

RIVERSIDE COUNTY EMS AGENCY MEDICATIONS & PROCEDURES REPORT 2021

MEDICATIONS & PROCEDURES REPORT

Riverside County Emergency Medical Services (EMS) has a dual response system in which both non-transport units (fire departments) and transport units (ambulance agencies and some fire departments) are dispatched to every 9-1-1 medical emergency. While all paramedics in Riverside County, regardless of agency type, are governed by the same treatment protocols and policies, *Medications* and *Procedures* administered to EMS patients with the same presenting symptoms, can vary. Factors influencing these differences include patient comorbidities, interventions prior to EMS arrival, patient acuity and compliance with treatment, as well as logistical factors such as which agency arrived 'first on scene'. Secondary factors such as field crew dynamics, experience, and differences in documentation practices can also influence how medications and procedures are utilized and documented.

REMSA Policy <u>3301</u>, also known as 'Drugs and Equipment list', describes the available medications and procedures available to Riverside County EMS providers for therapeutic intervention in the field. This report summarizes the primary medications and procedures administered by Riverside County EMS providers over the course of one year as documented in the EMS electronic patient care report (ePCR) system.

Methodology

Date

Electronic Patient Care Reports (ePCRs) were extracted from ImageTrend® Elite Report Writer between 1/1/2021 and 12/31/2021. Records for 9-1-1 non-transport and ground transport responses with one or more documented medication or procedure were included in the analysis. Each medication & procedure had to be documented as performed by a Riverside County EMS Agency credentialled provider name & ID number. This resulted in 111,629 medication ePCRs and 199,140 procedure ePCRs for a total of 207,143 unique ePCR records. The Medications Dataset where one or more medication/drug was documented, was created from 44 data fields. The Procedures Dataset where one or more procedure/equipment was documented, was created from 44 data fields. Data was collected from the REMSA 2021 Patient Care Continuum Report dataset for ePCRs where any patient contact was made to determine the number of records where at least one medication or procedure was performed. This resulted in 365,846 ePCRs and was used to calculate relative percentages of records where no medications or procedures were documented.

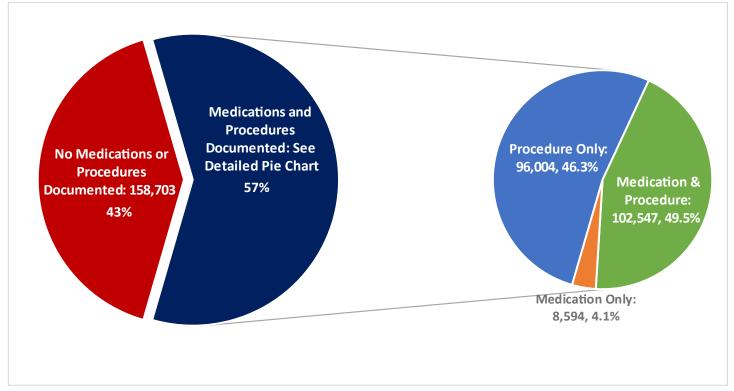
Exclusions

6,743 ePCRs (6%) from the Medications Dataset **and 5,266 ePCRs (2.6%)** from the Procedures Dataset **were excluded** from the analysis. Exclusions were due to provider name, provider role, or provider ID being blank, or medication or procedure being documented as performed by "Other". Additional Exclusions were for blank patient dispositions or dispositions indicating no patient contact was made (Canceled Enroute, Canceled Prior to Enroute, Canceled at Scene by Another Unit - No Patient Contact, No Patient Found, Non-Patient Transport, Standby: No Services or Support Provided, Standby: Public Safety, Fire, or EMS Operational Support Provided). No additional exclusions were made when the datasets were combined for analysis.

Systemwide Findings on Medications & Procedures

Out of 365,846 ePCRs from 9-1-1 responses documenting patient contact, 207,145 (56.6%) documented that a medication or procedure was administered. In Graph 1, the pie chart on the left shows the breakdown in ePCRs with a documented patient contact disposition and the difference between when a medication or procedure was documented and when none were documented. The pie chart on the right gives a break down for this subset of patient contacts where a medication, procedure, or both, were documented. This allows for comparison of counts for medications and procedures performed during patient contacts.





Response Unit Type

Response unit type describes the primary role of the EMS unit which responded to the EMS call (eResponse.07 & eResponse.13). These have been categorized into non-transport units (quick response vehicles such as fire engines, fire trucks, and squads) and transport units (ambulances). This allows for a comparison between the number of interventions performed for non-transport and transport units.

Table 1 and Table 2 below provide a breakdown of medications given, and procedures performed, by response unit type.

Table 1: Medications by Agency and Unit Type

Medications	Medications Given	Medication ePCRs	Total ePCRs	Medication ePCR Percentage	Average Medications Given
Non-Transport	56,259	27,253	176,622	15.4%	2.1
Calimesa Fire Department	28	26	976	2.7%	1.1
Cathedral City Fire Department	395	162	2,314	7.0%	2.4
Corona Fire Department	3,551	1,631	7,887	20.7%	2.2
Hemet Fire Department	1,472	688	8,430	8.2%	2.1
Idyllwild Fire Protection District	7	4	10	40.0%	1.8
March Air Reserve Base Fire Department	2	2	36	5.6%	1.0
Morongo Fire Department	344	181	3,218	5.6%	1.9
Murrieta Fire Department	1,994	1,015	8,010	12.7%	2.0
Palm Springs Fire Department	3,124	1,614	8,375	19.3%	1.9
Pechanga Fire Department	373	183	797	23.0%	2.0
Riverside City Fire Department	10,716	5,253	28,840	18.2%	2.0
Riverside County Fire Department	34,026	16,374	107,079	15.3%	2.1
Soboba Fire Department	227	120	649	18.5%	1.9
Transport	140,161	77,633	189,152	41.0%	1.8
AMR - Desert Cities	16,484	9,331	26,443	35.3%	1.8
AMR - Hemet	32,990	16,965	35,964	47.2%	1.9
AMR - Riverside	74,905	42,819	102,957	41.6%	1.7
Cathedral City Fire Department	4,007	2,059	4,764	43.2%	1.9
Idyllwild Fire Protection District	403	210	624	33.7%	1.9
Riverside County Fire Department	11,372	6,249	18,400	34.0%	1.8
Grand Total	196,420	104,886	365,778	28.7%	1.9

