

February 15, 2024

Facilitator: Gregory Kann, M.D. KannG@saccounty.gov

Attendees: EMS and Hospital Group

Торіс	Minutes	Open Items
Welcome and Introductions	Approval of Minutes: August 17, 2023 – Motion: Tressa Naik, Second: Jeremy Veldstra November 9, 2023 – Motion: Brian Morr, Second: Amelia Hart	
Quarterly Data Review	 2023 2Q and 3Q Data <u>Slide 23:</u> Jeremy Veldstra: Can you send me the information for calls when my hospital is contacted as the base and we approve a destination different than it should be? I want to follow up with my team. Shock Index <u>Slides 24 and 25:</u> Dr. Kann: The physiologic trauma triage criteria in policy states a heart rate greater than systolic blood pressure. So, a shock index exists in trauma triage criteria; it is just not stated specifically as a shock index. This is a potential area of improvement to remind crews that a shock index of greater than one is trauma triage positive. We looked at if we did that; how many patients would that have added to the trauma system? 214 overall in 2Q and 261 in 3Q. 	SCEMSA to send improper desintations approved by base to the base station liasions



Торіс	Minutes	Open Items
	 Sydney Freer: We sent a sample of those 214 to our trauma hospitals and it looked like the hospitals did not end up activating most of those patients that were not activated from the field. Dr. Kann: Shock index has been added in neighboring counties, is this something we want to clarify? Dr. Naik: How much more complicated would this make it in the field? Amelia Hart: Shock index is built in, though. Dr. Kann: Did any of the shock index patients we sent you go to the OR? Jeremy Veldstra: Two of them were coded 911, which is our highest activation. Amy Richards: A few of mine were pediatric, so we would have to adjust for that. Sydney Freer: I can send ones to the hospitals that are not trauma centers and ask if those patients ended up needing to go somewhere else? That might be more productive information than from the hospitals that are trauma centers. 	SCEMSA to follow up with non- trauma facilities on the shock index of one patient
	 TXA Use <u>Slides 26 and 27:</u> Dr.Kann: This is the first three quarters of 2023. This is an underutilized medication in the field, and we are making changes to the TXA policy. We want to bring to the MAC, TXA for mild to moderate TBI. These are interventions that have shown to be helpful. We want to get our crews more comfortable with TXA administration. Dr. Perlstein: I want to caution you about TXA because I can tell you from reviewing cases that the complications are there. However, there are conflicting studies and flawed research, so I don't know what the answer is. 	



Торіс	Minutes	Open Items
	Dr. Kann: It is true that there are conflicting studies, but I am not prepared to say no to a medication that may have an effect. Dr. Perlstein: I have not seen a study that has proven it has a mortality difference; the CRASH-2 trial was very flawed. What I ask of you is that you study it within your own agency because this is a wave across the country based on a flawed study, and risks are there. Dr.Kann: As a medical director for the county, I have to follow the best practice, which, as of now, seems to be TXA. However, tracking and research will continue.	SCEMSA to continue looking at / tracking TXA use and complications (including arterial complications)
Policy Review	PD# 8065 - Hemorrhage Dr. Kann: We talked about taking out "physician" and making it a base hospital contact instead. I am also proposing that we put head injury with a GCS of 9 -15 and reactive pupils into our TXA inclusion criteria. Exclusion being GCS less than 9. Amelia Hart: Should we put some kind of mechanism in there? Dr. Resnick: There is a difference between someone with a potential traumatic brain injury and a scratch on their head after a ground-level fall. Jeremy Veldstra: Now we are entering the discussion we have had multiple times in this county. Do we want to allow our paramedics to work at the top of their scopes, or do we want to prioritize all the potentials? Matt Burruel: The theme has been letting paramedics be clinicians. Sydney Freer: I think this will come to the education component. Medic Machado: I think we are going to read this and question some of it. Pupils? What if one is and they are different sizes? Or what if their baseline is altered? If we can make things more black and white, it is easier for us to interpret.	SCEMSA to add considerations for TXA for head injuries (will be reviewed at March MAC meeting)



Торіс	Minutes	Open Items
	Medic Boyle: Maybe add considerations? Dr. Resnick: I favor a more well-thought-out policy. The head injury seems too vague. Adam Blitz: In general, I would like to see more policy emphasis on hemostatic agents rather than tourniquets or TXA. PD# 5052 – Trauma Destination PD# 5053 – Trauma Triage Criteria PD# 6000 – Trauma Care System PD# 8015 – Trauma	
Case Presentations	 Julie Carrington and Medic Ryan – Cosumnes Fire Department Julie Carrington: Sometimes, taking care of the patient is the easiest part of the paramedic's job. Getting to the patient and gathering information can be very difficult. Dr. Shelby Resnick – Kaiser Hospital South Dr. Resnick: Kudos to the medics for catching both the trauma and the overdose, which allowed us to not be behind the 8-ball on either issue. Dr. Resnick: I found the language "titrated to adequate respiratory status" interesting for Narcan. Amelia Hart: When I am in a rig or when I am flying, if they are breathing okay and perfusing, I am not going to give Narcan because I am going to get swung on, or there could be complications. We have limited space, so part of it has to do with paramedic safety. If they are okay, I will get them to you guys. Dr. Perlstein: I also prefer this to avoid risking noncardiogenic pulmonary edema until the patient is at the hospital. 	



Торіс	Minutes	Open Items
Adjournment	See the presentation schedule below. We encourage collaboration between the providers and the hospitals for the presentation, but the schedule is so we have an idea of who will be picking cases and coordinating the presentation each meeting.	

Next Meeting: Thursday, May 16, 2024: 1:00- 3:00 pm at Mercy San Juan.





