

Trauma ED Through put

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Level IV Trauma Center

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- Trauma, Trauma, Trauma
 - ATLS

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- Disclosure.
 - I have stock in and on the Advisory Board of Global Med... A Telemedicine company.

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- Treat the patient first
 - Treat the patient as a family member
 - Put the team together to put the patient first

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- Trauma is a Team Sport
 - Pre-hospital
 - ER

ER Doc, Nurse, Tech

Rest of the Team

Surgeon, Ortho, OR, Vascular, Neurosurgeon

Transfer Team

Trauma Update

- Permissive Hypotension is real
- Fast Ultrasound and IVC measurement
- No more Pre-hospital, or ED Fluid, Fluid, Fluid
- Hypertonic fluid is being used in the OR
- Echo is being used more in ICU setting to monitor
- Hybrid OR.... CT and Angiocapabilities
- Balloon in the aorta just below the diaphragm

Trauma is Time Sensitive Disease

- Golden Hour
- 50% of all trauma deaths happen in first 2.6 hrs
- Trauma should be treated Fast. Time=Life
 - Like STEMI
 - Like Stroke and Thrombolysing
 - Sepsis
 - Time Protocols
 - Track everything

Level I

- Physiologic
- Mechanism

TRAUMA GUIDELINES

ANYONE MEETING TRAUMA CRITERIA SHOULD HAVE TEAM ACTIVATED

TRAUMA CRITICAL

- Respiratory compromise (distress, intubated, and/or hypoxic)
- Glasgow Coma Scale $<$ or $=$ 13
- Systolic BP $<$ 90 in adults
- Signs of shock in pediatric patients
- Penetrating trauma to the head, neck, chest or abdomen/pelvis
- Blunt abdominal trauma with hypotension
- Pneumothorax or flail chest
- Amputation above the wrist or ankle
- Blood infusing during transport

TRAUMA GUARDED

- Burns to face, with no respiratory difficulties $>$ 20% BSA
- Spinal Cord Injury with or without limb paralysis
- Open or depressed skull fracture
- Rib fractures or pulmonary contusion
- Poly Trauma $<$ 6 years or $>$ 60 years multiple injury sites
- Two or more long bone fractures
- Pelvic fracture
- Pregnancy $>$ 3 months
- Severe Head Injury

TRAUMA MECHANISM

- Fall $>$ 15 feet
- Fall $>$ twice patient's height (peds)
- Pedestrian v. motor vehicle $>$ 5 MPH
- MCA or ATV $>$ 20 MPH
- MVA $>$ 20 MPH unrestrained
- MVA $>$ 40 MPH, restrained
- High speed rollover
- Ejection from vehicle
- Death in same compartment
- Intrusion $>$ 18 inches
- Extrication $>$ 20 minutes
- Bicycle $>$ 5 MPH with injury
- Equestrian trauma – falls, dragged by, bucked off, etc.
- Snow sports injuries to head, neck, chest or abdomen/pelvis

TO ACTIVATE TRAUMA TEAM: Dial 6299, then 77 then **1
DOCUMENT IN TRAUMA LOG
RUN SHEET AND t-SHEET MUST HAVE INITIAL AND SECOND GCS

Trauma Activation

- Full Activation
 - ER Doc
 - Surgeon
 - Primary nurse, other
 - Charge nurse
 - Lab
 - Xray

Partial Activation

- ER Doc
- Primary Nurse
- Charge Nurse
- Lab
- Xray

TRAUMA GUIDELINES

ANYONE MEETING TRAUMA CRITERIA SHOULD HAVE TEAM ACTIVATED

TRAUMA CRITICAL

- Respiratory compromise (distress, intubated, and/or hypoxic)
- Glasgow Coma Scale $<$ or $= 13$
- Systolic BP < 90 in adults
- Signs of shock in pediatric patients
- Penetrating trauma to the head, neck, chest or abdomen/pelvis
- Blunt abdominal trauma with hypotension
- Pneumothorax or flail chest
- Amputation above the wrist or ankle
- Blood infusing during transport

TRAUMA GUARDED

Below Trauma < 6 years or > 60

- Glasgow Coma Scale < 8 or = 13
- Systolic BP < 90 in adults
- Signs of shock in pediatric patients
- Penetrating trauma to the head, neck, chest or abdomen/pelvis

- Amputation above the wrist or ankle
- Blood infusing during transport

TRAUMA GUARDED

- Burns to face, with no respiratory difficulties > 20% BSA
- Spinal Cord Injury with or without limb paralysis
- Open or depressed skull fracture
- Rib fractures or pulmonary contusion

- Poly Trauma < 6 years or > 60 years multiple injury sites
- Two or more long bone fractures
- Pelvic fracture
- Pregnancy > 3 months
- Severe Head Injury

