



El Dorado County Emergency Services Authority

Policy Subject Matter: **System Status Management**
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I. Policy:

The El Dorado County Emergency Services Authority (JPA) will continually make improvements to our System Status Management plan for enhanced delivery of high quality, advanced life support services.

II. Purpose:

The EMS System Status Management plan was created to facilitate communication and coordination between varying agencies and disciplines, identify roles and responsibilities of each contributing agency, and provide guidance on medic unit operations that will achieve superior performance through timely and effective deployments.

III. Definitions:

Advanced Life Support (ALS): A ground ambulance staffed by at least one paramedic (Medic) and equipped to provide advanced life support consistent with county, state, and federal laws, ordinances, regulations, policies and procedures.

Equal/Alternate Post (EAP): A location no greater than five minutes driving time from a medic unit's Primary Post location. The alternate post is available for paramedics to rehabilitate, tend to their medic units, and conduct business.

At Scene: For the purposes of this policy and procedure, "At Scene" denotes the medic unit has arrived and the wheels of the vehicle have come to a stop. This description meets our contractual agreement with the County for response time requirements.

CADWEB: Computer aided dispatch, web-based resources statusing program.

Emergency Medical Services Agency (EMSA): A county agency that oversees emergency medical services in the county.

Geographic Service Area (GSA): A specific area within the JPA Response Area where medic units are assigned to provide ambulance service.

Joint Power Authority (JPA) Response Area: Those areas within the County of El Dorado where direct responsibility for ambulance service is defined by contract with the County of El Dorado.

Move-up: A term used to denote the strategic movement of a medic unit to a specific location, and/or GSA for continued service and required response time capability.

Peak Demand: The required number of medic units needed for a given period of time to meet call demands 90% of the time. Peak demand is based on the time standard of one hour from the moment of dispatch; through service delivery to the point the time the medic unit is once again available for service in its geographic service area (GSA). Rural systems will have larger GSA's and with that more medic units are needed to meet Peak Demands.

System Status Management: The art and science of matching the production capacity of the EMS system to the ever-changing patterns of demand placed on the system.

System Status Plan: An algorithm for the online management of system deployment and re-deployment of medic units.

Unit Demands: Peak demand on a particular medic unit working a GSA.

IV. Resources:

- A. JPA resources consist of approximately 56 licensed paramedics, 10- public safety-medical Communication Operators, an Emergency Command Center with 6 dedicated workstations, 21 medic units that are equipped with a variety of advanced medical equipment and medications. These resources come from the following agencies through a contractual agreement with the JPA:
- El Dorado County Fire: 25 licensed paramedics
 - El Dorado Hills Fire: 6 licensed paramedics
 - Cameron Park/CAL FIRE: 6 licensed paramedics
 - Diamond Springs – El Dorado Fire: 10 licensed paramedics
 - Georgetown Fire: 4 licensed paramedics
 - CAL FIRE: 10 public safety – Emergency Medical Dispatchers (EMD)
 - CAL FIRE: Emergency Command Center with 3 Dispatch Positions
 - JPA: 19 medic units with advanced life support equipment and medications
 - Garden Valley Fire: 5 licensed paramedics
- B. The below listed fire districts provide ALS/BLS engines and respond to medical emergencies in conjunction with a JPA medic unit.
- El Dorado County Fire: 6 ALS engines
 - El Dorado Hills Fire: 5 ALS engines
 - Cameron Park-CAL FIRE: 2 ALS engines
 - Diamond Springs – El Dorado Fire: 1 ALS engine
 - Georgetown Fire: 1 part-time ALS engine
 - Rescue Fire: 1 ALS engine
 - Pioneer Fire: 1 BLS engine
 - Garden Valley Fire: 1 ALS engine
 - Mosquito Fire: 1 part-time ALS engine

- C. Daily status of the primary and reserve medic units shall be entered into CADWEB by 0830 hours. All JPA member agencies are encouraged to participate in the CADWEB resource status.
- D. Serving our region, air ambulance helicopter service is provided by CALSTAR, CARE FLIGHT and REACH. The California Highway Patrol staffs one rescue helicopter.

V. Training and Apparatus Maintenance:

An effective and efficient system begins with highly trained and experienced personnel who are equipped with well-maintained and reliable vehicles and equipment. The JPA is dedicated to providing a robust training program that expands the knowledge, experience and skills of its employees. Vehicles and equipment shall be regularly inspected and maintained for optimal performance and reliability.

