A) Status update on AZ Data Validation Tool
1) The AZ Data Validation Tool was just received at ADHS today. The first round of testing will begin this month by ADHS staff.
2) After initial testing at ADHS is complete and any necessary updates are made, we need one or two hospitals to help test the tool. Once we feel pretty confident that the validation tool is working properly, we will ask Lancet to distribute the program to all hospitals.
   a) St. Joseph’s and John C Lincoln North Mountain staff volunteered to help test the validation tool. Thank you!
3) We will check and clean trauma data for 2009 Quarters 1, 2, and 3 in February-March. 4th quarter 2009 data is due to ADHS by April 1, 2010. That final quarter of data will be checked and cleaned in April 2010. The goal is to have all 2009 data cleaned up by the beginning of May 2010. This will ensure 2009 hospital data is ready in time for NTDB submission and for ADHS reporting.
4) Once the AZ Data Validation Tool is officially in place, hospitals will be expected to concurrently validate their data and clean it before quarterly submission to ADHS. The data validation will then be run at ADHS to ensure that all errors have been corrected.
   a) Note: ADHS will put together an instruction manual on how to run the AZ data validation checks, what the data checks mean, and how to notify ADHS of your results. This information will be distributed when the validation tool is ready for implementation to hospitals.
5) Review of the warning levels that might appear:
   a) The AZ Validation Tool includes the national validator checks plus additional state field checks. There are 5 warning levels possible.
   b) For 2009 data, Level 1, 2 and 3 error checks must be reviewed for accuracy. Hospitals can ignore Level 4 or 5 flags for 2009 data, unless your hospital wishes to check them.
   c) For 2010 data, Level 1 - 5 checks be reviewed for accuracy, as we will have more time to clean up that data.
   d) Keep in mind that these messages are warnings and there will be times when a message comes up, but the data is correct (ex: a patient’s age may really be greater than 105 years or a 14 year old may really be driving a motor vehicle.) We need to set up a state process that hospitals can follow to notify ADHS when a warning has come up and the data has been verified as correct.
(i) Rose pointed out that the current NTDB validator results can be exported to an Excel file. If the AZ validator is similar, hospital staff could export the results to Excel and indicate on the spreadsheet that the data has been verified. Trauma Registry Manager will check into this option.

6) Reminder: Continue to run the blank field, invalid picklist entry and QA reports on your hospital’s 2009 data until the validation tool is distributed.

B) Status of database updates
1) System code SANTA CRU for Santa Cruz county: In the past, the county field had a size limit that led the system code to be SANTA CRU instead of SANTA CRUZ. The limit increased after our 2008 database changes. Some hospitals changed their databases to the short text SANTA CRUZ. The data is now mixed and we need to be consistent statewide. Trauma Registry Manager will investigate which code we will use and how to fix the data to match.
   a) FYI – Even if your database has the system code (short text) SANTA CRU, you can easily use the "Long Text" option in reporting to get the full county name for your report.
2) AIS 2005 picklist – The updates last year appear to have corrected the picklist. No additional changes were requested by TRUG.
3) Blood Alcohol Content field – submitting only first recorded BAC to ASTR – is everyone capturing this correctly?
   a) Need to check Banner Good Samaritan, John C Lincoln North Mountain, St Josephs and Phoenix Children’s Hospital databases.
4) We need to check the ICD-9 and AIS body region and severity data to make sure the blank invalid autofills are no longer showing up in our 2009 data. If the severity or body region is ever unknown/unspecified, flag the field as Not Documented (*ND).
5) NTDB export / validation
   a) Paul indicated that there is a Mt. Lemon zip code that keeps coming up as an error.
   b) Please report any export problems to Trauma Registry Manager. Any differences between the state and national requirements are handled at the export level.
6) In the state database, editing certain date/time fields after initial data entry will cause the Not Applicable or Not Documented flag to be deleted for ED LOS (Hours) and Admission LOS (Days). Hospital staff indicated this is happening in some of their databases as well. Be careful when you edit the ED dates/times or the admission/discharge dates. The length of stay fields will recalculate. If any of the dates/times are *NA or *ND, the LOS field will revert to blank. Make sure to again flag the LOS field as *ND or *NA.
7) AZ has a new hospital (Hualapai Mountain Medical Center in Kingman – MED4160) and the EMS agency Sonoita-Elgin Fire Department now has a CON license. A picklist update will be sent out for this. No other picklist updates were requested.
8) Any additional Lancet fixes needed? – None reported. Some of the hospitals are interested in the autofill E-code CDC Mechanism and Intent fields. Need to check with Lancet if this is possible. The program runs at data import so this would not work for hospital databases.

C) National Trauma Data Bank / National Trauma Data Standard
1) NTDS released a new 2010 dictionary at the end of the year. Changes were minor this year.
   a) The ASTR data dictionary will be updated to add additional national data entry clarifications and definitions.
   b) The required criteria to select ED DOA was deleted from the national data dictionary. The definition was causing problems when patients did not fit into any of the ED Death categories.
   c) GCS with limited documentation – If the numeric GCS is not recorded, but documentation states the patient’s level of functioning, the registrar may enter the corresponding GCS numeric value.
d) Hospital (Inpt) Discharge Disposition – NTDB changed the text for the “acute care” option to “Discharged/Transferred to a short-term general hospital for inpatient care”. Discussion was held and we will keep our current picklist wording of “Discharge/Transfer to another acute care hospital using EMS”. NTDB export will send to correct option.

e) *NA / NONE rule for Protective Devices - Currently, ASTR data entry instructions indicate to use NONE any time protective devices were not used. Not Applicable is not a valid choice. We are waiting for a response from NTDB on whether these instructions are ok. Continue to enter the data according to the data dictionary, unless notified otherwise by Trauma Registry Manager.

f) Data entry of ICD-9-CM codes – National data requires injury ICD-9-CM codes be submitted. NTDB now allows non-injury diagnosis codes to also be entered if the hospital collects them.

(i) Discussion was held regarding data entry of non-injury diagnosis codes. TRUG members indicated the workload would be too great to also enter non-injury diagnosis code for all patients. For AZ data, we will continue to enter injury ICD-9-CM diagnosis codes into the required ICD-9-CM diagnosis field.

(ii) After the meeting, it was suggested that maybe additional ICD-9 codes could be entered only for the patients who expired. This would allow for more explanation when reviewing patient deaths, but not cause too much extra work. This item can be discussed further by TRUG.

g) At the state level, we follow the national definitions for co-morbidities and complications.

2) 2011 NTDB schedule of changes - Revisions to the 2011 national dictionary will be available in 2010. The College of Surgeons is currently discussing 2012 changes. A draft dictionary should be available in July and they expect to ratify the final in October 2010. Each year we will assess how our AZ data compares to the national requirements.

3) NTDB Trauma Quality Improvement Program (TQIP)
   a) Rose attended this year’s NTDB TQIP meeting and gave an update:
      (i) NTDB is hoping to recruit more hospitals to participate in TQIP and improve trauma care. They may add additional fields to be captured only by TQIP hospitals.
      (ii) At the TQIP meeting, discussion was held regarding the importance of documenting the Injury Time (data is missing 40% nationally). Please do your best to track down this important information.
      (iii) Discussion was held regarding what to record for vitals when a patient is undergoing CPR. Per Rose, the American College of Surgeons indicated that vitals should be entered as 0 (zero). NTDB is reviewing the vital sign data points for additional discussion of these fields.

4) To participate in the NTDS Google group emails, go to the NTDS website and subscribe: http://www.ntdsdictionary.org/ntdbParticipants/ntdbUserGroups.html Topics include AIS coding, E-codes, ICD-9 diagnosis coding, national submission requirements, QA, PI, etc.

D) Quarter 4 data (October – December 2009) is due April 1, 2010.
   1) Please remember to back-date the date range (ED/Hospital Arrival Date) to include previous quarter updates with your submission.
   2) Make sure to UNCHECK both boxes before running the export.

E) Reduced data set submitters (submitted by some Level IV Trauma Centers):
   1) Welcome to our new Level IV trauma centers! ☺ We now have a total of 18 Arizona hospitals reporting to ASTR.
   2) Level IV and non-designated hospitals have the option to capture the full or reduced data set. Level I, II and III trauma centers submit the full data set.
   3) Anne is working closely with the new Level IV hospitals. The Level IV Excel import tool is complete and that data is being imported into Trauma One®.
   4) Separate reports/checks will be run to validate the reduced data set.
F) Training/Education
1) Lancet Trauma One® Report Writing was hosted by ADHS on October 15-16, 2009.

2) ADHS plan to test the consistency of data entry between registrars (inter-rater reliability):
   a) The Bureau of EMS needs sample test records (de-identified) from hospitals to be used
      for data entry validation and education. An email with further instructions will be sent out.
   b) Every few months, we will send out a couple of test records to all hospitals. Each
      registrar will enter the data into Trauma One®. Once we receive the records at ADHS,
      we will calculate the overall level of consistency between the records and identify fields
      that need clarification. We can then improve the consistency of the data through TRUG
      discussion, education, fact sheets, etc.

