行政院及所屬各機關出國報告

(出國類別:研究)

赴美研究急診病患創傷護理報告書

服務機關：國立臺灣大學

醫學院附設醫院

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摘要

此次出國進修主要參加加州大學舊金山分校所安排的特別學習計劃, 其半年間主要旁聽護理碩士班的急重症照護課程外, 更參觀第一及第二級的創傷中心, 包含 San Francisco General Hospital, UC Davis Medical Center, UCLA Medical Center and San Jose Medical Center。

其參觀內容包含:

1. 實地了解整個創傷計劃的進行,創傷救護系統如何啟動及創傷小組成員如何運作，使得救護過程得以順利進行。
2. 參觀創傷單位(急診、加護病房、普通病房)中護理人員的角色功能及訓練方式，及創傷病人的特殊照護方法及硬體設備加以實地查看理解。
3. 針對創傷協調員的所賦予的角色功能加以了解。

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研究目的

近年來國內急診屢見重大創傷病患，如 921 大地震、連環車禍、刀槍傷甚至毒化災。本院雖擁有一流的外科醫護人員，但面對創傷，尤其多發性創傷病人時，無一整合連貫之醫護系統且經驗缺乏，又國外文獻顯示在成立創傷照護系統後，病人的創傷死亡率明顯下降。有鑑於以上種種且基於改善創傷照護品質，院方已著手規劃—創傷醫學部。余幸得此出國進修研習之機會，欲習美國創傷照護系統之經驗，包括：

1. 瞭解創傷照護系統的模式，尤其創傷小組的運作。
2. 學習創傷小組協調員（Trauma Team Coordinator）的角色功能及養成教育。
3. 瞭解檢傷分類護理人員之養成教育及鑑定作業。
4. 參加創傷照護課程 ，增進創傷照護技能。
5. 參觀創傷處理站及留觀單位之軟硬體設施。

研究過程

在這出國進修的半年期間，主要以參加加州大學舊金山分校所安排的特別學習計劃(Special Study Program), 其內容包含旁聽護理碩士班的急重/創傷照護課程外(Critical Care/ Trauma Program), 更由導師安排下參觀創傷中心中整個創傷計劃的運作，醫院包括 San Francisco General Hospital, UC Davis Medical Center, UCLA Medical Center 和 San Jose Medical Center，尤其偏重在創傷護士和創傷協調員的角色功能；另外也參觀 UCAF Medical Center 的急診部，觀察急症患者的照護情形。

研究內容

✦創傷/醫院統計資料(*Trauma /Hospital Statistical Data*)

UC Davis Medical Center (UCDMC)—

The emergency department at UC Davis Medical Center sees more than 65,000 patients each year, with a high proportion (about 30 percent) requiring admission due to the severity of their illness or injury. More than 50 percent of all hospital patients are admitted through the emergency department. Licensed for 528 beds and fully accredited, UC Davis Medical Center is the region's only Level I comprehensive adult and pediatric trauma center north of San Francisco.

Statistical Report

January through December 1999-Trauma Patient met the Sacramento County EMS

For Trauma Patients with ED Dispositions of Admitted, Died(55)—

- Total 1786

Trauma Patient Injury Type —

- Blunt Injury 1498(84%)
- Penetrating Injury 288(16%)

Trauma Patient Machanism of Injury—

- 1st MVC(784)
- 2nd Fall(300),
- 3rd Pedes(244)

Trauma Patient Mode of Arrival—

- 1st Ambulance(1829)
- 2nd Private Vehicle(197)
- 3rd Helicopter(105)

Injury Severity Score(3rd Quarterly 2000)

- 0 to 9 63 %

- 10 to 14 17 %
- 16 to 25 12 %
- > 25 8 %

San Francisco General Hospital (SFGH)—

San Francisco General Hospital (SFGH) is a teaching facility for the University of California, San Francisco, and provides inpatient, outpatient and emergency services for the residents of San Francisco. Licensed for 550 hospital beds, San Francisco General Hospital offers acute inpatient care in the areas of general medicine, AIDS care, surgery, critical care, women and children services, and psychiatry. Outpatient services are provided through over 100 primary care, specialty care and subspecialty care clinics. SFGH is also the home of the Gladstone Institute of Virology and Immunology, the leader in HIV/AIDS research, as well as the Poison Control Center in San Francisco, which receives over 600 calls a day. The emergency department has an annual census of over 64,000, with approximately 9,700 admissions per year. Residents rotate through the emergency department as interns, and through the Poison Control Center in the second year. Approximately 88,000 individuals use the Hospital's out-patient clinics and in-patient wards each year, making over 1,000 visits per day. Most patients are from low-income families of color, who reside in economically distressed neighborhoods and rely on the Hospital's clinics for all their medical care.

In 1999 Trauma admission-1223 patients

UCLA Medical Center (UCLAMC)—

The UCLA Medical Center encompasses the UCLA hospital and Ambulatory Complex (Medical Plaza). The hospital is a modern, 711-bed facility which was built

in two stages. The original six-story building was finished in 1955, while the main segment of the hospital was completed in 1968. The UCLA Medical Plaza is a comprehensive multi-specialty out-patient facility which houses all ambulatory care of the medical center. The Emergency Medicine Center (EMC) is an integral part of the UCLA Medical Center. It is a comprehensive major emergency medical and trauma unit located in 11,000 square feet of space in the Medical Center. The EMC annually sees approximately 38,000 patients with a mixture of approximately 40% medicine, 35% surgery, 5% obstetrics-gynecology and 15% pediatrics. Approximately half of all admissions to the hospital come through the EMC. The EMC is a designated Level 1 Trauma Center for the County of Los Angeles.

The trauma and emergency surgery section continue to grow, with over 1200 admissions and 250 consults over the academic year. Admitted trauma patients admitted suffered from blunt trauma in 75% and from penetrating trauma 25% of case. A large number of these patients were multipally injured and required general surgical neurosurgical, and orthopedic operations.

San Jose Medical Center (SJMC)—

San Jose Medical Center is a 348 licensed-bed acute care medical center. The facility, located in downtown San Jose, CA, features a county-designated Level II Trauma Center, a skilled nursing facility, rehabilitation, the Cancer Care Institute, Family Health Center, gero-psychiatric care and cardiovascular services.

Statistical data—

Total Trauma Visits: 1999— 1924

Jan~Nov, 2000— 1875

Total Trauma Admissions (Jan~Aug, 2000)— 493

Total Pediatric Trauma Patients(age$\leqq$14) (Jan~Aug, 2000)— 169

Total Trauma Patients Brought in by Helicopter (Jan~Aug, 2000)— 219

Total ED Trauma Patients requiring CT scan (Jan~Aug, 2000)— 867

Trauma Patients with Hypothermia(< 95°F)(Jan~Aug, 2000)— 47

University of California

San Francisco Medical Center (UCSFMC)—

The UCSF Medical Center at Parnassus is located at 505 Parnassus Ave., near Golden Gate Park. The hospital, 500-bed main hospital is composed of two adjoining buildings called Moffitt-Long Hospitals. It is almost 100 visits everyday in ED.
There is no trauma center in UCSFMC. If they have major trauma patients, patients will sent to resuscitation room to resuscitate. There is a resuscitation room for critical patients. If trauma patients need to surgeon physician, Ed attending will consult them. Trauma patients seldom be transfered to SFGH because the cost issue. One reason is the cost issue, and the other is that the surgeon physician accepted the trauma training in SFGH. They also can handle the trauma patients.
The charge nurse will assign two ED staff to work with major trauma patient in the resuscitation room. There is a video camera on the wall in the resuscitation room. Charge nurse will turn on the camera to record the resuscitation process. The goals of resuscitation video is teaching new nurse for Clinical Specialist.

✦創傷小組起動(Activation of Trauma Team)

UCDMC—

The trauma service is immediately available 24-hours-per-day, seven days a week.

