



**Arizona Department of Health Services  
Bureau of EMS & Trauma System  
Trauma Registry Users Group (TRUG)**

**Trauma Registry Users Group (TRUG) Minutes  
Wednesday January 26, 2011 - 9:30 a.m. – 11:30 a.m.  
Location: Arizona Dept. of Health Services  
150 North 18th Avenue Phoenix AZ 85007  
5th Floor – 540A Conference Room  
Contacts: Anita Ray Ng 602-542-1245 [raya@azdhs.gov](mailto:raya@azdhs.gov)  
Anne Vossbrink 602-364-3164 [Anne.Vossbrink@azdhs.gov](mailto:Anne.Vossbrink@azdhs.gov)**

**Attendees:**

- ADHS– David Harden, Anita Ray Ng, Anne Vossbrink
- Banner Good Samaritan– Kathi Coniam, Angela Minchella, Lori Wass
- Chinle Comprehensive Health Care – Donna Olson (phone)
- Flagstaff Medical Center– Michelle Gochenour (phone), Beth Latrell (phone), Suzanna Hubbard (phone)
- John C Lincoln North Mountain– Xan Hummel (phone), Melissa Moyer, Heather Young
- Kingman Regional Medical Center- Sue Kern (phone), Elisa Bizon (phone)
- La Paz Regional Hospital– Maria Martinez (phone), Megan Blong (phone)
- Maricopa Medical Center–Lillian Duncan (phone), Claire Holmes (phone), Tiffany Strever (phone), Linda Tuck (phone)
- Phoenix Children’s Hospital– Cristina Wong
- Scottsdale Healthcare Osborn– Jane Burney, Karen Helmer
- St. Josephs’ Hospital– Rose Johnson, David Villa, Elisa Flores, Shawna Hosler
- Summit Healthcare Regional Medical Center– Veronica Stedman
- University Medical Center Tucson– Carol Bailey, Paul Bowlby (phone), Terry Burns, Julie Lopez, Alice Magno (phone), Sherry Staffen, Bianca Wade
- Yavapai Regional Medical Center– Donna Quay
- Yuma Regional Medical Center– Eugenia Sims

A) Important BEMSTS contact information:

Anita will be taking leave for a couple of months, tentatively scheduled from mid-April to mid-July 2011. ASTR contacts during this time:

Anne Vossbrink  
(602) 364-3164 (office)  
(602) 364-3568 (fax)  
[Anne.Vossbrink@azdhs.gov](mailto:Anne.Vossbrink@azdhs.gov)

David James Harden  
(602) 364-3188 office  
(602) 364-3568 fax  
[hardend@azdhs.gov](mailto:hardend@azdhs.gov)

Welcome to Noreen Adlin, our new ADHS Trauma System Designation Coordinator! For more information on trauma center designation, you can contact her at:

Noreen Adlin  
(602) 364-3275 (office)  
(602) 364-3568 (fax)  
[adlinn@azdhs.gov](mailto:adlinn@azdhs.gov)

B) ASTR Quarterly Data Submission

- 1) Reminder: Quarter 4 2010 data is due April 1, 2011 (ED/Hospital Arrival Dates Oct - Dec 2010). Please include all updates by back-dating the date range and un-checking both boxes on the export screen. **To make sure ASTR receives all of your validation corrections, please send the entire 2010 year with your next submission (1/1/2010 – 12/31/2010).**

C) 2011 Data Entry / Database Changes

- 1) If your hospital uses Trauma One® and did not receive a 2011 upgrade, please contact Anita.
- 2) **Two New Fields for 2011 ED/Hospital Arrival Dates forward:**
  - New: Signs of Life

- NTDB Definition: Indication of whether patient arrived at ED/Hospital with signs of life. NTDB Additional Information: A patient with no signs of life is defined as having none of the following: organized EKG activity, pupillary responses, spontaneous respiratory attempts or movement, and unassisted blood pressure. This usually implies the patient was brought to the ED with CPR in progress.
- Valid data entry selections will be:
  - N (Arrived with NO signs of life)
  - Y (Arrived with signs of life)
  - Not Documented is ok, but please try to obtain the information.
  - Not Applicable should not be used - This field should be completed for all patients, whether they arrived through the ED or were a direct admit.
- Reduced Data Set users WILL be entering the new Signs of Life field in Excel. Make sure you are using the 2011 spreadsheet which has this new field added.
- Registrar Questions:
  - (a) What if a patient is undergoing CPR at the time of arrival – do those vitals count as signs of life? -Signs of Life (yes or no) refers to whether patient arrived with or without signs of life, as documented during an unassisted assessment of the patient’s vitals.
  - (b) Can this field be auto-filled? –ASTR preference is that this field be manually entered Y or N after the registrar reviews the arrival vital signs in chart.
  - (c) Does PEA (Pulseless Electrical Activity) alone count as Signs of Life if no other signs were present? – Discussion was held and NTDB confirmation is needed on this.

POST MEETING FOLLOW-UP: Verified with Tammy Morgan at NTDB: PEA alone DOES count as arrived with signs of life.
- New: Activity E-code
  - Activity E-codes are supplemental codes that provide additional reporting information about the injury event. Primary and Secondary E-code fields for mechanism/intent cannot be listed with an Activity code or E849 code.
  - This new code indicates the activity of the person seeking healthcare for an injury, which resulted from, or was contributed to, by the activity.
  - We are not capturing the External Cause Status at this time (E000 codes for military vs. civilian vs. volunteer).
  - How to handle motor vehicle crashes, assaults and other E-codes that do not have a choice under the new activity list – The primary and secondary E-codes are already pretty good at describing if an injury event was motor vehicle related or assault. The new activity code gives you the ability to identify information that may not be detailed in the primary E-code - for example, which type of sport was involved, what household activity was being done at the time of injury, was the person driving distracted with a cell phone, etc. Alice from UMC indicated she consulted with a coding expert and was told that the “E 029.9 - Other activity” option should be used only rarely. If you are coding a motor vehicle event or other injury that does not apply to this activity list, use the Not Applicable (\*NA) key. If patient is “found down” and you are unable to identify what activity led to their injury, you would use the Not Documented (\*ND) key.
  - Reduced Data Set users will NOT be entering the Activity E-code field in Excel.

3) **2011 Picklist Updates:**

- ED Discharge Disposition list - edited to allow for 2010 and 2011 choices. This change applies to both Full and Reduced Data Set users. Please pay attention to the ED/Hospital Arrival Date of the record. If the arrival year is in 2010, use one of the 3 current ED choices. If the arrival year is 2011, please select only the 2011 ED DEATH choice (see below).

ASTR ED DISCHARGE DISPOSITION	
FLOOR	Floor bed (general admission, non specialty unit bed)
HOME NO SE	Home without services
ICU	Intensive Care Unit (ICU)
OR	Operating Room
TELE STEPD	Telemetry/step-down unit (less acuity than ICU)
TRANSFER	Transferred to another hospital
OBSERVE	Observation Unit (unit that provides<24 hour stays)

<b>-2011 forward ED Death choice:</b>	
ED DEATH	Death in ED
<b>-2010 ED Death choices:</b>	
ED DOA	Declared dead on arrival w/ minimal/no resuscitation attempt
DEATH RESU	Death after failed resuscitation attempt-no response 15 mins
DIED IN ED	Died in ED (other than failed resuscitation attempt)
LEFT AMA	Left against medical advice
HOME SERVI	Home with services
OTHER	Other (jail, institutional care, mental health, etc.)

- Co-morbid Conditions list - Cirrhosis has been added for 2011 data forward.
- Hospital Complications - There were a lot of changes to the national list. The 2011 picklist update helps the user identify which choices are valid for 2010 only, which are valid for 2011 only, and which are valid for either year.

**Hospital Complications (NTDB changes):**

**--RETIRED for 2011 forward:**

Abdominal compartment syndrome  
 Abdominal fascia left open  
 Base deficit  
 Bleeding  
 Coagulopathy  
 Coma  
 Intracranial pressure  
 Systemic sepsis  
 Wound disruption

**--Continued from 2010:**

Acute renal failure  
 Acute respiratory distress syndrome (ARDS)  
 Cardiac arrest with CPR  
 Decubitus ulcer  
 Deep surgical site infection  
 Drug or alcohol withdrawal syndrome  
 Deep Vein Thrombosis (DVT) / thrombophlebitis  
 Extremity compartment syndrome  
 Graft/prosthesis/flap failure  
 Myocardial infarction  
 Organ/space surgical site infection  
 Pneumonia  
 Pulmonary embolism  
 Stroke / CVA  
 Superficial surgical site infection  
 Unplanned intubation  
 Other

**--NEW for 2011 forward:**

Urinary Tract Infection  
 Catheter-Related Blood Stream Infection  
 Osteomyelitis  
 Unplanned return to the OR  
 Unplanned return to the ICU  
 Severe sepsis

- EMS Agency and Hospital lists - A couple of new agencies/facilities were added.
  - Behind the scenes, we had duplicate 2007 picklists marked as "not in use" that were causing problems with reporting long text (especially hospital name). Duplicates were deleted.
  - Note: After we close out the 2010 data, we will edit the picklists again to hide anything that is no longer valid for 2011. But for now (while we are entering both years of data), **please pay attention to what year the patient arrived at your hospital.**
- 4) **Procedures Performed** (a location/code/date/time are submitted for each procedure)
- The new NTDB 2011 required list has been adopted for ASTR ED/Hospital Arrival Dates 1/1/2011 forward (see handout). Per NTDB: "Procedures with an asterisk have the potential to be performed multiple times during one episode of hospitalization. In this case, capture only the first event. If there is no asterisk, capture each event even if there is more than one." For example, you would enter the first CT scan per body region performed at your facility. If a patient had multiple head and pelvic CT's at your facility, you are only required to code the first Head CT

and the first pelvic CT. Your hospital may choose to capture any additional procedures that are needed for your reports.