TRAUMA MECHANISM

- Fall > 15 feet
- Fall > 3 times patient's height

- Death in same compartment
- Intrusion > 18 inches

- Open or depressed skull fracture
- Rib fractures or pulmonary contusion

- Pregnancy > 3 months
- Severe Head Injury

TRAUMA MECHANISM

- Fall > 15 feet
- Fall > twice patient's height (peds)
- Pedestrian v. motor vehicle > 5 MPH
- MCA or ATV > 20 MPH
- MVA > 20 MPH unrestrained
- MVA > 40 MPH, restrained
- High speed rollover
- Ejection from vehicle
- Death in same compartment
- Intrusion > 18 inches
- Extrication > 20 minutes
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TO ACTIVATE TRAUMA TEAM: Dial 6299, then 77 then **1

DOCUMENT IN TRAUMA LOG

RUN SHEET AND t-SHEET MUST HAVE INITIAL AND SECOND GCS

Level I Trauma

- Full Activation
- Partial Activation
 - Track Everything
 - Xray, CT done quickly Head/pelvis CT takes 54 sec
 - Radiologist notified...track turn around time.
 - Night Radiologic Reads
 - Lab decide of needing O neg, Massive transfusion

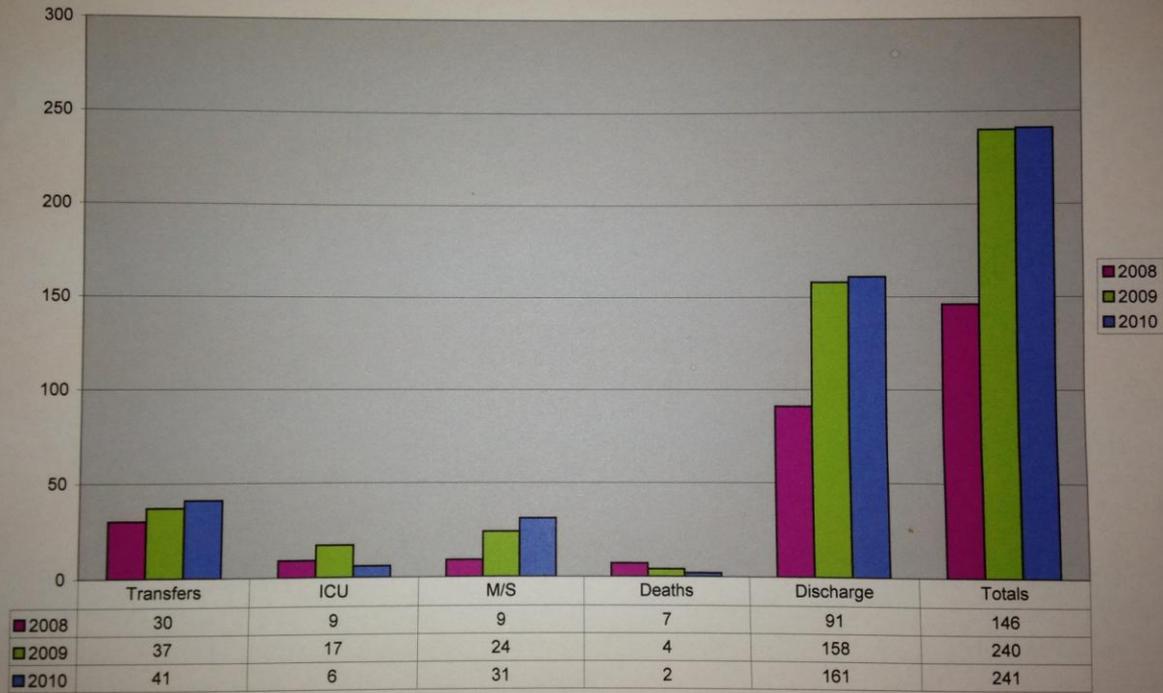
Summit Transfers		
2009		
<2 hrs	9	24 %
>2 hrs	28	76%
2010		
<2 hrs	12	30%
>2 hrs	27	69%
2011		
<2 hrs	10	32%
>2 hrs	21	67%

Summit Transfers		All Level IV Transfers
2011		
< 2 Hrs	10/ 32 ⁰ %	<2 Hrs 175/25 ⁰ %
> 2 Hrs	21/67 ⁰ %	> 2 Hrs 527/75 ⁰ %