Procedure

1. Upon Emergency Department radio pre-notification or direct patient arrival to the Emergency Department of a patient meeting the prehospital triage criteria, the following procedure is instituted:

   a. MICN (Mobile Intensive Care Nurse) receive information will notify the Emergency Department Internal Triage Nurse of a Trauma Code designated as a "911", "922", "933", or "944" level of severity.(See Trauma Activation Algorithm)

   b. The Internal Triage Nurse will activate the simultaneous Trauma code pager for the appropriate level per Trauma Activation Algorithm.

   c. Additional team member stationed in the Emergency Department will be notified by Charge Nurse. The Unit Secretary will make additional calls as needed.

✦ Prehospital triage criteria for the County of Sacramento are modeled after those suggested by the American College of Surgeon Committee on Trauma

2. Team member activated by the Initial Code response are determined by prehospital information as outlined in the Trauma Activation.

3. Trauma Team (Gold and Blue) includes:

   Trauma Attending
   Trauma Chief Resident
   Trauma PGY Ⅲ Surgery Resident

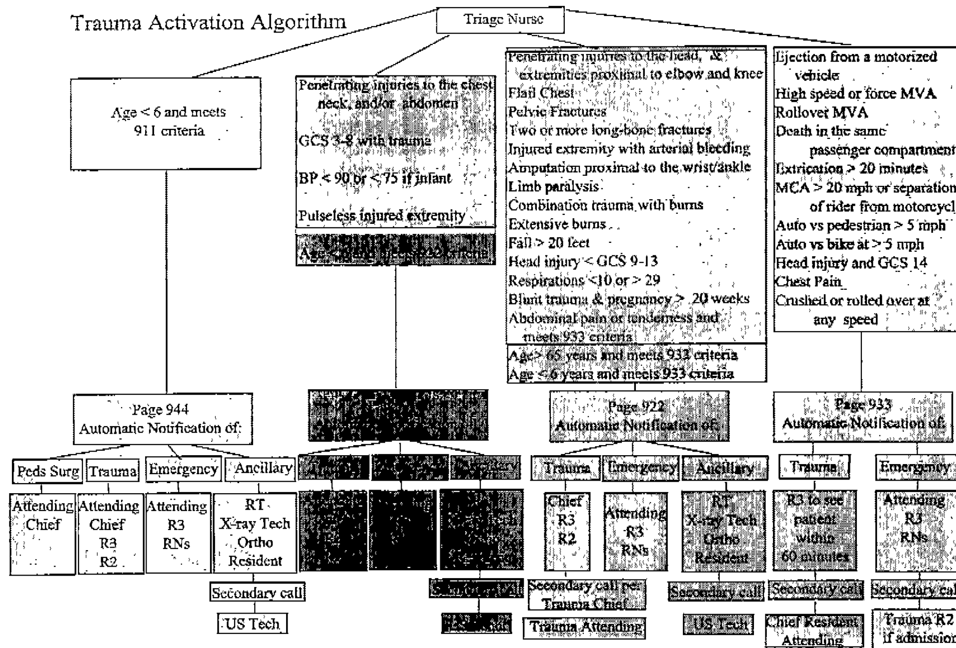
Trauma Interns

4. Team member activated on the above primary team response are as follows:

a. Trauma Attending	(911,944)
b. Trauma Chief Resident	(911,922,944)
c. Trauma PGY III Surgery Resident	(All levels)
d. Trauma Intern (PGY I)	(All levels)
e . ED PGY II Surgery Resident	(All levels)
f . ED PGY III Resident	(All levels)
g. Trauma Resuscitation Nurse	(All levels)
h. Trauma Support Nurse	(All levels)
i . Trauma Scribe Nurse	(All levels)
j . Pediatric Trained Emergency Medicine Faculty	(944)
k. Pediatric Surgery Chief Resident	(944)

5. Nursing Team Members (stationed in Emergency Department) to be notified by the Charge Nurse.
    a. Trauma Resuscitation Nurse
    b. Trauma Support Nurse
    c. Trauma Scribe Nurse
    d. Pediatric Resource Nurse (Available for consult from PICU or PediatricWard if pediatric trauma patient arrives)
6. The primary team will institute initial evaluation and measures for the patient .The Trauma Chief Resident is immediately available inhouse, 24 hours per day.The Trauma Attending is available with ten (10) minutes at all times.
7. Consult Services: Anesthesia, Orthopedics, Neurosurgery, Plastic Surgery and ENT will be notified to response to the Emergency Department at the discretion of the Trauma Team Leader after the initial evaluation of the patient is performed.

- Trauma Activation Algorithm



SFGH—

San Francisco General Hospital Trauma Center has three levels of response for a critically injured adult or child by the Trauma Team. Trauma Team activation applies to **all** patients who present to the ED regardless of method of arrival. The Trauma Team includes Attending and Resident Physicians on the Trauma Service, Anesthesiology, Emergency Medicine, Emergency Nurses, Radiology Technicians and Respiratory Therapists. The three levels are defined as follows:

- **9-1-0** - critical **child** [under age 18] trauma patient requiring immediate response of all members of Trauma Team + Pediatrician
- **9-1-1**- critical **adult** trauma patient requiring mediate response of all members of Trauma Team
- **9-1-2**- **adult or child** trauma patient requiring Trauma Team response within 20 minutes of notification
- **9-9-9** - multi-casualty incident alert to all members of Trauma Team

STEPS:

1. 9-1-1 ACTIVATION

When the Trauma Surgery Team is needed immediately in the Emergency Department based on patient's physiologic status, the Emergency Department personnel will page the (997-9111 beeper and enter **"911"** as the return number. This will indicate to the Trauma Senior Resident that he/she is to respond to the Eastside of the Emergency Department without stopping to call prior to his/her arrival. The criteria indicating an emergent consultation is:

VITAL SIGNS

- Heart Rate <50 or >120
- Respiratory Rate <10 or >29
- Systolic Blood Pressure <90
- Traumatic Arrest

NEUROLOGIC SIGNS

- Glasgow Coma Scale <10
- Paralysis

SKIN SIGNS

- Pale, cool, moist

MECHANISM

- Non-extremity gun shot wounds

AGE

- >65 years meeting 9-1-2 criteria

MASS CASUALTY INCIDENTS [MCI]

- any incident with 4 or more critical patients

2. 910 ACTIVATION

When the Trauma Surgery Team is needed immediately in the Emergency Department based on a child [under age 18] patient's physiologic status, the Emergency Department personnel will page the (997-9111 beeper and enter **"9-1-0"** as the return number. This will indicate to the Trauma Senior Resident that he/she is to respond to Trauma Room on the Eastside of the Emergency Department without stopping to call prior to his/her arrival. The criteria indicating an emergent consultation is:

VITAL SIGNS

- Heart Rate <60 or >120
- Respiratory Rate <10 or >29
- Systolic Blood Pressure <90
- Traumatic Arrest

NEUROLOGIC SIGNS

- Glasgow Coma Scale <10
- Paralysis

SKIN SIGNS

- Pale, cool, moist

MECHANISM

- Non-extremity gun shot wounds

AGE

- all <12 months with **any** trauma
- <10 years meeting 9-1-2 criteria

MASS CASUALTY INCIDENTS [MCI]

- any incident with 4 or more critical patients

3. 912 ACTIVATION

If the adult or child patient fails to meet physiologic criteria, but meets the anatomic criteria or mechanism of injury criteria, as outlined below, the Trauma Team will be accessed via the (997-9111 beeper system and **"9-1-2"** will be entered. The Senior Resident may contact the Emergency Department and request information about the incoming patient, but must physically respond to the ED **within 20 minutes**. The criteria are as follows:

	ADULT	PEDIATRIC
ANATOMC	• penetrating stab wounds to the head, neck, torso or thigh	• penetrating stab wounds to the head, neck, torso or thigh

	• extremity gunshot wounds unstable chest wall • 2 or more long bone fractures • multisystem trauma	• extremity gunshot wounds • unstable chest wall • 2 or more long bone fractures • multisystem trauma • burns >15% BSA
MECHANISM	• falls 20 ft. or more • motor vehicle crash with ejection of patient • motor vehicle crash with rollover • motor vehicle crash with death of passenger • motorcyclist separated from bike • pedestrian hit by motor	• falls 10 feet or more • motor vehicle crash with ejection of patient • motor vehicle crash with rollover • motor vehicle crash with death of passenger • motorcyclist separated from bike • pedestrian hit by motor

	vehicle ● pedestrian hit by bicycle ● crush or major degloving injury to the extremities	vehicle ● pedestrian hit by bicycle ● crush or major degloving injury to the extremities

If at any time the patient's status changes and then meets any of the 911 or 912 criteria, the trauma beeper should be used immediately to notify the Trauma Team.