Table 2: Procedures by Agency and Unit Type

Procedures	Procedures Performed	Procedure ePCRs	Total ePCRs	Procedure ePCR Percentage	Average Procedures Performed
Non-Transport	102,073	54,143	176,622	30.7%	1.9
Calimesa Fire Department	21	13	976	1.3%	1.6
Cathedral City Fire Department	474	339	2,314	14.6%	1.4
Corona Fire Department	8,363	4,310	7,887	54.6%	1.9
Hemet Fire Department	890	549	8,430	6.5%	1.6
Idyllwild Fire Protection District	5	3	36	8.3%	1.7
Morongo Fire Department	469	285	3,218	8.9%	1.6
Murrieta Fire Department	5,341	3,009	8,010	37.6%	1.8
Palm Springs Fire Department	4,442	2,566	8,375	30.6%	1.7
Pechanga Fire Department	370	233	797	29.2%	1.6
Riverside City Fire Department	25,700	12,781	28,840	44.3%	2.0
Riverside County Fire Department	55,587	29,907	107,079	27.9%	1.9
Soboba Fire Department	411	148	649	22.8%	2.8
Transport	389,292	139,731	189,152	73.9%	2.8
AMR - Desert Cities	51,933	20,225	26,443	76.5%	2.6
AMR - Hemet	93,884	30,126	35,964	83.8%	3.1
AMR - Riverside	220,804	77,849	102,957	75.6%	2.8
Cathedral City Fire Department	4,399	2,623	4,764	55.1%	1.7
Idyllwild Fire Protection District	563	184	624	29.5%	3.1
Riverside County Fire Department	17,709	8,724	18,400	47.4%	2.0
Grand Total	491,365	193,874	365,778	53.0%	2.5

Top Medications & Procedures

Table 3 and Table 4 below gives us an idea of which medications or procedures are most commonly used in our EMS system by looking at how often they are documented in ePCRs. To be included in this list the medication or procedure had to appear in a minimum of 1% of the time in their dataset. 16 out of 28 medication classifications and 16 out of 68 procedure classifications met this threshold for inclusion in the tables below.

A complete alphabetical list of medications and procedures is available in Tables 5 and 6 in the following section.

Table 3: Top Medications

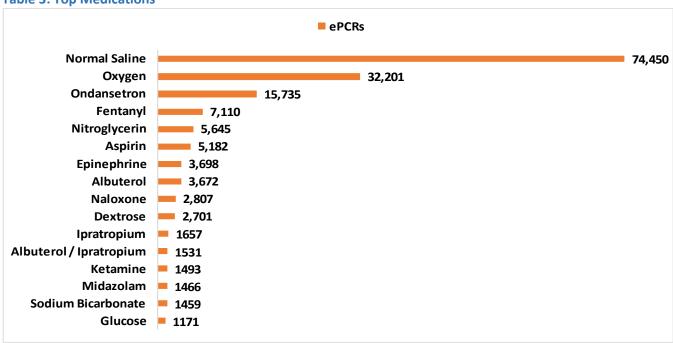
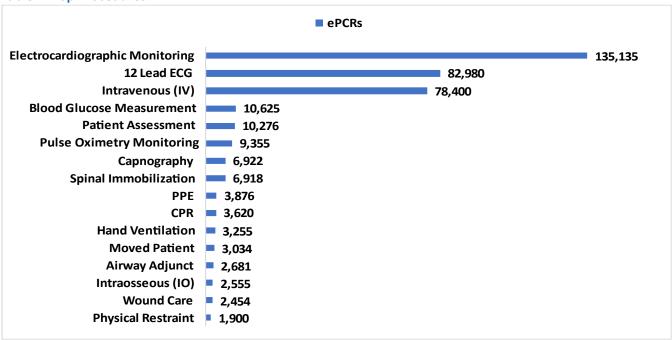


Table 4: Top Procedures



Findings by Medications Administered & Procedures Performed

In 2021, a total of 28 medication classifications were identified as administered in the ePCR system by EMS. A total of 181 unique procedures were identified as performed in the ePCR system by EMS and grouped into 81 categories. An average of 1.9 medications per medication ePCR and 2.5 procedures per procedure ePCR occurred in 2021. (These averages exclude ePCRs where no medication or procedure was performed as well as ePCRs with a canceled or no patient contact disposition.)

