Riverside County
Emergency Medical Services Agency
Trauma System Update
2016

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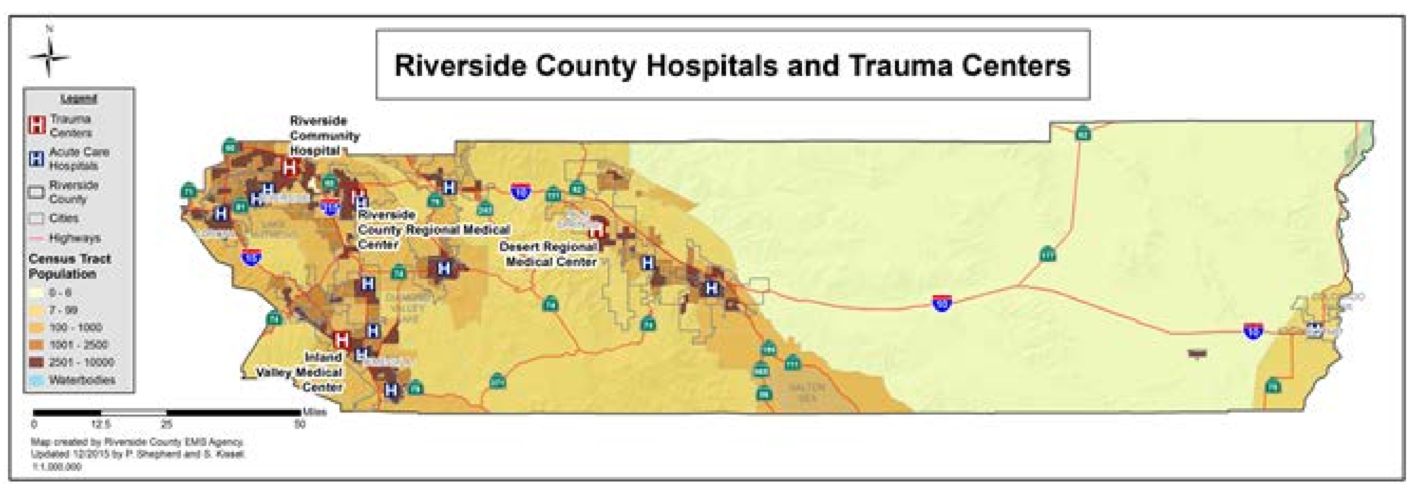
Trauma System Summary

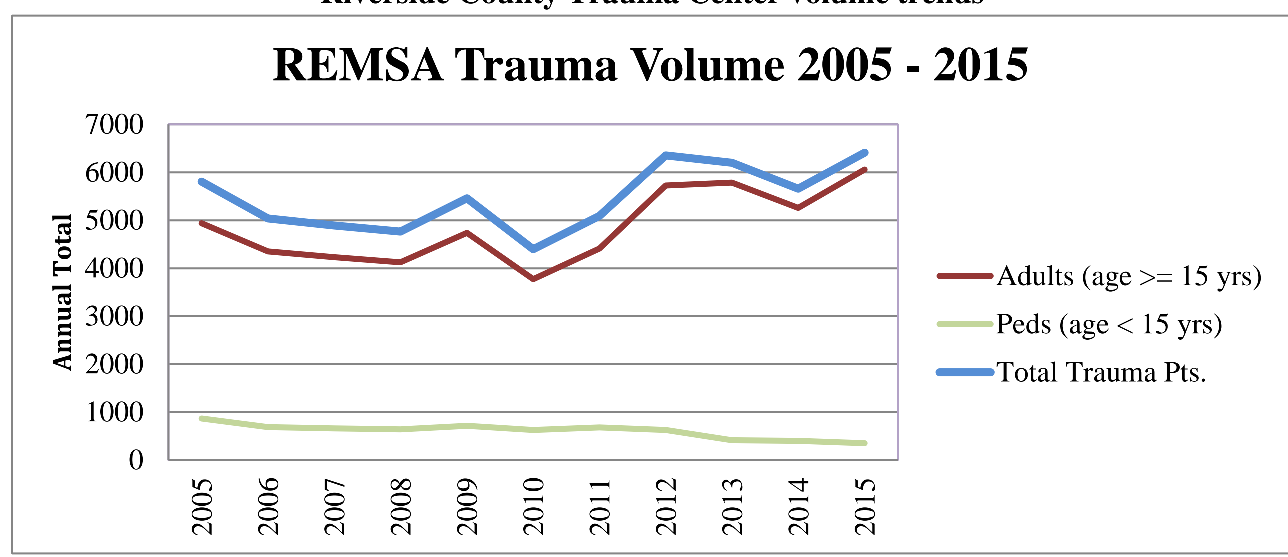
The Riverside County EMS Agency (REMSA) Trauma System Plan, originally approved by the California State EMS Authority (EMSA) in 1995, has been most recently updated in 2013 and 2015. This plan was written in compliance with Section 1798.160, et seq., Health and Safety Code, Division 2.5.

Riverside County has a population of over 2.3 million residents and four Level II trauma centers geographically located on the north, south, east and western region of the county. There is one Level II Pediatric Trauma Center (PTC) located in the mid region of the county.

In 2015, over 6,400 patients with traumatic injuries were treated at one of the four trauma centers. This number includes both Riverside County residents as well as out- of- county residents visiting for recreational activities.



Riverside County Trauma Center volume trends



Changes in Trauma System

1. Contracts
2. Trauma Registry
3. Helicopter EMS and Continuous Quality Improvement (HEMS CQI)
4. Policy Revisions
5. Education
6. Tranexamic Acid (TXA) Trial Study
7. Riverside County Trauma Report 2015

1. Contracts

Trauma contracts for Riverside County Trauma centers have had minimal revisions this past year. The changes added to the contracts include requirements from The American College of Surgeons – Committee on Trauma (ACS- COT) resource manual as now being a REMSA requirement. The contracts for the trauma centers remain separate from the pre-hospital agreement and have not been made into an annex to this agreement as stated in the 2015 Trauma Plan Update. The trauma centers are continually monitored for compliance with the Title 22, Division 9, Chapter 7 and ACS-COT standards as outlined in the contracts. REMSA meets with the Trauma Managers to discuss their individual trauma programs and compliance. (Attachment A: Adult Trauma Center Standards). Riverside University Health System- Medical Center (RUHS-MC) formerly Riverside County Regional Medical Center (RCRMC) remains the County of Riverside's PTC. The standards for PTC are similar to those of the adult trauma center with the inclusion of ACS-COT Chapter 10: Pediatric Trauma Care. (Attachment B: Pediatric Trauma Center Standards)

ACS- COT site verification or consultation continues to be a contractual requirement until 2017. The next contract term will require all trauma centers to have achieved ACS verification. Currently one trauma center has their second ACS Level II verification.

2. Trauma Registry

The current registry, Digital Innovations (DI CV5), has been in place since January 1, 2013. This is a California EMS Information Systems (CEMSIS) and National Trauma Data Bank (NTDB) compliant registry that is web and Windows based. Data submission is Health Insurance Portability and Accountability Act (HIPAA) compliant. (Attachment C: REMSA Patient Registry Data Elements). In January 2016, the data elements were updated to reflect changes made to the National Trauma Databank Data Dictionary. REMSA removed 52 data elements from the requirements for each trauma patient submission. Registry inclusion criteria includes at least one ICD-9 diagnostic code for any injury within the following range 800-959.9 ***and*** "seen by" Trauma Services.

In March 2015, DI developed hospital dashboards with trauma indicators that both the hospital and REMSA central site can access. This dashboard allows the trauma center to view their facility with 22 individual dashboards. Examples: statistics by Mechanism of injury, Average hospital length of stay, and Injury type by age. Once the data is uploaded, the trauma centers can select the graphs and the bar and pie charts adjust with current data.

3. Helicopter EMS and Continuous Quality Improvement (HEMS CQI)

HEMS CQI continues at the system level for monitoring the use of helicopter resources in the county. Since the restructuring of the HEMS committee in 2015, all air providers submit their agency's utilization of airships using the HEMS data collection tool on a monthly schedule. REMSA monitors and reviews medical calls initiated and transported to a Riverside county hospital. Helicopter transports are frequently used on the east side of the county where ground transport time is lengthy for critical trauma patients. REMSA works in collaboration with the two state prisons in Blythe and the air providers transporting patients outside of the California state border on CQI of the individual calls. The quarterly HEMS utilization continues to be presented at REMSA's Pre-hospital Medical Advisory Committee (PMAC).

4. Policy Revisions

REMSA is one year into a trial study with ICEMA, Alameda and Napa County for the administration of TXA by ground paramedics in the pre-hospital setting. This policy identifies the inclusion criteria, contraindications, procedure, and documentation requirements. The trial study began June 1, 2015 and will continue through March 2017 in order to collect all data elements from the trauma centers. Since the start of the trial, the policy has been updated to clearly identify the four bullets of the inclusion criteria for patients meeting critical trauma patient criteria. (Attachment D: TXA Trial Study Policy #5801). A change will be made to the Universal patient policy #4102 in 2017 regarding axial spinal immobilization and the use of long backboards. These specific changes will be reflected in the 2017 update.

5. Education

REMSA actively participates in educational opportunities among the pre-hospital agencies and hospitals. This includes policy updates, involvement with Advanced Trauma Life Support courses, Mass Casualty Incident (MCI) and Active Shooter Drills.

	TNCC	ATCN	ENPC	TCAR	PCAR
Desert Regional Medical Center (DRMC)	3 x year	X	3 x year	Bi-annually	X
Inland Valley Medical Center (IVMC)	Bi- annually	X		REMSA approved critical care course with TCAR components- Bi-annually	
Riverside Community Hospital (RCH)	Bi- annually	X	X	Quarterly- critical care course with TCAR components	X

RUHS-MC	Bi- annually	2016- 3 x year 2017- 4 x year	annually	X	X

REMSA's Trauma Coordinator attended The Optimal Trauma Center course and the Trauma Outcomes and Performance Improvement Course (TOPIC). The information received at these courses will be shared with the trauma centers as each of them prepare for their ACS consultation and/or verification.

Periodic TXA education updates include trends identified during the CQI process on an as needed basis.

6. Tranexamic Acid (TXA) Trial Study

Since the start of the TXA trial study, two additional counties have joined in the data collection. REMSA is only participating in the pre-hospital arm (paramedic group) of the study. In this arm of the study, the first dose of TXA is given by licensed paramedics in the field and second dose may or may not be given once the patient arrives at the trauma center. Each TXA administration is thoroughly reviewed for appropriateness by both the LEMSA and the participating agency. Currently, REMSA is monitoring each administration within the inclusion criteria, those that were given the medication outside of the inclusion criteria (fallouts), and the patients meeting inclusion criteria but did not receive the medication in the pre-hospital setting (missed). As previously stated, REMSA will continue the study at least through March 2017 to ensure sufficient data collection.

The Regional TXA CQI group has a monthly conference call to discuss cases of administration; Pre-hospital TXA cases are also reviewed at the regional TAC. As quality assurance of the study, REMSA submits to EMSA an update of indicators every six months during the duration of the study.

