I. <u>Purpose:</u>

A. To establish local documentation and reporting of medications and practices of state and county regulated procedures and protocols in Imperial County.

II. <u>Authority:</u>

A. Health and Safety Code, Section 1797.220, 1798. Title 22, Section 100170.

III. <u>Background:</u>

- A. The California Emergency Medical Services Authority (EMSA) implemented regulations related to Quality Improvement (QI) programs for EMS services throughout the state which require the Local EMS Agencies (LEMSA) to develop integrated, multidisciplinary processes for the management of quality in their systems.
- B. The clinical QI program for the Imperial County EMS System incorporates all EMS stakeholders within its jurisdiction. The LEMSA in conjunction with the prehospital provider agencies develops and implements QI activities. In addition, each provider agency will submit an annual report of QI activities to the LEMSA. The LEMSA incorporates the provider agency QI Activity reports into its annual report of QI activities that it will review and monitor through quality assurance review. See Quality Assurance and Improvement Policy for Agency quality assurance (QA) plan recommendations.
- C. The included indicators were determined to be of a high priority for continuous monitoring by the Imperial County quality assurance review. This list is not intended to limit the monitoring and reporting of other performance indicators selected by EMS provider agencies. Through continuous collaboration by quality assurance and review, and in response to policy and protocol updates, identified trends in incident reports and/or complaints received by the EMS Agency, and other factors, additional performance indicators will be identified for continuous or temporary monitoring.
- D. The Clinical QA process in Imperial County EMS evaluates important aspects of prehospital patient care such as compliance with policies and patient treatment protocols. Audit filters are used to monitor compliance with standards of care. The QA process ensures a review of any care that falls outside the identified standard and implementation of improvement plans to correct deficiencies. Improvement plans are monitored for continued progress towards the identified goals.

E. Each provider agency should have designated personnel who manage the internal quality improvement process for that agency. The provider agency QI personnel and medical directors report issues in medical management of patients to the EMS Agency Medical Director and EMS Manager upon completion of their internal QI review.

IV. <u>Responsibilities:</u>

- A. Responsibilities of the Imperial County EMS Agency:
 - 1. Develop and implement quality assurance review based on EMSA regulations.
 - 2. Provide logistical and administrative support for quality assurance and review.
 - 3. In collaboration with provider agencies, identify and develop indicators for performance measurement.
 - 4. Maintain summary quality assurance reports submitted by the provider agencies.
 - 5. Oversee the development of any indicated Performance Improvement Processes.
 - 6. Facilitate the development of education and training programs for the provider agencies in relation to the implementation of the quality assurance process.
 - 7. Monitor and Report progress of the quality assurance process.
- B. Responsibilities of EMS agencies within Imperial County
 - 1. In cooperation with the EMS Agency, implement quality assurance review internally.
 - 2. Assist in the identification of indicators needed and ensure compliance with completion of required indicators.
 - 3. Share results of internal QI activities as well as dissemination of appropriate information forwarded from the quality assurance review with all EMS personnel within the agency.
 - 4. Develop and implement a provider-specific written quality assurance plan.
 - 5. Review the provider-specific quality assurance annually for effectiveness in identifying and resolving provider related QI issues and revise as needed.
 - 6. Provide the EMS Agency with all required reports including an annual update on the provider quality assurance and review.

V. <u>Reporting Clinical Indicators:</u>

A. Each provider agency will complete the indicators based on the care that their personnel render to the patient. Using an Excel Spread Sheet as exemplified on the next page, each provider agency will submit the required information for the clinical indicator currently in use to the EMS Agency. The EMS Agency will send the spreadsheet electronically to each provider agency.

