

**San Francisco General Hospital
Trauma Services**



**CLINICAL
PRACTICE MANUAL
FOR TRAUMA &
EMERGENCY SURGERY**

from
**The SFGH Trauma Program
San Francisco General Hospital
University of California, San Francisco
Revision July 2013**

PREFACE

This manual has been prepared specifically for members of the surgical house staff at San Francisco General Hospital providing care for trauma patients. It is designed to define and clarify service coverage issues, trauma team activations, admissions, transfers, initial evaluations, documentation, interactions with consultants, and issues related to performance improvement. SFGH is the sole provider of organized trauma care for the City & County of San Francisco and northern San Mateo County, and also provides a disproportionate share of emergency care throughout the county. Trauma patients are transported to SFGH, not by choice, but by virtue of the actual and potential injuries they have sustained. SFGH, operating as a Level 1 Trauma Center under the California Code of Regulations, Title 22, is obligated by regulatory law to provide specific services and responses to critically injured patients. Many of the requirements included in this manual are based on this regulatory law, or requirements set forth by the American College of Surgeons Committee on Trauma. As in any complex organization involving patient safety, consistency & redundancy are critical elements. As a member of the trauma team at the only designated Trauma Center in San Francisco, it is important that you appreciate the importance of the role you play in regional public safety and the overall emergency medical response, a role which is unlike any other in a surgical residency program.

In a separate document, a compendium of clinical management protocols for trauma has been provided. These protocols have been developed at SFGH and reflect current practice at this institution. They are not intended to be used as a locked-in set of rules, but as guidelines which are applicable to most, but not all clinical situations. The list of protocols is not yet complete, and more are being added as time goes on. Major deviations from these management protocols, while occasionally necessary, must involve consultation with members of the SFGH surgical faculty.

Copies of this manual are available on the UCSF Department of Surgery resident website. Additional copies may be obtained from the Department of Surgery at SFGH. In addition, some of these protocols are available via the SFGH/CHN intranet and linked to the SFGH Lifetime Clinical Record (LCR). More will be uploaded as time goes on. Each member of the resident staff will be responsible for reviewing the Clinical Practice Manual thoroughly and being familiar with the guidelines, protocols, and practice patterns on the Trauma Service at SFGH. Senior housestaff should also be familiar with the essential clinical management protocols for trauma. Questions and suggestions should be directed to Patti O'Connor, the Trauma Case Managers, or the Trauma Nurse Practitioners, but any of the surgical faculty will be willing to provide clarification as needed. The practice of Trauma Surgery is challenging, fast paced, and can be extremely rewarding. It is hoped that this manual will provide a framework around which you can better structure your clinical education during your time at San Francisco General Hospital.

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CLINICAL COVERAGE: ATTENDING STAFF

The "Service Attending"

As the result of reductions in house staff and the implementation of work hours restrictions, it was necessary to eliminate the old system of multiple surgical services. All surgical inpatients are now admitted and cared for as part of a single surgical service, generically referred to as the "Trauma Service", although elective and emergency general, vascular, and thoracic patients are also admitted to this service. The service is covered at all times by an attending physician, the "service attending", who will make AM rounds with the surgical team (or individually with the senior or Chief resident) on a daily basis. The Service Attending is the "go-to" and continuity person for all patients hospitalized on the Trauma Service, and will be available 24 hours a day during the period of service coverage unless substitute coverage arrangements are made. Any problems that arise on hospitalized patients or established consults should be referred to the Service Attending. The Service Attending will serve as the attending-of-record for service in-patients in need of operative procedures, unless other arrangements have been made. In the event that the Service Attending is not immediately available for acute emergencies that arise on service patients, the on-call attending should be contacted.

The "ON-CALL" Attending

As of July 2007, attending trauma call has been split into daytime (7am-6pm) and nighttime coverage periods for weekdays. Weekends remain 24 hour coverage periods from 8am to 8am. The Service Attending and Trauma Fellow will cover weekday periods. In some cases, the Service Attending or Fellow will also cover the remaining nighttime period (6pm-9am), but more often this period will be covered by a separate attending. It is important for the senior resident on-call to check the published call schedule and know which attending is scheduled to cover. The On-call Attending will be responsible for covering all new admissions, new urgent/emergent consults, trauma resuscitations, and trauma and non-trauma emergency operations. The on-call physician is immediately available to respond to trauma and other surgical emergencies at all times and is usually physically present in the building. The senior surgical house staff will receive a laminated card with attending contact numbers (this is available from the administrative staff in the Department of Surgery at SFGH).

The "Surgeon-of-record"

While day-to-day house staff supervision, progress note documentation, and routine decision-making for service patients will be provided by the Service Attending, the surgical staff member who attends at an elective or emergency operative procedure generally follows these patients also and serves as the attending of record and the major decision-maker for subsequent patient care, unless other arrangements have been made between individual attendings. In less severe, uncomplicated non-operative cases, (e.g. mild pancreatitis, short-stay orthopedic injuries, etc.), the Service Attending typically assumes care of the patient, and acts as the attending-of-record. It is the responsibility of the Service Attending, not the house staff, to re-direct any questions regarding major therapeutic decisions to the appropriate surgeon-of-record as appropriate.

Sub-specialty Surgical Attending Consultants

Department of Surgery attending consultants are available for special problems involving burns, thoracic, vascular, pediatric surgery, and surgical critical care. All consultations made for sub-

specialty care involving acute or in-patient trauma problems should be cleared with either the on-call attending or the service attending. Sub-specialty consultants are:

Cardiothoracic: Arthur Hill, M.D.

Pediatric trauma: Peggy Knudson, M.D.

CLINICAL COVERAGE: TRAUMA FELLOW

The SFGH Trauma Fellowship is a one year, non-ACGME clinical fellowship in trauma and emergency surgery. The SFGH Trauma Fellow is typically a board certified/board eligible general surgeon, a board-eligible surgical Intensivist, and an active member of the SFGH Medical Staff. The trauma fellow acts as a junior attending surgeon, and provides trauma attending coverage, with identified faculty back-up, 4-6 nights/month. As of July 1, 2010 the full time SFGH trauma faculty will take in-house call with the trauma fellow, but all relevant clinical decisions should first involve the trauma fellow rather than the in-house attending (e.g. please do not bypass the trauma fellow). The fellow will also serve, typically later in the academic year, as the Trauma Service Attending, and may act as the surgeon-of-record for those operative and major non-operative cases they admit.

CLINICAL COVERAGE & RESPONSIBILITIES: HOUSE STAFF

The Chief Resident (PGY V)

The Chief Surgical Resident on the Trauma team will have clinical responsibilities similar to those of the 'Senior' surgical residents, but will also have overall responsibility for the service, and all of the trauma in-patients at San Francisco General Hospital. The 'Chief' will provide more senior supervision, as needed, for surgical resident team, and ensure its smooth operation. The Chief Resident will take in-house trauma & emergency call in accordance with established call schedules and compliant with house staff work hour limitation. The Chief Resident is responsible for maintaining a thorough knowledge of all service patients, particularly ICU and other higher risk patients. The Chief Resident, when on trauma call, is responsible for responding immediately to all '911' and '900' level activations. In the event the Chief is involved in elective surgery or some other non-emergent activity that might interfere with an immediate response to a '911' trauma team activation (TTA), it is his/her responsibility to ensure that either the Trauma Fellow or a PGYIV level resident will respond instead. Neither a PGYII nor a PGYIII level surgical resident may substitute for a Chief Resident or a Senior resident on '911' or '900' level trauma team activations unless specific arrangements are made with the on-call attending or trauma fellow.

The Senior Residents (PGY IV)

The 'Senior' surgical residents on the Trauma service will take in-house call in accordance with established call schedules and in compliance with house staff hours limits, typically on 12 hour rotations (days and nights), and provide coverage for operative procedures as needed. The post-call senior resident will conduct sign-out rounds with the incoming senior resident. The 'Seniors' will respond immediately to all '911' and '900' TTAs during their on-call periods. In the event the Senior Resident is involved in elective surgery or some other non-emergent activity that might interfere with an immediate response to a '911' trauma team activation (TTA), it is his/her responsibility to ensure that either the Trauma Fellow, another PGYIV or V level resident will respond instead. Both Chief and Senior residents will remain available at all times, either by phone or personal pager, for emergency call-back and multi-casualty incidents at SFGH, unless specifically excused by the Chief of Surgery at SFGH.