7. Riverside County Trauma Report 2015

In 2011, REMSA published the first Trauma Report with 10 years of trauma registry data from the four trauma centers. The Trauma Report 2015 is a five year data collection from the central site trauma registry giving a snapshot of the trauma case incidents specifically for the County of Riverside. This report serves as a reference for hospitals, Injury Prevention programs, and education focusing on traumatic injuries specific to Riverside County's geographical location. The 2015 Trauma Report can be accessed at http://remsa.us/documents/programs/trauma/2015TraumaReportFINAL.pdf.

Number and Designation Level of Trauma Centers

Hospital	Trauma Designation Level	Designation/ Verification
DRMC Palm Springs, CA	II	Adult
IVMC Wildomar, CA	II	Adult

RCH Riverside, CA	II	Adult
RUHS-MC Moreno Valley, CA	II	Pediatric Trauma Center (PTC) ACS Level II Adults
Loma Linda University Medical Center- *San Bernardino County	I	Adult and Pediatric ICEMA designated trauma center

Scheduled changes: There are no scheduled changes to the Trauma centers at this time.

System changes: REMSA does not anticipate the need for any additional trauma centers at this time.

RUHS-MC has expressed interest in becoming a Level I Trauma Center within the next three years. REMSA will work with them to explore the need and additional regulatory and/or ACS-COT requirements.

2013- 2015 Trauma Center Data	2013	2014	2015
Percentage Meeting Dx Criteria	95.6%	95.0%	94.6%
Percentage EMS Transport from Scene	75.5%	76.4%	77.5%
Percentage Transferred to Acute Care	7.9%	9.4%	7.8%

*Data reflects NTDB criteria- Admits / Transfers / Deaths

Trauma System Goals and Objectives

REMSA has developed the following goals and objectives for the Trauma System in 2016- 2017:

Goal #1: Trauma System Education

Objectives to Achieve Goal	Measure (s)	Timeline	Status
1.1 Attend Optimal course and TOPIC course	Share information from the Optimal course and TOPIC course with the four trauma centers to prepare for site visits	TOPIC conference October 8, 2015 Optimal conference April 2, 2016 Trauma center visit x 4	Attended Attended Pending

Goal #2: LEMSA participation on the state level

Objectives to Achieve Goal	Measure (s)	Timeline	Status
2.1 LEMSA support for the	Participate in CA system-wide ACS survey	March 23, 2016	Attended

State Trauma System ACS survey	Attend CA EMSA Trauma Summit	June 7-8, 2016	Attended

Goal #3: Participate in Regional activities with ICEMA

Objectives to Achieve Goal	**Measure (s)**	**Timeline**	**Status**
3.1 Regionalize trauma registry	Research new database in comparison with current registry	March 2018	In progress
3.2 Participate in regional TAC 3x/ year	Bring trauma cases from Riverside county to TAC to peer review with ICEMA trauma centers. Cases are peer reviewed across county borders as a regional effort to improve patient outcomes.	July 13, 2016 September 14, 2016	In progress

Goal #4: Improve pre-hospital patient care

Objectives to Achieve Goal	**Measure (s)**	**Timeline**	**Status**
4.1 Participate in TXA trial study- Prehospital arm of the study	Continue participating with ICEMA in trial study until goal of 200 patients are met or 18 months of the study	March 2017	One year of the 18 month study is complete
4.2 Implementation of Image Trend ePCR and CQI reporting tools	REMSA will begin submission of prehospital data to EMSA with new system	Ongoing evaluation	To begin January 2017

The following identifies the goal completion status from the Trauma Plan update 2013 and 2015.

Trauma System Goals 2013	Goal met (Y/N)	Status as of 2015 update	2016 Trauma Plan update status
Grow into ACS verification	No	1. IVMC upgraded to a Level II trauma center 2. ACS site visits planned for DRMC, IVMC, and RCH in 2016.	In process. 25% met- RUHS-MC is the only verified Level II trauma center at this time

Include Injury Prevention coordination between trauma centers and DOPH	Partially met	1. RCRMC and REMSA attend and participate in Child Death Review 2. REMSA participates in Domestic Violence/ Elder abuse team	Met- REMSA continues to participate in Child Death review team, and Domestic violence/ Elder abuse team. REMSA works with community agencies for water safety education/ drowning prevention activities. REMSA published the 2015 Trauma Report; this will support Hospitals, agencies, and Injury Prevention Programs to education on county specific injuries.
PTC Contract	No	1. RCRMC has been a designated PTC without a contract in place	Met- RUHS- MC PTC contract is currently in the final stages prior to approval.
Trauma System Goals 2015	Goal met (Y/N)	Status as of 2016 update	
Review identified trauma cases on a quarterly schedule	Yes	REMSA participates in a regional TAC meeting with ICEMA to peer review trauma cases	
Become more involved with continuing education	Yes	REMSA participated in 1 active shooter drill and 1 MCI event. Trauma Coordinator has attended 2 ATLS courses in collaboration with RUHS-MC	
Develop trauma policies that are data driven and evidence based	Yes	Trauma policy for TXA has been updated as an outcome of the trial study statistics	

Participate in Trial Studies with other LEMSA's	Yes	REMSA is one year into the trial study with ICEMA, Alameda County and Napa county.	Riverside County has 93 appropriate administrations of TXA June 1, 2015 – June 30, 2016.
Encourage all four trauma centers to have ACS verification	No	RUHS-MC continues to hold ACS Level II ACS site consultations for DRMC, IVMC, and RCH in 2017 and early 2018. Once consultation complete, ACS verification will be written into contract	

Changes to Implementation Schedule

There are no changes to report at this time.

System Performance Improvement

System wide Performance Improvement (PI) continues to be monitored via the LEMSA Trauma PI plan in addition to each trauma center internal PI plan. REMSA included components of the current ACS resource manual in the system wide PI plan.

Trauma patient care is monitored through each trauma center's internal trauma committee and the Regional LEMSA TAC. REMSA's PI plan is updated annually and monitored monthly with 100% compliance from the trauma centers. (Attachment E: 2017 REMSA PI Plan). Cases needing a higher level of peer review are discussed at TAC. TAC audit filters are updated to include any system trends, ACS- COT changes and/or individual requests in the Trauma Program Managers meeting. (Attachment F: Trauma Audit Committee TAC Schedule). Peer review cases are rotated through all seven participating trauma centers within both counties on an alternating schedule.

The 2016/ 2017 Peer Review Indicators for TAC (No change from 2015):

1. Unanticipated mortality needing third level review
2. All IFT's with ISS > 15, with referral hospital door-in to door – out time > 30 min (was this missed Trauma Continuation of Care?)
3. All ground level falls (ICD 885.9), > 65 y.o. on anticoagulants with unanticipated mortality and/or complications identified.
4. All patients receiving Tranexamic Acid (TXA) in the pre-hospital setting, both in San Bernardino and Riverside Counties.

Attachment A- Adult Trauma Center Standards

	Riverside County Adult Trauma Center Standards California Code of Regulations Title 22, Chapter 7- Trauma Care System				
	TRAUMA CENTER STANDARDS	**Level**	**Level**	**Level**	**Level**
	E = Essential (Title 22), D = Desired (Title 22), R=REMSA required	**I**	**II**	**III**	**IV**
1	**Institution/ Organization:**				
2	The Joint Commission (TJC) Accreditation	E	E	E	E
3	Licensed hospital in the State of California	E	E	E	E
4	Basic or comprehensive emergency services with special permits	E	E	E	E
5	1. A minimum of 1200 trauma program hospital admissions, or 2. A minimum of 240 trauma patients per year whose Injury Severity Score (ISS) is >15, or 3. An average of 35 trauma patients (with an ISS of >15) per trauma program surgeon per year	E			
6	A trauma research program	E			
7	An Accreditation Council on Graduate Medical Education (ACGME) approved surgical residency program	E			
8	**Trauma Program Medical Director:**	E	E	E	E
9	Board Certified Surgeon	E	E		
10	Qualified Surgical Specialist (*Level IV may be a non-surgical qualified specialist)			E	* E
11	Must maintain trauma- related extramural continuing medical education (16 hrs. annually or 48 hrs. in 3 years)	R	R	R	R
12	Current ATLS certification	R	R	R	R
13	Responsibilities include but not limited to:				
14	Recommending trauma team physician privileges	E	E	E	E
15	Working with nursing and administration to support needs of trauma patients	E	E	E	E
16	Developing trauma treatment protocols	E	E	E	E
17	Determining appropriate equipment and supplies	E	E	D	D
18	Ensuring development of policies/procedures for domestic violence, elder/child abuse/neglect	E	E	D	D
19	Having authority and accountability for QI peer review process	E	E	E	E
20	Correcting deficiencies in trauma care or excluding from trauma call those team members who no longer meet standards	E	E	E	E
21	Coordinating with local and State EMS agencies (level IV with local EMS agency only)	E	E	R	R

22	Coordinating pediatric trauma care with other hospitals and professional services	E	E	R	R
23	Assisting with the coordination of budgetary processes for trauma program	E	E	E	E
24	Identifying representatives from neurosurgery, orthopaedic surgery, emergency medicine, pediatrics and other appropriate disciplines to assist in identifying physicians from their disciplines who are qualified to be members of the trauma program	E	E	E	R
25	Using the expertise of representatives from neurosurgery, orthopaedics, emergency medicine, pediatrics and other appropriate disciplines	E	E	R	R
26	**Trauma Program Manager**	E	E	E	E
27	Qualifications are:				
28	Registered Nurse	E	E	E	E
29	Dedicated FTE; Current in TNCC or ATCN; Completes 16 hr. of trauma education/yr.	R	R	R	R
30	Provide evidence of educational preparation and clinical experience in the care of adult and/or pediatric trauma patient and administrative ability	E	E	E	E
31	Responsibilities include but not limited to:				
32	Organizing services and systems necessary for multidisciplinary approach to the care of the injured patient	E	E	E	E
33	Coordinating day-to-day clinical process and performance improvement of nursing and ancillary personnel	E	E	E	E
34	Collaborating with trauma program medical director to carry out educational, clinical, research, administrative and outreach activities of the trauma program	E	E	E	E
35	**Trauma Service**	E	E	E	E
36	Implementation of requirements as specified under Title 22 Chapter 7 and provide for coordination with the local EMS agency	E	E	E	E
37	**Trauma Team**				
38	A multidisciplinary team responsible for the initial resuscitation and management of the trauma patient	E	E	E	E
39	Emergency Department/Trauma Team Nursing Staff				
40	Registered Nurse	R	R	R	R
41	Expertise in adult and pediatric trauma care	E	E	E	R
42	Maintains TNCC or ATCN	R	R	R	R
43	6 hr./yr. of trauma nursing education	R	R	R	R
44	ENPC (optional) or PALS	R	R	R	R
45	Responsibilities include but not limited to:				
46	Capability of providing *immediate* initial resuscitation/management of the trauma patient	E	E		