- B. The clinical indicator information, in spreadsheet form, will be due back to Imperial County EMS Agency by the 15th business day of the following month. The Agency will review and validate the data and look for trends. Trends derived from the clinical indicators will be discussed at the quality assurance review meetings.
- C. The indicators will measure current compliance with identified best practices. If compliance is maintained or improved, the indicators may be retired and new indicators are developed through the quality assurance review.
- D. Imperial County EMS will maintain the records of the results of the clinical indicators submitted by the local provider agencies. The provider agencies will maintain all raw data collected for the clinical indicators should there be any questions about trends or identified issues
- E. The indicators required for reporting include:
 - 1. ACS Administration of aspirin for suspected ACS
 - 2. ACS Completion of 12 Lead EKG
 - 3. TRA Transport of Trauma Patients to a Trauma Center
 - 4. HYP Treatment Administered for Hypoglycemia
 - 5. STR Prehospital Screening for Suspected Stroke Patients
 - 6. PED Respiratory Assessment for Pediatric Patients
 - 7. RST 911 Requests for Services That Included a Lights and/or Sirens Response
 - 8. RST 911 Requests for Services That Included a Lights and/or Sirens Transport
 - 9. Ambulance Patient Offloading Time
 - HEMS Unified Scope Reporting Requirements, ETA and dispatch requirement (per EMSA unified scope requirement)
 - 11. Respiratory and Cardiac Arrest
 - a. Airway and Breathing Interventions
 - i. Supraglottic Airway Use (Cardiac Arrest and Respiratory Arrest)
 - ii. Continuous EtCO2 Pre and Post Intervention
 - iii. CPAP Use

b.	Cardiac	Arrest
b.	Cardiac	Arrest

- i. Suspected medical or traumatic source
- ii. Adult or pediatric
- iii. Witnessed or unwitnessed
- iv. Defibrillation Occurred
 - v. Airway (should be included in Airway Intervention)
- vi. Medications
- vii. ROSC, termination of resuscitation, obvious death, transported to hospital
- viii. Transport
- 12. Procedures and Medications
 - a. Pleural Decompression
 - i. Adult or pediatric
 - ii. Spontaneous or traumatic suspected etiology
 - b. Dopamine administration
 - c. Push-dose epinephrine administration
 - d. Local Optional Scope Medications for Medics
 - i. Tranexamic acid
 - ii. Ketorolac
 - iii. IV Acetaminophen
 - iv. Interfacility transport antibiotic

Reporting Example	
Reporting Period:	Monthly
Numerator:	Total Number of patients encountered with symptoms suggestive
	of suspected Acute Coronary Syndrome which were correctly
	treated according to IC Treatment Protocol 9170. (N=90).
Denominator:	Total number of patients who presented with symptoms
	suggestive of Acute Coronary Syndrome. (D=95)
Formula:	Numerator/Denominator * 100=% (90/95) * 100= 95% Summary
Indicator	95% compliance with IC Treatment Protocol 9170
	for patients who present with symptoms suggestive Acute
	Coronary Syndrome.

Acute Coronary Syndrome (ACS) – Aspirin

DEFINITIONS:

% Compliance:	Percentage (%) of adult patients assessed by EMS personnel who present with
	symptoms consistent with suspected Acute Coronary Syndrome (ACS) and are
	treated with Aspirin (ASA) prior to hospital arrival.
Adult patient:	Age >35 years
Symptoms of ACS	Including but not limited to one or more of the following suspected cardiac
	complaints: chest pain or pressure; chest tightness, discomfort, arm or neck pain,
anginal equivalent including shortness of breath	

REPORTING:

Indicator items:	Total number of patients presenting with symptoms suggestive of Acute
	Coronary Syndrome
	Total number of above identified patients who received ASA according to the
	chest pain/suspected ACS protocol.
	% compliance rate for correct protocol use in patients presenting to EMS
	personnel with suspected cardiac ischemia.
Reporting formula:	N/D * 100 = %
Data Points:	Inclusion criteria:
	• Patient age > 35 years

Quality Assurance and Improvement Reporting

Operational Policies

•	Patient complains of symptoms suggestive of suspected Acute
	Coronary Syndrome.

