



**RIVERSIDE COUNTY
EMERGENCY MEDICAL SERVICES
AGENCY (REMSA)**

**ST-ELEVATION MYOCARDIAL
INFARCTION (STEMI) SYSTEM UPDATE
2020**

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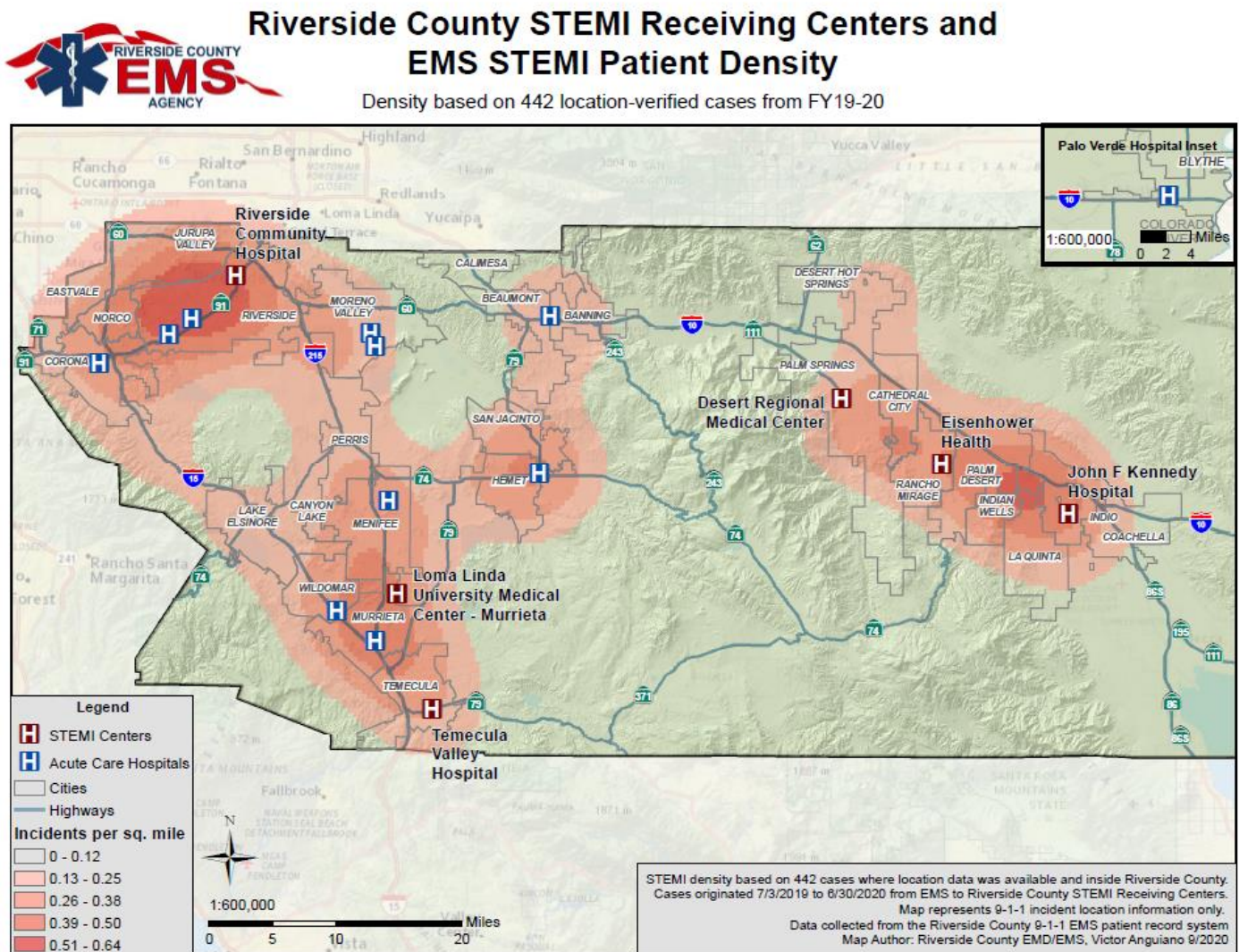
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STEMI System Summary

The Riverside County EMS Agency (REMSA) STEMI Care System Plan was developed in compliance with Section 1798.160, et seq., Health and Safety Code. REMSA's organized system of care for STEMI patients has been in place since 2007 with the last update approved by the State EMS Authority (EMSA) in 2019. This current plan update reflects the 2019- 2020 data and information for Riverside County.