VI. Medic Unit Staffing Requirements:

- A. An Advanced Life Support medic unit shall consist of two (2) medical personnel in the following two configurations:
 - 1. Two (2) state licensed and locally accredited paramedics, and or,
 - 2. One (1) state licensed and locally accredited paramedic, and one (1) certified EMT-1.
- B. A critical care transport ambulance shall consist of one (1) state licensed and locally accredited paramedic, one (1) registered nurse competent in emergency critical care, and an affiliated EMT 1 driver.

VII. Geographical Service Areas (GSA):

The JPA service area has been divided into five GSAs. The goal is to maximize resource capabilities for area coverage and to provide timely ALS response, as outlined in our contractual agreement with the County of El Dorado (County). Within each GSA, a primary and alternate post assignment has been identified. Alternate post assignments must not be more than five minutes driving time from their primary post assignment. Strategic move-ups of available medic units should be utilized to maintain GSA coverage as medic units become committed to calls. GSA areas and posts are as follows:

- A. GSA areas:
 - Core: Diamond Springs, Mosquito, El Dorado, and Placerville areas
 - West: Shingle Springs, Cameron Park, Rescue, El Dorado Hills, and Latrobe areas
 - East: Camino, Pollock Pines, Kyburz, Strawberry, and US Forest areas
 - North: Georgetown, Garden Valley, Cool, Kelsey, Coloma, Pilot Hill, and US Forest Service areas
 - South: Pleasant Valley, Sierra Springs, Omo Ranch, Somerset, and Grizzly Flat areas
- B. Primary post assignments:
 - Core: El Dorado County Fire Station 25 and Diamond Springs-El Dorado Fire Station 48 and 49
 - West: Cameron Park Fire Station 89, El Dorado Hills Fire Station 85 and El Dorado County Fire Station 28

- East: El Dorado County Fire Stations 17 and 21
- North: Georgetown Fire Station 61, El Dorado County Fire Station 74 and Garden Valley Fire Station 51
- South: El Dorado County Fire Station 19

VIII. Time Response Requirements:

By contractual agreement with the El Dorado County Emergency Medical Services Agency, we must satisfy certain ALS ambulance response time requirements for defined areas of the county.

Exceptions to these time requirements are allowed for unavoidable situations such as disaster events, communication failure, adverse traffic conditions, and severe weather conditions, to name a few. The time requirements and exception waivers can be found in the Master Contract between the County of El Dorado and the JPA.

IX. System Status Levels:

System status levels have been established to provide guidance on the management of JPA resources to maximize effectiveness for GSA coverage and response times. The ECC Duty Officer has the authority to deviate from this guidance depending on the circumstances. On average the JPA deploys eight (8) medic units, 24/7/365 to cover five (5) GSA areas. The system has the capacity to staff additional medic units for disaster events, long distance transfers, system draw down, dedicated assignments and to stand-by at special events such as the County Fair. The system is very fluid and medic unit status can run the spectrum of medic unit availability.

As the system is drawn down of available medic units, it is essential that strategic move-ups be considered to maintain coverage of the GSAs that, historically, have the highest probability of calls for service, and from which medic units can be deployed for a timely and efficient response. Calls for service and GSA data have been analyzed to determine the priority in which each GSA should be maintained with coverage. That analysis is depicted below.

The system status shall be defined as follows:

- Level 0 – No medic units available in the system
- Level 1 – One medic unit available in the system
- Level 2 – Two medic units available in the system
- Level 3 – Three medic units available in the system
- Level 4 – Four medic units available in the system
- Level 5 – Five medic units available in the system
- Level 6 – Six medic units available in the system
- Level 7 – Seven medic units available in the system
- Level 8 – Eight medic units available in the system

The ECC shall post medic units according to the current system status levels as follows:

Level 0									
Level 1	CORE ST 25/48								
Level 2	CORE ST 25/48	WEST ST 89/86							
Level 3	CORE ST 25/48	WEST ST 89/86	ST 21						
Level 4	CORE ST 25/48	WEST ST 89/86	ST 21	ST 74					
Level 5	CORE ST 25/48	WEST ST 89/86	ST 21	ST 74	CORE/W EST				
Level 6	CORE ST 25/48	WEST ST 89/86	ST 17	ST 61/74	CORE/W EST	CORE/ WEST			
Level 7	CORE ST 25/48	WEST ST 89/86	ST 17	ST 61/74	ST 19	CORE/ WEST	CORE/ WEST		
Level 8	CORE ST 25/48	WEST ST 89/86	ST 17	ST 61/74	ST 19	CORE/ WEST	CORE/ WEST	WEST	