Table 5 and Table 6 below are in alphabetical order and provide a breakdown of these findings. "Count" refers to the number of times a medication was administered, or a procedure was performed. "ePCRs" refers to the number of patient contact ePCRs where the medication or procedure appears in. "ePCR Percentage" is the relative rate of ePCRs the medication or procedure is documented in and is based on medication ePCRs or Procedure ePCRs. ***The sum of "% of ePCRs" will add up to more than 100% due to multiple medications or procedures being documented in an ePCR***

Table 5: Medications Administered

	Medications	Medication	Medication ePCR
Medications	Given	ePCRs	Percentage
Activated Charcoal	324	317	0.2%
Activated Charcoal (272)	324	317	0.2%
Adenosine	454	417	0.2%
Adenosine (Adenocard) (296)	454	417	0.2%
Albuterol	4,261	3,672	2.2%
Albuterol (Proventil) (435) Albuterol (Proventil) Inhaler (90 μg / Metered Dose) (745682)	4,219 42	3,635 40	2.1% 0.0%
Albuterol / Ipratropium	1,553	1,531	0.8%
Albuterol / Ipratropium (Combivent, DuoNeb) (214199)	1,553	1,531	0.8%
Amiodarone	523	377	0.3%
Amiodarone (Cordarone) (703)	523	377	0.3%
Aspirin	5,189	5,182	2.6%
Aspirin (1191)	5,189	5,182	2.6%
Atropine	458	331	0.2%
Atropine (1223)	458	331	0.2%
Calcium	167	165	0.1%
Calcium Chloride (1901)	155	153	0.1%
calcium chloride 10 % 10 ML Prefilled Syringe (828527)	12	12	0.0%
Dextrose	2,734	2,701	1.4%
Dextrose 10% Half Normal Saline (244098)	1	1	0.0%
Dextrose 10% Normal Saline (244099)	1,734	1,709	0.9%
Dextrose 10% Water (237648)	862	856	0.4%
Dextrose 25% Water (260258)	45	44	0.0%
Dextrose 5% Quarter Normal Saline (630800)	7	7	0.0%
Dextrose 50% Water (237653)	85	85	0.0%
Diphenhydramine	746	737	0.4%
Diphenhydramine (Benadryl) (3498)	746	737	0.4%
Epinephrine	9,370	3,698	4.8%
Epinephrine (Epipen) Auto-Injector (0.15 mg) (727386)	3	2	0.0%
Epinephrine (Epipen) Auto-Injector (0.3 mg) (727347)	3	3	0.0%
Epinephrine 1:1,000 (1 mg/mL) (328316)	389	280	0.2%
Epinephrine 1:10,000 (0.1 mg/mL) (317361)	7,234	2,766	3.7%

Epinephrine 1:100,000 (Push Dose Epi) (330545)	1,741	875	0.9%
Fentanyl	11,274	7,110	5.7%
Fentanyl (Sublimaze) (4337)	11,274	7,110	5.7%
Glucagon	405	405	0.2%
Glucagon (4832)	398	398	0.2%
Glucagon Auto-Injector (791870)	7	7	0.0%
Glucose	1,216	1,171	0.6%
Glucose (4850)	1,216	1,171	0.6%
Ipratropium	1,668	1,657	0.8%
Ipratropium (Atrovent) (7213)	1,668	1,657	0.8%
Ketamine	1,815	1,493	0.9%
Ketamine (6130)	1,751	1,440	0.9%
Ketamine 10 MG/ML (330467)	64	53	0.0%
Lidocaine	139	139	0.1%
Lidocaine (Xylocaine) (6387)	138	138	0.1%
lidocaine 2 % Injectable Solution (317567)	1	1	0.0%
Magnesium Sulfate	79	75	0.0%
Magnesium Sulfate (6585)	79	75	0.0%
Midazolam	1,730	1,466	0.9%
Midazolam (Versed) (6960)	1,730	1,466	0.9%
Morphine	15	9	0.0%
Morphine (7052)	15	9	0.0%
Naloxone	6,629	2,807	3.4%
Naloxone (Narcan) (7242)	6,376	2,683	3.2%
Naloxone (Narcan) Auto-Injector (727348)	253	132	0.1%
Nitroglycerin	9,043	5,645	4.6%
Nitroglycerin (0.4 mg) (316365)	6,801	5,051	3.5%
Nitroglycerin (4917)	378	276	0.2%
Nitroglycerin Paste 2% (242946)	1,864	1,850	0.9%
Normal Saline	83,077	74,450	42.3%
Normal Saline (125464)	1,317	1,089	0.7%
Normal Saline (313002)	81,760	73,369	41.6%
Ondansetron	17,244	15,735	8.8%
ondansetron (as ondansetron hydrochloride) 4 MG Disintegrating Oral Tablet (104894)	73	73	0.0%
Ondansetron (Zofran) (26225)	17,171	15,670	8.7%
Oxygen	34,662	32,201	17.6%
Oxygen (7806)	34,662	32,201	17.6%
Sodium Bicarbonate	1,499	1,459	0.8%
Sodium Bicarbonate (CARES) (36676)	65	63	0.0%
Sodium Bicarbonate 4.2% (237361)	4	4	0.0%
Sodium Bicarbonate 8.4% (237363)	1,430	1,396	0.7%
Sterile Water	2	2	0.0%
Sterile Water (107129)	2	2	0.0%
Tranexamic Acid	159	157	0.1%
Tranexamic Acid (TXA, Lysteda) (10691)	159	157	0.1%
Grand Total	196,435	104,893	100.0%