- Procedures Performed at the Referring Facility are still required for AZ data. Procedures with a location of "REF" do not export to NTDB. TRUG discussion was held as to which referring procedures should be entered. Decision was made for registrars to consult with their Trauma Coordinators and for each hospital to report back their recommended list to ADHS. POST MEETING FOLLOW-UP: An email was sent to all of TRUG requesting feedback (TRUG email group includes program managers, coordinators, registrars, PI/QA staff, etc.) Responses were received from 9 full data set hospitals. Results were tabulated. The tabulated results were presented to the AZ TRAUMA AND EMS PERFORMANCE IMPROVEMENT (TEPI) committee. Only 10 procedures from the entire NTDB list had a majority consensus NOT to be collected for referring data. TEPI's decision was that **the same required procedure list should be used for referring and reporting hospitals.**
- Procedures Cheat Sheet
  - Need TRUG's help coming up with coding guidelines to post online for our users. More information will be emailed.

Questions from registrars:

- Coding peripheral IV's? Some trauma registrars on the national email group suggested using 38.93 but TRUG member consensus was that 38.99 should be used for peripheral IV.
- How to code blood transfusions? Per NTDB: An ICD-9 procedure code, start date, start time is required for each transfusion or red cells, platelets, and plasma over the first 24 hours following hospital arrival.
- Is there a limit to the number of procedures that can be entered in Trauma One? As far as we know, there is no limit in the database, but NTDB only accepts 200. If you think a record is going to be close to the limit and you do export to NTDB, you may want to enter the more critical procedures first.
- Can registrars enter the same date/time for a procedure (ex: multiple transfusions within a short period of time)? For AZ data, registrars can enter the same date/time for a procedure. If this causes an NTDB critical error, it will be handled in NTDB export. If it causes a warning error, it can be ignored and shouldn't affect national submission.
- Is NTDB ok with coding only one date/time for blood products involving massive transfusion protocol? TRUG believes the answer is yes, but hospitals can confirm with NTDB and TRUG needs to confirm the correct ICD-9 code. John C. Lincoln emailed this question to NTDB but hasn't received a response yet.

#### 5) ICU and Vent Days

- NTDB no longer allows ICU or Vent Days to be entered as 0 (zero). Some AZ users have been entering zero for no ICU days and others have been using \*NA. To prevent validation errors, flag as \*NA if no ICU or vent days occurred.
- Additional NTDB instructions for Vent Days: Recorded in full day increments with any partial day listed as a full day. Field allows for multiple "start" and "stop" dates and calculates total days spent on a mechanical ventilator. If a patient begins and ends mechanical ventilation on the same date, the total ventilator days is one day. Excludes mechanical ventilation time associated with OR procedures. Non-invasive means of ventilatory support (CPAP or BIPAP) should not be considered in the calculation of ventilator hours.
- TRUG discussion was held whether Vent Days should be 0 or 1 for a patient vented in the ED but discharged or died the same day and never admitted. TRUG consensus was that the Vent Days would be 0 for these non-admitted patients. You would still indicate ventilation in the procedures section, which allows hospitals to track it in reporting.

#### D) New ASTR 2008-2011 Data Dictionary (draft)

- 1) New format (Word instead of Excel) to match other BEMSTS documents
- 2) 2011 changes and some additional data entry/reporting instructions have been added
- 3) Plan is for TRUG to review the new dictionary before we officially finalize it. Email to follow. Please send any corrections/comments to Anita.

- 4) ASTR / NTDB note: There are a few differences between the national and state data entry instructions. Please always follow what we have in the STATE data dictionary. The AZ NTDB export is set up to account for any differences between NTDB and ASTR.
- E) Training/Education
- 1) Inter-Rater Reliability (IRR)
    - The next IRR record is scheduled to be sent out to hospitals in mid-February.
  - 2) Continuing Education Certificates were created for each participant (documentation of hours for IRR project 1 and the 2009/2010 TRUG meetings. Certificates will be provided for 2011 as well. Save these copies for your hospital's site designation visits. Verification was made after the meeting that these certificates can also be used for CSTR renewal.
- F) ASTR 2010 Data Validation
- 1) Hospitals should be receiving the 2010 AZ Validation Tool and run validation checks for the 2010 data clean-up. The AZ Validation Tool is now under final revision to address the NTDB 2011 changes. Final edits should allow it to work for both 2010 and 2011 data. The 2011 edit request was sent to Lancet on 1/14/11. Once 2011 changes are ready, the updates will be installed in each hospital database.
    - Please let ADHS know if you see any problems with your validation reports.
    - If the data has been verified as ok and does not require a correction, you will need to notify ADHS so these items can be ignored on re-checks. There is an option to send the report to the screen, printer (or PDF) and/or to a print file (.PRN). You can pick multiple options. If you export the report to a print file, you can open it in Notepad or Word and indicate which edit checks were already confirmed as ok. More information will be emailed on how to do this.
  - 2) Reminder: Continue to run blank field, invalid entry and QA checks on your hospital's 2010 data until we are sure these errors are being correctly identified by the AZ Validation Tool.
  - 3) 2010 AZ Data Validation Schedule:
    - Quarter 1 and 2 (Jan-June) 2010 validation reports were sent out to hospitals. Some errors were discovered in the reports and the tool has been modified. But most of the edit checks were valid and require correction, so make sure these have been corrected.
    - Quarter 3 (July-Sept) 2010 reports will be sent out in the next few weeks. We will back-date the reports to run validation on all 3 quarters. Please run these on your hospital database as well.
    - Quarter 4 (Oct-Dec) 2010 data is not due until April 1. Data will be processed when it is received. Please run the validation tool at your hospital for quarter 4 data as you enter it.
    - The 2010 ASTR data close-out needs to be completed by mid-July 2011 to be ready for the annual trauma reports due to the ADHS Director and advisory boards. Anne will be assisting with the 2010 data close-out during Anita's leave.
  - 4) National Trauma Data Bank call for 2010 data
    - Due date? NTDB call for 2010 data has not been sent out yet, but the data is typically due in May of each year.
    - Running the AZ Validation Tool should identify all NTDB data entry warnings. Some NTDB error checks had to be customized in the AZ Validation Tool to meet state standards, but the export should take care of any differences.
    - If you find any problems with your next NTDB export, please notify ASTR Trauma Registry Manager.
- G) Any other items or questions to discuss?
- 1) Registrar question: Trauma One<sup>®</sup> ICD-9 picklist – Is it ok that the 807.0 rib fracture picklist displays coding options that include hemo/pneumothorax but in the ICD-9 manual, two separate diagnosis codes apply (807.0x + 860.x)?
    - It appears that most registrars are following the Trauma One<sup>®</sup> picklist for these situations and would only select the 807.0x code which has different text than the coding manual. The text does indicate there was a hemo/pneumothorax (and the database codes a higher ISS than without it) but the additional 860.x code is not being selected. It would be hard to tell from the picklist alone when an extra ICD-9 code is required.

- The problem with this scenario is that ICD-9 report queries typically look at only the code and if a researcher is looking for all hemo or pneumothorax cases, these records will not be counted. TRUG members indicated there are other codes besides rib fractures where the picklist does not match the ICD-9-CM coding manual.
- More research is needed on the actual picklist and how it fits the ICD-9-CM coding requirements. This item will be discussed at the next TRUG meeting.

H) 2011 remaining TRUG meeting schedule (posted online): <http://www.azdhs.gov/bems/TRUG.htm>  
**Wednesday, March 30, 2011 - 9:30 am** - ADHS Conference Room 540-A  
~~**Wednesday, July 20, 2011 - 9:30 am**~~ - ADHS Conference Room 540-A (cancelled)  
**Wednesday, August 17, 2011 - 9:30 a.m.** - ADHS Conference Room 540-A (new date)  
**Wednesday, October 12, 2011 - 9:30 am** - ADHS Conference Room 540-A



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**Location: Arizona Dept. of Health Services**  
**150 North 18th Avenue Phoenix AZ 85007**  
**5th Floor – 540A Conference Room**  
**Contacts: Anita Ray Ng 602-542-1245 [raya@azdhs.gov](mailto:raya@azdhs.gov)**  
**Anne Vossbrink 602-364-3164 [Anne.Vossbrink@azdhs.gov](mailto:Anne.Vossbrink@azdhs.gov)**

**Attendees:**

ADHS– Anita Ray Ng, Anne Vossbrink  
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Summit Healthcare Regional Medical Center– Veronica Stedman  
University Medical Center Tucson– Terry Burns, Carol Bailey, Julie Lopez (phone), Bianca Wade (phone)  
Yavapai Regional Medical Center– Donna Quay  
Yuma Regional Medical Center– Eugenia Sims  
CHIR / ASU – Gevork Harootunian, Yue Qiu

- A) Anita’s upcoming leave schedule (Intermittent leave from mid-April to mid-July). **Please copy both Anita and Anne on ASTR email correspondence during the months of April - July.**

ASTR contacts during Anita’s leave:

Anne Vossbrink  
(602) 364-3164 (office)  
(602) 364-3568 (fax)  
[Anne.Vossbrink@azdhs.gov](mailto:Anne.Vossbrink@azdhs.gov)

Dr. David James Harden  
(602) 364-3188 (office)  
(602) 364-3568 (fax)  
[hardend@azdhs.gov](mailto:hardend@azdhs.gov)

- B) Welcome to ASU Center for Health Information & Research staff Gevork and Yue. They are currently working on linking and research projects with the AZ Level I Trauma centers.
- C) ASTR Quarterly Data Submission
- 1) Reminder: Quarter 4 2010 data is due April 1, 2011 (ED/Hospital Arrival Dates Oct - Dec 2010). Trauma One® users: Please include all updates by back-dating the date range and un-checking both boxes on the export screen. To make sure ASTR receives all of your validation corrections, please send the entire 2010 year with your next submission (1/1/2010 – 12/31/2010).
- D) 2011 Data Entry / Database Changes
- 1) **\*Change from previous TRUG meeting minutes\***  
Revised Required Hospital Procedures list
- a) On 2/15/11, the National Trauma Data Bank uploaded a new 2011 data dictionary to their website and indicated that the national requirements for Hospital Procedure coding had been revised. Our TRUG group and the TEPI advisory board had already approved the previous version of the 2011 NTDB requirements for AZ data entry.
- b) TRUG and BEMSTS administration were emailed regarding the national changes and the consensus was **to accept the newly revised NTDB list as our state standard for Hospital Procedures.** (Please refer to handout for the latest NTDB required procedure list.)

- c) The NTDB/AZ list refers to the minimum procedure coding required. Hospitals may continue to capture as many additional procedures as needed for reporting and PI purposes.
  - d) The same list is required whether coding procedures that were performed in the reporting or referring hospital. When entering referring hospital procedures, always select "REF" as the procedure location code to prevent data validation errors. All other picklist choices for procedure location refer to places in your facility (the reporting hospital).
  - e) Reduced Data Set Excel spreadsheet users do not capture any procedure data.
  - 2) Hospital Procedure coding "Cheat Sheet" – this will be sent out to TRUG for review after Anita returns from leave.
  - 3) Any problems/questions about 2011 changes? – None reported.
- E) New ASTR 2008-2011 Data Dictionary (draft) in Word format
- 1) Item is still in progress and will be finalized upon Anita's return. TRUG review will be needed to approve dictionary. For now, use the updated Excel 2008-2011 version that is being emailed out.
  - 2) Reminder - There are a few differences between the national (NTDB) and state (ASTR) data entry instructions. Please always follow what we have in the STATE data dictionary. The AZ NTDB export is set up to account for any differences between state and national standards.
- F) ASTR 2010 Data Validation
- 1) AZ Validation Tool in Trauma One® – Lancet is working on the 2011 NTDB validation changes (plus some additional fixes that have been identified). As soon as the latest update is available, Lancet will contact each hospital to update your program in Trauma One®.
    - a) AIS 2005 body region autofill (7001 validation errors) – some of the AIS 2005 external codes (body region=6) are incorrectly autofilling into the database. This is causing AIS 2005 invalid errors when running the validation tool. Lancet is aware of the issue and is working on a fix to distribute to hospitals. AIS 2005 ISS values may need to be updated if the wrong value has auto-calculated.
  - 2) 2010 AZ Data Validation Schedule:
    - a) Quarter 4 2010 data is due on April 1. ASTR has requested that Q1-Q3 2010 updates be sent along with the full data set Q4 data. Once the data files are imported into the state database, validation reports will be run on the entire 2010 year and results will be given to each hospital.
    - b) The 2010 ASTR data close-out (for full and reduced data) must be completed by July 2011 in order to prepare the annual trauma reports due to the ADHS Director and advisory boards.
    - c) Anne will be assisting with the 2010 full data close-out during Anita's leave. Please copy both Anita and Anne on any emails regarding your data validation results.
- G) National Trauma Data Bank call for 2010 data
- 1) For hospitals that submit to NTDB, the 2010 data is due by May 13, 2011.
  - 2) If you clean up your data using the AZ validation reports, your data should be ready for NTDB submission. Some of the national error checks had to be customized in the AZ Validation Tool to meet state standards, but the export is supposed to take care of any differences between state and national standards.
  - 3) If you find any problems with your NTDB export, please notify Lancet asap to check your export. Please copy the ASTR Trauma Registry Manager on your emails. It was reported that the zip code for San Tan Valley is coming up as an invalid during NTDB validation. This issue will be reported to Lancet.
- H) Trauma One® ICD-9 picklist differences from the ICD-9-CM coding manual
- 1) Some of the Trauma One ICD-9 diagnosis codes have been grouped together in order to calculate a severity level for the Injury Severity Score (ICD-9). Example: The 807.0 single rib fracture picklist has choices that combine the fracture code with hemo/pneumothorax (give it a higher severity than rib fracture without). In the official ICD-9-CM coding manual, 2 separate codes would be required to document a fracture plus hemo/pneumothorax (807.0x + 860.x).
  - 2) How this issue will be addressed: The ICD-9-CM Injury Diagnosis picklist will be left as it is currently in hospital and ASTR database. We have been using this same picklist since we started the registry and we need to stay consistent. ASTR staff will review the ICD-9 diagnosis drop

down menu and make reporting notes in the data dictionary for any codes where this is an issue. There are not expected to be many codes that have this issue.

l) Training/Education

1) Inter-Rater Reliability (IRR)

- a) Thank you for your participation in our IRR project to improve trauma data quality!
- b) IRR test record # 2 was sent to Full Data Set hospitals on 2/18/11 and to Reduced Data Set hospitals on 2/25/11.
- c) TRUG review of initial IRR analysis (Full Data Set only - Reduced Data Set IRR results will be reviewed during a separate meeting.)
  - Please refer to your individual scoring sheets for the ASTR answer key and notes regarding the answers that you selected for IRR record 2.
  - Individual data entry errors are highlighted and explained on the scoring sheets. Please contact ASTR staff if you have questions as to why a specific answer was selected.
  - Below are some Important data entry topics of discussion from the TRUG meeting:

(a) Prehospital Date/Time documentation when the run sheet is INCOMPLETE:

- (i) If a patient was treated by EMS and arrived to the reporting hospital all on the same day, it is safe to assume the EMS dates for notification, left for scene, arrived at scene, patient contact, etc. would be that same day. An EMS run sheet may only document a run sheet date or notification date at the top and then list the times. It is ok to fill in the EMS date fields, which would be obvious in this case. This is true even if the EMS times have to be flagged as Not Documented.
- (ii) If the date on the run sheet and the ED/Hospital arrival are not the same (ex: EMS dates passed over midnight at some point and the EMS times are NOT documented), then any EMS dates not provided on the run sheet should be flagged as Not Documented. In this case, you can't be sure what happened on which dates.
- (iii) If the EMS run sheet does not have all of the EMS dates documented, but all of the times are listed and the dates are obvious, fill in the appropriate dates even if they are "technically" Not Documented.

(b) Prehospital POV and First Responder documentation:

- (i) TRUG discussion was held regarding when to take the time to document extra prehospital legs of transport/care besides the transport into the reporting facility. The majority consensus was to do the following:
- (ii) There has to be one leg of care/transport entered that pertains to the transport into the reporting hospital (INTO\_REPT\_HOSP), regardless of whether it is by POV, EMS or other. Even if the majority of the prehospital fields have to be flagged as Not Documented, this leg of transport into the reporting hospital MUST be entered for all records. Otherwise, the data will not export correctly to NTDB and you will receive state validation errors.
- (iii) As discussed in the previous IRR, if you know that the patient came in by POV to the referring facility, you should fill that in the referring POV leg in addition to how they came to your hospital. Likewise, if you know that the patient came in by Ground Ambulance or Air to the referring facility, please fill in as much information as you know about the initial transport from the injury scene to the referring facility and then document the leg into your hospital.
- (iv) If you only have a Transporter run sheet and the run sheet has NO documentation of First Responder, then enter the leg of EMS care for the Transporter and do not enter anything for First Responder. A few registrars added a First Responder EMS leg of care for IRR record 2, but there was no mention of First Responder care anywhere in the record. It is not necessary to document First Responder care if you do not know if patient was even treated by a First Responder. It is also not necessary to create two separate prehospital entries if the First Responder and Transporter were the same exact agency.
- (v) If the Transporter run sheet has a First Responder listed and there is no information aside from just an agency name (no vital signs, no documentation if

they even arrived to treat the patient), then you do not need to add the First Responder leg of care. If there IS documentation that the First Responder arrived and the run sheet has any important information (such as First Responder patient contact time, what First Responder care was administered, the very first vital signs taken for the patient, etc.) then the First Responder leg does need to be entered.

(c) EMS Destination Arrival Time and ED Arrival Time:

- (i) Registrars should not automatically assume that the EMS Destination Arrival Time is always the same as the ED/Hospital Arrival Time.
- (ii) If the EMS Destination Arrival Time is listed as only a couple of minutes later than the ED/Hospital Arrival Time, change the EMS arrival to the ED/Hospital Arrival Time so that you do not receive validation errors. It is likely that the EMS agency or hospital had a slightly different clock setting. However, if the EMS Destination Arrival Time is much later than the ED/Hospital Arrival Time, flag the Destination Arrival Time as Not Documented because it is likely an error.