3) E-codes - questions raised in the NTDS Google group
   a) E-coding has not been clear with regards to sledding accidents. Flagstaff is coding
      sledding accidents as E885.9 “Fall from other slipping, tripping, or stumbling”. Our
      Maricopa County and Tucson hospitals stated they rarely see these types of injuries.
   b) After the meeting, Trauma Registry Manager obtained an updated 2010 ICD-9-CM
      coding manual and realized that new activity E-codes (E001-E030) have been added to
      the list. One of these activity codes does identify sledding accidents. Trauma Registry
      Manager emailed the NTDS group to see if these new activity codes are valid for the
      2010 NTDB E-code data.

G) Congrats to Suzanna Hubbard (Flagstaff Medical Center) on her new CSTR designation! 😊

H) TRUG members’ dedication to quality data continues to make a difference. Many trauma
   registry reports are being generated from the ASTR data that you submit every quarter.
   1) In February, ADHS will run Blank / Not Documented checks for critical fields, as part of the
      regular QA/quarterly reports that are sent out to reporting hospitals.
      a) If you have any quarterly reports that ADHS can run that would be helpful to your
         facility, please let Joel know. We can run comparisons of your data to aggregate data
         combined from other trauma hospitals. We want the quarterly reports to be useful to
         your facility.
   2) Below is a link to some of the other reports created by the Arizona Bureau of EMS & Trauma
      System that used ASTR trauma data:
      • http://www.azdhs.gov/bems/TraumaServices.htm
      • http://www.azdhs.gov/bems/STABreports.htm
      • http://www.azdhs.gov/bems/ASTRTraumaDataReports.htm
   3) We continue to process requests for trauma data on various injury topics.

I) Any other items or questions to discuss?
   1) Discussion regarding financial interfacing – Some hospitals are importing the method of
      payment from billing and others are entering the information manually. If interfacing from
      other hospital records, be sure to map the insurance categories to fit into one of the data
      dictionary choices.

J) 2010 TRUG meeting schedule (posted online): http://www.azdhs.gov/bems/TRUG.htm
   1) Upcoming 2010 TRUG meeting dates:
      • Wednesday, April 21st - 9:30 am - ADHS Conference Room 540-A
      • Wednesday, July 21st - 9:30 am - ADHS Conference Room 540-A
      • Wednesday, September 29th - 9:30 am - ADHS Conference Room 540-A
A) ASTR Data Close-Out for 2009 ED/Hospital Arrival Dates
   1) Quarter 4 QA and invalid checks were sent out to each hospital. These reports also include any items that were not corrected from the previous reports.
   2) Please submit your final 2009 updates into the SFTP folder by April 30, 2010. The data will be imported and reports will be re-run to make sure the data is ready for close-out.

B) AZ Data Validation Tool
   1) Status update: The AZ Validation Tool is being tested here at ADHS. Changes were requested and we have started another round of testing. NTDB has identified problems with their Level 5 errors, and NTDB checks were included as part of our validation tool. ADHS will talk with Lancet about the best way to proceed. Hospitals will be notified when the tool is ready for distribution.
   2) Preview of the data validation tool – Anita displayed the test AZ Validation Tool on screen for participants to see. Lancet will add a button to the discharge page to run the validation checks for that specific record. There will also be a validation program available to run the checks using a date range. Validation results are sorted in order of error level and the State Unique ID is provided for records that need to be checked. For Trauma One® users, the State Unique ID is your hospital’s 4 letter code + the record’s Lancet account number in your database.
   3) Once the AZ Data Validation Tool is officially in place, hospitals will concurrently validate their data and clean it before quarterly submission to ADHS. The data validation will then be run at ADHS to ensure that all errors have been corrected. Some checks are warnings and the data may actually be correct. Hospitals will notify ADHS that they have confirmed the data to be valid.
   4) Reminder: Until the validation tool is distributed, continue to run the blank field, invalid picklist entry and QA reports that were provided to each hospital. These reports cover many of the error checks found in the validation tool.

C) Status of database updates
   1) County of Residence and County of Injury - System code for Santa Cruz. Most hospitals had their picklist changed to SANTA CRUZ instead of SANTA CRU. Some hospitals even converted old data. To make it easier for hospitals, we have decided to change the state picklist code to SANTA CRUZ. Lancet will convert the previous state data to the new code.
2) EMS agency, hospital list and county picklist update – A picklist update will be sent to hospitals.

3) NTDB export / validation – Any problems with the NTDB export or NTDB Validator?
   a) UMC reported a problem where the NTDB export is showing all Zip codes as invalid. It seems to be a problem with an extra space at the end of the Zip. Lancet has been contacted.
   b) Hospital reports indicated if a lot of data is being run through the NTDB validator, all users have to get out of the database. To solve this, the suggestion was made to run the validation in quarters instead of the full year. The report can also be run overnight.

4) Update from last meeting: The state database has autofilled CDC Mechanism and Intent fields. At the last meeting, hospitals requested to add these E-code categories to their databases. Lancet was contacted. They do have these fields available to hospitals who want this for reporting. Please contact Lancet to get these fields added to your hospital database.

5) New activity E-codes
   a) The 2010 ICD-9-CM book has a new list of E-codes called Activity codes. Lancet has a picklist available for this coding update. These codes offer additional information about the injury event and can be helpful for hospital and state injury reporting. These codes would be a supplement to the E-codes that we already capture. (For example: Right now the type of sport is not identified well in the current E-codes. If we add this field, you would be able to query if an injury happened while playing tackle football or hockey or soccer, etc.)
   b) Discussion was held about adding the Activity E-code as a new field for 2011 data. There were no objections stated for starting this with 2011 ED/Hospital Arrival Dates.

D) National Trauma Data Bank / National Trauma Data Standard
   a) Status of the NTDB 2009 submissions due May 14, 2010 (May 15th is a Saturday). – As of this meeting, Level I trauma centers are finishing up the corrections and working on submitting to NTDB. Please contact Lancet right away if you are having problems.
   b) American College of Surgeon’s Trauma Quality Improvement Program (TQIP) - A TRUG member commented that the November TQIP training is already full. An online training is now available for those who want to participate in this new ACS program. There is an annual fee to participate and quarterly data submission. For more information: http://www.facs.org/trauma/ntdb/tqip.html

E) Reminder: Quarter 1 2010 trauma data (January – March 2010) is due July 1, 2010.

F) Reduced data set (submitted by some Level IV Trauma Centers)
   1) Level IV and non-designated hospitals have the option to capture a reduced data set using an Excel spreadsheet. There are currently six Level IV hospitals using the reduced data set and two Level IV hospitals entering the full data set.
   2) Our Trauma One® AZ Validation Tool was not designed for a limited data set, so ADHS has created separate validation reports for the Reduced Data Set. Validation results will be sent to the Excel spreadsheet users within 2 weeks of receipt of their quarterly data submission. Hospitals will have 2 weeks to correct the spreadsheet and return it to ADHS.
   3) The Reduced Data Set contains confidential patient information and the spreadsheets are transferred through secure email. A secure email can be requested at any time by contacting Anne Vossbrink.

G) Training/Education
   1) TRUG discussion was held to clarify data entry for records where the patient discharges from the ED and later returns to the hospital for inpatient care of the same injury.
      a) Ex1: Patient left AMA from the ED before treatment could be given. Patient returns several days later and is admitted for surgery.
         • Decision: This type of patient (with only one injury event) should NOT generate two separate records. The information from the initial visit should be entered with an ED
discharge disposition equal to “Left AMA”. The admission and discharge fields would be flagged as Not Applicable. Hospitals that capture readmission information can use their Readmission tab to enter the second visit’s admission, discharge and procedure information. Readmission fields do not export to ASTR so only the initial visit will be sent.

b) Ex2: Patient is transferred from the ED to another acute care facility for a test or procedure. After the test is done, the patient is returned back to the original hospital for inpatient care. Patient was not officially discharged from the hospital to go get the procedure. (Ex: The patient would not fit into the MRI machine at Hospital A so they were transported to Hospital B for testing and returned back to Hospital A.)

- **Decision:** Because the patient was not discharged by Hospital A, the patient is still under the Hospital A’s care and their record will not be entered as a discharge for that procedure. The length of stay may be a little longer when this situation occurs, but a brief explanation can be recorded in the Injury Details field. The ED Disposition and Hospital Disposition should reflect the official discharge from the reporting hospital.

2) More information on the ASTR Inter-Rater Reliability Testing
   a) A request was sent out to hospitals for sample test records (de-identified) to be used for data entry validation and education. Four hospitals have sent test records so far. If you have not done so already, please send your test records either through the SFTP folder or secure email. If you have questions regarding how to de-identify a record, please contact Anita.
   b) Discussion regarding how this process will work
      - The first test record will be sent out late May or early June 2010.
      - Results and data entry education will be provided at the July 21 TRUG meeting.

3) Trauma Registrar continuing education –
   a) The American College of Surgeon guidelines recommend all registrars have a minimum of 4 hours of registry-specific continuing education every year. For those with CSTR designations, the continuing education requirement is higher. Your participation in state trauma registry activities may help to fulfill the CE requirements.
   - Every registrar who participates in the inter-rater reliability process will be given a certificate documenting hours towards Trauma Registry continuing education.
   - At the end of each year, ADHS will use TRUG meeting sign-in sheets to document the number of hours that each member participated in quarterly state trauma registry meetings. A certificate can be provided to document your TRUG participation.
   - The Continuing Education certificates will be available to both full and reduced data set users to help reporting hospitals with educational requirements.

