

TRAUMA HOSPITAL RESOURCE UTILIZATION



Figure 45 provides a graphic representation of trauma patient arrival to the trauma centers by hour and day of the week. The larger the circle, the greater the number of trauma patients in that time period. Typically, more traumatic injuries are brought to the trauma center in the evenings and on the weekend. Awareness of the trends in trauma patient arrivals to the hospital allows for staffing and resource planning to meet patients' needs.

Figure 45: Trauma System Patients by Day of Week

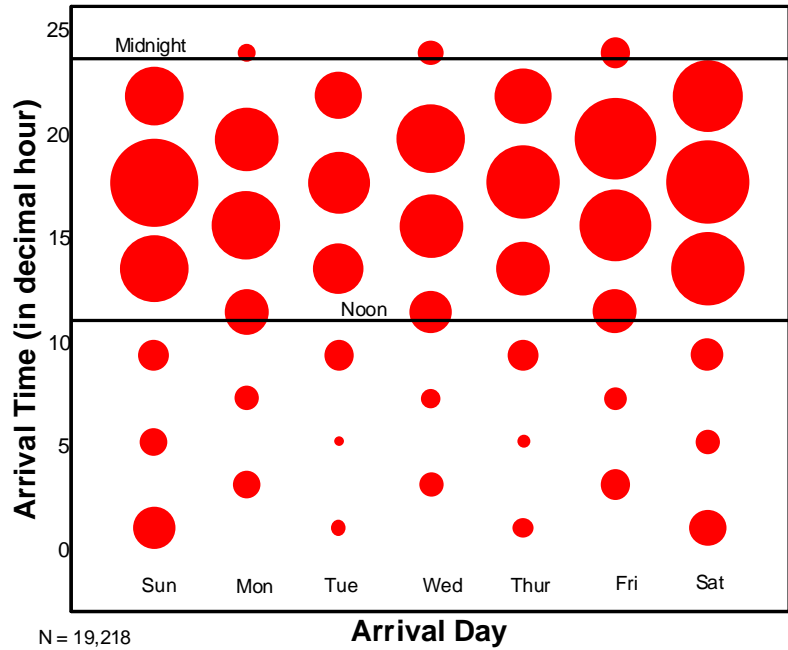
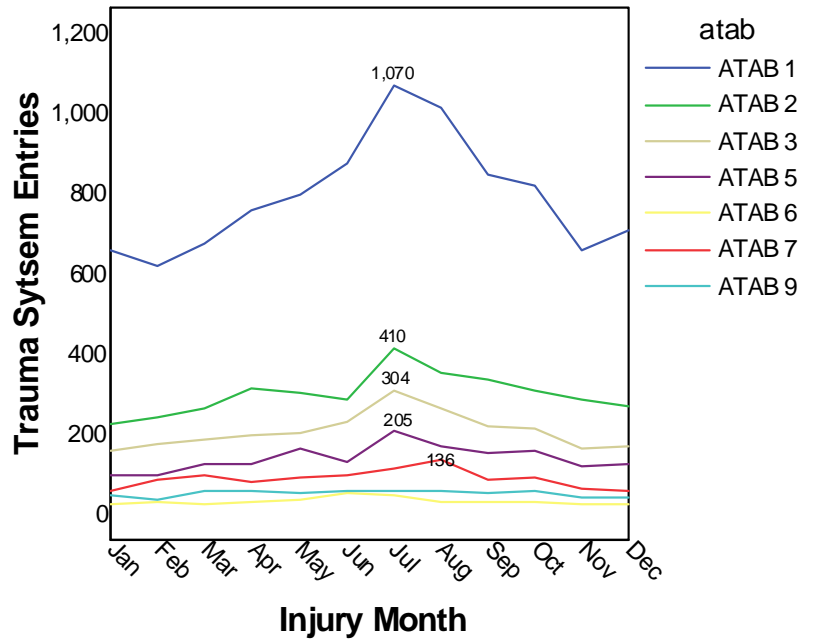