The Junior Residents (PGY II, III)

The 'Junior' surgical residents on the Trauma service will take in-house call in accordance with established call schedules and in compliance with house staff hours limits. They will also respond immediately to '911' level resuscitations and will be responsible for communicating any urgent patient needs or serious condition immediately to the on-call Chief or 'Senior' resident. The 'Junior' residents will assist w/ trauma resuscitations under the direction of the 'Chief' or 'Senior' residents, including the transport & monitoring of patients to CT or angiography. The PGYIII level resident may not act as a substitute for the Chief or 'Senior' resident for '911' or '900' level TTAs unless specific arrangements are made with the on-call attending or trauma fellow.

Interns (PGY I)

The surgical interns on the Trauma service will take in-house call in accordance with established call schedules and in compliance with house staff hours limits. The surgical interns will respond to '911' trauma team activations, and assist with trauma resuscitations only as needed and directed by the more senior surgical residents, or the ED attending staff.

4th Year Medical Students ("Sub-interns")

Acting interns, "sub-I's", may respond to '911' TTAs and assist in the same manner as interns, but generally should NOT be involved, unless specifically requested by a Senior or Chief resident, in trauma-related procedures conducted during the resuscitation.

3rd Year Medical Students

Surgery 110 students (3rd year) should NOT be involved in trauma resuscitation except as observers. Exceptions may be made under unusual circumstances, but only as directed by the Chief, Senior residents or the Trauma Attending surgeon.

CALL-BACKS (emergency situations requiring return to the hospital):

SFGH is the sole receiving facility for trauma in the City/County of San Francisco. There is no backup facility, and SFGH does not 'divert' trauma patients. As such, SFGH must maintain a 'surge capacity', and be able to manage an unexpected 'bolus' of high acuity trauma patients. For the attending-level staff, the call-back order is: 1) trauma fellow and/or service attending, depending on the situation 2) pre-call attending 3) post-call attending. For the resident staff, the call-back order is: 1) Trauma PGYIII resident or Chief resident depending on need. 2) pre-call PGYII resident 3) off-call senior resident (rarely). While it is extremely rare that more than one or two call-back physicians are needed, it is the responsibility of each member of the house staff, while on rotation at SFGH, to remain available by personal pager, cell phone, home phone, or some other means, in the event that return to the hospital becomes necessary. Special arrangements for out-of-town travel may be made through the SFGH Chief of Surgery's office. At the beginning of each SFGH Trauma rotation, each house staff member (PGY II-V) will receive a laminated card with contact numbers for the SFGH surgical faculty, as well as the UCSF house staff.

SIGN-OUTS & CONTINUITY OF CARE

Gaps in the continuity of care present one of the most serious problems in patient safety that exist on a busy trauma/emergency service. These gaps have increased as the result of the 80 hour work limits and an increasing amount of "shift work" scheduling. It is imperative that these inherent gaps in the transfer of care from one group of physicians to another be minimized through comprehensive, high-fidelity sign-outs & transfers. (see "Communication & the chain of

command"). Whenever possible, non-urgent interventions requiring timely follow-up (e.g. chest tube removal, central line insertion, etc) should be conducted so as not to span these continuity gaps. In specific terms, the following policies are in effect:

1. Formal 'off-service' notes, briefly summarizing injuries, conditions, and clinical course, shall be written for all patients transferred to other acute care services at SFGH. The neurosurgical service will not accept patients without these notes.
2. The practice of writing "Call Trauma for post-op orders" on the part of the orthopedic service is no longer acceptable. For patients hospitalized on the trauma service needing orthopedic procedures, a set of post-operative orders is needed, but will be written by the trauma service only following direct and comprehensive communication between a senior member of the orthopedic operating team, and a member (PGYII, III, IV, C) of the trauma team.
3. Formal sign out between covering residents will take place at 6AM (prior to formal rounds beginning at 6:30AM) and again at 6PM (prior to sign out rounds beginning at 6:30PM)

CLINICAL COVERAGE: TRAUMA NURSE PRACTITIONERS

SFGH currently employs twelve (12) trauma nurse practitioners on the Trauma/GS service. They are highly trained providers who function under the supervision of the SFGH Trauma Medical Director and a Senior Hospital Administrator. Nurse practitioners are members of the SFGH ancillary medical staff and are licensed and approved to independently prescribe medications and treat patients, within a defined scope of practice. Their responsibilities are split between Trauma and General Surgery patients. The NPs may admit and assume primary care of patients, assist with discharge planning, see clinic patients independently, and act as a consultative liaison to rehabilitation and other services. The NPs also assist with many aspects of the management of ICU patients related to the patient's critical illness (e.g. DVT prophylaxis monitoring, rehab consults, etc.), and help coordinate care. All NP in-patient care activities must be consistent and coordinated with the overall patient management plan as directed by the Trauma Attending or Trauma Chief/Senior Resident.

TRAUMA TEAM ACTIVATIONS

'900' and '911' Level Activations

Criteria for '900' and '911' trauma team activations are attached (attachment2). These activations require an immediate response on the part of the Chief or 'Senior' on-call surgical residents. Insofar as the majority of '900' activations require hospital admission, the Trauma Service, unless they indicate otherwise, will be primarily responsible for these patients. '911' activation patients are cared for collaboratively between the Trauma and EM services but are the primary responsibility of the EM service until it is clear that they will need admission at which time the primary responsibility will switch to the Trauma Service. Unless, and until it is established that a '900' or '911' patient will not require hospital admission, the senior members of the Trauma Service (Attending, Chief, or 'Senior' resident) will be the primary decision makers in the course of managing these patients. The conduct for '900' and '911' resuscitations is detailed in the Trauma Task Force Personnel and Organization document (attachment 9).

Any patient who presents to the ED with, or develops indications for, a higher level of TTA than was originally made, will automatically trigger a second, upgraded TTA. A TTA upgrade may be triggered, at any time, and regardless of the presence in the ED of senior trauma team members. It

will be the responsibility of the ED staff and the trauma team members in attendance to ensure that the upgrade is recognized and a page is sent.

Mandatory Trauma Attending Response: The '900' Level Activation

The American College of Surgeons guidelines for a Level 1 Trauma Center requires that a board eligible or certified, trauma-qualified surgeon be present in the ED for major resuscitations. A '900' page is triggered by the ED charge nurse, based either on pre-hospital or on-arrival patient status. This page is received through the house staff pager and also on specially designated '900' pagers, carried by the on-call trauma attending and the on-call attending anesthesiologist. Trauma attendings will respond to the ED within 15 minutes of this page. '900' level activations may be triggered at any time during the initial resuscitation, and are based on confirmed hypotension (BP<90mmHg), respiratory distress (or need for intubation), gunshot wounds to the neck or torso, or for multiple patients & mass casualty incidents as detailed in the trauma triage criteria. In cases of severely injured patients or those in shock where no Trauma Attending is present, the Senior or Chief resident present should immediately request activation of the '900' page, or page/call the attending surgeon directly.

Trauma Activations with Minor or Unclear Mechanisms

Patients presenting to the ED with seemingly minor or unknown mechanisms and altered (911-type) physiology will trigger a '911' TTA if any reasonable suspicion of a traumatic etiology exists. This determination will be made collaboratively by the ED attending and ED Charge Nurse.

TRAUMA RESUSCITATIONS: ROLES & RESPONSIBILITIES OF THE EMERGENCY DEPARTMENT AND TRAUMA TEAMS

Leadership, Decision Making, and the "Team Approach"

Each resuscitation must have a "team leader", who organizes the team and coordinates the resuscitation, as well as someone, typically the most experienced physician, making the major diagnostic and therapeutic decisions. Occasionally, this may be the same person. Collaboration between members of the Trauma (surgical) team and the Emergency Medicine (EM) team is critically important, and should involve all physicians providing care during a trauma resuscitation. The following are guidelines, not policy, that apply to these roles and responsibilities. As with any guideline, a certain flexibility should be maintained in their application, and adjustments made as needed, based on physician experience, patient volume & acuity, and individual injuries:

- For all trauma team activations and consults there should be a service primarily responsible for the care of the patient and a consultative service. For patients anticipated not to require hospital admission, the EM team will act as the primary service and the trauma team the consultative service. This will be the case for most '911' activations. For patients anticipated to require hospital admission, the Trauma team will act as the primary service and the EM team the consultative service. This will be the case for most '900' activations.
- For '900' level activations the responsibilities for team leadership are shared between the Trauma team and the EM team on an alternating-day basis (odd days = EM team, even days = Trauma team). While a collaborative approach to management between the EM and trauma teams is expected, the ultimate responsibility for major diagnostic & therapeutic decisions rests with the trauma team. If a '900' patient, in the course of evaluation, is not found to have indications for hospital admission, the EM team becomes the primary team and assumes primary responsibility for major diagnostic and therapeutic decisions, regardless of initial team leadership roles.