MULTI-CASUALTY INCIDENTS [MCIs]

Mass casualty incidents for the purpose of mobilizing the Trauma Team are defined as four or more critical injuries, or at the discretion of the Attending in charge (AIC). The 911 Activation Beeper will be used for all mass casualty incidents via the 997-9111 beeper system and **"9-9-9"** will be entered.

METHOD OF ACTIVATING THE TRAUMA SURGERY TEAM

A. The MICN on telemetry/or the triage nurse will notify the Unit Clerk, the Emergency Department Charge Nurse and the Emergency Department Eastside Attending Physician and Eastside Resident of incoming 9-1-1, 9-1-2, or 9-1-0 patients.

B. The Unit Clerk will:

1.page Trauma as a "9-1-1" - "9-1-2" or "9-1-0" on the trauma beeper

997-9111

C. The Emergency Department Charge Nurse will:

1.notify the Eastside Team Leader

D. The Emergency Department Eastside Attending Physician will:

1.notify the Emergency Department Eastside Charge Resident

2.notify any consult services that will immediately be needed (i.e. Neurosurgery)

E. The Trauma Chief and Senior Residents will:

1.respond to all 9-1-1 activations

2.notify the Trauma Attending Surgeon if surgical intervention is necessary. The Trauma Attending Surgeon will be notified of all pediatric activations ["9-1-0"]

F. The Trauma Senior will:

1.respond to all 9-1-2 activations

2.notify the Trauma Chief Resident if immediately needed

G. ***Emergency Nurse***

Circulating-Trauma Nurse will:

Follow notification of the imminent arrival of a 911, 910, and/or 912 patient requiring trauma team activation:

- Anticipate necessary resuscitation equipment and assist with proper set –up:
  - Autotransfusion
  - Level I Warmer
  - Cutdown, Chest tube insertation, Thoracotomy trays
- Assist in removing/cutting off clothing to completely expose patients. Ensure warming measures are provided.
- Report findings regarding history, physical assessment, vital signs(first BP is palpated), and neurologic checks to the recording nurse.
- Label and monitor intravenous fluids; apply oxygen, pluse oximeter, and cardiac monitor; administer medications; and hand-off laboratory specimens to recording nurse.
- Assist in gathering clothes and valuables for booking.
- Set-up additional equipment needed during the resuscitation, monitor proper functioning of the equipment in use.
- Assist with the location of supplies for team members.
- Monitor vital sign as indicated, and report status changes to recording nurse.
- Accompany and monitor the patient in CT scan/Special Procedures after consultation with Charge Nurse.
- Assist with restocking supplies, equipment, and medications following patient transfer from the Trauma room.

Recordiong-Trauma Nurse will:

- Clear a Trauma Room and obtain trauma packet.
- Anticipate necessary resuscitation equipment and ensure proper set-up, assisted by circulating nurse:
  - Autotransfusion
  - Level I Warmer
  - Cutdown, Chest tube insertation, Thoracotomy trays

- Obtain Group O blood
- Ensure that appropriate services have been notified and responded:
  - Anesthesia(on Trauma beeper)
  - Trauma(on Trauma beeper)
  - Neurosurgery
  - Orthopedics
  - Pediatrics
- Confirm pre-hospital history and record additional information on arrival of the patient.
- Document assessment, vital signs, procedures, medications, and responses.
- Ensure the safe handling of sharps/secrections and adherence of universal blood and body secretion precautions.
- Facilitate laboratory diagnostics as ordered:

  CBC, Electrolytes panel, Amylase, Blood alcohol level, PT, PTT, Urinalysis
- Consider organ procurement, secure and save specimens:
  - Purple top
  - Urine
- Assist with the location of supplies for team members.
- Monitor, report, and record intravenous fluid intake, laboratory results, changes in patient status.
- Confirm the request for blood transfusion, check the blood prior to administration, and record the transfusion on the medical record.
- Ensure ID band is applied to the patient as soon as possible.
- Ascertain location of patient's family/significant other from the

Charge Nurse.

- Provide report on patient addimission to nursing units. Ensure that booking of valuables and clothing is completed.
- Initiate pre-operative checklist, as appropriate.
- Restock supplies, equipment, and medications following patient transfer from the Trauma room.

UCLAMC—

A. Trauma Team Activation

<u>UCLA Trauma Team Activation Criteria:</u>

1.Activation of Trauma Team is required for the following:

a. Passenger space intrusion

b. Blood pressure <90, age >6

c. Blood pressure <60, age <6

d. Penetrating head

e. Penetrating neck

f. Diffuse abdominal tenderness

g. Fall greater than 15 feet

h. Flail chest

i. Gunshot wound to trunk

j. Penetrating injury between mid-clavicular lines

k. Abnormal capillary refill

l. No spontaneous eye opening

m. Blunt head injury GCS less than 14

n. Open or closed injury to the spinal column associated with sensory deficit or weakness of one or more extremity

2. UCLA Trauma Team Activation Guidelines:

Activation of the trauma team is based upon patient physiological condition, prehospital assessment and EMC (Emergency Medicine Center) attending judgment. If the patient arrived by his/her own means, activation is optional based on assessment of the EMC attending.

a. Survivor of a fatal accident

b. Extrication required

c. Ejection from the vehicle

d. Pedestrian/bicycle versus vehicle

3. Discretion:

If a paramedic on the scene or a physician in the EMC feels that a patient who has traumatic injuries, but LA County criteria or guidelines have not been met, needs activation of the trauma team because of the patient condition they may do so.

B. Procedure

1. An MICN will receive notification of trauma patient transport to the EMC. The MICN taking the report will notify the Central Work Area of rescue bringing the patient, approximate time of arrival, age, sex and mechanism of injury.
2. The Central Work Area clerk will initiate "Code Trauma" contact check list.
3. Trauma patients will be triaged to the resuscitation suits (RS). In the event of more than one victim, Room 14 will be utilized as a "back-up" RS.

C. Trauma Team Response

1. With a trauma team activation, there will be a trauma team response. The patient's status may be downgraded and the trauma team response terminated, if appropriate, after initial evaluation by an EMS Attending or Pink Attending has occurred.

D. Trauma Team Roles and Responsibilities

EMC and Surgery Attendings

- Supervise overall management of the resuscitation and patient care

Trauma Surgeon (Chief or Clinical 4th Year)

- Functions as the Trauma Team Leader and coordinates overall team efforts
- Determines initial laboratory, radiographic and diagnostic tests in conjunction with the senior EMC resident.
- Determines need for consultation from other surgical services and coordinates patient care.
- Develops a management plan, and communicates plan of care the trauma team, and coordinates the implementation of the plan.
- Documents plan on the chart.
- Notifies the operating room of impending surgical needs.
- Oversees and coordinated the care of the patient throughout the hospital stay.

Trauma Surgeon (Senior or Clinical 3rd Year)

- Performs initial assessment with EMC senior resident.
- Performs surgical procedures as needed.
- Accompanies patient to diagnostic tests outside of the EMC.
- Accompanies patient to the OR.
- Documents admission history and physical on the chart.

