
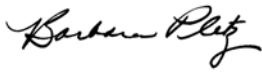




TRAUMA TRIAGE AND PATIENT DESTINATION

APPROVED:  EMS Medical Director  EMS Administrator

AUTHORITY: Division 2.5 Health and Safety Code. Article 2.5 Regional Trauma Systems. 1798.163

1. Triage Criteria For Identifying Major Trauma Victims
 - 1.1 Patients identified by the paramedic as a major trauma victim will be directed to a trauma receiving hospital approved as a part of the San Mateo County Trauma Plan. (San Francisco General Hospital and Stanford University Hospital)
 - 1.2 If there is any question as to the trauma status of the patient the paramedic should consult with the trauma receiving hospital as early as possible in the patient's evaluation
 - 1.3 The paramedic will use the following criteria to identify the major trauma victim
 - 1.3.1 Physiologic Criteria: Adults
 - 1.3.1.1 Systolic blood pressure <90
 - 1.3.1.2 Respiratory rate <10 or >29/minute sustained
 - 1.3.1.3 Glasgow Coma Score <13
 - 1.3.1.4 Unable to follow simple commands
 - 1.3.2 Physiologic Criteria: Pediatric

Age < or = 3 years old	Age > 3 years old
Respiratory distress	Respiratory distress
Respiratory rate <20 or >50 per minute sustained	Respiratory rate <16 or >40 per minute sustained
Loss of peripheral pulse	Loss of peripheral pulse
HR < 80 or > 180 bpm, sustained	HR < 60 or > 160 bpm, sustained
	Systolic BP < 70
Behavior not appropriate for age	Behavior not appropriate for age

1.3.3 Anatomic Criteria: Adult and Pediatric

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- 1.3.3.1 Penetrating injuries to head, neck, torso, and extremities proximal to elbow and knee
- 1.3.3.2 High energy blunt trauma to head, neck, torso or groin
- 1.3.3.3 Flail chest
- 1.3.3.4 Combination of trauma with burns
- 1.3.3.5 Two or more proximal long bone fractures
- 1.3.3.6 Suspected pelvic fractures (Unstable pelvis)
- 1.3.3.7 Open or depressed skull fracture
- 1.3.3.8 Paralysis secondary to recent trauma
- 1.3.3.9 Amputation proximal to ankle or wrist

- 1.3.4 Mechanism of Injury adult and pediatric
 - 1.3.4.1 Ejection from a motor vehicle
 - 1.3.4.2 Fall >20 feet adult or >10 feet children
 - 1.3.4.3 Death of a victim in the same passenger compartment of a vehicle
 - 1.3.4.4 Extrication time >20 minutes
 - 1.3.4.5 Roll over motor vehicle crash with unrestrained patients
 - 1.3.4.6 High-speed vehicle crash
 - 1.3.4.4.6.1 Initial speed >40 mph
 - 1.3.4.4.6.2 Major auto deformity >20 inches
 - 1.3.4.4.6.3 Intrusion into passenger compartment >12 inches
 - 1.3.4.7 Auto-pedestrian/auto-bicycle with obvious injury or complaint of pain or injury
 - 1.3.4.8 Pedestrian thrown or run over
 - 1.3.4.9 Motorcycle crash >20 mph or with obvious injury or complaint of pain or injury
 - 1.3.4.10 Significant force blunt trauma to head or torso from large animal (ex: fall or kick from horse)

- 1.3.5 Co-Morbid factors: Adult or pediatric
 - 1.3.5.1 Patients with blunt abdominal trauma in the third trimester of pregnancy should be transported to a trauma center

 - 1.3.5.2 The paramedic should consider the following in the decision to identify the patient as a major trauma victim
 - 1.3.5.2.1 Age <5 or > 65
 - 1.3.5.2.2 History of cardiac or respiratory disease
 - 1.3.5.2.3 Insulin-dependent diabetes
 - 1.3.5.2.4 Cirrhosis
 - 1.3.5.2.5 Morbid obesity
 - 1.3.5.2.6 Immunosuppressed patients (HIV infected patients or those with organ transplantation)

- 1.3.5.2.7 Patients with bleeding disorders or those who are being treated with anticoagulants
- 1.3.6 Other patients, who in the best professional judgment of the paramedic, need to be categorized as major trauma victims.