System Status Posting

X. Strategic Move-ups and Assignments:

System Status Management is an on-going planning process that involves not only a reaction to what is taking place, but also an intuitive examination of what future needs might include. As drawdowns occur, planning for current and future ALS service needs can be accomplished by taking into consideration the following factors:

- Numbers of units committed at any given time
- Call volume (below, at, and/or above normal for that period)
- The nature of the ALS calls (traffic collisions, MCI's, and major injury patients)
- Turn-around time for units to return to service (out-of-county transports)
- Remoteness of current calls (rural and wilderness settings)
- Time, day of the week, holiday periods
- Weather conditions (rain, snow)
- Special events that are taking place (County Fair, parades)
- Emergencies such as fires, crime scenes, hazmat spills, etc.
- Empirical and historical knowledge of the ECC
- Extended mission times
- Destination hospital diversions

A. Specific Instructions to the ECC:

1. West and East GSA coverage shall be balanced, i.e.: two and two, and not one and three.
2. The ECC Duty Officer or designee may deviate from the normal Post assignments when extenuating circumstances occur (i.e. MCIs, disaster events, and etc.).
3. Move-up assignments should be given to the closest available medic unit to minimize any delay in achieving a higher system status level. Exception: the ECC Duty Officer may deviate from the closest medic concept when the move-up is strategic to pending incidents (for example, code-2 IFT requests, coverage of the core, or coverage of Station 74).
4. A Move-up in progress shall be kept at a post beyond 2100 Hours.
5. Between 0900 and 2100 hours, the ECC shall make Post assignments based on the above listed guidelines.
6. Between 2100 and 0900 hours, the ECC shall continue to follow these guidelines only when:
 - a. Level 2 has been reached OR
 - b. It is anticipated that for the next 15 minutes, four or more medic units will be unavailable for service.
 - c. The ECC finds it necessary, due to situational priorities.

XI. Patient Transfers:

The JPA provides ALS services for patient transfers between a variety of facilities and destinations in our region.

A. Specific Instructions to the ECC:

1. Code 3 inter-facility transfer (IFT) requests:
 - a. Air ambulance is the preferred method of transport for all Code 3 IFTs that terminate outside of Sacramento County.
 - b. Marshall Medical Center will coordinate all air ambulance Code 3 IFTs that terminate outside of Sacramento County.
 - c. In the event an air ambulance transfer is unavailable for a Code 3 IFT that terminates outside of Sacramento County, the transfer shall be filled with the closest available medic unit.
 - d. Code 3 IFTs that terminate outside of El Dorado County shall be filled with the closest available medic unit.
2. Day Code 2 inter-facility transfer (IFT) requests between the hours of 0900-2100 that terminate within El Dorado County, Sacramento County or Placer County:
 - a. Regardless of destination, shall be filled with the first available medic unit not assigned to a call.

3. Day Code 2 inter-facility transfer (IFT) that terminate outside of Sacramento County or Placer County:
 - a. Marshall Medical Center will place the JPA last on the approved vendor transport list for IFTs that terminate outside of Sacramento County or Placer County.
 - b. The initiation of the transfer must not be during peak hours of Monday – Friday 0600 – 0900 and 1400 – 1800.
4. Night Code 2 inter-facility (IFT) requests between the hours of 2100-0900 that terminate within El Dorado County, Sacramento County or Placer County:
 - a. To prevent excessive fatigue on any one medic unit, all medic units, with the exception of M25 and M49 will rotate night code 2 IFTs.
5. The ECC shall keep a weekly continuous list of which medic unit completed an IFT.
6. M25 and M49 will be excluded from all Code 2 IFTs out of the County, as they will be responsible for the night local transfers within their response areas that originate from Marshall Hospital.
7. Pending IFTs with greater than a 2-hour mission response time may be staffed with a call back unit.
8. For long distance IFT's beyond Sacramento County, the ECC may back fill with a call back unit.
9. Transfer facility must be within 150 miles of Marshall Hospital. The only exception to the 150-mile rule will be for transfers to San Jose Behavioral Health and Stanford Medical Center. For IFTs beyond Sacramento County, the initiation of the transfer must not be during peak hours of Monday – Friday 0600 – 0900 and 1400 – 1800.
 - a. Exception:

The ECC Duty Officer may use his/her judgment to accept a transfer exceeding 150 miles for unusual or exigent circumstances (i.e. Marshall explains that no other ambulance provider can assist with the transfer, MCI's, or special/unique circumstances).
 - b. Declined Transfer Tracking Report:

Any time a transfer is denied, the ECC Duty Officer will send an email to the JPA Director with the date, time of request and reason for denial of the transfer. This denial will be reviewed at the next SSM meeting.
10. Mutual Aid

Occasionally a request will come from Sacramento Regional Fire Emergency Communications Center (SRFECC) to move up and cover a station in Folsom. To comply with this request the Camino ECC Duty Officer or designee will send a medic unit if it is available. The ECC Duty Officer or designee will make the appropriate move ups in GSA coverage as outlined in IX. Systems Status Posting. The ECC Duty Officer or designee has the discretion to request and/or decline mutual aid depending on the current demands that exist within our own systems status management.

1. Specific instructions for Medic Unit personnel responding to mutual aid in Sacramento County:
 - a. Upon leaving El Dorado County advise the Camino ECC that the unit will be switching over to the SRF ECC frequency.
 - b. Come up on the SRF ECC frequency A2 and advise the availability for assignment and proceed as directed.
 - c. If the Medic Unit is not equipped with a Sacramento County 800 frequency radio, proceed to Folsom Station 37 located at 70 Clarksville Road (near E. Bidwell and Clarksville) as there are two portable 800 frequency radios there for our use. Once in possession of the portable radios follow (a. and b. above). Upon release from SRF ECC return the radios to Station 37.
 - d. If assigned a call in Sacramento County, request from the Camino ECC an Incident Report number for the Patient Care Report. This number will be needed for the El Dorado County EMSA billing system. An FC34 from SRF ECC would be beneficial for future reports and billing but is not necessary.
 - e. Upon release from SRF ECC return to El Dorado County and notify the Camino ECC of availability.

XII. Call-Backs:

The Camino ECC and provider agency chiefs have the discretion to call-back employees to staff additional medic units, as deemed necessary, to maintain System Status levels.

A. Triggers for initiating a call-back:

1. The Camino ECC shall attempt to staff an additional medic unit when Level 3 has been reached and it is anticipated that it will remain at that level for a period of 30 minutes or more.
2. The Camino ECC shall attempt to staff an additional medic unit when Marshall Hospital is on diversion and the County System Status Management is at Level 3.
3. Pending IFTs with greater than a 2-hour mission response time may be staffed with a call back unit.

B. Procedures for call-backs:

1. The closest agency Duty Chief with reserve capacity where the coverage is needed shall be contacted to determine if they can fill the need. The agency will have five minutes to make that determination. If the agency is unable to staff an additional medic unit, the next closest agency provider in proximity will be contacted with the same time element.
2. If the ECC is unable to staff an additional medic unit with JPA resources, mutual aid shall be sought. Refer to Mutual Aid policy for guidelines.

3. The ECC Duty Officer or designee shall CAD page to PGMEDIC when the System Status has reached a Level 3.
4. The ECC Duty Officer or designee shall notify the JPA, Executive Director and local government Duty Chiefs that a call back is being initiated.

XIII. Operational Overview:

Requests for an ALS ambulance usually begin with a 911 call (either by landline or cellular phone) to a Public Safety Answering Point (PSAP). There are three PSAPs in El Dorado County: The El Dorado County Sheriff's Communication Center (Central Dispatch), Placerville Police Department Dispatch Center, and the South Lake Tahoe Police Department Dispatch Center. ALS requests can also be received over a public safety radio frequency from a public safety agency.

After answering the 911 call, the PSAP dispatcher will interview the reporting person (RP) for information to determine the nature, location and severity of the emergency situation. When the emergency involves a request for an ALS medic unit response, the PSAP dispatcher will transfer the call to the CAL FIRE ECC in Camino. The Camino ECC Communication Operator will gather pertinent information from the RP and dispatch appropriate resources to provide ALS services. The Camino ECC Communication Operators are also trained and certified in Emergency Medical Dispatch to provide First-Aid and CPR instruction to those who are on-scene with the patient, for immediate care and treatment.