4) Blank / Not Documented checks – hospital and ASTR aggregate reports
   a) A sample report was passed out. A Blank/Not Documented report will be sent out to hospitals a couple of times per year. Please use this report to determine what areas of data are missing most often, and see if there is a way to improve the completeness of trauma data.
   b) The goal is to have less than 5% of critical fields entered as Blank or Not Documented. We realize that the completeness of some fields may be outside of a hospital’s control (ex: missing pre-hospital documentation).
   c) If the reports do not match what you see in your hospital database, please contact Anita. There may be a problem with your data export.
   d) Discussion was held regarding the 2nd Race field (a national reporting requirement). Hospitals indicated that they do not usually get this information, so there will be a high percentage of Not Documented responses. Go ahead and continue to use *ND if unknown, so we know that secondary race data is not often available.
   e) TRUG members asked if the Not Documented reports could be provided directly to the EMS agencies. Suggestion was made instead for hospitals to discuss the results with their prehospital coordinators. ADHS did send a letter to EMS agencies informing them of the importance of run sheet data. The item has also been discussed at regional EMS council meetings.

5) ASTR Inclusion Criteria
a) A review of the inclusion criteria was created for our new hospitals. A copy was passed out at the meeting.

b) Discussions held prior to the meeting revealed that there are different interpretations of which EMS patients to include in the registry. TRUG discussion was held at today’s meeting regarding the first part of the inclusion criteria: “A patient with injury or suspected injury who is triaged from a scene to a trauma center or ED based upon the responding EMS provider’s trauma triage protocol.” The plan is to collect more information from TRUG and then meet with the hospital Trauma Coordinators. The recommendations will be taken to the advisory board at their September meeting to see if any clarification or changes are needed.

c) For now, continue to enter the data the way that you have been. If anything changes, it will take effect for 2011 records.

d) In order to effectively analyze the trauma system at the state level, it is important that all hospitals are using the criteria consistently.

H) Congratulations to our newest Certified Specialists in Trauma Registry (CSTR) – Melissa Moyer, Beth Latrell and David Villa!
1) The AZ list of CSTR’s is growing – Rose Johnson, Jane Burney, Erzsebet Szabo, Suzanna Hubbard, Beth Latrell, Melissa Moyer and David Villa. Great job! ☺
2) For more information on certification: [http://www.amtrauma.org/courses/exam_cert.html](http://www.amtrauma.org/courses/exam_cert.html)
3) If you would like more information on setting up a CSTR study group, please contact Erzsebet.

I) Any other items or questions to discuss?

1) Question1: How do you request data from the Arizona State Trauma Registry?
   a) The required data request forms are on the Bureau of EMS & Trauma System website: [http://www.azdhs.gov/bems/RequestASTRTraumaData.htm](http://www.azdhs.gov/bems/RequestASTRTraumaData.htm)
   b) We can provide hospitals with non-confidential aggregate state data that you can use to compare with your hospital’s data. Depending on the type of report, we can also run reports using aggregate Level I data or aggregate Level IV data.
   c) Please let us know what state data reports would be useful for your facility. We would appreciate any ideas of what to add to the quarterly reports that ADHS sends out to each reporting facility.

2) Question2: How are registrars coding a King airway? Consensus was that this should be coded on the Airway Management field as “ETDLAD / Combitube”. Discussion: The Intubation(before vitals) field, the Paralytics(before vitals) field, and the GCS Qualifiers field are used in reporting to identify which respiratory rates and GCS scores might not represent the patient’s actual condition. If a patient was intubated or was given medications, then the Respiratory Rate and GCS could be affected. RR and GCS are used to calculate the Revised Trauma Score and Probability of Survival. For example, if a patient was given paralytics/sedation before the vital signs were measured, the medication could lower their responses in the GCS measure. This GCS value may not be a true representation of what the patient’s status is without any medication.

J) 2010 TRUG meeting schedule (posted online): [http://www.azdhs.gov/bems/TRUG.htm](http://www.azdhs.gov/bems/TRUG.htm)

1) Upcoming 2010 TRUG meeting dates:
   - Wednesday, July 21st - 9:30 am - ADHS Conference Room 540-A
   - Wednesday, September 29th - 9:30 am - ADHS Conference Room 540-A
Arizona Department of Health Services  
Bureau of EMS & Trauma System  
Trauma Registry Users Group (TRUG)  

Trauma Registry Users Group (TRUG) Meeting Minutes  
Wednesday July 21, 2010 - 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  
Anne Vossbrink  602-364-3164  vossbra@azdhs.gov

Attendees:

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A) Data & QA Section Chief Joel Bunis accepted a position with the ADHS Preparedness section. Joel will no longer be working with the EMS and Trauma databases. Thank you to Joel for his assistance with the trauma data.

B) ASTR Quarterly Data Submission  
1) 2009 data is closed out and the annual reports are being completed. We appreciate all of your hard work on last year’s trauma data!  
2) Quarter 1 2010 data was due July 1, 2010 (ED/Hospital Arrival January - March 2010). Data has been imported and validation checks are being run.  
3) Quarter 2 2010 data is due October 1, 2010 (ED/Hospital Arrival April - June 2010).

C) Status update on AZ Data Validation Tool  
1) For 2010 forward, the trauma data will be cleaned on a quarterly basis, instead of annually.  
2) Level 1 - 4 checks must be reviewed.  
3) The AZ Validation Tool covers all national and state data checks. There are only a few differences between state and national data entry. The tool was modified in those instances to meet the state data dictionary instructions. Any differences between state and national requirements are handled by the NTDB export.  
4) The decision was made to delete all national Level 5 reminder messages from the validation tool. Lancet is working on these changes now. These messages are resulting in hundreds of extra pages to check through and are not useful in finding invalid results.  
5) We need the assistance of our reporting hospitals to fine-tune our AZ Validation Tool. Please email Trauma Registry Manager with any problems you find.
6) ASTR staff are working on an AZ data validation manual with detailed explanations for each validation check.

7) Reminder: Continue to run the blank field, invalid picklist entry and QA reports on your hospital’s 2010 data until we are sure these errors are being correctly identified by the AZ Validation Tool.

D) E-code, ICD-9-CM and AIS 2005 validation checks
1) The AZ Validation Tool has only limited checks for E-codes, ICD-9-CM diagnosis codes, AIS 2005 injury codes, and procedures. An error will come up if a field is blank or if a code cannot be found on the state picklist.
2) We need to come up with a process to further validate the quality and accuracy of this data. Some ASTR ideas that are being investigated:
   a) Position in Vehicle field compared to Primary E-code
   b) Random selection of records to compare Injury Event details field with the E-code that was selected
3) Are reporting hospitals using any reports or a special process to check the accuracy of coded data? – Hospitals did not report any QA checks for these coding fields.

E) Training/Education
1) Inter-Rater Reliability (IRR) / Data Validation Project 1
   a) The first IRR test record was emailed to our participating full data set hospitals in June 2010. Each registrar was given the same exact record to enter and results were compared for: 1) consistency between registrars and 2) agreement with the ASTR Data Dictionary instructions. Test records were received back from all 12 full data set hospitals (27 registrars total). Thank you for the great participation!
   i) Results were reviewed and the items with the most disagreement were discussed. We will continue our discussion of IRR record 1 at the next TRUG meeting, as there were a couple of items decided after the last meeting. Procedures, ICD-9 diagnoses and AIS 2005 diagnoses were not scored at the time of the meeting, as TRUG discussion was needed in order to come to a consensus regarding which codes represented the best options.
   ii) Refer to Handout A for the final IRR record 1 scoring sheet. Registrars can find their individual scores by looking up the account number on your comparison sheet.
   iii) Refer to Handout B for important notes on IRR record 1 results.
   iv) Discussion was held with TRUG regarding which procedure codes are mandatory/essential to code and which are optional. TRUG started a list of what would be considered “optional,” but after the meeting a request was made to require DPLs and blood products. We need a final consensus so this will be addressed again at the next TRUG meeting. The list would represent the minimum state requirements for procedure reporting. Hospitals will still be able to capture any additional procedures that are necessary for hospital reporting.
   a) Failure to enter CT scans was one of the most common omissions for the IRR record 1. NTDB requires registrars to code the first CT per body region, so this is also the state standard. The ASTR data dictionary does list the national procedure definition as our state definition:
      Per NTDB: “Operative and/or essential procedures are defined as those procedures performed in the OR, ED, or ICU that were essential to the diagnoses, stabilization or treatment of the patient's specific injuries. Repeated diagnostic procedures (e.g., repeated CT scan) should not be recorded (record only the first procedure)."
   b) Another problem discovered with the procedures section is that some hospitals are entering CT results into a separate radiology tab that does not export to the
state or to NTDB. In order for your procedures to export, the information must be entered into the state procedures fields. In the state database, this field is located on the Discharge tab and includes procedure location, start date, start time and procedure code. Please confirm that you are entering procedures into this location or your data will be incomplete.