DEFINITION OF ADULT AND PEDIATRIC MAJOR TRAUMA VICTIM			
Mechanism of Injury	Anatomic Criteria	Physiologic Criteria	Co-Morbidity Factors
<p>Adult and Pediatric:</p> <p>Ejection from a motor vehicle</p> <p>Falls >20 feet adult >10 feet children</p> <p>Death of a victim in the same passenger compartment of a vehicle</p> <p>Extrication time >20 minutes</p> <p>Rollover motor vehicle crash with unrestrained patients</p> <p>High speed vehicle crash:</p> <ul style="list-style-type: none"> • Initial speed >40mph • Major auto deformity >20 inches • Intrusion in to passenger compartment >12 inches <p>Auto-ped/auto-cycle with obvious injury or complaint of pain or injury</p> <p>Pedestrian thrown or run over</p> <p>Motorcycle crash > 20mph or obvious injury or complaint of pain or injury</p> <p>Significant blunt force trauma from large animal to head, neck or torso</p>	<p>Adult and Pediatric:</p> <p>Penetrating injuries to the head, neck, torso, and extremities proximal to elbow and knee</p> <p>High energy blunt trauma to head, neck, torso, or groin</p> <p>Flail chest</p> <p>Combination of trauma with burns</p> <p>Two or more proximal long bone fractures</p> <p>Suspected pelvic fractures (unstable pelvis)</p> <p>Open or depressed skull fracture</p> <p>Paralysis secondary to recent trauma</p> <p>Amputation proximal to ankle or wrist</p>	<p>Adult:</p> <p>Systolic blood pressure <90</p> <p>Respiratory rate <10 or >29 per minute sustained</p> <p>Glasgow Coma Score <13</p> <p>Unable to follow simple commands</p> <p>Pediatric: <u>Respiratory Distress:</u> <3 yrs: <20 or >50/min >3 yrs: <16 or >40/min <u>Blood Pressure:</u> Loss of peripheral pulse or > 3 systolic BP <70 <u>Heart Rate:</u> 3yrs or under: <80 or >180/ min over 3 years <60 or >160 /min <u>Neurological status</u> Behavior not appropriate for age</p>	<p>Adult and Pediatric</p> <p>Patients with blunt abdominal trauma in the third trimester of pregnancy</p> <p><i>Patients with less severe injuries and the presence of any one of these factors may be considered major trauma victims:</i></p> <p>Age less than 5 years or greater than 65 years.</p> <p>History of respiratory or cardiovascular disease</p> <p>Insulin-dependent diabetes</p> <p>Cirrhosis</p> <p>Morbid obesity Immunosuppressed patients</p> <p>Patients with bleeding disorders or those on anticoagulants</p>
<p>Other patients, who in the best professional judgment of the paramedic, need to be categorized as major trauma victims.</p>			