(d) Complete Trauma Team Arrival Time:

- (i) The definition in the ASTR data dictionary indicates that this field refers to when the entire (complete) trauma team arrived. However, from IRR #2 review, we quickly learned that nearly all hospitals have been interpreting this time to be when the lead/primary trauma team member has arrived. For Level I trauma centers, this is typically when the Trauma Surgeon arrives. For non-designated and Level IV facilities, this is usually when the ED physician arrives.
- (ii) **Because nearly all of our reporting hospitals have been using the lead team member's arrival time for this field, it was decided that this definition will be accepted as the state standard. However there is one important item to keep in mind: If there happened to be an issue where an important team member did not arrive and it caused a delay in care, the trauma team arrival time should reflect this delay.** For example, if the anesthesiologist did not arrive timely and the trauma surgeon could not start the surgery due to the delay, then this field should reflect the time that the anesthesiologist arrived and not the time of trauma surgeon arrival.
- (iii) This field does NOT refer to trauma team notification and entering this time was counted as an error for IRR #2.

(e) Field Airway Management (prehospital) = PULSE OX:

- (i) PULSE OX does need to be documented when the run sheet has information that this was performed. Although we have a separate state required field for oxygen saturation, the O2 fields are not queried when we run state reports using the Field Airway Management data element. It is much easier to use this one field for reporting purposes than to have to track an oxygen field plus airway management. So if any of the choices on the Airway Management apply, they need to ALL be selected.

Note: The question came up about the "EMS Interventions" field on the prehospital screen – this is NOT a state required field and we do not track this data at the state level.

(f) System Access(Inclusion Criteria):

- (i) The IRR 2 patient was triaged by EMS as a trauma because his age was >55 so EMS\_TRIAGE needs to be selected. The hospital trauma team was activated so ACTIVATION needs to be selected. Patient did not receive care at a referring facility so interfacility transfer should not be selected. **ICD9\_REVIEW should not be selected – even if this patient had a qualifying ICD-9 diagnoses, he was NOT admitted or died so he does not meet that part of the inclusion criteria.**

d) TRUG discussion on the required coding for ICD-9 and AIS 2005 diagnoses

- **Please refer to your individual scoring sheets for the ASTR answer key and notes regarding the diagnosis coding that you selected for IRR record 2.**
- ICD-9-CM Injury Diagnosis Coding
  - (a) Patient had a “5 cm full thickness laceration” of the forehead. IRR record 2 referred to the body region both as forehead and scalp so both were considered acceptable for the ICD-9 coding. After review of the record and discussion/email with TRUG members, it was decided that the best diagnosis code for this injury was 873.42 / severity = 1 (minor) / body region = 6 (external) / text = MINOR OPEN WOUND LACERATION OF FOREHEAD WITHOUT INJURY TO DEEPER STRUCTURE, UNCOMPLICATED. This was also the most common diagnosis code selected by TRUG members.
    - (i) After some research, it was determined that there are no ICD-9 official definitions for major and minor laceration because these are Lancet picklist options used to determine severity and calculate the correct ICD-9 Injury Severity Score. The ICD-9 coding book only differentiates between complicated and non-complicated lacerations - it does not address what is a major or minor laceration.
    - (ii) In the AIS 2005 book, there are definitions for major and minor lacerations. For future ICD-9 diagnosis coding, please use the same definition as AIS 2005:
      1. **Major = A laceration of >10cm long AND into subcutaneous tissue. Less severe than this would be considered minor. For future IRR records, you will need to follow these guidelines in order to get the diagnosis correct.**
    - (iii) Both major and minor laceration codes were accepted for IRR #2 (and two possible ICD-9 ISS scores were allowed) because this issue had never been addressed by TRUG and there was no set definition for these terms in the picklist. **However, in the future the AIS major and minor definition should be used in order to score a point for the correct diagnosis in both ICD-9 and AIS 2005 coding.**
    - (iv) To determine if an open wound is “complicated” or “uncomplicated” (using the ICD-9 coding system), please refer to the following guidelines that were taken from the official ICD-9-CM coding rules: “The description ‘complicated’ used in the fourth digit subdivisions includes those with mention of delayed healing, delayed treatment, foreign body, or infection... Do not assign a code designated as “complicated” based only on physician documentation of complicated. For coding purposes, there must be indications of delayed healing, delayed treatment, infection, or foreign body.” **In this record, the laceration would not be considered “complicated” using the above definition.** Because this has never been discussed by TRUG and the physician notes did say “complex stellate laceration”, no points were taken off for selecting complicated laceration for IRR #2. **But in future IRR records, you must follow these ICD-9 instructions in order to get the diagnosis correct.**
    - (v) Note: If you select the wrong major/minor code or forget to code the contusions, an incorrect ICD-9 Injury Severity Score will be calculated. The ISS is one of the most common fields that ADHS uses for trauma reporting.
  - (b) Patient also had 3 contusions that should be coded – 922.2 Abdominal Wall Contusion, 924.00 Thigh Contusion and 923.10 Forearm Contusion. All three of these codes have a severity= 1(minor) and body region= 6 (external).
  - (c) Head Injury/Loss of Consciousness coding in ICD-9-CM – In our last IRR record 1, we discussed that the Loss of Consciousness (LOC) codes cannot be coded without any documentation by a physician of concussion or intracranial injury. This record had two physician diagnoses listed – ED physician dx: “head injury” with “a loss of consciousness of about 3 minutes” and Trauma Surgeon dx: “closed head injury” with “brief loss of consciousness”. There was no mention by either physician of concussion or intracranial injury and the head CT was negative.
    - (i) In our last IRR 1, we consulted with national coding sources and were told that there was not enough documentation to code the head injury in ICD-9 and that a registrar should go back to the physician for these cases and ask if a concussion or intracranial injury diagnosis applies.

- (ii) We can tell from IRR #2 results that some of our reporting hospitals are coding the head injury for these types of records and others are not, and this issue does seem to vary nationally. If one hospital decides to code these head injuries and another does not, the facility recording the head injuries will end up with higher ISS scores. It is important that we are consistent statewide on this issue.
- (iii) **Because we discussed in IRR #1 that a registrar should NOT code the head injury in ICD-9 with this type of diagnosis wording, the correct coding answer for IRR 2 was assumed to be NOT to code for head injury in ICD-9. However, this issue will be brought up to the TEPI advisory board at their meeting in May and ADHS will ask for a final decision as to whether to code a head injury and LOC with this type of documentation. ADHS will accept the advisory board recommendation as the final answer for all hospitals to comply with. More information to follow after the advisory board meeting in May.**
- AIS 2005 Injury Coding
  - (a) Patient had a “5 cm full thickness laceration” of the forehead (also referred to as scalp in the record). In the AIS 2005 book, there is a definition for major and minor lacerations: **Major = A laceration of >10cm long AND into subcutaneous tissue. Less severe than this would be considered minor.** 5 cm laceration fits the definition of Minor Laceration in AIS 2005, so the correct code was determined to be 210602- FACE- SKIN MINOR LACERATION. This was the most common code selected by TRUG members.
    - (i) If you selected “Major Laceration” you were not given a point for that diagnosis, because this change the Severity Level from a 1 to 2 and raised the AIS 2005 Injury Severity Score.
  - (b) Patient also had 3 contusions that should be coded – 510402 Abdominal Wall Contusion, 810402 Lower Extremity Contusion and 710402 Upper Extremity Contusion. More than half of participating TRUG members documented these contusions.
  - (c) Head Injury/Loss of Consciousness coding in AIS 2005 – In our last IRR record 1, we confirmed that in AIS 2005, the Loss of Consciousness (LOC) codes CAN be coded without documentation of concussion. This record had two physician diagnoses listed – ED physician dx: “head injury” with “a loss of consciousness of about 3 minutes” and Trauma Surgeon dx: “closed head injury” with “brief loss of consciousness”. Per consultation with Jan Price during IRR #1, we learned that there is sufficient documentation to code LOC if the physician has documented it in the record (even without the word concussion). In fact, for the AIS 2005 coding, the correct IRR 2 answer requires that the registrar select a LOC code when the physician documents it. 161004 “Brief Loss of Consciousness <=30 minutes” was the most common code selected by TRUG members. However, the Trauma Surgeon did document in his final report only “brief loss of consciousness” and 161002 “Brief Loss of Consciousness NFS” has the exact same severity level for ISS calculation, so both codes 161004 and 161002 were accepted. Preferred code is 161004 Brief LOC <= 30 minutes (severity = 2 / body region = 1) and more than half of participating TRUG members documented either 161004 or 161002.
  - (d) Note: If you select the wrong major/minor code, forget to code the contusions or do not code the LOC, the incorrect AIS Injury Severity Score will be calculated. The ISS is one of the most common fields that ADHS uses for trauma reporting.
- e) The ICD-9 most common and preferred ISS was 1 and the most common and preferred AIS 2005 ISS was 5. These two coding scales can lead to a different number of codes and different ISS scores. This is ok.
- f) TRUG discussion on required coding for Hospital Procedures
  - **Please refer to your individual scoring sheets for the ASTR answer key and notes regarding the procedure coding that you selected for IRR record 2.**
  - Procedures that are required for entry for the IRR 2 record:
    - (a) Patient had “Excisional Debridement of Wound” (86.22) that should be recorded (the record said “devitalized skin edges were sharply debrided with scissors, as was any

devitalized underlying soft tissue...requiring layered repair"). 86.22 was the most common answer selected by TRUG members for the injury repair and more than half got the code correct. Note: Closure of Skin and Subcutaneous Tissue (86.59) was changed by NTDB from required to optional in February 2011, so the coding of this procedure was counted as optional.