Riverside County's jurisdiction includes six (6) STEMI centers, all of which have achieved accreditations from the American College of Cardiology as Chest Pain Centers with Percutaneous Coronary Intervention (PCI).



REMSA collects data using the Imagetrend Patient registry, which has been utilized since July 2019. All STEMI centers provide the clinical outcome of each STEMI patient, which links back to the pre-hospital ePCR, giving EMS providers feedback and outcomes of patients transported. STEMI centers submit data concurrently, which is analyzed and reported by REMSA. There is an ongoing plan in place to align and begin submission of State mandated STEMI data in the future. STEMI data is updated quarterly and can be found here: <http://www.remsa.us/documents/programs/stemi/>. Meeting minutes, STEMI center applications and quarterly data can also be found there.

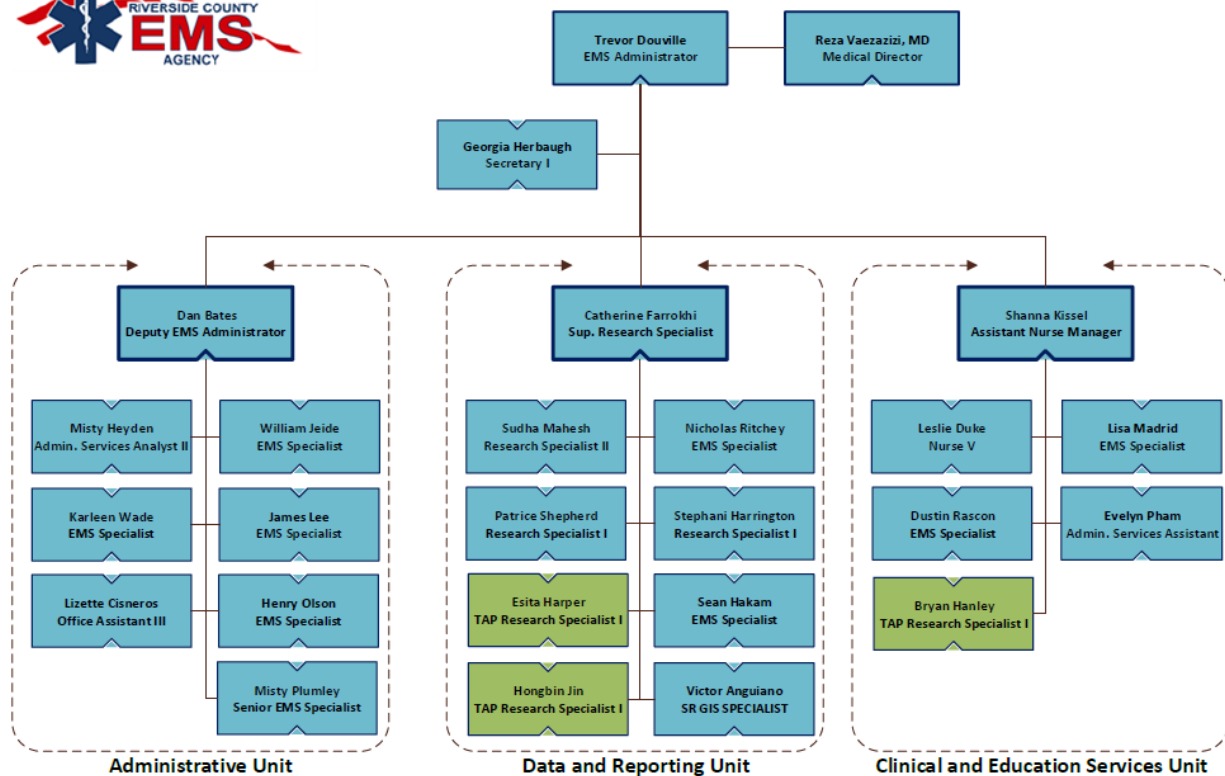
STEMI System Changes

The RIVCO STEMI program is an active and ever evolving service to the community. Based upon our data findings, STEMI System Advisory Committee recommendations and improvements in care provision we make modifications to the system. The following items were actions taken during this reporting period.