- IC chest pain/suspected ACS protocol is utilized
- Appropriate aspirin dose (324 mg) is documented
- If unable to provide aspirin, document why

Numerator:

Total Number of patients encountered with symptoms suggestive of Acute Coronary Syndrome who received ASA. (N)

Denominator:

Number of patients who presented with symptoms suggestive of Acute Coronary Syndrome (D)

Reporting Period: Monthly

Data Source: Patient Care Reports

Acute Coronary Syndrome (ACS) – Pre-Hospital 12-Lead

% Compliance:	Percentage (%) of patients assessed by EMS personnel who present with symptoms consistent with suspected ACS, and received a 12 lead by paramedics prior to hospital arrival.
Symptoms of ACS	Including but not limited to one or more of the following suspected cardiac complaints: chest pain or pressure; chest tightness, discomfort, arm, or neck pain, or anginal equivalent, including shortness of breath.
REPORTING:	
Indicator items:	Total number of patients presenting with symptoms suggestive of Acute Coronary Syndrome
	Total number of above identified patients who received 12-lead according to IC treatment protocol for chest pain/suspected ACS.
	% compliance rate for correct protocol use in patients presenting to EMS Personnel with suspected cardiac ischemia.
Reporting formula:	N/D * 100 = %
Data Points:	 Inclusion criteria: Patient age > 18 years Patient complains of symptoms suggestive of suspected Acute Coronary Syndrome. IC Treatment Protocol for chest pain/suspected ACS.

Numerator:	
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Total Number of patients encountered with symptoms suggestive of Acute Coronary Syndrome who a 12 lead was performed on. (N)

Denominator:

Number of patients who presented with symptoms suggestive of Acute Coronary Syndrome (D)

Reporting Period: Monthly

Data Source: Patient Care Reports

Treatment Administered for Hypoglycemia

% Compliance:	Percentage (%) of patients received treatment to correct their hypoglycemia originating from a 911 response
Hypoglycemia:	Glucose level <80 mg/dL (adult), 60mg/dL (child) or 45mg/dL (neonate)
REPORTING:	
Indicator items:	Total number of patients with hypoglycemia
	Total number of above identified patients who received treatment according to the corresponding protocol.
	% compliance rate for correct protocol use in patients presenting to EMS personnel with hypoglycemia.
Reporting formula:	N/D * 100 = %
Data Points:	Inclusion criteria: • Hypoglycemia
	<i>Numerator:</i> Total number of patients who received treatment to correct hypoglycemia originating from a 911 response. (N)
	Denominator: Number of patients who presented with hypoglycemia (D)

Reporting Period: Monthly

Data Source:

Patient Care Reports

Suspected Acute Stroke Glucose Monitoring

DEFINITIONS:

% *Compliance:* Percentage (%) of patients assessed by EMS personnel as suspecting acute stroke and receive glucose testing.

Acute suspected Stroke:

Any change in a patient's neurological state displaying neurological deficit.

REPORTING:

Indicator item: % Compliance glucose testing rate per total cases

Reporting formula: N/D * 100 = %

Data points:

	Inclusion criteria: Patient concerning for stroke presentation
Numerator:	Total number of patients who had glucose testing on all suspected strokes
Denominator:	Total number of patient cases assessed by EMS personnel as suspected Acute Stroke Symptoms
Reporting period:	Monthly
Data source:	Patient Care Reports

Acute Stroke – Stroke Scale Assessment Documentation

% Compliance:	Percentage (%) of patients assessed by EMS personnel who present with symptoms
	consistent with suspected Acute Stroke and received a Stroke Scale Assessment
	documented prior to hospital arrival.
Symptoms of suspected stroke	Including but not limited to one or more of the following complaints: unilateral weakness, paresthesia, facial droop, difficulty speaking, vision changes, balance or ambulation issues.
REPORTING:	
Indicator items:	Total number of patients presenting with symptoms suggestive of Acute Stroke using BEFAST scoring system
	Total number of above identified patients who received a Stroke Scale Assessment according to IC treatment protocol for altered mental status.
	% compliance rate for correct protocol use in patients presenting to EMS Personnel with suspected Acute Stroke.
Reporting formula:	N/D * 100 = %
Data Points:	<i>Inclusion criteria</i> : Patient complains of symptoms suggestive of suspected Acute Stroke. IC Treatment Protocol for altered mental status.
	<i>Numerator:</i> Total Number of patients encountered with symptoms suggestive of Acute Stroke who a Stroke Assessment (N)
	<i>Denominator:</i> Number of patients who presented with symptoms suggestive of Acute Stroke (D)
Reporting Period:	Monthly
Data Source:	Patient Care Reports