- At the conclusion of each resuscitation, clear delineation of primary and consultative patient care teams shall be made by the EM and Trauma services.
- If, at any time and for any reason, the EM resident is unable to act as an effective 'team leader' or declines the role, the role will be assumed by the trauma Chief or Senior resident. If, at any time, the ED resident, as "team leader" for '900/'911' activations, is unable or unwilling to follow the major diagnostic and/or therapeutic plans delineated by the trauma team, the role of 'team leader' will be assumed by the trauma Chief or Senior resident or Trauma Attending.
- In the absence of a Trauma Senior or Chief resident, or Trauma Attending, the EM team, under the direct supervision of the EM Attending, will assume primary responsibility for a '900/911' resuscitation and direct all major therapeutic and diagnostic decisions.
- Airway management, including tracheal intubations and rapid sequence inductions (RSI) will be the responsibility of the anesthesiology team, working in conjunction with the resuscitation "team leader" and the Trauma team. All related medications administered during a trauma RSI will be prescribed by the anesthesiology team, unless delegated otherwise. Airway management, in the absence of the anesthesiology team, will be the responsibility of the EM attending.
- Sub-specialty services, neurosurgery, orthopedics, pediatrics, and consulting services during trauma resuscitations will work collaboratively with the trauma team and resuscitation "team leader". Major decisions based on sub-specialty consultation as well as any sub-specialty related procedures must be made or performed in consultation with the trauma team.
- Disputes between members of the resuscitation team, including Trauma and EM members, regarding patient management issues, will be resolved by the Trauma Attending as needed.

Trauma-related Procedures

Trauma-related procedures are shared between the Trauma team and the EM team on an alternate day basis with the team not providing team leadership typically being responsible bedside procedures (odd days=trauma team, even days=EM team). The following guidelines apply to procedures performed during resuscitation in the ED by the trauma team or ED team:

- All procedures must be supervised by an ED attending, Trauma Attending, or Trauma Senior/Chief resident
- Strict aseptic technique, including wide prep & draping, should be followed at all times.
- Procedures in critically injured patients should not be performed, even if supervised, by house staff lacking complete familiarity and substantial experience with that procedure, or one very closely related.
- 3rd year medical students should NOT be performing any procedures on acute trauma patients.
- Resuscitative thoracotomies should be performed by Trauma Senior or Chief residents or Trauma Attending surgeons, unless specifically directed otherwise by the Trauma Attending. In the event that none of the senior trauma team members are available, (beeper malfunction, mass casualty events, etc), and the patient has injuries consistent with possible cardiac tamponade, the EM Attending may assume responsibility for personally performing these procedures.
- Open cricothyroidotomy is the preferred 'surgical' airway for most trauma patients, and should be performed by PGYIII level surgical resident or higher, with appropriate trauma attending supervision. Open cricothyroidotomies may be performed by a member of the ED resident team only with direct supervision by the trauma attending surgeon.

- Needle cricothyroidotomies may be performed by a member of the anesthesiology team or ED team only at the discretion of the Trauma Attending, or at the discretion of the ED Attending if the Trauma Attending is not available. Endotracheal intubations should be performed by a member of the anesthesiology team, unless specifically directed otherwise by the Anesthesiology Attending. In the absence of the anesthesiology team, the EM Attending will assume responsibility for airway management and intubation.

ROUNDS, PATIENT ADMISSIONS, & CONSULTATIONS

Basic Criteria for Admission to the Trauma Service

All patients requiring hospital admission on the basis of demonstrated or suspected acute traumatic injury will be initially admitted to the Trauma Service until a complete diagnostic evaluation is completed and appropriate service transfer arrangements, if needed, can be made. All ICU admissions for trauma patients should be initially to the Trauma Service except as noted below for isolated traumatic brain injuries. Patients with isolated sub-specialty system injuries (e.g. multiple facial fractures) requiring ICU admission will be admitted to the trauma service, and not the ICU service. Pediatric patients requiring hospital admission will be admitted to the trauma service with active daily pediatric service involvement. On occasion, very young patients (less than 4-5 years of age) may be admitted to the pediatric service with active daily trauma service involvement.

Exceptions to the rules above include the following:

- Isolated orthopedic injuries to the extremities without suspicion of associated abdominal, vascular or neurological injury may be admitted to the orthopedic service (see guidelines for orthopedic patients in attachments).
- Minor isolated head injuries, cleared by the Trauma service, and not requiring ICU or 4B admission may be admitted to the neurosurgery service.
- Serious isolated traumatic brain injuries, completely cleared of associated injuries by the Trauma service, seen & examined & cleared by the on-call Trauma attending, and seen & examined by the neurosurgery attending or Chief resident may be admitted to the neurosurgery service if OK'ed by both the Trauma Attending and Neurosurgical Attending or Chief.
- Pediatric patients cleared by the Trauma service for discharge, but admitted separately by the pediatric service
- On rare occasions, patients with severe or complex underlying co-morbidity (e.g. severe CAD, COPD) may require admission precipitated on the basis of a minor or moderate injury. Admission to a subspecialty service may be appropriate, but should be cleared with the Attending Trauma Surgeon on-call.

Trauma Consults

Trauma consults are requested by the ED staff or sub-specialty services, and involve non-trauma team activation patients. Patients meeting the following guidelines require evaluation by a **Senior Trauma resident or above**:

- Any patient with a trauma-related mechanism requiring ICU or Step-down admission by a non-trauma service.
- Any patient with major or minor mechanism with any complaints of abdominal pain or signs of abdominal injuries.
- Patients with major mechanism trauma not resulting in TTA, who require hospital admission for any reason.
- All trauma patients being transferred to SFGH from out-of-region

Surgical Sub-specialty Consultations

Additional consults may be requested by the on-call trauma team, as needed.

- Burn patients requiring admission: Mandatory notification of the on-call Trauma attending followed by notification of the on-call burn attending.
- Blunt aortic injury: Mandatory notification of the on-call trauma attending followed by contacting the cardio-thoracic on-call surgeon. If SFGH on-call staff are unavailable, then the UCSF-Parnassus campus on-call CT surgeon should be notified.
- Axial spine injuries: Mandatory notification of the on-call spine team.
- Complex pediatric trauma: Mandatory notification of the on-call trauma attending followed by notification of the pediatric surgeon on-call.
- Urology: For significant injuries to the kidney, ureters, bladder, or urethra
- Vascular: Vascular injuries are normally managed by the trauma attending. Any additional consultation for vascular surgery should be directed by the trauma attending.

EMERGENCY DEPARTMENT DISPOSITION

Critical Care Patients (intubated and non-intubated)

Current hospital policy dictates that intubated patients will be physically admitted to an ICU bed within 30 minutes of ICU notification. The E.D. charge nurse is responsible for ICU notification. Approval by the Critical Care resident for intubated patients is not required. Patients requiring radiographic studies (e.g. CT scans or angios) should **not** return to the E.D., but should be transported directly to the ICU post-radiology. Non-intubated patients will be admitted within 30 minutes of ICU resident approval (verbal or otherwise). Under no circumstances should a critical care patient be held in the E.D. for prolonged diagnostic studies.

All trauma patients requiring critical care unit admission will be admitted to the Trauma Service except for clearly defined, isolated head injuries, which may be admitted to the neurosurgery service.

Monitoring of Critical Care Patients in Radiology

All patients requiring ICU admission should be attended by at least a junior resident (PGY2 or higher), while undergoing studies in radiology (CT/angio). The trauma senior staff (Senior, Chief, Attending) will be immediately available to these patients.

CHART DOCUMENTATION

Documentation is a critical responsibility of all medical care providers, including more senior house staff and attendings. As the result of recent external reviews identifying deficiencies in trauma-related documentation, a set of documentation guidelines and standards have been developed. (see attachments) All patients for whom the trauma team is activated will be evaluated by the Senior or Chief resident. The Senior or Chief resident is also responsible for completing the Trauma evaluation form on all major trauma patients admitted to the hospital. Junior residents (not interns or medical students), may complete the form for minor trauma patients (e.g. patients with less severe, isolated injuries), but it must be signed with a short note from the Senior or Chief resident. Occasionally, the demands of mass or multiple (≥ 3) casualty events require that junior residents complete the form for multiple patients. Under these circumstances, however, the patient must be evaluated by a Senior/Chief resident and documentation to that effect provided on the form. In addition to the trauma evaluation form completed by the trauma Chief/Senior resident, all

admitted patients must also have a complete history & physical exam completed by the PGYI, PGYII, or NP admitting the patient.