(c) Please refer to Handout C for final procedure code decisions for IRR record 1.

(v) Another common area of disparity between registrars occurred in the diagnosis section (ICD-9-CM Injury Diagnoses and AIS 2005 Injury Codes).
(a) TRUG discussed the correct injury coding for ICD-9 and AIS 2005 for IRR record 1, but there was a remaining question as to whether it was appropriate to code for head injury. Adding the extra head injury code does affect the ISS calculation. In this record, the ER physician notes did indicate “closed head injury” and “brief loss of consciousness.” There was no mention of concussion or intracranial injury and the head CT was negative.
(i) Trauma Registry Manager confirmed with Jan Price with AAAM that AIS 2005 does allow for coding of loss consciousness (without mention of concussion) and that the AIS code 161002 should be coded in this case. Because the exact number of minutes was not specified for LOC, the correct code is “161002 - brief loss of consciousness NFS”. Please refer to Handout D for the AIS 2005 coding decisions for IRR record 1.
(ii) For ICD-9-CM diagnosis codes, Trauma Registry Manager emailed Michelle Pumphrey and Debbie Hutton who assist with the American Trauma Society Trauma Registrar trainings. Their advice was that without mention of concussion or intracranial injury, you cannot code a loss of consciousness using ICD-9. Please refer to Handout E for final ICD-9-CM coding decisions for IRR record 1.
(b) After the meeting Trauma Registry Manager received questions about abrasions and contusions and whether it is necessary to code these separately. Some registrars coded the abrasions into a multiple external code instead of coding facial and thorax separately. Trauma Registry Manager emailed this question to Jan Price and her response was that it is a local decision on whether to code each abrasion separately, but that typically more than 3 abrasions will get lumped into a multiple abrasion code (does not affect ISS calculation). She did not mention grouping contusions, only abrasions. We will discuss this item at the next TRUG meeting and come to a state consensus.
(c) The AIS 2005 Injury Severity Score for this record was 17. The ICD-9-CM Injury Severity Score for this record was 9. As you can tell, there are several differences between these two coding scales, so be aware of this when you run reports using ISS. In some cases the AIS ISS calculation ends up higher, but in others you will find that the ICD-9 ISS is higher. Make sure to specify in your reporting which ISS you are using. Only Level I Trauma Centers are required to submit the AIS 2005 ISS to ASTR.

b) Future Validation / IRR projects – The IRR process will be repeated semi-annually so that we can track improvement in data quality over time. The suggested schedule is twice per year.

c) The reduced data set (Level IV Excel spreadsheet users) will participate separately in their own Inter-Rater / Data Validation project. Anne will lead the Reduced IRR/Data Validation project.

2) Continuing Education Certificates from ADHS – Attendance at TRUG meetings and participation in the IRR project do count towards the trauma registrar education certificates from ADHS.
a) The average time reported to code the IRR record 1 was two hours. The 2009 and 2010 continuing education certificates will be prepared for each registrar and will include each registrar’s hours of TRUG meeting attendance and participation in the IRR project.

3) Blank / Not Documented reports 2009 – these reports will be addressed at next meeting.

F) Implementation of ICD-10 in hospital and state trauma registries (affects ICD E-codes, ICD Injury Diagnoses and Procedure Codes)
   1) National CMS implementation date for ICD-10 – new coding system goes into effect October 1, 2013. Typically we do not change state “picklists” (drop-down menus) in the middle of a reporting year, but this is a special circumstance and a national requirement.
   2) TRUG decision is to align with national standards and switch for ED/Hospital Arrival Dates 10/1/2013 forward, unless something changes with the national mandate. ICD-9-CM codes will not be converted to ICD-10.

G) Any other items or questions to discuss? None mentioned.

H) TRUG meeting schedule (posted online): http://www.azdhs.gov/bems/TRUG.htm
   1) Next meeting: Wednesday, September 29th - 9:30 am - ADHS Conference Room 540-A
   2) 2011 TRUG meetings will be scheduled and TRUG will be notified.
**ARIZONA STATE TRAUMA REGISTRY / JULY 2010**

**INTER-RATER RELIABILITY / DATA VALIDATION PROJECT 1 - FINAL SCORING (updated 8/19/2010)**

<table>
<thead>
<tr>
<th>IRR PROJECT 1</th>
<th>Demographics</th>
<th>Injury</th>
<th>Pre-hospital</th>
<th>Referring Facility</th>
<th>ED/Toxicology</th>
<th>Discharge/Finance</th>
<th>Procedures</th>
<th>ICD-9-CM Injury Diagnoses/ISS/POS</th>
<th>AIS 2005 Codes/ISS (optional for non-Level I)</th>
<th>Total Points*</th>
<th>Percent Score</th>
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**Individual Registrar Results:**

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</table>

*AIS 2005 fields are optional for NON-Level I hospitals. Level I Trauma Centers submit 168 required data elements / Non-Level I Full Data Set users submit 164. Fields requiring multiple entry were assigned more than one point. Only FULL Data Set reporting hospitals were included in this IRR Project 1.

Intended for Use Only in the BEMSTS Quality Assurance Process
We are very pleased with the participation and quality of data received from our reporting hospital registrars. Keep up the good work! We have discovered a few sections where more education is needed and we will discuss these items at upcoming TRUG meetings. When questions come up, please refer to the ASTR Data Dictionary instructions and/or contact the ASTR Trauma Registry Manager.

Below are some key data dictionary instructions that apply to our first IRR test record:

**DEMOGRAPHICS**

- **ADMIT DATE** – Pay special attention if the patient is admitted on a different day than when they arrived. For the test record, the patient arrived on 3/1/1990 and was admitted 3/2/1990.

**INJURY**

- **STREET LOCATION OF INJURY** – Please attempt to obtain as much information as possible regarding the Injury location fields (Injury Street Location, Zip, City, County, State). These fields are extremely important for analyzing injury patterns and the state trauma system. The data dictionary has instructions regarding the format that should be used to enter an address, intersection, highway, etc. This format helps ADHS to map injury events using GPS software.

**PREHOSPITAL**

- **PREHOSPITAL TRANSPORT** – Please enter as much information as you can regarding any transports that happened before the patient arrived at your facility. In the IRR record 1, two legs of transport should have been entered – 1) POV to Cobre Valley Community Hospital and 2) Helicopter Ambulance into your hospital.

- **AIRWAY MANAGEMENT** – Data Dictionary definition = All airway management procedures performed by EMS providers at the scene of injury or during EMS transport to the first hospital for treatment. For the IRR record 1, there was no EMS care prior to arrival at the 1st hospital (Cobre Valley). Thus Airway Management is Not Applicable (*NA).

- **TIME EMS PROVIDER NOTIFIED BY DISPATCH** – Keep in mind that this is the time the individual EMS provider was notified by dispatch, not when the dispatch service was notified.

**ED/TOXICOLOGY**

- **BLOOD ALCOHOL CONTENT** – Only the first recorded BAC closest to the injury event should be submitted to ASTR.

- **DRUG USE INDICATOR/SUBSTANCES FOUND** – The drug fields refer to PATIENT USE only. The Drug Use fields do NOT refer to any medications given to the patient by EMS, hospital staff or other medical providers.

**PROCEDURES**

- Procedures from both the Referring and Reporting Hospital should be entered. If entering a procedure that was performed at a referring facility, please use the Referring Facility (REF) selection, regardless of location at the other facility. The other location codes (ED, OR, ICU,
etc.) all refer to places at your hospital. The REF location code helps filter out referring procedures for the NTDB export.

- ASTR follows the NTDB definition for procedures: “Operative and/or essential procedures conducted during hospital stay. Operative and/or essential procedures are defined as those procedures performed in the OR, ED, or ICU that were essential to the diagnoses, stabilization or treatment of the patient’s specific injuries. Repeated diagnostic procedures (e.g., repeated CT scan) should not be recorded (record only the first procedure).”

- The most common omission in the IRR record 1 was failing to enter CT scans. Per national instructions, code the first CT for each separate body region. Please make sure you are entering the required procedure fields into the correct location in your database. The radiology tab does not export to ASTR or NTDB.

- EMS procedures should not be entered into the hospital procedures section.

- Refer to Procedure handout for final answers in IRR project 1.

**DIAGNOSES**

- At the next TRUG meeting, further discussion will be held to discuss the final consensus for ICD-9-CM Injury Diagnoses and AIS 2005 codes in IRR record 1. In the meantime, refer to the AIS and ICD-9 IRR handouts for the final answers.

IRR TEST RECORD 1 - TOXICOLOGY

ALCOHOL USE BY PATIENT

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<th>Alcohol Use Indicator</th>
<th>Blood Alcohol - mg/dl</th>
<th>Frequency</th>
<th></th>
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</thead>
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<td>282</td>
<td>22 (out of 27)</td>
<td>Correct answer, per data dictionary.*</td>
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<tr>
<td>ABOVE_LEGAL_LMT</td>
<td>167</td>
<td>4</td>
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<tr>
<td>ABOVE_LEGAL_LMT</td>
<td>163</td>
<td>1</td>
<td></td>
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</table>

*Hospitals should export to ASTR the 1st recorded BAC closest to the time of injury. In this record, the 1st recorded BAC was drawn at the referring facility and was 282.