2. Pain Control For Major Trauma Victims
 - 2.1 Pain control for major trauma victims should be consistent with adult and pediatric protocols for pain management.
3. Transportation To The Trauma Hospital
 - 3.1 The decision to use code 3 transportation to the hospital will be determined by the transporting paramedic
 - 3.2 In general those patients who meet the physiological criteria for a major trauma victim will be transported code 3
4. Paramedic Notification Of Trauma Center Or Receiving Hospital
 - 4.1 The paramedic will notify the trauma center or receiving hospital as soon as possible
 - 4.1.1 San Francisco General Hospital should be contacted via radio whenever possible. If needed the phone number is (415) 647-4747.
 - 4.1.2 Stanford Hospital should be contacted by radio when ever possible. If needed the phone number is (650) 723-7337
5. Patient Destination By Location And Mode Of Transportation
 - 5.1 San Francisco General Hospital
 - 5.1.1 Patients injured in any area north of Devils Slide; on the north side or to the north of Trousdale Avenue, from Highway 280 to El Camino Real; on the north side or to the north of Millbrae Avenue, from El Camino Real to the San Francisco Bay, will be taken to San Francisco General Hospital
 - 5.1.2 Patients transported by air-medical are not routinely transported to San Francisco General because this facility does not have a helipad. Air-medical patients from this area are routinely transported to Stanford Hospital.
 - 5.2 Stanford Hospital
 - 5.2.1 Persons injured in any area south of and including Devils Slide; on the south side to the south of Trousdale Avenue, from Highway 280 to El Camino Real, on the south side or to the south of Millbrae Avenue, from El Camino Real to the San Francisco Bay, will be taken to Stanford University Medical Center.
 - 5.2.2 If Stanford Hospital is unavailable air medical patients may be transported to another hospital with a helipad
 - 5.3 Transportation of a trauma patient to a non-trauma hospital should only be done if the patient has an unmanageable airway
 - 5.4 Multiple Major Trauma Patients

- 5.4.1 When there are multiple major trauma patients from a single event, they should be distributed in a manner to most effectively utilize available trauma resources
- 5.4.2 Patients should be transported as they are extricated
- 5.4.3 The most critical patients should be transported to the closest available as determined by both transport time, mode of transportation, and distance
- 5.4.4 If there are multiple critical patients the paramedic should contact the trauma center early in the call in order to determine how many of the critical patients can be treated at that facility
- 5.4.5 Patients who do not meet major trauma criteria may be transported to the closest available receiving hospital

6. Diversion By A Trauma Center

- 6.1 San Francisco General Trauma centers will not close to major trauma cases except in a declared internal disaster such as a plant problem with no water or electricity, or an extreme overload of major trauma patients in the emergency department or operating room
- 6.2 Stanford Hospital may close to trauma or indicate limited resources for surgical or neurological capability based upon criteria established by the Santa Clara County Emergency Medical Services Agency.
- 6.3 If a trauma center must close to trauma or has limited resources, the charge nurse will call San Mateo County Public Safety Communications at 650-363-4981 and request that the EMS Administrator on-call and the AMR field supervisor be notified immediately.
- 6.4 Procedure if Stanford Hospital is closed (red) or has limited resources (orange) .See attachment A
 - 6.4.1 The trauma center will enter the change in status on the HART computer
 - 6.4.2 The paramedics who are within Stanford's catchment area should contact public safety communications to determine the status of the Stanford Trauma Center as soon as possible if a patient meets major trauma criteria.
 - 6.4.3 If a patient meets trauma criteria by anatomic or physiological criteria (altered vital signs, neurological status or injury to critical areas) the paramedic should request air medical resources for transport to the closest open trauma center with helicopter capability. It is not anticipated that Santa Clara Valley Medical Center will be utilized for any air medical patients other than those with burns.
 - 6.4.4 If the patient meets trauma criteria **ONLY** by mechanism or co-morbidity they should be transported by ground to San Francisco General Hospital unless they are on the San Mateo or Dumbarton Bridge. Eden Hospital should be considered for those patients.
 - 6.4.5 If air medical resources are not available the paramedic will contact

the Stanford ED physician. Based on information provided to the physician about the patient's condition and destination options the Stanford ED physician will determine if Stanford Hospital should accept the patient

6.4.5.1 The name of the Stanford ED physician will be documented on the patient care record

6.4.6 If Stanford Hospital accepts the patient, the patient will be transported to Stanford. If Stanford is unable to accept the patient the patient will be transported by ground as described in 6.4.3 above