Emergency Medical Services Trauma Improvement Committee

2024 Meeting Dates / Presentation Schedule

Date:	5/16/2024	8/15/2024	11/21/2024	2/20/2025
KHS		Х		
MSJ		Х		
SRMC				Х
UCDMC				Х
Cosumnes Fire	Х			
Folsom Fire	Х			
Metro Fire			Х	
Sacramento City Fire			Х	

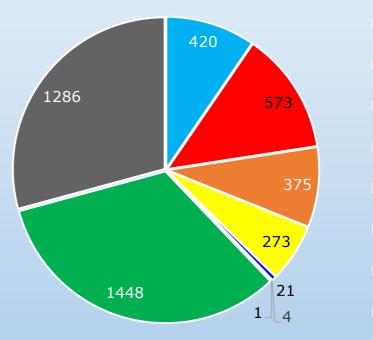
Trauma Improvement Committee (TIC) Meeting Minutes https://dhs.saccounty.gov/PUB/EMS/Pages/Committees/TRC/Trauma-Review-Committee-(TRC).aspx

Trauma Improvement Committee

Facilitated By: Gregory Kann, M.D. 2023 – 2nd and 3rd Quarter (April-Sep) Presented February 15th, 2024

Trauma Incident Counts per Provider for 2023 2Q and 3Q





<u>3rd Quarter</u>



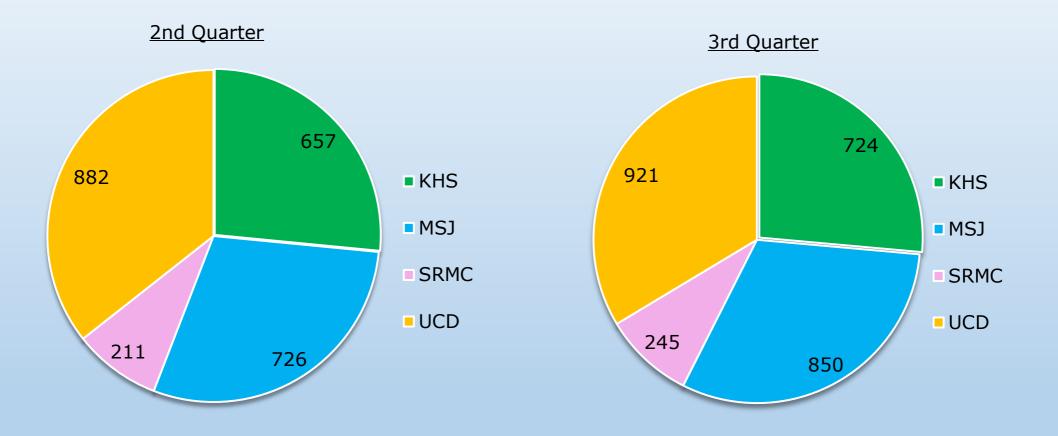
AMR

- Cosumnes Fire
- Folsom Fire
- Medic Ambulance
- Norcal Ambulance
- River Delta
- Sacramento Fire
- Sacramento Metro

CEMSIS EMS Data



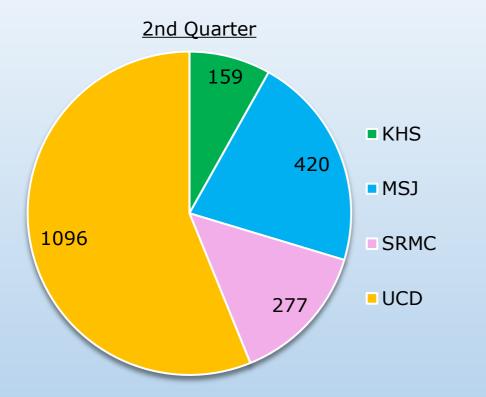
EMS Transport Hospital Distribution for 2023 2Q and 3Q