DRUG USE BY PATIENT

<table>
<thead>
<tr>
<th>Drug Use Indicator</th>
<th>Toxic Substance Found</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES_ILLEGAL_USE THC MARIJUANA</td>
<td>17 (out of 27)</td>
<td>Correct answer, per data dictionary.**</td>
</tr>
</tbody>
</table>

**Illegal use of THC MARIJUANA is the correct answer. It is true that Opiates were detected in the patient's blood, but it is clearly documented that opiates were given to the patient by the referring facility. Per data dictionary, this field indicates "patient use" of substances and NOT medications given to patient by an EMS provider or hospital medical staff.
IRR TEST RECORD 1 / JULY 2010
LOCATION OF INJURY

The Injury Location fields are very important for state reporting, injury tracking and trauma system evaluation. Please make every effort to obtain the most complete information possible for Injury Street Address, Injury Zip, Injury City, Injury County and Injury State.

The address that was listed in Test Record 1 was: 999 S BROADWAY RD

INSTRUCTIONS FROM ASTR DATA DICTIONARY:

STREET LOCATION OF INJURY - The street address/location where the injury incident occurred (best approximation).

This field is very important for reporting. To facilitate geocoding, the first preference is to submit a full street address. Second preference would be the intersection. Enter the full street address using the abbreviations provided below. Example1: 123 N 19TH AVE APT 12 Example2: 1234 S 8TH ST

If you are entering a location name plus an address, first enter the street address, followed by the location name in parentheses. Example: 26700 S HWY 85 (ASPC LEWIS). If you are entering a place name without an address, enter the place name in parentheses.

If only the intersection is known, please enter intersection using the & sign. Example1: 7TH ST & MCDOWELL Example2: 19TH AVE & VAN BUREN
If only the milepost is known, please enter the highway, followed by the milepost (abbreviate as MP) Example1: I-10 E MP 145 Example 2: HWY 89 MP 470

Please use the following abbreviations (with no punctuation): North = N, South = S, West = W, East = E, Street = ST, Apartment = APT, Avenue = AVE, Road = RD, Drive = DR, Circle = CIR,
### Handout C

#### IRR Test Record 1 - Procedures

**Notes from TRUG Discussion are entered in red - best answers (per TRUG) are highlighted in yellow. Please confirm.**

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<td>79.16</td>
<td>23</td>
<td><strong>CLOSED REDUCTION OF FRACTURE OF TIBIA AND FIBULA WITH INTERNAL FIXATION</strong> best answer per TRUG (counted as mandatory for this record)</td>
</tr>
<tr>
<td>79.06</td>
<td>17</td>
<td><strong>CLOSED REDUCTION OF FRACTURE OF TIBIA AND FIBULA WITHOUT INTERNAL FIXATION</strong> best answer per TRUG (ok to code, counted as optional for this record - will discuss at next meeting)</td>
</tr>
<tr>
<td>79.36</td>
<td>2</td>
<td><strong>OPEN REDUCTION OF FRACTURE OF TIBIA AND FIBULA WITH INTERNAL FIXATION</strong> was a closed reduction, not open</td>
</tr>
<tr>
<td>93.54</td>
<td>8</td>
<td><strong>APPLICATION OF SPLINT (at referring hospital)</strong> (not wrong to code this procedure but TRUG determined that splint is optional to code)</td>
</tr>
<tr>
<td>93.52</td>
<td>7</td>
<td><strong>APPLICATION OF NECK SUPPORT</strong> (not wrong to code but TRUG decided neck support/C-collars are optional to code)</td>
</tr>
<tr>
<td>86.59</td>
<td>3</td>
<td><strong>CLOSURE OF SKIN AND SUBCUTANEOUS TISSUE OTHER SITES</strong> (per TRUG, this is assumed with the OR procedure)</td>
</tr>
<tr>
<td>86.28</td>
<td>1</td>
<td><strong>NONEXCISIONAL DEBRIDEMENT OF WOUND, INFECTION, OR BURN</strong> (per TRUG, this is assumed with the OR procedure)</td>
</tr>
<tr>
<td>93.57</td>
<td>2</td>
<td><strong>APPLICATION OF OTHER WOUND DRESSING</strong> (per TRUG, this is assumed with the OR procedure)</td>
</tr>
<tr>
<td>96.59</td>
<td>1</td>
<td><strong>OTHER IRRIGATION OF WOUND</strong> (per TRUG, this is assumed with the OR procedure)</td>
</tr>
<tr>
<td>88.38</td>
<td>11</td>
<td><strong>OTHER COMPUTERIZED AXIAL TOMOGRAPHY</strong> best answer per TRUG - this is the code for CT of C-spine</td>
</tr>
<tr>
<td>88.01</td>
<td>10</td>
<td><strong>COMPUTERIZED AXIAL TOMOGRAPHY OF ABDOMEN</strong> best answer per TRUG (abdomen CT code includes pelvis)</td>
</tr>
<tr>
<td>87.03</td>
<td>9</td>
<td><strong>COMPUTERIZED AXIAL TOMOGRAPHY OF HEAD</strong> best answer per TRUG</td>
</tr>
<tr>
<td>87.41</td>
<td>9</td>
<td><strong>COMPUTERIZED AXIAL TOMOGRAPHY OF THORAX</strong> best answer per TRUG</td>
</tr>
<tr>
<td>87.44</td>
<td>6</td>
<td><strong>ROUTINE CHEST X-RAY, SO DESCRIBED</strong> (not wrong to enter any of these X-rays but TRUG decided X-rays are optional, not mandatory to code)</td>
</tr>
<tr>
<td>87.39</td>
<td>1</td>
<td><strong>OTHER SOFT TISSUE X-RAY OF CHEST WALL</strong> (not wrong but optional to code, per TRUG)</td>
</tr>
<tr>
<td>87.49</td>
<td>1</td>
<td><strong>OTHER CHEST X-RAY</strong> (not wrong but optional to code, per TRUG)</td>
</tr>
<tr>
<td>87.22</td>
<td>1</td>
<td><strong>OTHER X-RAY OF CERVICAL SPINE</strong> (not wrong but optional to code, per TRUG)</td>
</tr>
<tr>
<td>88.27</td>
<td>3</td>
<td><strong>SKELETAL X-RAY OF THIGH, KNEE, AND LOWER LEG</strong> (not wrong but optional to code, per TRUG)</td>
</tr>
<tr>
<td>88.28</td>
<td>1</td>
<td><strong>SKELETAL X-RAY OF ANKLE AND FOOT</strong> (not wrong but optional to code, per TRUG)</td>
</tr>
</tbody>
</table>

**NTDB Definition:** Operative and/or essential procedures conducted during hospital stay. Operative and/or essential procedures are defined as those procedures performed in the OR, ED, or ICU that were essential to the diagnoses, stabilization or treatment of the patient's specific injuries. Repeated diagnostic procedures (e.g., repeated CT scan) should not be recorded (record only the first procedure).
Some say DPLs and blood products are essential, others think these do not need to be coded. We will discuss at next TRUG meeting.

Not mandatory (optional) to code a splint. After meeting, confirmed that splint is assumed with closed reduction.

Need more clarification nationally on whether to code MRIs

CTs at your hospital should be included, but you are required to only enter 1 CT per body region. EX: If pt had 2 head CTs and 2 thorax CTs, the requirement is to code the 1st head CT and the 1st thorax CT

THE RADIOLOGY TAB DOES NOT SEND TO ASTR – you have to enter the required codes into the state PROCEDURES field

You do not need to code CTs or X-rays at a referring hospital. But you DO need to include any important procedures performed at the referring facility.

Sutures may, or may not, need to be coded depending on the situation. If an OR procedure was performed where the sutures would be assumed, it is not mandatory to code. Otherwise code the sutures.
# ASTR IRR TEST 1 - AIS 2005 INJURY CODES