- STEMI Specialty Care Coordinator
- STEMI System Outreach- EMS education
- Policy Revisions and Additions
- System Performance Improvement

STEMI Specialty Care Coordinator

With CA STEMI regulations in place, and realignment complete, REMSA has funded a Specialty Care Nurse Coordinator role to maintain regulatory oversight and provide direction to all STEMI centers. The Specialty Care Coordinator is part of the clinical team and acts as a program administrator, and liaison, between hospital stroke programs and EMSA. In collaboration with the REMSA Medical Director, REMSA administration and the clinical and education units, the Specialty Care Coordinator facilitates stroke committee activities related to performance improvement and quality improvement indicators.



STEMI System Outreach- EMS Education

A core goal of the Riverside County STEMI Critical Care System Plan is to disseminate ongoing STEMI education to EMS field providers. Continuing STEMI-specific education is designed to reduce the incidence of disease, improve health outcomes, and enhance the quality of life for patients who have experienced a STEMI. Educational modules will be distributed bi-annually and will communicate feedback from STEMI System Advisory Committee process improvement initiatives directly to field providers. Major components of the education module will include 12-lead EKG interpretation, documentation, policy, communication, and performance metrics for the STEMI system. The frequency with which these courses are offered will be re-evaluated and adjusted as needed. Our mission is to collaboratively and continuously improve the delivery of high-quality care to those experiencing a STEMI. The STEMI Program Managers from STEMI centers, and EMS provider agencies, are heavily involved in conducting this mandated education.

Policy Revisions and Additions

All STEMI patient treatment policies are routinely updated with current standards of care and vetted through the Pre-hospital Medical Advisory Committee (PMAC).

Suspected Acute Coronary Syndrome (ACS) - Policy #4402 (<http://www.remsa.us/policy/>), is the field treatment policy that details patient care activities for suspected ACS and STEMI patients. It was updated in 2020 to streamline the care pathway and increase the efficiency of field treatment and transport. Mandatory base contact with a STEMI base hospital was also removed.

System Performance Improvement

Process improvement involves the practice of identifying, analyzing, and improving existing processes to optimize performance, meet best practice standards, or simply improve quality.

The STEMI System Advisory Committee participates in case review as a continuous performance improvement activity. Case review indicators consist of system issues, unanticipated outcomes, morbidity and mortality related to procedural complications, deviation from policy or protocols, and any cases needing further review or loop closure. The six (6) STEMI centers are on a rotation for case review presentations. As a future goal to provide loop closure for the STEMI centers, REMSA will send closure letters from the STEMI committee with adjudication, if any.

Retrospective data collection and analysis lies at the heart of quality improvement. Data aids in understanding how well the systems work, identifying potential areas for improvement, setting measurable goals, and monitoring the effectiveness of change.

As a system for the STEMI program, we look at data elements that align with our set goals and objectives. Data is compiled from the 2019 CARES Utstein report (Attachment A), cardiac arrest report, and Image Trend, and is presented at the STEMI CQI Committee meeting. This data is also used to drive CQI processes to improve outcome performance measures. These can be found here: <http://www.remsa.us/documents/programs/stemi/>.

Number and Designation of STEMI Centers

All six (6) STEMI centers have identical contracts that establishes a written agreement between the facilities and REMSA.