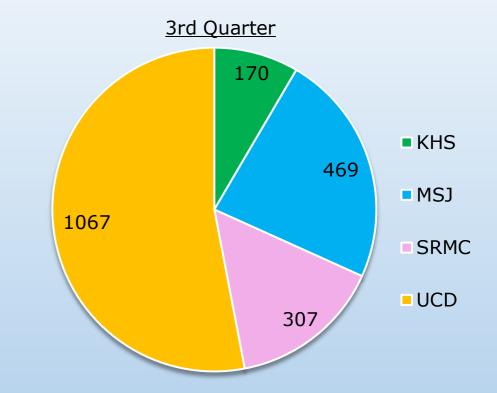


CEMSIS EMS Data



Total Patients per Hospital for 2023 2nd and 3rd Quarter

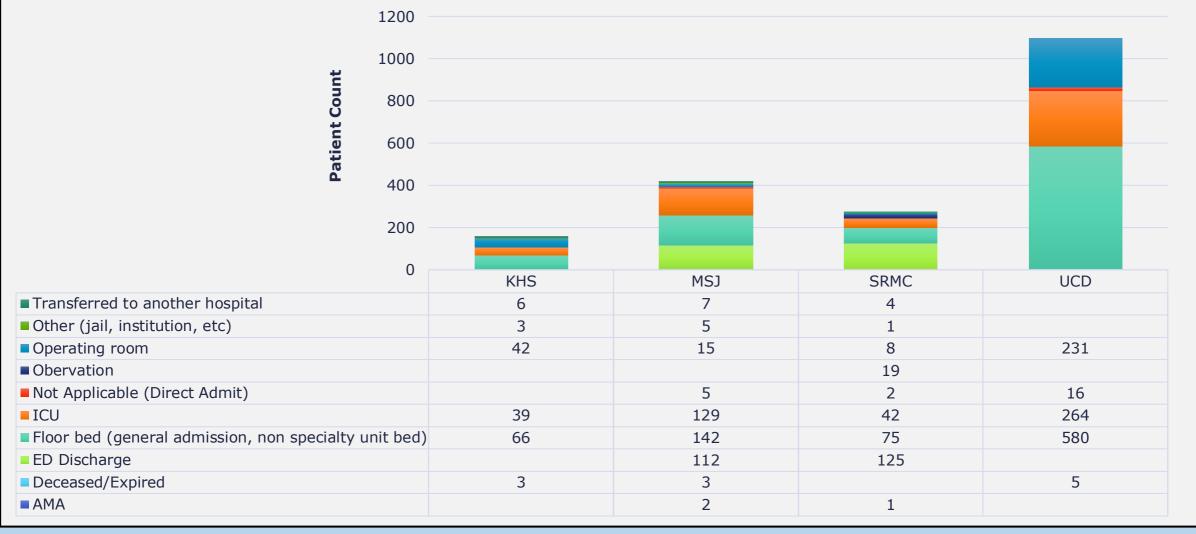




Patient Registry Hospital Data



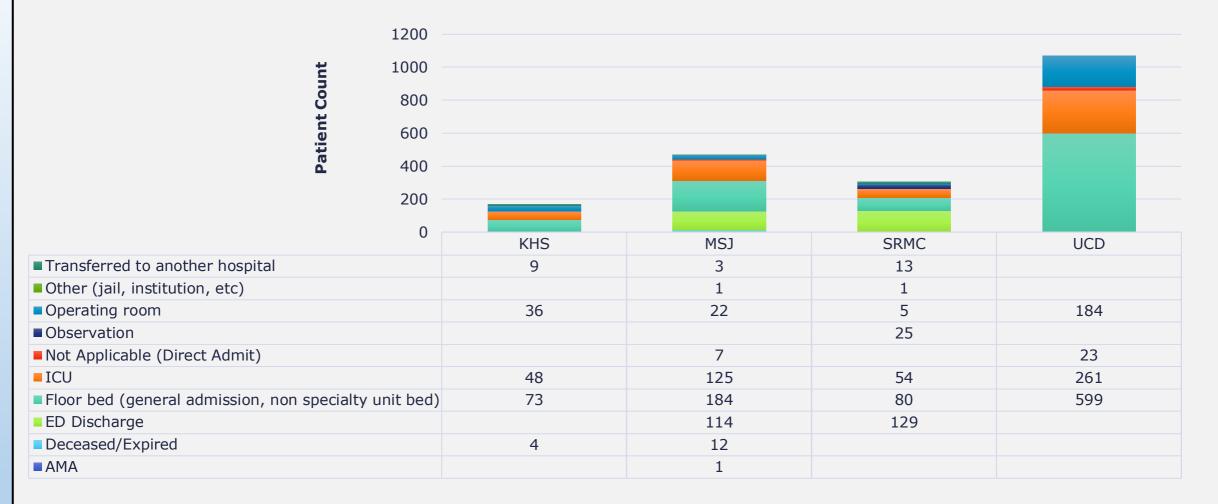
Emergency Room Disposition 2023 2Q- per Hospital



Patient Registry Hospital Data



Emergency Room Disposition 2023 3Q- per Hospital



Patient Registry Hospital Data





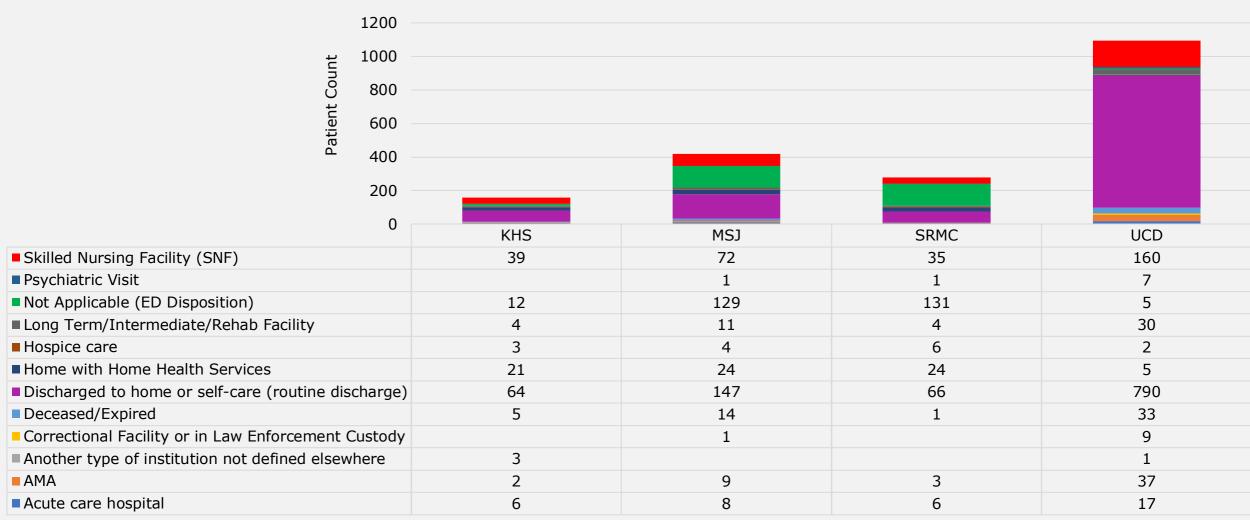
Emergency Room Disposition- Rolling 4 Quarters

Emergency Room	кнѕ					MSJ				SR	МС				Grand		
Disposition	2022- 4Q	2023- 1Q	2023- 2Q	2023- 3Q	Total												
АМА					1	1	2	1		1	1						7
Deceased/Expired	10	5	3	4	5	4	3	12					4	2	5		57
Floor bed (general admission, non specialty unit bed)	72	67	66	73	140	134	142	114	82	87	75	80	535	431	580	599	3277
ED Discharge					96	69	112	184	128	106	125	129					949
ICU	31	46	39	48	154	121	129	125	37	41	42	54	246	249	264	261	1887
Not Applicable (Direct Admit)	1	1			5	2	5	7	4	7	2		25	13	16	23	111
Observation									32	25	19	25					101
Operating room	17	27	42	36	24	12	15	22	9	13	8	5	146	157	231	184	948
Other (jail, institution, etc)	2		3		3	3	5	1			1	1					19
Transferred to another hospital	3	5	6	9	3	1	7	3	7	8	4	13					69
Grand Total	136	151	159	170	431	347	420	469	299	288	277	307	956	852	1096	1067	7425