Performance of Skills – Endotracheal Intubation

% Compliance:	Percentage (%) of adult, or adult-sized, patients who received successful endotracheal intubation within two attempts in a prehospital setting.
Adult patient:	Patient age > 14 years old (or patients qualifying by size greater than pediatric length-based tape)
REPORTING:	
Indicator items:	Total number of all events with endotracheal intubation attempts
	% compliance rate for successful endotracheal intubations as defined as successful within 2 (two) attempts.
Reporting formula:	N/D * 100 = %
Data Points:	 Inclusion criteria: Patient age > 14 years or size greater than pediatric length-based tape Patient receiving endotracheal intubation attempts
	<i>Numerator:</i> Total Number of patients encountered with a successful endotracheal intubation within 2 attempts. (N)
	<i>Denominator:</i> Number of patients who received an endotracheal intubation attempt. (D)
Reporting Period:	Monthly
Data Source:	Patient Care Reports; Intubation Validation Form

Performance of Skills – King Airway

% Compliance:	Percentage (%) of adult, or adult-sized, patients who received successful King Airway application within two attempts in a prehospital setting.
Adult patient:	Patient age > 14 years old (or patients qualifying by size greater than pediatric length-based tape)
REPORTING:	
Indicator items:	Total number of all events with King Airway attempts
	% compliance rate for successful King Airway placement as defined as successful within 2 (two) attempts.
Reporting formula:	N/D * 100 = %
Data Points:	 Inclusion criteria: Patient age > 14 years or size greater than pediatric length-based tape Patient receiving King Airway attempts
	Numerator:
	Total Number of patients encountered with a successful King Airway application within 2 attempts. (N)
	Denominator:
	Number of patients who received a King Airway attempt. (D)
Reporting Period:	Monthly
Data Source:	Patient Care Reports

Performance of Skills – Continuous Positive Airway Pressure (CPAP)

% Compliance:	Percentage (%) of adult, or adult-sized, patients who received appropriate CPAP application in a prehospital setting.
Adult patient:	Patient age > 14 years old (or patients qualifying by size greater than pediatric length-based tape)
REPORTING:	
Indicator items:	Total number of all events with CPAP application
	% compliance rate for successful CPAP application without negative outcome
Reporting formula:	N/D * 100 = %
Data Points:	Inclusion criteria:
	 Patient age > 14 years or size greater than pediatric length-based tape Patient receiving CPAP application
	Numerator:
	Total Number of patients encountered with application of CPAP
	Denominator:
	Number of patients who received CPAP application. (D)
Reporting Period:	Monthly
Data Source:	Patient Care Reports

Performance of Skills – Pleural Decompression

% Compliance:	Percentage (%) of adult, or adult-sized, patients who received appropriate pleural decompression in a prehospital setting.
Adult patient:	Patient age > 14 years old (or patients qualifying by size greater than pediatric length-based tape)
REPORTING:	
Indicator items:	Total number of all events with pleural decompression
	% compliance rate for pleural decompression without negative outcome
Reporting formula:	N/D * 100 = %
Data Points:	Inclusion criteria:
	• Patient age > 14 years or size greater than pediatric length-based tape
	Patient receiving pleural decompression
	Numerator:
	Total Number of patients encountered with application of pleural decompression
	Denominator:
	Number of patients who received pleural decompression. (D)
Reporting Period:	Monthly
Data Source:	Patient Care Reports