Dispatched medic unit(s) and fire agency resources respond to the scene and provide ALS services to stabilize the patient for transport. The System Status Management plan is designed to make strategic movements of medic units to respond to ALS calls within defined response times.

It is not uncommon for patients to refuse treatment from medics and fire personnel. If the patient appears to be able to make a competent decision on his-her medical care, the patient shall be asked to sign a release waiver. If the patient is incompetent to make such a decision because of a mental illness or dysfunction and/or substance abuse, the local law enforcement agency with jurisdiction will be summoned to the scene to evaluate the patient for a 5150 Welfare and Institutions Code (W&I) mental health commitment. If the patient is placed under a 5150 W&I hold by a law enforcement officer, the officer may direct medics to provide ALS services and transport the patient to a medical hospital for further treatment.

Patients will be evaluated for transportation to the most appropriate receiving medical facility. In some instances, the patient's injuries or medical condition may require use of an air ambulance helicopter.

XIV. Operational procedures:

The following procedures were developed utilizing many years of past experiences and should be used to help guide personnel actions to achieve optimum performance.

- A. The Camino Emergency Command Center (ECC) Procedures: Upon receiving an ALS request, the following guidelines shall be followed;
 1. The Call Taker will initially question the Reporting Party (RP) for basic call information: verification of emergency location, verification of RP call back phone number, and basic

type of emergency. The Call Taker will then enter the call into the Computer Aided Dispatch (CAD) Pending Events for the Initial Attack Dispatcher.

2. The Initial Attack Dispatcher will dispatch the appropriate resources to the emergency, based on the predetermined response plan.
 3. While the Initial Attack Dispatcher is dispatching resources to the emergency, the Call Taker continues to question the RP using the Medical Priority Dispatch System (EMD Protocols). Based on the answers given by the RP, the calls are given a code. Responding resources are reduced to a Code 2 response for Alpha level calls. Bravo, Charlie, Delta, and Echo level responses are continued as Code 3 responses.
 4. The Command Channel Communication Operator will positively check back the resources responding to the incident. Upon confirmation of responding resources, the Command Channel Communication Operator will give the responding resources additional pertinent information about the call, and reduce the resources to Code 2, if appropriate, for an Alpha level response.
 5. All further radio traffic, such as resource status changes and transport status, shall be conducted on the appropriate command channel.
- B. Medic Unit Procedures: To meet contractual response time requirements between the County and the JPA, the below listed guidelines shall be followed by all medic units.
1. Posting: When the Camino ECC dispatches a medic unit to move up and cover a geographic response area (GSA) the medic unit shall be en route immediately to their posting location and notify the Camino ECC. Medic units shall inform the Camino ECC of their intended route of travel to and from their post assignment. This will allow the ECC Duty officer or designee to preplan GSA coverage needs.
 2. Locations: Medic units shall remain within 5 minutes of the dispatched move-up and cover locations. Station 89 will be the posting location for move-up and cover assignments in the West end. The only exception is for Medic 28 when already in quarters, they shall remain in quarters for West end coverage.
 3. Hospital: Medic units shall be available for dispatch within 10 minutes of arrival at the hospital. All medics shall clear the destination hospital within 30 minutes after arrival. Exception: Circumstances dictate a longer period at the hospital and the medic unit has informed the Camino ECC.
 4. Medic units shall inform the Camino ECC of their intended route of travel when returning from MFER and AFER destination hospitals. This will allow the ECC Duty officer or designee to preplan GSA coverage needs.
 5. Medic units shall maintain communication with Camino ECC and monitor their radio (appropriate local net and command frequencies) at all times.
 6. Advise the ECC as soon as it is determined that the Medic Unit will be committed and a hospital has been designated.

7. The Camino ECC will indicate on each FC-34 the response time for the GSA that the medic unit responded to. All medic unit personnel shall be aware of and report any exceptions to the maximum response time standards as established by the County and the JPA. Medic personnel shall use “exception” forms to complete their reports.
8. Reconcile any changes to time (FC-34) and transport mileage upon scene to provide accurate data. The reports are to be emailed or faxed to the JPA office (530-642-0628).