

# 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**

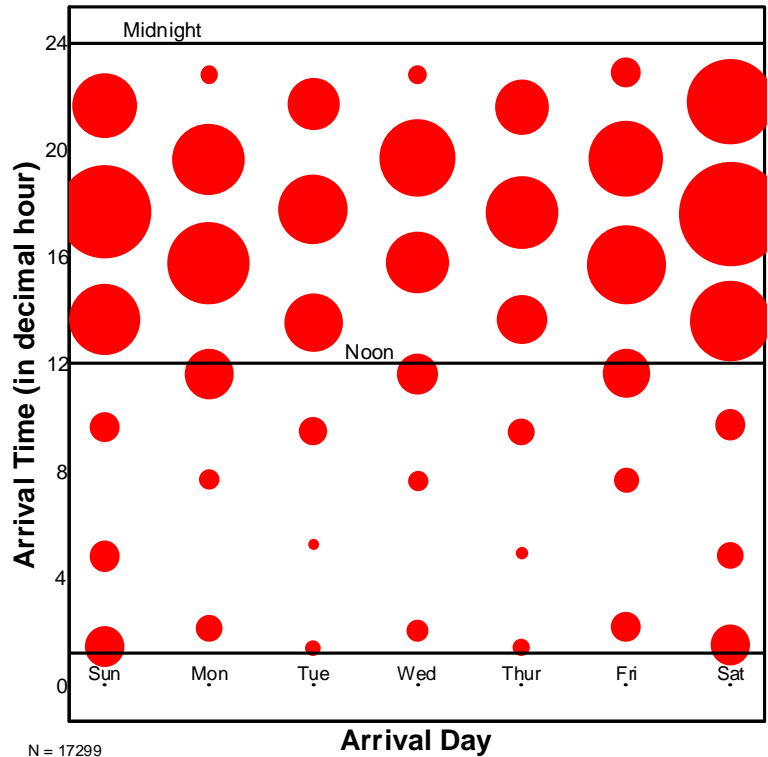


Figure 46 identifies the months of July and August as the months with the highest trauma volume across the state. Each ATAB sees their regional peak volume in different months, generally spread across the summer months. The peak monthly volume is presented here on each ATAB line. Statewide, the fewest 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**

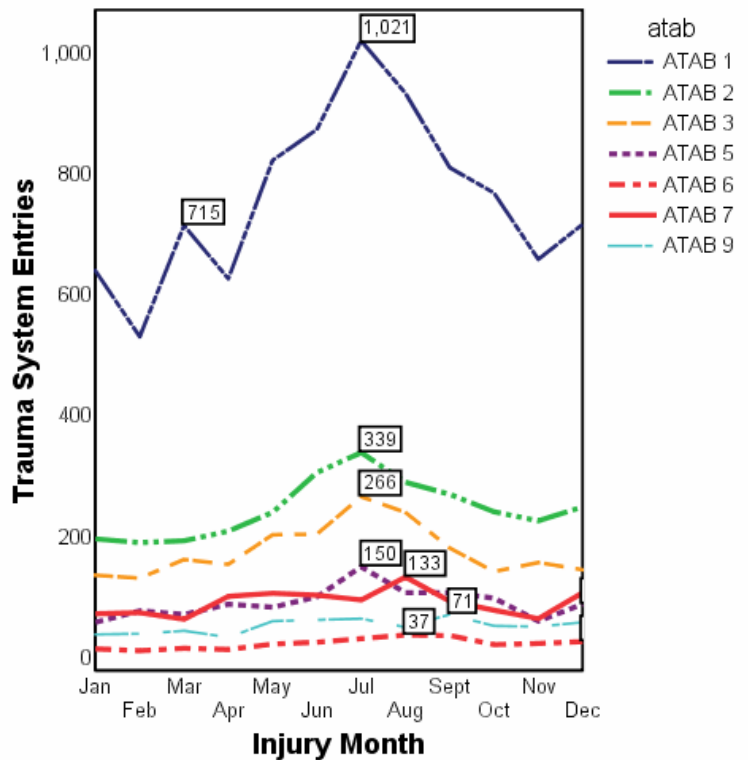


Figure 47 identifies the disposition for the trauma patients who arrived at trauma center Emergency Departments. Seventy percent of patients were admitted to the hospital. Patients were admitted to the nursing care floor (32.4%), intensive care unit (20.9%), operating room (11.2%), direct admission (1.4%), or were placed in another patient care area, such as an ED Observation Unit (4.7%). Patients discharged home from the ED or leaving Against Medical Advice (AMA) accounted for 17.2% of patients. Eleven percent of patients were transferred to another trauma center for specialty care, and dead on arrival (DOA) and expired patients accounted for 1.2%.