Out-of-Hospital Cardiac Arrest – Return of Spontaneous Circulation

% Compliance:	Percentage (%) of patients who experience cardiac arrest have return of
	spontaneous circulation (ROSC) prior to arrival or receiving facility.
Resuscitation:	Any time an EMS provider provides chest compressions.
REPORTING:	
Indicator items:	Total number of patients presenting with resuscitation due to cardiac arrest
	% rate for patients who had ROSC after resuscitation prior to arrival of receiving facility.
Reporting formula:	N/D * $100 = \%$
Data Points:	Inclusion criteria:
	Patient experiencing cardiac arrest with initiation of chest
	compressions prior to arrival of receiving facility.
	Numerator:
	Total Number of patients with ROSC after initiation of chest compressions by
	EMS providers prior to arrival to receiving facility. (N)
	Denominator:
	Number of patients who received resuscitative measures with chest
	compressions by EMS prior to arrival to receiving facility (D)
Reporting Period:	Monthly
Data Source:	Patient Care Reports

Out-of-Hospital Cardiac Arrest Utilization of Automated External Defibrillation (AED)

% Compliance:	Percentage (%) of patients who experience cardiac arrest and resuscitation who received defibrillation by automatic or semi-automatic external defibrillator and performed by on duty EMS personnel.
Resuscitation:	Any time an EMS provider provides chest compressions.
REPORTING:	
Indicator items:	Total number of patients presenting with cardiac arrest and receive resuscitation measures by on duty EMS personnel.
	% rate for patients who received defibrillation during an out of hospital resuscitation with an AED by on duty EMS personnel.
Reporting formula:	N/D * 100 = %
Data Points:	 Inclusion criteria: Patient experiencing cardiac arrest with EMS provision of chest compressions prior to arrival of receiving facility.
	Numerator:
	Total Number of patients who were defibrillated utilizing an AED by on duty
	EMS personnel during cardiac arrest resuscitation. (N)
	Denominator:
	Number of patients who received resuscitative measures with chest
	compressions by EMS prior to arrival to receiving facility (D)
Reporting Period:	Monthly

Imperial County Public Health Department Operational Policies Quality Assurance and Improvement Reporting		Emergency Medical Services Agency Policy/Procedure/Protocol Manual Date: 07/01/2023	
		Policy #4300	
Medic	ations and Procedures under Local Optional Section 2015	cope of Practice	
(IV Tranexamic Acid	l, IV acetaminophen, IV/IM/IO ketorolac, IV hydroxo	cobalamin, amyl nitrate with IV	
	sodium thiosulfate and sodium nitrate)		
	ions should be submitted through separate reports, and	d not as a combined total.**	
DEFINITIONS:			
% Compliance:	Percentage (%) of patients who are administered t	these medications and all	
	parameters for administration, including appropria	tely identified contraindications	
	(Ex: age, pregnancy or vital signs) are utilized.		
REPORTING:			
Indicator items:	Total number of patients receiving the above medi personnel.	ications by on duty EMS	
	% rate for patients who appropriately received th	he medications, appropriately	
	following inclusion criteria, and contraindications.		
Reporting formula:	N/D * 100 = %		
Data Points:	Inclusion criteria:		
	• Patients meeting criteria for the individual loca	al optional scope of	
	practice medications		
	Numerator:		
	Total Number of patients who correctly received th	hese medications with all	
	inclusion criteria and contraindications met. (N)		
	Denominator:		
	Number of patients who received any of these med	lications by EMS prior to	
	arrival to receiving facility (D)		
Reporting Period:	Monthly		

911 Requests for Services that Included a Lights and/or Sirens Response

DEFINITIONS:

% Compliance:	Percentage (%) of EMS responses originating from a 911 request that included the
	use of lights and/or sirens during a response.