47	Capability of providing *prompt* assessment, resuscitation and stabilization to trauma patients			E	
48	Ability to provide treatment or arrange for transportation to higher level trauma center		E	E	E
49	**Trauma Data/Registry**				
50	Trauma registrar FTE requirements as per the most current ACS recommendations	R	R	R	R
51	**Surgical Department (s), Division (s), Service (s), Sections (s)**				
52	Which include at least the following surgical specialties which are staffed by qualified specialists:				
53	General	E	E	E	
54	Neurologic (*May be provided through transfer agreement)	E	E	E*	
55	Obstetric/Gynecologic	E	E		
56	Ophthalmologic	E	E		
57	Oral or maxillofacial or head and neck	E	E		
58	Orthopaedic	E	E	E	
59	Plastic	E	E		
60	Urologic	E	E		
61	**Non-surgical Department (s), Division (s), Service (s), Section (s):**				
62	Which include at least the following non-surgical specialties which are staffed by qualified specialists:				
63	Anesthesiology	E	E	E	
64	Internal Medicine	E	E		
65	Pathology	E	E		
66	Psychiatry	E	E		
67	Radiology	E	E		
68	Emergency Medicine, immediately available	E	E	E	E
69	**Qualified Surgical Specialist (s):**available as follows:				
70	General Surgeon:	E	E	E	
71	Capable of evaluating and treating adult and pediatric trauma patients shall be immediately available for trauma team activation and promptly available for consultation	E	E		
72	Other Qualified Surgical Specialists on-call and *promptly* available:				
73	Neurologic (*Level III - May be provided through written transfer agreement)	E	E	*E	
74	Obstetric/Gynecologic	E	E		
75	Ophthalmologic	E	E		
76	Oral or maxillofacial or head and neck	E	E		
77	Orthopaedic	E	E	E	

78	Plastic	E	E		
79	Reimplantation/microsurgery capability (may be provided through written transfer agreement)	E	E		
80	Urologic	E	E		
81	Residency Coverage:				
82	Surgical Specialists' requirements may be fulfilled by supervised senior residents	E	E		
83	Senior Resident shall:				
84	Be capable of assessing emergent situations in their respective specialty, and	E	E		
85	Be able to provide overall control and surgical leadership including surgical care if needed	E	E		
86	A staff trauma surgeon/surgeon with experience in trauma care shall be on-call and *promptly* available	E	E		
87	A staff trauma surgeon/surgeon with experience in trauma care shall be advised of all trauma patient admissions, participate in major therapeutic decisions, and be present in the ED for major resuscitations and in the OR for all trauma operative procedures	E	E		
88	Trauma Team Activation: Tiered activations are monitored and reviewed through the Performance Improvement (PI) process for accuracy of under/over triage. "Immediate response" is defined as 15 mins, 80% of the time; "Promptly" is defined as 30 mins, 80% of the time	R	R	R	R
89	Surgical Consultations:				
90	Available for consultation or consultation and transfer agreements for adult and pediatric trauma patients **(in-house or through written agreements)** **REMSA note: EMTALA supersedes "written agreements" for higher level of care from the ED.*				
91	Burn Care	E	E	E	E
92	Cardiothoracic - On-Call and *Promptly available*	E			
93	Cardiothoracic		E	E	E
94	Pediatric - On-Call and *Promptly available*	E			
95	Pediatrics		E	E	E
96	Reimplantation/microsurgery	E	E	E	E
97	Spinal cord injury	E	E	E	E
98	**Qualified Non-Surgical Specialist (Applies to all specialties)**				
99	*Residency Coverage*				
100	Emergency Medicine and Anesthesiology Specialists' requirements may be fulfilled by supervised senior residents.	E	E		
101	Senior Resident must be capable of assessing emergent situations in their respective specialty and initiating treatment	E	E		

102	Supervising physician with experience in trauma care shall be on-call and promptly available	E	E		
103	Supervising qualified specialists shall be advised of all trauma patient admissions, participate in major therapeutic decisions, and be present in the ED for major resuscitations (Anesthesiologists will be in the OR for all trauma operative procedure)	E	E		
104	Emergency Medicine:				
105	In-house and *Immediately Available*	E	E	E	E
106	Board certified or recognized qualified specialists in emergency medicine	E	E		
107	ATLS Certification: Required for emergency medicine physicians boarded in other specialties	E	E	E	E
108	Anesthesiology				
109	In-house 24 hours/day and *Immediately Available*	E			
110	On-call and *promptly available* with a mechanism to ensure presence in the OR when the patient arrives.		E	E	
111	Senior Resident or CRNA in-house supervised by Staff Anesthesiologist are *promptly* available at all times and present for all operations	E	E	E	
112	Radiology				
113	On Call and *Promptly Available*	E	E		
114	Other Non-Surgical Specialists Available for consultation:				
115	Cardiology	E	E		
116	Gastroenterology	E	E		
117	Hematology	E	E		
118	Infectious Diseases	E	E		
119	Internal Medicine	E	E		
120	Nephrology	E	E		
121	Neurology	E	E		
122	Pathology	E	E		
123	Pulmonary Medicine	E	E		
124	**Service Capabilities:**				
125	Radiological Service				
126	Radiological technician *immediately available* and capable of performing plain film and computed tomography	E	E		
127	Shall have a radiological technician *promptly available*			E	E
128	Angiography and ultrasound services shall be *promptly* available	E	E		
129	Clinical Laboratory Service				
130	Comprehensive blood bank or access to community central blood bank	E	E	E	E
131	Clinical laboratory services *immediately* available	E	E		

132	Clinical laboratory services *promptly* available			E	E
133	Surgical Services				
134	Shall have an operating suite available or being utilized for trauma patients and has:	E	E	E	
135	A surgical service that has at least the following: (1) operating staff who are immediately available unless operating on trauma patients and back-up personnel who are *promptly* available.	E			
136	Operating staff, *promptly* available, and back-up staff who are promptly available unless operating on trauma patients. *Back up staff not required		E	*E	
137	Appropriate surgical equipment and supplies as determined by the trauma program medical director	E	E		
138	Appropriate surgical equipment and supplies requirements which have been approved by the local EMS agency			E	
139	Cardiopulmonary bypass equipment	E			
140	Operating microscope	E			
141	**Basic or comprehensive emergency services with special permits**				
142	Designate an emergency physician to be member of trauma team	E	E	E	E
143	Provide emergency services to adult and pediatric patients	E	E	E	E
144	Personnel knowledgeable in the treatment of adult and pediatric trauma	E	E	E	E
145	Designated trauma resuscitation area physically separated from other patient care areas and of adequate size to accommodate multi-system injured patient and equipment	R	R	R	R
146	Appropriate equipment and supplies for adult and pediatric patients as approved by the director of emergency medicine in collaboration with the trauma program medical director	E	E	E	E
147	Key controlled elevator, where necessary for immediate access between trauma resuscitation area and helipad, OR or radiology	R	R	R	R
148	**In addition to the special permit licensing services, Trauma Centers shall have the following approved supplemental services:**				
149	Intensive Care Service				
150	Special permit licensing ICU service	E	E		
151	Qualified specialist in-house 24 hours/day *and immediately* available to care for the trauma ICU patient	E			
152	Qualified specialist *promptly* available to care for trauma patients in the ICU		E	E	

153	RN's caring for trauma patients must have completed TNCC, ATCN, TCAR (or REMSA approved course can substitute for TCAR) and have 6 hrs./2yr of trauma nursing education	R	R	R	R
154	Qualified specialist may be a resident with 2 years of training who is supervised by staff intensivist or attending surgeon who participates in all critical decision making	E	E	E	
155	Qualified specialist (above) shall be a member of the trauma team	E	E	E	
156	Appropriate equipment and supplies determined by physician responsible for intensive care service and the trauma program medical director.	E	E	E	
157	Burn Center - in house or transfer agreement	E	E	E	E
158	Physical Therapy Service:				
159	Personnel trained in physical therapy	E	E		
160	Equipped for acute care of critically injured patient	E	E		
161	Rehabilitation Center:				
162	Rehabilitation services shall be in-house or may be provided by written transfer agreement with a rehabilitation center	E	E	E	
163	Personnel trained in rehabilitation care	E	E		
164	Equipped for acute care of critically injured patient	E	E		
165	Respiratory Care Service:	E	E		
166	Personnel trained in respiratory therapy	E	E		
167	Equipped for acute care of critically injured patient	E	E		
168	Acute Hemodialysis Capability	E	E		
169	Occupational Therapy Service:	E	E		
170	Personnel trained in Occupational therapy	E	E		
171	Equipped for acute care of critically injured patient	E	E		
172	Speech Therapy Service	E	E		
173	Personnel trained in speech therapy	E	E		
174	Equipped for acute care of critically injured patient	E	E		
175	Social Service	E	E		
176	**Trauma Centers shall have the following services and programs (special license or permit not required)**				
177	Pediatric Service providing in-house pediatric trauma care shall have:				
178	PICU approved by CCS or a written transfer agreement with an approved PICU	E	E		
179	Hospitals without a PICU shall establish and utilize written criteria for consultation and transfer of pediatric patients needing intensive care	E	E	E	E
180	A multidisciplinary team to manage child abuse and neglect	E	E		

181	Acute spinal cord injury - This service may be provided through in-house or written transfer agreement	E	E	E	E
182	Organ Donor Protocol as described in Div.7, Ch. 3.5 of CHSC	E	E		
183	**Outreach Program to include:**				
184	Telephone and on-site physician consultations with physicians in the community and outlying areas	E	E	E	E
185	Trauma prevention for general public	E	E	E	E
186	**Continuing Education** in Trauma Care for:				
187	Provide ongoing education requirements as per the most current ACS recommendations for:	E	E	E	E
188	Staff physicians	E	E	E	E
189	Staff nurses	E	E	E	E
190	Staff allied health personnel	E	E	E	E
191	EMS personnel	E	E	E	E
192	Other community physicians and health care personnel	E	E	E	E
193	**Quality Improvement:**				
194	Must have a quality improvement process in place which includes structure, process and outcome evaluations	E	E	E	E
195	Must have improvement process in place to identify root causes of problems	E	E	E	E
196	Must have interventions to reduce or eliminate the causes	E	E	E	E
197	Must take steps/actions to correct the problems identified	E	E	E	E
198	*In addition the process shall include:*				
199	A detailed audit of all trauma -related deaths, major complications and transfers (including interfacility transfer)	E	E	E	E
200	A multidisciplinary trauma peer review committee that includes all members of the trauma team	E	E	E	E
201	Participation in the trauma data management system	E	E	E	E
202	Participation in the local EMS agency trauma evaluation committee	E	E	E	E
203	A written system in place for patients, parents of minor children who are patients, legal guardians of children who are patients, and/or primary caretakers of children who are patients to provide input and feedback to hospital staff regarding the care provided to the child	E	E	E	E
204	**Interfacility transfer of trauma patients:**				
205	Patients may be transferred between and from trauma centers providing that: (REMSA note: EMTALA supersedes Title 22 for higher level of care and the need for written transfer agreements; however, repatriation agreements should be in writing.)				
206	Transfers shall be medically prudent as determined by the trauma physician of record	E	E	E	E

207	Shall be in accordance with the local EMS Agency interfaculty transfer policies	E	E	E	E
208	Hospitals shall have written transfer agreements exists with receiving trauma centers	E	E	E	E
209	Hospital shall develop written criteria for consultation and transfer of patients needing a higher level of care	E	E	E	E
210	Hospitals which have repatriated trauma patients from a designated trauma center will provide the trauma center with all required information for the trauma registry, as specified by local EMS policy	E	E	E	E
211	Hospitals receiving trauma patients shall participate in system and trauma center quality improvement activities for those trauma patients they have transferred	E	E	E	E