Table 6: Procedures Performed

Table 6: Procedures Performed					
Procedures	Procedures	Procedure	Procedure ePCR		
	Performed	ePCRs	Percentage		
12 Lead ECG	114,867	82,980	42.8%		
12 Lead ECG (268400002)	114,744	82,961	42.8%		
ECG Transmission (422952004)	123	121	0.1%		
Active External Cooling	234	213	0.1%		
Active External Cooling (431774007)	234	213	0.1%		
Active External Warming	180	178	0.1%		
Active External Warming (431949004)	180	178	0.1%		
Airway Adjunct	2,772	2,681	1.4%		
Nasopharyngeal Airway (182692007)	1,166	1,152	0.6%		
Oropharyngeal Airway (7443007)	1,606	1,593	0.8%		
Airway Clearance by Finger Sweep	2	2	0.0%		
Airway Clearance by Finger Sweep (232706008)	2	2	0.0%		
Airway Opened	150	148	0.1%		
Airway Opened (232664002)	150	148	0.1%		
Airway Suctioning	1,013	894	0.5%		
Airway Suctioned (230040009)	879	799	0.4%		
Irrigate and Suction Endotracheal Tube (443533003)	11	10	0.0%		
Suction Endotracheal Tube (225715000)	84	74	0.0%		
Suction Newborn (18540005)	23	22	0.0%		
Vomit Removed from Airway (225713007)	16	16	0.0%		
Ambulance Requested	6	6	0.0%		
Ambulance Requested (185406000)	6	6	0.0%		
Assess Airway Device Cuff Pressure	3	3	0.0%		
Assess Airway Device Cuff Pressure (448464001)	3	3	0.0%		
Assist with Toileting	6	4	0.0%		
Assist with Toileting (313420001)	6	4	0.0%		
,	865	765	0.0%		
Chamical Hamastatia Agent for Blooding (272045002)					
Chemical Hemostatic Agent for Bleeding (372045002)	2	1	0.0%		
Direct Pressure for Bleeding (447686008)	409	402	0.2%		
Hemostatic agent applied (QuikClot or other dressing) (713147009)	18	17	0.0%		
Pressure Dressing for Bleeding (26906007)	318	303	0.2%		
Pressure to Artery for Bleeding (233419004)	15	15	0.0%		
Tourniquet for Bleeding (20655006)	103	98	0.1%		
Blood Glucose Measurement	10,997	10,625	5.5%		
Finger-prick (278450005)	7,775	7,583	3.9%		
Glucose measurement, blood (33747003)	3,222	3,042	1.6%		
Burn Care	49	38	0.0%		
Burn Care (133901003)	20	17	0.0%		
Burn Dressing Applied (90660004)	29	24	0.0%		
Capnography	7,224	6,922	3.6%		
ETCO2 Colorimetric Detection (428482009)	116	111	0.1%		
ETCO2 Digital Capnography (425543005)	7,108	6,832	3.5%		
Cardiac Pacing	161	121	0.1%		
Cardiac Pacing (18590009)	161	121	0.1%		

Cardioversion (250980009)	89	61	0.0%
,	89	61	0.0%
Central Pulses Present	266	226	0.1%
Central pulses present (ROSC) (425598000)	266	226	0.1%
Cervical Spine Stabilization	307	306	0.2%
Manual Cervical Spine Stabilization (449199004)	307	306	0.2%
Childbirth	32	32	0.0%
Childbirth (236973005)	32	32	0.0%
Comfort Measures	1,566	1,534	0.8%
Comfort care management (385897008)	16	15	0.0%
Comfort Measures (133918004)	841	838	0.4%
Position of Comfort (225994009)	702	694	0.4%
Turn Patient in Bed (359962006)	7	7	0.0%
Comfort Survivors	23	23	0.0%
Comfort Survivors (171007003)	23	23	0.0%
CPAP	1,589	1,150	0.6%
CPAP (47545007)	1,144	1,099	0.6%
CPAP Titration (446573003)	445	305	0.2%
CPR	4,341	3,620	1.9%
Manual CPR (89666000)	3,746	3,370	1.7%
Mechanical Device CPR (429283006)	595	538	0.3%
Decontamination	8	8	0.0%
Decontamination (409530006)	8	8	0.0%
Defibrillation	1,547	600	0.3%
Defibrillation (426220008)	1,547	600	0.3%
Electrocardiographic Monitoring	201,645	135,135	69.7%
3 Lead ECG (428803005)	3,782	3,776	1.9%
Cardiac Monitor Surveillance (88140007)	869	864	0.4%
Electrocardiographic monitoring (46825001)	196,994	131,694	67.9%
Endotracheal Tube	271	216	0.1%
Check Endotracheal Tube for Security (225717008)	8	6	0.0%
Check Endotracheal Tube Position by Auscultation (432028000)	48	42	0.0%
Remove Endotracheal Tube (271280005)	23	23	0.0%
Reposition Endotracheal Tube (225716004)	3	3	0.0%
Secure Endotracheal Tube by Hand (429618000)	4	4	0.0%
Secure Endotracheal Tube with Holder (429184008)	185	185	0.1%
Environmental Management	90	53	0.0%
Environmental Management for Comfort (386284008)	45	40	0.0%
Environmental Management for Safety (385873004)	45	40	0.0%
- · · · · · · · · · · · · · · · · · · ·	3	3	0.0%
extubation of trachea	3	3	0.0%
extubation of trachea (309812005)	94	92	0.0%
Extubation of trachea (309812005) E ye Care	94 14	92 14	0.0% 0.0%
Extubation of trachea (309812005) Eye Care Eye Bandaging (225692006)			
Extubation of trachea Extubation of trachea (309812005) Eye Care Eye Bandaging (225692006) Eye Irrigation (49999004) Hand Ventilation	14 80	14 79	0.0% 0.0%
Extubation of trachea (309812005) Eye Care Eye Bandaging (225692006) Eye Irrigation (49999004) Hand Ventilation	14 80 3,305	14 79 3,255	0.0% 0.0% 1.7%
Extubation of trachea (309812005) Eye Care Eye Bandaging (225692006) Eye Irrigation (49999004)	14 80	14 79	0.0% 0.0%