**NOTES FROM TRUG DISCUSSION ENTERED IN RED - BEST ANSWERS (per TRUG) ARE HIGHLIGHTED IN YELLOW.**

<table>
<thead>
<tr>
<th>Injury Type</th>
<th>AIS 2005 CODES</th>
<th>Frequency</th>
<th>Text</th>
<th>Best answer per TRUG</th>
</tr>
</thead>
<tbody>
<tr>
<td>RIB FRACTURES</td>
<td>450203</td>
<td>26</td>
<td>&gt;= THREE RIB FRACTURES W/O FLAIL, OIS II</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>854251</strong></td>
<td>18</td>
<td>TIBIA SHAFT FRACTURE - SIMPLE; SPIRAL; OBLIQUE; TRANSVERSE; WINQUIST I</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>854471</strong></td>
<td>17</td>
<td>FIBULA FRACTURE ABOVE JOINT (SUPRASYNDESMOTIC); ISOLATED SHAFT, HEAD OR NECK; WEBER C</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>854441</strong></td>
<td>6</td>
<td>FIBULAR MALLEOLI FRACTURE - NFS</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>854472</strong></td>
<td>3</td>
<td>FIBULA FRACTURE ABOVE JOINT (SUPRASYNDESMOTIC); ISOLATED SHAFT, HEAD OR NECK; WEBER C - OPEN</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>854221</strong></td>
<td>3</td>
<td>TIBIA SHAFT FRACTURE - NFS</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>854111</strong></td>
<td>2</td>
<td>PROXIMAL TIBIA FRACTURE - NFS</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>854361</strong></td>
<td>1</td>
<td>DISTAL TIBIA FRACTURE W/PARTIAL ARTICULAR</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>854331</strong></td>
<td>1</td>
<td>DISTAL TIBIA FRACTURE - NFS INCLUDES PILON FRACTURE</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>850099</strong></td>
<td>1</td>
<td>LOWER EXTREMITY FRACTURE - NFS</td>
<td></td>
</tr>
<tr>
<td>TIBIA / FIBULA FRACTURES</td>
<td><strong>210202</strong></td>
<td>19</td>
<td>FACIAL (INCLUDING EYELID, LIP, EXT. EAR &amp; FOREHEAD) ABRASION</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>410202</strong></td>
<td>8</td>
<td>THORAX - SKIN ABRASION</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>910200</strong></td>
<td>3</td>
<td>EXTERNAL ABRASION(S)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>110202</strong></td>
<td>3</td>
<td>SCALP ABRASION</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>810202</strong></td>
<td>2</td>
<td>LOWER EXTREMITY SKIN/SUBCUTANEOUS/MUSCLE ABRASION</td>
<td></td>
</tr>
<tr>
<td>ABRASIONS</td>
<td><strong>410402</strong></td>
<td>14</td>
<td>THORAX - SKIN CONTUSION (HEMATOMA) - OIS GRADE I</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>210402</strong></td>
<td>7</td>
<td>FACIAL (INCLUDING EYELID, LIP, EXT. EAR &amp; FOREHEAD) CONTUSION</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>450802</strong></td>
<td>6</td>
<td>STERNUM CONTUSION</td>
<td></td>
</tr>
<tr>
<td>CONTUSIONS</td>
<td><strong>450203</strong></td>
<td>26</td>
<td>&gt;= THREE RIB FRACTURES W/O FLAIL, OIS II</td>
<td></td>
</tr>
</tbody>
</table>

Per TRUG, the 2 codes above best document the tib & fib fractures that were mentioned in OR report. The OR report does indicate the site of injury on the tibia and fibula so it needs to be documented to that level of detail.

"face and scalp" is mentioned once (page 22) but it doesn't specify whether scalp has abrasion, excoriation or contusion. Everything else mentions face. The facial abrasion code above is best answer.

TRUG members said the actual sternum bone needs to be mentioned (there are several mentions of chest contusion). There is no evidence in the CT scan that the bone was involved. This is a thorax skin contusion.
<table>
<thead>
<tr>
<th>Code</th>
<th>Value</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>810402</td>
<td>5</td>
<td>LOWER EXTREMITY SKIN/SUBCUTANEOUS/MUSCLE CONTUSION (HEMATOMA)</td>
<td>may code this, but not required</td>
</tr>
<tr>
<td>110402</td>
<td>2</td>
<td>SCALP CONTUSION; HEMATOMA</td>
<td>&quot;face and scalp&quot; is mentioned once (page 22) but it doesn't specify whether the scalp has abrasion, excoriation or contusion. Everything else mentions face. The facial contusion code above is best answer.</td>
</tr>
<tr>
<td>161002</td>
<td>4</td>
<td>BRIEF LOSS OF CONSCIOUSNESS - NFS</td>
<td>Per Jan Price, there is sufficient evidence to code 161002 Brief Loss of Consciousness. AIS allows coding of LOC without concussion and is required in this record.</td>
</tr>
<tr>
<td>161004</td>
<td>2</td>
<td>BRIEF (LOSS OF CONSCIOUSNESS &lt;= 30 MINS)</td>
<td>The record says brief loss of consciousness, but the number of minutes is not specified. Patient's wife found patient outside and patient was unsure what happened… no mention of timing in record other than &quot;brief&quot; so you would use Brief LOC, NFS.</td>
</tr>
<tr>
<td>100099</td>
<td>1</td>
<td>INJURIES TO HEAD NFS</td>
<td>no injury found in Head CT or documented by physician</td>
</tr>
</tbody>
</table>
# ASTR IRR TEST 1 - ICD-9-CM INJURY DIAGNOSES

NOTES FROM TRUG DISCUSSION ARE ENTERED IN RED. BEST ANSWERS HIGHLIGHTED IN YELLOW.

<table>
<thead>
<tr>
<th>Injury Type</th>
<th>ICD9 Injury Diagnosis</th>
<th>Frequency</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RIB FRACTURES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>807.03</td>
<td>26</td>
<td>CLOSED FRACTURE OF THREE RIBS</td>
</tr>
<tr>
<td></td>
<td>807.04</td>
<td>1</td>
<td>CLOSED FRACTURE (&gt; 3 RIBS ON ONE SIDE) OR FRACTURE (&lt; 4 RIBS ON ANY SIDE) W/ HEMO/PNEUMOTHORAX OR COMMINUTED/DISPLACED FRACTURE OF TOTAL OF FOUR RIBS</td>
</tr>
<tr>
<td><strong>TIBIA / FIBULA FRACTURES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>823.01</td>
<td>18</td>
<td>CLOSED FRACTURE OF UPPER END OF FIBULA</td>
</tr>
<tr>
<td></td>
<td>823.20</td>
<td>17</td>
<td>CLOSED FRACTURE OF SHAFT OF TIBIA</td>
</tr>
<tr>
<td></td>
<td>823.22</td>
<td>9</td>
<td>CLOSED COMMINUTED/DISPLACED FRACTURE OF SHAFT OF FIBULA WITH TIBIA</td>
</tr>
<tr>
<td></td>
<td>823.00</td>
<td>1</td>
<td>CLOSED FRACTURE OF UPPER END OF TIBIA</td>
</tr>
<tr>
<td></td>
<td>823.02</td>
<td>1</td>
<td>CLOSED FRACTURE OF UPPER END OF FIBULA WITH TIBIA</td>
</tr>
<tr>
<td></td>
<td>823.21</td>
<td>1</td>
<td>CLOSED FRACTURE OF SHAFT OF FIBULA</td>
</tr>
<tr>
<td><strong>ABRASIONS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>910.0</td>
<td>22</td>
<td>ABRASION OR FRICTION BURN OF FACE, NECK, AND SCALP EXCEPT EYE, WITHOUT INJURY TO A DEEPER STRUCTURE, WITHOUT MENTION OF INFECTION</td>
</tr>
<tr>
<td></td>
<td>911.0</td>
<td>8</td>
<td>ABRASION OR FRICTION BURN OF TRUNK, WITHOUT INJURY TO A DEEPER STRUCTURE, WITHOUT MENTION OF INFECTION</td>
</tr>
<tr>
<td></td>
<td>919.0</td>
<td>3</td>
<td>ABRASION OR FRICTION BURN OF OTHER, MULTIPLE, AND UNSPECIFIED SITES, WITHOUT MENTION OF INFECTION</td>
</tr>
<tr>
<td></td>
<td>916.0</td>
<td>3</td>
<td>ABRASION OR FRICTION BURN OF HIP, THIGH, LEG, AND ANKLE, WITHOUT INJURY TO A DEEPER STRUCTURE, WITHOUT MENTION OF INFECTION</td>
</tr>
<tr>
<td><strong>CONTUSIONS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>922.1</td>
<td>20</td>
<td>CONTUSION OF CHEST WALL</td>
</tr>
<tr>
<td></td>
<td>920.</td>
<td>7</td>
<td>CONTUSION OF SCALP/NECK/FACE EXCEPT EYE(S), WITHOUT INJURY TO A DEEPER STRUCTURE</td>
</tr>
<tr>
<td></td>
<td>920.</td>
<td>2</td>
<td>CONTUSION OF SCALP AND NECK WITH INJURY TO A DEEPER FACE STRUCTURE</td>
</tr>
<tr>
<td></td>
<td>924.10</td>
<td>3</td>
<td>CONTUSION OF LOWER LEG</td>
</tr>
</tbody>
</table>

Per TRUG, the 2 codes above best document the tib & fib fractures that were mentioned in OR report. The OR report does indicate the site of injury on the tibia and fibula so it needs to be documented to that level of detail.

Per TRUG, the leg contusions are aren't mandatory to report if you code the fractures. Will discuss at next meeting.

Best answer per TRUG.