- (b) Four CT codes (88.01 CT Abdomen, 87.03 CT Head, 87.41 CT Thorax and an 88.01 CT Other – to account for CT of facial bones and spine) should be recorded.
  - (c) Patient also had a CTA Chest that should be recorded - either Arteriography code 88.44 or 88.43 was accepted for CTA Chest.
  - (d) All procedures should have a corresponding location, date and time documented. It is ok to use the "Time to CT" or nursing note "in CT" as an estimated start time for IRR 2's CT times, even though the record did not say an exact start time for each individual CT.
  - (e) Your hospital may capture as many additional procedure codes as needed by your facility (e.g. X-rays were changed from required to optional on the new NTDB list, but your hospital can choose whether or not to record them). The latest required NTDB list is the minimum of what to capture for state and national data submission.
  - g) The final IRR #2 individual results and scoring sheet will be emailed to each participating registrar.
  - h) The final IRR #2 scoring sheet with accuracy percentages will be presented to BEMSTS administration and the AZ TEPI trauma advisory board. Registrar names will be kept confidential in advisory board presentations. Data quality is being tracked from one IRR project to the next and **it does appear that the data quality has improved from IRR #1 to IRR #2**. Great job everyone!
  - i) IRR record #3 is currently scheduled to be sent out to hospitals in late July 2011. IRR record #4 is expected to be sent out in February 2012.
  - j) Starting 2012 forward, IRR projects will be scheduled on an annual basis.
- J) Congratulations to Shawna Hosler on becoming Arizona's newest Certified Specialist in Trauma Registry (CSTR)! Great job! ☺
- K) 2011 remaining TRUG meeting schedule (posted online): <http://www.azdhs.gov/bems/TRUG.htm>  
~~Wednesday, July 20, 2011 - 9:30 am - ADHS Conference Room 540-A (cancelled)~~  
**Wednesday, August 17, 2011 - 9:30 a.m.** - ADHS Conference Room 540-A (new date)  
**Wednesday, October 12, 2011 - 9:30 am** - ADHS Conference Room 540-A

**Definition** Operative and essential procedures conducted during hospital stay. Operative and essential procedures are those that were essential to the diagnosis, stabilization, or treatment of the patient's specific injuries or complications.

The list of procedures below should be used as a guide to non operative procedures that should be provided to NTDB. This list is based on procedures sent to NTDB with a high frequency. Not all hospitals capture all procedures listed below. Please transmit those procedures that you capture to NTDB.

<b>XSD Data Type</b> <i>xs: string</i>	<b>XSD Element / Domain (Simple Type)</b> <i>Hospital Procedure</i>
<b>Multiple Entry Configuration</b> Yes, max 200	<b>Accepts Null Value</b> Yes, common null values
<b>Required in NTDS</b> Yes	

**Field Values**

- Major and minor procedure (ICD-9-CM) IP codes.
- The maximum number of procedures that may be reported for a patient is 200.

**Additional Information**

- Code the field as Not Applicable if patient did not have procedures.
- Include only procedures performed at your institution.
- Capture all procedures performed in the operating room.
- Capture all procedures in the ED, ICU, ward, or radiology department that were essential to the diagnosis, stabilization, or treatment of the patient's specific injuries or their complications.
- Procedures with an asterisk have the potential to be performed multiple times during one episode of hospitalization. In this case, capture only the first event. If there is no asterisk, capture each event even if there is more than one.
- Note that the hospital may capture additional procedures.

**Diagnostic & Therapeutic Imaging**

Computerized tomographic studies \*  
 Diagnostic ultrasound (includes FAST) \*  
 Doppler ultrasound of extremities \*  
 Angiography  
 Angioembolization  
 Echocardiography  
 Cystogram  
 IVC filter  
 Urethrogram

**Cardiovascular**

Central venous catheter \*  
 Pulmonary artery catheter \*  
 Cardiac output monitoring \*  
 Open cardiac massage  
 CPR

**CNS**

Insertion of ICP monitor \*  
 Ventriculostomy \*  
 Cerebral oxygen monitoring \*

**Musculoskeletal**

**Genitourinary**

Ureteric catheterization (i.e. Ureteric stent)  
 Suprapubic cystostomy

**Transfusion**

The following blood products should be captured over first 24 hours after hospital arrival:

Transfusion of red cells \*  
 Transfusion of platelets \*  
 Transfusion of plasma \*

In addition to coding the individual blood products listed above assign the 99.01 ICD-9 procedure code on patients that receive > 10 units of blood products over first 24 hours following hospital arrival \*

**Respiratory**

Insertion of endotracheal tube\*  
 Continuous mechanical ventilation \*  
 Chest tube \*  
 Bronchoscopy \*  
 Tracheostomy

**Gastrointestinal**

Endoscopy (includes gastroscopy, sigmoidoscopy,

Soft tissue/bony debridements \*  
Closed reduction of fractures  
Skeletal and halo traction  
Fasciotomy

colonoscopy)  
Gastrostomy/jejunostomy (percutaneous or endoscopic)  
Percutaneous (endoscopic) gastrojejunoscopy

**Other**

Hyperbaric oxygen  
Decompression chamber  
TPN \*

**Data Source Hierarchy**

1. Operative Reports
2. ER and ICU Records
3. Trauma Flow Sheet
4. Anesthesia Record
5. Billing Sheet / Medical Records Coding Summary Sheet
6. Hospital Discharge Summary

**Associated Edit Checks**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
6501	1	Invalid value
6502	1	Procedures with the same code cannot have the same <i>Hospital Procedure Start Date and Time</i>
6503	4	Blank, required field



**Arizona Department of Health Services  
Bureau of EMS & Trauma System  
Trauma Registry Users Group (TRUG)**

**Trauma Registry Users Group (TRUG) Minutes  
Wednesday August 17, 2011 - 9:30 a.m. – 11:30 a.m.  
Location: Arizona Dept. of Health Services  
150 North 18th Avenue Phoenix AZ 85007  
5th Floor – 540A Conference Room  
Contacts: Anita Ray Ng 602-542-1245 [raya@azdhs.gov](mailto:raya@azdhs.gov)  
Anne Vossbrink 602-364-3164 [Anne.Vossbrink@azdhs.gov](mailto:Anne.Vossbrink@azdhs.gov)**

**Attendees:**

- |  |   |
|--|---|
| <p>ADHS– Anita Ray Ng<br/>ADHS– David Harden<br/>Banner Good Samaritan– Lori Wass (p)<br/>Banner Good Samaritan– Angela Minchella (p)<br/>Chinle Comprehensive Health Care– Leilana Badonie (p)<br/>Copper Queen Community Hospital– Heath Brock<br/>John C Lincoln North Mountain– Melissa Moyer<br/>John C Lincoln North Mountain– Xan Hummel (p)<br/>Maricopa Medical Center– Lillian Duncan (p)<br/>Maricopa Medical Center– Linda Tuck (p)<br/>Scottsdale Healthcare Osborn– Erzsebet Szabo (p)<br/>Southeast Arizona Medical Center– Annie Benson<br/>St. Joseph’s Hospital– David Villa<br/>St. Joseph’s Hospital– Shawna Hosler<br/>Tuba City Regional Health Care– Shannon Johnson<br/>University Medical Center Tucson– Paul Bowlby (p)<br/>University Medical Center Tucson– Carol Bailey (p)<br/>University Medical Center Tucson– Bianca Wade (p)<br/>West Valley Hospital– Darlene Rodriguez<br/>Wickenburg Community Hospital– Linda Brockwell (p)<br/>Verde Valley Medical Center– Jessica Pust<br/>Yuma Regional Medical Center– Eugenia Sims (p)</p> | <p>ADHS– Anne Vossbrink<br/>ADHS–Noreen Adlin<br/>Banner Good Samaritan– Kathi Coniam (p)<br/>Banner Good Samaritan– Susan Lunsford (p)<br/>Chinle Comprehensive Health Care– Lynette Largo (p)<br/>Flagstaff Medical Center– Suzanna Hubbard<br/>John C Lincoln North Mountain– Heather Young<br/>Kingman Regional Medical Center– Elisa Bizon (p)<br/>Maricopa Medical Center– Claire Holmes (p)<br/>Phoenix Children’s Hospital– Cristina Wong<br/>Scottsdale Healthcare Osborn– Rodney Jackson (p)<br/>St. Joseph’s Hospital– Rose Johnson<br/>St. Joseph’s Hospital– Elisa Flores<br/>Summit Healthcare Reg’l Med Ctr – Veronica Stedman (p)<br/>Tuba City Regional Health Care– Tana Yazzie<br/>University Medical Center Tucson– Terry Burns (p)<br/>University Medical Center Tucson– Julie Lopez (p)<br/>University Medical Center Tucson– Arvie Webster (p)<br/>Wickenburg Community Hospital– Scott Stewart (p)<br/>Verde Valley Medical Center– Tish Arwine<br/>Yavapai Regional Medical Center– Donna Quay</p> |
|--|---|

- A) Thank you for your hard work!! The 2010 trauma records have been cleaned up and closed out.
- B) List of ASTR Reporting Hospitals – Our group is growing! Welcome to our new participants!