**Figure 47: Disposition From the Emergency Department**

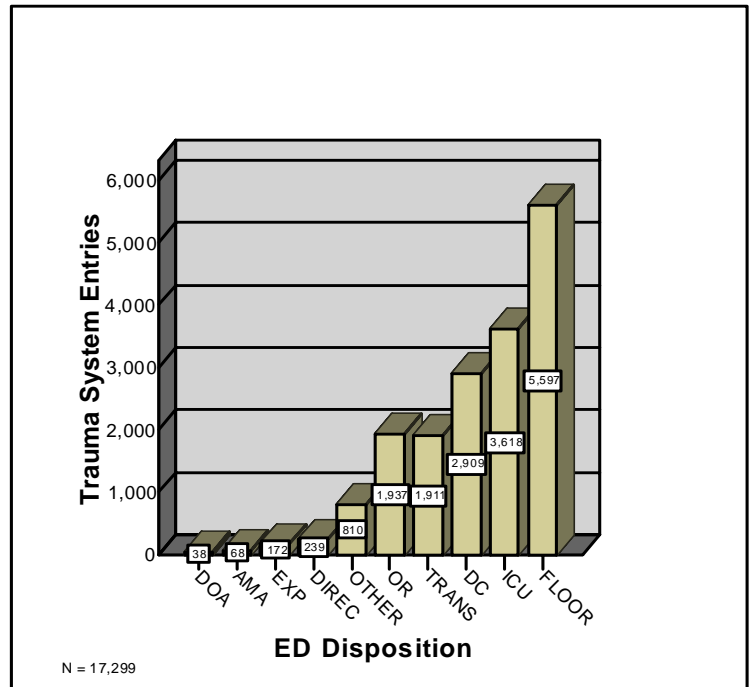
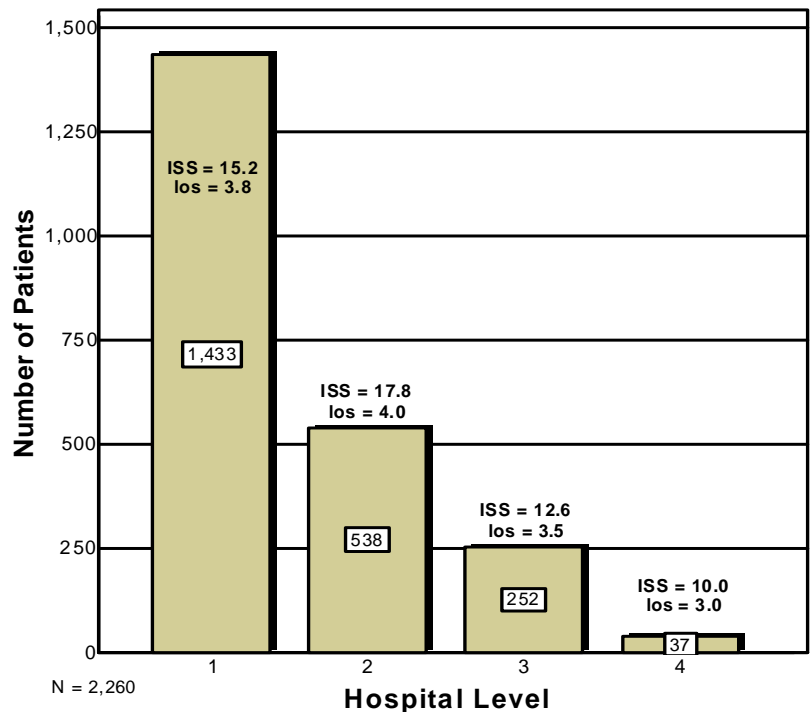