COMMUNICATION & THE 'CHAIN OF COMMAND'

Poor communication constitutes one of the most common failures of the system of care for trauma patients and results in errors, delays, and even preventable deaths. Gaps in the continuity of care are thought to be a major cause of preventable medical errors and are often linked to poor communication. The house staff at SFGH has historically been allowed a greater degree of autonomy and latitude in independent decision-making than exists at most other hospitals within the UCSF system. This "supervised autonomy" has also been an important and popular element in the UCSF resident educational program, and one in which the SFGH faculty continues to be committed to. In order to prevent errors and sub-optimal decision making by house staff involved in learning & accruing experience it is critical that the "chain of command" and good communication be maintained. The following are a set of guidelines regarding physician to physician communication.

Communication with the On-call Trauma Attending

Prompt notification & discussion with the trauma attending will be made for:

- All trauma service patients requiring operative intervention for traumatic injury.
- All patients with abnormal findings on abdominal or chest (CT) scan, (+) DPL, or (+) FAST, cardiac echo, exam suggestive of a potentially serious injury.
- All patients requiring admission to ICU or step-down unit.
- Any request from an out-of-county facility for emergent trauma patient transfer.
- All patients who present or develop a significant (asymmetric) pulse deficit.
- All cases requiring diagnostic or therapeutic angiography.
- All pediatric patients requiring hospital admission.
- Following the admission/operation of multiple high acuity trauma patients, and as soon as time permits, the senior/Chief resident should perform a brief but systematic review/discussion/re-evaluation of these patients w/ the on-call Trauma Attending.
- Any instance of a major change in clinical status:
 - Development of any shock state, major hct drop, or other evidence of hemorrhage
 - Urgent / emergent need for intubation
 - Significant change in LOC or neurological status
 - Pulse deficit consistent with possible compartment syndrome or vascular injury

Communication with the Service Attending & "Surgeon of Record"

- Discussion RE scheduling, staffing, positioning, etc. of any OR case*
- Courtesy call notifying attending of case start*, if not present in OR.
- For senior house staff starting an operative case: immediate notification of attending for any major unexpected findings.
- Immediate notification for change in patient physiologic status in OR or evidence of ongoing hemorrhage.
- Discussion with 'surgeon of record' RE any subsequent surgical complications.
- Daily discussion of all service patients and significant consultations (typically on rounds) w/ service attending.
- Prompt notification of service attending of major changes in clinical status for service patients.

Communication & “Sign-offs” between House Staff Members & Nurse Practitioners

- For PGYII,III residents responding to trauma resuscitations prior to the arrival of the Senior/Chief resident: Immediate notification of senior house staff or attending staff for any abnormal physiology or potentially serious injuries.
- Comprehensive review & sign-off for all patients admitted (new to the service) during the previous 12 or 24 hours (depending on the length of work cycle).
- Comprehensive review & sign-off for patients waiting in the ED for admitted to the Trauma Service.
- Comprehensive review & sign-off for patients being evaluated in the ED whose admission has not yet been determined.
- Pending & completed diagnostic studies on all new patients.

DECISION-MAKING & COORDINATION WITH OTHER SERVICES

Maintaining the reliability and fidelity of communication within and between services has become perhaps the most challenging problem on resident-staffed trauma services. Short clinical rotations, and “shift work” necessitated by work hours restrictions has exacerbated these problems. Serious errors in patient management have occurred as the result of long communication “linkages” involving less experienced house staff (e.g. intern to jr. resident to attending to jr. resident to intern, etc.). For this reason, communication regarding substantive clinical decisions must be made between principal decision-makers ONLY. This typically involves decision-making discussions confined to Senior/Chief residents and Attendings.

Organ Donation & Requests for Consent

All patients sustaining traumatic brain injuries that are likely to be non-survivable should be considered as potential organ donors. Contact of the transplantation network & transplant coordinator should be based on the identification of such patients. Assumptions regarding age, HIV status, hypotension, etc. as exclusionary factors for organ donation should NOT be made by the surgical house staff; the transplant coordinator is responsible for screening of potential donors. Once a patient has been identified as a potential donor, under no circumstances is a member of the house staff to approach the family in regards to consent for organ donation. This function requires careful coordination, proper timing, and an appropriate location. The transplant coordinators are specifically trained in proper methods for tendering such a request, and should be the ones directing this process. The responsibility of the surgical house staff is to provide information regarding medical treatment, prognosis, and even the presence or absence of brain death, but not to raise issues regarding organ donation.

In 2007, SFGH began a program allowing organ donation after cardiac death (DCD, or “non-heart beating” donors). In certain circumstances, it may be appropriate for the physician to approach the family regarding DCD, but this should only be done by the Trauma Attending of record.

SERVICE TRANSFERS & REPATRIATION

SFGH Service Transfer Guidelines

As a general rule, all major mechanism trauma patients at risk for serious complications, and those with multi-system injuries will be admitted initially to the trauma service. Patients may be transferred to another service (typically ortho, neuro, ENT, occasionally Medicine) only under following conditions:

1. The patient has only a single 'active*' system injury (e.g. orthopedic, neuro etc.). Specific guidelines for admission/transfer to the orthopedic service have been developed and agreed to by both services (attachment 7).
2. The patient has an overwhelming traumatic brain injury AND is followed daily as a trauma consult until condition #1 is met AND has been specifically cleared for transfer to neurosurgery by the Service or on-call Attending. Transfers should not be made during evening or off-hours unless the Neurosurgery Chief or Attending is present to accept the patient in transfer.
3. The patient has overwhelming medical problems AND is followed daily as a consult AND has been specifically cleared for transfer to Medicine by the Service attending
*active = injury sufficient, in and of itself, to require continued acute care hospitalization

Patients being admitted to the ICU, regardless of injury or condition, should **never** be transferred during evening/nighttime hours to another service unless:

1. The receiving service's senior housestaff or attending staff is directly involved with the patient and agrees to accept the patient in transfer.
2. The transfer is specifically OK'ed by the on-call attending after evaluating the patient. Under **NO** circumstances should any such transfer occur in the ED, CT scan, or arteriogram suite (no "on-the-fly" transfers).

Transfers IN, from Other Acute Care Facilities to SFGH

Transfers to SFGH may come from within the county of San Francisco, or from out-of-region. In-county transfers occur as a matter of policy and do not require prior approval. In most instances in-county trauma transfers will be indistinguishable from field triaged trauma patients. Requests for transfers from out-of-region (e.g. Marin, Lake counties) may be accepted if:

1. There are beds available at SFGH and
2. They involve a level of care (LOC) transfer (see attachments) regardless of insurance status
OR
3. They do not involve a LOC transfer and are covered by an acceptable form of insurance. The procedure for acceptance of out-of-county trauma patients is included in the attachments.

Transfers OUT, to Other Acute Care Facilities from SFGH

When a patient is being transferred out to a non-trauma center (NTC) from SFGH, it represents a down-grade in the level of care. Such transfers are generally discouraged, but may occur in the setting of patient/family wishes or as the result of HMO contractual arrangements. When the latter occurs, it is termed "repatriation", and involves the transfer of a patient from a non-HMO hospital to an HMO hospital, typically for financial reasons. Insofar as "repatriation" transfers are rarely of medical benefit to the patient, particularly when they involve transfer to an NTC, they occur only under certain circumstances, and only when the risks of the transfer is outweighed by the benefits. In all cases of transfers, approval by the trauma Service Attending and/or the surgeon-of-record must be obtained.

Occasionally, patients with minor, low risk injuries may be transferred directly from the Emergency Department. Under these circumstances, SFGH transfer-out guidelines must be followed, and direct approval obtained from the ED attending, the Trauma attending, and any subspecialty service involved in the care of the patient (e.g. ortho). The process and guidelines for transfers-out may be found in attachment 5.

CONFERENCES & TRAUMA PERFORMANCE IMPROVEMENT (QA)

In order to continue to improve the trauma care provided at SFGH and the performance of the surgical services, a variety of conferences and resources are available. It is recognized that the quality & consistency of care provided at SFGH must take into account a constantly changing array of providers (house staff), who are in various stages of their surgical education. The overall goal of trauma-related conferences & performance improvement (PI) activity is the continuing development of a system that will provide optimal care to the injured patient, and yet still provide a rich educational environment for physicians-in-training.