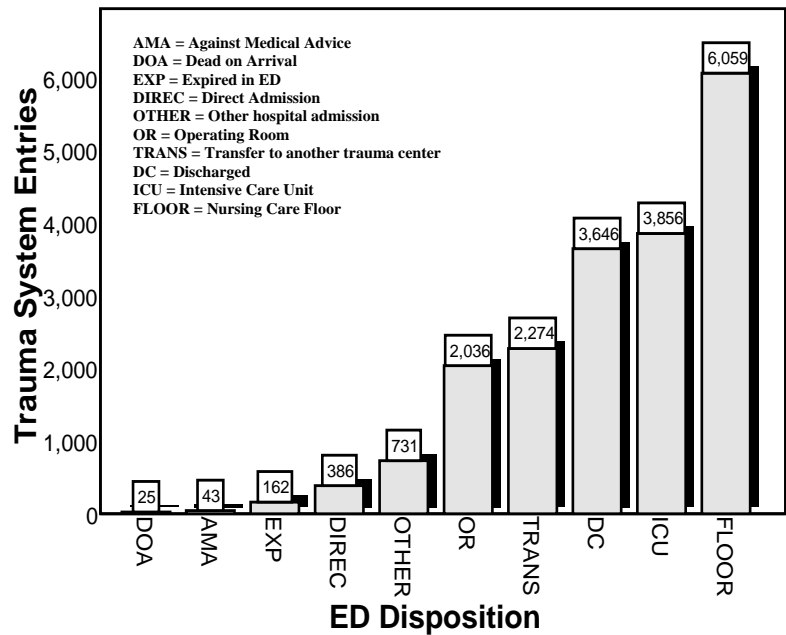
Figure 46 identifies the months of July and August as the months with the highest trauma volume across the state. Each ATAB sees their regional peak volume in different months, generally spread across the summer months. The peak monthly volume is presented here on each ATAB line. Statewide, the fewest number of patients are injured during January and February. ATAB 1, containing the greatest resident population of all the ATABs and the two Level I trauma centers, receives the greatest number of patients in each month.

Figure 46: Trauma System Patients by ATAB by Month



Sixty-eight percent of trauma patients who arrived at a trauma center Emergency Department were admitted to the hospital. Patients were admitted to the nursing care floor (31.5%), intensive care unit (20.1%), operating room (10.6%), direct admission (2.0%), or were placed in another patient care area, such as an ED Observation Unit (3.8%). Patients discharged home from the ED or leaving Against Medical Advice (AMA) accounted for 19.2% of patients. Almost twelve percent (11.8%) of patients were transferred to another trauma center for specialty care. Dead on arrival (DOA) and expired patients accounted for 1.0%.

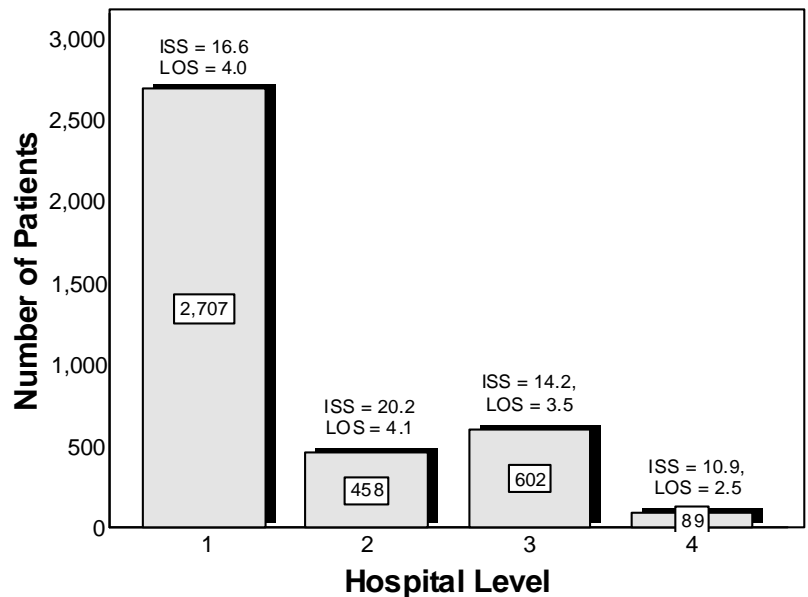
Figure 47: Disposition From the Emergency Department



N = 19,218

Figure 48 shows the number of patients admitted to the ICU following their traumatic injury. Each level of trauma center is represented, with the mean Injury Severity Score (ISS) and length of stay (LOS) noted for each. All ICU admissions are included in this chart, regardless of their final outcome (alive or expired).

Figure 48: Intensive Care Unit Admissions by Hospital Level



N = 3,856, ISS = Injury Severity Score, LOS = Length of Stay

Because outcomes for patients with traumatic injuries often depend on prompt surgical care, Oregon designed its trauma system to optimize the availability of surgeons. Level I trauma centers have a surgeon and a fully staffed operating room immediately available to a patient 24-hours a day. Level II and III trauma hospitals have a surgeon and staffed operating room available within minutes of the arrival of an injured patient. Level IV hospitals are not required to provide surgical services although many in Oregon do. Figure 49 displays the average time from patient arrival to the hospital to the time anesthesia was administered in the Operating Room (OR). This interval includes the time to receive the patient, perform assessment and critical procedures, and move the patient to the OR. The statewide average time to the OR for patients requiring emergency operative management was 1.8 hours.