EMC Senior Resident

- Functions as physician in charge during the initial triage and resuscitation, and is responsible for primary survey.
- Reports findings of the primary and secondary survey to the trauma team.
- Works in conjunction with the trauma team leader to ensure that diagnostic and therapeutic interventions are accomplished efficiently and in the proper order.
- Is responsible for medication and fluid orders to the Primary Trauma nurse.
- Speaks with family or another senior MD.

- Documents the history and physical on the EMC face sheet.

EMC Junior Resident

- Assist senior EMC resident.
- Assess the patient.
- Initial airway management and maintain c-spine precautions as appropriate.
- Performs surgical procedures in conjunction with the Trauma surgeon.

Primary Trauma RN

- Ascertains that the room is properly set up prior to patient's arrival.
- Obtains information and prior field treatment and response from field report or base hospital.
- Communicates with the trauma team relaying all pertinent information.
- Coordinates/ delegates/ performs nursing procedures.
- Administers medication to patient and notes response and reports results to Scribe RN for documentation.
- Communicates with the ED Administrative Nurse on Duty as to the patients status and treatment stage.
- Responsible for assuring the ID Band placed on patient by blood drawer.
- Accompanies patient to other departments and provides all necessary equipment for patient care.
- Cleans and restocks room.
- Controls the physical environment, i.e. crowd control.
- Release other nursing personnel.

Circulating Nurse

- Please EKG monitor pads on patient.
- Assists with trays and procedures.
- Monitors intravenous fluids and blood therapy, rates, patency, infection control

techniques, stabilization, relpaces solutions and obtains flow rates from physician.

- Assures CO2 reading obtained for patients intubated during resuscitation.
- Performs procedures as delegated by Primary Trauma RN.
- Obtain Vital Signs including pluse oximetry reading.
- Assists with undressing the patient.
- Obtains blood specimens and send standard trauma labs.
- Remain in RS until released by Primary Trauma RN.

Scribe RN

- Obtains notes from Base Hospital report.
- Documents thoroughly, a brief etiology of the injury, the patients condition on arrival, all treatments and procedures rendered, and the outcomes to such, all medications given and the results, all diagnostic tests orderd and completed.
- Documents and informs team members of the time sequences for therapeutic interventions.
- Confirms completion of all diagnostic tests.
- Places all orders for diagnostic tests consultation calls.
- Communicates with the CWA clerks.
- Completes all paperwork excluding physician reports associated with resuscitations including trauma study protocols.
- Remains in RS until released by Primary Trauma RN.
- Documents patient belongings and valuables. Notifies Registration personnel or secure valuables.

Emergency Trauma Technician

- Report to the RS when Code Trauma is announced.
- Remains in the RS until released by the Primary Trauma RN.
- Assist with the transfer of patient from ambulance gurney to EMC gurney.

- Assist with the removal of clothes.
- Performs the following tasks if directed to do so:

    Placement of the MAST Suit as appropriate

    Splint fractures

    Apply cardiac monitor leads

    12 Lesd EKG

    Chest Compressions

    Obtain VS

- Deliver speciments to lab and/or blood bank.
- Assist with the transport of patient for diagnostic testing.
- Assist with the transport and retrieval equipment.
- Assist with cleanup and restock room, particularly the trays.

EMC Administrative Nurse on Duty

- Coordinate family notification with Social Worker.
- Acts as a family and police liaison.
- Arrange for messengers and runners after Code Trauma Activated.
- Arrange for admission.
- Coordinate all administrative functions.
- Assign Personnel.
- Provide administrative support to Primary Trauma RN in Crowd Control.

CWA Clerk

- Initiates Code Trauma Team Call List as soon as notified of patients impending arrival.
- Completes EMC log.
- Place patient name and location on the status board.

- Triage phone calls regarding the trauma victim to the appropriate resource. After trauma team activation notification, initiates the pagers for specialists.

X-ray Technician

- Responds immediately to request for x-ray in the RS.
- Takes and develops appropriate x-ray as ordered.

Respiratory Therapy

- Assist with the initial O2 and airway needs of patient.
- Assist with intubation.
- Ventilates patient.
- Suctions patient.
- Assist in transport to surgery, CT, angio and the ICU for intubated patients.
- Assures that appropriate equipment is available prior to the transport.

Social Service

- Notifies family when requested to do so by the Administrative Nurse on Duty.
- Informs Administrative Nurse on Duty if the arrival of family members.
- Provides initial crisis intervention when the family arrives.

Trauma Director and ICU Protocols

The trauma director or the trauma attending surgeon is in charge of all protocols and procedures for all trauma patients while in the intensive care unit at UCLA Medical Center.

SJMC—

If the patient meets Santa Clara County trauma criteria per notification by pre-hospital personnel, activate the trauma alert.

Trauma alert team members include the Trauma Surgeon (team leader), ED Physician, charge nurse, primary nurse, scribe nurse, respiratory therapy, operating room nurse,

x-ray/laboratory personnel and social services. Individual team members are excused at the discretion of the Trauma Surgeon.

Trauma Criteria—

Physical Criteria :

- GCS ≦13
- SBP <90
- Resp. rate < 10 or > 29/min
- Pediatric : SBP < 60 for Child ≦ 6 yrs
- Pediatric : SBP < 90 for Child > 6 yrs

Anatomic Criteria :

- Penetrating Injury to head
- Penetrating Injury to chest
- Penetrating Injury to back
- Penetrating Injury to abdomen
- Penetrating Injury to groin
- Penetrating Injury to extremities- proximal to elbow or knee
- Two femur fractures
- Flail or crushed chest
- Amputations proximal to wrist or ankle
- Suspected pelvic fractures
- Burn injuries w/ significant trauma
- Blunt injury to head
- Spinal trauma w/ limb paralysis
- Prehospital witnessed CNS changes

Machanism of Injury Criteria

- Estimated impact speed > 35 mph
- Major auto deformity > 20 inches
- Passengers space intrusion in space occupying the passenger
- Significant structural damage to vehicle
- Ejection from auto
- Death of passenger in same vehicle
- Prolonged extrication
- Falls > 15 ft

- Rollover w/ unrestrained with occupant
- Auto-ped w/ significant(>5 mph) impact
- Pedestrian thrown or run over
- Cycle crash > 20 mph
- Cycle crash w/ rider thrown
- Pediatric falls from height > 10 ft

-or- Paramedic or MD discretion

Trauma Team Roles and Responsibilities :

<u>Charge Nurse</u>

1. If criteria for Trauma Alert is met, initiate Trauma Alert by dailing and estimated time of arrival (ETA).
2. Notify ED physician of incoming trauma patient.
3. Meets paramedics and directs patient(s) to trauma room.
4. Clears unnessary people from emergency area.
5. Escorts family to clerk area and/or family waiting room.
6. Is responsible for facilitating all orders and contacting needed consultants.

<u>Primary Nurse</u>

Must be certified as TNCC provider.

1. Is the Nurse in charge of the Trauma Room and functions as primary care provider until a disposition from the ED.
2. Ensures C-spine precautions are maintained until disposition from the ED.
3. Attaches monitor leads and obtains full set of vital signs along with along with patient's medical and immunization history.
4. Obtain vital sign as frequently as patient condition warrants or at least every 15 minutes *1 hour, every 1 hour thereafter, and PRN.(Vital sign

include heart rate, blood pressure, respiratory/minute, oxygeon saturation, and GCS)

5. Performs primary and secondary assessments.
6. Starts IV if indicated.
7. Provides assessment information to scribe.
8. Gives medications as needed.
9. Assists with procedures as needed.
10. Review documentation for accuracy.
11. Notifies charge nurse of any equipment, supply or procedure needs.
12. Applies patient identification band to patient's wrist.

Scribe

1. Obtains and documents pre-hospital information.
2. Documents primary and secondary survey.
3. Responsible for keeping track and documenting patient's fluid status.
4. Inquires about information which is not call out to complete documentation required.
5. Obtains lab results, documents and informs physician.
6. Handles and records valuables.
7. Obtain necessary emergency permits.