Attachment B: Pediatric Trauma Center Standards

	Riverside County Pediatric Trauma Center Standards California Code of Regulations Title 22, Chapter 7- Trauma Care System		
	PEDIATRIC TRAUMA CENTER STANDARDS	**Level**	**Level**
	E = Essential (Title 22), D = Desired (Title 22), R=REMSA required	**I**	**II**
1	**Institution/ Organization**		
2	The Joint Commission (TJC) Accreditation	E	E
3	Licensed hospital in the State of California	E	E
4	Basic or comprehensive emergency services with special permits	E	E
5	Annually admit 100 or more injured children younger than 15 years		R
6	**Pediatric Trauma Program Medical Director**	E	E
7	Board Certified Surgeon with experience in pediatric trauma care (may also be the Trauma Program Medical Director for Adult Trauma Services	E	E
8	Must maintain pediatric trauma- related extramural continuing medical education (16 hrs. annually or 48 hrs. in 3 years)	R	R
9	Current ATLS certification	R	R
10	Responsibilities include but not limited to:		
11	Recommending trauma team physician privileges	E	E
12	Working with nursing and administration to support needs of pediatric trauma patients	E	E
13	Developing pediatric trauma treatment protocols	E	E
14	Determining appropriate equipment and supplies for pediatric trauma care	E	E
15	Ensuring development of policies/procedures for domestic violence, elder/child abuse/neglect	E	E
16	Having authority and accountability for pediatric QI peer review process	E	E
17	Correcting deficiencies in pediatric trauma care or excluding from trauma call those team members who no longer meet standards	E	E
18	Coordinating with local and State EMS agencies	E	E
19	Coordinating pediatric trauma care with other hospitals and professional services	E	E
20	Assisting with the coordination of budgetary processes for trauma program	E	E

21	Identifying representatives from neurosurgery, orthopaedic surgery, emergency medicine, pediatrics and other appropriate disciplines to assist in identifying physicians from their disciplines who have pediatric trauma care experience and who are qualified to be members of the pediatric trauma program	E	E
22	**Pediatric Trauma Nurse Coordinator/ Manager**	E	E
23	Qualifications are:		
24	Registered Nurse, may also be Adult TPM (for Level II)	R	R
25	Shall maintain verification of TNCC or equivalent and ENPC (This new requirement will have a one year time frame for compliance)	R	R
26	Completes 6 hrs. annually of pediatric trauma related education	R	R
27	Responsibilities include but not limited to:		
28	Organizing services and systems necessary for multidisciplinary approach to the care of the injured child	E	E
29	Coordinating day-to-day clinical process and performance improvement as it pertains to pediatric trauma nursing and ancillary personnel	E	E
30	Collaborating with the pediatric trauma program medical director in carrying out the educational, clinical, research, administrative and outreach activities of the pediatric trauma program	E	E
31	**Pediatric Trauma Services**	E	E
32	Implementation of requirements as specified under Title 22 Chapter 7 and provide for coordination with the local EMS agency	E	E
33	Trauma Team Activation: Tiered activations are monitored and reviewed through the Performance Improvement (PI) process for accuracy of under/over triage. "Immediate response" is defined as 15 mins, 80% of the time; "Promptly" is defined as 30 mins, 80% of the time.	R	R
34	**Pediatric Trauma Team**		
35	Trauma Nursing Personnel:		
36	Registered Nurse	R	R
37	Shall maintain verification of TNCC or equivalent and ENPC (This new requirement will have a one year time frame for compliance)	R	R
38	6 hrs. minimum annually of pediatric trauma nursing education	R	R
39	A multidisciplinary team responsible for the initial resuscitation and management of the pediatric trauma patient	E	E
40	The pediatric trauma team leader shall be a surgeon with pediatric trauma care experience as defined by the TPD	E	E

41	The remainder of the team shall include physician, nursing and support personnel in sufficient numbers to evaluate, resuscitate, treat and stabilize pediatric trauma patients	E	E
42	Responsibilities include but not limited to:		
43	Capability of providing *immediate* initial resuscitation/management of the trauma patient	E	E
44	Ability to provide treatment or arrange for transportation to higher level trauma center		E
45	**Trauma Data/Registry**		
46	Must have a pediatric trauma registrar	R	R
47	Trauma registrar FTE requirements as per the most current ACS recommendations	R	R
48	**Surgical Departments (s), Division (s), Services (s), Section (s):**		
49	Which include at least the following surgical specialties which are staffed by qualified specialists with pediatric experience:		
50	Neurologic	E	E
51	Obstetric/Gynecologic (may be provided through a written transfer agreement)	E	E
52	Ophthalmologic	E	E
53	Oral or maxillofacial or head and neck	E	E
54	Orthopaedic	E	E
55	Pediatric	E	E
56	Plastic	E	E
57	Urologic	E	E
58	Microsurgery/ reimplantation (may be provided through a written transfer agreement)	E	E
59	**Non-surgical Department (s), Divisions(s), Service (s), Section (s):**		
60	Which include at least the following non-surgical specialties which are staffed by qualified specialists with pediatric experience:		
61	Anesthesiology	E	E
62	Cardiology	E	E
63	Critical care	E	E
64	Emergency Medicine	E	E
65	Gastroenterology	E	E
66	General Pediatrics	E	E
67	Hematology/ Oncology	E	E
68	Infectious Disease	E	E
69	Neonatology	E	E
70	Nephrology	E	E
71	Neurology	E	E
72	Pathology	E	E
73	Psychiatry	E	E

74	Pulmonology	E	E
75	Radiology	E	E
76	Rehabilitation/ Physical medicine (may be provided through a written transfer agreement with a pediatric rehabilitation center)	E	E
77	An emergency department, division, service, or section staffed with qualified specialists in emergency medicine with pediatric trauma experience, who are immediately available	E	E
78	**Qualified Surgical Specialist (s)/ Specialty Availability:**		
79	Pediatric Surgeon:	E	E
80	Capable of evaluating and treating pediatric trauma patients shall be *immediately* available for trauma team activation and *promptly* available for consultation, fulfilled by:	E	E
81	1. a staff pediatric surgeon with experience in pediatric trauma care; *or* 2. a staff trauma surgeon with experience in pediatric trauma care; *or* 3. a senior general surgical resident who has completed at least three clinical years of surgical residency training	E	E
82	Senior Resident shall:		
83	1. Be able to provide overall control and surgical leadership necessary for the care of the patient, including initiating surgical care; *and* 2. A staff pediatric surgeon with experience in pediatric trauma care or a staff trauma surgeon with experience in pediatric trauma care shall be on-call *and* 3. A staff pediatric surgeon or a staff surgeon with experience in pediatric trauma care shall participate in major therapeutic decisions, be advised of all pediatric trauma patient admissions and be present in the ED for major resuscitations and in the OR for all trauma operative procedures	E	E
84	Pediatric surgeon must participate in the PIPS process	R	R
85	**Other Qualified Surgical Specialists on-call and *promptly* available with pediatric experience:**		
86	Neurologic	E	E
87	Obstetric/Gynecologic (may be provided through a written transfer agreement)	E	E
88	Ophthalmologic	E	E
89	Oral or maxillofacial or head and neck	E	E
90	Orthopaedic	E	E
91	Plastic	E	E
92	Reimplantation/microsurgery capability (may be provided through written transfer agreement)	E	E

93	Urologic	E	E
94	Requirements may be fulfilled by supervised senior residents as defined in Title 22 Chapter 7 who are capable of assessing emergent situations in their respective specialties. When a senior resident is the responsible surgeon:	E	E
95	Senior Resident shall:		
96	1. Be able to provide overall control and surgical leadership necessary for the care of the patient, including initiating surgical care; *and* 2. A staff trauma surgeon with experience in pediatric trauma care or a staff surgeon with experience in pediatric trauma care shall be on-call *and* 3. A staff trauma surgeon or a staff surgeon with experience in trauma care shall participate in major therapeutic decisions, be advised of all trauma patient admissions, participate in major therapeutic decisions, be present in the ED for major resuscitations and in the OR for all trauma operative procedures	E	E
97	Available for consultation or consultation and transfer agreements for pediatric trauma patients requiring the following surgical services;	E	E
98	Burns;	E	E
99	Cardiothoracic; and	E	E
100	Spinal cord injury	E	E
101	**Qualified Non-Surgical Specialist (Applies to all specialties)**		
102	Emergency Medicine:		
103	In-house and *Immediately* Available at all times	E	E
104	1. May be fulfilled by a qualified specialist in pediatric emergency medicine; or 2. qualified specialist in emergency medicine with pediatric experience; or 3. a subspecialty resident in pediatric emergency medicine who has completed at least one year of subspecialty residency education in pediatric emergency medicine	E	E
105	The senior resident shall be capable of assessing emergency situations in trauma patients and of providing for initial resuscitation	E	E
106	(Board certified Emergency medicine physicians or pediatric emergency medicine don't require ATLS)	E	E
107	ATLS Certification: Required for emergency medicine physicians boarded in other specialties	E	E
108	When a senior resident is responsible:		
109	a qualified specialist in pediatric emergency medicine, or emergency medicine with pediatric experience shall be *promptly* available; and	E	E

110	the qualified specialist on-call shall be notified of all patients who require resuscitation, operative intervention or ICU admission	E	E
111	Anesthesiology		
112	*Promptly available* with a mechanism to ensure presence in the OR when the patient arrives.		E
113	Senior Resident or CRNA with pediatric experience capable of assessing emergent situations in pediatric trauma patients	E	E
114	Staff Anesthesiologist with pediatric experience on-call shall be advised, *promptly* available at all times and present for all operations	E	E
115	Radiology		
116	*Promptly Available*	E	E
117	Available for consultation or provided through transfer agreement, specialists with pediatric experience:		
118	Adolescent medicine	E	E
119	Child development	E	E
120	Genetics/ dysmorphology	E	E
121	Neuroradiology	E	E
122	Obstetrics	E	E
123	Pediatric allergy and immunology	E	E
124	Pediatric dentistry	E	E
125	Pediatric endocrinology	E	E
126	Pediatric pulmonology; and	E	E
127	Rehabilitation/ Physical medicine	E	E
128	Pediatric critical care, in house and *immediately* available	E	E
129	qualified specialist in pediatric critical care medicine; or qualified specialist in anesthesiology with experience in pediatric critical care	E	E
130	qualified surgeon with expertise in pediatric critical care; or physician who has completed at least two years of residency in pediatrics	E	E
131	When a senior resident is the responsible pediatric critical care physician:	E	E
132	qualified specialist in pediatric critical care medicine or in anesthesiology with experience in pediatric critical care shall be on call and *promptly* available; and	E	E
133	the qualified specialist on call shall be advised about the patients who may require admission to the PICU and shall participate in all major decisions	E	E
134	Qualified specialists with pediatric experience shall be on the hospital staff and available for consultation:		
135	General pediatrics	E	E
136	Mental health	E	E

