

# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

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# **RIVERSIDE COUNTY EMS AGENCY CQI PLAN**

## **Introduction**

The goal of the Riverside County Emergency Medical Services (EMS) Continuous Quality Improvement (CQI) Plan is to establish a system wide process for evaluating and improving the quality of prehospital care in Riverside County.

CQI is a never-ending process in which all levels of healthcare workers are encouraged to team together, without fear of management repercussion, to develop and enhance the system they work in. Based on EMS community collaboration and a shared commitment to excellence, CQI reveals potential areas for improvement of the EMS System, identified training opportunities, highlights outstanding clinical performance, audits compliance with treatment protocols, and reviews specific illnesses or injuries along with their associated treatments. These efforts contribute to the continued success of our emergency medical services through a systematic process of review, analysis, and improvement.

A by-product of the plan is the alliance of municipal agencies and private providers that offer emergency medical services within Riverside County. This affords all participants (administrator to first responder) an opportunity to work at peak capacity with energy and focus in a system that they can support, believe in, and have “ownership” in.

We are committed to CQI and recognize that greater results can be achieved by improving whole processes rather than blaming individual workers when something goes wrong. We also understand that a CQI Program is an ongoing, dynamic process that takes time to develop.

Riverside County EMS Agency’s CQI Plan has been written in accordance with the Emergency Medical Services System Quality Improvement Program Model Guidelines (Rev. 3/04).

# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

## Section 1A – Structure

**EMS CQI Team** – The EMS CQI Team is the central repository of local EMS system information as it relates to EMS CQI Program activities. The CQI Team includes, but is not limited to, the following representatives:

- a. The EMS Agency Medical Director
- b. The EMS Agency Director/Assistant Director
- c. The EMS Agency CQI Coordinator

Responsibilities of the EMS CQI Team include:

- a. Cooperate with the State of California Emergency Medical Services Authority (EMSA) in carrying out the responsibilities of the statewide EMS CQI Program and participation in the EMSA Technical Advisory Group, if requested.
- b. Cooperate with the EMSA in the development, approval, and implementation of state required and optional EMS system indicators.
- c. Re-evaluate, expand upon, and improve state and locally developed EMS system indicators annually or as needed.
- d. Provide technical assistance for facilitating the EMS CQI Programs of all organizations participating in the Riverside County EMS CQI Program.
- e. Facilitate meetings and presentations on Riverside County EMS indicators and the development of performance improvement plans for review by designated EMS providers.
- f. Charter Quality Task Forces.
- g. Assure reasonable availability of EMS CQI Program training and in-service education for EMS personnel under the statewide EMS CQI Program.
- h. Review and approve CQI Plans submitted by Riverside County EMS System providers and base hospitals/alternate base stations.
- i. Publish annual summary of activity and plan implementation for distribution.
- j. Seek and maintain relationships with all EMS participants including but not limited to the following entities, as appropriate for CQI activity:
  - i. State EMSA
  - ii. Other Local EMS Agencies (LEMSAs)
  - iii. EMS Service Providers
  - iv. Local Department of Public Health
  - v. Specialty Care Centers
  - vi. Law Enforcement
  - vii. Public Safety Answering Points (PSAPs)
  - viii. EMS Dispatch Center(s)
  - ix. Constituent Stakeholder Groups

# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

## Section 1A – Structure, continued

**EMS Technical Advisory Group (TAG)** – The Riverside County EMS Agency TAG is multidisciplinary and includes, but is not limited to, representatives from each of the following:

- a. The Riverside County EMS Agency Director/Assistant Director
- b. The Riverside County EMS Agency CQI Coordinator
- c. Two representatives from fire departments providing medical first responder services in Riverside County, who shall be selected by the Riverside County Fire Chiefs Association.
- d. Two representatives from an approved private ALS ambulance service in Riverside County, one from the east side of the county, one from the west side.
- e. One representative from a BLS/CCT Ambulance Company selected by the Riverside County EMS Agency.
- f. One representative from a Riverside County EMS Agency approved Air Ambulance Company, selected by the Air Ambulance(s).
- g. Two representatives from the Prehospital Liaison Nurses (PLNs) group, one from the Desert area and one from Western Riverside County, selected by the PLN group.
- h. One representative from a Public Safety Answering Point (PSAP), to include Emergency Medical Dispatch, selected by the Riverside County EMS Agency.
- i. One representative from a Riverside County EMS Agency approved Paramedic Training Program, to be selected by the Paramedic Training Program Directors.
- j. One representative from a Riverside County EMS Agency approved EMT-I Training Program, to be selected by the EMT-I Training Program Directors.

All representatives will serve a term of two (2) years and will select replacements for them if they must discontinue service.

Responsibilities of the TAG members include:

- a. Attendance at TAG meetings. If a representative is unable to attend a meeting, he or she is responsible to have a replacement to represent his/her agency.
- b. Prepare and follow-up as appropriate for TAG meetings.
- c. Disseminate the information discussed at TAG meetings to the represented groups.
- d. Maintain responsibility for monitoring, collecting data on, reporting on, and evaluating state and locally required and optional EMS System indicators from the EMS providers and hospital within the jurisdiction of Riverside County EMS Agency.
- e. Identify and develop Riverside County EMS specific indicators for system evaluation.

# RIVERSIDE COUNTY EMS AGENCY

## CQI PLAN

### Section 1A – Structure, continued

- f. Re-evaluate, expand upon, and improve locally developed EMS system indicators annually or as needed.
- g. Prepare plans for improving the Riverside County EMS Agency's CQI Program.
- h. Establish a mechanism to incorporate input from EMS provider advisory groups for the development of performance improvement plan templates.
- i. Recommend the chartering of Quality Task Forces and review of their reports.
- j. Seek and maintain relationships with all EMS participants including but not limited to:
  - i. State EMSA
  - ii. Other Local EMS Agencies (LEMSAs)
  - iii. EMS Service Providers
  - iv. Local Department of Health
  - v. Specialty Care Centers
  - vi. Law Enforcement
  - vii. Public Safety Answering Points (PSAP)
  - viii. EMS Dispatch Center(s)
  - ix. Constituent Groups

**Quality Task Force** – A Quality Task Force is an ad-hoc committee developed by the EMS CQI Team or by the TAG for the purpose of finding a solution to a specific improvement need. This Task Force may be comprised of personnel from previously stated bodies or may include consultants or experts from other agencies as needed. Each Quality Task Force will be assigned one specific project and be disbanded upon completion of the project. Each Quality Task Force will be chaired by a member of the EMS CQI Team.

**External EMS Participants** – The Riverside County EMS Agency may find it necessary to call on expertise from external resources to address a specific aspect of our EMS System. These resources will be utilized within the TAG or the EMS CQI Team for their expertise and their guidance as it relates to their respective field. External EMS participants will be required to adhere to the same responsibilities as the group within whose confines they are operating. External participants may include, but are not limited to:

- a. Riverside County Epidemiology and Program Evaluation
- b. Law Enforcement Agencies
- c. Local and Regional Dispatch Agencies
- d. Community Groups.
- e. Other EMS participants
- f. First Responder Agencies
- g. Riverside County Coroner

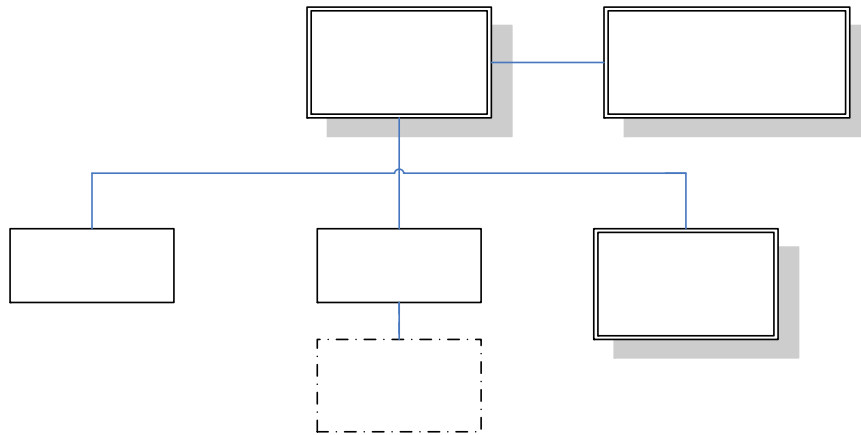
# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

## Section 1A – Structure, continued

- h. Representatives from fixed wing air medical transport companies
- i. Skilled nursing facility representatives
- j. Representative(s) from the Riverside County Department of Public Health
- k. California State Department of Corrections
- l. Physician Specialists

## Section 1B – Organizational Description

### Riverside County EMS Agency CQI Organizational Chart



# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

## Section 1B – Organizational Description, continued

The Mission Statement of the Riverside County EMS Agency is, “To assure the timely and compassionate provision of high quality emergency and disaster medical services to the people of Riverside County and to optimize these services through reasonable cost, community involvement, continuous evaluation, and anticipatory planning.”