Facility	Contract Term	Agreement Type
Desert Regional Medical Center	July 1, 2019-June 30,2022	ST Elevation Myocardial Infarction (STEMI) Receiving Center Designation Agreement
Eisenhower Health	July 1, 2019-June 30,2022	ST Elevation Myocardial Infarction (STEMI) Receiving Center Designation Agreement
John F. Kennedy Memorial Hospital	July 1, 2019-June 30,2022	ST Elevation Myocardial Infarction (STEMI) Receiving Center Designation Agreement
Loma Linda University Medical Center-Murrieta	July 1, 2019-June 30,2022	ST Elevation Myocardial Infarction (STEMI) Receiving Center Designation Agreement
Riverside Community Hospital	July 1, 2019-June 30,2022	ST Elevation Myocardial Infarction (STEMI) Receiving Center Designation Agreement
Temecula Valley Hospital	July 1, 2019-June 30,2022	ST Elevation Myocardial Infarction (STEMI) Receiving Center Designation Agreement

STEMI System Goals and Objectives

REMSA has developed the following goals and objectives for the STEMI System calendar year 2020.

Goal #1: Quality of Care

Goal	Objectives	Timeline	Status
Improve the quality and service delivered to STEMI patients	<ul style="list-style-type: none"> • Identify best practices through evidence-based data that can be implemented as needed • Evaluate and reduce time from symptom onset to definitive care for STEMI patients • Develop data reports from the patient registry that inform the STEMI system to include: <ul style="list-style-type: none"> ○ First medical contact to balloon time ○ False negative rate ○ True positive rate ○ Incident quality review performed 	Ongoing	Ongoing

	○ Mortality		
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Goal #2: Reduce EMS to Balloon times

Goal	Objectives	Timeline	Status
Reduce E2B times	<ul style="list-style-type: none"> Monitor EMS to balloon times and reduce to under 90 min 95% of the time 	Quarterly	Deferred goal until registry system is updated to pull data to obtain accurate E2B times

Goal #3: EMS Education

Goal	Objectives	Timeline	Status
Provide education to increase identification of STEMI patients	<ul style="list-style-type: none"> Deliver up-to-date and relevant education to EMS professionals Sharing current performance metrics 	April 1, 2021	In process

Goal #4: Increase EMS pre-notification

Goal	Objectives	Timeline	Status
Increase EMS pre-activation	<ul style="list-style-type: none"> Increase EMS notification to 95% of the time Increase pre-activation of catheterization lab teams 	Quarterly	Goal updated to reflect the intent to increase pre-activation of catheterization lab teams

Goal #5: Direct transport of ROSC patients to STEMI Center

Goal	Objectives	Timeline	Status
Direct transport of stable ROSC patients to STEMI Centers	<ul style="list-style-type: none">• On scene evaluation for transport to closest STEMI center• Patients with stable ROSC and aggressive resuscitation management will be transported to closest STEMI center• Decrease time to catheterization at a specialized cardiac center• Improve patient outcome after ROSC	Quarterly	Ongoing