cc Pack 89 Chemically-activated Ice Pack Treatment (229583009) 2: Cold/Ice Pack treatment (229585002) 87 ntraosseous (IO) 2,6 Monitoring of Intraosseous (IO) Access (708010003) 1: ntravenous (IV) 83,7 Blood Draw for Labs (82078001) 18 ntravenous (IV) (392230005) 82,7 ntravenous (IV) Infusion Prior to This Unit's Care (14152002) 10 V Catheter Care (410109005) 94 V Catheter Removal (424287005) 15 Venous Puncture (396540005) 66 ntubation 1,3 Bougie, device (physical object) (26128008) 1 Cricoid Pressure Applied (241726007) 1 Endotrachael Intubation-Video Laryngoscopy (-3) 2 Intubation of Existing Tracheostomy Stoma (232685002) 5 Orotracheal Intubation (232674004) 1,2 Jaryngoscopy 2 Elexible Fiberoptic Laryngoscopy (49077009) 3 aaryngoscopy (28760000) 1 aaryngoscopy with Foreign Body Removal (19433002) 9 ubrication 1	1 21 23 863 863 25 2,555 12 2,546 3 13 78,400 87 187 276 77,298 99 109 88 912 66 62 19 1,163 1 1 2 2 5 5 14 1,154 66 96 5 25	1.3% 0.0% 0 40.4% 0.1% 8 39.9% 0.1% 0.5% 0.1% 0.0% 0.0% 0.0% 0.0% 0.0%
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Name	12 2,546 3 13 742 78,400 87 187 276 77,298 99 109 48 912 56 62 19 1,163 1 1 2 5 14 1,154 6 96 5 25	1.3% 0.0% 0.0% 40.4% 0.1% 8 39.9% 0.1% 0.5% 0.1% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%
Monitoring of Intraosseous (IO) Access (708010003) Intravenous (IV) Blood Draw for Labs (82078001) Intravenous (IV) (392230005) Intravenous (IV) (1992230005) Intravenous (IV) Infusion Prior to This Unit's Care (14152002) V Catheter Care (410109005) V Catheter Removal (424287005) I Surgia (1998) V Catheter Care (410109005) I Surgia (1998) V Catheter Care (410109005) I Surgia (1998) I Su	3 13 742 78,400 37 187 276 77,298 39 109 48 912 56 156 6 62 19 1,163 1 1 2 5 14 1,154 6 96 5 25	0.0% 40.4% 0.1% 8 39.9% 0.1% 0.5% 0.1% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%
Sacration Sacr	742 78,400 37 187 276 77,298 39 109 48 912 56 156 6 62 19 1,163 1 2 5 5 14 1,154 6 96 5 25	0 40.4% 0.1% 8 39.9% 0.1% 0.5% 0.1% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0
Slood Draw for Labs (82078001) 18 Intravenous (IV) (392230005) 82,2 Intravenous (IV) Infusion Prior to This Unit's Care (14152002) 10 V Catheter Care (410109005) 94 V Catheter Removal (424287005) 15 Venous Puncture (396540005) 66 Intubation 1,3 Sougie, device (physical object) (26128008) 1 Cricoid Pressure Applied (241726007) 1 Endotrachael Intubation-Video Laryngoscopy (-3) 2 Intubation of Existing Tracheostomy Stoma (232685002) 5 Crotracheal Intubation (232674004) 1,2 Use of Bougie / Introducer Stylet (397874007) 96 Caryngoscopy (28760000) 1 Caryngoscopy (28760000) 1 Caryngoscopy with Foreign Body Removal (19433002) 9 Usbrication 1 Usbrication (257883005) 1 Monitoring of J-tube 5 Monitoring of J-tube 302353008) 5 Mouth-to-Mask/Mouth Ventilation 5 Mouth-to-Mask/Mouth Ventilation (243180002) 5 Moved Patient 3,9	37 187 276 77,298 39 109 48 912 46 156 46 62 19 1,163 1 1 2 5 14 1,154 6 96 5 25	0.1% 8 39.9% 0.1% 0.5% 0.1% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0
ntravenous (IV) (392230005) 82,2 ntravenous (IV) Infusion Prior to This Unit's Care (14152002) 10 V Catheter Care (410109005) 94 V Catheter Removal (424287005) 15 Venous Puncture (396540005) 66 Intubation 1,3 Bougie, device (physical object) (26128008) 1 Cricoid Pressure Applied (241726007) 1 Endotrachael Intubation-Video Laryngoscopy (-3) 2 Intubation of Existing Tracheostomy Stoma (232685002) 5 Orotracheal Intubation (232674004) 1,2 Use of Bougie / Introducer Stylet (397874007) 96 Laryngoscopy 2 Flexible Fiberoptic Laryngoscopy (49077009) 3 Laryngoscopy (28760000) 13 Laryngoscopy with Foreign Body Removal (19433002) 9 Lubrication 1 Lubrication (257883005) 1 Monitoring of J-tube 5 Monitoring of J-tube (302353008) 5 Mouth-to-Mask/Mouth Ventilation 5 Moved Patient 3,9	276 77,298 99 109 18 912 66 156 6 62 19 1,163 1 1 2 5 14 1,154 6 96 5 25	8 39.9% 0.1% 0.5% 0.1% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%
ntravenous (IV) Infusion Prior to This Unit's Care (14152002) V Catheter Care (410109005) V Catheter Removal (424287005) Venous Puncture (396540005) Intubation Bougie, device (physical object) (26128008) Cricoid Pressure Applied (241726007) Endotrachael Intubation-Video Laryngoscopy (-3) Intubation of Existing Tracheostomy Stoma (232685002) Corotracheal Intubation (232674004) Jayse of Bougie / Introducer Stylet (397874007) Laryngoscopy Flexible Fiberoptic Laryngoscopy (49077009) Laryngoscopy (28760000) Laryngoscopy with Foreign Body Removal (19433002) Lubrication Lubrication (257883005) Monitoring of J-tube Monitoring of J-tube (302353008) Mouth-to-Mask/Mouth Ventilation Mouth-to-Mask/Mouth Ventilation (243180002) Moved Patient 15	109 109 109 109 109 109 109 109	0.1% 0.5% 0.1% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0