7. Documentation

7.1 A PCR will be left at the trauma center for all trauma patients at the time of the call

8. Notification

8.1 The on-duty field supervisor shall be notified immediately after the call if any of the following occur:

8.1.1 Any patient identified as a major trauma victim that is not transported to a trauma center.

8.1.2 Any instance of diversion by a trauma hospital

8.2 A non-trauma receiving hospital will notify the on duty supervisor of any patient transferred to a trauma center

9. Destination Considerations for Multiple Major Trauma Patients From A Single Event

9.1 Intent: The intent of this section is to provide guidance to field personnel in determining the best destination for trauma patients when there are multiple trauma patients from a single event. For specific procedures for multi-casualty incidents see MCI Policy.

9.2 Goals

9.2.1 To make the highest level trauma care available as soon as possible to the most seriously injured.

9.2.2 To ensure that all trauma patients from a single incident receive an appropriate level of care.

9.2.3 To complete transport of major trauma victims to a trauma center as quickly as feasible.

9.2.4 To guide emergency medical care personnel at the emergency scene in making the most appropriate and timely patient destination decisions.

9.2.5 To enhance communications between dispatch centers, field medical personnel, receiving hospitals/trauma centers, and aeromedical personnel.

9.2.6 To utilize available hospital resources most effectively to meet patient needs.

9.3 Guiding Principles

- 9.3.1 Patients meeting major trauma criteria should be transported to a trauma center as soon as feasible.
- 9.3.2 San Mateo County's designated trauma centers are Stanford and San Francisco General. These centers will be the receiving facility for all patients meeting major trauma criteria unless the number of patients exceeds the capacity of these two centers.
- 9.3.3 In the event that the number of major trauma patients exceeds the capacity of the two designated trauma centers, the EMS system will attempt to transport some patients to other area trauma centers (see attachment B).
- 9.3.4 If there are insufficient trauma center/transport resources, patients who do not meet anatomic or physiologic major trauma criteria may be transported to receiving hospitals that are not trauma centers.
- 9.3.5 Patients will be distributed to hospitals in a manner that most effectively use resources and provides the highest level of care to the most seriously injured victims.
- 9.3.6 Time to definitive trauma care is critical for major trauma patients. If possible, the patients with the most serious injuries should be directed to the closest trauma centers (closest by time/ground or air transport).

9.4 Communications

9.4.1 Initial Communication to local Trauma Centers

- 9.4.1.1 As soon as feasible, a paramedic at the emergency scene will contact the charge nurses at the two trauma centers and inform them of the type of incident, the estimated number of patients, and how many appear to be "immediate." This does not replace the "polling procedures," conducted by Public Safety Communications that are used during a multi-casualty incident.
- 9.4.1.2 The Medical Group Supervisor (or designee) will notify the trauma center of the number of patients it will initially be receiving as soon as feasible.
- 9.4.1.3 The ambulance crew (air or ground) will communicate a summarized patient report, via cell phone, to the trauma center as soon as feasible prior to arrival. This report will include the:
 - 9.4.1.3.1 Mechanism
 - 9.4.1.3.2 Injury (ies)
 - 9.4.1.3.3 Vital signs
 - 9.4.1.3.4 Treatment provided

9.5 Distribution of Multiple Major Trauma Patients

- 9.5.1 In multi-victim incidents involving more than two major (intubated/unstable) patients it is best to distribute the patients to more than one facility as long as this will not jeopardize patient care (e.g. critical patient condition and transport time will be too