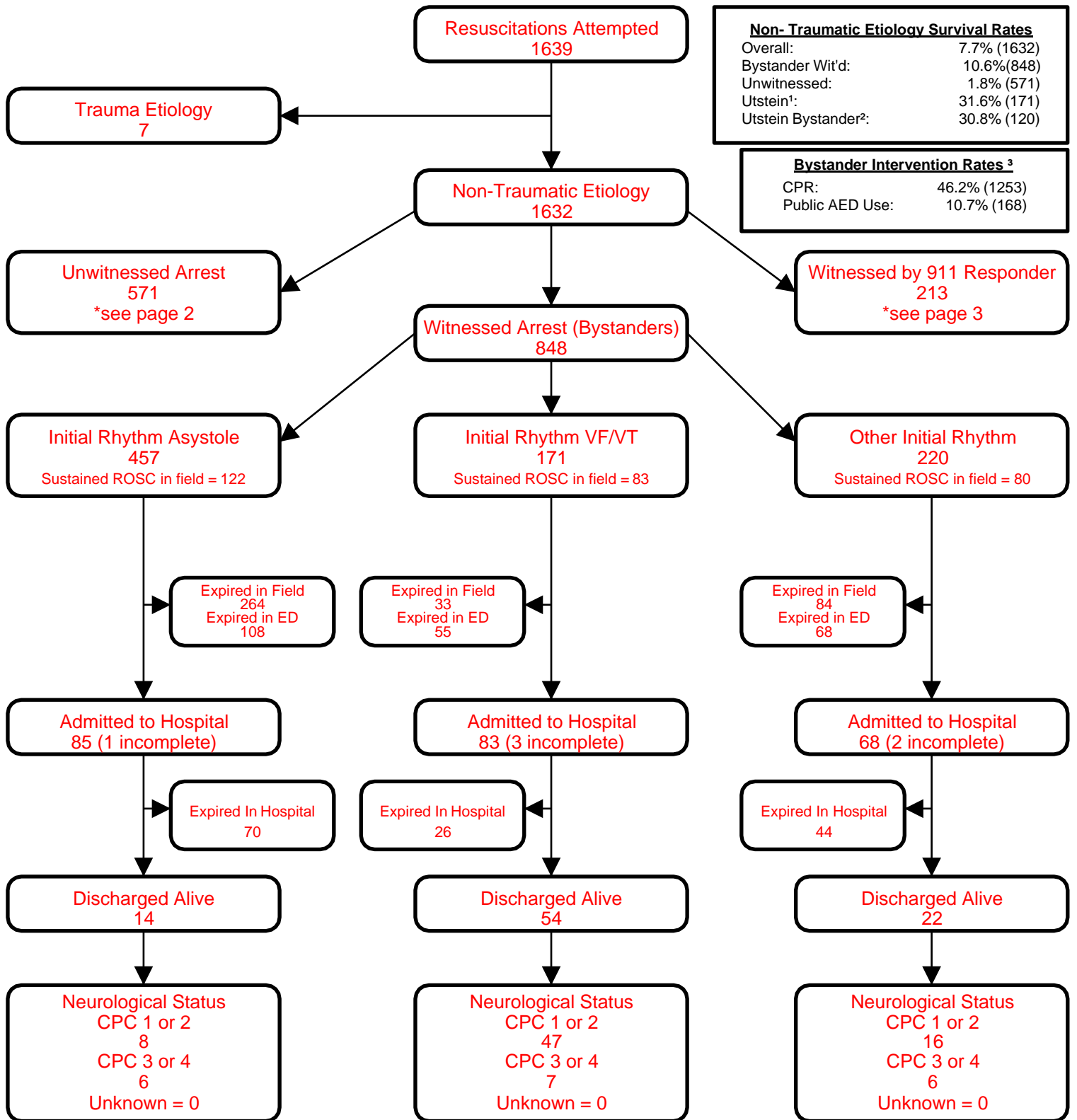
Goal #6: Provide EMS Feedback

Goal	Objectives	Timeline	Status
Provide EMS feedback	<ul style="list-style-type: none">• Increase awareness of patient outcomes• Improve performance• Professional growth• Increased awareness of patient outcomes	Completed Dec. 2019	Goal met, will continue to provide EMS feedback on all cases

Utstein Survival Report

All Agencies

Agency Group: Riverside County EMS Agency | Service Date: 01/01/19 - 12/31/19



Non-Traumatic Etiology Survival Rates	
Overall:	7.7% (1632)
Bystander Wit'd:	10.6%(848)
Unwitnessed:	1.8% (571)
Utstein ¹ :	31.6% (171)
Utstein Bystander ² :	30.8% (120)

Bystander Intervention Rates ³	
CPR:	46.2% (1253)
Public AED Use:	10.7% (168)

¹Utstein: Witnessed by bystander and found in shockable rhythm.