Figure 49: Hospital Arrival to Emergency Operative Procedure

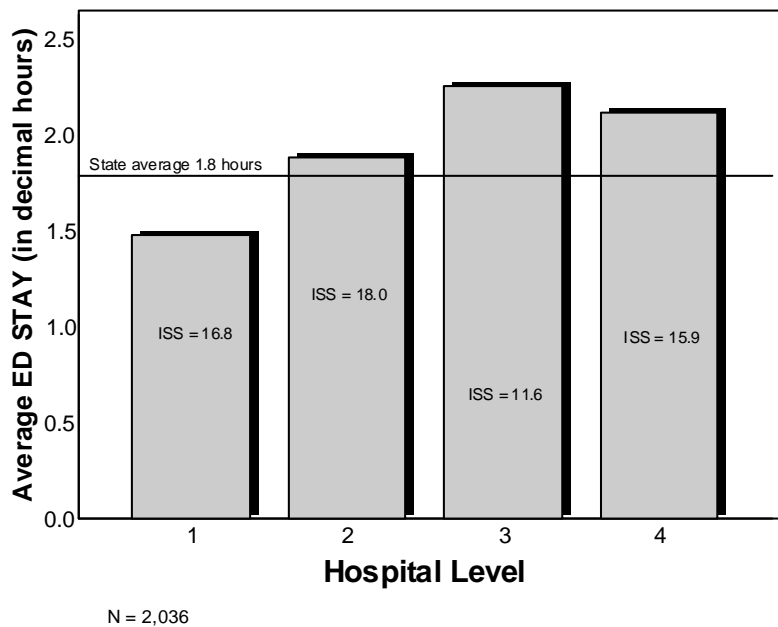


Table 3 lists the total number of operative procedures – emergency or otherwise - by body region. Of all patients admitted for trauma center care, approximately 25.9% require surgical management. This list is not mutually exclusive; a patient may have received one or more procedures as a result of their traumatic injuries.

Table 3: All Operative Procedures by Body Region

Body Region	Number of Procedures
Soft tissue	1,093
Cardiac/vascular	792
Face and facial bones	1,486
Abdominal viscera	1,756
Pulmonary/chest	865
Brain and skull	1,621
Spinal cord and spine	942
Genito-urinary/GYN	234
Musculoskeletal	8,328
Endocrine/lymphatic	46
Total	17,163

Transferring patients between hospitals allows the patient to receive the specialty care services they need. Almost 3,600 patients were transferred from one hospital to another for definitive trauma care.

Of the 2,912 patients received in transfer at a Level I trauma hospital, 32.8% came from non-trauma hospitals in Oregon. When trauma hospitals transferred their patients to a Level I, less than 3% came from a Level II hospital; 35.4% were from a Level III; and 18.0% were from a Level IV. A rare occurrence (0.2%) was a lateral transfer from the other Level I hospital. Patients transferred from out of state accounted for 8.7% of the transfer volume.

Figure 50: Patients Transferred to Level I Trauma Hospital

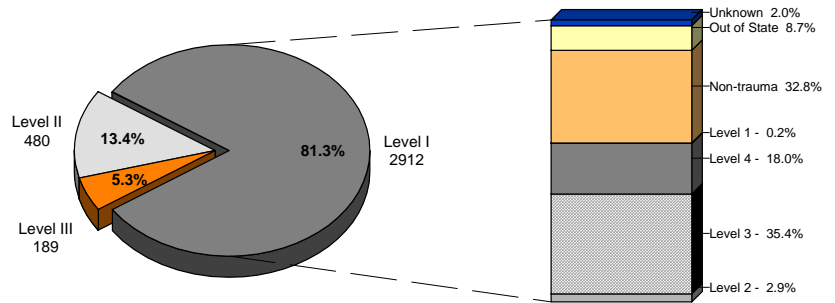


Figure 51: Patients Transferred to Level II Trauma Hospital

Of the 480 patients received in transfer at a Level II trauma hospital, 10.2% came from non-trauma hospitals in Oregon. Of those patients who were received from trauma hospitals, 1.5% were moved laterally from a Level II; 39% were transferred from a Level III; and 47.9% were transferred from a Level IV. A rare occurrence (0.2%) was a transfer from a Level I to a Level II trauma hospital. Patients transferred from out of state accounted for 0.4% of the transfer volume.

