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POLICY MEMORANDUM 6105

Implementation Date: December 15, 2011

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REVIEWED/APPROVED BY:

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SUBJECT: SOLANO COUNTY PREHOSPITAL TRAUMA TRIAGE PLAN

AUTHORITY: CALIFORNIA HEALTH & SAFETY CODE, DIVISION 2.5, 1797.220, 1798.100, 1798.162, and 1798.163

PURPOSE:

To maintain a system that allows trauma patients to benefit from receiving Trauma Center services most appropriate to that patient's injuries in the most expeditious manner possible. Level I, II, or III Trauma Centers should be utilized when appropriate.

I. GENERAL CONCEPTS:

- A. Trauma Centers improve the outcomes for patients with significant traumatic injuries.
- B. Level I/II Trauma Centers are able to provide emergent neurosurgical intervention and have in-house trauma surgeons and operating room teams immediately available; therefore major trauma patients with injuries (definite or suspected) requiring immediate access to a neurosurgeon should be transported to the closest Designated Level I/II Trauma Center.

II. PATIENTS LIKELY TO BENEFIT FROM TRAUMA CENTER SERVICES:

A. Trauma patients to be transported to closest Level I or II Trauma Center:

1. Glasgow Coma Scale (GCS) ≤ 8 ; or
2. Penetrating trauma to head; or
3. Suspected open or depressed skull fracture; or
4. Paralysis.

B. Physiological Criteria to be transported to closest Designated Trauma Center:

1. Systolic blood pressure less than 100mm/Hg; or
2. Inappropriate pediatric vital signs; or
3. Not following commands – GCS 9 – 13; or
4. Pregnant patients ≥ 24 weeks with torso trauma.

C. Anatomical Criteria to be transported to the closest Designated Trauma Center:

1. Penetrating injury to neck, torso, buttock, groin, or extremities proximal to knee or elbow; or
2. Two or more proximal long bone fractures; or
3. Amputation/crush/degloving proximal to wrist or ankle; or
4. Pelvic instability; or
5. Pulseless extremity; or
6. Trauma with burns with TBSA $> 9\%$.

D. Mechanical Criteria to be transported to the closest Designated Trauma Center:

1. Falls greater than 20 feet for adults, or two times the height of a child; or
2. Ejection from a vehicle, partial or complete, with injury; or
3. Motor vehicle crash (MVC) with death in the same vehicle; or
4. Thrown from an animal with injury; or
5. Vehicle vs pedestrian/bicyclist thrown with impact at > 10 mph or torso run over; or
6. Motorcycle > 20 mph with impact to an object (excluding road).

- E. Transport to a trauma center should be considered in the following situations:
 - 1. Fall in patient ≥ 65 years old;
 - 2. Anticoagulant use.

III. TRAUMA MEDICAL DIRECTION

- A. Major trauma patients in the pediatric age range (less than 15 years of age) should bypass local Trauma Centers and be transported to a Pediatric Trauma Center unless they meet the criteria of Section II(B), (D) or V of this policy.
- B. Paramedics have been trained to apply protocols and use judgment to identify Level I/II trauma patients. The approved trauma triage algorithm will be used to determine the appropriate trauma center destination.
- C. When assessing, treating, or transporting a Level I/II trauma patient, Paramedics shall contact the Solano Emergency Medical Services Cooperative (SEMSC) designated Level II Trauma Base Hospital for medical direction if either SEMSC's protocols require securing medical direction or if Paramedics otherwise determine medical direction is necessary.
 - 1. The SEMSC designated Level II Trauma Center is Kaiser Foundation Hospital, Vacaville.
 - 2. For trauma patients originating in the Vallejo/Benicia area, factoring in time of day, traffic, weather, etc., trauma patients may be transported directly to John Muir Medical Center (JMMC), Walnut Creek. If a Paramedic is requiring medical direction and is transporting to JMMC, the Paramedic shall contact the SEMSC designated Level II Trauma Base Hospital.
- D. When assessing, treating, or transporting a Level III trauma patient, Paramedics may contact any SEMSC designated Trauma Center for medical direction. Paramedics may transport Level III patients to the closest Trauma Center.
- E. The use of air ambulances is considered separately from the trauma triage decision. Air ambulances may benefit patients injured in locations distant from Trauma Centers, and/or those in need of immediate procedures available to flight nurses, but outside the scope of practice of Paramedics. The use of air ambulances is not the default method of transport for major trauma patients. Aircraft should only be used when they offer a measurable advantage compared to ground transport. Use of air ambulances is covered in Policy 5800.
- F. Pregnant patients, greater than 24 weeks gestation, that do not meet Trauma Triage Criteria will be transported to a facility with OB capabilities.
- G. This policy does not apply to Multi-Casualty Incidents (MCIs).