Patient Registry and Hospital Data



Hospital Discharge Disposition 2023-2Q

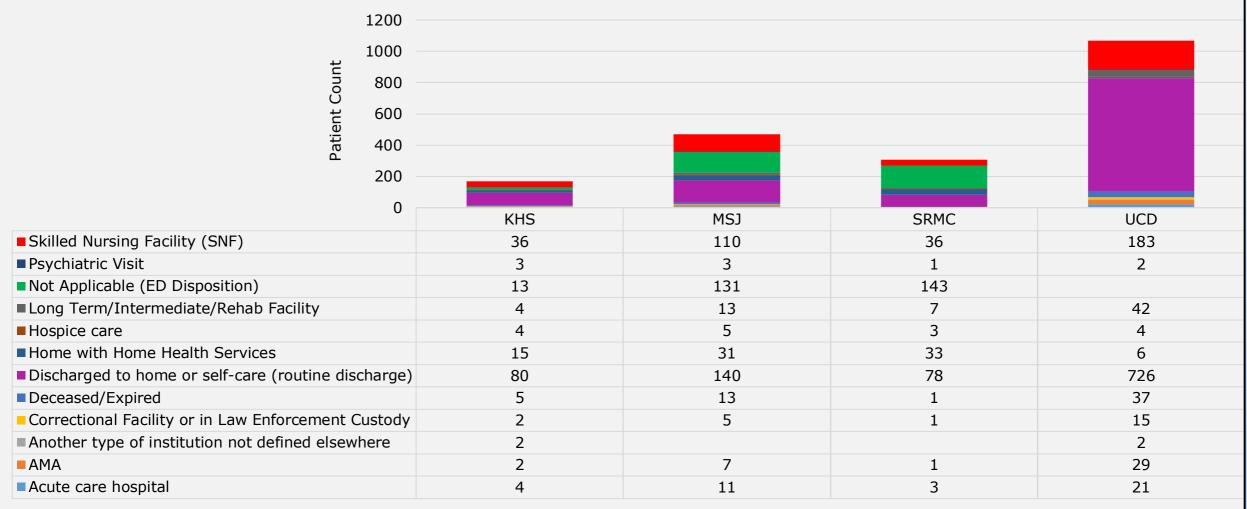


Patient Registry and Hospital Data





Hospital Discharge Disposition 2023-3Q



Patient Registry and Hospital Data



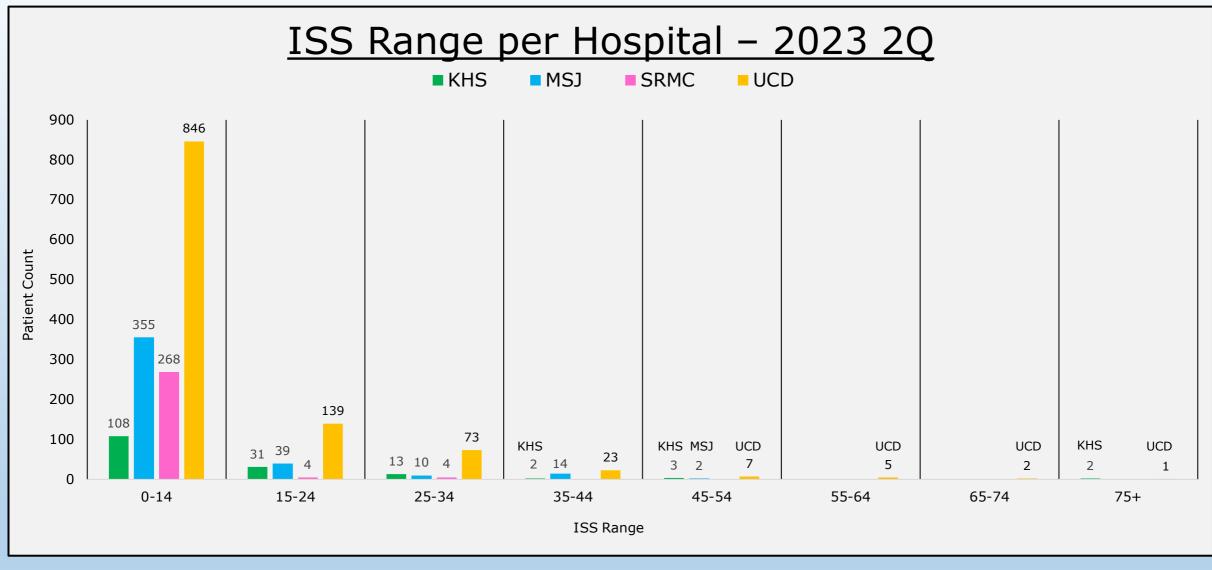


Hospital Discharge Disposition- Rolling 4 Quarters

		KI	HS			MSJ				SR	МС			U	CD		Grand
Emergency Room Disposition	2022- 4Q	2023- 1Q	2023- 2Q	2023 -3Q	2022- 4Q	2023- 1Q	2023- 2Q	2023- 3Q	2022- 4Q	2023- 1Q	2023- 2Q	2023 -3Q	2022- 4Q	2023- 1Q	2323- 2Q	2023- 3Q	Total
Acute care hospital		3	6	4	4	5	8	11	5	16	6	3	21	9	17	21	139
ама	5		2	2	13	5	9	7	1	6	3	1	13	19	37	29	152
Another type of institution not defined elsewhere	2	3	3	2									1	1	1	2	15
Correctional Facility or in Law Enforcement Custody	1	1		2	2	2	1	5				1	12	17	9	15	68
Deceased/Expired	4	13	5	5	15	15	14	13	1		1	1	28	31	33	37	216
Discharged to home or self-care (routine discharge)	60	72	64	80	135	111	147	140	75	82	66	78	658	582	790	726	3866
Home with Home Health Services	9	15	21	15	34	25	24	31	31	24	24	33	2	2	5	6	301
Hospice care	2	2	3	4	6	4	4	5	5	4	6	3	2	1	2	4	57
Long Term/ Intermediate/Rehab	1	3	4	4	8	17	11	13	4	7	4	7	26	28	30	42	209
Not Applicable (ED Disposition)	15	10	12	13	108	78	129	131	133	107	131	143	4	2	5		1021
Psychiatric Visit		2		3	5		1	3			1	1	4	4	7	2	33
Skilled Nursing Facility (SNF)	37	27	39	36	101	85	72	110	44	42	35	36	185	156	160	183	1348
Totals	136	151	159	170	431	347	420	469	299	288	277	307	956	852	1096	1067	7425