Trauma Videotape Review Conference

Trauma Videotape Review Conference is held on second Tuesday of each month at 5pm in Carr Auditorium. The surgical house staff is strongly encouraged to attend.

Departmental Morbidity & Mortality Conference

Each Wednesday 11am to 12pm. All house staff not involved in emergency patient care are expected to attend. Led by the Trauma Chief Resident.

Trauma Program Nursing Director & Trauma Case Managers

Patti O'Connor (Trauma Program Nursing Director), leads a team of trauma case managers who assist in the management of the trauma program. One of their functions is to manage the trauma performance improvement program, and capture all significant errors, complications, and problems that occur in the course of providing trauma care at SFGH. The case managers work closely with the Trauma Director on program development & monitoring. Any significant system or provider-related problems encountered in the course of patient management should be reported back to one of the case managers.

Clinical Management Protocols for Trauma

The purpose of the CMPs (separate document), is to reduce undesirable physician-related variability (and errors) in the management of trauma patients. The principles learned on elective surgical rotations at other hospitals are often not applicable to the critically injured trauma patient. In addition, the "making-it-up-as-we-go-along" approach is completely unacceptable and even dangerous in this environment. Surgical house staff responsible for making or formulating decisions in the management of trauma patients should be familiar with the relevant protocols contained in this document. It is well recognized that management algorithms are in a constant state of evolution & change. Part of this change depends on regular critique & input from clinical practitioners. Your questions, comments, critiques and suggestions are all welcome.

ATTACHMENTS

1. Documentation Guidelines for House Staff
2. Trauma Team Activation Criteria (revised 02/12)
3. Process for Accepting Out-of-region Transfers IN
4. Transfer-IN Guidelines
5. Transfer-OUT Guidelines
6. Reporting of Deaths & Complications, Performance Improvement
7. Guidelines for Transfer to the Orthopedic Service
8. Guidelines for Transfer / Admission of Patients with Neurological Injuries
9. Trauma Task Force Personnel and Organization

ATTACHMENT 1:

SFGH TRAUMA SERVICE
 Documentation Guidelines: RESIDENT STAFF

DOCUMENTATION STANDARD	DOCUMENTATION GUIDELINES
Complete H&P for all patients, dated & timed	Separate, written H&P using the clinical evaluation form for <u>all</u> '900' activations. A pre-op assessment written on the pre/post op note form does not satisfy this requirement. Evaluation should be performed as soon as possible if the attending was not present for the initial resuscitation.
Procedure note for all procedures, dated & timed	Procedure notes may be written or dictated. Should include procedure, indications, anesthesia, size of any tubes/drains/catheters placed, complications, etc.
Initial critical care progress note, dated & timed.	Written progress notes should be provided for operative and non-operative patients needing prolonged or complex critical care management immediately following the initial resuscitation. An example would be the patient with a bad pelvic fracture needing mechanical ventilation, angio/embolization, etc.
Adverse event notes (requiring STAT bedside evaluation and emergent tx./dx.), dated & timed	If a patient requires any <u>unexpected</u> urgent/emergent diagnostic tests or studies, or any urgent/emergent therapeutic interventions a brief note, timed and dated, should be written. For ICU patients, some of these tests and non-procedural interventions may be incorporated into the progress note.
Hand-written operative note for all patients, dated and timed.	Form provided for this purpose. Should be completed PRIOR to leaving the OR.
Dictated operative report	If asked to dictate the OP note by the attending, the note must be dictated within 24 hours using the hospital dictation system.
Daily progress note, dated & timed	Progress notes should clearly state the assessment and plan as opposed to simply data.
Death note, all relevant patients, dated and timed.	Brief note documenting diagnosis, medical decision-making, circumstances RE demise, precise sequence-of-events, notification (M.E., family, attending etc.)
Comprehensive discharge summary	A comprehensive discharge summary should be dictated on every patient and include the chronology of events, the specific injuries & conditions, operations, etc.

ATTACHMENT 2:

TRAUMA TEAM ACTIVATION (TTA) BEEPERS

All Chief, Senior, and Junior residents will carry a “Trauma Code Beeper” while on the Trauma Service at SFGH. In general, Paramedics call into the ED with a description of the type of Trauma Patient they are en route with and the appropriate trauma code, based on prehospital report and activation criteria, is entered into the system. (See Appendix A for TTA Criteria).

You may receive any of the following codes:

- **900** Highest level of trauma activation. Requires IMMEDIATE response by the trauma team to the ED. In addition to the full resident team, the Trauma Attending surgeon and the Attending anesthesiologist will respond to these activations. The criteria relate to non-extremity GSWs, hypotension attributed to trauma, GCS ≤ 8 , or need for intubation for any reason attributable to traumatic injury.
- **911** Signifies a patient who meets physiologic and/or age specific anatomic and mechanism of injury criteria. The resident trauma team, including the Chief or Senior resident on call, respond IMMEDIATELY to the trauma room.
- **999** The Multicasualty Incident Code: Signifies the imminent arrival of 4 or more critical trauma patients. The Trauma Attending, Anesthesiology attending, Chief resident and all available Seniors and Juniors respond IMMEDIATELY to the ED. The ED Attending in Charge (AIC) will assign staff to trauma resuscitation areas. Surgical staff in the building should also respond to the ED and report to the ED AIC.

ADDITIONAL CRITERIA FOR TRAUMA TEAM ACTIVATION

- Unknown mechanism: Patients with unknown mechanism, but has suspected traumatic injury based on physical exam or history, and meets physiologic criteria for TTA will trigger a TTA, typically ‘911’.
- Upgrades: Patients without initial TTA or with lower level. TTA may arrive with or develop physiological signs consistent with a higher level activation. Under these circumstances it will be the responsibility of the ED staff and the Trauma team to ensure that a higher level of activation is paged.

TRAUMA TEAM ACTIVATION CRITERIA

900 ACTIVATION : Based on Field Report

- Confirmed SBP < 90 at any time in adults and age specific hypotension for children
- Clinical evidence of shock
- Respiratory compromise from trauma or burns, potential need for intubation
- GCS =< 8 attributed to trauma
- MCI activation (≥ 4 critical patients)
- GSW to torso, head or neck
- SW to torso or neck
- Penetrating extremity wounds with active external hemorrhage, expanding hematoma or pulse deficits
- Traumatic amputation proximal to wrist or ankle
- Mangled extremity, degloving injury, or other large wounds
- Traumatic paraplegia or quadriplegia
- 2 or more long bone fractures (femur or tibia)
- Major burns > 15%BSA or suspicion of inhalation injury
- Pedi 10 yrs: **any** major MOI, or +LOC, or long bone fracture
- ED Attending, ED Charge Nurse, or Trauma Senior resident discretion

900 ACTIVATION : Based on ED Evaluation

- Pelvic fracture: open, displaced, or mechanically unstable (on initial xray)
- Flail chest (*clinical*) or major pulmonary contusion (*by CXR*)
- Open or depressed skull fracture on clinical exam
- Any trauma patient given blood during the initial resuscitation
- Any trauma patient transferred in (ED to ED) that meets '900' criteria
- Pregnancy 24 weeks with suspected blunt abdominal trauma
- Patients found to meet any of the '900' criteria
- ED Attending, ED Charge Nurse, or Trauma Senior resident discretion
- Patients requiring blood transfusions to maintain vital signs
- Other: ED Attending or Charge Nurse discretion

911 ACTIVATION: Based on Field Report

- Adult falls 12 feet/stairs
- Pedi falls 2x height of child or 10 feet, whichever is less
- MVC with rollover, ejection, death of passenger,
- intrusion >12" occupant site; >18" any site, or abdominal seatbelt sign
- MCC or other motorized 2 & 3 wheeled vehicle crash > 20MPH or with significant impact
- PVA or BVA with significant impact
- Penetrating injuries not meeting '900' criteria
- GCS 9 - 11 attributable to trauma
- Pedi 10 yrs: any significant injury not meeting '900' criteria
- Any open long bone fractures (tibia/femur)
- Patients > 65 yrs with significant MOI and:
 - SBP < 110 or
 - any long bone fractures or
 - taking major anticoagulants