Operating Room Nurse

1. Assists with underessing the patient.
2. Responsible for patient warming measures(i.e.Hot-lines, Level I Rapid infusors)
3. Assists with invasive or operative procedures as needed by gathering supplies and set up of equipmant.
4. Places nasogastric tube and foley catheter if indicated.
5. Assist with arterial line set up.

6. Communicates with operating surgical needs.

Lab

1. Draws blood when indicated by primary nurse or Trauma surgeon.
2. Applies patient blood band to patient wrist.
3. Returns promptly to lab with blood sample.
4. Actives Massive Transfusion Protocol when notified by trauma team.

Respiratory Therapy

1. Monitors patient's airway and respiratory status.
2. Assists with monitoring C-spine precautions.
3. Assists Emergency Department Physician with intubation/suction.
4. Ventilates patient.
5. Draws ABG's.
6. Reports ABG results to trauma team and scribe.
7. Assists with or inserts arterial line when needed.
8. Assists with CPR.
9. Accompanies intubated patients to CT, OR, etc.

X-Ray

1. Takes and processes C-spine films and chest films before proceeding with further films when instructed by Trauma surgeon.
2. Completes additional films as needed.

Social Service

1. Social Service intervention (including crisis intervention, conseling and referral) will be provided to all trauma patients and their families as needed in the Emergency Department.

✈創傷設備(Trauma Facility)

UCDMC—

Prehospital-Life Fight

UCDMC Life Flight (helicopter service) provides fast, efficient transport of critically ill or injured adults and children from outlying hospitals and accident scenes.
大多數運送的病人為小孩，且多數為呼吸道急症的病人。
通常接到任務後，5 分鐘內直昇機需起飛，10 分鐘內到達現場。

Equipment:

- emergency drugs
- intubation and airway supplies
- cardiac monitoring, defibrillation and external pacing quipment
- suction systems
- traction and immobilization equipment
- extensive intravenous fluid supplies
- specially adapted pediatric equipment
- digital blood pressure monitor
- invasive hemodynamic monitoring equipment
- mechanical ventilator

Emergency Department: 42Beds

Emergency Physician

The role of the emergency physician in the care of the trauma patient depends on the level of response as outline in our tiered response system.
For the most seriously injured patients (911,944), the role of emergency physician is limited to aiding in non-surgical airway management. In the second tier of patients (922), the emergency physician aids the trauma team residents in patient management.

In the event of a disagreement about management, the trauma surgery attending is brought into the decision-making process and has ultimate jurisdiction. In the lowest level of trauma response (933), emergency medicine attendings and residents are responsible for initial management of the patient. The trauma team follows the workup of the patient and is consulted as needed for admission or further workup or management.

ED Nurse

The preferential hire is a nurse with Emergency Department experience. However, nurses without ED experience are hired and trained who have other types of nursing experience. Both ACLS and PALS are pre-employment requirements in the ED. All nurses are required to complete competency-based orientation which is at least five weeks in duration. New graduate nurse orientation is a minimum of eight weeks. It can be extended to 12 weeks if required. All new nurses are required to attend the Trauma Care Course within a year of employment as a basis standard of education trauma care.

Operating Room: 16 Rooms

When there are no trauma cases in progress, a designated room in the operating room (room 11) is held open for trauma. In the event that room 11 is needed for a trauma case, the next available room is held open.

PACU(Post Anesthesia Care Unit): 22 Beds

The PACU is open and available to trauma patients at all times. It is used for trauma patients in the following situations:

1.Postoperative recovery of trauma patients unless the patient is directly admitted to an intensive care unit bed postoperatively. Postoperative trauma patients eventually destined for an intensive care unit bed are sometimes kept in the PACU pending further diagnostic studies (angiography, computerized tomography,etc).

2.Placement of epidural catheters for analgesia. Patient admitted through the Emergency Department who require epidural analgesia are first sent to the PACU for catheter placement.

3.Overflow of intensive care unit patients when all intensive care unit beds are full and patients require admission from the Emergency Department.

RN staff are required to be certified in ACLS,PALS and CPAC(Certified Post Anesthesia Nurse).

SICU I : 12 Beds

Neurosurgical ICU:10 Beds

SICU I is designated as the primary ICU for trauma and vascular patients and these patients have priority in that unit. If a non-trauma or non-vascular patient is occupying one of these beds and a bed is needed for a trauma patient, the non-vascular, non-trauma patient can be displaced.The neurosurgical ICU is the secondary ICU for trauma patients and they have priority (along with neurosurgical patients) in that
unit. In the event that all ICU beds are full and a trauma patient requires ICU admission, the nursing supervisor and the medical officer of the day are notified by the trauma team. They are responsible for finding a bed, preferably in either the primary or secondary units (SICU I or the neurosurgical ICU).

Trauma Nursing Unit: 38 Beds

UCDMC built the TNU to house the trauma patients. Those patients with critical injuries are cared for in the ICUs in the main facility. Once their condition improves, they are moved to the TNU. The goal of the TNU is to provide the most comprehensive care of the trauma patient by bringing together nurses, physical therapists, speech therapists, occupational therapists, social services, doctors and patients in a central facility. Here assessments are done repeatedly to detect subtle changes associated with trauma. Lab values are assessment on a regular basis. The patient's injuries are repaired and the patient receives training to deal with any functional limitations he may have acquired from his injury.

SFGH—

Emergency Department: 36Beds

The SFGH Emergency Department is a 24-hour service licensed by the State of California and fully accredited by the Joint Commission on the Accreditation of Health Organizations (JCAHO) as a Comprehensive Service Level I department to provide emergency and trauma care. The American College of Surgeons (ACS) has accredited SFGH as a Level I Trauma Center. The San Francisco Emergency Medical Service Agency (SFEMSA) has authorized the ED as a Base Hospital for pre-hospital paramedic direction and consultation and as a Receiving Hospital for the City & County of San Francisco. SFEMSA has also approved the ED for care of pediatric emergencies (EDAP).

The ED consists of five clinical areas (Eastside, Medical Ward, Westside Urgent Care, Westside Fast Track, and Observation Ward) containing 36 beds subdivided as follows:

- 4 critical care rooms (resuscitation rooms)
- 5 Eastside exam rooms
- 11 Medical Ward beds (including one private exam room)
- 8 Observation Ward beds
- 4 Westside Urgent Care rooms (including an EENT procedure room)
- 3 Westside Fast Track rooms

The mission at the SFGH Emergency Department is to provide competent, humanistic, and cost-effective emergency and trauma care to adults and children, and to respect our patients' cultural, socioeconomic, religious, lifestyle, and educational differences.

Circulating and Recording –Trauma Registered Nurse, Emergency Service

Qualifications:

- Unrestricted Registered Nurse licensure
- ACLS certification
- TNCC verification preferred

- Trauma Nursing Core Course (TNCC)

  ENA (Emergency Nurses Association) developed and implemented the TNCC for national and international dissemination as a means of identifying a standardized body of trauma nursing knowledge. The TNCC (Provider) is a 16 or 20-hour course designed to provide the learner with cognitive knowledge and psychomotor skills. Nurses with limited emergency nursing clinical experience, who work in a hospital with limited access to trauma patients, or who need greater time at the psychomotor skill stations are encouraged to attend courses scheduled for the 20-hour format.

The TNCC may be officially attended by registered nurses (RN's). Other health care providers may attend the course as observers. In order to maximize success in the TNCC (Provider), it is recommended that the participant have at least six months of clinical nursing experience in an emergency care setting. It is assumed that the course participant possesses generic nursing knowledge, has an understanding of emergency care terminology, and has familiarity with standard emergency equipment.

Operating Room

Room 1 is for Emergency cases.

Surgical/Trauma ICU: 16Beds

The nurse patient ratio is 1: 1 or 1: 2.Patients with major burns and critically ill pediatric patients are also admitted to the ICU.

Progressive Care Unit: 4 Beds

PCU is designed to provide intermediate nursing care at a level between critical care and general care. It provides for continued use of sophisticates technology for patients whose needs are not considered critical, but who remain too acute for the general unit.