REPORTING:

Indicator items:	% rate of EMS responses originating from a 911 request that included the use of lights and/or sirens during a response.
Reporting formula:	N/D * 100 = %
Data Points:	<i>Inclusion criteria</i> : 911 request for service that included a lights and/or sirens response.
	<i>Numerator:</i> Number of EMS responses originating from a 911 request that included a lights and/or sirens response. (N)
	<i>Denominator:</i> Number of EMS responses originating from a 911 request. (D)
Reporting Period:	Monthly

911 Requests for Services that Included a Lights and/or Sirens Transport

DEFINITIONS:

% Compliance:	Percentage (%) of EMS responses originating from a 911 request that included the
	use of lights and/or sirens during a transport.

REPORTING:

Indicator items:	% rate of EMS transports originating from a 911 request that included the use of lights and/or sirens during a transport.
Reporting formula:	N/D * 100 = %
Data Points:	<i>Inclusion criteria</i> : 911 request for service that included a lights and/or sirens transport.
	<i>Numerator:</i> Number of EMS transports originating from a 911 request that included a lights and/or sirens transport. (N)
	<i>Denominator:</i> Number of EMS transports originating from a 911 request. (D)
Reporting Period:	Monthly

Respiratory Assessment for Pediatric Patients

DEFINITIONS:	
% Compliance:	Percentage (%) of pediatric patients that had a primary or secondary impression of
	respiratory distress and received a documented respiratory assessment originating
REPORTING:	from a 911 response.
Indicator items:	Total number of pediatric patients who had a primary or secondary
	impression of respiratory distress originating from a 911 response.
	% rate for patients had a primary or secondary impression of respiratory distress
	and received a documented respiratory assessment originating from a 911 response.
Reporting formula:	N/D * $100 = \%$
Data Points:	Inclusion criteria:
	Pediatric patients who had a primary or secondary impression of
	respiratory distress originating from a 911 response.
	Numerator:
	Number of pediatric patients who had a primary or secondary impression of
	respiratory distress originating from a 911 response and yielded a documented
	respiratory assessment. (N)
	Denominator:
	Number of pediatric patients who had a primary or secondary impression of
	respiratory distress originating from a 911 response. (D)
Reporting Period:	Monthly

VI. <u>Evaluation of Clinical Indicators:</u>

- A. Clinical indicators are completed monthly by the provider agencies and the results are sent electronically to the EMS Agency (the EMS Medical Director and EMS Manager) for analysis. The EMS Agency compiles indicator data and documents compliance with the measured criteria in graph form.
- B. The EMS agency sends the results of the analysis back to the provider agencies each month with a graph that demonstrates the mean county rate of compliance with the measured indicators, the agency's specific compliance as it relates to the county's mean compliance and the comparison of agency and county compliance. (See figures 1, 2 and 3).
- C. The compliance threshold for each criteria measured is set at 90%. Once the mean county compliance meets and sustains at 90% consistently for 6 months, the clinical indicator will be retired and new indicators will replace the existing indicators

VII. <u>Methods for Improvement:</u>

- A. The provider agencies, through their internal QI process, are responsible for creating and monitoring issue resolution programs in conjunction with the EMS agency Medical Director, up to and including individual performance improvement plans, education and training, standardized education and if necessary discipline.
- B. The involvement of all stakeholders in the Quality Assurance Committee ensures that a multidisciplinary approach to issue resolution exists. As trends in issues are identified through quality assurance review, and may elect to refer issues to the EMS Training/ Education subcommittees to address specific issues and develop solutions.
- C. Should an issue arise outside of the specifically collected indicators or filters, notification of the issue will be directed by the EMS agency to the provider agencies. The EMS Agency in collaboration with the provider agencies will explore the issue's root causes as well develop solutions. Any of the advisory committees can be a forum for discussion of these issues.

VIII. Quality Assurance Issues and Concerns:

A. Major issues identified will be investigated by the EMS Education and Training Advisory Group (members of the prior committee) via a Root Cause Analysis method in order to find the "Root Cause" of the problem versus apply a punitive action against the providers. Analysis will be reported to the Agency for further actions and recommendations. Individual Performance Improvement Plans will be coordinated between the Agency, QI representative, BH representative and the provider.

APPROVED:

Signature on File Katherine Staats, M.D. FACEP EMS Medical Director