Patient Registry and Hospital Data

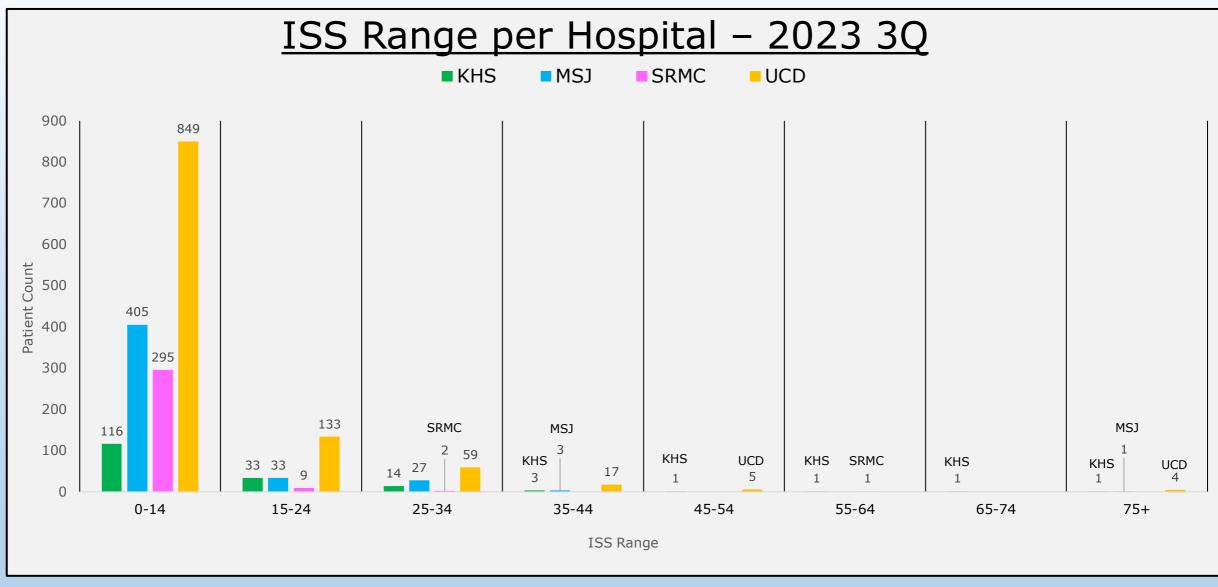




Patient Registry and Hospital Data

Trauma Improvement Committee





Patient Registry and Hospital Data

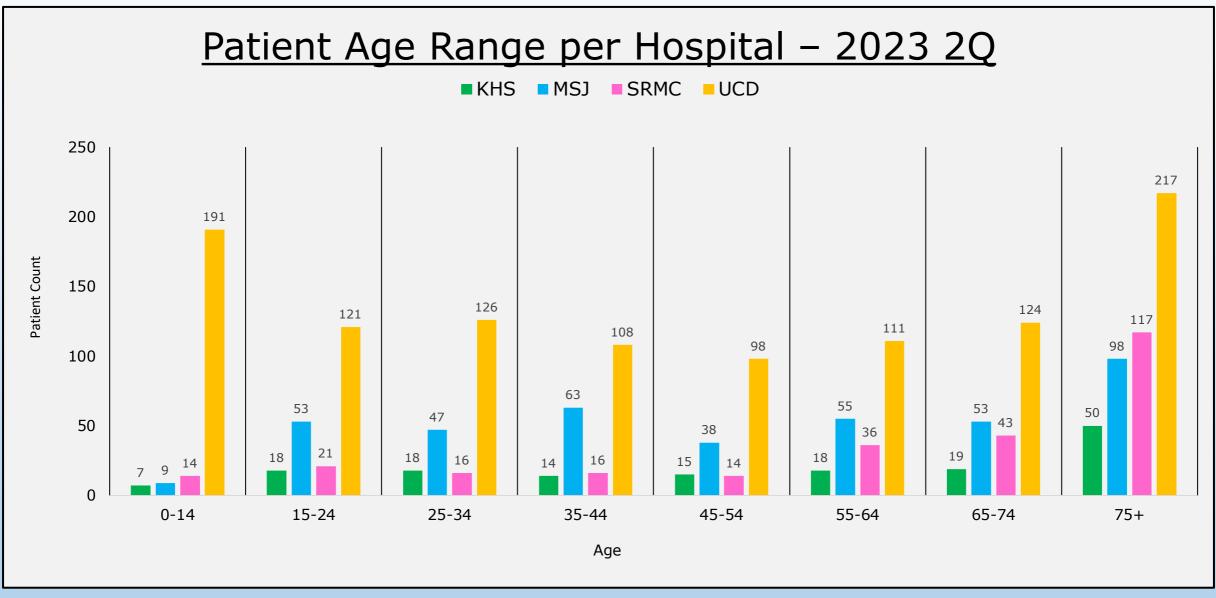


IS Score per Hospital – Rolling 4 Quarters

ISS		KI	IS			M	SJ			SR	MC			Grand			
Range	2022- 4Q	2023- 1Q	2023- 2Q	2023- 3Q	Total												
0-14	95	99	108	116	370	292	355	405	287	273	268	295	713	638	846	849	6009
15-24	20	19	31	33	34	33	39	33	5	12	4	9	144	128	139	133	816
25-34	14	25	13	14	21	17	10	27	6	1	4	2	78	68	73	59	432
35-44	3	7	2	3	6	2	14	3	1	1			13	15	23	17	110
45-54	1		3	1		1	2			1			6	3	7	5	30
55-64	1			1								1	1		5		9
65-74	1	1		1									1		2		6
75+	1		2	1		2		1							1	4	12
Totals	136	151	159	170	431	347	420	469	299	288	276	307	956	852	1096	1067	7424

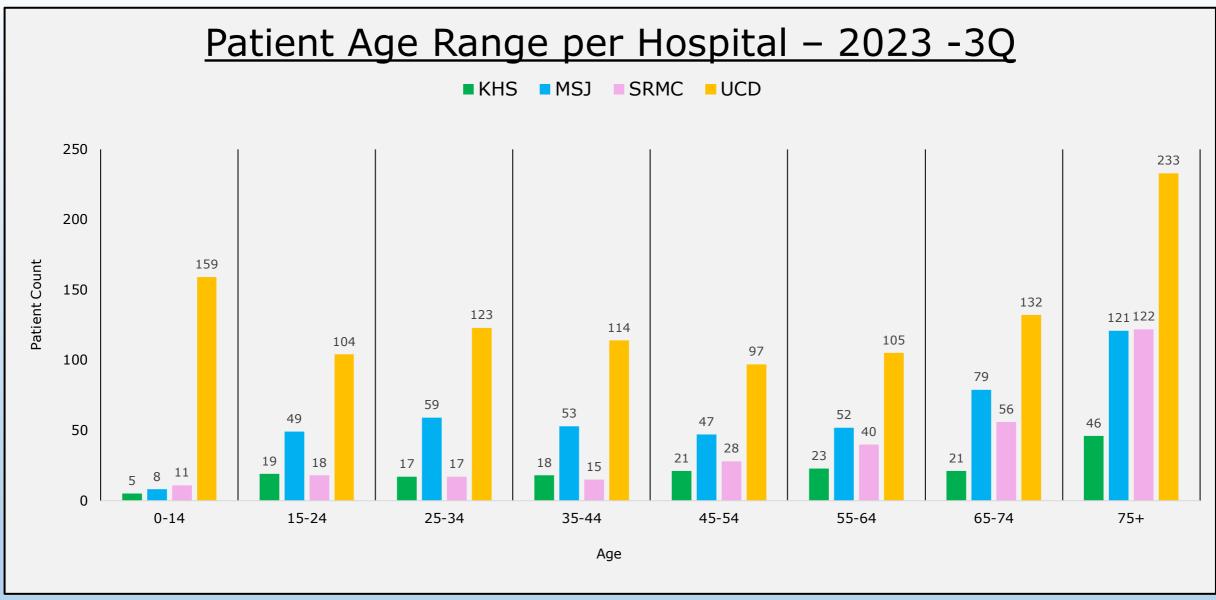
*Patient Registry and Hospital Data *Note: One Record ISS not Documented 2Q*