1	Banner Good Samaritan Medical Center	15	Phoenix Children's Hospital
2	Banner Page Hospital	16	Scottsdale Healthcare Osborn
3	Benson Hospital	17	Sierra Vista Regional Health Center
4	Chinle Comprehensive Health Care	18	Southeast Arizona Medical Center - Douglas
5	Copper Queen Community Hospital	19	Summit Healthcare Regional Medical Center
6	Flagstaff Medical Center	20	St. Joseph's Hospital and Medical Center
7	Havasu Regional Medical Center	21	Tuba City Regional Health Care Corporation
8	John C. Lincoln North Mountain Hospital	22	University Medical Center - Tucson
9	Kingman Regional Medical Center	23	Verde Valley Medical Center - Cottonwood
10	La Paz Regional Hospital	24	West Valley Hospital
11	Little Colorado Medical Center	25	Wickenburg Community Hospital
12	Maricopa Medical Center	26	Yavapai Regional Medical Center
13	Mountain Vista Medical Center	27	Yuma Regional Medical Center
14	Northern Cochise Hospital		

- C) ASTR Quarterly Data Submission
- 1) Reminder: Quarter 2 data files are due October 3, 2011 (ED/Hospital Arrival Dates Apr – Jun 2011). Note: October 1 is a Saturday so the deadline will be the following Monday.  
 --Trauma One<sup>®</sup> users: Please include the previous quarter updates by back-dating the date range (01/01/2011 – 06/30/2011) and un-checking both boxes on the export screen.
- D) ASTR 2011 Data Validation – for Trauma One<sup>®</sup> users
- 1) AZ Validation Tool – Another update is in process to address the items below. Lancet will contact each hospital to install the update when it is ready.
  - 2) Hospitals should use the validation tool as the data is being entered. To run validation checks after completing a single record, use the “AZ State Validator” button on the discharge page. To run more than one record at a time using a date range... From the main Trauma One<sup>®</sup> screen, select Tools...External Program...AZ State Validator and enter the date range to check.
  - 3) Here are some validation issues that came up in our final 2010 correction efforts:
    - a) AIS 2005 picklist and validation errors – Errors were discovered in the AIS 2005 picklist. These errors have been causing 7001-7003 validation messages due to incorrect body region. 2010 data was corrected. A fix for 2011 will be included in the update.
    - b) Referring Facility Procedure times are still coming up as error - will be re-submitted for Lancet attention.
    - c) Age calculation is not working when age is entered in months - will be re-submitted for Lancet attention.
    - d) Calculation for Referring Facility Length of Stay less than one hour is coming up as an error - will be re-submitted for Lancet attention.
    - e) Total ICU Days – If your database calculates this field based on multiple ICU entry and exit dates, check that the calculation is correct. One hospital recently discovered that their ICU calculation was adding an extra day.
    - f) Extra blank lines in the multi-copy “scrolling window” fields - Talked with Lancet about changing the blank check for some of the multi-copy fields so that it searches only the first line of data (ex: Co-morbidities, Complications, Protective Devices, Airbag Details, System Access). But for the prehospital section and diagnosis section, the blank check has to look for blanks within all rows because we do not want blank lines in the middle of the data. If there is a blank EMS or diagnosis row accidentally created, you will have to delete it.
      - To clear a single field you use the F9 key, but to delete an entire row, you have to use Ctrl + the letter D. Be careful using Ctrl+D on the diagnosis section because it will delete both the ICD-9 and AIS 2005 codes listed in that row.
    - g) Other suggestions/corrections? – Validation message #4435-AZ “Interfacility Transfer was entered as N (No) but record has a prehospital Transported From(Origin)=From Referring Hospital” -- Users indicated that this warning is coming up when a POV interfacility transport is entered on the Prehospital page. Anita will ask Lancet if POVs can be ignored for the prehospital Transported From(Origin) check. We decided at a previous TRUG meeting that “From a Referring Hospital” can be selected in the prehospital section, even if patient arrived by POV. But the Interfacility Transfer section (on the referral tab) should only be Yes if the patient was transported by EMS.
    - h) Need to confirm that NTDB 2011 validation changes have been made (ex: new Signs of Life).
  - 4) 2011 AZ Data Validation Schedule
    - a) Full Data Set
      - Anita is editing quarter 1 2011 validation reports and will send to hospitals through SFTP as soon as they are complete. Any questionable validation checks are being removed. Quarter 1 corrections will be submitted along with the Quarter 2 data due in Oct.
    - b) Reduced Data Set
      - Each submitted quarter will be validated/checked for errors prior to the due date of the next quarter of new data. A final year-end data cleanup/data closing will occur after all 4 quarters have been submitted for 2011 ED/Hospital Arrival Dates.

## 5) Common Questions and Data Entry Issues

### a) Full Data Set

- EMS Destination Arrival Time error will be removed from the check. In a previous TRUG discussion, we decided that the registrar should change the EMS Destination Arrival Time to match the ED/Hospital Arrival Time if the EMS destination time was later than (and within a few minutes of) the ED/Hospital Arrival Time. However, when running 2010 validation checks, we noticed that this error comes up a lot and is likely due to a difference in clock settings between EMS and hospitals. CHANGE FROM PREVIOUS TRUG DECISION: Do not worry about changing the EMS Destination Arrival Time to match. Validation check 13132-AZ will be removed.
- An error for "Probability of Survival=Blank" comes up often and not all sites have the ability to modify this field to \*ND. If the ISS, age or initial ED vital signs are missing, a POS cannot be calculated. We already have blank checks for all of these fields. Validation check 19130-AZ will be removed.
- Reminder: If the corresponding severity or body region cannot be determined for a diagnosis code, be sure to flag as \*ND (Not Documented). You will get an error message if you leave blank an AIS or ICD-9 body region or severity.
- Data Entry Reminder – The prehospital section allows for entry of EMS and non-EMS transports. Every record must have an "Into Reporting Hospital" leg of transport, even if patient came in by POV into your hospital. Enter any additional legs of transport that you are aware of, but at a minimum, you must document how they arrived at your hospital. For hospitals that submit to NTDB, Transport Type=INTO\_REPT\_HOSP tells the NTDB export which row of prehospital data to send.
- Reimbursements greater than Total Hospital Charges (19435-AZ) – If this error comes up, please confirm that the numbers are correct. Sometimes there is overpayment so all you need to do is verify that the data is correct.

### b) Full and Reduced Data Set

- Data Entry Reminder: It is important to select the right null value for diagnosis/ISS:
  - (a) Not Applicable (\*NA) for diagnosis codes and Injury Severity Score means that patient had NO injuries. Ex: Trauma team was activated for a pregnant patient involved in a rollover high speed accident. After observation, no injuries were detected. Because the trauma team was activated, patient is included in the registry.
  - (b) Not Documented (\*ND) for diagnosis codes and Injury Severity Score means that the patient's injuries are unknown so an ISS cannot be calculated (ex: diagnoses are not documented in the chart or patient left AMA).
- Admit Status errors – Use of \*NA (Not Applicable) for ED and Inpatient fields:
  - (a) The Admission Status field (on the Demographics Page) indicates if the patient received only ED care ("ED treat and release"), only Admission/Inpatient care (Direct Admit), or both ED and Admission care. The Admit Status field should never be blank, \*ND or \*NA. You will receive an error if the record's ED or inpatient fields do not match what was selected for Admit Status.
  - (b) All records must have an ED/Hospital Arrival Date and Time. This is why these two fields are labeled as "ED/Hospital Arrival" and not just "ED Arrival". These fields cannot be Blank, Not Applicable or Not Documented. All state reports and exports are run based on ED/Hospital Arrival Date because all records are assumed to have this date.
  - (c) Only patients that were treated in the ED will have an ED Exit Date, ED Exit Time, ED LOS and ED Disposition. For Direct Admits, these fields will be flagged as Not Applicable (\*NA).
  - (d) Only patients that were transferred to another acute care facility from your ED should have an ED Discharge Destination Hospital, ED Discharge Transport Agency or ED Transfer Reason. Otherwise, these fields should be flagged \*NA.

- (e) Only patients that were admitted to your hospital will have a Hospital (Inpt) Discharge Date, Hospital (Inpt) Discharge Time, Hospital (Inpt) Discharge Disposition, and Admission LOS. If treated only in the ED, these fields should be flagged as \*NA.
- (f) Only patients that were transferred to another acute care facility after hospital admission should have a Hospital Discharge Destination Hospital, Hospital Discharge Transport Agency or Hospital Transfer Reason. Otherwise, these fields should be flagged as \*NA.
- (g) Even if the patient was not admitted, all records should have a Final Outcome (which is the outcome when they left your hospital). A Total Hospital LOS will be calculated for all records based on the entries for ED and Admission dates/times.

c) Reduced Data Set

- The most common errors occurring are of two types:
  - (a) Missing/Blank data values of which the most common are: Missing Hospital Discharge (Inpatient) Destination, Missing Hospital (Inpatient) Discharge Disposition, and Missing ED Discharge Destination. These errors mostly occur when a patient's status should lead to these fields being filled as \*NA (Not Applicable), but were left blank in error.
  - (b) Invalid data values, of which the most common are: Invalid ICD-9-CM Diagnosis Code(s), and Invalid 1<sup>st</sup> E-code is not found in AZ E-code file. These errors usually due to codes that are incomplete (missing a decimal, a 4<sup>th</sup> digit, or 5<sup>th</sup> digit), or typos. Some invalid codes are out of range of what is acceptable (800.00-999.9) or in an invalid format (such as missing the preceding 'E' for E-codes).