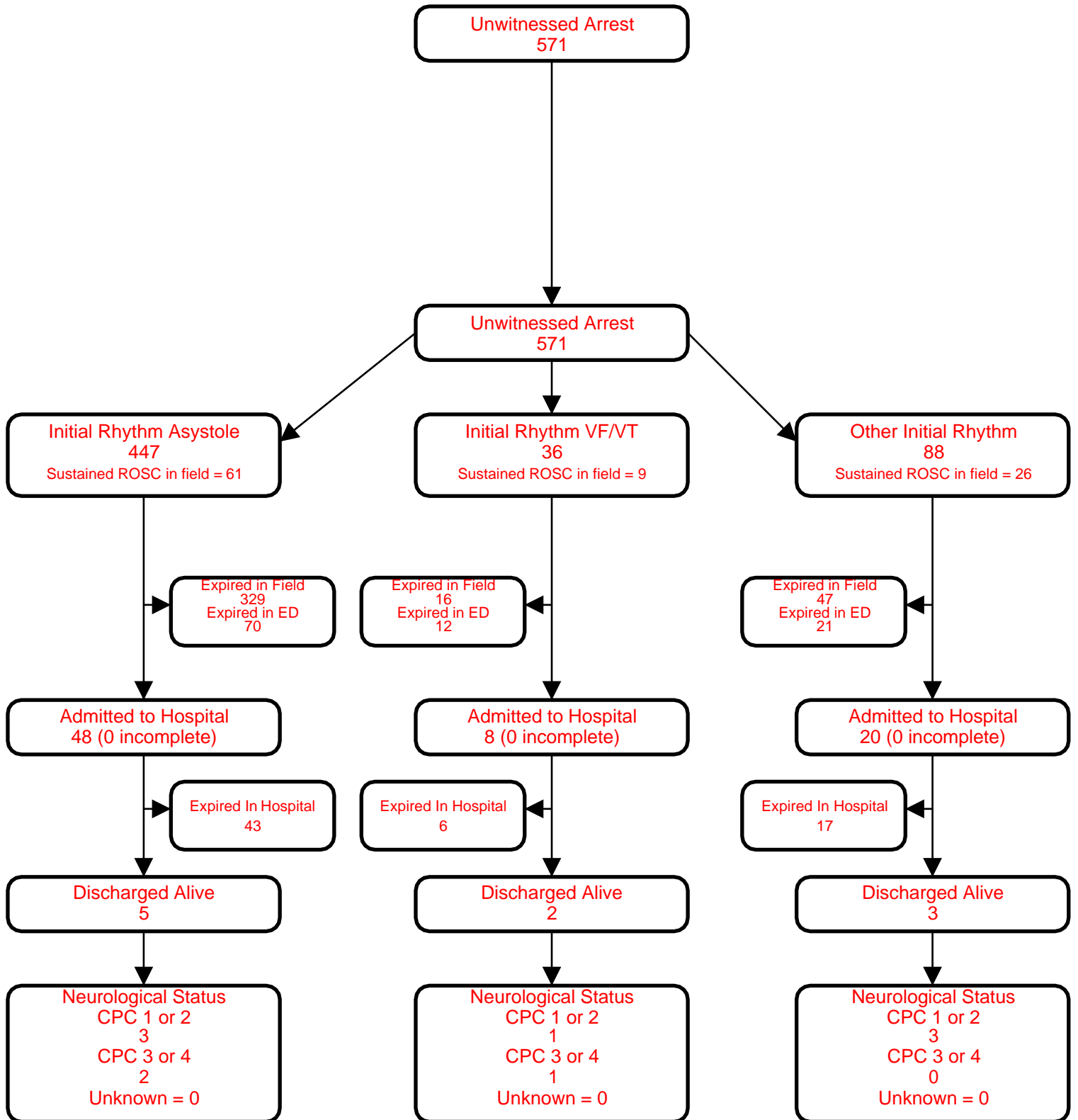
²Utstein Bystander: Witnessed by bystander, found in shockable rhythm, and received some bystander intervention (CPR and/or AED application).

³Bystander CPR rate excludes 911 Responder Witnessed, Nursing Home, and Healthcare Facility arrests. Public AED Use rate excludes 911 Responder Witnessed, Home/Residence, Nursing Home, and Healthcare Facility arrests. *Only data from the previous calendar year is fully audited. Data from the current calendar year is dynamic.