IV. PARAMEDIC IMPRESSION

If the primary Paramedic believes that a patient not meeting criteria as a trauma patient has injuries that may exceed the capabilities of the usual receiving hospital, then the case should be discussed with SEMSC Designated Level II Trauma Base Hospital. The trauma base physician, Mobile Intensive Care Nurse (MICN), or designee, in consultation with the primary scene paramedic, may designate that patient as a trauma patient, and that patient will be transported to the nearest appropriate Trauma Center.

V. CRITERIA FOR TRUAMA PATIENT TRANSPORT TO THE CLOSEST RECEIVING FACILITY

The following trauma patients will be transported to the closest receiving facility:

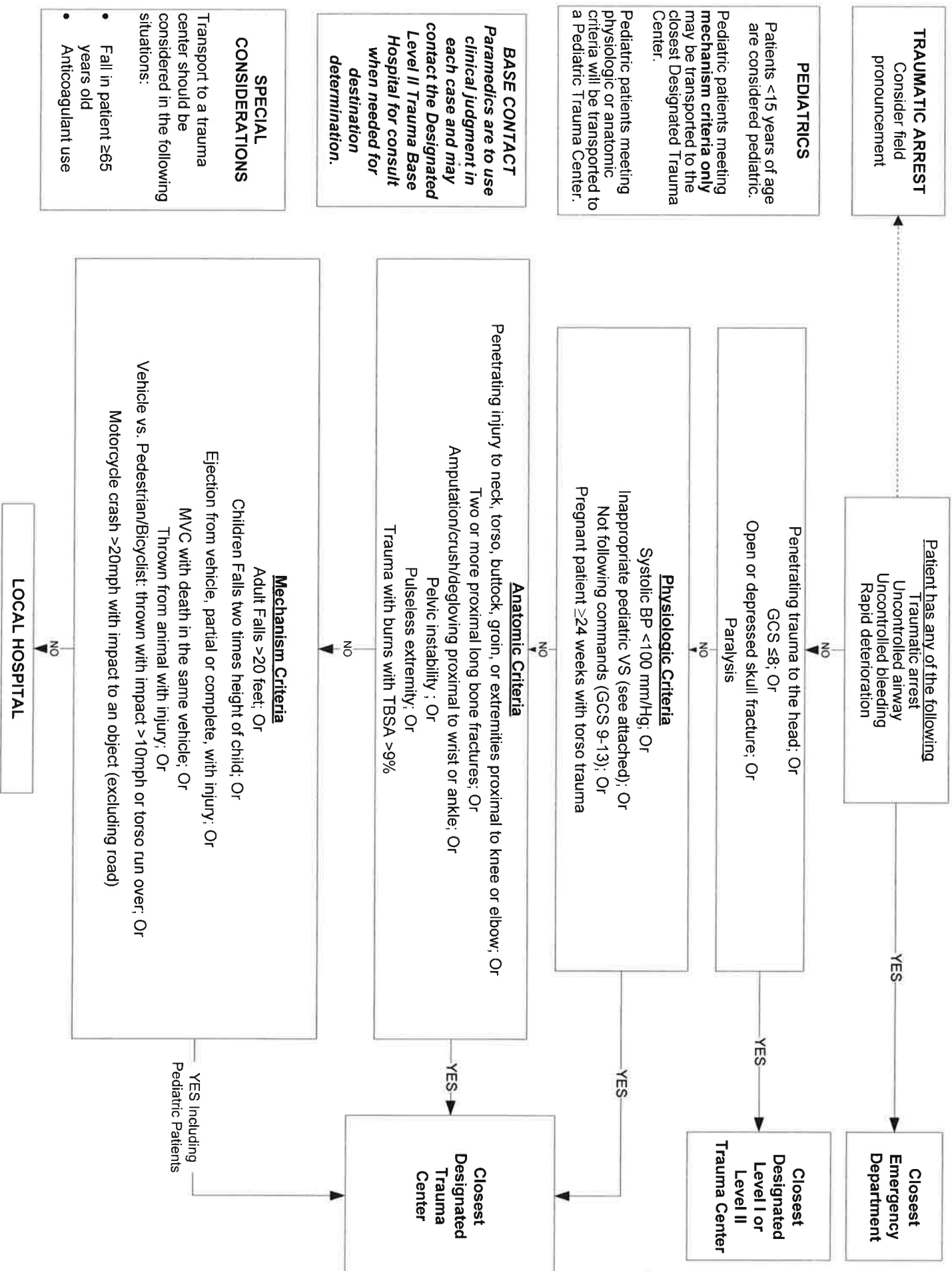
- A. Trauma patients in cardiac arrest (consider field pronouncement);
- B. Trauma patients with an uncontrolled airway;
- C. Trauma patients with uncontrolled bleeding;
- D. Major trauma patients with rapid deterioration/impending arrest should be taken to the closest receiving facility if conditions (traffic, distance, weather) are unfavorable for rapid transport to a Solano County Designated Trauma Center.