E) Trauma One<sup>®</sup> Version 4.20 Multi-Site Upgrade Status Report – David Harden

- 1) ADHS is investigating web-based database options to reduce the time it takes for validation, data submission, picklist changes, etc. This would also help lower the costs associated with software license fees and facilitate statewide reporting and benchmarking. Any change to the current reporting system is dependent on ADHS budget and funding. December 2012 would be the earliest possible date for implementation of a full web-based system, but there are options that we may be able to implement now to automate Full and Reduced Data Set validation and simplify Reduced Data Set reporting. More information will be provided to reporting hospitals as it becomes available.

F) TEPI Advisory Board discussions

- 1) ASTR Inclusion Criteria for Full and Reduced Data Sets:
  - a) From the TEPI May 11, 2011 advisory board meeting – A motion was made to change the wording in the AZ Trauma Inclusion Criteria item \*B to "**Level III and Level IV Trauma Centers** must report all patients with injury that are transported via EMS to another acute care hospital or trauma center." This change will take effect for January 1, 2012 records forward. Previous wording was: "A patient with injury who is transported via EMS transport from one acute care hospital to another acute care hospital."
  - b) Data entry reminders for Full and Reduced Data Sets: The "System Access (Inclusion Criteria)" field tells ASTR which inclusion criteria the patient met in order to be included in the registry. It is very important that you select all that apply. Please ask Anita or Anne if you have questions about which records to submit to ASTR or how to complete this field.
    - The state data does not have a field for activation level, so this field tells ADHS when your hospital trauma team was activated. It must be entered whenever activation of the trauma team occurred.
    - A POV transport into your hospital cannot be listed as an EMS Trauma Triage.
    - An ED discharge home cannot be submitted as an ICD-9 review case, because the patient must have been admitted or died in order to meet the third part of the criteria.
- 2) Head Injury/Loss of Consciousness coding in ICD-9-CM – consistent trauma diagnosis coding statewide
  - During our ASTR Inter-Rater Reliability testing, we discovered that we are not consistent statewide regarding how to code a record when there is no mention of the word

concussion, but there is: 1) Physician diagnosis of Closed Head Injury AND 2) Physician documentation of patient's loss of consciousness (LOC). Even various national sources had differing opinions for coding when the physician did not specifically document the word "concussion."

- Consistency statewide is important because the Injury Severity Score will be different if you choose to code - or do not code- a head injury diagnosis.
- **At the May 11, 2011 TEPI meeting, the advisory board discussed this situation and determined that a registrar should select from the ICD-9-CM 850.xx range of concussion diagnosis codes if the physician documents diagnosis of Closed Head Injury and Loss of Consciousness.**
- Which 850 code you select will depend on the length of the LOC. Example: Physician indicates that patient had "Closed Head Injury" and loss of consciousness of about 3 minutes. Registrar should select code **850.11 Concussion with Loss of Consciousness 30 minutes or less.**
- **\*\*Important Note: After the TRUG meeting, DQA Section Chief David Harden confirmed that this coding directive will begin for January 1, 2012 records forward.**
- The TEPI advisory board did not discuss how to code a diagnosis of "Closed Head Injury" and NO mention of loss of consciousness. We will discuss this at the October TRUG meeting.

G) AIS 2005 Head Injury coding (related topic but NOT discussed at the TEPI advisory board meeting):

- We will continue to code head injuries in AIS 2005 the same that we discussed after IRR #1 and #2. We will discuss this further at the October TRUG meeting.
- Per discussion with Jan Price, Technical Coordinator, Injury Scaling / Association for the Advancement of Automotive Medicine:

AIS 2005 does allow for coding of loss consciousness with or without mention of concussion. AIS codes in the 16100x section should be coded. If the physician validates LOC - no matter where he/she gets the info – you may code it. You may use the 161002 – 161006 codes if the only documentation by a physician or physician extender is "loss of consciousness per EMS" or "+ LOC" or "brief LOC". You do not need the word "concussion", and as long as there is some indication of trauma to the head (not a simple syncopal episode), you do not need the specific words "closed head injury" in addition to the documentation of loss of consciousness.

The only choices you have if the MD only diagnoses CHI or TBI without mention of concussion OR loss of consciousness are 100099.9, 100999.9 or, if there is documentation by the physician or physician extender of headache, you can use code 110009.1.

H) Training / Education / Data Quality

- 1) Inter-Rater Reliability (IRR)
  - a) IRR #3 has been postponed. TRUG will be notified once the next date is set.
- 2) Data Completeness - Blank/Not Documented reports will be run and sent out by email. Data completeness is important for trauma reporting and research.
- 3) We hope to host another Trauma One<sup>®</sup> Report Writing training this fall when contract funding becomes available.

I) 2011 remaining TRUG meeting schedule (posted online): <http://www.azdhs.gov/bems/TRUG.htm>

**Wednesday, October 12, 2011 - 9:30 am** - ADHS Conference Room 540-A

- 1) Discussion items for the October 12th meeting agenda:
  - a) 2012 diagnosis coding for Closed Head Injury with NO mention of loss of consciousness
  - b) NTDB 2012 Data Dictionary changes
  - c) "Procedure Cheat Sheet" for NTDB list
  - d) 2012 TRUG meeting dates



**Arizona Department of Health Services  
Bureau of EMS & Trauma System  
Trauma Registry Users Group (TRUG)**

**Trauma Registry Users Group (TRUG) Meeting Minutes  
Wednesday October 12, 2011 - 9:30 a.m. – 11:00 a.m.  
Location: Arizona Dept. of Health Services  
150 North 18th Avenue Phoenix AZ 85007  
5th Floor – 540A Conference Room  
Contacts: Anita Ray Ng 602-542-1245 [raya@azdhs.gov](mailto:raya@azdhs.gov)  
Anne Vossbrink 602-364-3164 [Anne.Vossbrink@azdhs.gov](mailto:Anne.Vossbrink@azdhs.gov)**

**Attendees:**

ADHS– Anita Ray Ng	Phoenix Children's Hospital – Cristina Wong
ADHS– David Harden	Scottsdale Healthcare Osborn– Erzsebet Szabo (p)
ADHS – Anne Vossbrink	Scottsdale Healthcare Osborn– Jane Burney (p)
Banner Good Samaritan– Lori Wass (p)	Scottsdale Healthcare Osborn– Karen Helmer (p)
Banner Good Samaritan– Angela Minchella (p)	Scottsdale Healthcare Osborn– Rodney Jackson (p)
Banner Good Samaritan– Kathi Coniam (p)	St. Joseph's Hospital– Rose Johnson
Banner Good Samaritan– Allison Rose (p)	St. Joseph's Hospital– David Villa
Chinle Comprehensive Health Care – Leilana Badonie	St. Joseph's Hospital– Shawna Hosler
Chinle Comprehensive Health Care – Lynette Largo	Tuba City Regional Health Care– Shannon Johnson
Flagstaff Medical Center– Suzanna Hubbard	Tuba City Regional Health Care– Delores Succo
John C Lincoln North Mountain– Melissa Moyer	University Medical Center Tucson– Bianca Wade (p)
John C Lincoln North Mountain– Heather Young	University Medical Center Tucson– Julie Lopez (p)
John C Lincoln North Mountain– Xan Hummel (p)	Verde Valley Medical Center– Tish Arwine
Kingman Regional Medical Center– Elisa Bizon (p)	Verde Valley Medical Center– Jessica Pusl
Maricopa Medical Center – Tiffany Strever (p)	West Valley Hospital– Darlene Rodriguez
Maricopa Medical Center– Claire Holmes (p)	Yavapai Regional Medical Center– Donna Quay
Maricopa Medical Center– Lillian Duncan (p)	Yuma Regional Medical Center– Eugenia Sims (p)
Maricopa Medical Center– Linda Tuck (p)	

- A) ASTR Quarterly Data Submission
  - 1) Reminder: Quarter 2 data was due October 3, 2011 (ED/Hospital Arrival Dates Apr – Jun 2011). Thank you for your data submission! Validation reports are being prepared.
  - 2) Next data submission due date is **January 3, 2012** (ED/Hospital Arrival Dates July – Sept 2011) --Trauma One® users: Please include the previous quarter updates by back-dating the date range (04/01/11 – 09/30/11) and un-checking both boxes on the export screen.
- B) ASTR 2011 Data Validation schedule
  - 1) Full Data Set - AZ Data Validation Tool – Run at your hospital before submission to ADHS. ASTR staff will re-run to see if anything was missed or if there are questions.
    - Lancet is fixing some validation tool checks that are not working properly (ex: procedures in the referring facility are incorrectly displaying error messages, a correct referring LOS <1 hr is displaying error messages, age calculation error is displayed if age is entered in months, etc.)
- C) Picklist updates 2012