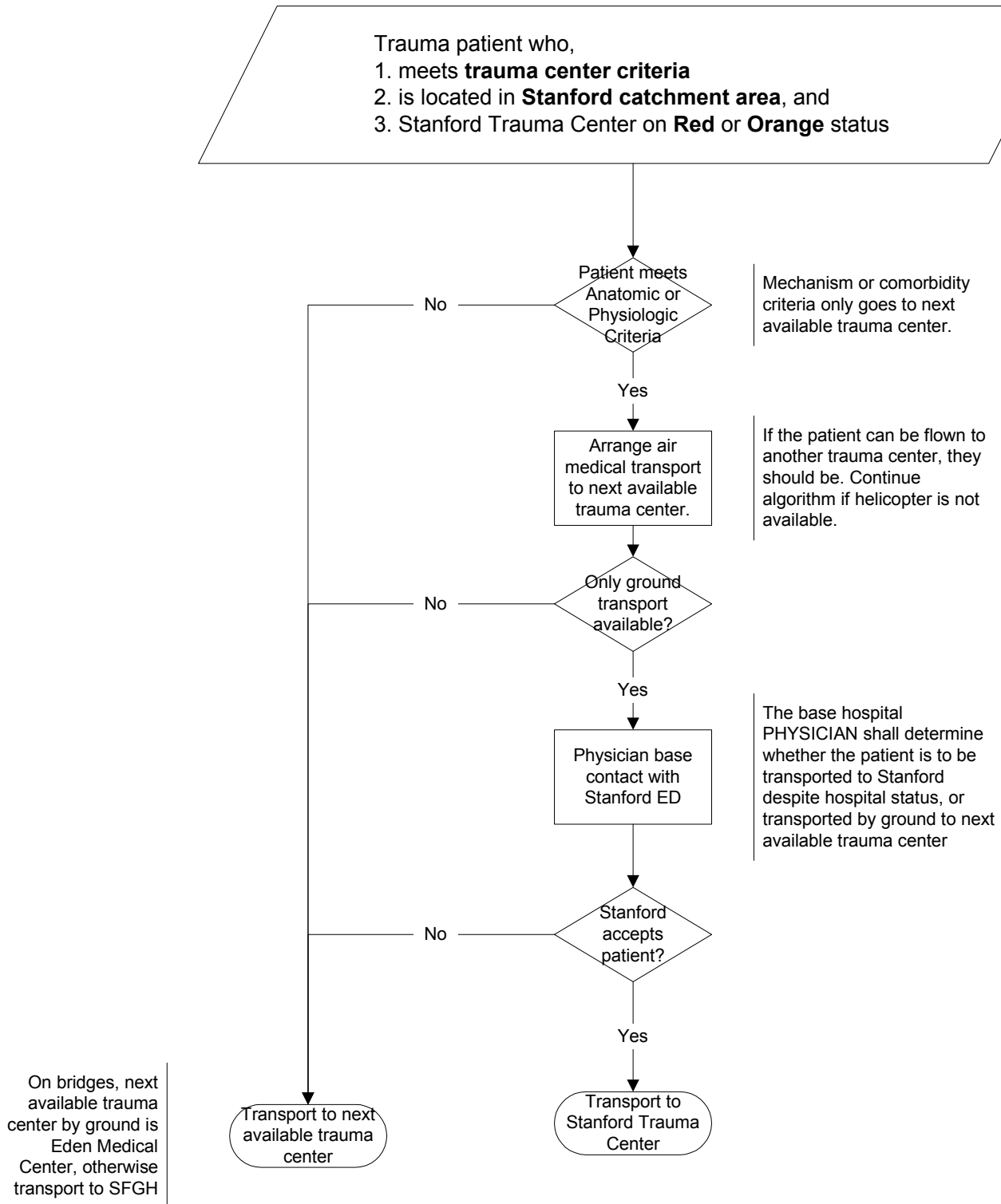
prolonged). The most seriously injured patients should be taken to the closest trauma center (by time not distance).