137	Neonatology	E	E
138	Nephrology	E	E
139	Pathology	E	E
140	Pediatric cardiology	E	E
141	Pediatric gastroenterology	E	E
142	Pediatric hematology/ oncology	E	E
143	Pediatric infectious disease	E	E
144	Pediatric neurology; and	E	E
145	Pediatric radiology	E	E
146	**Service Capabilities:**		
147	Radiological Service		
148	Radiological technician in-house *immediately available* for plain film and computed tomography	E	E
149	Angiography and ultrasound services shall be *promptly* available	E	E
150	Clinical Laboratory Service		
151	Comprehensive blood bank or access to community central blood bank	E	E
152	Clinical laboratory services *immediately* available	E	E
153	Surgical Services- available suite for trauma patient 24/7	E	E
154	Operating staff *promptly* available 24/7	E	E
155	Back up staff who are *promptly* available	E	E
156	Age specific surgical equipment and supplies as determined by the pediatric trauma program medical director	E	E
157	Nursing services staffed by qualified licensed nurses competent in caring for the ill and injured child	E	E
158	**Basic or comprehensive emergency services with special permits**		
159	Designate an emergency physician to be member of the pediatric trauma team	E	E
160	Provide emergency services to pediatric patients	E	E
161	Age appropriate pediatric equipment and supplies	E	E
162	Designated trauma resuscitation area physically separated from other patient care areas and of adequate size to accommodate multi-system injured patient and equipment	R	R
163	Key controlled elevator, where necessary for immediate access between trauma resuscitation area and helipad, OR or radiology.	R	R
164	**In addition to the special permit licensing services, Trauma Centers shall have the following approved supplemental services:**		
165	Burn Center - in house or transfer agreement	E	E
166	Physical Therapy Service:		
167	Personnel trained in pediatric physical therapy	E	E

168	Equipped for acute care of critically injured patient	E	E
169	Rehabilitation Center:		
170	In-house or may be provided by written transfer agreement with a rehabilitation center	E	E
171	Personnel trained in rehabilitation care	E	E
172	Respiratory Care Service:		
173	Personnel trained in respiratory therapy	E	E
174	Equipped for acute care of critically injured child	E	E
175	Acute Hemodialysis Capability	E	E
176	Occupational Therapy Service:		
177	Personnel trained in Pediatric Occupational therapy	E	E
178	Equipped for acute care of critically injured child	E	E
179	Speech Therapy Service:		
180	Personnel trained in pediatric speech therapy	E	E
181	Equipped for acute care of critically injured child	E	E
182	Social Service	E	E
183	**Trauma Centers shall have the following services and programs (special license or permit not required)**		
184	Pediatric Service providing in-house pediatric trauma care shall have:		
185	PICU approved by CCS	E	E
186	PICU shall have age appropriate equipment and supplies	E	E
187	Pediatric intensivist shall be *promptly* available	E	E
188	Pediatric intensivist shall be a member of the trauma team	E	E
189	RN's caring for trauma patients must have completed TNCC, ATCN, TCAR (or REMSA approved course can substitute for TCAR) and have 6 hrs./2yr of trauma nursing education	R	R
190	Acute spinal cord injury - in-house or written transfer agreement with a rehabilitation center	E	E
191	Organ Donor Protocol as described in Div.7, Chapter 3.5 of the CA HS Code	E	E
192	**Outreach Program to include:**		
193	Telephone and on-site physician consultations with physicians in the community and outlying areas	E	E
194	Trauma prevention for general public	E	E
195	Public education and illness/ injury prevention education	E	E
196	Written interfacility transfer agreements with referring and specialty hospitals	E	E
197	Policies and procedures to assure appropriate care and coordination of services for critically ill and injured children	R	R
198	**Continuing Education** in Pediatric Trauma Care for:		
199	Staff physicians	E	E
200	Staff nurses	E	E

201	Staff allied health personnel	E	E
202	EMS personnel	E	E
203	Other community physicians and health care personnel	E	E
204	In addition to a special permit licensing service, a pediatric trauma center shall have:		
205	Suspected child abuse and neglect (SCAN) team	E	E
206	Aeromedical transport plan with designated landing site	E	E
207	Child Life program	E	E
208	**Quality Improvement**		
209	Should be benchmarked with national pediatric trauma data (NTDB or TQIP)	R	R
210	Must have a pediatric trauma performance improvement and patient safety (PIPS) program	R	R
211	Multidisciplinary trauma peer review committee	E	E
212	Participation in trauma system data system management	E	E
213	Participation in local EMS trauma evaluation committee	E	E
214	Written system in place for patients, parents of minor children who are patients, legal guardian (s) of children who are patients, and/or primary caretaker (s) of children who are patients to provide input and feedback to hospital staff regarding the care provided to the child	E	E
215	Follow applicable provisions of Evidence Code Section 1157.7 to ensure confidentiality	E	E

Attachment C: REMSA Patient Registry Data Elements

1. DEMOGRAPHIC SECTION	**OLD DATABASE**	**REMSA**	**NTDB**	**CEMSIS**	**PG#**
Record Created Date / Time					3
Record Created By					4
Initial Location		~~**D-01**~~			5
Facility		**D-02**			6
Trauma Registry Number	**X**	**D-03**			7
Patient Arrival Date	**X**	**D-04**			8
Patient Arrival Time	**X**	**D-05**			9
Medical Record Number	**X**	~~**D-06**~~			10
Account Number	**X**				11
Patient Name	**X**	**D-07**		~~**CA-04,05**~~	12
Patient Origin		~~**D-08**~~			13
Inclusion Source		~~**D-09**~~			14
NTDB	**X**				15
REMSA		**D-10**			16
Name / Alias		**D-11**			17
SSN (last four digits)	**X**	**D-12**		~~**CA-06**~~	18
Date of Birth	**X**	**D-13**	**D-07**	**D-07**	19
Age	**X**	**D-14**	**D-08**	**D-08**	20
Age Units	**X**	**D-15**	**D-09**	**D-09**	21
Gender	**X**	**D-16**	**D-12**	**D-12**	22
Race	**X**	**D-17**	**D-10**	**D-10**	23
Ethnicity	**X**	**D-18**	**D-11**	**D-11**	24
Patient Home Zip Code	**X**	**D-19**	**D-01**	**D-01**	25
Patient's Home Postal Code		**D-19**	**D-01**	**D-01**	26
Homeless Status		~~**D-20**~~			27
Patient Home Address	**X**	~~**D-21**~~			28
Patient Home City	**X**	**D-22**	**D-05**	**D-05**	29
Patient Home State	**X**	**D-23**	**D-03**	**D-03**	30
Patient Home County	**X**	**D-24**	**D-04**	**D-04**	31
1. DEMOGRAPHIC SECTION (con't)	OLD DATABASE	REMSA	NTDB	CEMSIS	PG#

Patient Home Country	**X**	**D-25**	**D-02**	**D-02**	32
Patient Alternate Home Address		**D-26**	**D-06**	**D-06**	33
Patient Telephone					34
Relative / Guardian Relationship to Patient					35
Guardian to Patient					36
Relative / Guardian Name					37
Relative / Guardian Address Info					38
Relative / Guardian Home Zip Code					39
Relative / Guardian Home Address					40
Relative / Guardian Home City					41
Relative / Guardian Home State					42
Relative / Guardian Home County					43
Relative / Guardian Home Country					44
Relative / Guardian Telephone					45
Demographic Section Notes	**X**				46
2. INJURY INFORMATION SECTION					**47**
Injury Date	**X**	**I-01**	**I-01**	**I-01**	49
Injury Time	**X**	**I-02**	**02**	**02**	50
Place of Injury E849 **REMSA requires only ICD10 codes for 2016 data**	**X**	**~~I-03~~**	**I-08**	**I-08**	51
Place of Injury ICD10		**I-04**	**I-09**	**I-17**	52
Specify Memo Field	**X**	**~~I-05~~**			53
Incident Location Zip Code	**X**	**I-06**	**I-12**	**I-09**	54
Incident Location Postal Code		**I-06**	**I-12**	**I-09**	55
Incident Location Address	**X**	**~~I-07~~**			56
Incident Location City	**X**	**I-08**	**I-16**	**I-13**	57
Incident Location State	**X**	**I-09**	**I-14**	**I-11**	58
Incident Location County	**X**	**I-10**	**I-15**	**I-12**	59
Incident Location Country	**X**	**I-11**	**I-13**	**I-10**	60
2. INJURY INFORMATION SECTION (con't)	**OLD DATABASE**	**REMSA**	**NTDB**	**CEMSIS**	**PG#**
Work Related	**X**	**I-12**	**I-03**	**I-03**	61
Occupation	**X**	**I-14**	**I-05**	**I-05**	62
Occupational Industry	**X**	**I-15**	**I-04**	**I-04**	63

Domestic Violence		~~I-13~~			64
Report of Physical Abuse		**I-36**	**I-20**	**I-18**	65
Investigation of Physical Abuse		**I-37**	**I-21**	**I-19**	66
Restraints	**X**	**I-16**	**I-17**	**I-14**	67
Airbag Deployment	**X**	**I-17**	**I-19**	**I-16**	68
Child Specific Restraints	**X**	**I-18**	**I-18**	**I-15**	66
Equipment	**X**	**I-19**	**I-17**	**I-14**	70
Primary E-Code – ICD-9 **REMSA requires only ICD10 codes for 2016 data**	**X**	~~I-20~~	**I-06**	**I-06**	71
Secondary E-Code – ICD-9 **REMSA requires only ICD10 codes for 2016 data**	**X**	~~I-21~~	**I-10**	**I-08**	72
Tertiary E-Codes – ICD-9 **REMSA requires only ICD10 codes for 2016 data**		~~I-22~~			73
Primary E-Code ICD-10 **REMSA requires only ICD10 codes for 2016 data**		**I-32**	**I-07**	**I-20**	74
Secondary E-Code ICD-10 **REMSA requires only ICD10 codes for 2016 data**		**I-33**	**I-11**	**I-21**	75
Tertiary E-Codes ICD-10 **REMSA requires only ICD10 codes for 2016 data**		**I-34**			76
Cause of Injury Memo Field	**X**	~~I-23~~			77
Position in Vehicle		**I-24**			78
Impact Location / Other Impact Location		**I-25**			79
Injury Type	**X**	**I-26**			80
Activity E-Code **REMSA requires only ICD10 codes for 2016 data**		**I-27**			81
Alcohol Involvement REMSA requires only ICD10 codes for 2016 data		**I-36**			82
Specify Activity Memo Field		~~I-28~~			83
Injury Mechanism		**I-29**			84
Disaster Casualty		**I-30**			85
Casualty Event		**I-31**			86
Injury Section Notes	**X**				87
3. PRE-HOSPITAL SECTION	**OLD DATABASE**	**REMSA**	**NTDB**	**CEMSIS**	**89**
POV / Walk-In	**X**	**P-01**	**P-07**	**P-07**	91
Inclusion Source		~~D-09~~			92
Extrication		**P-02**			93
Extrication Time		**P-03**			94
Fluid Amount		**P-04**			95
Trauma Alert Called by EMS Date		**P-05**			96

Trauma Alert Called by EMS Time		**P-06**			97
Transport Mode	**X**	**P-07**	**P-07**	**P-07**	98
Transport Mode - Additional (Other)	**X**	**P-08**	**P-08**	**P-08**	99
Transport		**P-09**			100
Agency ID Number		**P-10**			101
Agency Unit		**P-11**			102
Role		**P-12**			103
Scene EMS Report	**X**	**P-13**			104
PCR Number	**X**	**P-14**			105
EMS Call Dispatched Date	**X**	**P-15**	**P-01**	**P-01**	106
EMS Call Dispatched Time	**X**	**P-16**	**P-02**	**P-02**	107
Rendezvous Pickup Location		**P-17**			108
EMS Unit Arrived at Location Date	**X**	**P-18**	**P-03**	**P-03**	109
EMS Unit Arrived at Location Time	**X**	**P-19**	**P-04**	**P-04**	110
EMS Unit Departed Location Date	**X**	**P-20**	**P-05**	**P-05**	111
EMS Unit Departed Location Time	**X**	**P-21**	**P-06**	**P-06**	112
EMS Unit Arrived Destination Date	**X**	**P-22**			113
EMS Unit Arrived Destination Time	**X**	**P-23**			114
Scene Time Elapsed		**P-24**			115
Transport Time Elapsed		**P-25**			116
Trauma Center Criteria	**X**	**P-26**	**P-18**	**P-18**	117
Vehicular, Pedestrian, Other Risk Injury		**P-26**	**P-19**	**P-19**	118
Prehospital Vitals Recorded Date	**X**	**P-27**			119

