Chandler Regional Medical Center Journey to Level I Trauma Center.

Lori Wass, MSN
Trauma Program Manager
December 4, 2015
Timeline

• October 2012-Presentation to Community Hospital Board
• April 2013-TPM hired
• September 2013-TMD hired
• September 2013-Trauma Registrar hired
• October 2013-Trauma Registry begin
• March 24, 2014-AZ DHS designated CRMC as a Provisional Level I Trauma Center
• June 30 2015-ACS Verification visit for Level I Trauma Center Obtained Level I Verification.
East Valley Trauma Facilities 2012

Level I Centers
• St. Joe’s
• JCL
• Banner Good Sam
• Maricopa County
• Osborn

Level III (actual or in-process)
• Banner Desert
• Banner Gateway
• Banner Baywood
• Mountain Vista

Level IV (in-process)
• Banner Ironwood

Trauma is now the Competitive Standard in the East Valley
Chandler Regional’s Entry into Level I Trauma
Chandler Regional’s Catchment Area

**Level I Centers**
- St. Joe’s
- Good Sam
- Maricopa
- Osborn
- Tucson Medical
- JCL
- Flagstaff

*CRMC Trauma I Service Area*
Demographics of CRMC’s likely Trauma Volume

**Incremental Volume**
- 1,600 to 1,700 Pts.
- 5,600 to 5,900 Inpt Days
- ADC of 15 to 16

**Payer Mix**
- Commercial 33%
- MC/MC Risk 13%
- AHCCCS 28%
- Private Pay 17%
- Other 10%

**Injury Severity Score (ISS)**
- 0-8 57%
- 9-15 22%
- 16-24 12%
- 25-75 7%
- Unknown 2%

**Other Statistics**
- 89% - Blunt Trauma
- 50% - MVA Type
- 84% - Ground Ambulance
- 61% - Admitted
- 30% - Discharged Home

Source: State Trauma Registry for CY2010 & CY2011
Timeline to Trauma Initial

Milestones to Certification

- Completion of the 9 months to start-up period
- Apply to the State of Arizona and receive provisional status
- 12 – 18 month window to Receive ACS Certification
- 5 Month Gap before Tower C opens
Timeline to Trauma Actual

Milestones to Certification

- Completion of the 9 months to start-up period
- Apply to the State of Arizona and receive provisional status
- 12 – 18 month window to Receive ACS Certification
- 5 Month Gap before Tower C opens
High Priority Early Considerations

Timing of Dignity Health’s Announcement
Possible Employment of Trauma Surgeons
Political Hurdles
Public Announcement
ICU Capacity Constraints
Implementation of Trauma Program
To Do List:

- Develop PIPS Plan
- Develop training plan for clinical and non-clinical staff
- Development of Policies/Protocols/Guidelines
- Development of staff requirements
- Development of documentation system
- Development of Trauma Activation Criteria
To Do List:

• Obtaining appropriate supplies/capital equipment

• Implementation of Trauma One Database

• Establishment of Residency program

• Development of Research program

• PRQ for State provisional status
Develop PIPS Plan

• PIPS plan developed
  – Needed to get buy-in
  – Quality had a hospital-wide PIPS plan
  – Performance Improvement
    • Indicators:
      – Response times
      – Appropriate triage
      – Complications
      – Dwell times
Training plan for clinical and non-clinical staff

• Education plan
  - EMS and other outlying facilities
  - Skills stations and lectures for all ED staff
  - Lectures for all hospital staff – Trauma Program Manager and Trauma Surgeons
    • What is a trauma center?
    • How to take care of trauma patients?
  - Skills and lectures for OR, TICU, Floor staff
  - TNCC
  - ATCN
  - Mock Traumas
  - Department meetings
Policies/Protocols/Guidelines

- Policies
  - Trauma Team Activation
  - Trauma Member Response
  - Trauma Surgeon Role
  - Back-up Trauma Surgeon Role
  - ER Physician Role in Trauma
  - ER Nurse Trauma Team Role
  - ICU Nurse Trauma Team Role
  - OR Nurse Trauma Team Role
  - Trauma Anesthesiologist Role
  - CT Tech Role in Trauma Team
  - Lab Phlebotomist Role in Trauma Team
  - Radiology Role in Trauma team
  - Diversion of EMS of Trauma Patients
Policies/Protocols/Guidelines

- Protocols/Guidelines
  - Standardized order sets - Trauma profiles/panels
  - Massive Transfusion protocol
  - Clearance C-spine
  - Airway management
  - Weaning protocol
  - ETOH Withdrawal
  - IVC filters
  - Management of Mangled Extremity
  - Non-operative Spleen
Staff Requirements

• Who can do Trauma?
  - Initially All wanted to be able to take care of Trauma patients.
  - All were evaluated on the care and documentation on trauma patients.
  - RN needed trauma skills day and ATCN or TNCC (Preferred ATCN)
  - Techs had to do the trauma skills days
  - After evaluation changes were made.
    • Went with a core group
      - Advantages
        • More familiar with documentation, skills and care of the trauma patient
Documentation requirements

• **Electronic vs Paper**
  - Change for facility
  - Implementation of new EHR planned in 2014
  - Medical Records

• **Trauma Flowsheet**
  - 5 different samples used as references
  - 5 page Trauma flowsheet developed
    • Has all the elements for the trauma database
    • Accountability for RN to scan into EHR
    • SBAR utilized for feedback and changes in processes
    • Audits on Trauma Flowsheet key elements done weekly for compliance
Trauma Activation Criteria