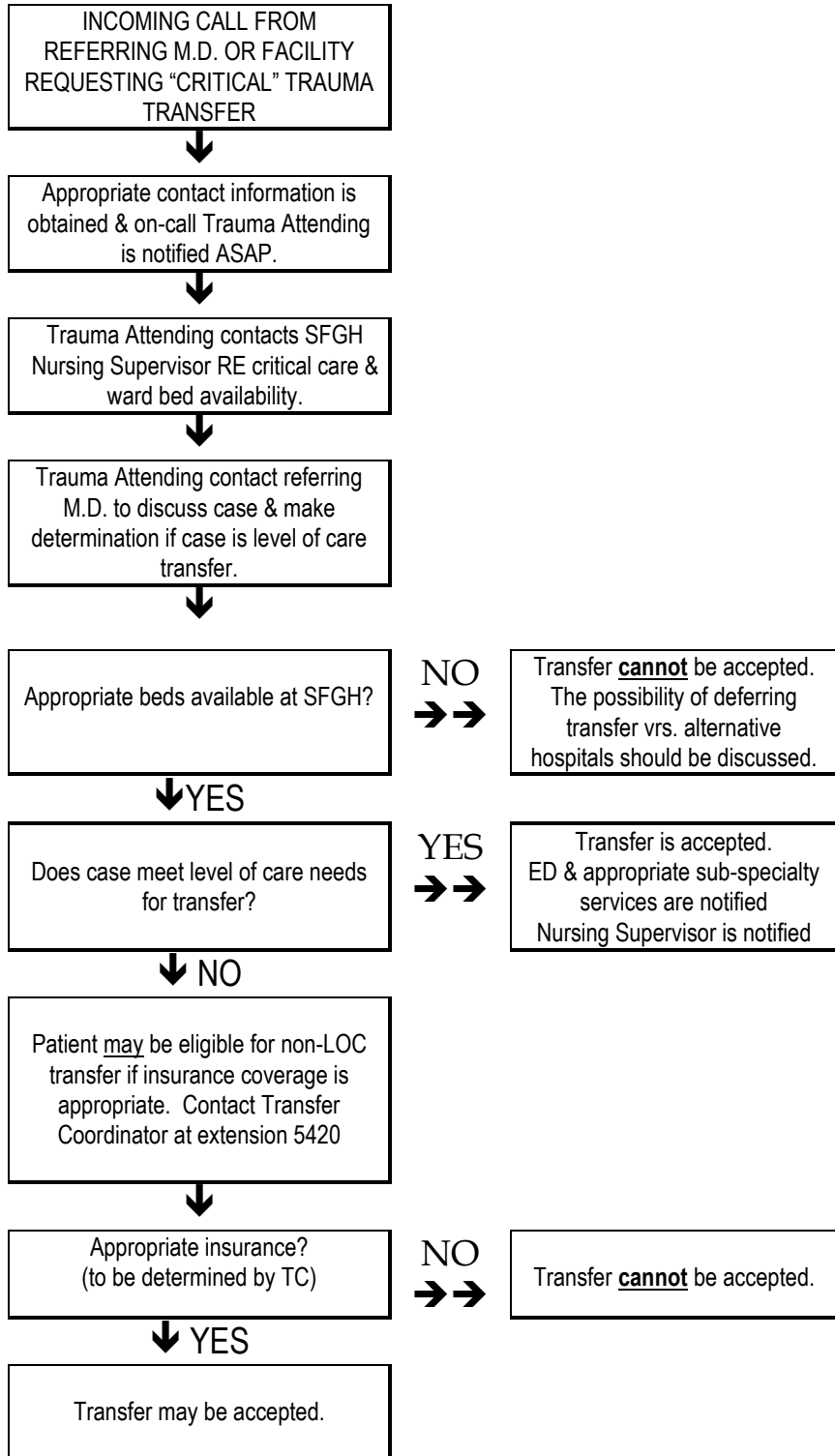
911 ACTIVATION: Based on ED Evaluation

- Serious burns not meeting '900' criteria
- Limb ischemia or suspected compartment syndrome
- Focal neuro deficits not meeting '900' criteria
- Patients found to meet any of the '911' criteria
- Any trauma patient transferred in (ED to ED) that meets '911' criteria
- ED Attending, ED Charge Nurse, or Trauma Senior resident discretion

ATTACHMENT 3:

PROCEDURE FOR ACCEPTANCE OF "CRITICAL" OUT-OF-REGION TRAUMA PATIENTS

COMMENTS



Routine, non-emergent patient transfers should be referred to the admissions transfer coordinator at extension

- A level-of-care case is one which exceeds, in complexity or severity, the capacity of a typical acute care, non-trauma center hospital to provide care for. The lack of available specialty physicians to cover trauma cases *per se*, does not constitute a level-of-care situation if such specialty physicians are on staff at the hospital.

ATTACHMENT 4:

PATIENT TRANSFERS: FROM SFGH TO ANOTHER ACUTE CARE FACILITY

- Refer all calls requesting patient transfers from SFGH to another acute care facility to the Trauma Clinical Case Manager on Beeper **997-9053**.
- All interfacility acute care transfers **MUST** be approved by the Trauma Service Attending prior to the transfer.
- Refer to the attached guidelines for determination of patient stability/suitability for transfer (attached)
- The Chief Resident or Trauma Service Attending will be contacted by the Trauma Clinical Case Manager with the name and number of the accepting physician who needs to be called prior to patient transfer. In general, all trauma service patients should be transferred to a surgical service.
- When the patient is approved for transfer the following paperwork needs to be completed:
 - Stat Discharge Dictation: NP or house staff
 - Pertinent Copies of X-rays: Trauma Clinical Case Manager
 - Chart Documentation: Social Worker
- Please be sure to note any further diagnostic follow-up or consults that the patient will require at the accepting facility

TRANSFERS FROM THE SFGH EMERGENCY DEPARTMENT TO ANOTHER ACUTE CARE FACILITY:

- As a general rule: **NO MAJOR MECHANISM OR TRAUMA ACTIVATION PATIENT SUSTAINING INJURIES REQUIRING HOSPITAL ADMISSION SHOULD BE ACUTELY TRANSFERRED FROM THE EMERGENCY DEPARTMENT TO ANOTHER ACUTE CARE FACILITY**, and no patient, regardless of mechanism or activation who has sustained, or has potentially sustained life or limb threatening injuries should be acutely transferred from the emergency department to another acute care facility.
- For the rare case involving unusual or extenuating circumstances that might make transfer appropriate, the following must occur:
 - An SFGH admitting service must be identified (Trauma Service=default, but occasionally Neurosurgery or Orthopedic Surgery or even Plastics or ENT if the patient has been adequately cleared by the trauma service).
 - Clearance to transfer the patient must be obtained directly from the admitting attending-of-record and this discussion clearly documented in the chart.

ATTACHMENT 5:

GUIDELINES FOR THE ACUTE TRANSFER OF TRAUMA PATIENTS FROM SAN FRANCISCO GENERAL HOSPITAL

The following guidelines have been developed and approved by the SFGH Trauma Quality Assurance Committee. Their intent is to help provide consistency of practice for transferring patients to non-Trauma Center hospitals, to discourage medically inappropriate "economic" transfers, and to limit physician and institutional liability. Trauma patients requiring continued acute care hospitalization should not be transferred without the explicit permission of the primary attending physician.

Trauma Patients Unstable for Transfer

1. Urgent Treatment Needed:

Any patient with a documented injury/condition requiring urgent/emergent treatment such that the delay in treatment engendered by transfer has a reasonable chance of producing serious complications is **NOT** stable for transfer.

e.g. major/open fractures, ruptured spleen, subdural hematoma etc.

2. Incomplete Evaluation

Any patient who, on the basis of mechanism of injury and/or physical examination, has potentially life or limb threatening injuries AND who has not undergone a complete evaluation with respect to those injuries is **NOT** stable for transfer.

e.g. blunt abdominal trauma pending evaluation; blunt torso trauma with long bone fracture & dropping hematocrit; uncleared axial spine following major mechanism

3. Urgent Treatment potentially needed

Any patient who, on the basis of their initial evaluation, has a reasonable chance of developing an acute condition such as that described in #1, is **NOT** stable for transfer.

e.g. major pelvic fracture possibly requiring angiographic embolization; patients with acute intracranial hemorrhage not requiring immediate operation.

4. Unacceptable transit risk

For all patients requiring an repeated intermittent, or continuous therapeutic intervention: If the inadvertent cessation/suspension/disruption of the intervention during the transfer interval has a reasonable chance of producing serious complications, the patient is **NOT** stable for transfer.

e.g. most patients dependent on mechanical ventilation or vasoactive infusions; patients requiring large blood or fluid administration; unstable/potentially unstable axial spine injuries.