V Catheter Care (410109005) 94 V Catheter Removal (424287005) 15 Venous Puncture (396540005) 66 Intubation 1,3 Bougie, device (physical object) (26128008) 1 Cricoid Pressure Applied (241726007) 1 Endotrachael Intubation-Video Laryngoscopy (-3) 2 Intubation of Existing Tracheostomy Stoma (232685002) 5 Orotracheal Intubation (232674004) 1,2 Jse of Bougie / Introducer Stylet (397874007) 96 Laryngoscopy 2 Elexible Fiberoptic Laryngoscopy (49077009) 3 Laryngoscopy (28760000) 13 Laryngoscopy with Foreign Body Removal (19433002) 9 Lubrication 1 Lubrication (257883005) 1 Monitoring of J-tube 5 Monitoring of J-tube 5 Mouth-to-Mask/Mouth Ventilation 5 Moved Patient 3,9	912 66 156 6 62 19 1,163 1 1 2 2 5 5 14 1,154 6 96 5 25	0.5% 0.1% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0
V Catheter Removal (424287005) Venous Puncture (396540005) Venous Puncture (396540005) Ontubation Bougie, device (physical object) (26128008) Cricoid Pressure Applied (241726007) Endotrachael Intubation-Video Laryngoscopy (-3) Intubation of Existing Tracheostomy Stoma (232685002) Orotracheal Intubation (232674004) Laryngoscopy Flexible Fiberoptic Laryngoscopy (49077009) Laryngoscopy (28760000) Laryngoscopy with Foreign Body Removal (19433002) Lubrication Lubrication (257883005) Monitoring of J-tube Monitoring of J-tube (302353008) Mouth-to-Mask/Mouth Ventilation Mouth-to-Mask/Mouth Ventilation Mouth-to-Mask/Mouth Ventilation (243180002) Moved Patient 13.6 15.7 16.7 17.7 18.7	156 6 62 19 1,163 1 1 2 2 5 5 14 1,154 6 96 5 25	0.1% 0.0% 0.6% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%
Venous Puncture (396540005) Intubation Sougie, device (physical object) (26128008) Cricoid Pressure Applied (241726007) Endotrachael Intubation-Video Laryngoscopy (-3) Intubation of Existing Tracheostomy Stoma (232685002) Crotracheal Intubation (232674004) I,2 Use of Bougie / Introducer Stylet (397874007) Selexible Fiberoptic Laryngoscopy (49077009) Laryngoscopy Flexible Fiberoptic Laryngoscopy (49077009) Laryngoscopy with Foreign Body Removal (19433002) Subrication Lubrication (257883005) Monitoring of J-tube Monitoring of J-tube (302353008) Mouth-to-Mask/Mouth Ventilation Mouth-to-Mask/Mouth Ventilation (243180002) Moved Patient 13,3 14,3 15,3 16,17	6 62 19 1,163 1 1 2 2 5 5 14 1,154 6 96 5 25	0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%
Intubation Bougie, device (physical object) (26128008) Cricoid Pressure Applied (241726007) Endotrachael Intubation-Video Laryngoscopy (-3) Intubation of Existing Tracheostomy Stoma (232685002) Crotracheal Intubation (232674004) Jse of Bougie / Introducer Stylet (397874007) Laryngoscopy Elexible Fiberoptic Laryngoscopy (49077009) Laryngoscopy (28760000) Laryngoscopy with Foreign Body Removal (19433002) Lubrication Lubrication (257883005) Monitoring of J-tube Monitoring of J-tube (302353008) Mouth-to-Mask/Mouth Ventilation Mouth-to-Mask/Mouth Ventilation (243180002) Moved Patient 1.3.3	19 1,163 1 1 1 2 2 5 5 14 1,154 6 96 5 25	0.6% 0.0% 0.0% 0.0% 0.0% 0.6% 0.0%
Bougie, device (physical object) (26128008) Cricoid Pressure Applied (241726007) Endotrachael Intubation-Video Laryngoscopy (-3) Intubation of Existing Tracheostomy Stoma (232685002) Crotracheal Intubation (232674004) Lase of Bougie / Introducer Stylet (397874007) Laryngoscopy Flexible Fiberoptic Laryngoscopy (49077009) Laryngoscopy (28760000) Laryngoscopy with Foreign Body Removal (19433002) Lubrication Lubrication (257883005) Monitoring of J-tube Monitoring of J-tube (302353008) Mouth-to-Mask/Mouth Ventilation Mouth-to-Mask/Mouth Ventilation (243180002) Moved Patient	. 1 . 1 . 2 . 5 . 5 . 14 1,154 . 6 96 . 5 . 25	0.0% 0.0% 0.0% 0.0% 4 0.6% 0.0%
Cricoid Pressure Applied (241726007) Endotrachael Intubation-Video Laryngoscopy (-3) Intubation of Existing Tracheostomy Stoma (232685002) Crotracheal Intubation (232674004) I,2 Use of Bougie / Introducer Stylet (397874007) Elexible Fiberoptic Laryngoscopy (49077009) Earyngoscopy (28760000) Earyngoscopy with Foreign Body Removal (19433002) Eubrication Eubrication (257883005) Monitoring of J-tube Monitoring of J-tube (302353008) Mouth-to-Mask/Mouth Ventilation Mouth-to-Mask/Mouth Ventilation (243180002) Moved Patient 12 13 14 15 16 17 17 18 18 19 19 19 19 19 19 19 19	. 1 2 2 5 5 14 1,154 6 96 5 25	0.0% 0.0% 0.0% 0.6% 0.0%