3. PRE-HOSPITAL SECTION (con't)	**OLD DATABASE**	**REMSA**	**NTDB**	**CEMSIS**	**PG#**
Prehospital Vitals Recorded Time	**X**	**P-28**			120
Vitals / Procedures / Meds Agency / Unit	**X**	**P-10**			121
Prehospital Paralytic Agents	**X**	**P-29**			122
Prehospital Initial Vitals Sedated	**X**	**P-30**			123
Prehospital Initial Vitals Eye Obstruction	**X**	**P-31**			124
Prehospital Intubated	**X**	**P-32**			125
Prehospital Intubation Method		**P-33**			126
Prehospital Respirations Assisted	**X**	**P-34**			127
Prehospital Respiration Assistance Type		**P-35**			128

Prehospital SBP	X	P-36	P-09	P-09	129
Prehospital DBP		P-37			130
Prehospital Pulse Rate	X	P-38	P-10	P-10	131
Prehospital UnAssist. Resp. Rate	X	P-39	P-11	P-11	132
Prehospital Assist. Resp. Rate	X	P-40			133
Prehospital 02 Sat	X	P-41	P-12	P-12	134
Prehospital Supplemental 02		P-42			135
Prehospital ETCO2					136
Prehospital GCS Eye	X	P-43	P-13	P-13	137
Prehospital GCS Verbal	X	P-44	P-14	P-14	138
Prehospital GCS Motor	X	P-45	P-15	P-15	139
Prehospital GCS Total	X	P-46	P-16	P-16	140
Pediatric Trauma Score - Weight					141
Pediatric Trauma Score - Airway					142
Pediatric Trauma Score - Skeletal					143
Pediatric Trauma Score - Cutaneous					144
Pediatric Trauma Score - Consciousness					145
Pediatric Trauma Score - Pulse Palp					146
Pediatric Trauma Score - Total					147
Prehospital Procedure	X	P-47			148
Prehospital Medication		P-48			149
Prehospital Section Notes	X				150
4. REFERRING FACILITY SECTION	**OLD DATABASE**	**REMSA**	**NTDB**	**CEMSIS**	**151**
Immediate Referring Facility Transfer Status	X	RH-01	P-17	P-17	153
Immediate and Additional Referring Facility	X	RH-02			154
Immediate and Additional Referring Facility Arrival Date	X	RH-03			155
Immediate and Additional Referring Facility Arrival Time	X	RH-04			156
Immediate and Additional Referring Facility Departure Date	X	RH-05			157
Immediate and Additional Referring Facility Departure Time	X	RH-06			158
Immediate and Additional Referring Facility Length of Stay		RH-07			159
Immediate and Additional Referring Facility Mode of Arrival	X	RH-08			160
Immediate and Additional Referring Facility Transfer Rationale	X	RH-09			161

Immediate and Additional Referring Facility Transfer Rationale By		~~RH-10~~			162
Immediate and Additional Referring Facility Late Referral	**X**	**RH-11**			163
Immediate and Additional Referring Facility Vitals Recorded Date		**RH-12**			164
Immediate and Additional Referring Facility Vitals Recorded Time		**RH-13**			165
Immediate and Additional Referring Facility Temperature		**RH-14**			166
Immediate and Additional Referring Facility Temperature Route		**RH-15**			167
Immediate and Additional Referring Facility Temperature Unit		**RH-16**			168
Immediate and Additional Referring Facility Paralytic Agents		**RH-17**			169
Immediate and Additional Referring Facility Sedated		**RH-18**			170
Immediate and Additional Referring Facility Eye Obstruction		**RH-19**			171
Immediate and Additional Referring Facility Intubated		**RH-20**			172
Immediate and Additional Referring Facility Intubation Method		**RH-21**			173
Immediate and Additional Referring Facility Resp. Assisted.		**RH-22**			174
Immediate and Additional Referring Facility Resp. Assistance Type		**RH-23**			175
Immediate and Additional Referring Facility SBP		**RH-24**			176
Immediate and Additional Referring Facility DBP		**RH-25**			177
Immediate and Additional Referring Facility Pulse Rate		**RH-26**			178
4. REFERRING FACILITY SECTION (con't)	**OLD DATABASE**	**REMSA**	**NTDB**	**CEMSIS**	**PG#**
Immediate and Additional Referring Facility UnAssist. Resp. Rate		**RH-27**			179
Immediate and Additional Referring Facility Assist. Resp. Rate		**RH-28**			180
Immediate and Additional Referring Facility 02 Sat		**RH-29**			181
Immediate and Additional Referring Facility Supplemental 02		**RH-30**			182
Immediate and Additional Referring Facility ETCO2					183
Immediate and Additional Referring Facility GCS Eye		**RH-31**			184
Immediate and Additional Referring Facility GCS Verbal		**RH-32**			185
Immediate and Additional Referring Facility GCS Motor		**RH-33**			186
Immediate and Additional Referring Facility GCS Total		**RH-34**			187
Immediate Referring Facility Alcohol Use Indicator		**RH-35**	**ED-17**	**ED-15**	188
Immediate Referring Facility ETOH / BAC Level		**RH-36**			189
Immediate Referring Facility Drug Use Indicator		**RH-37**	**ED-18**	**ED-23**	190
Immediate Referring Facility Tox Screen Results		**RH-38**			191
Immediate Referring Facility Clinician Administered		**RH-39**			192

Immediate Referring Facility If Other Tox Memo Field		**RH-40**			193
Immediate and Additional Referring Facility Procedures / Medications		**RH-02**			194
Immediate and Additional Referring Facility Procedure ~~ICD9~~ **ICD10** Code **REMSA requires only ICD10 codes for 2016**	**X**	**RH-41**			195
Immediate and Additional Referring Facility Procedure Start Date		~~**RH-42**~~			196
Immediate and Additional Referring Facility Procedure Start Time		~~**RH-43**~~			197
Immediate and Additional Referring Facility Procedure Diagnostic Results		**RH-44**			198
Immediate and Additional Referring Facility Procedure Anatomic Region		~~**RH-45**~~			199
Immediate and Additional Referring Facility Procedure Memo Field		~~**RH-46**~~			200
Immediate and Additional Referring Facility Medication Codes		**RH-47**			201
Immediate and Additional Referring Facility Provider Vitals		**RH-02**			202
Intra-facility POV / walk-In		**RH-48**			203
Intra-facility Transport Mode		**RH-49**			204
Intra-facility Transport Mode if Other Memo Field		**RH-50**			205
Intra-facility Transport Agency		**RH-51**			206
Intra-facility Transport Unit		**RH-52**			207

4. REFERRING FACILITY SECTION (con't)	**OLD DATABASE**	**REMSA**	**NTDB**	**CEMSIS**	**PG#**
Intra-facility Transport Role		**RH-53**			208
Intra-facility Transport Scene EMS Report		**RH-54**			209
Intra-facility Transport PCR Number		**RH-55**			210
Intra-facility Transport Call Dispatched Date		**RH-56**			211
Intra-facility Transport Call Dispatched Time		**RH-57**			212
Intra-facility Transport Rendezvous Pick-up Location		**RH-58**			213
Intra-facility Transport Arrived at Location Date		**RH-59**			214
Intra-facility Transport Arrived at Location Time		**RH-60**			215
Intra-facility Transport Departed Location Date		**RH-61**			216
Intra-facility Transport Departed Location Time		**RH-62**			217
Intra-facility Transport Arrived Destination Date		**RH-63**			218
Intra-facility Transport Arrived Destination Time		**RH-64**			219
Intra-facility Transport Scene Time Elapsed. Transport Time Elapsed		**RH-65** **RH-66**			220
Intra-facility Transport Paralytic Agents		**RH-67**			221
Intra-facility Transport Sedated		**RH-68**			222
Intra-facility Transport Eye Obstruction		**RH-69**			223

Intra-facility Transport Intubated		**RH-70**			224
Intra-facility Transport Intubation Method		**RH-71**			225
Intra-facility Transport Resp. Asst.		**RH-72**			226
Intra-facility Transport Resp. Assistance Type		**RH-73**			227
Intra-facility Transport SBP		**RH-74**			228
Intra-facility Transport DBP		**RH-75**			229
Intra-facility Transport Pulse Rate		**RH-76**			230
Intra-facility Transport Unassisted. Resp. Rate		**RH-77**			231
Intra-facility Transport Assist. Resp. Rate		**RH-78**			232
Intra-facility Transport 02 Sat		**RH-79**			233
Intra-facility Transport Supplemental 02		**RH-80**			234
Intra-facility Transport ETCO2					**235**
Intra-facility Transport GCS Eye		**RH-81**			236
4. REFERRING FACILITY SECTION (con't)	**OLD DATABASE**	**REMSA**	**NTDB**	**CEMSIS**	**PG#**
Intra-facility Transport GCS Verbal		**RH-82**			237
Intra-facility Transport GCS Motor		**RH-83**			238
Intra-facility Transport GCS Total		**RH-84**			239
Intra-facility Transport Agency / Transport Unit		**RH-51** **RH-52**			240
Intra-facility Transport Procedure		**RH-85**			241
Intra-facility Transport Medications		**RH-86**			242
Referring Facility Section Notes	**X**				243
5. ED RESUSCITATION SECTION					**245**
Direct Admit Status	**X**	**ED-01**			247
ED Arrival Date	**X**	**ED-02**	**ED-01**	**ED-01**	248
ED Arrival Time	**X**	**ED-03**	**ED-02**	**ED-02**	249
ED Departure Order Date		**ED-65**	**ED-21**	**ED-19**	**250**
ED Departure Order Time		**ED-66**	**ED-22**	**ED-21**	**251**
ED Departure or Admission Date	**X**	**ED-04**	~~**ED-21**~~	~~**ED-19**~~	252
ED Departure or Admission Time	**X**	**ED-05**	~~**ED-22**~~	~~**ED-20**~~	253
Time in ED		**ED-06**			254
Mode of Arrival	**X**	**ED-07**	**P-07**	**P-07**	255
Response Level	**X**	**ED-08**			256