Primary health care services/processes monitored or performed by the Riverside County EMS Agency and associated standards/requirements are shown in the following chart:

**Process List and Improvement Priorities**

Processes/Services Used in Our Organization	Strategic Goals Affected	Priority for Improvement A, B, or C	Process Owner	Elements to be Monitored
Certification – Accreditation	8,9	C	Karen	Personnel
Formal Certification Discipline	8,9	C	Karen	Personnel
Education – Training/CQ Review/Approval	8,9	C	Karen	Personnel
Education – EMS Conference	8,9	B	Laura	Personnel
Oversight – Trauma Issues	8,9	C	Janet	Personnel, Equipment and Supplies, Documentation, Clinical Care and Patient Outcome, Skills Maintenance/Competency, Transportation/Facilities
Oversight – Continuous Quality Improvement	6,8,9	A	Laura	Risk Management, Documentation
Oversight – Procedure Evaluations	8,9	B	Karen	Risk Management, Documentation
Oversight – Incident Review	6,8,9	B	Laura	Risk Management, Documentation, Clinical Care and Patient Outcome, Transportation/Facilities, Risk Management
Regulation – EMS for Children/Pediatric Issues	8,9	C	Janet	Equipment and Supplies, Clinical Care and Patient Outcome, Transportation/Facilities, Risk Management
Designate Specialty Centers	8,9	C	Laura	Risk Management, Clinical Care and Patient Outcome
Communications – ReddiNet	1,8,9	A	Karen	Communications, Risk Management
Regulation – Air Operations	8,9	C	Janet	Risk Management, Equipment and Supplies, Transportation/Facilities, Clinical Care and Patient Outcome

# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

## Section 1B – Organizational Description, continued

### Process List and Improvement Priorities

Processes/Services Used in Our Organization	Strategic Goals Affected	Priority for Improvement A, B, or C	Process Owner	Elements to be Monitored
Regulation – Diversion Issues	1,8,9	A	Karen	Transportation/Facilities, Risk Management
Contract Negotiation	4,8,9,10,11	A	Brian	Personnel, Risk Management
Contract Development	4,8,9,10,11	A	Point	Personnel, Risk Management
Regulation – Ambulance Permits	4,8,9	B	Brian	Risk Management, Transportation/Facilities
Regulation – Data System	3,8,9	A	Laura	Documentation, Risk Management
Regulation – EMS Update	8,9	B	Brian	Documentation, Risk Management
Regulation – Policy/Procedures	8,9	B	Karen	Risk Management, Documentation, Skills Maintenance, Personnel, Clinical Care and Patient Outcome
Liaison with Mental Health and Bioterrorism	5,7,8,9	C	Laura	Clinical Care and Patient Outcome, Personnel, Risk Management
CARE Team meetings	8,9	C	Laura	Public Education, Clinical Care and Patient Outcome, Risk Management
PAD/AED/ICCM Meetings	8,9	C	Laura	Public Education, Clinical Care and Patient Outcome
Prehospital Liaison Nurse Meetings	8,9	C	Janet	Risk Management, Personnel
Designated Officer/Infection Control	8,9	C	Laura	Risk Management, Personnel
Training Programs Meeting Coordination	8,9	C	Karen	Personnel
Prehospital Medical Advisory Committee, Emergency Medical Care Committee	8,9	C	Brian	Personnel, Risk Management, Public Education
Communications – Emergency Medical Dispatch	2,8,9	B	Laura	Communications, Risk Management



# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

## Section 1B – Organizational Description, continued

### Priority for Improvement A, B, or C:

A = Needs improvement in coming 6 months; may be costly or cross-cutting;

B = Needs improvement later;

C = Improvement may be needed after that

**The CQI Team designated the initial priority ratings in the preceding chart, with input from staff. In the future, the TAG will participate in achieving Strategic Goals.**

Rationale for selection of priorities for improvement is the strategic goals that are addressed by the particular process and the amount of time necessary to improve the process to an optimal level. The strategic goals of the Riverside County EMS Agency, as identified in the 2006 Riverside County EMS Plan and in the Mission Statement, are:

1. Decrease ambulance wait times and diversion hours at Riverside County hospital Emergency Departments.
2. Education of the public on the appropriate use of 9-1-1
3. Establish a Countywide Data System for information exchange between stakeholders and electronic Patient Care Report (PCR) usage by prehospital personnel.
4. Formulate agreements with all emergency ambulance providers and receiving facilities.
5. Coordinate and increase integration of non 9-1-1 resources into the County's disaster response preparedness.
6. Establish a countywide CQI Program.
7. Mitigate the impact that decreasing mental health resources have on the healthcare system in Riverside County.
8. Assure the timely and compassionate provision of high quality emergency and disaster medical services to the people of Riverside County.
9. Optimize these services through reasonable cost, community involvement, continuous evaluation, and anticipatory planning.
10. Develop and implement hospital receiving center contracts.
11. Develop and implement a gurney van ordinance.

# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

## Section II A – Data Collection and Reporting

Data collection and reporting are two of the most important elements in CQI. The data collected must be valid, reliable, and standardized with all other system participants. Riverside County EMS Agency encourages the sharing of data through Summary Reports among all EMS system participants. The following are the elements required by the state, how each relates to Riverside County EMS Agency’s strategic goals, the specific information that will be monitored, and how each relates to the Riverside County EMS Agency’s strategic goals.

Operational Area	Index Code from State Appendix M Core Indicators	Indicators (appearing in appendix)	Specific information to be monitored	Method of Collection	Riverside County EMS Agency Required Indicator (yes/no)	Strategic Goal Affected
Personnel	N/A		EMT-I Certifications Current	EMS Agency records, Fire Department records, Ambulance Provider	yes	8, 9
	N/A		EMT-I and EMT-P certifications compliant with Riverside County EMS Agency policies	records EMS agency records, Fire Department records, Ambulance Provider records	yes	8, 9
Equipment and Supplies	N/A		Percentage of ALS Providers in Riverside County with 12-Lead ECG Capabilities	Fire Department and ambulance records	no	8, 9

# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

## Section II A – Data Collection and Reporting, continued

Operational Area	Index Code from State Appendix M Core Indicators	Indicators (appearing in appendix)	Specific information to be monitored	Method of Collection	Riverside County EMS Agency Required Indicator (yes/no)	Strategic Goal Affected
Documentation	N/A	A	Number of incidents investigated by Riverside County EMS Agency that are determined to be non-incidents	Riverside County EMS Agency records	no	3, 6
Clinical Care and Patient Outcome	CA1	N	Pulseless V-fib or V-Tach unwitnessed – survival to hospital discharge	base hospital records	yes	1,8,9
	N/A	A	% of infrequently used skills per number of patient care reports	Fire Department and ambulance provider records	yes	8, 9
Skills Maintenance and Competency	SK1	A,E	% Insertion Rate Endotracheal Tube – Adult and Pediatric	base hospital records	yes	8,9
Transportation and Facilities			Number of 9-1-1 ambulance transports with a drop time under 25 minutes	From all ambulance providers, segmented into ALS and BLS	no	1, 4, 7
Public Education and Prevention	PP1	A	% of population certified in bystander CPR	American Heart Association and American Red Cross	no	2

## RIVERSIDE COUNTY EMS AGENCY CQI PLAN

Operational Area	Index Code from State Appendix M Core Indicators	Indicators (appearing in appendix)	Specific information to be monitored	Method of Collection	Riverside County EMS Agency Required Indicator (yes/no)	Strategic Goal Affected
Risk Management	N/A	A	% of Agencies / Providers that have their CQI plan up to date and approved	Riverside County EMS Agency records	no	6, 8, 9

### Section II B– Data Collection and Reporting, continued

- B. The EMS Agency CQI Team examined our strategic challenges and goals to select relevant indicators and ensured that at least one of each of the data elements required by the state is being monitored.
- C. The EMS Agency CQI Coordinator will collect data on the indicators in the preceding chart monthly by accessing reports on HealthWare Solutions, if it is being used countywide, ReddiNet, American Heart Association, and American Red Cross. If HealthWare Solutions is not being utilized countywide, the EMS Agency will require providers and base hospitals/alternate base stations to submit copies of each PCR that meets the criteria for inclusion in the indicator, as well as outcome information from the base hospitals. The EMS CQI Coordinator will build the reports on the selected indicators on a quarterly basis. Reports will be made available to all EMS System stakeholders by posting the reports on the Riverside County EMS Agency’s website at [www.rivcoems.org](http://www.rivcoems.org) The TAG meets quarterly to review results and may recommend selection of different indicators as indicated.

# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

## Section III – Evaluation of Indicators

- A. The EMS Agency CQI Coordinator will analyze the quality indicators on a monthly basis and then create a chart for presentation to the TAG.
- B. Presentation of quality indicator analyses will most frequently be in a run chart, a Pareto chart, or a histogram format. This will enable the TAG to easily identify trends and to rapidly interpret the data.
- C. Utilizing the processes outlined in Appendix F of the EMS System Quality Improvement Program Model Guidelines, the TAG will meet at least quarterly to evaluate and discuss the data provided by the EMS Agency CQI Coordinator according to the following agenda:
  - 1. Review of prior meeting action items.
  - 2. Presentation of indicators and results/trends.
    - a. For each indicator that the TAG reviews, the following process will be followed:
      - i. Identify the objectives of the evaluation.
      - ii. Present indicators and related EMS information
      - iii. Compare performance with goals or benchmarks
      - iv. Discuss performance with peers/colleagues
      - v. Determine whether improvement or further evaluation is required.
      - vi. Establish plan based upon decision
      - vii. Assign responsibility for post-decision action plan
  - 3. Examine correlations between/among trends.
  - 4. Acknowledgement of positive trends; discussion of unsatisfactory trends.
  - 5. Receive reports from Quality Task Forces, if any.
  - 6. Discuss changes needed to indicators.
  - 7. Recommend the chartering of Quality Task Forces, if any.
  - 8. Provide input to the CQI Team to update the Improvement Priorities (A, B, or C) on the Process List in the CQI Plan, Section I B.
  - 9. Summarize action items identified at this meeting.
  - 10. Recommend training/educational needs.
  - 11. Evaluation of the meeting.

# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

## Section IV – Action to Improve

- A. Once a need for improvement in performance has been identified by the TAG, Riverside County EMS Agency will be utilizing the FOCUS-PDSA model for performance improvement. FOCUS-PDSA involves the following steps:
1. **Find** a process to improve – the TAG will identify improvement needs.
  2. **Organize** a team that knows the process – the CQI Team will form Task Force(s) as needed and review process documents.
  3. **Clarify** current knowledge of the process – review indicator trends relevant to the process, collect other information
  4. **Understand** causes of process variation utilizing tools such as fishbone diagrams, Pareto analyses, etc.
  5. **Select** process improvement to reduce or eliminate cause(s).
  6. **Plan** – State objective of the test, make predictions, Develop plan to carry out the test (who, what where, when)
  7. **Do** - Carry out the test, document problems and unexpected observations, begin analysis of the data
  8. **Study** - Complete the analysis of the data, compare the test data to predictions, and summarize what was learned
  9. **Act** - What changes are to be institutionalized? What will be the objective of the next cycle? What, if any, re-education or training is needed to effect the changes?
- Once a Performance Improvement Plan has been implemented, the results of the improvement plan will be measured. Changes to the system will be standardized and/or integrated. A plan for monitoring future activities will be established.
- B. During its quarterly or other meetings, the TAG will identify indicators that signal a need for improvement and make recommendations for chartering a Quality Task Force, if needed. The CQI team will select members and charter the Task Force with a specific objective for improvement. Each Task Force will use the FOCUS-PDSA model to conduct improvement planning and prepare recommendations or a report for review by the CQI team. The CQI team will modify or accept and implement recommendations of the Quality Task Force and prepare the report for distribution to the TAG. The CQI team will also disband the Quality Task Force at the appropriate time.

# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

## Section V – Training and Education

- A. Once the decision to take action or to solve a problem has occurred, training and education are critical components that need to be addressed. Education needs will be identified in reports given at quarterly TAG and CQI team meetings. The EMS Agency will make recommendations for educational offerings countywide based on these reports and reports from CQI Task Forces. Needs identified in these ways will be taken into consideration when planning EMS conferences in Riverside County.
  
- B. Once a Performance Improvement Plan recommended by a Task Force, the CQI Team, or the TAG has been implemented, Riverside County EMS Agency will standardize the changes within the appropriate policies and procedures. The EMS Specialist responsible for educational oversight maintains the Policy and Procedure Manual, which is updated twice per year. Changes recommended by a Quality Task Force or other system participants are implemented via policy changes or new policies being written as indicated. The new policy or change in policy is presented at the Riverside County Prehospital Medical Advisory Committee (PMAC) for discussion. Changes may be made based on those discussions. The policy is then posted on the Riverside County EMS Agency's website at [www.rivcoems.org](http://www.rivcoems.org) for a 30 day public comment period. Final changes to the policy are made based on public comments received. The new or improved policy is then implemented. If additional training is required of system participants, time is allotted for that training prior to the implementation of the policy. Policies also may be changed to comply with State or Federal mandates. These changes are written into the policies and are discussed at PMAC and posted on the EMS Agency's website, but do not go out for a public comment period.
  
- C. The EMS Specialist responsible for educational oversight also ensures that providers submit documentation that all training requirements have been met by all EMS system participants, usually twice per year and on an as-needed basis. This is accomplished via training memos, training program development, or by train-the-trainer programs. Providers are ultimately responsible for ensuring that staff is adequately trained. The rosters and records of training are available to the EMS Agency upon request.

# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

## Section VI – Annual Update

The Annual Update is a written account of the progress of an organization’s activities as stated in the EMS CQI Plan. An EMS Specialist in the Riverside County EMS Agency is responsible for annually updating the EMS Plan, in alignment with current EMS strategic goals. The CQI Coordinator will do an initial review of the CQI plan, identifying what did and did not work. The CQI Coordinator will work in conjunction with the EMS Specialist responsible for updating the EMS Plan to ensure that both the CQI Plan and the EMS Plan are focusing on the same objectives. Once both the CQI Plan and the EMS Plan have been reviewed in this fashion, the CQI Coordinator will present his/her findings to the TAG and to the CQI Team. The following chart will be the template for the presentation of the update.

Indicators Monitored	Key Findings/Priority Issues Identified	Improvement Action Plan/Plans for Further Action	Were Goals Met? Is Follow-up Needed?

As part of the annual update, the CQI Coordinator, the TAG, and the CQI Team will offer recommendations for changes needed in the CQI plan for the coming year, including priority improvement goals/objectives, indicators monitored, improvement plans, how well goals/objectives were met, and whether follow-up is needed.

A current CQI Plan will be submitted to the State EMS Authority every five (5) years.



# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

## Appendix A – Specific Indicators to be monitored

<b>CORE INDICATOR INDEX #</b>	<b>PERSONNEL</b>
<b>MEASURE</b>	<b>EMT-I Certification Current</b>
<b>CORE INDICATOR REF</b>	<b>SYSTEM OPERATIONS EDUCATION AND TRAINING</b>
<b>Objective</b>	<input type="checkbox"/> Measure % current certification of EMT-I's in Riverside County
<b>Classification</b>	<input type="checkbox"/> system ops - education
<b>Type of Measure</b>	<input type="checkbox"/> structural
<b>Domain of Performance</b>	<input type="checkbox"/> Volume
<b>Indicator Reporting Value</b>	<input type="checkbox"/> number per month
<b>Display Format</b>	<input type="checkbox"/> list
<b>Frequency of Display</b>	<input type="checkbox"/> monthly
<b>Measures of Central Tendency</b>	<input type="checkbox"/> mean – no <input type="checkbox"/> median – no <input type="checkbox"/> variance – no <input type="checkbox"/> standard deviation - no
<b>Trending Analysis</b>	<input type="checkbox"/> NA
<b>Minimum Data Values</b>	<input type="checkbox"/> total
<b>Sampling</b>	<input type="checkbox"/> periodic-rate
<b>Aggregation</b>	<input type="checkbox"/> no
<b>Blinded</b>	<input type="checkbox"/> no
<b>Beta Testing</b>	<input type="checkbox"/> NA
<b>Population Denominator (D)</b>	<input type="checkbox"/> All EMT-I's in Riverside County
<b>Denominator</b>	<b>Inclusion Criteria</b>
	<input type="checkbox"/> All EMT-I's in Riverside County
<b>Denominator Data Source</b>	<input type="checkbox"/> EMS Agency records <input type="checkbox"/> Fire Department records <input type="checkbox"/> Ambulance Provider records
<b>Population Subset Numerator (N)</b>	<input type="checkbox"/> All EMT-I's in Riverside County with current EMT-I certification
<b>Numerator</b>	<b>Inclusion Criteria</b>
	<input type="checkbox"/> All EMT-I's in Riverside County with current EMT-I certification
<b>Numerator Data Source</b>	<input type="checkbox"/> EMS Agency records <input type="checkbox"/> Fire Department records <input type="checkbox"/> Ambulance Provider records
<b>Description of Indicator formula</b>	<input type="checkbox"/> Number of EMT-I's with current certification divided by total EMT-I's in Riverside County
<b>Indicator Formula Numeric Expression</b>	<input type="checkbox"/> N/D

# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

## Appendix A – Specific Indicators to be monitored, continued

<b>CORE INDICATOR INDEX #</b>	<b>PERSONNEL</b>
<b>MEASURE</b>	<b>EMT-I and EMT-P certifications compliant with Riverside County EMS Agency policies</b>
<b>CORE INDICATOR REF</b>	<b>SYSTEM OPERATIONS EDUCATION &amp; TRAINING</b>
<b>Objective</b>	<input type="checkbox"/> to measure the compliance of each EMT-I or EMT-P certification to Riverside County EMS Agency policies
<b>Classification</b>	<input type="checkbox"/> system ops
<b>Type of Measure</b>	<input type="checkbox"/> structural
<b>Domain of Performance</b>	<input type="checkbox"/> volume
<b>Indicator Reporting Value</b>	<input type="checkbox"/> number per month
<b>Display Format</b>	<input type="checkbox"/> List
<b>Frequency of Display</b>	<input type="checkbox"/> monthly
<b>Measures of Central Tendency</b>	<input type="checkbox"/> mean – No <input type="checkbox"/> median – No <input type="checkbox"/> variance – No <input type="checkbox"/> standard deviation - No
<b>Trending Analysis</b>	<input type="checkbox"/> NA
<b>Minimum Data Values</b>	<input type="checkbox"/>
<b>Sampling</b>	<input type="checkbox"/> Periodic - Rate
<b>Aggregation</b>	<input type="checkbox"/> yes
<b>Blinded</b>	<input type="checkbox"/> NA
<b>Beta Testing</b>	<input type="checkbox"/> NA
<b>Population Denominator (D)</b>	<input type="checkbox"/> Number of EMT-I certifications and EMT-P accreditations/reverifications in Riverside County
<b>Denominator</b>	<b>Inclusion Criteria</b>
	<input type="checkbox"/> All EMT-I certifications and EMT-P accreditations/reverifications in Riverside County
<b>Denominator Data Source</b>	<input type="checkbox"/> Riverside County EMS Agency records
<b>Population Subset Numerator (N)</b>	<input type="checkbox"/> Number of EMT-I and EMT-P accreditations that are compliant with Riverside County EMS Agency policies
<b>Numerator</b>	<b>Inclusion Criteria</b>
	<input type="checkbox"/> All EMT-I certifications and EMT-P accreditations/reverifications that have all certifications (CPR, ACLS, CE hours) current and up-to-date
<b>Numerator Data Source</b>	<input type="checkbox"/> Fire Department records <input type="checkbox"/> Ambulance Provider records <input type="checkbox"/> Riverside County EMS Agency records
<b>Description of Indicator formula</b>	<input type="checkbox"/> number value per 30 day period
<b>Indicator Formula Numeric Expression</b>	<input type="checkbox"/> NA
<b>Linkage</b>	<b>Linkage Options</b>
	<input type="checkbox"/> CPR card <input type="checkbox"/> ACLS card <input type="checkbox"/> Continuing Education hours
<b>Stratification</b>	<b>Options</b>
	<input type="checkbox"/> NA <input type="checkbox"/> <input type="checkbox"/>
<b>Indicator Exclusion Criteria</b>	<input type="checkbox"/> EMT-I certifications and EMT-P accreditations/reverifications that are compliant with Riverside County EMS Agency policies.

# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

## Appendix A – Specific Indicators to be monitored, continued

CORE INDICATOR INDEX #	EQUIPMENT AND SUPPLIES
<b>MEASURE</b>	ECG Capabilities
<b>Objective</b>	<input type="checkbox"/> To measure the% of ALS Providers in Riverside County with 12-Lead ECG capabilities
<b>Classification</b>	<input type="checkbox"/> medical care - clinical
<b>Type of Measure</b>	<input type="checkbox"/> structural
<b>Indicator Reporting Value</b>	<input type="checkbox"/> %
<b>Display Format</b>	<input type="checkbox"/> Bar Graph <input type="checkbox"/> Table
<b>Frequency of Display</b>	<input type="checkbox"/> quarterly
<b>Measures of Central Tendency</b>	<input type="checkbox"/> Mean
<b>Trending Analysis</b>	<input type="checkbox"/> yes
<b>Minimum Data Values</b>	<input type="checkbox"/> 5 values per measure <input type="checkbox"/>
<b>Aggregation</b>	<input type="checkbox"/> yes
<b>Blinded</b>	<input type="checkbox"/> no
<b>Beta Testing</b>	<input type="checkbox"/> no
<b>Population Denominator (D)</b>	<input type="checkbox"/>
<b>Denominator</b>	<b>Inclusion Criteria EMSA Data Elements</b>
	<input type="checkbox"/> all ALS providers in Riverside County
<b>Denominator Data Source</b>	<input type="checkbox"/> LEMSA database
<b>Population Subset Numerator (N)</b>	<input type="checkbox"/> N/A
<b>Numerator</b>	<b>Inclusion Criteria EMSA Data Elements</b>
	<input type="checkbox"/> all ALS providers in Riverside County who carry monitors with 12-Lead ECG capabilities
<b>Numerator Data Source</b>	<input type="checkbox"/> ALS Provider records
<b>Description of Indicator formula</b>	<input type="checkbox"/> total number of ALS providers in Riverside County with 12-Lead ECG capabilities
<b>Indicator Formula Numeric Expression</b>	<input type="checkbox"/> N/D = %
<b>Linkage</b>	<b>Linkage Options EMSA Data Elements</b>
	<input type="checkbox"/> name(s) of agency(ies) carrying 12-Lead ECG Monitors
<b>Stratification</b>	<b>Options EMSA Data Elements</b>
	<input type="checkbox"/> ALS Ambulances <input type="checkbox"/> CCT Ambulances <input type="checkbox"/> Fire Department ALS Providers

# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

## Appendix A – Specific Indicators to be monitored, continued

CORE INDICATOR INDEX #	<u>DOCUMENTATION</u>
<b>MEASURE</b>	Non-Incident Investigations
<b>Objective</b>	<input type="checkbox"/> to measure the total number of incidents investigated by the Riverside County EMS Agency that concluded with non-incident status
<b>Classification</b>	<input type="checkbox"/> medical care - clinical
<b>Type of Measure</b>	<input type="checkbox"/> Process
<b>Indicator Reporting Value</b>	<input type="checkbox"/> %
<b>Display Format</b>	<input type="checkbox"/> bar graph <input type="checkbox"/> pie chart
<b>Frequency of Display</b>	<input type="checkbox"/> quarterly
<b>Measures of Central Tendency</b>	<input type="checkbox"/> mean - yes <input type="checkbox"/> mode - no <input type="checkbox"/> variance - no <input type="checkbox"/> standard deviation - no
<b>Trending Analysis</b>	<input type="checkbox"/> yes
<b>Minimum Data Values</b>	<input type="checkbox"/> n/a
<b>Sampling</b>	<input type="checkbox"/> Sentinel - Rate
<b>Aggregation</b>	<input type="checkbox"/> yes
<b>Blinded</b>	<input type="checkbox"/> yes
<b>Beta Testing</b>	<input type="checkbox"/> none to date
<b>Population Denominator (D)</b>	<input type="checkbox"/> all incidents investigated by the Riverside County EMS Agency
<b>Denominator</b>	<b>Inclusion Criteria EMSA Data Elements</b>
	<input type="checkbox"/> all incidents reported to the Riverside County EMS Agency for investigation
<b>Denominator Data Source</b>	<input type="checkbox"/> Riverside County EMS Agency records
<b>Population Subset Numerator (N)</b>	<input type="checkbox"/> all incidents reported to the Riverside County EMS Agency for investigation
<b>Numerator</b>	<b>Inclusion Criteria EMSA Data Elements</b>
	<input type="checkbox"/> all incidents reported to the Riverside County EMS Agency for investigation that were concluded as “non-incidents”
<b>Numerator Data Source</b>	<input type="checkbox"/> Riverside County EMS Agency records
<b>Description of Indicator formula</b>	<input type="checkbox"/> total number of incidents investigated by the Riverside County EMS Agency that concluded as being “non-incidents”
<b>Indicator Formula Numeric Expression</b>	<input type="checkbox"/> N/D = %
<b>Linkage</b>	<b>Linkage Options EMSA Data Elements</b>
	<input type="checkbox"/> Name of organization being investigated
<b>Stratification</b>	<b>Options EMSA Data Elements</b>
	<input type="checkbox"/> hospitals <input type="checkbox"/> fire departments <input type="checkbox"/> ambulance companies <input type="checkbox"/> dispatch agencies
<b>Indicator Exclusion Criteria</b>	<input type="checkbox"/> agencies that did not have an incident investigated by the Riverside County EMS Agency

# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

## Appendix A – Specific Indicators to be monitored, continued

<b>CORE INDICATOR INDEX #CA1N</b>	<b>PULSELESS V-FIB or V-TACH - UNWITNESSED</b>	
<b>Measure</b>	<u>Survival to Hospital Discharge</u>	
<b>CORE INDICATOR REF #CA1</b>	<b>CARDIAC - ADULT TREATMENT PROTOCOL UTILIZATION</b>	
<b>Objective</b>	<input type="checkbox"/> to measure % of patients who survive to hospital discharge after suffering a pulseless ventricular fibrillation (VF) or ventricular tachycardia (VT) event which is unwitnessed and treated by EMS personnel	
<b>Classification</b>	<input type="checkbox"/> medical care - clinical	
<b>Type of Measure</b>	<input type="checkbox"/> outcome	
<b>Domain of Performance</b>	<input type="checkbox"/> Effectiveness	
<b>Indicator Reporting Value</b>	<input type="checkbox"/> %	
<b>Display Format</b>	<input type="checkbox"/> Bar Chart <input type="checkbox"/> Line Graph	
<b>Frequency of Display</b>	<input type="checkbox"/> Monthly x 12	
<b>Measures of Central Tendency</b>	<input type="checkbox"/> mean - Yes <input type="checkbox"/> mode - No <input type="checkbox"/> variance - No <input type="checkbox"/> standard deviation - No	
<b>Trending Analysis</b>	<input type="checkbox"/> NA	
<b>Minimum Data Values</b>	<input type="checkbox"/> 30 values per measure	
<b>Sampling</b>	<input type="checkbox"/> Periodic - Rate	
<b>Aggregation</b>	<input type="checkbox"/> Yes	
<b>Blinded</b>	<input type="checkbox"/> Yes	
<b>Beta Testing</b>	<input type="checkbox"/> None to Date	
<b>Population Denominator (D)</b>	<input type="checkbox"/> the number of adult patients who suffer a pulseless VF or VT event not witnessed by EMS personnel	
<b>Denominator</b>	<b>Inclusion Criteria</b>	<b>EMSA Data Elements</b>
	<input type="checkbox"/> patient has reached age 15 <input type="checkbox"/> patient has suffered a VF or VT event) <input type="checkbox"/> patient was pulseless (patient VF or VT <input type="checkbox"/> event was in prehospital setting <input type="checkbox"/> patient VF & VT event was not witnessed by EMS personnel <input type="checkbox"/> specified time period	<input type="checkbox"/> EMSA #36  <input type="checkbox"/> EMSA #54VTAC, 54VFIB <input type="checkbox"/> EMSA #54C-A  <input type="checkbox"/> EMSA #54  <input type="checkbox"/> EMSA #52  <input type="checkbox"/> EMSA #11
<b>Denominator Data Source</b>	<input type="checkbox"/> EMS Medical Records	
<b>Population Subset Numerator (N)</b>	<input type="checkbox"/> the number of patients who survive to hospital discharge	
<b>Numerator</b>	<b>Inclusion Criteria</b>	<b>EMSA Data Elements</b>
	<input type="checkbox"/> patients who survive to hospital discharge <input type="checkbox"/> Subset of denominator <input type="checkbox"/> Time period query match denominator	<input type="checkbox"/> discharge status (TBD)
<b>Numerator Data Source</b>	<input type="checkbox"/> EMS Records <input type="checkbox"/> hospital discharge records <input type="checkbox"/> OSHPD discharge record	
<b>Description of Indicator Formula</b>	<input type="checkbox"/> numerator value (N) divided by denominator value (D) multiplied by 100 equals percentage (%)	
<b>Indicator Formula Numeric Expression</b>	<input type="checkbox"/> $N / D = \%$	

# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

## Appendix A – Specific Indicators to be monitored, continued

Linkage	Linkage Options	EMSA Data Elements
	<input type="checkbox"/> name <input type="checkbox"/> dob <input type="checkbox"/> age <input type="checkbox"/> gender <input type="checkbox"/> admit date <input type="checkbox"/> procedures	<input type="checkbox"/> EMSA #29 <input type="checkbox"/> EMSA #35 <input type="checkbox"/> EMSA #36 <input type="checkbox"/> EMSA #38 <input type="checkbox"/> EMSA # ? <input type="checkbox"/> EMSA #73
Stratification	Options	EMSA Data Elements
	<input type="checkbox"/> by age <input type="checkbox"/> by gender <input type="checkbox"/> by incident type <input type="checkbox"/> by response times <input type="checkbox"/> by scene times <input type="checkbox"/> by number of defibrillations <input type="checkbox"/> by provider level	<input type="checkbox"/> EMSA #36 <input type="checkbox"/> EMSA #38 <input type="checkbox"/> EMSA #8 <input type="checkbox"/> EMSA #17-20 <input type="checkbox"/> EMSA #8 <input type="checkbox"/> EMSA #73 (99.62)  <input type="checkbox"/> EMSA #25
Indicator Exclusion Criteria	<input type="checkbox"/> non-cardiac etiologies, <input type="checkbox"/> cardiac etiologies where resuscitation was not attempted by EMS personnel <input type="checkbox"/> event witnessed by EMS personnel <input type="checkbox"/> patient has not survived to hospital discharge	
References	<input type="checkbox"/> Utstein Model; Pitt, Penn Kass LE. One Year Survival after Prehospital Cardiac Arrest: The Utstein Model applied to Rural-Suburban EMS System. Ann of Emerg Med; 12:17-20, 1994 <input type="checkbox"/> Wisconsin study; Olson DW, MD. EMT-Defibrillation: The Wisconsin Experience;. Ann of Emerg Med, 18:8;806. 1989 <input type="checkbox"/> Seattle Washington; Weaver DW, MD. Considerations for Improving Survival from Out of Hospital Cardiac Arrest. Ann of Emerg Med 15:10;1181, 1986. <input type="checkbox"/> Ontario, Canada; Brison RJ. Cardiac Arrest in Ontario; Can Med Assoc J; 191-199, 1992	
Source	<input type="checkbox"/> California EMSA Vision Project	

# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

## Appendix A – Specific Indicators to be monitored, continued

CORE INDICATOR INDEX #	<u>ADVANCED PROVIDER SKILLS</u>	
<b>MEASURE</b>	Infrequently Used Skills	
<b>Objective</b>	<input type="checkbox"/> To measure the number of infrequently used skills that are reported to the Riverside County EMS Agency	
<b>Classification</b>	<input type="checkbox"/> Medical Care - clinical	
<b>Type of Measure</b>	<input type="checkbox"/> Process	
<b>Domain of Performance</b>	<input type="checkbox"/> Frequency	
<b>Indicator Reporting Value</b>	<input type="checkbox"/> %	
<b>Display Format</b>	<input type="checkbox"/> Bar graph <input type="checkbox"/> Pareto Chart <input type="checkbox"/> Run Chart	
<b>Frequency of Display</b>	<input type="checkbox"/> semi - annually	
<b>Measures of Central Tendency</b>	<input type="checkbox"/> mean - no <input type="checkbox"/> mode - no <input type="checkbox"/> variance - no <input type="checkbox"/> standard deviation - no	
<b>Trending Analysis</b>	<input type="checkbox"/> yes	
<b>Minimum Data Values</b>	<input type="checkbox"/> n/a	
<b>Sampling</b>	<input type="checkbox"/> 100% sample done semi - annually	
<b>Aggregation</b>	<input type="checkbox"/> yes	
<b>Blinded</b>	<input type="checkbox"/> no	
<b>Beta Testing</b>	<input type="checkbox"/> n/a	
<b>Population Denominator (D)</b>	<input type="checkbox"/> all ALS prehospital care providers in Riverside County	
<b>Denominator</b>	<b>Inclusion Criteria</b>	<b>EMSA Data Elements</b>
	<input type="checkbox"/> all fire departments and ambulance companies in Riverside County who provide Advanced Life Support (ALS) services in Riverside County	
<b>Denominator Data Source</b>	<input type="checkbox"/> Riverside County EMS Agency records	
<b>Population Subset Numerator (N)</b>	<input type="checkbox"/> all infrequently used skills performed in Riverside County	
<b>Numerator</b>	<b>Inclusion Criteria</b>	<b>EMSA Data Elements</b>
	<input type="checkbox"/> Monitoring of IV solutions containing heparin, nitroglycerine, or >20 mEq KCl <input type="checkbox"/> Nasal tracheal intubations <input type="checkbox"/> Pediatric intubations <input type="checkbox"/> Intraosseous placements <input type="checkbox"/> Needle thoracostomy <input type="checkbox"/> Needle cricothyrotomy <input type="checkbox"/> Transcutaneous Pacing <input type="checkbox"/> Accessing Pre-existing vascular access sites	
<b>Numerator Data Source</b>	<input type="checkbox"/> Patient Care Reports	
<b>Description of Indicator formula</b>	<input type="checkbox"/> Number of infrequently used skills performed in Riverside County	
<b>Indicator Formula Numeric Expression</b>	<input type="checkbox"/> N/D = %	
<b>Linkage</b>	<b>Linkage Options</b>	<b>EMSA Data Elements</b>
	<input type="checkbox"/> none	
<b>Stratification</b>	<b>Options</b>	<b>EMSA Data Elements</b>
	<input type="checkbox"/> by provider	
<b>Indicator Exclusion Criteria</b>	<input type="checkbox"/> all ALS skills that are not included in the Inclusion Criteria	

# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

## Appendix A – Specific Indicators to be monitored, continued

CORE INDICATOR Index # SK1A	<u>ADVANCED PROVIDER SKILLS</u>	
<b>Measure</b>	<b>% Insertion rate Endotracheal Intubation - Adult</b>	
<b>CORE INDICATOR REF #SK1</b>	CLINICAL SKILLS UTILIZATION	
<b>Objective</b>	<input type="checkbox"/> to measure % insertion rate per total attempts at oral endotracheal intubation for EMS personnel.	
<b>Classification</b>	<input type="checkbox"/> medical care - clinical	
<b>Type of Measure</b>	<input type="checkbox"/> Process	
<b>Domain of Performance</b>	<input type="checkbox"/> Psychomotor skills	
<b>Indicator Reporting Value</b>	<input type="checkbox"/> %	
<b>Display Format</b>	<input type="checkbox"/> Table <input type="checkbox"/> Cube Chart <input type="checkbox"/> Bar Chart <input type="checkbox"/> Line Graph <input type="checkbox"/> Process Control Chart	
<b>Frequency of Display</b>	<input type="checkbox"/> Monthly x 12	
<b>Measures of Central Tendency</b>	<input type="checkbox"/> mean - Yes <input type="checkbox"/> mode - No <input type="checkbox"/> variance - No <input type="checkbox"/> standard deviation - Yes	
<b>Trending Analysis</b>	<input type="checkbox"/> NA	
<b>Minimum Data Values</b>	<input type="checkbox"/> 30 values per measure	
<b>Sampling</b>	<input type="checkbox"/> Periodic - Rate	
<b>Aggregation</b>	<input type="checkbox"/> Yes	
<b>Blinded</b>	<input type="checkbox"/> Yes	
<b>Beta Testing</b>	<input type="checkbox"/> None to Date	
<b>Population Denominator (D)</b>	<input type="checkbox"/> the number of attempts at insertion of a endotracheal tube - Adult	
<b>Denominator</b>	<b>Inclusion Criteria</b>	<b>EMSA Data Elements</b>
	<input type="checkbox"/> patient has reached age 15 <input type="checkbox"/> Attempt is the laryngoscopy and passing of a ET tube beyond the teeth with intent of placing an endotracheal tube <input type="checkbox"/> event was in prehospital setting <input type="checkbox"/> specified query time period same period as numerator	<input type="checkbox"/> EMSA #36 <input type="checkbox"/> EMSA #54VTAC, 54VFIB <input type="checkbox"/> EMSA #54C-A  <input type="checkbox"/> EMSA #54 <input type="checkbox"/> EMSA #52
<b>Denominator Data Source</b>	<input type="checkbox"/> EMS Medical Records	
<b>Population Subset Numerator (N)</b>	<input type="checkbox"/> the number of patients whom an endotracheal tube is inserted.	
<b>Numerator</b>	<b>Inclusion Criteria</b>	<b>EMSA Data Elements</b>
	<input type="checkbox"/> patient has reached age 15 <input type="checkbox"/> insertion is passing of an ET tube into the trachea with confirmation by presence of bilateral breath sounds in lungs on auscultation and absence of air in stomach on auscultation. <input type="checkbox"/> event was in prehospital setting <input type="checkbox"/> subset of denominator <input type="checkbox"/> specified query time period same period as denominator	<input type="checkbox"/> discharge status (TBD)



# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

## Appendix A – Specific Indicators to be monitored, continued

<b>Numerator Data Source</b>	<input type="checkbox"/> EMS Medical Records <input type="checkbox"/> ED Chart	
<b>Description of Indicator Formula</b>	<input type="checkbox"/> numerator value (N) divided by denominator value (D) multiplied by 100 equals percentage (%)	
<b>Indicator Formula Numeric Expression</b>	<input type="checkbox"/> $N / D = \%$	
<b>Linkage</b>	<b>Linkage Options</b>	<b>EMSA Data Elements</b>
	<input type="checkbox"/> name <input type="checkbox"/> dob <input type="checkbox"/> age <input type="checkbox"/> gender <input type="checkbox"/> admit date <input type="checkbox"/> procedures	<input type="checkbox"/> EMSA #29 <input type="checkbox"/> EMSA #35 <input type="checkbox"/> EMSA #36 <input type="checkbox"/> EMSA #38 <input type="checkbox"/> EMSA # ? <input type="checkbox"/> EMSA #73
<b>Stratification</b>	<b>Options</b>	<b>EMSA Data Elements</b>
	<input type="checkbox"/> by age <input type="checkbox"/> by gender <input type="checkbox"/> by incident type <input type="checkbox"/> by provider level	<input type="checkbox"/> EMSA #36 <input type="checkbox"/> EMSA #38 <input type="checkbox"/> EMSA #8 <input type="checkbox"/> EMSA #17-20
<b>Indicator Exclusion Criteria</b>	<input type="checkbox"/> nasal intubations <input type="checkbox"/> pediatric intubations	
<b>References</b>	<ul style="list-style-type: none"> <li>• American Heart Association, Textbook on Advanced Cardiac Life Support, (2000)</li> <li>• California Code of Regulations Title 22, Social Security Division 9, Prehospital EMS 1991</li> <li>• O'Connor, R MD; ET Field experience; Paramedics to Proficiency, Prehospital &amp; Disaster Medicine: 1995, Vol 10 No 4, (Sup S23)</li> <li>• Pediatric Airway Management Study. 1997 LA County EMS Services</li> <li>• Skelton MB, McSwain NE. A study of Cognitive and Technical Skills Deterioration Among Trained paramedics. JACEP 1997;6: 436-438</li> <li>• Stratton S., Prospective Study of Mannequin and Human Subjects for Endotracheal Intubation training for Paramedics, Ann of Emerg Me; 1991, Vol 20 p 1314-1318</li> </ul>	
<b>Source</b>	<input type="checkbox"/> California EMSA Vision Project	

# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

## Appendix A – Specific Indicators to be monitored, continued

<b>CORE INDICATOR Index # SK1E</b>	<b>ADVANCED PROVIDER SKILLS</b>	
<b>Measure</b>	<b>% Insertion Rate</b>	
	<b>Pediatric Endotracheal Intubation</b>	
<b>CORE INDICATOR REF #SK1</b>	CLINICAL SKILLS UTILIZATION	
<b>Objective</b>	<input type="checkbox"/> to measure % insertion rate per total attempts at pediatric endotracheal intubation for EMS personnel.	
<b>Classification</b>	<input type="checkbox"/> medical care - clinical	
<b>Type of Measure</b>	<input type="checkbox"/> Process	
<b>Domain of Performance</b>	<input type="checkbox"/> Psychomotor skills	
<b>Indicator Reporting Value</b>	<input type="checkbox"/> %	
<b>Display Format</b>	<input type="checkbox"/> Table <input type="checkbox"/> Cube Chart <input type="checkbox"/> Bar Chart <input type="checkbox"/> Line Graph <input type="checkbox"/> Process Control Chart	
<b>Frequency of Display</b>	<input type="checkbox"/> Monthly x 12	
<b>Measures of Central Tendency</b>	<input type="checkbox"/> mean - Yes <input type="checkbox"/> mode - No <input type="checkbox"/> variance - No <input type="checkbox"/> standard deviation - Yes	
<b>Trending Analysis</b>	<input type="checkbox"/> NA	
<b>Minimum Data Values</b>	<input type="checkbox"/> 30 values per measure	
<b>Sampling</b>	<input type="checkbox"/> Periodic - Rate	
<b>Aggregation</b>	<input type="checkbox"/> Yes	
<b>Blinded</b>	<input type="checkbox"/> Yes	
<b>Beta Testing</b>	<input type="checkbox"/> None to Date	
<b>Population Denominator (D)</b>	<input type="checkbox"/> the number of attempt s at pediatric endotracheal intubation	
<b>Denominator</b>	<b>Inclusion Criteria</b>	<b>EMSA Data Elements</b>
	<input type="checkbox"/> patient has not reached age 15 <input type="checkbox"/> Attempt is laryngoscopy and the passing of a ET tube beyond the teeth or upper soft palate with intent of placing an endotracheal tube <input type="checkbox"/> event was in prehospital setting <input type="checkbox"/> specified query time period same period as numerator	<input type="checkbox"/> EMSA #36 <input type="checkbox"/> EMSA # <input type="checkbox"/> EMSA #54C-A <input type="checkbox"/> EMSA #54 <input type="checkbox"/> EMSA #52
<b>Denominator Data Source</b>	<input type="checkbox"/> EMS Medical Records	
<b>Population Subset Numerator (N)</b>	<input type="checkbox"/> the number of patients whom a pediatric endotracheal tube is inserted.	
<b>Numerator</b>	<b>Inclusion Criteria</b>	<b>EMSA Data Elements</b>
	<input type="checkbox"/> patient has not reached age 15 <input type="checkbox"/> insertion is passing of an ET tube into the trachea with confirmation by presence of bilateral breath sounds in lungs on auscultation and absence of air in stomach on auscultation. <input type="checkbox"/> event was in prehospital setting <input type="checkbox"/> subset of denominator <input type="checkbox"/> specified query time period same period as denominator	<input type="checkbox"/> discharge status (TBD)

# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

## Appendix A – Specific Indicators to be monitored, continued

<b>Numerator Data Source</b>	<input type="checkbox"/> EMS Medical Records <input type="checkbox"/> ED Chart	
<b>Description of Indicator Formula</b>	<input type="checkbox"/> numerator value (N) divided by denominator value (D) multiplied by 100 equals percentage (%)	
<b>Indicator Formula Numeric Expression</b>	<input type="checkbox"/> $N / D = \%$	
<b>Linkage</b>	<b>Linkage Options</b>	<b>EMSA Data Elements</b>
	<input type="checkbox"/> name <input type="checkbox"/> dob <input type="checkbox"/> age <input type="checkbox"/> gender <input type="checkbox"/> admit date <input type="checkbox"/> procedures	<input type="checkbox"/> EMSA #29 <input type="checkbox"/> EMSA #35 <input type="checkbox"/> EMSA #36 <input type="checkbox"/> EMSA #38 <input type="checkbox"/> EMSA # ? <input type="checkbox"/> EMSA #73
<b>Stratification</b>	<b>Options</b>	<b>EMSA Data Elements</b>
	<input type="checkbox"/> by age <input type="checkbox"/> by gender <input type="checkbox"/> by incident type <input type="checkbox"/> by provider level	<input type="checkbox"/> EMSA #36 <input type="checkbox"/> EMSA #38 <input type="checkbox"/> EMSA #8 <input type="checkbox"/> EMSA #17-20
<b>Indicator Exclusion Criteria</b>	<input type="checkbox"/> adult oral intubations <input type="checkbox"/> nasal intubations	
<b>References</b>	<ul style="list-style-type: none"> <li>• American Heart Association, Textbook on Advanced Cardiac Life Support, (2000)</li> <li>• California Code of Regulations Title 22, Social Security Division 9, Prehospital EMS 1991</li> <li>• O'Connor, R MD; ET Field experience; Paramedics to Proficiency, Prehospital &amp; Disaster Medicine: 1995, Vol 10 No 4, (Sup S23)</li> <li>• Pediatric Airway Management Study. 1997 LA County EMS Services</li> <li>• Skelton MB, McSwain NE. A study of Cognitive and Technical Skills Deterioration Among Trained paramedics. JACEP 1997;6: 436-438</li> <li>• Stratton S., Prospective Study of Mannequin and Human Subjects for Endotracheal Intubation training for Paramedics, Ann of Emerg Me; 1991, Vol 20 p 1314-1318</li> </ul>	
<b>Source</b>	<input type="checkbox"/> California EMSA Vision Project	

# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

## Appendix A – Specific Indicators to be monitored, continued

CORE INDICATOR INDEX #	<u>TRANSPORTATION AND FACILITIES</u>
<b>MEASURE</b>	Number of 9-1-1 ambulance runs with a drop time under 25 minutes
<b>Objective</b>	<input type="checkbox"/> To measure the number of 9-1-1 ambulance runs that transport a patient to an acute care hospital and are available to respond to another call in 25 minutes or less.
<b>Classification</b>	<input type="checkbox"/> System Operations
<b>Type of Measure</b>	<input type="checkbox"/> Process
<b>Domain of Performance</b>	<input type="checkbox"/> efficiency
<b>Indicator Reporting Value</b>	<input type="checkbox"/> %
<b>Display Format</b>	<input type="checkbox"/> Bar Chart <input type="checkbox"/> Line Graph
<b>Frequency of Display</b>	<input type="checkbox"/> Monthly x 12
<b>Measures of Central Tendency</b>	<input type="checkbox"/> mean – Yes <input type="checkbox"/> mode – Yes <input type="checkbox"/> median – Yes <input type="checkbox"/> Standard Deviation - Yes
<b>Trending Analysis</b>	<input type="checkbox"/> NA
<b>Minimum Data Values</b>	<input type="checkbox"/> 30 values per measure
<b>Sampling</b>	<input type="checkbox"/> Periodic - Rate
<b>Aggregation</b>	<input type="checkbox"/> Yes
<b>Blinded</b>	<input type="checkbox"/> Yes
<b>Beta Testing</b>	<input type="checkbox"/> NA
<b>Population Denominator (D)</b>	<input type="checkbox"/> The number of runs where the drop time is less than 25 minutes
<b>Denominator</b>	<b>Inclusion Criteria</b> <span style="float: right;"><b>EMSA Data Elements</b></span>
	<input type="checkbox"/> Patient treated by EMS personnel <input type="checkbox"/> The wait time at the hospital was less than 25 minutes
<b>Denominator Data Source</b>	<input type="checkbox"/> Ambulance provider records <input type="checkbox"/> Hospital records
<b>Population Subset Numerator (N)</b>	<input type="checkbox"/> The number of 9-1-1 ambulance runs that are transported to an acute care hospital
<b>Numerator</b>	<b>Inclusion Criteria</b> <span style="float: right;"><b>EMSA Data Elements</b></span>
	<input type="checkbox"/> All 9-1-1 ambulance transports to an acute care hospital
<b>Numerator Data Source</b>	<input type="checkbox"/> Ambulance provider records <input type="checkbox"/> Hospital records
<b>Description of Indicator formula</b>	<input type="checkbox"/> numerator value (N) divided by denominator value (D) multiplied by 100 equals percentage (%).
<b>Indicator Formula Numeric Expression</b>	<input type="checkbox"/> N / D = %
<b>Linkage</b>	<b>Linkage Options</b> <span style="float: right;"><b>EMSA Data Elements</b></span>
	<input type="checkbox"/> all approved 9-1-1 ambulance transport agencies
<b>Indicator Exclusion Criteria</b>	<input type="checkbox"/> all 9-1-1 calls that resulted in no transport

# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

## Appendix A – Specific Indicators to be monitored, continued

<b>CORE INDICATOR INDEX # PP1A</b>	<b><u>PUBLIC EDUCATION &amp; PREVENTION</u></b>	
<b>Measure</b>	<b><u>% Population Certified in Bystander CPR</u></b>	
<b>CORE INDICATOR REF #PP1A</b>	SYSTEM OPERATIONS <b>PUBLIC EDUCATION &amp; PREVENTION</b>	
<b>Objective</b>	<input type="checkbox"/> to measure % of adult population in a specific EMS response area who are trained in bystander CPR.	
<b>Classification</b>	<input type="checkbox"/> system operations – Public Education & Prevention	
<b>Type of Measure</b>	<input type="checkbox"/> Structural	
<b>Domain of Performance</b>	<input type="checkbox"/> Volume/Frequency	
<b>Indicator Reporting Value</b>	<input type="checkbox"/> %	
<b>Display Format</b>	<input type="checkbox"/> Listing <input type="checkbox"/> Cube Chart <input type="checkbox"/> Bar Chart <input type="checkbox"/> Line Graph	
<b>Frequency of Display</b>	<input type="checkbox"/> Monthly x 12	
<b>Measures of Central Tendency</b>	<input type="checkbox"/> mean - Yes <input type="checkbox"/> mode - No <input type="checkbox"/> variance - No <input type="checkbox"/> standard deviation - No	
<b>Trending Analysis</b>	<input type="checkbox"/> NA	
<b>Minimum Data Values</b>	<input type="checkbox"/> 30 values per measure	
<b>Sampling</b>	<input type="checkbox"/> Periodic - Rate	
<b>Aggregation</b>	<input type="checkbox"/> Yes	
<b>Blinded</b>	<input type="checkbox"/> Yes	
<b>Beta Testing</b>	<input type="checkbox"/> None to Date	
<b>Population Denominator (D)</b>	<input type="checkbox"/> the number of adults in a specified geographic EMS response area..	
<b>Denominator</b>	<b>Inclusion Criteria</b>	<b>EMSA Data Elements</b>
	<input type="checkbox"/> Adult has reached age 15 <input type="checkbox"/> Query is within a specified geographic EMS response area.	<input type="checkbox"/> EMSA #36  <input type="checkbox"/> EMSA #54VTAC, 54VFIB <input type="checkbox"/> EMSA #54C-A  <input type="checkbox"/> EMSA #54
<b>Denominator Data Source</b>	<ul style="list-style-type: none"> <li>• LEMSA Records</li> <li>• Public Census records</li> </ul>	
<b>Population Subset Numerator (N)</b>	<input type="checkbox"/> the number of adults who are trained in bystander CPR in a specified geographic EMS response area	
<b>Numerator</b>	<b>Inclusion Criteria</b>	<b>EMSA Data Elements</b>
	<input type="checkbox"/> Adult has reached age 15 <input type="checkbox"/> Adult has taken an approved CPR training program <input type="checkbox"/> Subset of numerator <input type="checkbox"/> Query is within a specified geographic EMS response area as defined in denominator.	<input type="checkbox"/> EMSA#
<b>Numerator Data Source</b>	<ul style="list-style-type: none"> <li>• Public CPR Training Program Records</li> <li>• LEMSA</li> </ul>	
<b>Description of Indicator Formula</b>	<input type="checkbox"/> numerator value (N) divided by demoninator value (D) multiplied by 100 equals percentage (%)	
<b>Indicator Formula Numeric Expression</b>	<input type="checkbox"/> $N / D = \%$	

# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

## Appendix A – Specific Indicators to be monitored, continued

Linkage	Linkage Options	EMSA Data Elements
	<input type="checkbox"/> name <input type="checkbox"/> dob <input type="checkbox"/> age <input type="checkbox"/> gender	<input type="checkbox"/> EMSA #29 <input type="checkbox"/> EMSA #35 <input type="checkbox"/> EMSA #36 <input type="checkbox"/> EMSA #38
Stratification	Options	EMSA Data Elements
	<input type="checkbox"/> by age <input type="checkbox"/> by gender	<input type="checkbox"/> EMSA #36 <input type="checkbox"/> EMSA #38 <input type="checkbox"/> EMSA #8
Indicator Exclusion Criteria	<input type="checkbox"/> Persons who have not reached age 15 years. <input type="checkbox"/> Persons not residing or employed in specified EMS Response Area.	
References	<ul style="list-style-type: none"> <li>• National Highway Traffic Safety Administration (NHTSA); EMS Agenda for the Future, Washington, DC: Author</li> <li>• Weaver, WD; Factors Influencing Survival of Out of Hospital Cardiac Arrest; J Am Coll Cardiol 7:752-757</li> </ul>	
Source	<input type="checkbox"/> California EMSA Vision Project	

# RIVERSIDE COUNTY EMS AGENCY CQI PLAN

## Appendix A – Specific Indicators to be monitored, continued

<b>CORE INDICATOR INDEX #</b>	<b>RISK MANAGEMENT</b>	
<b>MEASURE</b>	CQI Plan compliance	
<b>Objective</b>	<input type="checkbox"/> to measure the % of organizations who have their CQI plan up to date and approved by the Riverside County EMS Agency.	
<b>Classification</b>	<input type="checkbox"/> system operations – CQI	
<b>Type of Measure</b>	<input type="checkbox"/> Outcome	
<b>Indicator Reporting Value</b>	<input type="checkbox"/> number of CQI plans approved by the EMS Agency and up to date	
<b>Display Format</b>	<input type="checkbox"/> bar graph	
<b>Frequency of Display</b>	<input type="checkbox"/> annually	
<b>Measures of Central Tendency</b>	<input type="checkbox"/> no	
<b>Trending Analysis</b>	<input type="checkbox"/> yes	
<b>Minimum Data Values</b>	<input type="checkbox"/> 1 values per measure	
<b>Sampling</b>	<input type="checkbox"/> 100% - Periodic	
<b>Aggregation</b>	<input type="checkbox"/> yes	
<b>Blinded</b>	<input type="checkbox"/> yes	
<b>Beta Testing</b>	<input type="checkbox"/> none to date	
<b>Population Denominator (D)</b>	<input type="checkbox"/> all organizations in Riverside County required by the State to have updated and approved CQI Plans	
<b>Denominator</b>	<b>Inclusion Criteria</b>	<b>EMSA Data Elements</b>
	<input type="checkbox"/> number of CQI plans required to be submitted by the State EMSA to Riverside County EMS Agency	
<b>Denominator Data Source</b>	<input type="checkbox"/> Riverside County EMS Agency records	
<b>Population Subset Numerator (N)</b>	<input type="checkbox"/> number of CQI plans approved by the Riverside County EMS Agency that are up to date	
<b>Numerator</b>	<b>Inclusion Criteria</b>	<b>EMSA Data Elements</b>
	<input type="checkbox"/> all CQI plans that are current and approved by the Riverside County EMS Agency	
<b>Numerator Data Source</b>	<input type="checkbox"/> Riverside County EMS Agency records	
<b>Description of Indicator formula</b>	<input type="checkbox"/> total number of CQI plans approved by the Riverside County EMS Agency and up to date.	
<b>Indicator Formula Numeric Expression</b>	<input type="checkbox"/> N/D = %	
<b>Linkage</b>	<b>Linkage Options</b>	<b>EMSA Data Elements</b>
	<input type="checkbox"/> name(s) of organizations required to submit CQI plans for approval to the Riverside County EMS Agency and to keep them current.	
<b>Stratification</b>	<b>Options</b>	<b>EMSA Data Elements</b>
	<input type="checkbox"/> base hospitals/alternate base stations <input type="checkbox"/> fire departments providing at least EMT-I level service in Riverside County <input type="checkbox"/> ambulance companies	
<b>Indicator Exclusion Criteria</b>	<input type="checkbox"/> hospitals not required by the State EMSA to submit CQI Plans to the Riverside County EMS Agency <input type="checkbox"/> Fire Departments that do not provide at least EMT-I level service	



## ST-Elevation MI (STEMI) Report

### Field Section:

1. Medic Unit number: \_\_\_\_\_ Paramedic(s): \_\_\_\_\_
2. Date: \_\_\_\_\_ Patient Age: \_\_\_\_\_ Patient Gender:  Male  Female
3. Field 12-Lead ECG Interpretation: \_\_\_\_\_
4. Hospital(s) bypassed to come to STEMI Receiving Center: \_\_\_\_\_
5. If patient bypassed for other than an "acute MI suspected" on a field ECG, please indicate reason:  
\_\_\_\_\_

### **Attach copies of EKG and PCR and give to nurse**

### Emergency Department Section:

6. Hospital: \_\_\_\_\_ Person completing form: \_\_\_\_\_
7. Was the field 12-Lead ECG interpretation confirmed in ED? Yes  No
8. If "No", ED physician interpretation: \_\_\_\_\_
9. Did patient go to cath lab? Yes  No   
If no, reason for delay: \_\_\_\_\_
10. If not, did the patient receive IV fibrinolytics? Yes  No   
If not, why not? \_\_\_\_\_
11. Time STEMI Receiving Center notified of patient by Base Hospital: \_\_\_\_\_
12. Time of patient arrival in Emergency Department: \_\_\_\_\_

### Cardiology Cath Lab Section:

13. Time Cardiologist notified: \_\_\_\_\_ Time Cath Lab notified: \_\_\_\_\_
14. Was the door-to-balloon time 90 minutes or less? Yes  No
15. Time to reperfusion (balloon, inflation/stent; include also time pacemaker, Intra-aortic balloon pump if done first): \_\_\_\_\_
16. Immediate Outcome (within 48 hours): Lived  Died

### Fax form to:

**Riverside County EMS Agency**  
FAX: (951) 358-5160 Phone: (951) 358-5029  
Attention: Laura Wallin, EMS Specialist,