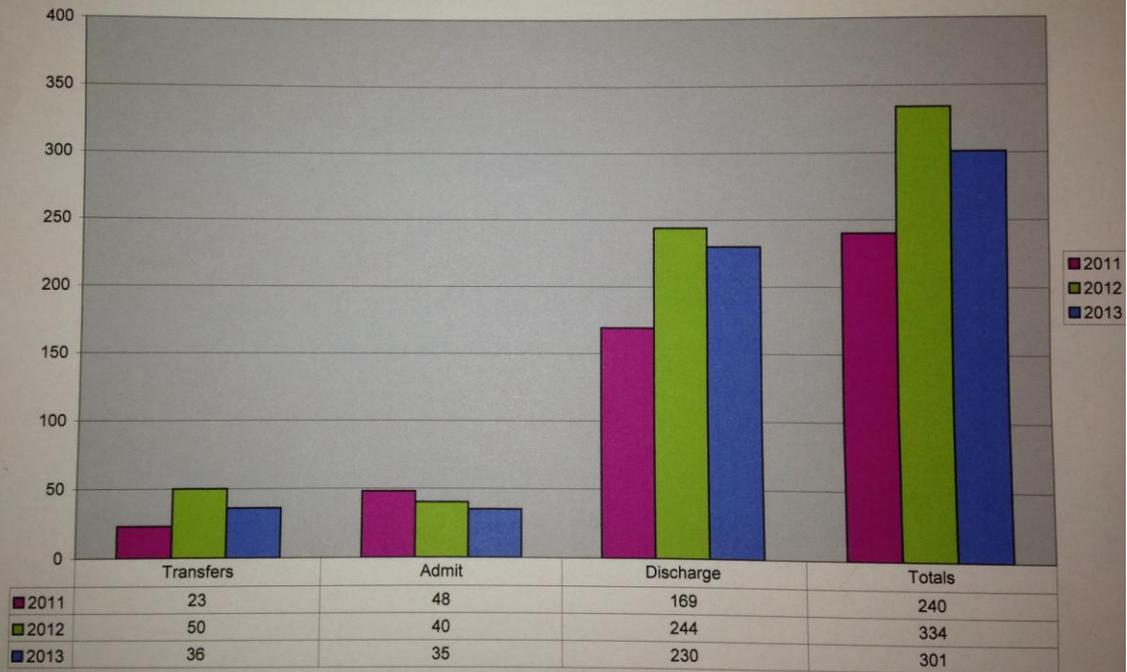
Summit Transfers 2012

< 2 Hours	10	21%
>2 hours	37	78.2%

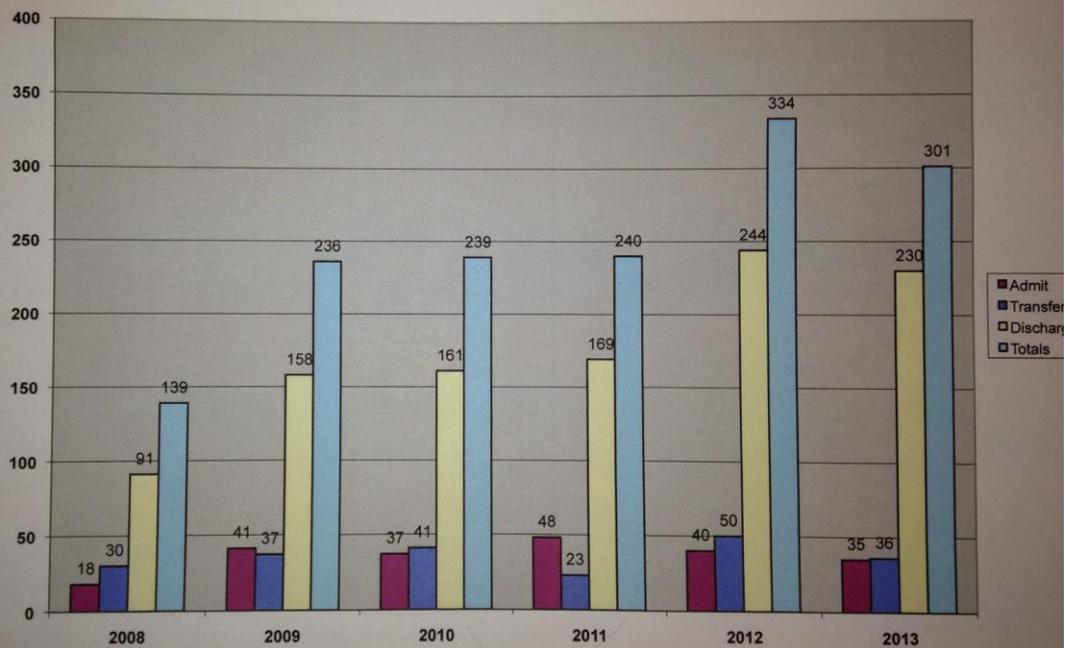
Yearly Trauma Data



Yearly Trauma Data



Trauma Data 2008-2013



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- Summit Hurdles
 - ED Physician buy in
 - Level I Trauma communicated to Radiologist
 - Level I Trauma night Radiologists reads

 - Get the Radiologist coming to meetings.
 - Track By Radiologist
 - Track Night Reads
 - READ THE CT YOURSELF.

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- Summit Hurdles
 - Surgeon Buy in
 - Helped having a Trauma/General/Vascular

Trauma Documentation

- Trauma Flow
- Trauma Activation order
- Trauma Activation First thing on MDM
- Primary and Secondary Survey Timed and Repeated
- Document when surgeon called, return call, in ER
- Document when ortho called, return call, in ER
- Document Transfer call placed, talked to Trauma
- Physician side > 30 min of Critical Care
- Hospital Side > 30 min of Critical Care
 - Frequent Vitals. One on One Nursing

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- Level IV Helicopter review

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- Summary
 - Trauma is Time sensitive
 - Label it Level I trauma
 - Can down grade it and discharge if appropriate eval
 - If Transferring put the goal of less that 2 hours... I would say well under 1 hour
 - Damage Control operation and keep what you can
 - Track and review everything