Endotrachael Intubation-Video Laryngoscopy (-3) 12	2 5 5 14 1,154 6 96 5 25	0.0% 0.0% 4 0.6% 0.0% 0.0%
Endotrachael Intubation-Video Laryngoscopy (-3) 12	5 5 14 1,154 6 96 5 25	0.0% 4 0.6% 0.0% 0.0%
ntubation of Existing Tracheostomy Stoma (232685002) Orotracheal Intubation (232674004) Jse of Bougie / Introducer Stylet (397874007) Laryngoscopy Flexible Fiberoptic Laryngoscopy (49077009) Laryngoscopy (28760000) Laryngoscopy with Foreign Body Removal (19433002) Lubrication Lubrication (257883005) Monitoring of J-tube Monitoring of J-tube (302353008) Mouth-to-Mask/Mouth Ventilation Mouth-to-Mask/Mouth Ventilation (243180002) Moved Patient 5 Moved Patient	14 1,154 6 96 5 25	0.6% 0.0% 0.0%
Drotracheal Intubation (232674004) 1,2 Use of Bougie / Introducer Stylet (397874007) 99 Laryngoscopy 2! Elexible Fiberoptic Laryngoscopy (49077009) 3 Laryngoscopy (28760000) 13 Laryngoscopy with Foreign Body Removal (19433002) 99 Lubrication (257883005) 11 Monitoring of J-tube (302353008) 55 Mouth-to-Mask/Mouth Ventilation 55 Mouth-to-Mask/Mouth Ventilation (243180002) 55 Moved Patient 3,9	14 1,154 6 96 5 25	0.6% 0.0% 0.0%
Use of Bougie / Introducer Stylet (397874007) Laryngoscopy Flexible Fiberoptic Laryngoscopy (49077009) Laryngoscopy (28760000) Laryngoscopy with Foreign Body Removal (19433002) Lubrication Lubrication (257883005) Monitoring of J-tube Monitoring of J-tube (302353008) Mouth-to-Mask/Mouth Ventilation Mouth-to-Mask/Mouth Ventilation (243180002) Moved Patient 90 10 11 12 13 14 15 15 16 17 17 18 18 18 18 18 18 18 18	96 5 25	0.0% 0.0%
Laryngoscopy Flexible Fiberoptic Laryngoscopy (49077009) Laryngoscopy (28760000) Laryngoscopy with Foreign Body Removal (19433002) Lubrication Lubrication (257883005) Monitoring of J-tube Monitoring of J-tube (302353008) Mouth-to-Mask/Mouth Ventilation Mouth-to-Mask/Mouth Ventilation (243180002) Moved Patient 29 29 30 31 32 33 34 35 36 36 37 37 38 38 38 38 38 38 38 38	5 25	0.0%
Flexible Fiberoptic Laryngoscopy (49077009) Laryngoscopy (28760000) Laryngoscopy with Foreign Body Removal (19433002) Lubrication Lubrication (257883005) Monitoring of J-tube Monitoring of J-tube (302353008) Mouth-to-Mask/Mouth Ventilation Mouth-to-Mask/Mouth Ventilation (243180002) Moved Patient 339		
Laryngoscopy (28760000) Laryngoscopy with Foreign Body Removal (19433002) Lubrication Lubrication (257883005) Monitoring of J-tube Monitoring of J-tube (302353008) Mouth-to-Mask/Mouth Ventilation Mouth-to-Mask/Mouth Ventilation (243180002) Moved Patient 13433002	•	
Laryngoscopy with Foreign Body Removal (19433002) Lubrication Lubrication (257883005) Monitoring of J-tube Monitoring of J-tube (302353008) Mouth-to-Mask/Mouth Ventilation Mouth-to-Mask/Mouth Ventilation (243180002) Moved Patient 9 9 9 9 9 9 9 9 9 9 1 1 1	3 13	0.0%
Lubrication 1 Lubrication (257883005) 1 Monitoring of J-tube 5 Monitoring of J-tube (302353008) 5 Mouth-to-Mask/Mouth Ventilation 5 Mouth-to-Mask/Mouth Ventilation (243180002) 5 Moved Patient 3,9		0.0%
Lubrication (257883005) Monitoring of J-tube Monitoring of J-tube (302353008) Mouth-to-Mask/Mouth Ventilation Mouth-to-Mask/Mouth Ventilation (243180002) Moved Patient 1 1 1 1 1 1 1 1 1 1 1 1 1		0.0%
Monitoring of J-tube5Monitoring of J-tube (302353008)5Mouth-to-Mask/Mouth Ventilation5Mouth-to-Mask/Mouth Ventilation (243180002)5Moved Patient3,9		0.0%
Monitoring of J-tube (302353008) Mouth-to-Mask/Mouth Ventilation Mouth-to-Mask/Mouth Ventilation (243180002) Moved Patient 3,9		0.0%
Mouth-to-Mask/Mouth Ventilation5Mouth-to-Mask/Mouth Ventilation (243180002)5Moved Patient3,9		0.0%
Mouth-to-Mask/Mouth Ventilation (243180002) 5 Moved Patient 3,9		0.0%
Moved Patient 3,9		0.0%
,		
3,5 Since the street (30405003)		
Needle Chest Decompression 10		0.0%
Needle Chest Decompression (182705007)		0.0%
· · · · · · · · · · · · · · · · · · ·		0.0%
•		
Notify Coroner (363049002) 48 Nutrition and Oral Intake 6		0.0%
		0.0%
Giving oral fluid (225285007) 4	_	0.0%
Provision of food (710925007)	-	0.0%
Occlusive Wound Dressing 99		0.0%
Occlusive Wound Dressing (22206003)		0.0%
Orthostatic Vital Signs 74		0.4%
Orthostatic Vital Signs (425058005) 74		0.4%
Oxygen 20		0.1%
Blow by oxygen mask (physical object) (425478008)	_	0.0%
Nonrebreather oxygen mask (physical object) (427591007) 4:	1 14	0.0%
Oxygen nasal cannula (physical object) (336623009) 11		0.1%