- 9.5.2 Stanford/San Francisco Commitment to Automatically Accept Multiple Major Trauma patients in incidents exceeding the available resources of a single trauma center:
 - 9.5.2.1 Stanford will automatically accept three (3) major trauma patients
 - 9.5.2.2 San Francisco General Hospital will automatically accept four (4) major trauma patients
- 9.5.3 The Medical Group Supervisor (or designee) will recontact the local trauma centers if necessary to determine whether they can receive additional patients (beyond the “automatic” number).
- 9.5.4 In events resulting in multiple major trauma patients and with additional patients not meeting major trauma criteria, it is preferred that patients with minor injuries be taken to non-trauma receiving hospitals.
- 9.5.5 In instances resulting in larger numbers of major trauma patients than can be handled using the two local trauma centers, if possible air medical resources should be utilized and the patients distributed to trauma centers within the region. See attachment B
- 9.5.6 In instances resulting in such large numbers of major trauma patients that there are insufficient trauma centers available within the region (considering these centers and ability to transport to them within a reasonable time period) actions should be taken:
 - 9.5.6.1 To direct the most seriously injured patients (those meeting anatomic/physiologic criteria) to available trauma centers.
 - 9.5.6.2 To direct major trauma patients meeting only mechanism criteria to non-trauma receiving hospitals.

10. Managing and Transferring a Major Trauma Patient from a Non-Trauma Hospital to a Trauma Center
 - 10.1 In the event that a patient who meets anatomic and, or physiologic major trauma criteria (see previous sections of this policy) arrives at a non-trauma hospital, the non-trauma hospitals may:
 - 10.1.1 Provide appropriate patient assessment and emergency treatment
 - 10.1.2 Request County Public Communications to send 9-1-1 paramedic ambulance to transport the patient to the closest trauma center
 - 10.1.3 Notify the closest trauma center of the intent to transfer the patient and provide as complete a patient report as possible.
 - 10.1.4 Provide the ambulance crew with as complete a patient report as possible (verbal essential, written if possible). Do not delay transport of the patient. If a complete written patient report is not sent with the ambulance, the sending hospital will Fax the report to the trauma center in sufficient time that it should arrive prior to the patient.
 - 10.2 In the event that a non-trauma hospital elects not to transfer a patient who meets anatomic and, or physiologic major trauma criteria, the non-trauma hospital will notify the EMS agency within five (5) working days of the event.

Attachment: A

Stanford Hospital Trauma Catchment Area Triage Algorithm



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Attachment B:

Bay Area Trauma Centers

Hospital	Level	Location	Helipad	Special Services	Phone
Davis	1	Sacramento	Yes	Pediatrics	916-734-2011
Eden	2	Castro Valley	Yes		510-537-1234
Highland	2	Oakland	No		510-534-8055
John Muir	2	Walnut Creek	Yes		925-939-3000
Marin General	3	Greenbrae	No but can land in park across the street		415-925-7000
Oakland Childrens	2	Oakland	Yes	Childrens Hospital	510-428-3259
Queen of the Valley	3	Napa	Yes		707-252-4411
Santa Rosa Memorial	2	Santa Rosa	Yes		707-546-3210
SFGH	1	SF	No but rendezvous may be possible	Burns, Reimplantation, Peds but no Pediatric Intensive Care Unit	415-206-8111 (Request ED charge nurse)
Stanford	1	Palo Alto	Yes	Reimplantation Childrens Hospital	650-723-7570
Valley Med Center	1	San Jose	Yes	Burns Spinal Injury/ PICU	408-885-5000

Air Medical Resources

Agency	In Area	Type	Staffing	Phone
Stanford Lifelight	Y	Air Ambulance	2 RN	800-321-7828
CALSTAR	Y	Air Ambulance	2 RN	800-252-5050
Reach	N	Air Ambulance	1 RN /1 P	800-338-4045
Mediflight	N	Air Ambulance	1 RN /1 P	800-692-5740
AirMed	N	Air Ambulance	1 RN /1 P	800-576-7828
East Bay Regional Parks	N	Air Rescue	1 P	510-881-1833
CHP – Napa	N	Air Rescue	1 P	707-551-4180
CHP – Santa Clara	Y	Air Rescue	1 E	707-551-4180
Coastguard	Y	Air Rescue	--	See PSC process

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