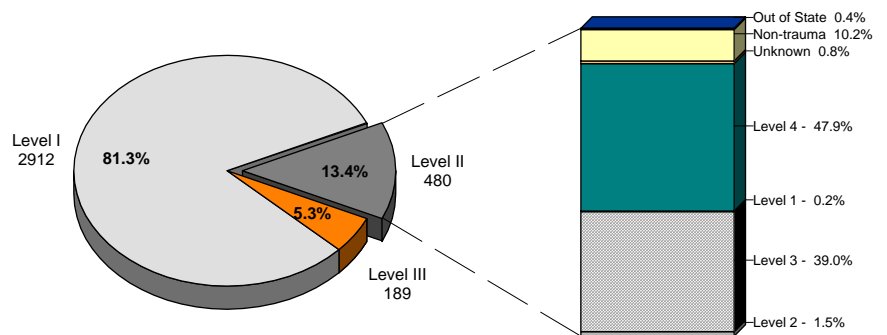
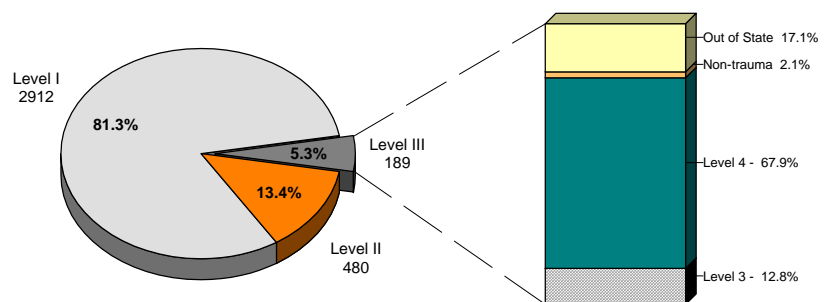


Figure 52: Patients Transferred to Level III Trauma Hospital

Of the 189 patients received in transfer at a Level III trauma hospital, 2.1% came from non-trauma hospitals in Oregon. Most (67.9%) were transferred from a Level IV trauma hospital but 12.8% were transferred laterally from another Level III. Patients transferred from out of state accounted for 17.1% of the trauma transfer volume.



The average length of stay for a trauma patient has declined since 1991. The most dramatic reduction occurred in patients who required hospitalization for a major injury.

Figure 53: Hospital Length of Stay

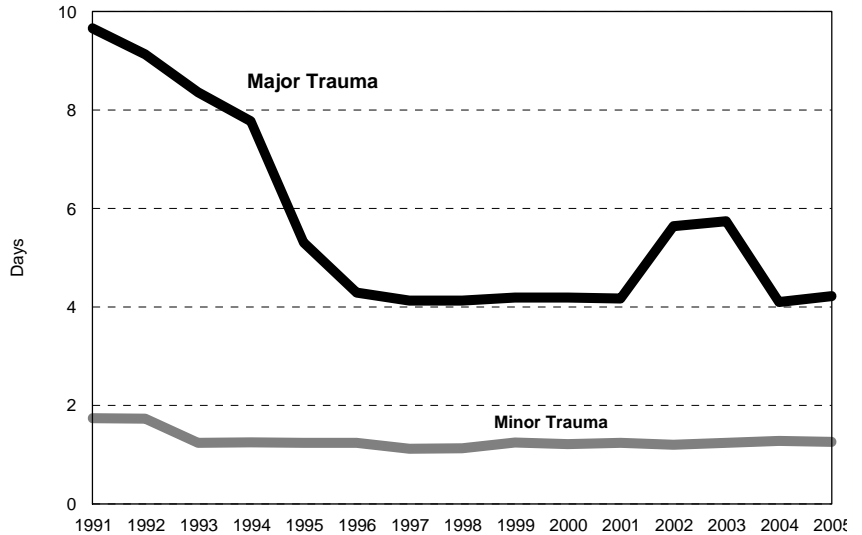
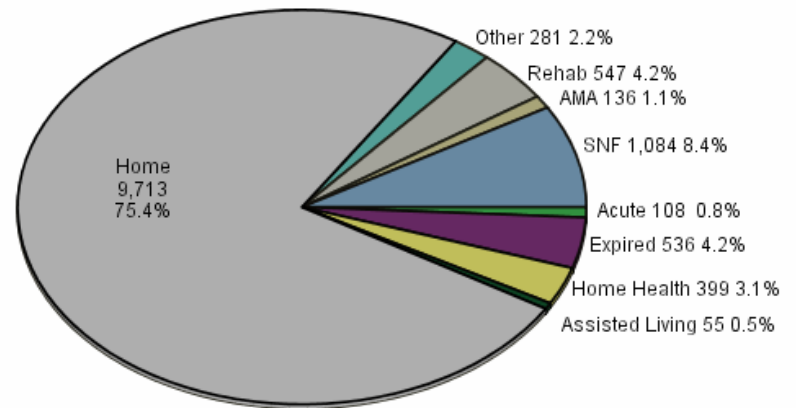


Figure 54 displays the disposition of trauma patients who were hospitalized for definitive care of their injuries. Seventy-five percent of patients were able to return home for further recovery, with an additional 3.1% requiring home health services. Just over 4% were discharged to a rehabilitation center, while 8.4% required additional care in a skilled nursing facility (SNF). Just over 4% of the patients who were hospitalized died during their hospital stay.

Figure 54: Disposition Following Hospitalization



N = 12,876, exclude unknown.