Revised Response Level		**ED-09**			257
Post ED Disposition	**X**	**ED-10**	**ED-19**	**ED-17**	258
Admitting Service	**X**	~~**ED-11**~~			259
Post OR Disposition	**X**	~~**ED-12**~~			260
Signs of Life		**PM-01**	**ED-20**	**ED-18**	261
Response Activation Date	**X**	**ED-13**			262
Response Activation Time	**X**	**ED-14**			263
Response Activation Elapsed Time		**ED-15**			264
Revised Response Activation Date		**ED-16**			265
Revised Response Activation Time		**ED-17**			266
5. ED RESUSCITATION SECTION (con't)	**OLD DATABASE**	**REMSA**	**NTDB**	**CEMSIS**	**PG#**
Revised Response Activation Elapsed Time		**ED-18**			267
Admitting Physician	**X**				268
Medications					269
Warming Measures					270
Arrival / Admission CPR		**ED-22**			271
Arrival / Admission CPR Duration		**ED-23**			272
Arrival / Admission Initial & Additional Vitals Recorded Date	**X**	**ED-24**			273
Arrival / Admission Initial & Additional Vitals Recorded Time	**X**	**ED-25**			274
Arrival / Admission Initial & Additional Vitals Temperature	**X**	**ED-26**	**ED-05**	**ED-05**	275
Arrival / Admission Initial & Additional Vitals Temperature Unit		**ED-27**			276
Arrival / Admission Initial & Additional Vitals Temperature Route		~~**ED-28**~~			277
Arrival / Admission Initial & Additional Vitals Weight		**ED-29**	**ED-16**	**ED-21**	278
Arrival / Admission Initial Weight Units		**ED-30**			279
Arrival / Admission Initial & Additional Vitals Height		**ED-31**	**ED-15**	**ED-22**	280
Arrival / Admission Initial Height Units		**ED-32**			281
Arrival / Admission Initial ED / Hospital BMI					**282**
Arrival / Admission Initial & Additional Vitals Paralytic Agents	**X**	**ED-33**	**ED-14**	**ED-14**	283
Arrival / Admission Initial & Additional Vitals Sedated	**X**	**ED-34**	**ED-14**	**ED-14**	284
Arrival / Admission Initial & Additional Vitals Eye Obstruction	**X**	**ED-35**	**ED-14**	**ED-14**	285
Arrival / Admission Initial & Additional Vitals Intubated	**X**	**ED-36**	**ED-14**	**ED-14**	286
Arrival / Admission Initial & Additional Vitals Intubation Method		**ED-37**			287

Arrival / Admission Initial & Additional Vitals Resp. Asst.	X	**ED-38**	**ED-07**	**ED-07**	288
Arrival / Admission Initial & Additional Vitals Resp. Assistance Type		**ED-39**			289
Arrival / Admission Initial & Additional Vitals SBP	X	**ED-40**	**ED-03**	**ED-03**	290
Arrival / Admission Initial & Additional Vitals DBP		**ED-41**			291
Arrival / Admission Initial & Additional Vitals Pulse Rate	X	**ED-42**	**ED-04**	**ED-04**	292
Arrival / Admission Initial & Additional Vitals UnAssist. Resp. Rate	X	**ED-43**	**ED-06**	**ED-06**	293
Arrival / Admission Initial & Additional Vitals Assist. Resp. Rate	X	**ED-44**			294
Arrival / Admission Initial & Additional Vitals 02 Sat	X	**ED-45**	**ED-08**	**ED-08**	295
5. ED RESUSCITATION SECTION (con't)	**OLD DATABASE**	**REMSA**	**NTDB**	**CEMSIS**	**PG#**
Arrival / Admission Initial & Additional Vitals Supplemental 02	X	**ED-46**	**ED-09**	**ED-09**	296
Arrival / Admission Initial & Additional Vitals ETCO2					**297**
Arrival / Admission Initial & Additional Vitals GCS Eye	X	**ED-47**	**ED-10**	**ED-10**	298
Arrival / Admission Initial & Additional Vitals GCS Verbal	X	**ED-48**	**ED-11**	**ED-11**	299
Arrival / Admission Initial & Additional Vitals GCS Motor	X	**ED-49**	**ED-12**	**ED-12**	300
Arrival / Admission Initial & Additional Vitals GCS Total	X	**ED-50**	**ED-13**	**ED-13**	301
ABGs		~~**ED-51**~~			302
ABG pH		~~**ED-52**~~			303
PaO2		~~**ED-53**~~			304
PaCO2		~~**ED-54**~~			305
Base Deficit		~~**ED-55**~~			306
Hematocrit		~~**ED-56**~~			307
INR		~~**ED-57**~~			308
Initial Alcohol Use Indicator	X	**ED-58**	**ED-17**	**ED-15**	309
ETOH / BAC Level	X	**ED-59**			310
Initial Drug Use Indicator	X	**ED-60**	**ED-18**	**ED-23**	311
Initial Tox Screen Results	X	**ED-61**			312
Initial Tox Screen Clinician Administered		**ED-62**			313
Initial Tox Screen Results Other		**ED-63**			314
Assessment Type		~~**ED-64**~~			315
ED Resus Section Notes	X				316
6. PATIENT TRACKING SERVICE					**317**
Location of Pt.					319

Location of Pt. Arrival Date	**X**				320
Location of Pt. Arrival Time	**X**				321
Location of Pt. Departure Date					322
Location of Pt. Departure Time					323
Location of Pt. Elapsed Time					324
6. PATIENT TRACKING SERVICE (con't)	**OLD DATABASE**	**REMSA**	**NTDB**	**CEMSIS**	**PG#**
Location Tracking Details					325
ICU Days	**X**	**O-05**	**O-01**	**O-01**	326
Step-Down / IMC Days					327
Service / Consult					328
Service / Consult Start Date					329
Service / Consult Start Time					330
Service / Consult Stop Date					331
Service / Consult Stop Time					332
Service / Consult Elapsed Time					333
Service Tracking Details					334
Ventilator Start Date					335
Ventilator Start Time					336
Ventilator Stop Date					337
Ventilator Stop Time					338
Ventilator Elapsed Time					339
Total Ventilator Days	**X**	**O-06**	**O-02**	**O-02**	340
Blood Product		**PT-06**			341
Blood Volume		**PT-07**			342
Blood Units		**PT-08**			343
Blood Location		**PT-09**			344
Blood Time Period		**PT-10**			345
Clinical Management Code / Intervention					346
Clinical Management Intervention Start Date					353
Clinical Management Intervention Stop Date					354
Patient Tracking Section Notes					355
7. PROVIDERS SECTION					**357**

Resus Team Type / In-House Consult	**X**	**PR-01**			359
Resus Team Provider / In-House Consult	**X**	~~**PR-02**~~			360
7. PROVIDERS SECTION (con't)	**OLD DATABASE**	**REMSA**	**NTDB**	**CEMSIS**	**PG#**
Resus Team / In-House Consult Called Date	**X**	**PR-03**			361
Resus Team / In-House Consult Called Time	**X**	**PR-04**			362
Resus Team / In-House Consult Responded Date	**X**	**PR-05**			363
Resus Team / In-House Consult Responded Time	**X**	**PR-06**			364
Resus Team / In-House Consult Arrived Date	**X**	**PR-07**			365
Resus Team / In-House Consult Arrived Time	**X**	**PR-08**			366
Resus Team Timeliness	**X**	**PR-09**			367
In-House Consult Timeliness	**X**	~~**PR-10**~~			368
Resus Team / In-House Consult Notes					369
Provider Section Notes	**X**				370
8. PROCEDURES SECTION					**371**
ICD9 Procedure Code **REMSA requires only IVD10 codes for 2016**	**X**	~~**HP-01**~~	**HP-01**	**HP-01**	373
ICD10 Procedure **REMSA requires only IVD10 codes for 2016**		**HP-13**	**HP-02**	**HP-04**	374
Procedure Location	**X**	~~**HP-02**~~			376
Operation Number	**X**	~~**HP-03**~~			377
Procedure / Operation Start Date	**X**	**HP-04**	**HP-03**	**HP-02**	378
Procedure / Operation Start Time	**X**	**HP-05**	**HP-04**	**HP-03**	379
Procedure / Operation Stop Date	**X**	~~**HP-06**~~			380
Procedure / Operation Stop Time	**X**	~~**HP-07**~~			381
Procedure / Operation Diagnostic Result					382
Procedure / Operation Anatomic Region					383
Procedure / Operation Service		~~**HP-10**~~			384
Procedure / Operation Physician					385
ICD9 Procedure Narrative	**X**	**HP-12**			386
Procedure Section Notes	**X**				387
9. DIAGNOSES SECTION					**389**
AIS Version	**X**	~~**DG-01**~~	~~**IS-04**~~	~~**IS-04**~~	391
9. DIAGNOSES SECTION (con't)	**OLD DATABASE**	**REMSA**	**NTDB**	**CEMSIS**	**PG#**

ISS	**X**	**DG-02**	~~**IS-05**~~	~~**IS-05**~~	392
NISS					393
TRISS	**X**	**DG_13**			394
ICD9 Diagnosis Narrative	**X**	**DG-03**	**DG-02**	**DG-02**	395
ICD9 Diagnosis Code **REMSA requires only ICD10 codes for 2016**	**X**	~~**DG-04**~~			396
ICD-10 Diagnosis Code **REMSA requires only ICD10 codes for 2016**		**DG-08**	**DG-03**	**DG-03**	396
Diagnosis Predot	**X**	**DG-05**	**IS-01**	**IS-01**	397
AIS Severity	**X**	**DG-06**	**IS-02**	**IS-02**	398
ISS Body Region	**X**	**DG-07**	~~**IS-03**~~	~~**IS-03**~~	399
Non-Trauma Diagnosis ICD9 **REMSA requires only ICD10 codes for 2016**		~~**DG-09**~~			400
Non-Trauma Diagnosis ICD-10 **REMSA requires only ICD10 codes for 2016**		**DG-10**			400
Co-Morbidities Code	**X**	**DG-11**	**DG-01**	**DG-01**	401
Pre-Hospital Cardiac Arrest		**P-49**	**P-20**	**P-20**	402
Co-Morbidities Note		**DG-12**			403
Diagnosis Section Notes					404
10. OUTCOME SECTION					**405**
Discharge Status	**X**	**O-01**			407
Discharge Condition		~~**O-02**~~			408
Discharge / Death Date	**X**	**O-03**	~~**O-03**~~	~~**O-03**~~	409
Discharge / Death Time	**X**	**O-04**	~~**O-04**~~	~~**O-04**~~	410
Discharge Order Date		**O-37**	**O-03**	**O-03**	**411**
Discharge Order Time		**O-38**	**O-04**	**O-04**	**412**
Total ICU Days	**X**	**O-05**	**O-01**	**O-01**	413
Total Ventilator Days		**O-06**	**O-02**	**O-02**	414
Total Hospital Days	**X**	**O-07**			415
Discharging Physician					416
Discharged Destination	**X**	**O-08**	**O-05**	**O-05**	417
Caregiver at Discharge		**O-38**	**I-22**	**I-22**	418
Discharge Destination Specify		**O-09**			419
10. OUTCOME SECTION (con't)	**OLD DATABASE**	**REMSA**	**NTDB**	**CEMSIS**	**PG#**
Initial Transferred Discharge Facility	**X**	**O-10**			420
Initial Discharge Destination Other	**X**	**O-11**			421
Initial Discharge Transfer Rationale	**X**	~~**O-12**~~			422