Trauma Patients Unsuitable for Transfer (In addition to #1-4 above:)

1. Anticipated major complications

Complex, polytrauma patients with a high likelihood of developing to develop serious, acute complications as the results of their injuries.

e.g. complex pancreatic/duodenal/hepatic/vascular trauma

2. Level of care

Patients will not be transferred to any facility lacking the capacity to provide continuing care comparable to a that of a major trauma center. Patients will not be transferred to the care of any physician lacking appropriate background, training, or experience to care for that patient. (transfers involving diminished Level-of-Care)

e.g. specialist unavailability,

ATTACHMENT 6:

REPORTING OF TRAUMA DEATHS AND COMPLICATIONS

The Department of Surgery at SFGH conducts a weekly Mortality and Morbidity Conference on Wednesdays at 11:00 AM in the Orthopedic Conference Room. On Tuesdays, after videotape conference, a list of all deaths and complications to be presented at the conference, needs to be submitted by each Senior Resident to the Trauma Nursing Director. Complications need to be presented concurrently, not necessarily when they have “resolved.”

The weekly statistics (admissions, discharges, and operations) are calculated from the previous Tuesday through the following Monday. Your admission and discharge numbers will be calculated for you and left in the Seniors boxes, but the breakdown of operative cases must be filled in by a member of your team. **All deaths and complications must be presented by the Chief Resident.** Relevant X-rays, photographs, or diagrams should be available at the conference. For cases involving delays, and for all trauma deaths, critical times should also be presented (e.g. ‘time-to-OR’, ‘time-to-angio/embolization’, ‘time-to-CT’ etc).

All of the following must be presented at the weekly M&M conference:

- All deaths on the Trauma Service
- All major clinical complications (See Appendix B)
- All unplanned returns to the OR
- All negative laparotomies (no significant findings)
- All errors in judgment, technique, and diagnosis
- Other cases as requested by the Trauma Director or Service Attending

The following must be reported to the Trauma Nursing Director and after discussion may be presented at M&M conference:

- All delays to the OR, >1hr with any BP <90
- All delays to the OR, >4hrs with normal VS and positive findings at laparotomy
- All delays in diagnosis
- All delays in major diagnostic procedures (ex. Angiography, CT scan, etc.)
- All delays in service by subspecialties
- Any significant problems involving the system of care for trauma patients at SFGH. May include equipment, policies, SFGH staff, organization etc.

Please notify the Trauma Nursing Director of any specific requests for preliminary autopsy reports by Monday afternoon preceding the Wednesday conference.

ATTACHMENT 7:

GUIDELINES FOR TRANSFER / ADMISSION OF PATIENTS WITH ORTHOPEDIC INJURIES

- 1) Patients with any non-orthopedic traumatic injuries that, independently, would require acute care hospitalization will be admitted to or remain on the Trauma Service. Patients who have been adequately evaluated and found to have single active (requiring acute care hospitalization) system injuries limited to orthopedics will be eligible for transfer/admission to the orthopedic service. In general, with the exceptions specified in items #2 and #3 below, any patient that could and would be discharged from either the hospital or ED, were it not for acute orthopedic injuries, will be eligible for transfer/admission to the orthopedic service.
- 2) Patients whose continued acute care hospitalization is based solely on the need for ongoing physical therapy related to orthopedic injury will be kept on the Trauma Service unless the anticipated duration of hospitalization for PT exceeds 2 days. Patients with isolated orthopedic injury-related PT requirements extending beyond 2 days will be eligible for transfer to the orthopedic service. Patients with prolonged critical illness and/or complex injuries hospitalized on the Trauma Service for a prolonged period of time are excepted from this.
- 3) Patients with chronic or acute medical problems: a) sufficiently complex to warrant hospitalization on 4B (or ICU) OR b) sufficiently severe or complex to require ongoing consultative medical services, will remain on the Trauma Service. Patients with other uncomplicated medical conditions, including simple infections such as UTI, pneumonia, or uncomplicated seizure disorder will be eligible for transfer to the orthopedic service with medical service consultation as needed.
- 4) No ICU (including 4B) patient may be transferred to the orthopedic service under any circumstances. Only non-ICU patients will be eligible for transfer to the orthopedic service.
- 5) Patients with high risk conditions (i.e. the potential for serious related complications such as FUO => sepsis, abdominal abscess, seizure => head injury, etc.), will remain on the Trauma Service. Low risk conditions unrelated to other specific injuries (e.g. low grade FUO, clinically insignificant dysrhythmia, etc.) will not constitute a contraindication for transfer to the orthopedic service.
- 6) All patients with significant pelvic fractures or other major mechanism patients with high risk orthopedic injuries (e.g. multiple long bone fxs.) will be admitted to the Trauma Service. These patients will be eligible for transfer to the orthopedic service only after they have completed their tertiary and been found to have no other active non-orthopedic injuries, and are no longer at-risk for associated hemorrhage or potential vascular injury.
- 7) In-patient transfers from the Trauma Service will only be made during working hours (8am - 6pm) Initiation of the transfer will be through direct communication between senior house staff or attending staff. Agreed upon transfers should occur in a timely manner.
- 8) Disagreements regarding transfers that cannot be resolved at the house staff level, will be resolved by the supervising Trauma and Orthopedic Attendings.
- 9) Inappropriate (premature) transfers, inappropriate delay-of-transfer, diagnostic delays, missed injuries, delays-of-service and other quality assurance issues will be reported to the Trauma PI staff and tracked, as needed, on a continuing basis. Specific cases will be discussed at Trauma Multidisciplinary Peer Review as needed.

ATTACHMENT 8:

GUIDELINES FOR TRANSFER / ADMISSION OF PATIENTS WITH NEUROLOGICAL INJURIES

- 1) As a general rule, all patients requiring intubation or deemed to be at high risk for requiring intubation for reasons of a actual or presumed spinal cord or traumatic brain injury will be initially admitted to the trauma service. Exceptions to this may be made under the following circumstances:
 - a. The patient has a known, severe, isolated traumatic brain or spinal cord injury AND
 - b. Senior neurosurgical staff (Chief or Attending) are present in the hospital AND
 - c. For reasons of severity of injury or post-operative status, the senior neurosurgical staff is willing to assume care of the patient

- 2) Patients with any non-neurological traumatic injuries that, independently, would require acute care hospitalization will be admitted to or remain on the Trauma Service. Patients who have been thoroughly evaluated and found to have single active (requiring acute care hospitalization) system injuries limited to neurological injuries being managed primarily by the neurosurgical service (conditions being managed by neurology are excepted) will be eligible for transfer/admission to the neurosurgical service, subject to the conditions in #1 above. In general, with the exceptions specified in items #1 above, any patient that could and would be discharged from either the hospital or ED, were it not for acute neurological injuries, will be eligible for transfer/admission to the neurosurgical service.

- 3) Patients whose continued acute care hospitalization is based solely on the need for ongoing physical therapy related to their neurological injury will be kept on the Trauma Service unless the anticipated duration of hospitalization for PT exceeds 2-3 days. Patients with isolated neurological injury-related PT requirements extending beyond 3 days will be eligible for transfer to the neurosurgery service. Patients with prolonged critical illness and/or complex injuries hospitalized on the Trauma Service for a prolonged period of time are excepted from this.

- 4) ICU patients with other active system injuries (those requiring acute care hospitalization), may be transferred to the neurosurgical service provide that:
 - a. the other active system injuries are not life/limb threatening (e.g. calcaneus fracture)
 - b. the predominant injury is neurological (TBI or SCI), and severe or complex.
 - c. the neurosurgery service is willing to assume primary management of the patient.

- 5) Patients with high risk conditions (i.e. the potential for serious related complications such as FUO => sepsis, abdominal abscess), will remain on the Trauma Service. Low risk conditions unrelated to other specific injuries (e.g. low grade FUO, clinically insignificant dysrhythmia, etc.) will not constitute a contraindication for transfer to the neurosurgery service.

- 6) Patients with injuries deemed to be non-survivable by the neurosurgical service (Chief or Attending) whose continued resuscitation/treatment is for purposes of organ procurement only, may be admitted to the 4E Critical Care Service.

- 7) With the exception of conditions outlined in #1 above, in-patient transfers from the Trauma Service will only be made during working hours (8am - 6pm) Initiation of the transfer will be through direct communication between senior house staff or attending staff. Agreed upon transfers should occur in a timely manner.