Figure 48 shows the number of patients admitted to the ICU following their traumatic injury. Each level of trauma center is represented, with the mean Injury Severity Score (ISS) and length of stay (LOS) noted for each. All ICU admissions are included in this chart, regardless of their final outcome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

**Figure 48: Intensive Care Unit Admissions by Hospital Level**



Because life-threatening injuries often require prompt surgical care, Oregon designed its trauma system to optimize the availability of surgeons. A patient's outcome is often highly dependent on the delivery of rapid and appropriate care, which may include operative management. 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 calculated from patient arrival to the hospital to the time anesthesia was administered in the Operating Room (OR). This length of stay demonstrates the time to receive the patient, perform assessment and critical procedures, and move the patient to the OR.

**Figure 49: Hospital Arrival to Emergency Operative Procedure**

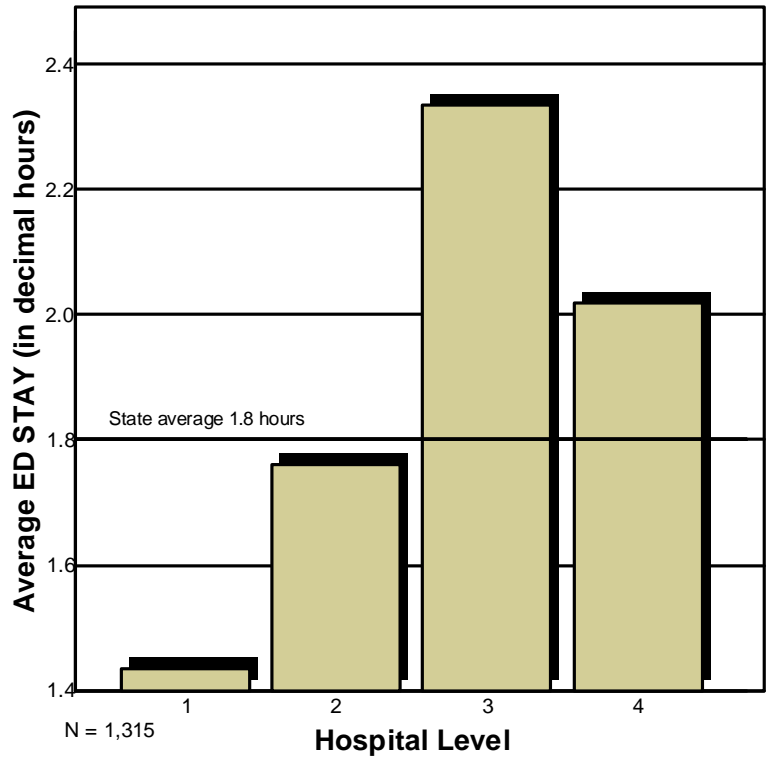


Table 3 lists the total number of operative procedures by body region. Of all patients admitted for trauma center care, approximately 37% require surgical management. This list is not mutually exclusive; a patient may have received one or more procedures as a result of their traumatic injuries.

**Table 3: Operative Procedures by Body Region**

Body Region	Number of Procedures
Soft tissue	1,727
Cardiac/vascular	763
Face and facial bones	1,509
Abdominal viscera	2,018
Pulmonary/chest	900
Brain and skull	1,477
Spinal cord and spine	972
Genito-urinary/GYN	226
Musculoskeletal	7,135
Endocrine/lymphatic	46
<b>Total</b>	<b>16,773</b>

Transferring patients between hospitals allows the patient to receive the specialty care services they need. Over 3,100 patients were transferred from one hospital to another for definitive trauma care.

Figure 50 demonstrates that of the 2,586 patients received in transfer at a Level I trauma hospital, 34.9% came from non-trauma hospitals. When trauma hospitals transferred their patients to a Level I, less than 3% came from a Level II hospital; 34% were from a Level III; and 20.2% 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% of the transfer volume.