VI. MAJOR TRAUMA PROCEDURES

- A. The primary Paramedic will determine whether the patient meets criteria as a trauma patient, and what level and type of trauma center care is appropriate for that patient (see Trauma Triage Algorithm attachment).
- B. The Primary Paramedic will determine the mode of transportation to the appropriate Trauma Center, in accordance with policy.
 - 1. If transportation is by ground, the transporting unit's dispatching agency will confirm that the closest destination Trauma Center is open.
 - 2. If transportation is by air ambulance, the air ambulance provider's dispatch will determine the closest appropriate destination Trauma Center, and confirm that it is open to receiving trauma patients.
- C. The transporting unit will contact the designated Trauma Center and advise them of their impending arrival, and provide a report on the patient's injuries and condition. Non-designated Out-of-county destination facilities are not authorized to give online medical instructions/orders.

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SOLANO COUNTY PREHOSPITAL TRAUMA TRIAGE ALGORITHM



TRAUMATIC ARREST
Consider field pronouncement

PEDIATRICS

Patients <15 years of age are considered pediatric. Pediatric patients meeting mechanism criteria only may be transported to the closest Designated Trauma Center.
Pediatric patients meeting physiologic or anatomic criteria will be transported to a Pediatric Trauma Center.

BASE CONTACT
Paramedics are to use clinical judgment in each case and may contact the Designated Level II Trauma Base Hospital for consult when needed for destination determination.

SPECIAL CONSIDERATIONS

Transport to a trauma center should be considered in the following situations:

- Fall in patient ≥65 years old
- Anticoagulant use

Patient has any of the following
Traumatic arrest
Uncontrolled airway
Uncontrolled bleeding
Rapid deterioration

Penetrating trauma to the head; OR
GCS <8; OR
Open or depressed skull fracture; OR
Paralysis

Physiologic Criteria
Systolic BP <100 mm/Hg; OR
Inappropriate pediatric VS (see attached); OR
Not following commands (GCS 9-13); OR
Pregnant patient ≥24 weeks with torso trauma

Anatomic Criteria
Penetrating injury to neck, torso, buttock, or extremities proximal to knee or elbow; OR
Two or more proximal long bone fractures; OR
Amputation/crush/degloving proximal to wrist or ankle; OR
Pelvic instability; OR
Pulseless extremity; OR
Trauma with burns with TBSA >9%

Mechanism Criteria
Adult Falls >20 feet; OR
Children Falls two times height of child; OR
Ejection from vehicle, partial or complete, with injury; OR
MVC with death in the same vehicle; OR
Thrown from animal with injury; OR
Vehicle vs. Pedestrian/Bicyclist: thrown with impact >10mph or torso run over; OR
Motorcycle crash >20mph with impact to an object (excluding road)

LOCAL HOSPITAL

SOLANO COUNTY PREHOSPITAL TRAUMA TRIAGE ALGORITHM

Patients with an uncontrolled airway, uncontrolled bleeding, and traumatic arrest, should be taken rapidly to the closest Solano County receiving hospital. Similarly, trauma patients who are rapidly deteriorating on the brink of arrest may need to be taken to the closest facility if conditions (traffic, distance, available air ambulance) are unfavorable for rapid transport to a trauma center. For patients in traumatic arrest, consider field pronouncement.

Patients with injuries or deficits that may indicate need for immediate neurosurgical intervention shall be taken to the nearest Solano County Designated Level I or Level II Trauma Center.

If the primary paramedic feels that a patient not meeting criteria as a major trauma patient has injuries which may exceed the capabilities of the patient choice or closest hospital, and would likely benefit from direct transport to a Trauma Center, then the case should be discussed with a **SEMSC Designated Level II Trauma Base Hospital Physician**. Using Mechanism of Injury criteria for trauma center destination decisions alone is not always predictive of injury; if during the paramedic's assessment they determine the patient may not have any injuries, trauma base physician consultation may be made to alter the destination. **NOTE: SEMSC Designated Level II Trauma Base Hospital Physicians do not need to be contacted for every trauma destination but are always available to assist.**

The SEMSC Designated Level II Trauma Base Hospital is Kaiser Foundation Hospital, Vacaville; contact telephone number: (707) 452-9892

Pediatric Vitals: threshold for transfer to trauma center:

| <u>AGE</u> | <u>HR</u> | <u>RR</u> | <u>BP</u> |
|---------------|------------------|-----------------|-----------------|
| 0 – 6 months | greater than 150 | greater than 50 | |
| 7 – 11 months | greater than 140 | greater than 40 | |
| 1 – 2 years | greater than 130 | greater than 40 | less than 75/50 |
| 2 – 6 years | greater than 120 | greater than 30 | less than 80/55 |
| 6 – 12 years | greater than 110 | greater than 20 | less than 90/60 |
| 12 – 15 years | greater than 100 | greater than 16 | less than 90/60 |

A major trauma patient less than 15 years of age should be taken to the nearest pediatric trauma center.