Patient Registry Hospital Data





Patient Registry Hospital Data





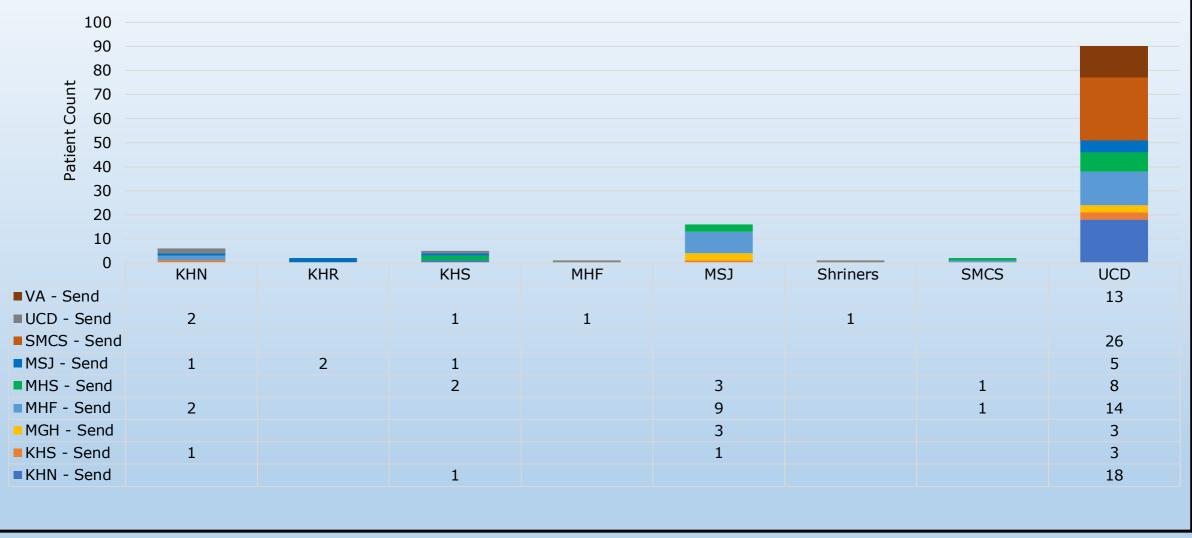
Patient Age Range per Hospital – Rolling 4 Quarters

		Kł	IS			М	SJ			SR	МС			U	CD		Grand
Age Range	2022- 4Q	2023- 1Q	2023- 2Q	2023- 3Q	2022- 4Q	2023- 1Q	2023- 2Q	2023- 3Q	2022- 4Q	2023- 1Q	2023- 2Q	2023- 3Q	2022- 4Q	2023- 1Q	2023- 2Q	2023- Q3	Total
0-14	2	5	7	5	5	7	9	8	6	3	14	11	66	59	191	159	557
15-24	4	13	18	19	46	25	53	49	17	22	21	18	112	94	121	104	736
25-34	22	17	18	17	50	40	47	59	21	14	16	17	105	93	126	123	785
35-44	20	11	14	18	63	26	63	53	19	17	16	15	97	102	108	114	756
45-54	12	19	15	21	41	41	38	47	27	17	14	28	81	76	98	97	672
55-64	16	18	18	23	50	49	55	52	23	34	36	40	107	92	111	105	829
65-74	17	18	19	21	62	44	53	79	53	54	43	56	142	107	124	132	1024
75+	43	50	50	46	112	114	98	121	133	127	117	122	246	229	217	233	2058
Not Recorded					2	1	4	1									8
Totals	136	151	159	170	431	347	420	469	299	288	277	307	956	852	1096	1067	7425