**Figure 50: Patients Transferred to Level I Trauma Hospital**

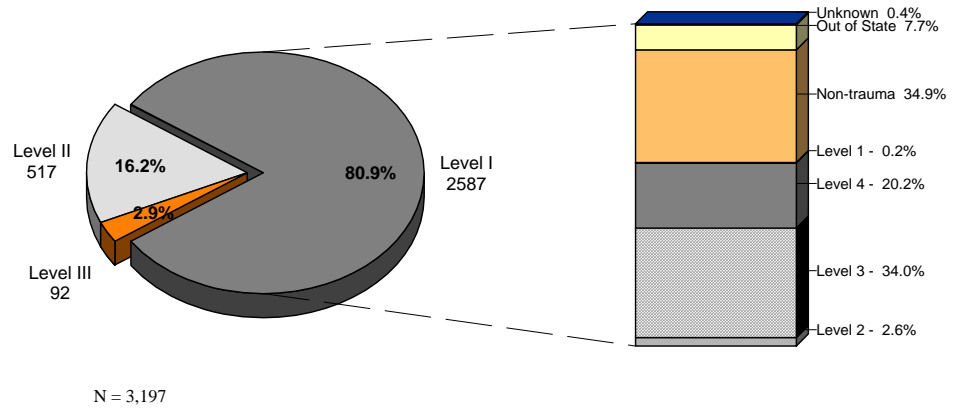


Figure 51 demonstrates that of 518 patients received in transfer at a Level II trauma hospital, 6.6% came from non-trauma hospitals. Of those patients who were received from trauma hospitals, 2.1% were moved laterally from a Level II; 29% were transferred from a Level III; and 56.1% were transferred 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 5% of the transfer volume.

**Figure 51: Patients Transferred to Level II Trauma Hospital**

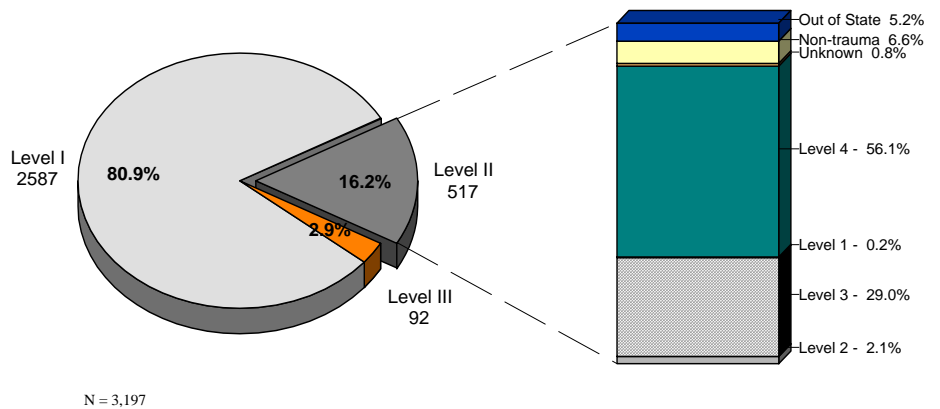


Figure 52 demonstrates that of the 93 patients received in transfer at a Level III trauma hospital, 2.2% came from non-trauma hospitals. Fifty-six percent were transferred laterally from another Level III trauma hospital, and 33.7% were transferred from a Level IV. One patient was transferred from a Level I trauma hospital; no transfers occurred from a Level II to a Level III. Patients transferred from out of state accounted for 5% of the trauma transfer volume.