Medical/Surgical General Ward

Trauma patients have priority to admit this ward. This ward give patient physical therapy, occupational therapy and speech therapy by specialists.

They assess and evaluate trauma patients' ability and choice rehab protocol or specific therapy.

UCLAMC—

Trauma Care Management

The trauma care management team is directly involved in coordinating patient care throughout the patient's length of stay at the hospital and discharge. Team members

are available to assist patients, families and staff and work directly with the physician and nurses. The clinical nurse specialist supervises the team.

UCLA trauma care management team members include:

- clinical nurse specialist
- trauma nurse coordinator
- utilization review nurse
- discharge planner
- social worker
- home health representative
- physician therapy representative

Emergency Department: 24 Beds

There is one resuscitation room in ED. If this bed is used, there are two-beds as secondary trauma resuscitation room next to the major resuscitation room.

ED nurse:

Qualification

- Registered Nurse licensure
- ACLS certification preferred
- TNCC verification preferred

Operation Room:

One room is held for trauma patient

Surgical ICU: 8 Beds

Neurosurgical ICU: 7 Beds

Trauma patients have priority to admit SICU and NSICU. Trauma patients also can attend Medical ICU when all 8 SICU beds and all 7 NSICU beds are full.

ICU nurse:

Qualification

- Registered Nurse licensure
- ACLS certification preferred
- TNCC verification preferred

Surgical general ward: 42 Beds

SJMC—

Emergency Department: 16 Beds

The designated trauma resuscitation bed will be bed 1-B in the trauma room. The bed is to remain open at all times.

If this bed is used for a trauma alert/resuscitation the patient should then be moved to an appropriate bed elsewhere in the Emergency Department when this location is no longer needed.

Bed 1-A will be used as the secondary trauma resuscitation bed. This bed should remain open when bed 1-B is in use, otherwise it may be used for other patients as needed.

Critical Care Unit: 16 Beds

Medical/Surgical general ward: 42Beds

Trauma Education Plan

Purpose

The Trauma Service Department of San Jose Medical Center is supporting trauma education for all members of the hospital staff to ensure appropriate and safe care to the trauma patient in all phases of their hospital stay. The Emergency Department, Operating Room, Post Anesthesia Recover Room, Intensive Care Unit, Pediatric Intensive Care Unit and Medical/Surgical Unit will have specific annual requirements for nursing personnel.

Policy

1. Emergency Department:

   TNCC(Trauma Nursing Core Course) will be required of all registered nurses within one year of employment at San Jose Medical Center.The Primary Nurse in the resuscitation room must be TNCC certified.All RN's will complete competencies within their department and maintain certifications including ACLS and PALS.All RN's will be required to complete 8 hours of trauma CEU's per year or 24 trauma CEU's over 3 consecutive years.

   CEN(Certification Emergency Nurse) certification is encouraged.

2. Operating Room/PACU/Intensive Care Unit/PICU

   All RN's will complete competencies within their department including basic trauma competency.All RN's will be required to complete 8 hours of trauma CEU's per year or 24 trauma CEU's over 3 consecutive years.

   PICU RN's and PACU RN's caring for pediatric patients are required to maintain PALS certification.

   TNCC certification is preferred.

   Intensive Care Unit, PACU, and PICU RN's are encouraged to have CCRN certification.

3. Medical/Surgical and Pediatrics

   All RN's will complete competencies within their department and will be required to complete 4 trauma CEU's per year or 12 trauma CEU' over 3 consecutive years.

✶創傷協調員 *(Trauma Coordinator)*

Qualifications of the Trauma Coordinator

The Trauma Coordinator, usually a Registered Nurse, must show evidence of educational preparation, with a minimum of 16 hours of trauma related continuing education per year, certification, and clinical experience in care of the injured. A selection process defined by the institution's personnel policy must be delineated. Qualifications and activities should include the following:

Clinical Activities

Coordinating trauma care management across the continuum of trauma care, including planning and implementing of clinical protocols/practice management guideline, monitoring care of in-hospital patients, and serving as a resource for clinical practice.

- Alcohol Withdraw Protocol in UCDMC

Education Responsibilities

Providing for interfacility and regional professional staff development, participating in case review, standardizing practice guidelines, and directing community trauma education and prevention program.

- Trauma Videotape Conference and TNCC in SFGH
- Trauma Core Course, Trauma Videotape Conference and ATLS in UCDMC

Performance Improvement

Monitoring clinical outcomes and system issues related to quality of care delivery, developing quality filters, audits, and case reviews, identifying trends and sentinel events, and helping to outline remedial actions while maintaining confidentiality.

- Trauma Videotape Resuscitation Conference in UCDMC, SFGH

Administration

Managing, as appropriate, the operational, personnel, and financial aspects of the

Trauma Program, serving as a liaison to administration, and representing the Trauma Program on various hospital and community committees to enhance and foster optional trauma care management.

- Trauma CQI Committee, Trauma Systems Committee in UCDMC
  - Trauma COI Committee is representation from medical staff, nursing and ancillary staff who participates in the care of the trauma patient. The committee is responsible for monitoring and evaluating trauma care and all activities that relate to trauma patient's care.
  - Trauma System Committee has representation from medical staff, nursing and ancillary staff who participate in the care of the trauma patient. The committee is responsible for review of systems and administrative issues that impact trauma patient care. The committee is also responsible for trauma program policy review and approval.
- Trauma Committee-SFGH
- Clinical Service Committee, M&M Committee-SJMC

Supervision of the Trauma Registry

Collecting, coding, scoring, and developing processes for validation of data and designing the registry to facilitate performance improvement activities, trend reports, and research while protecting confidentiality.

Consultant/Liaison

Stablizing the complex network of many disciplines that work in concert to provide high-quality care, serving as an internal resource for staff in all departments, and acting as an extended liaison for Emergency Medical Services agencies, the community, and the nation.

Ps: SJMC- "Pain medication administered to pediatric trauma patients(≦14yrs)with long bone fractures within 15 minutes of arrival" is a item of performance

measure by JCAHO(Joint Commission on Accreditation of Health Care Organizations)

Research

Being involved in research selection, analysis, and distribution of findings, and facilitating protocol design for accurate data collection, feedback, and analysis.

Community/National Involvement in Trauma Care System

Participating in the development of trauma care systems at the community, state, provincial, or national levels.

Trauma Coordinator in UCDMC

This position is responsible for providing analytical, research and statistical suppport to the Trauma Program. Responsible for oversight of comprehensive relational data system for monitoring, review and evaluation of prehospital, Emergency Department and hospital care of the Trauma patient population. Responsible for oversight of various profiles that drive trauma billing operations, developing and monitoring reports to ensure accuracy on all billing transactions originating from Trauma Program.

Function	%
1.***Data Analysis Support***	70%

a.) Develop daily, weekly and monthly reports to reflect all trauma patient activity, including monitoring and trending of admitted and ED discharged patient population. Develop routine reporting

Formats which meeting the needs of Trauma Program for evaluation of inpatient and outpatient activity.

b.)Program computer database for Trauma Program research projects.

Provide consultation on data analysis and statistical research techniques; data

entry; analyze results of reports collaborating with Traum Registrar and Trauma Program Manager as appropriate.

c.)Responsible for collecting, reviewing, analyzing and editing data for various suverys and research projects. Research and maintain Trauma Program Statistics and information for inclusion in grant proposals and various reports.

2.***Clinical Quality Improvement*** 20%

a.)Collaborate with Trauma Program Manager and Trauma Director in maintaining Trauma Program Continuous Quality Improvement Plan. Participate in Trauma Multidisciplinary and CQI Committees. Utilizing audit filter information (clinical indicators) identify potential problems regarding prompt review of timeliness, appropriateness and consequences of care rendered to the trauma patient population.

b.)Design report formats in a manner which presents data in a clear, logical and accurate formate.