Patient Registry and Hospital Data



<u>2023-2Q IFTs with Primary Impressions of Trauma</u> <u>EMS Data</u>

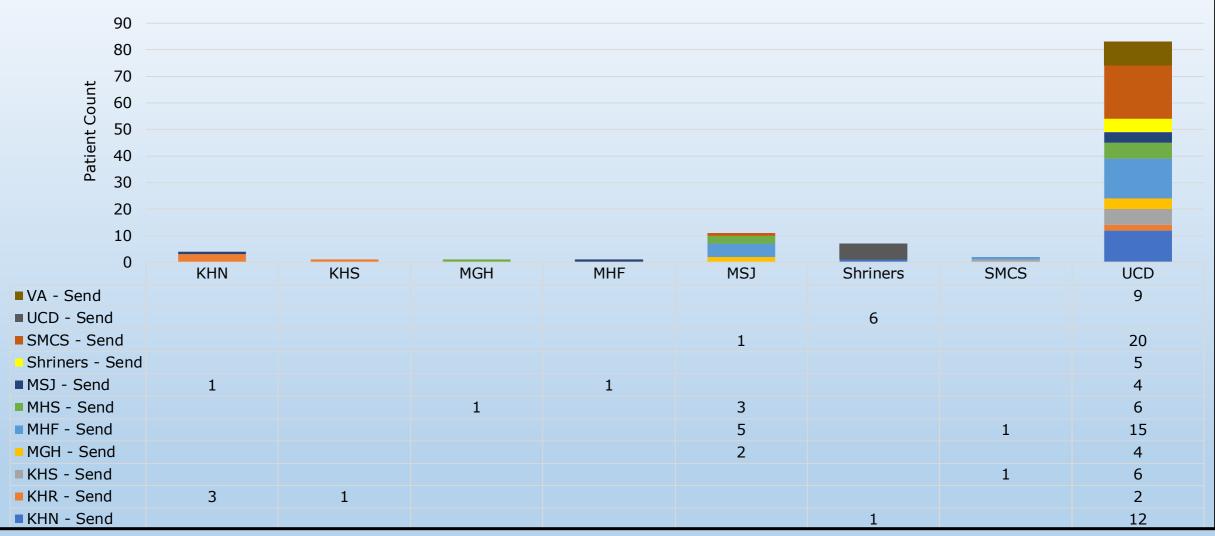


Patient Registry and Hospital Data



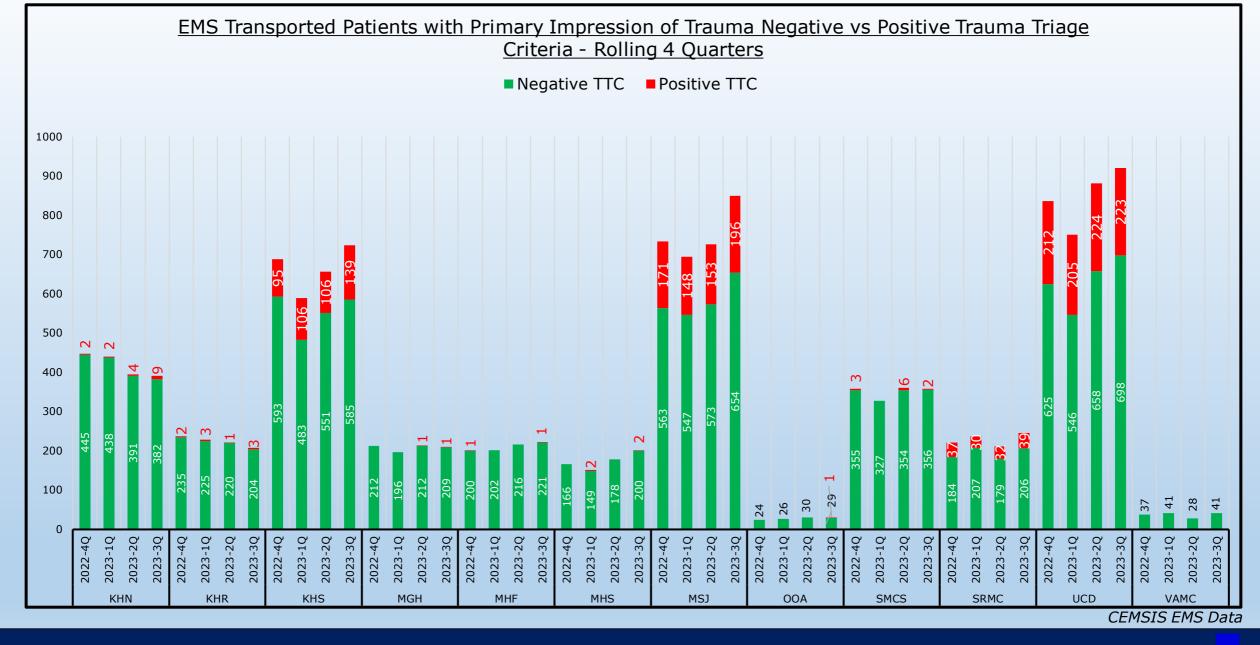


2023 3Q IFTs with Primary Impressions of Trauma EMS Data

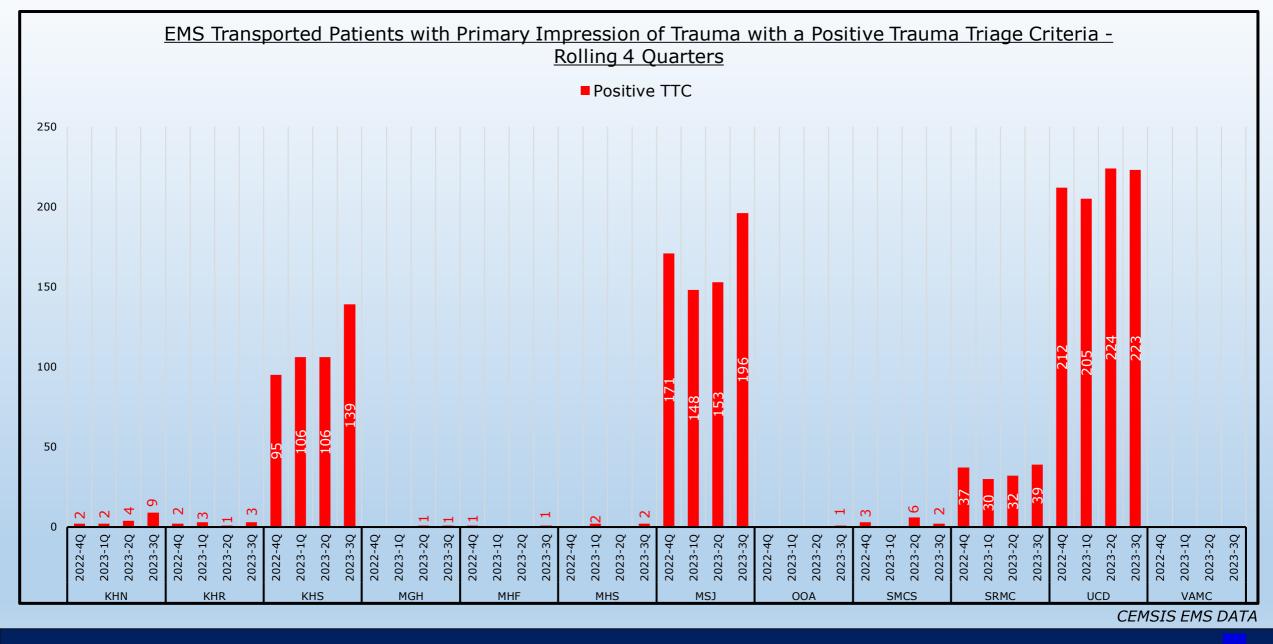


Patient Registry and Hospital Data



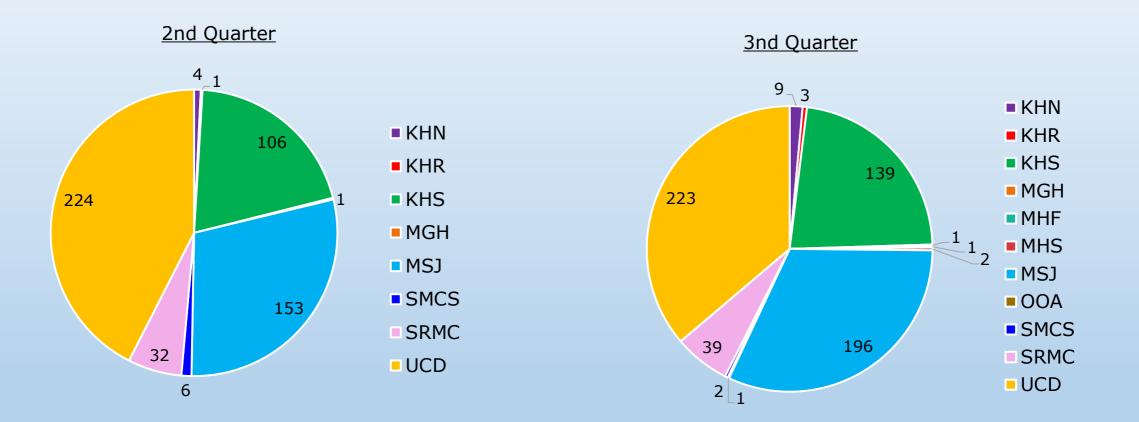








EMS Transported Patients Meeting Trauma Triage Criteria 2023 2Q and 3Q



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<u>Review of Positive Trauma Triage Criteria to</u> <u>Non- Trauma Hospital – 2023 2Q</u>