**Figure 52: Patients Transferred to Level III Trauma Hospital**

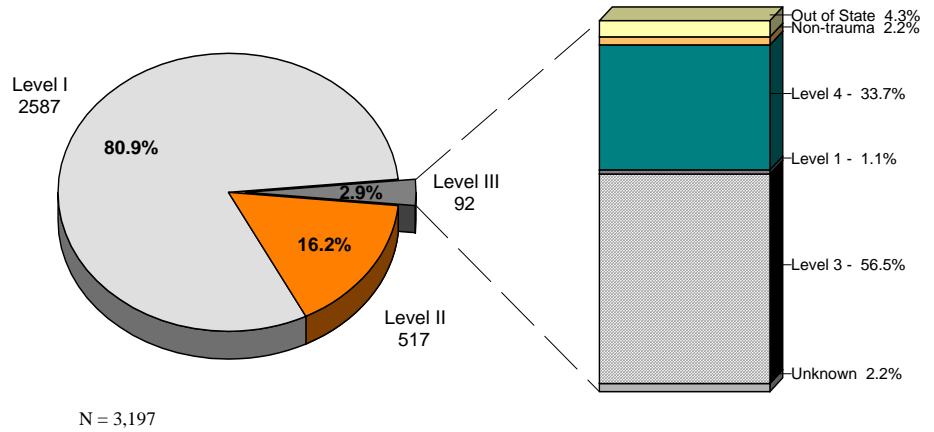


Figure 53 depicts the average length of stay for a trauma patient following their traumatic injury, which has declined over the past 10 years. The most dramatic reduction occurred in patients who required hospitalization for a major injury; however that trend shifted upward in 2002-03.

**Figure 53: Hospital Length of Stay**

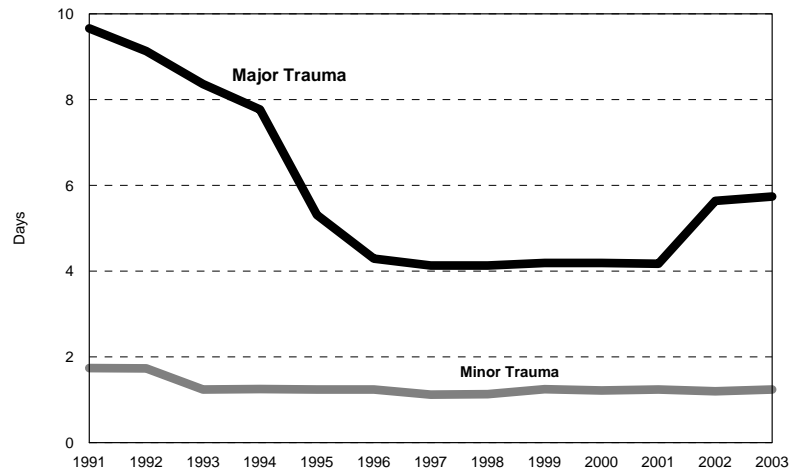
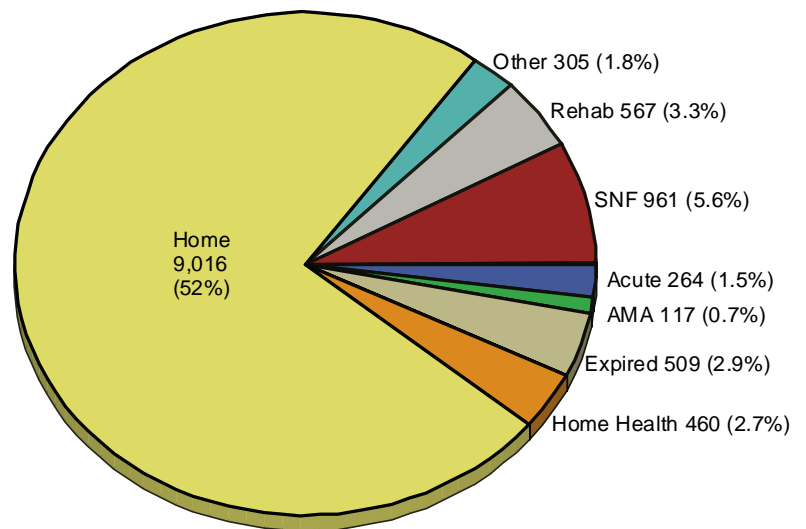


Figure 54 displays the disposition of trauma patients who were hospitalized for definitive care of their injuries. Fifty-two percent of patients were able to return home for further recovery, with an additional 2.7% requiring home health services. Just over 3% were discharged to a rehabilitation center, while 5.6% required additional care in a skilled nursing facility (SNF). Just under 3% of the patients who were hospitalized died during their hospital stay.

**Figure 54: Disposition Following Hospitalization**



N = 12,199, exclude unknown