Initial Discharge Transfer Rationale By		~~O-13~~			423
Impediment to Discharge	X	~~O-14~~			424
Ready For Discharge Date		~~O-15~~			425
Impediments to Discharge Delay Days		~~O-16~~			426
Disabilities - Pre-Existing / Upon Discharge		~~O-17~~			427
Disabilities Qualifiers		~~O-18~~			428
Disabilities - Totals		~~O-19~~			429
Rehabilitation Potential		~~O-20~~			430
Death Location		~~O-21~~			431
Death Manner (Suspected)		~~O-22~~			432
Death Cause		~~O-23~~			433
Autopsy Status	X	**O-24**			434
Medical Examiner					435
Autopsy Number		**O-25**			436
Autopsy Memo	X	**O-26**			437
Organ Donation Request Status		**O-27**			438
Organ Donation Request Permission		**O-28**			439
Organs Procured	X	**O-29**			440
Organ Procured Specify Other	X	**O-30**			441
Organ Non-Procurement Reason		**O-31**			442
Organ Donor Status		~~O-32~~			443
Organ Procurement Date		~~O-33~~			444
Organ Procurement Time		~~O-34~~			445
Billing Account Number	X				446
Total Hospital Charges Billed	X	~~O-35~~			447
Diagnosis Billing DRG					448
10. OUTCOME SECTION (con't)	**OLD DATABASE**	**REMSA**	**NTDB**	**CEMSIS**	**PG#**
Diagnosis Billing MS-DRG					449
Primary Payor / Additional Payor	X	**O-36**	**F-01**	**F-01**	450
Primary Payor / Add. Payor Collected Amount					451
Primary Payor / Add. Payor Collected Date					452
Billing Specify					453
Total Charges Collected	X				454

	OLD DATABASE	REMSA	NTDB	CEMSIS	PG#
Last Date Charges Collected					455
Outcomes Section Notes	**X**				456
11. QA TRACKING SECTION					**457**
ACS Questions	**X**	**Q-01**			459
QA Item Occurrence Date					461
QA Item Occurrence Response					462
QA Item Occurrence Tracking					463
QA Item Occurrence Notes					464
NTDB Complications	**X**	**Q-02**	**Q-01**	**Q-01**	465
NTDB Complications Date					467
NTDB Complications QA Tracking					468
QA Item					469
QA Item Occurrence Location					470
QA Item Occurrence Service					471
QA Item Occurrence Date Opened					472
QA Item Occurrence Date Loop Closed					473
QA Item Occurrence Provider					474
QA Item Occurrence Section Notes					475
QA Item Occurrence Reviewer					476
QA Item Occurrence Reviewed Date					477
QA Item Occurrence Reviewed Comment					478
QA Item Occurrence Contributing Factors					479
11. QA TRACKING SECTION (con't)	**OLD DATABASE**	**REMSA**	**NTDB**	**CEMSIS**	**PG#**
QA Item Occurrence Determination - System/Disease/Provider					480
QA Item Occurrence Determination Qualifier - OFI Status					481
QA Item Occurrence Determination Grade					482
QA Item Occurrence Determination Care Given Status					483
QA Item Occurrence Corrective Action					484
QA Item Occurrence Corrective Action Status					485
QA Item Occurrence Memo Field					486
12. TQIP SECTION					**487**

NTDB Enable Fields	**X**				489
NTDB Lock Record	**X**				490
TQIP Exclusion	**X**				491
TQIP Head Injury Criteria	**X**				492
TQIP Blood Product Criteria					493
TQIP Withdrawal Of Care		**PM-02**	**PM-~~34~~ 36**	**I-23**	494
TQIP Withdrawal Date		**PM-03**	**PM-~~35~~ 37**	**I-24**	495
TQIP Withdrawal Time		**PM-04**	**PM-~~36~~ 38**	**I-25**	496
TQIP Venous Thromboembolism	**X**		**PM-~~07~~ 09**		497
TQIP Prophylaxis Date	**X**		**PM-~~08~~ 10**		498
TQIP Prophylaxis Time	**X**		**PM-~~09~~ 11**		499
TQIP / TBI Highest Total GCS Within 24 Hrs.			**PM-01**		500
TQIP / TBI GCS Motor Component	**X**		**PM-02**		501
TQIP / TBI GCS Qualifiers	**X**		**PM-03**		502
TQIP / TBI Pupillary Response			**PM-04**		**503**
TQIP / TBI Midline Shift			**PM-05**		**504**
TQIP / TBI Cerebral Monitor Type	**X**		**PM-~~04~~ 06**		505
TQIP / TBI Cerebral Monitor Date	**X**		**PM-~~05~~ 07**		506
TQIP / TBI Cerebral Monitor Time	**X**		**PM-~~06~~ 08**		507
TQIP / BLOOD Lowest ED SBP			**PM-~~26~~ 28**		508
12. TQIP SECTION (con't)	**OLD DATABASE**	**REMSA**	**NTDB**	**CEMSIS**	**PG#**
TQIP / BLOOD Transfusion Blood 4hrs			**PM-~~10~~ 12**		509
TQIP / BLOOD Transfusion Blood 24hrs			**PM-~~11~~ 13**		510
TQIP / BLOOD Transfusion Blood Measurements			**PM-~~12~~ 14**		511
TQIP / BLOOD Transfusion Blood Conversion			**PM-~~13~~ 15**		512
TQIP / BLOOD Transfusion Plasma 4hrs			**PM-~~14~~ 16**		513
TQIP / BLOOD Transfusion Plasma 24 Hrs.			**PM-~~15~~ 17**		514
TQIP / BLOOD Transfusion Plasma Blood Measurements			**PM-~~16~~ 18**		515
TQIP / BLOOD Transfusion Plasma Blood Conversion			**PM-~~17~~ 19**		516
TQIP / BLOOD Transfusion Platelets 4hrs			**PM-~~18~~ 20**		517
TQIP / BLOOD Transfusion Platelets 24 Hrs.			**PM-~~19~~ 21**		518
TQIP / BLOOD Transfusion Platelets Blood Measurements			**PM-~~20~~ 22**		519
TQIP / BLOOD Transfusion Platelets Blood Conversion			**PM-~~21~~ 23**		520

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TQIP / BLOOD Cryoprecipitate 24 Hrs.			**PM-~~23~~ 25**		522
TQIP / BLOOD Cryoprecipitate Measurements			**PM-~~24~~ 26**		523
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TQIP / BLOOD Embolization Site			**PM-~~28~~ 30**		525
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RIVERSIDE COUNTY EMS AGENCY	Trial Study		5801
	Effective April 1, 2016	Expires March 31, 2017	
Policy: Tranexamic Acid (TXA)	Approval: REMSA Medical Director Daved van Stralen, MD	Signed	
Applies To: Authorized Study Participants, EMS System	Approval: REMSA Director Bruce Barton	Signed	

PURPOSE

To determine the role of prehospital Tranexamic Acid (TXA) to improve hemorrhagic shock outcomes, prevent massive internal bleeding by stabilizing clot formation, and decrease extravascular bleeding in trauma patients.

AUTHORITY

California Health and Safety Code - Division 2.5: Emergency Medical Services [1797. - 1799.207.]
California Code of Regulations, Title 22. Social Security, Division 9. Prehospital Emergency Medical Services

Inclusion Criteria

Patients must meet anatomic, physiologic, and/or mechanism of injury trauma triage criteria as established by REMSA. Refer to REMSA Policy 5301 - Trauma Triage Indicators and Destination.

The prehospital use of TXA should be considered for all trauma patients that meet any of the following inclusion criteria:

- Any sustained blunt or penetrating trauma within three hours with:
  - Blunt or penetrating trauma with signs and symptoms of hemorrhagic shock
    - Systolic blood pressure of less than 90 mmHg at scene of injury, during ground medical transport, or on arrival to designated trauma centers
  - Patients who are considered to be high risk for significant hemorrhage:
    - Estimated blood loss (EBL) of 500 mL in the field accompanied by a heart rate greater than 120
    - Bleeding not controlled by direct pressure or tourniquet
    - Major amputation of any extremity above the wrists and above the ankles

Contraindications

- Any patient under 18 years of age
- Any patient with an active thromboembolic event (within the last 24 hours); i.e. active stroke, myocardial infarction or pulmonary embolism
- Any patient with a hypersensitivity or anaphylactic reaction to TXA
- Any patient more than three hours post injury
- Traumatic arrest with greater than five minutes of CPR without return of vital signs
- Penetrating cranial injury
- Traumatic brain injury with brain matter exposed
- Isolated drowning or hanging victims
- Documented cervical cord injury with motor deficit

Special Consideration: TXA may be administered if the patient arrives at a non-trauma hospital, meets the inclusion criteria listed above, and is transferred using Continuation of Trauma Care; refer to REMSA Policy 5302 - Continuation of Trauma Care.

Procedure

If patient meets inclusion criteria listed above:

- Administer TXA 1 g in 50-100 mL of Normal Saline via IV/IO Bolus drip over 10 minutes
  *(**Do not administer IVP** – This will cause hypotension)*
- Place the approved neon green wristband on patient prior to transporting patient to a Trauma Center

- Trauma base hospital contact is mandatory. Advise trauma base hospital of:
    - Patient assessment
    - Vital signs
    - EBL and condition
    - TXA administration

Documentation Requirements

Must use a REMSA contracted or authorized electronic patient care report system:

- Documentation must include:
    - Meets trauma triage criteria
    - Age
    - Weight
    - Date/time of injury onset of symptoms
    - Mechanism of injury
    - Initial systolic blood pressure and vital signs
    - EBL, both pre and post TXA administration
    - Blunt or penetrating trauma location and description of injuries
    - Vital signs including Glasgow Coma Scale and temperature: pre, during and post TXA administration
    - Any fluid administration
    - Date/time TXA was started
    - Past medical history
    - Allergies
    - Race/ethnicity
    - Gender
    - Any first response agency or transport service defined questions related to TXA

Attachment E: 2017 REMSA PI Plan

PI	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Under-triage %			X- qtr 3-2016			X- qtr 4-2016			X- qtr 1-2017			X- qtr 2- 2017
Non-surgical admit %			X- qtr 3-2016			X- qtr 4-2016			X- qtr 1-2017			X- qtr 2- 2017
TAC attendance		X				X				X		
Disaster Plan- hospital drills 2 times a year												
CEMSIS data submission	X- 3rd qtr 2016			X- qtr 4-2016			X- qtr 1-2017			X- qtr 2- 2017		
Trauma Continuation of Care - %			X				X				X	
Annual PI												
TMD active member in regional or national trauma organization	X											
Copy of trauma activation criteria	X											
Hospital PIPS- Annual												X
Year- end Injury Prevention report												X

Attachment F: Trauma Audit Committee (TAC) Schedule

2016	13-Jul-16	14-Sep-16
DRMC	ARMC	RUHS-MC
RUHS- MC	LLUMC-A	RCH
RCH	IVMC	LLUMC-P
IVMC	DRMC	LLUMC-A
LLUMC-P	RCH	DRMC
LLUMC-A	RUHS-MC	ARMC
ARMC	LLUMC-P	IVMC

February 8, 2017 Charts to Chris/ Shanna 2/1/2017 @ ICEMA	June 21, 2017 Charts To Chris/ Shanna 6/14/2017 @ ICEMA	October 11, 2017 Charts to Chris/ Shanna 10/11/2017 @ ICEMA
DRMC→ LLUMC- A	DRMC→ RCH	DRMC→ ARMC
RUHS- MC -→ ARMC	RUHS- MC -→ IVMC	RUHS- MC -→LLUMC- A
RCH → LLUMC-P	RCH → RUHS-MC	RCH → IVMC
IVMC → RCH	IVMC → LLUMC-P	IVMC → DRMC
LLUMC-P → RUHS	LLUMC-P → ARMC	LLUMC-P → RCH
LLUMC- A → IVMC	LLUMC- A → DRMC	LLUMC- A → RUHS-MC
ARMC → DRMC	ARMC → LLUMC- A	ARMC → LLUMC-P