3.***Trauma Billing Operations*** 10%

Oversee all aspects of Truma Charge billing, including ICD-9/CPT coding, billing detail/accuracy, claims review and payment denials.

Trauma Coordinator in SFGH

Position Summary:

The Trauma Program Coordinator is responsibility for administrative overight of service for the trauma patient population. She/he plans, coordinates, directs, and evaluates the delivery of trauma services by maintaining Level I Trauma Center standards of care, practice and performance.

Reporting Relationships:

- Responsible and accountable to the Associate Administrator for Pre-Hospital and Emergency Services.
- Selects, orients, supervises, and evaluates Trauma Case Managers, and Trauma Registry personnel.
- Collaborates with Medical Director of the Trauma Service and other

Multidisciplinary team members of the Trauma Center.

Major Responsibilities:

- Plans, problem-solves effectively.
- Organizes areas of responsibility and leads staff effectively.
- Manages human resources effectively.
- Communicates with other and manages information resources effectively.
- Consider factors related to safety, cost efficiency and effectiveness when managing care delivery systems.
- Contributes to the planning, implementation, and evaluation of the Organization's plan for providing trauma patient care.
- Evalutes and improve own nursing practice in accordance with professional and regulatory standards.
- Maintains and upgrades and skills appropriate to the assigned practice setting.
- Contributes to the professional development of peers, colleagues, and others.
- Practice and promotes an ethical approach to patient and health care management.
- Promotes a philosophy and environment that is conducive to effective collaboration among health care providers, and others as appropriate.
- Advocates for and supports research in the practice setting.
- Adheres to health, safety, infection, control policies and resource utilization standards.
- Adhere to hospital/department personnel policies.
- Management work time effectively, efficiently, and productively.

Trauma Clinical Case Manager in SFGH

Position Summary:

The Trauma Clinical Case manager (TCCM) coordinates the timely provision of cost effective quality care to injured patients across the continuum of care. He/she maintains continuity of care when multiple services and health care providers are involved. The TNCC works collaboratively with the beside nurse to manage patient

care. Primary responsibilities include coordination and monitoring of the acute care hospitalization phase of the injured patient, ongoing quality improvement, and completion of the trauma registry and audit filters. The position requires clinical expertise in the care of the injured patient.

Trauma Registry Personnel in SFGH

Working Title: Trauma Medical Records Clerk

Position Summary:

Under the supervision of the Trauma Coordinator, abstracts medical raw data for statistical purposes and research; performs ICD-9 coding for trauma patients, enters all data into a computerized database, obtains patients charts from medical records, and performs related duties as required.

Trauma Coordinator in UCLAMC

Position Information:

A designated Registered Nurse with responsibility for coordination of all activities related to the Trauma Program in collaboration with the Trauma Director.

Job Summary:

Ensure a continuum of care is provided, in a cost efficient manner, for all patients admitted to the trauma service.

1.***Clinical/Administrative***

1) Coordinates trauma care across the continuum of care.
2) Collaborates in the development and implementation clinical protocols and guidelines related to trauma care.
3) Monitors care of in-hospital patients.
4) Service as a resource for clinical practice.
5) Service as a liaison to administration.

6) Represents the Trauma Program on various hospital and community committees.

2.***Performance Improvement***

1) Assists the Trauma Director in developing and implementing an effective Quality Improvement Program.

2) Monitors and evaluates the Program on a regular basis.

3) Identifies and refers cases for physician review or intervention where appropriate.

4) Monitors clinical outcomes and system issues and reports to Subcommittee for Trauma Patient Care monthly.

5) Identifies trends and sentinel events and assists with remedial actions while maintaining confidentiality.

3.***Truama Registry***

1) Directly supervises the trauma registry staff.

2) Ensure collection. coding and scoring of data is done according to the Los Angeles County EMS Agency trauma contract regulations,

3) Develops processes for data validation, performance improvement activities and trends while protecting confidentiality.

4.***Consultant/Liaison***

1) Stabilizes the complex network of many disciplines that work in concert to provide high quality trauma care.

2) Serves as an internal resource for staff in all departments involved in trauma care.

3) Acts as an extended liaison for UCLA Medical Center in the community.

4) Participates in the development of trauma care systems at the community, state and national level.

5.***Education***

1) Collaborates with planning and organizing intramural and extramural educational programs.

2) Participate in case reviews.

3) Plans, develops and participates in community trauma education and injury prevention activities.

6.***Research***

1) Reads, interprets and utilizes research findings and trauma registry data to enhance the delivery of trauma care.

2) Facilitates and/or participates in multidisciplinary research.

3) Identifies areas of study, which could impact trauma care. Job

Trauma Registrar in UCLAMC

Reports To: Trauma Nurse Coordinator

Department: Department of Nursing

Job Summary:

Provides primary support to the Trauma Nurse Coordinator. Accurately identifies all patients for entry into the hospital trauma registry. Responsible for providing monthly, annual and ad-hoc reports to the Trauma Coordinator or Trauma Medical Director. Identifies and submits data to approved local, regional, and national studies as approved by the Trauma Coordinator and Trauma Medical Director.

Essential Job Duties:

1.*Data Abstraction:*

Accurately identifies all patients for entry into the hospital trauma registry, abstract data from the medical records of appropriately defined trauma patients. Completes and verifies for accuracy all data collected as a requirement for a level 1 trauma center. Assigns and scores all injuries utilizing the ICD-9 system. Assigns accurate

E-codes, collects and codes data on all procedures, and ensures all data elements for the hospital trauma registry are collected and entered.

2.*Data Reporting/Entry:*

Provides monthly, quarterly, annual and ad-hoc reports to the Trauma Coordinator or Trauma Medical Director. Submits the required data elements to the state trauma registry as required by state status. Enters the required data into the Lancet system according to set standards. Identifies and submits data to approved local, regional, and national studies as approved by the Trauma Coordinator and Trauma Medical Director.

3.*Computer Hardware and Software:*

The primary responsibilities for the Trauma Registrar's role encompass all aspects of database model. Modify and maintain database structure and methods as required by changes. Establish and maintain the databases used for testing new and modified applications. Design, implement and test the user interfaces and reports for database applications. Monitor the security of data to ensure the integrity and reliability of database systems.

Minimum Job Requirements/Competencies:

1.Knowledge of computers, D-base, Windows 95/NT OS environment, data entry

2.Knowledge of statistical reports

3.Knowledge and experience in medical record coding

4.Medical terminology course completion

5.Working knowledge of Microsoft Word, Excel and Access

心得

去年九月中秋節前夕，獨自一人抱著興奮與忐忑不安的心情出國，興奮的是：能夠學習新知且獨立生活；忐忑不安的是：人生地不熟且語言不太通。但所幸遇到一些貴人的幫忙下，能順利的完成原定的學習計劃且體驗到異國的民俗風情，使得這次進修算是完滿。

學習的過程是甘苦參半的。在參觀醫院方面，由於外國的學習方式為自動自發式且學習的角色，對於我來說是新的，故先要有概念後才有辦法詢問問題，進行參觀；而非國內的填鴨式，所以一開始參觀前的準備工作，便十分重要且吃力，花許多時間在閱讀許多創傷雜誌和書籍。另一方面外國的生活方式亦需要適應，故剛到的幾個月日子是艱辛且孤獨的，但隨後漸漸的感覺到閱讀英文猶如到吃甘蔗般，越唸越得心應手且漸漸適應美國的單純安靜的生活，而此時亦以度過第三個月圓日。

隨後的日子，過的更是緊湊。密集的參觀創傷中心醫院，由國外之軟硬體設施，更是深深體驗到院內創傷照護體系之不足，越是激發我參觀醫院的熱忱，而如何摘取國外之優點而運用於本院的體系中便是思考重點，亦是最困難之處。