- Need to remove 2010 only picklist choices
  - EMS and hospital lists updates
  - NTDB changes for co-morbidities and complications
  - Some hospitals are on 4.2 Trauma One and others are on 4.1 – two separate picklist updates will need to be created
- 2) Reduced Data Set – Validation reports for the Quarter 2 spreadsheets will be emailed. The reports, if you do not have yours already, should be available next week.
- 3) Additional edit checks run here at ADHS – will be placed in SFTP file when available
- Full and Reduced DS: E-code mismatch with Position in “Vehicle/Vehicle Type” fields for ATV, Motorcycle and Bicycle
  - Full DS: Transport Type (Prehospital section) cannot be Blank, Not Documented or Not Applicable
  - Full DS: Interfacility Transfer=Yes but Transport Mode listed as POV into your hospital
  - Level I TC: New SAS edit check: AIS 2005 data entry - Head Injury code (severity >=3) in AIS but no ICD-9 head injury code / ICD-9 code=TBI 1, 2 or 3 but no AIS head injury code
- D) National Trauma Data Bank / NTDS 2012 changes
- 1) 2012 changes - Impact to ASTR 2012 data entry
- NTDB is requiring Total ICU Days and Total Vent Days to be entered as null value Not Applicable if patient did not have any ICU or Vent days. NTDB used to allow zero. NTDB data dictionary has notes and examples on how to calculate ICU and Vent Days. Some of this information will be added to state data dictionary to help with data entry.
    - Note: UMC discovered a problem with their database calculation of ICU Days. If your hospital database calculates the ICU LOS based on enter and exit dates/times, please check that the calculation matches the NTDB requested formula. Some hospitals enter the Total ICU Days manually and other databases rely on the database to calculate it.
  - Co-morbid conditions (new + retired)
    - Retire “Impaired sensorium” and add “Dementia”, “Major psychiatric illness”, “Drug abuse or dependence” and “Pre-hospital CPR”. Update text “DNR status” to “Advanced directive limiting care (DNR)”, “Chemotherapy for cancer within 30 days” to “Currently receiving chemotherapy for cancer”, “Currently requiring or on dialysis” to “Chronic renal failure”, “History of myocardial infarction within past 6 months” to “History of myocardial infarction”, “History of revascularization / amputation for PVD” to “History of PVD”.
    - Use most current NTDB definitions - will add to state data dictionary.

**Proposed 2012 Co-morbid Conditions list:**

Advanced directive limiting care (DNR)
Alcoholism
Ascites within 30 days
Bleeding disorder
Currently receiving chemotherapy for cancer
Cirrhosis
Congenital Anomalies
Congestive heart failure
Current smoker
Chronic renal failure
CVA/residual neurological deficit
Dementia
Diabetes mellitus
Disseminated cancer
Drug abuse or dependence

Esophageal varices
Functionally dependent health status
History of angina within past 1 month
History of myocardial infarction
History of PVD
Hypertension requiring medication
Major psychiatric illness
Obesity
Pregnancy
Pre-hospital CPR
Prematurity
Respiratory Disease
Steroid use
OTHER CO-MORBIDITIES EXIST (not on this list)

- Complications (new + retired)
  - Retire “Abdominal compartment syndrome”, “Abdominal fascia left open”, “Base Deficit”, “Bleeding”, “Coagulopathy”, “Coma”, “Intracranial Pressure”, “Systemic sepsis” and “Wound disruption”. Add “Acute kidney injury”, “Urinary Tract Infection”, “Catheter-Related Blood Stream Infection”, “Osteomyelitis” and “Severe Sepsis”. Text change: “Acute renal failure” to “Acute kidney injury”. Text change: “Acute respiratory distress syndrome (ARDS)” to “Acute lung injury/Acute respiratory distress syndrome(ARDS)”.
  - Use most current NTDB definitions - will add to state data dictionary.

**Proposed 2012 Hospital Complications list:**

Acute kidney injury
Acute lung injury/Acute respiratory distress syndrome(ARDS)
Cardiac arrest with CPR
Catheter-Related Blood Stream Infection
Decubitus ulcer
Deep surgical site infection
Deep Vein Thrombosis (DVT) / thrombophlebitis
Drug or alcohol withdrawal syndrome
Extremity compartment syndrome
Graft/prosthesis/flap failure
Myocardial infarction
Organ/space surgical site infection
Osteomyelitis
Pneumonia
Pulmonary embolism
Severe sepsis
Stroke / CVA
Superficial surgical site infection
Unplanned intubation
Unplanned return to the ICU
Unplanned return to the OR
Urinary Tract Infection
OTHER COMPLICATIONS EXIST- not on this list

- Note: The state picklists cannot be altered, but Lancet can give hospitals a separate hospital-specific complications field to capture whatever additional items your hospital

needs to track. Most databases already have this option. If your database does not and you want this extra field, please contact Lancet. Hospitals can also add a hospital-specific co-morbidity field if you need that as well.

- Discussion was held regarding accepting the new NTDB picklists for co-morbid conditions and hospital complications for the state 2012 data dictionary. TRUG members were in agreement with the recommended changes, but requested ADHS email the program managers/coordinators to confirm that they too are in agreement with these changes.
    - **After the meeting, ADHS emailed all Trauma Program Managers/Coordinators from participating hospitals with the information on the 2011 and 2012 NTDB lists and requested their feedback on accepting these changes. Program Managers and Coordinators replied in favor of adopting these changes for our state 2012 picklists. Hospitals may continue to track hospital-specific co-morbid and complications data in a separate hospital field.**
  - Changes in alternate residence definitions. Will update data dictionary.
  - Minor updates to GCS data entry notes. Will update data dictionary.
  - Field limit change to Field and ED Respiratory Rate limit of 99: New limit: RR cannot be >99 if age >=6; RR cannot be >120 if age<6. Check validation tool.
  - New option added for ED GCS Qualifier field when Not Applicable (will likely handle this in NTDB export).
  - Procedures note added for blood product. Will update data dictionary.
  - Changes in validation error levels and checks. Will review state validation tool.
  - New TBI fields added for TQIP participating hospitals. These are not state required fields. ASTR is not going to add these optional NTDB fields to the state data set at this time. Lancet will give TQIP participating hospitals the ability to capture this data and send to NTDB.
- 2) Any other items to discuss before we start 2012 data?
- Request was made to delete the “Intubated?(before vitals)” Yes/No field as it corresponds to data also collected in the ED GCS Qualifier field. This field is already being used in a specific state data extract, so at this time it is best to leave it in. Lancet can create a rule to autofill Yes or No depending on your entries for the ED GCS Qualifier field if you would like. The prehospital “Intubated?” field cannot be removed because we do not have a prehospital GCS qualifier field.
  - More investigation is needed on ICD-10 implementation – discuss at next meeting.
  - Still working on scheduling a Lancet report writer training. Before this can be scheduled, we need to get the Reduced Data Set access to the state database. More information to follow.

#### E) Trauma One® Version 4.20 Multi-Site Upgrade

- 1) Status report and update on how this will affect the trauma data entry and submission process:
- This first phase of the Trauma One upgrade will include hospitals that currently submit ASTR data as a Level IV Excel spreadsheet user, as a 4.1 Level IV Trauma One® user, and smaller undesignated facilities. Access to the 4.2 Trauma One® will be hosted at ADHS, likely by using a secure ADHS VPN connection, until the application can be updated to a web-based version.
  - Anne is requesting all participating Level IV and smaller non-designated hospitals to send IT contact info and signed user forms to ADHS.
  - The upgrade will affect the Reduced Data Set (RDS) users by allowing the ability to enter the data elements directly into the database. This will give reduced data set users access to new picklists (including coding with accompanying descriptive text). Basic reports will be available to run on your hospitals data and can be shared for you to customize. Also, the new Full Data Set validation tool will be modified and available to RDS users so that each record (or a range of records) can be validated (checked for errors) by the data entry user and corrections can be made as soon as the record has been entered. Because the RDS validation tool can be run per record, data clean up time will be shorter. Another significant additional advantage to the new 4.2 upgrade is that there will no longer be the need to use secure emails or SFTP for RDS data submission.
  - To the data elements there will be a few changes, but they will be minor and will be in an updated data dictionary.

- Once the system is up, there will be a short overview walk-through by Lancet (the vendor of the Trauma One® software) and/or ADHS. We anticipate that, for this phase of the upgrade, 1-2 users total will be granted a VPN login per hospital. Entry of ASTR data into the Excel spreadsheet will be phased out once the system is up and running and determined to be properly functioning. Please feel free to email Anne with any questions and she will get back to you or forward you to the appropriate person.
  - Note for Full Data Set users: Only a few of our smaller Full Data Set users will be added to the state 4.2 Trauma One® at this time. The current database is not capable of handling such a large volume of users. If you have not received an email from Anne, your hospital is not on the list to have direct access to the state database at this time. It is expected that Lancet will have a full web-based version of Trauma One® (with increased capacity) available in early 2013. More information will be provided on this option as we receive it. We will address hospital questions regarding data security, functionality, customization, etc. as we learn more, and the discussion will be held with Trauma Program Managers/Coordinators in addition to TRUG. The benefits of using the multi-site state database include: direct data entry (no need to run the data export and use SFTP every quarter for data submission), immediate picklist updates to all facility lists (instead of updating each hospital individually), easier ability to share reports and populations, faster and less time-consuming database upgrades, data benchmarking options, etc.
- F) 2012 TRUG meeting schedule (will be posted online soon): <http://www.azdhs.gov/bems/TRUG.htm>
- 1) **Wednesday, January 4, 2012 - 9:30 am** - ADHS Conference Room 540-A
  - 2) **Wednesday, April 11, 2012 - 9:30 am** - ADHS Conference Room 540-A
  - 3) **Wednesday, July 18, 2012 - 9:30 am** - ADHS Conference Room 540-A
  - 4) **Wednesday, October 24, 2012 - 9:30 am** - ADHS Conference Room 540-A
- G) FYI only - In case you need to know when the Arizona trauma and EMS advisory boards are meeting: <http://www.azdhs.gov/bems/trauma-pdf/2012MeetingSchedule.pdf>