- 8) Disagreements regarding transfers that cannot be resolved at the house staff level, will be resolved by the supervising Trauma and Neurosurgical Attendings.

9) Inappropriate (premature) transfers, inappropriate delay-of-transfer, diagnostic delays, missed injuries, delays-of-service and other quality assurance issues will be reported to the Trauma PI staff and tracked , as needed, on a continuing basis. Specific cases will be discussed at Trauma Multidisciplinary Peer Review as needed.

ATTACHMENT 9:

TRAUMA TASK FORCE PERSONNEL AND ORGANIZATION

Purpose: Delineate personnel and responsibilities for trauma 900 and 911 activations.

900 ACTIVATION ORGANIZATION:

Activation consists of a team comprised of:

EM Team: Consists of a total of 3 from the following:

- 1 EM Attending
- 2 EM Residents (senior and junior)

Trauma Team: Consists of a total of 3 from the following:

- 1 Trauma Attending
- 1 Trauma Fellow (days or Fellow nights)
- 1 Trauma NP
- 1 Trauma Senior Resident
- 1 Trauma Junior Resident

Anesthesia Team: Consists of a total of 2 from the following

- 1 Anesthesia Attending
- 1 Anesthesia Resident/CRNA
- 1 Anesthesia Junior Resident

Nursing:

- 2 Resuscitation Nurses
- 1 Scribe Nurse

Additional Team:

As needed 1 EM Scribe and 1 Trauma Scribe will be incorporated into the team.

Other Staff:

- RT (1)
- Radiology Tech (1)
- Social Worker (1)

Other members of each service will stay available outside the resuscitation room and limit entry into the resuscitation room for direct action and monitoring. Extra members of the team may be called into the room as needed by the Resident Resuscitation Team or Attending Resuscitation Team.

Ancillary Consultant Services:

Ancillary consultant services including Pediatrics, Obstetrics, Neurosurgery, Orthopedics, ENT, etc. will announce their arrival to the Resident Resuscitation Team leader. Consulting services will be in the resuscitation room only when directly examining the patient or communicating with the resuscitation team. At all other times consulting services are to be available directly outside the resuscitation room.

Resuscitation Leadership Team:

The Resuscitation Leadership Team is a collective of the Resident and Attending Resuscitation Teams.

Resident Resuscitation Team:

- Anesthesia Senior Resident
- EM Senior Resident
- Trauma Senior Resident

The **Resident Resuscitation Team** consisting of the EM Senior Resident, the Anesthesia Senior Resident and the Trauma Senior Resident will lead the resuscitation. The Resuscitation Team will be led by one ATLS trained resuscitation leader, which will alternate days, between the Trauma Senior Resident (even days) and EM Senior Resident (odd days).

On EM Airway days the Anesthesia Senior Resident will remain part of the Resuscitation Team and will participate in the resuscitation (despite not being primarily responsible for the airway) as a member of that team.

On days where there is no Anesthesia Resident, a second EM Resident will make up the third member of the Resident Resuscitation Team

It is the assumption that the **Resident Resuscitation Team** will work collaboratively to assess the patient and guide the resuscitation working as a team with one clear Team Leader whose responsibility will be the repository for information and communication with other members of the trauma team.

Attending Resuscitation Team:

- Anesthesia Attending
- EM Attending
- Trauma Attending

The Resuscitation Team will be supervised and guided by the **Attending Resuscitation Team**, which will consist of the EM Attending, the Trauma Attending and the Anesthesia Attending. **The ultimate decision-making responsibility for the patient's care will fall with the Trauma Attending.**

The **Attending Resuscitation Team** will collaboratively supervise the resuscitation and help guide the resident team.

Resuscitation Team Notes:

The Resident Resuscitation Team leader will be responsible for assigning and guiding tasks and should not therefore be involved in performing or supervising procedures. Their role will be to integrate data, disseminate information and plans to all in the room. Ideally, they will be the big picture and communication person and will avoid becoming primarily involved in procedures. In the event that the specified resuscitation leader is needed to perform a procedure they will verbally announce that the resuscitation leader duties are being transferred to one of the other ATLS trained members of the Resident Resuscitation Team.

Other tasks to be verbally appointed by the Team Leader include:

- Physical Exam/assessment
- Lines
- FAST
- Chest Tubes
- Thoracotomy
- Other Procedures

These tasks/procedures will be performed and all data will flow back to the Team Leader for dissemination and discussion

Resuscitation/procedures:

The Resuscitation Team Leader will be responsible for leading the resuscitation of the patient and dissemination of information, coordination of planning, disposition adjudication etc. until the patient reaches initial disposition which consists of IR, OR, FLOOR or ICU or until a leadership handoff has occurred. The residents who perform procedures and lead resuscitations will stay/be kept involved with decision making of severely injured patients to their initial disposition. In the RARE occurrence that a senior resident is needed urgently for another patient and cannot continue to participate in the Resuscitation Team, they will collaborate with the other members of the Resident Resuscitation Team and will specify a replacement resuscitation leader.

The Attending Resuscitation Team and ultimately the Trauma Attending can make adjustments to the plan, task assignments, or any aspect of the care conduct and will be primarily and finally responsible for all decisions and care.

Debrief:

When time allows at the end of resuscitation a few minute debrief will take place. This will be led by the Attending Resuscitation Team and will include the Resident Resuscitation Team, Nursing Staff, and other team members as appropriate.

Research:

Researchers will be allowed in the resuscitation room ONLY for CHR approved and Trauma Research Committee approved studies. Every attempt should be made to reduce the number of and time spent by researchers directly in the resuscitation room. Researchers must be identifiable (by clothing, signs, hats, pins etc.) and will not be permitted in the resuscitation room without visual identification.

Students:

Medical students will be permitted (maximum 1 from each service) and encouraged at the discretion of the Resident and Attending Resuscitation Team.

911 RESUSCITATION ORGANIZATION:

EM Team: Consists of a total of 2-3 from the following:

- 1 EM Attending
- 2 EM Residents (R2-R4)

Trauma Team: Consists of a total of 2-3 from the following

- 1 Trauma Fellow (days or Fellow nights)
- 1 Trauma NP
- 1 Trauma Senior Resident
- 1 Trauma Junior Resident

Nursing: Will be 1-3 from the following

- 1 'Left' Side Resuscitation Nurse
- 1 'Right' Side Resuscitation Nurse
- 1 Scribe Nurse

Other Staff:

- RT (1)
- Radiology Tech (1)
- Social Worker (1)

Other staff will make every attempt to be available outside the resuscitation room and limit entry into the resuscitation room for direct action and monitoring.

Ancillary Consult Services:

Ancillary consultant services including Neurosurgery, Orthopedics, ENT, etc. will announce their arrival to the resident resuscitation team leader. Consulting services will be in the resuscitation room only when directly examining the patient or communicating with the resuscitation team. At all other times consulting services are to be available directly outside the resuscitation room.

Resuscitation Leadership Team:

The Resuscitation Leadership Team is a collective of the Resident and Attending Resuscitation Teams.

Resident Resuscitation Team:

EM Resident
Trauma Resident

The **Resident Resuscitation Team** will be supervised by the **Attending Resuscitation Team**.

Attending Resuscitation Team:

EM Attending
Trauma Fellow/Attending

Resuscitation/procedures:

As with the 900 resuscitations it is expected that the Resident Resuscitation Team will work collaboratively with the Resuscitation Team Leader primarily responsible for leading the team, collecting and disseminating data and the overall care plan and assigning tasks and procedures. Procedures will ideally not be performed by the Resuscitation Leader but rather by their assigned surrogates. As many of the 911s are less acute, it is expected that the procedures can be collaboratively distributed by the **Resident Resuscitation Team** based on the expectations that the Resuscitation Team Leader will not be involved in performing or supervising procedures unless absolutely necessary.

911s would provide an outstanding opportunity for more junior residents to be educated in leading resuscitations. In particular the more junior Trauma Residents could work collaboratively with the EM residents (who could help train and 'co-lead') and be supervised by the ED Attending and Trauma Fellow as they learn to lead resuscitations.

Students:

Medical students will be permitted (maximum 1 from each service) and encouraged at the discretion of the Resident and Attending Resuscitation Team.

Research:

Researchers will be allowed in the resuscitation room ONLY for CHR approved and Trauma Research Committee approved studies. Every attempt should be made to reduce the number of and time spent by researchers directly in the resuscitation room. Researchers must be identifiable (by clothing, signs, hats, pins etc.) and will not be permitted in the resuscitation room without visual identification.