此次的進修學習，讓自己對整個創傷計劃更有概念之外，亦讓自己的視野拓展不少，受益良多。更期待回國後，能發揮所學，對醫院有所貢獻。

致謝

這次國外進修須感謝護理部主任、張瑛副主任、繡珠護理長、明德護理長、巧文護理長等人的多方協助使之能順利成行且完滿達成任務；在國外方面感謝我的指導老師-Kathleen Puntillo、臨床指導師-Jinhee、Diane、Garrett、John、Cheryl的熱心幫忙指導，使參觀醫院收獲良多。

建議

一創傷急救(Trauma Resuscitataion)—

急救現況分析—

一但有重大創傷病人入急診,便急忙由家屬或救護員送到外科診間，並無事到院前通報系統，除非病人是轉院才會事先知曉；醫護人員大多在無準備的情況下，先放下手邊的病人，驅趕輕症病人及家屬到診間外，然後方能挪出一個空間急救用，而針對創傷急救的常用設備常需花時間於急救時準備。此時醫護人員方面除原有的第二年的外科住院、骨科、實習醫師及兩位外科診間護士外，可能會有急診 CR、floating nurse 幫忙，就在一陣初步評估和急救之後，開始照會他科醫師或社工人員和送到 X 光室和電腦斷層室作檢查，接著等照會和檢查結果，所以病人通常會在外科診間至少 2~3 小時才會有進一步送 ICU 或 OR 的處置。針對重大創傷病人會在急診的晨間討論會中透過醫師和病例的回顧進行檢討。

目前急診並無創傷小組的設立，以致在急救方面有以下數項的缺點:

1.)急救區不夠大且設備擺設及運用不夠完備
2.)照會系統尚流暢但尚未組織化，以致跨部單位的溝通協調費時

就創傷小的整體運作建議如下—

創傷急救(Trauma Resuscitation)是一個強調組織化且跨科部的過程。從救護員的急救、聯繫及到院前的篩傷分類(Prehospital Triage)，創傷小組的啟動(Trauma Alert)以至於跨科部的通力合作皆須分秒必爭且須提供 24 小時的服務，故創傷照顧手冊(Trauma Care Protocol)必須必須在接觸病人之前於創傷小組成員間達成共識，以期創傷病人能在到醫院的最初幾分鐘能獲得最適切的評估及急救。需透過持續的工作改進(Performance Improvement)的過程，以增進對嚴重的創傷病人急救需要認知(Cognitive)、精神運動(Psychomotor)和管理技能。創傷小組成員應該透過回溯性的急救過程來評值、討論和質疑來確定小組成員的效

率和熟練度，例如藉由舉行創傷錄影帶的討論會(Trauma Videotape Conference)和審查創傷紀錄文件(Resuscitation Documentation、Flow sheet)。

就創傷急救區(Trauma Resuscitation Area)的建議如下—

急診必須設計規劃出一個夠大的創傷急救區，此區能夠容納整個創傷小組成員和一些必須設備像呼吸器和 portable X-ray machine 等。此區須有足夠的照明和獨立的室內溫度控制設施。物品和設備必須標明清楚且打開陳列便於創傷小組成員就近使用，像呼吸道和插管設備會設置在床頭，抽血和靜脈留置所需用物會擺在床兩側，胸管托盤會擺在靠近胸部處。在入口處須放置 physical or visual barrier 為了 universal precautions 像隔離衣、護目鏡、防液體的帽子和手套。

就創傷設備(Equipment)的建議如下—

1. 執行些侵入性技術，像緊急開胸、插胸管、腹腔灌洗時，將所需使用的器材地擺在拖盤上，以利技術執行。
2. 靜脈輸液須保溫
3. 必備大號的 Catheter 和 Tubing
4. 接於胸管的自體輸血設備須亦於裝置
5. 偵測生命徵象的監視器的擺設，須易於觀看
6. 機械性的呼吸器須立刻可獲得
7. 緊急麻醉、插管、疼痛控制、高級心臟救命術等的藥物須常備在急救區
8. 創傷小組成員的姓名和角色、重要部門和 on-call 人員的電話，均需寫在大壁板上

就溝通(Communication)的建議如下—

醫院和到院前救護人員須透過無線電和電話的聯繫做好緊急的醫療處置、指引可就近到達的適當醫療機構和儘可能使急診在病人到達前狀況便知道受傷狀況；另外創傷小組成員的內部和外部溝通皆是急救的重要關鍵。

✦創傷協調員(Trauma Coordinator)—

院內現況分析—

目前醫院無此編制人員

國外現況分析—

國外創傷協調員的資格方面，由急診或加護單位資深護理人員(5 年以上)，至少學士學歷，每年接受創傷在職教育，最好有對教育計劃發展、品質管理、創傷照護系統的發展、實行、和評值有經驗。

針對創傷協調員的角色建議事項—

創傷協調員雖同時需扮演多重角色，但 Trauma Registry 是 Trauma Program 的一切根基，故余短期目標會設定在先做好 Trauma Registry，同時進行 Quality Improvement。針對創傷計劃(Trauma Program)尚未設立運作的情形下，須有 Trauma Program Committee 成立，會對整個創傷服務(Trauma Service)的過程加以評估和掌握，而後創傷協調員才能進一步的發揮功能。且於此同時經由跟隨 Trauma Attending 巡視病房，參加國內外創傷研習，若有機會最好能參與一般外科加護病房的護理工作，藉由此些訓練過程加強本身的 high level clinical knowledge。待短期目標皆已上軌道再對其他功能角色加以發揮。

另外，與 Trauma director 保持開放性的溝通，針對創傷病人的管理達成共識且和醫院主管進行品管計劃會議，先對創傷病人(Criteria)加以定義，參考國外創傷規則系統(Algorithm)發展出標準化之照顧模式、品質指標(Quality indicator)、資料收集的步驟，清楚地定義合併症，由行政部門認證受權之後執行，接著進行監測，監測結果和區域或國家的正常值加以比較。其中資料收集部分需有創傷病人紀錄單(Trauma Flow Sheet)，故須設計 Trauma Flow Sheet，要考慮以下數點：

1. 能反映病人臨床狀況的快速變化且呈現病人在急診的整個背景。
2. 加強 Trauma Registry 資料的收集。
3. 幫助 Trauma Coordinator 查閱病歷，以利 Performance Improvement 的進行。

由於創傷病人的急救分秒必針故針對減少因急診掛號的例行工作時間而妨礙

急救過程的流暢便利性，便可仿效國外有所謂的創傷姓名(Trauma Name)和

傷包裹(Trauma Package)。其中創傷姓名(Trauma Name)是針對創傷啟動(Trauma Alert)的病人，事先便以編造的名字；創傷包裹(Trauma Package)是事先便整理好空白的創傷病人所需的病歷單張和創傷姓名卡及貼紙，一旦創傷啟動的病人入院便用此創傷姓名掛號和辨識用，此可方便流程進行。

長期目標為傷害預防(Injury Provention)工作的施行，將 Trauma Registry 所收集整理的資料提供給政府衛生單位，如此可針對民眾易發生的意外事件加以進行教育宣導以減少創傷事件的發生，此為創傷護理積極的目標。

一般建議事項

臨床實習時，令人印象深刻的事便是護理人員接觸意識清醒病人的第一步先介紹自己，雖然每位護理人員皆有佩帶識別證，而這是與急診部推行的政策如初一轍，但於院內實行時卻效果不彰。介紹自己給病人便是建立護病關係的第一步，口頭上介紹勝過只有識別證的佩帶，且來的正式且有效果，讓病人及家屬認識護理人員，此時彼此的信任感便應運而生；尤其在急診時常很忙時，有藉口說沒時間介紹時更應實行，因為病人及家屬更會有無所適從感，此時抱怨連連不滿意度便提昇。因此識別證的佩帶加上口頭上的介紹是最容易建立護病關係的第一步，也是最有效率的一步。

在國外急診創傷家屬，一般在病人送入急診時便會被安排在候客室，待急救到一段落再讓家屬會客如此便不會干擾到醫護人員的急救且候客室有舒適的椅子和寬敞的空間可讓家屬休息。