and outcomes should be considered in the development of trauma protocols

*Central VA Trauma Coalition

VCU Medical Center, Mary Washington Hospital, Bon Secours Southside Medical Center, HCA Henrico Doctor's Hospital, and HCA Chippenham Hospital