- Development of Activation Criteria
  - Done in conjunction with CDC field triage criteria
Trauma Activation Criteria

Measure Vital signs and level of consciousness

- GCS < 10 or
- Systolic BP < 90 mmHg (80 mmHg < age 8) or
- Respiratory < 10 or > 29 or, < 20 in infant aged < one year
- Unstable airway
- Shock

Assess anatomy of Injury

- All penetrating injuries to head, neck, torso, and extremities proximal to elbow and knee
- Flail chest
- Two or more proximal long bone fractures
- Crushed, degloved, or mangled extremity
- Amputation proximal to wrist and ankle
- Pelvic fractures
- Open or depressed skull fracture
- Paralysis OR
- Unstable patients Transferred from other hospitals
- Physician Discretion

Assess mechanism of Injury & evidence high energy impact

1. Falls
   - Adults: > 20 feet (one story is equal to 10 feet)
   - Children: > 10 feet or two or three times the height of the child
2. High Risk auto crash
   - Intrusion: > 12 inches, occupant site; > 18 inches, any site
   - Ejection (partial or complete) from the vehicle
   - Death in same passenger compartment
   - Vehicle telemetry data consistent with high risk of injury
3. Auto vs. Pedestrian/bicyclist thrown, run over, or with significant (> 20 mph) impact.
   - Motorcycle crash > 20 mph

Assess special patient or system considerations

1. Age
   - Older Adults: Risk of injury/death increases after age 55 years
   - Children: should be triaged preferentially to pediatric-capable trauma centers
2. Anticoagulation and bleeding disorders
3. Burns
   - Without other trauma mechanism: Triage to burn facility
   - With trauma mechanism: Triage to trauma center
4. Time sensitive extremity injury
5. End-stage renal disease requiring dialysis
6. Pregnancy > 16 weeks OR
7. EMS provider judgment

Not a Trauma Activation

Activate Trauma Code Team

Activate Trauma Alert Team
Trauma One Database

- Vendor - Lancet
  - Trauma registry complete data set
    - Initially hired 1 FTE - September 2013
    - Currently 5 FTE for Trauma Registry
    - TQIP started July 2015
    - ICD-10 coding implemented October 2015
Residency Program

- Requirement for ACS Level I Trauma Centers

- Established a relationship with William Beaumont Army Medical Center in El Paso, TX
  - Residents rotation schedule established at CRMC
  - Also included Research Residents

Since establishing this relationship we have increased our residents to include Orthopedic and Family Medicine from other programs.
Research Program

• Trauma Research requirement for ACS Level I Trauma Centers
  – Trauma Research Coordinator hired- November 2013
  – Trauma Research Medical Director appointed- March 2014
  – Established a scorecard for status of publications and compliance with ACS
  – Foundation funds secured to support Trauma Research
  – CRMC is participating in several multi-center studies
  – At the end 10 Articles completed and met all requirements with no deficiencies
## PRQ for State

- **PRQ for state for provisional status**
  - Good tool to ensure all the requirements are in place
  - Took all the State criteria and compared to ACS criteria
    - Included rationale and documentation of how the criteria was met

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Details</th>
<th>How meet</th>
<th>Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chapter 1</strong> &lt;br&gt; Trauma Systems</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State Level I:</td>
<td>ACS Level I: All trauma centers must participate in the state and/or regional trauma system planning, development, or operation</td>
<td>ACS: Examples to meet: State trauma planning committees or commissions, EMS bureaus, State COT, local EMS rule-making bodies</td>
<td>Participation in AMES, AZTRACC, TRUG, TEMPI, Trauma workgroup on rewriting the AZ State Trauma Plan. Need documentation of participation for Lori and Dr. Moore. Minutes and or attendance confirmation&lt;br&gt;Need current proof Have TRUG STAB info and AZTRACC</td>
</tr>
<tr>
<td><strong>Chapter 2</strong> &lt;br&gt; Description of Trauma Centers and Their Roles in a Trauma System</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State Level I:</td>
<td>ACS Level I: Surgical commitment is essential for a properly functioning trauma center.</td>
<td>Board resolution/MEC resolution document. Does this need to go to surgical committee? Surgical leadership..add Dr. Moore CV, job description, PIP attendance with surgical attendance highlighted</td>
<td>Need a current one signed going to MEC 2-6-15</td>
</tr>
</tbody>
</table>
Demographics of CRMC’s Actual Trauma Volume

Incremental Volume
• 3265 Pts. annualized

Payer Mix
Commercial 44%
MC/MC Risk 22%
AHCCCS 15%
Private Pay 13%
Other 6%

Injury Severity Score (ISS)
0-8 63%
9-15 29%
16-24 4%
25-75 4%

Other Statistics
92% - Blunt Trauma
40% - MVA Type
23% - GLF
78% - Ground Ambulance
15% POV
7% Air
81% - Admitted
17% - Discharged Home

Source: CRMC Trauma Registry for 2015
Resources

• CDC National Center for Injury Prevention and Control
  http://www.cdc.gov/injury/

• American College of Surgeons-Committee on Trauma
  http://www.facs.org/trauma/index.html

• Arizona Department of Health; Bureau of Emergency Medical Services and Trauma System
  http://www.azdhs.gov/bems/trauma/index.htm

• Trauma Systems Consultation
  http://www.facs.org/trauma/tsepc/index.html
Questions?

Thank You