Counted as acceptable for this record. Will discuss at next meeting.

not seeing this in record

no injury to deeper structure

Best answers per TRUG.
<table>
<thead>
<tr>
<th>Code</th>
<th>Value</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>924.11</td>
<td>1</td>
<td>CONTUSION OF KNEE, WITH INJURY TO A DEEPER STRUCTURE</td>
<td>not seeing this in record</td>
</tr>
<tr>
<td>922.0</td>
<td>1</td>
<td>CONTUSION OF BREAST, WITHOUT INJURY TO A DEEPER STRUCTURE</td>
<td>N/A for a male patient - use Chest contusion instead</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CONCUSSION/H HEAD INJURY</td>
<td></td>
</tr>
<tr>
<td>850.11</td>
<td>4</td>
<td>CONCUSSION W/ LOSS OF CONSCIOUSNESS OF 30 MINS. OR LESS</td>
<td>Physician indicated &quot;brief loss of consciousness&quot; but no mention of concussion or intracranial injury. ICD-9 codes do not allow coding of LOC without mention of concussion. (AIS is different.) Per TRUG, you cannot code concussion unless a physician specifically documents concussion in the record. If the physician does document a concussion, you should only use the length for loss of consciousness that is specified by a medical professional such as MD, RN, EMS - not just family member report.</td>
</tr>
<tr>
<td>850.5</td>
<td>2</td>
<td>CONCUSSION WITH LOSS OF CONSCIOUSNESS OF UNSPECIFIED DURATION</td>
<td></td>
</tr>
<tr>
<td>854.02</td>
<td>1</td>
<td>INTRACRANIAL INJURY OF OTHER AND UNSPECIFIED NATURE, WITH BRIEF</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(LESS THAN ONE HOUR) LOSS OF CONSCIOUSNESS</td>
<td></td>
</tr>
<tr>
<td>959.01</td>
<td>1</td>
<td>HEAD INJURY, UNSPECIFIED</td>
<td></td>
</tr>
</tbody>
</table>
Attendees:
ADHS– David Harden, Anita Ray Ng, Anne Vossbrink
Banner Good Samaritan– Kathi Coniam (phone), Angie Minchella (phone), Philomene Spadafore (phone)
Flagstaff Medical Center– Bill Ashland (phone), Michelle Gochenour (phone), Beth Latrell
John C Lincoln North Mountain– Melissa Moyer, Heather Young
La Paz Regional Hospital– Maria Martinez (phone)
Maricopa Medical Center–Lillian Duncan (phone), Claire Holmes (phone), Tiffiny Strever (phone), Linda Tuck (phone)
Northern Cochise Community Hospital– David Edwards
Phoenix Children’s Hospital– Cristina Wong
Scottsdale Healthcare Osborn– Jane Burney, Karen Helmer, Kelley Lewellyn, Erzsebet Szabo
St. Josephs’ Hospital– Rose Johnson
Summit Healthcare Regional Medical Center– Veronica Stedman (phone)
University Medical Center Tucson– Paul Bowby (phone), Alice Magno (phone)
Yavapai Regional Medical Center– Donna Quay
Yuma Regional Medical Center– Eugenia Sims (phone)

A) ASTR Quarterly Data Submission
  1) Reminder: Quarter 2 2010 data is due October 1, 2010 (ED/Hospital Arrival April - June 2010).
     a) Full Data Set users: Please include your quarter 1 updates by back-dating the date range
        (1/1/2010–6/30/2010) and un-checking both boxes on the export screen.
     b) Reduced Data Set users: Please submit your Excel spreadsheets through secure email.

B) Training/Education
  1) Data Entry Validation and Inter-Rater Reliability (IRR) – Project 1
     a) Final IRR scores and comparison sheets were emailed to each registrar. Please review your
        results carefully and be sure to ask if you have any questions.
     b) We plan to implement the IRR process semi-annually (for now) to track our progress and
        continue to address questions on data entry. Discussion was held on when to send out IRR
        records. TRUG decision was that mid to late July and in February would be most convenient.
     c) Reduced Data Set users will be participating soon in the IRR project 1. More information will
        be provided at the Reduced Data Set conference call October 20th at 1 pm.
     d) After the last TRUG meeting, we had some remaining questions on coding with ICD-9-CM
        and AIS 2005. Final IRR answers were sent out in the July 21 TRUG meeting minutes.
        Please refer to the July 21 handouts for more information on coding explanations.
        • Key points following the last meeting - Final answers for ICD-9-CM Injury Diagnosis:
          (a) Confirmed with national sources that in ICD-9-CM coding, you cannot code loss of
              consciousness if there is no documentation by physician of a concussion or
              intracranial injury. Mention of “closed head injury” is insufficient for coding ICD-9 loss
              of consciousness without documentation of the actual head injury.
          (b) State decision: When coding a record where patient has more than one abrasion,
              you may code a “multiple” abrasion category or as separate abrasion codes. Either
              way, the record will be accepted as correct. Points were given for either answer.
        • Key points following the last meeting - Final answers for AIS 2005:
          (a) Per Jan Price of AAAM: In AIS 2005, loss of consciousness can be coded without
              confirmation of concussion or intra-cranial injury if there is sufficient physician LOC
              documentation. The way the book is written, it appears that LOC codes 161002-
              161006 fall under the concussive injury codes, but Jan confirmed that test record 1
does have sufficient documentation to code the brief LOC code 161002. Note: THESE RULES ARE DIFFERENT THAN ICD-9-CM CODING.

(b) State decision: When coding a record where patient has more than one abrasion, you may code a “multiple” abrasion category or as separate abrasion codes. Either way, the record will be accepted as correct. Points were given for either answer.

(c) Discussion was held regarding whether loss of consciousness must be “observed” by medical staff to be coded or if the physician only has to “corroborate” the LOC. After the meeting, Anita confirmed with Jan Price… If the physician validates LOC - no matter where he/she gets the info – you may code it in AIS 2005. EMS or physicians do not have to witness the LOC. Per Jan, if your hospital relies on physician extenders (NP or PA consulting with the physician), you may consider their validation as well. If the only LOC documentation is from the patient or EMS or RN (and NOT the physician), you cannot code the LOC.

• Discussion on how diagnosis coding affects the Injury Severity Score (ISS) – Refer to Handout A1. Key points:
  (a) ISS is calculated based on the severity score of the 3 most severely injured body regions. Severity scores and body regions are determined based on the ICD-9-CM or AIS 2005 diagnosis codes that you select. Omitting a code or selecting an incorrect code, body region or severity, can impact the injury severity calculated for that patient. ISS is used often in trauma reporting.
  (b) For ICD-9-CM, you must select the appropriate code from the picklist (not type in the number and move to the next field). Most codes have more than one possible severity value (refer to Handout A2). If you type the code in the database will be unable to determine the appropriate level of severity to calculate ISS.
  (c) As you can tell from IRR test record 1, there can be differences in the ISS if you choose ICD-9-CM or AIS 2005 coding scales. In some cases, AIS ISS will be higher and in others the ICD-9 ISS is higher. Make sure you know which ISS score you need before running your hospital reports.

• Key points following the last meeting - Final answers for ICD-9-CM Hospital Procedures:
  (a) All hospitals MUST confirm that your Hospital Procedures are being entered into the correct section of your database. The radiology tab does NOT export to the state or NTDB, so you have two choices: 1) Directly enter all required radiology and non-radiology procedures into the state/NTDB Hospital Procedures field, or 2) Ask Lancet to auto-fill a copy of the Radiology data into the Hospital Procedures field. Check that the location, start date, start time and codes are filled in correctly.
  (b) For IRR test record 1, procedure code 79.16 (closed reduction of tibia and fibia with internal fixation) was required. Per national coding sources, 79.06 (without internal fixation) is technically not required if you have already included the code for internal fixation. 79.06 was considered optional for test record 1.

e) The IRR process was set up so that individual registrar results would remain confidential and be released only to the individual. TRUG discussed whether this requirement should remain for future IRR projects. Decision was made that ADHS will not release individual results, but registrars may choose to share their individual results with their Trauma Managers and Coordinators.

f) Any remaining questions on the data entry for IRR test record 1? None reported.

2) Discussion on which Hospital Procedures are OPTIONAL to code
  a) ADHS emailed NTDB for guidance. NTDB is releasing a new 2011 data dictionary before the end of the year and the definition/requirements for Hospital Procedures has been expanded. Please refer to Handout B for the new NTDB Procedure data entry requirements. The new list is very detailed and includes procedures that TRUG originally thought might not be mandatory to capture. For ED/Hospital Arrival Dates January 1, 2011 forward, ASTR Procedures data entry requirements will match the National Trauma Data Bank standard and this definition will need to be followed. The only difference in the state and national procedures data is that AZ state data requires major procedures performed at the referring facility. If Location=Referring Facility, the procedure will not export to NTDB.
b) Registrars, please email Anita if you have any procedure or diagnosis “cheat sheets” that you use. TRUG will work together to create AZ cheat sheets to help save data entry time and improve coding consistency.

3) Ongoing training ideas for diagnoses and procedures? Any volunteers to assist with this?
   a) Please email Anita if you would like to be part of a TRUG sub-committee to help with registrar education activities for TRUG meetings.

4) ADHS is working on the Continuing Education Certificates – PDF documents will be emailed to each registrar.