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Oxygen Prior to This Unit's Care (57485005)	45	45	0.0%
Patient Assessment	12,652	10,276	5.3%
Adult care assessment (408994004)	1	1	0.0%
Continuous Patient Assessment (422618004)	2,596	2,568	1.3%
nitial Patient Assessment (315639002)	9,984	9,973	5.1%
Newborn Continuous Patient Assessment (423589000)	18	16	0.0%
Patient Assessment (Triage) (245581009)	53	52	0.0%
Physical Restraint	2,905	1,900	1.0%
Physical Restraint (386423001)	1,784	1,574	0.8%
Physical Restraint Checked and Maintained (35497000)	1,121	887	0.5%
Police Requested	20	20	0.0%
Police Requested (184966003)	20	20	0.0%
PPE	3,944	3,876	2.0%
Airborne Precautions (409524006)	339	339	0.2%
Aspiration Precautions (386519006)	7	7	0.0%
Blood and Fluids Precautions (65011002)	47	47	0.0%
Contact Precautions (409529001)	100	100	0.1%
Face mask/covering for Patient (465635009)	531	529	0.3%
solation (40174006)	6	6	0.0%
Respiratory Secretion Precautions (409525007)	20	20	0.0%
Standard Precautions (409522005)	2,894	2,880	1.5%
Psycho-spiritual Comforting	646	626	0.3%
Psycho-spiritual Comforting (385728004)	646	626	0.3%
Pulse Oximetry Monitoring	9,371	9,355	4.8%
Pulse Oximetry Monitoring (284034009)	9,371	9,355	4.8%
Removal of Foreign Body	29	29	0.0%
Foreign Body Removed from Airway (232707004)	22	22	0.0%
Removal of Foreign Body (10849003)	5	5	0.0%
Removal of Foreign Body from Skin (302421003)	2	2	0.0%
Removal of Ring from Finger	24	24	0.0%
Removal of Ring from Finger (426509009)	24	24	0.0%
Remove Device from Airway	2	2	0.0%
Remove Device from Airway (232708009)	2	2	0.0%
Report	2,418	1,527	0.8%
Report to Nurse (385775004)	1,522	1,513	0.8%
Report to Physician (304562007)	896	892	0.5%
Safety Management	40	40	0.0%
Safety Management (712991000)	40	40	0.0%
Sling	300	287	0.1%
Sling Applied (182558000)	281	281	0.1%
Sling Maintained (81533008)	19	19	0.0%
Spinal Immobilization	7,053	6,918	3.6%
Cervical Collar Applied (49689007)	6,482	6,473	3.3%
Cervical Spine Stabilization (398041008)	571	569	0.3%
Splint	1,332	1,282	0.3% 0.7%
Air Splint Applied (274475000)	378	371	0.2%
Extrication splint device (physical object) (421925007)	3	3	0.2%
Splint Applied (79321009)	5 773	5 758	0.0%
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Splint Maintained (10442004)	27	25	0.0%
Vacuum Splint Applied (427996005)	151	146	0.1%
Time of death	57	57	0.0%
Time of death (observable entity) (398299004)	57	57	0.0%
Tracheostomy Care/Monitoring	5	5	0.0%
Tracheostomy Care/Monitoring (410213006)	5	5	0.0%
Traction	59	52	0.0%
Application of skeletal traction via the femur (239656007)	1	1	0.0%
Traction Maintained (48035000)	10	10	0.0%
Traction Splint Applied (302488007)	48	48	0.0%
Unexpected death-Coroner told	21	21	0.0%
Unexpected death-Coroner told (finding) (270115005)	21	21	0.0%
Vagal Maneuver	216	196	0.1%
Vagal Maneuver (128968000)	216	196	0.1%
Ventilator	4	4	0.0%
Ventilator Care and Adjustment (385857005)	4	4	0.0%
Wound Care	2,761	2,454	1.3%
Wound Care (225358003)	100	97	0.1%
Wound Dressing (182531007)	2,451	2,262	1.2%
Wound Irrigation (225116006)	210	195	0.1%
Grand Total	491,366	193,875	100.0%

Data in this report is provided by the efforts of the Riverside County EMS System and its EMS Providers in ensuring quality care and documentation of patient encounters.

Report prepared by Sean Hakam & Catherine Farrokhi, Data & Reporting Unit, Riverside County EMS Agency

For more information, please contact Riverside County EMS Administrator, Trevor Douville tdouville@rivco.org