Utstein Survival Report

All Agencies

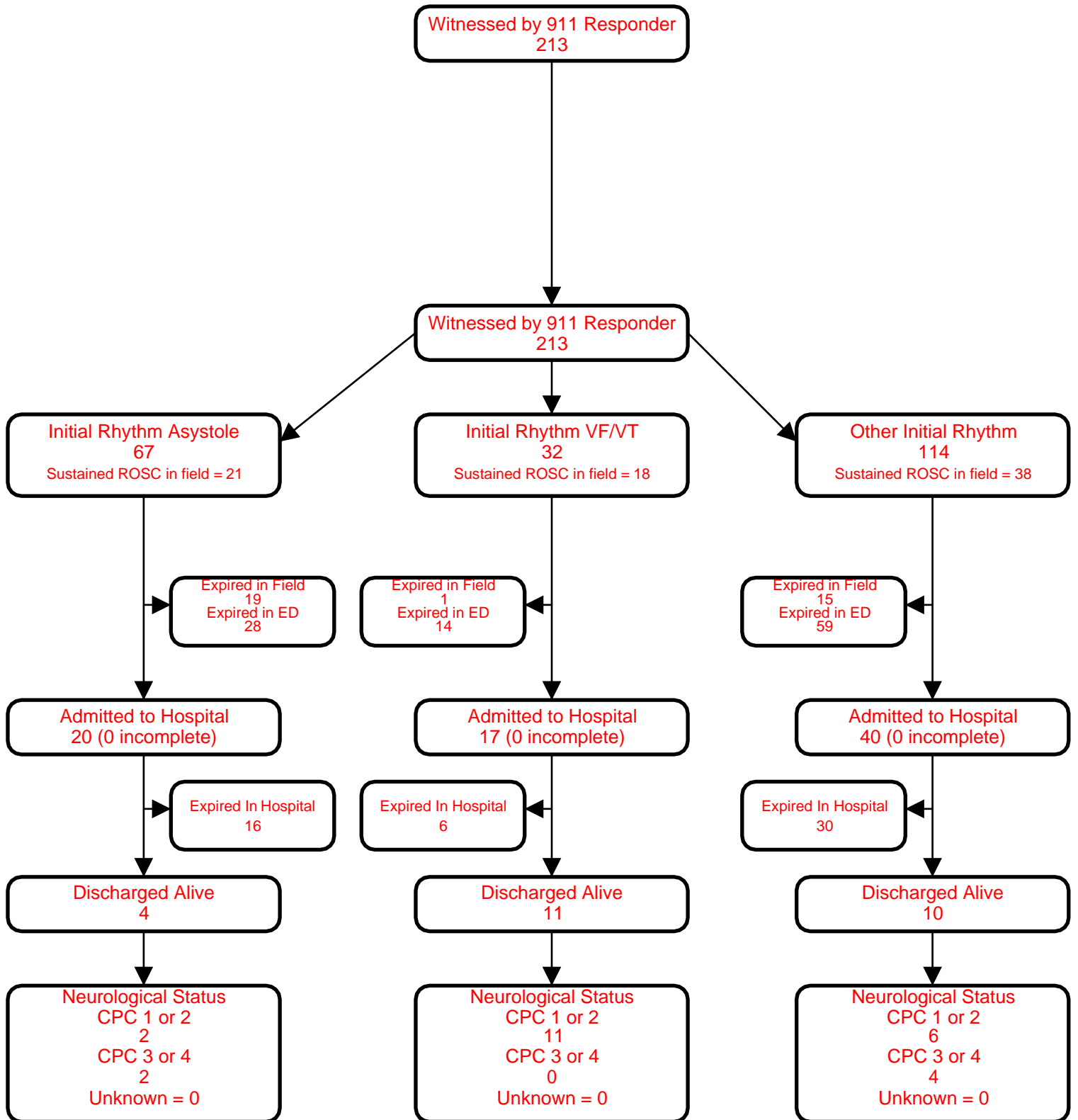
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Utstein Survival Report

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References

California Code of Regulations, Title 22. Social Security, Division 9. Prehospital Emergency Medical Services, Chapter 7.1 ST-Elevation Myocardial Infarction Critical Care System. (2020). [CCR Title 22, Division 9, Chapter 7.1 ST-Elevation Myocardial Infarction Critical Care System](#)

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