C) Status update on the AZ Data Validation Tool
   1) Quarter 1 AZ Validation Tool results have been sent to hospitals. If you have already submitted your quarter 2 data, your hospital’s reports are being re-run to include quarter 1 updates.
      a) Some of the error checks are showing up for every record (even when the data is accurate). Trauma Registry Manager deleted these checks from hospital results before sending out the reports. We can re-run these checks after we get a fix.
      b) Please let Anita know if you find any additional checks that don’t make sense. A list of validation tool revisions is being prepared for the software vendor and the tool will be sent out to everyone after this next fix.
      c) Keep in mind as you correct data that this tool is much more comprehensive and we are now running 850+ data checks. Pay attention to the State Unique ID when making corrections. If you get one data element wrong, it can trigger multiple errors in the same record. For example, by fixing one EMS time, you might resolve several different errors messages that came up because that one time field was compared to several other times in the database.
      d) If data has been verified as valid and does not require correction, please let the ASTR Trauma Registry Manager know so these items can be ignored on re-checks.
   2) Reminder: Continue to run the blank field and QA reports on 2010 data until we are sure these errors are being correctly identified by the AZ Validation Tool.
   3) Discussion and explanation of specific validation checks:
      a) Rule # 2702 - “Airbag Deployment - If completed, then Protective Device must be 8 (Airbag Present).” This is an NTDB check for “Airbag Present” in the Protective Devices field. A lot of hospitals are getting this error. Basically if you entered anything in the airbag deployment field except *NA or *ND, it is assumed that the vehicle had an airbag present (deployed or not) and that the Protective Devices field should match and have “Airbag Present”. If an airbag was present but did not deploy, you would select Airbag Present for protective devices and indicate that the airbag did not deploy in the Airbag Deployment field. If you do NOT know if an airbag was present, use *ND for Airbag Deployment. If you an airbag was NOT present, use *NA.
      b) Rule # 6504 – “Hospital Procedures must be BIU=1 (NA) when ED Death=1 (DOA)” (NTDB check). The number of ED DOA records in the ASTR is fairly small (Q1 2010 = 37 records). We will keep this check in the validation tool so that registrars can confirm the patient was in fact DOA and not one of the other death categories. Confirm that only basic procedures were performed when you select ED DOA (i.e., CPR or intubation).
      c) ICD-9-CM and AIS 2005 - Invalid or Blank errors will show up when the severity or body region values are missing. NOTE: If body region or severity values are unable to be determined, please use the *ND key to fill in any blank values.
         • Important note: You must select ICD-9-CM diagnosis codes by reading the picklist instead of typing in the number (see ISS discussion above).
      d) Rule # 19435-AZ – “Total Reimbursements is greater than the Total Hospital Charges.” This error will show up to confirm the data entry was correct. Sometimes this occurs because of a typo in the numbers. But it could be correct due to overpayment (refund still in process) or a higher DRG pay rate.
      e) ICD-9-CM and AIS 2005 coding – what to do when the number of codes do not match for AIS and ICD9. Do NOT use *NA, *ND or blank lines to make the codes line up – each section is now independent of each other with regards to severity and body region. NTDB no longer requires diagnosis codes to be entered in order of severity. Be careful using Ctrl + D to delete a line of diagnosis codes, because it will still delete the entire ICD-9 and AIS row.
      f) Rule # 2333-AZ – “County of Injury is Not Documented. Even if address is unknown, registrar should make every attempt to determine county.” Please make every attempt to find where
trauma injuries are occurring. Injury location (address, zip, city, county and state) are very important for state reporting and injury GIS mapping.

g) Rule # 4513 – “ED/Hospital Arrival Date minus Injury Incident Date must be less than 30 days” (NTDB check). Per previous TRUG discussion, we decided that arrival more than 30 days after injury happens very rarely, but it would be ok to submit the record if patient’s initial hospital visit occurred more than 30 days after injury event. Anita will check with Lancet to see if we can reword NTDB text to more of a warning message (Change text: “must be less than 30 days” to “is less than 30 days”). Readmission visits are different and are not submitted to ASTR.

h) Admission Status errors – ED and Admission fields. These error checks compare the Admit Status field (from the Demographics section) to the ED fields and Admission/Discharge fields. There are several causes for these types of errors: 1) Incorrect Admit Status was entered. 2) You may have entered a date, time or disposition that really should be “NA. 3) You entered “NA, but there should be actual ED or admission data entered.

i) Rule # 11932-AZ – “Record does not have a prehospital entry that pertains to arrival of patient into your facility (INTO_REPT_HOSP).” All records must have documentation of the transport that brought the patient into your facility (regardless if EMS or POV). If this transport is missing, the record is incomplete.

j) Rule # 11933-AZ – “Record has more than one prehospital entry that pertains to arrival of patient into your facility (INTO_REPT_HOSP).” If you have more than one transport into your facility, check if you might have entered a duplicate EMS transport or else coded both the 1st responder and transporter as bringing the patient to your hospital.

k) Note: In Trauma One® prehospital data entry, there is a button at the top that lets you switch views back and forth from the regular data block to a scrolling window. Sometimes it is easier to check for duplicate EMS entries or missing entries if you change to a scrolling window and view every leg of care that was documented.

l) Rule # 12033-AZ – “Record has more than one leg of transport listed as the transport from the Injury Scene. Check transport information.” Same as error 11933-AZ. Check for duplicate entries or coding the non-transport entry incorrectly.

m) Invalid Zip Code errors - Zip Codes that refer only to PO Box mailing addresses (and not actual locations in AZ) are accepted for residence but not for the Injury ZIP. If the injury occurred in the Phoenix metro area and Zip is for PO Box mail only, you will get an error.
   • If you have an address, but are missing the zip code or if you need to confirm that a Zip Code is valid, please go to www.usps.com and select “Find a Zip Code”. You can search by address or by city. You can also type in a Zip to check if it is valid and which cities or PO Boxes apply to it.

4) NTDB export for Level I hospitals – 2010 data is due May 2011 and call for data starts in March.
   a) 2010 will be our first year to have state data checked with the comprehensive state validation tool. By checking data each quarter, we should eliminate the time it takes to submit to NTDB.
   b) Some of the NTDB error checks were customized to meet state standards, but this should not affect your NTDB submission. The AZ NTDB export is set to address any differences between state and national standards.
   c) If you find any problems with the NTDB export, please notify the Trauma Registry Manager.
      • Flagstaff reported problems with Airbag=*ND on the previous NTDB validation report.
      • Need to confirm that *NA is exported for procedures if ED Disposition = ED DOA.
      • Need to confirm that Referring Procedures (location = REF) are not exported to NTDB.

D) New field for 2011 – E000 activity codes
1) This is a supplemental code (like E849 location) and cannot be entered as the Primary E-code or Secondary E-code. We will ask Lancet to install the new field at the same time they install the validation tool. Trauma One® users please begin entering activity E-codes for January 1, 2011 ED/Hospital Arrival Dates forward.
   a) Decision has not been made if Reduced Data Set users will also submit this code. More information to follow at the Reduced Data Set conference call October 20th.

E) Quarter 1 2010 Not Documented (ND) or Blank (BL) reports were passed out for each full data set hospital. Aggregate ASTR 2009 data were also passed out to compare quarter 1 to last year.
1) The data completeness goal is to have less than 5% missing data. But ADHS understands that obtaining the data for some of these fields is outside of your hospital's control (ex: if EMS refuses to leave a run sheet.) But if there is anything you can do at your hospital to improve the chances of obtaining this data, it would be helpful.

2) Important fields to try to improve would be: Injury Date/Time, Injury Location (street address, zip, city, county, state), EMS dates/times, and Referring Hospital dates/times/length of stay. Fields like Second Race or Temperature Route may be missing more often, but it would be best to focus limited staff time on key reporting fields.

3) If you find a process that helps your hospital obtain better data for injury, EMS or referral, please share your experiences at TRUG meetings.

F) Picklist updates were sent out to add new EMS providers and hospitals to our ASTR lists. The update was emailed on August 19th. If you have not updated your picklists, please do so ASAP.

G) Are there any reporting topics that would be helpful to your hospital? None reported. ASTR can provide aggregate data compared to your hospital data.

H) Any other items or questions to discuss?
   1) Registrar question: If patient came to my hospital by POV from another acute care facility, should PREHOSPITAL "Transported From (Origin)" be "From Referring Hospital" and "Transported From (Hospital)" be that facility? On the Referral page, it says the patient must come in by EMS to be an interfacility transfer, but what about the prehospital section?
      • Discussion was held. Decision was made that yes ON THE PREHOSPITAL PAGE you enter that the patient came in as Transport Mode = POV and Transport Origin = From a Referring Facility. But on the REFERRING PAGE, this patient must be marked as No for Interfacility Transfer because the transfer into your hospital did not involve an EMS transport. Interfacility Transfer can only be YES if the patient was transferred INTO your hospital by EMS.
   2) FYI - Native Air and LifeNet have online access to run sheets if you are unable to track down the paper form.

I) 2011 TRUG meeting schedule (will be posted online): http://www.azdhs.gov/bems/TRUG.htm
   Wednesday, January 26, 2011 - 9:30 am - ADHS Conference Room 540-A
   Wednesday, March 30, 2011 - 9:30 am - ADHS Conference Room 540-A
   Wednesday, July 20, 2011 - 9:30 am - ADHS Conference Room 540-A
   Wednesday, August 17, 2011 - 9:30 am - ADHS Conference Room 540-A (date updated)
   Wednesday, October 12, 2011 - 9:30 am - ADHS Conference Room 540-A