Documented Trauma Triage (Drop down box)	Findings (ePCR Narrative)
•All Penetrating Injuries	•GSW (+) TTC, Transported to MSJ (Documentation Error)
Death in Same Passenger Compartment	•MCI (+) TTC, Instructed to SMC by the Disaster Control Facility
Death in Same Passenger Compartment	•MVA (+) TTC, Instructed to SMC by the Medical Control Facility
•Motorcycle Crash > 20 MPH	•Motorcycle Crash (+) TTC, Cleared by Med Control for MGH
•All Penetrating Injuries	•Puncture Wounds/Dog Bite (-) TTC
Auto Vs Pedestrian/Bicyclist Thrown	•MVA, Patient Request for SMCS (-) TTC
•Fall Adult > 20ft	•Ground Level Fall (-) TCC
•Fall Adult > 20ft	•Ground Level Fall with Laceration to the Face (-) TTC
Pelvic Fracture	•Ground Level Fall with Possible Hip Dislocation (-) TTC
Pelvic Fracture	•Ground Level Fall with Possible Hip Dislocation (-) TTC
•Resp Rate < 10 or > 29 RR or Need for Ventilatory Support	•Ground Level Fall (-) TTC
•Resp Rate < 10 or > 29 RR or Need for Ventilatory Support	•Ground Level Fall (-) TTC

CEMSIS EMS DATA





<u>Review of Positive Trauma Triage Criteria to</u> <u>Non- Trauma Hospital – 2023 3Q</u>

Documented Trauma Triage (Drop down box)	Findings (ePCR Narrative)
All penetrating injuries to head, neck, torso, and extremities proximal to elbow or knee	(+) TTC Penetrating injury (stabbing) to LT eye
• Fall Adults: > 20 ft	(+) TTC Unwitnessed Fall, with ALOC and Hematoma on Head, Transported to KHS (Documentation Error)
Need for ventilatory support	(+) TTC Unresponsive after fall, Airway unstable , Transported to closest ER.
• Systolic Blood Pressure <90 mmHg	(+) TTC Unwitnessed fall with possible Pelvic Fracture, Request by family to Transport to KHN, (Base was contacted)
All penetrating injuries to head, neck, torso, and extremities proximal to elbow or knee	(-) TTC Skin tear on LT leg due Hoyer lift
Amputation proximal to wrist or ankle	(-) TTC Stated bus hit patient's hand, ETOH
Amputation proximal to wrist or ankle	(-) TTC Ground Level Fall with skin tears on LT and RT hand
 Auto v. Pedestrian/Bicyclist Thrown, Run Over, or > 20 MPH Impact 	(-) TTC MVA with soreness and headache
Auto v. Pedestrian/Bicyclist Thrown	(-) TTC Possible Open fracture on forearm from falling off a bike
Fall Children: > 10 ft. or 2-3 times the height of the child	(-) TTC Adult Ground Level Fall
Motorcycle Crash > 20 MPH	(-) TTC MVA Neck Pain, no deformities, and able to move extremities and walk to gurney
• Paralysis	(-) TTC Ground Level Fall with right leg pain and unable to bear weight, unstable airway after pain management
Paralysis	(-) TTC Assaulted with RT hand pain, small laceration to head
Respiratory Rate <10 or >29 breaths per minute	(-) TTC Ankle Pain after fall with swelling and unable to bear weight
Respiratory Rate <10 or >29 breaths per minute	(-) TTC Shoulder Dislocation
 Run Over, or > 20 MPH Impact 	(-) TTC The patient stated that their foot was ran over by a car, but able to walk without discomfort
• SBP < 110 for age > 65	(-) TTC Ground Level Fall
Two or more proximal long-bone fractures	(-) TTC Fall with LT arm pain, swelling and crepitus present

CEMSIS EMS DATA



<u>Shock Index Classification for EMS Transported Patients</u> with a Negative Trauma Triage Criteria 2023 2Q

Shock Index Classification	Count
No Shock (< 0.6)	1112
No Shock (< 0.6)	
Moderate Shock (\geq 0.6 to < 1.0)	2240
Severe Shock (≥ 1.0)	214
No Shock Value	24
Total	3590
	CEMSIS EMS Data

CEMSIS EMS Data





<u>Shock Index Classification for EMS Transported Patients</u> with a Negative Trauma Triage Criteria 2023 3Q

Shock Index Classification	Count
No Shock (< 0.6)	1127
Moderate Shock (\geq 0.6 to < 1.0)	2376
Severe Shock (\geq 1.0)	261
No Value	21
Total	3785

CEMSIS EMS Data





Outcome of Field TXA Patients 2023-1Q, 2Q, and 3Q

Field TXA Patient	Field Blood Pressure	Destination Blood Pressure	Blood Products Received	Destination TXA Administered	VTE/PE Present	
Patient 1	80/30	108/65	108/65 Yes		No	
Patient 2	No Documentation	104/91	Yes	No	No	
Patient 3	No Documentation	CPR	No	No	No	
Patient 4	65/50	66/P	Yes	Yes	Yes-PE	
Patient 5	0	90/P	Yes	No	No	
Patient 6	90/40	90/P	Yes	No	No	
Patient 7	80/40	UTO	Yes	No	Yes-PE	
Patient 8	181/105	162/94	No	No	No	
Patient 9	74/45	102/64	Yes	No	No	
Patient 10	86/58	66/35	Yes	No	No	
Patient 11	70/37	90/p	No	No	No	
Patient 12	70/60	80/P	Yes	Yes	No	
Patient 13	74/P	90/P	Yes	No	No	
Patient 14	No Documentation	UTO	Yes	No	No	
Patient 15	94/86	162/150	No	No	No	
Patient 16	103/66	96/64	Yes	No	No	
Patient 17	80/P	UTO	No	No	No	
Patient 18	50/60	UTO	Yes	No	No	
Patient 19	86/128	140/P	No	No	No	
Patient 20	130/94	UTO	No	No	No	
Patient 21	88/P	UTO	Yes	No	No	

CEMSIS EMS and Hospital Data



Missed Opportunities for Field TXA 2023 – 2Q and 3Q

Hospital	Count
KHC	2
KHS	2
MSJ	4
SRMC	2
UCD	8
Total	16



<u>Hospital Data - County of Origin Out of Area vs</u> <u>Sacramento County 2Q and 3Q</u>

2nd Quarter

3rd Quarter

Hospital	Out of Area	Sacramento County	Unkown	Total	Hospital	Out of Area	Sacramento County	Unkown	Tota
кнѕ	13	132	14	159	KHS	12	149	9	15
MSJ	23	361	36	420	MSJ	24	381	64	42
SRMC	0	277	0	277	SRMC	0	307	0	27
UCD	333	430	333	1096	UCD	294	422	351	106
Total	369	1200	383	1952	Total	330	1259	424	201

Patient Registry and Hospital Data

