

Kansas Trauma Registry Subcommittee Policy Meeting  
April 29, 2009  
Saint Francis Hospital, Room 3  
Topeka, KS

Present: Scott Harrison, Janelle Dimond, Joe Moreland, Sharon Gehring, Chris Alexander, Dr. Ramona Warren, Debbie Trujillo, Debbie Helton, Liz Carlton, Dr. Chris Bandy, Lois Towster, Dr. Dennis Allin

Absent: Dr. Jonathan Dort, Dan Murray, Dan Leong, Cathy Heikes

**Program Update**

**Rosanne Rutkowski**

Rosanne welcomed everyone to the meeting. [Click here to view the meeting handout.](#) She gave a brief history of the policy subcommittee. The subcommittee was established to gather local input for the on going process of up-dating the registry. We are fortunate because Kansas is one of the few states where all the hospitals in the state send injury data to the registry. This statewide data allows the trauma program to make programmatic decisions based on data. Trauma registry data are also intended to drive performance improvement at both the system and hospital level. The data reports were created to address the performance improvement.

Rosanne provided a brief history of the trauma registry contract with Digital Innovation and needing to evaluate the contract to make sure that it fits the needs of Kansas hospitals. Rosanne then asked for members present to introduce themselves.

**AIS 2005**

**Dee Vernberg**

Dee gave a presentation describing the advantages and disadvantages of switching to the AIS 2005. [Click here to see the presentation.](#) The group discussed whether to move to AIS 2005 or not.

Liz Carlton asked who was currently using AIS 2005. Colorado is using these codes, but the trauma program was unable to speak with them before this meeting. Liz suggested we should seek the advice of the states with more established trauma systems and see what they think of AIS 2005. Rosanne asked what the hospitals wanted. Liz asked what the NTDB is using. No one knew. Liz Carlton said that if the move to AIS 2005 is inevitable then we should start planning to implement it. Lois Towster emphasized her desire to switch because the AIS 2005 is more comprehensive in measuring organ severity and Overland Park has two individuals already trained. The point was reiterated that the switch to AIS 2005 is an inevitable event so the group should start planning on the switch. Sharon Gehring explained AIS 1998 will not work with ICD10; so in order to help facilitate the switch from ICD9 to ICD10 we need to start thinking about AIS 2005 soon. Liz said it sounds like we need to move forward. Double coding might be the best way to address the analysis issue at the state level. Because the AIS 98 and AIS 2005 are not strictly comparable, analyzing data will require matching the codes two codes initially if longitudinal analyses are conducted.

Rosanne asked if Jan 2010 would be a good date to switch. Everyone agreed that would be a good date. Scott Harrison asked if the state would bring in training or if the individual facilities have to find training. Rosanne answered that we will have to give the question some thought. Because the class is expensive, it would be advantageous to have one centrally held class in Kansas to cut back on travel. Liz suggested ear marking funds from the regional support grants to support AIS 2005 training. If that does not cover the entire amount needed, then hospitals could provide supplemental funds for the participants who attend. There was some discussion about how the AIS coders would be switched. Lois pointed out that the old AIS coder cannot simply be taken out and just switched. It must be inactivated after a certain date in order to allow manipulation of the older records. Lois asked the trauma program to look at when the NTDB has said we need to switch over to AIS 2005.

### **Review current benchmark reports**

**Dee Vernberg**

[Click her to view presentation.](#) Dee described the Kansas data report and proposed changes for some of the indicators.

**Transfer Flow:** This indicator states that for all transferred patients, elapsed time between emergency department arrival and discharge to another acute care facility does not exceed 6 hours. The issue underlying the proposed change is that some facilities have an excess of outliers for this indicator. In other words, for some facilities, many of the outliers listed are patients who are transferred to another acute care facility for non-definitive care which explains why the transfer takes place after 6 hours from the time of hospital arrival. The proposed change for this indicator involves changes in trauma registry data collection (modifying options to the field “discharge to”).

Changing the options in collector from “discharge to another acute care facility” to the following three options: 1) discharge to “acute care facility for definitive care”, 2) discharge to “another acute care facility for non definitive care” and 3) discharge to “another acute care facility unknown whether for definitive care or not” could solve this problem. Lois said the change should be in a pop-up window in order to keep with the NTDB format. The committee decided to send the options proposal to the ACT for approval. Dr. Bandy suggested that the elapsed time between emergency department arrival and discharge to another acute care facility, currently set at 6 hours, should be changed to 4 hours. He said this change needs to be a priority for next year.

**Unstable Transfer:** This indicator states: For transfers with Initial Systolic Blood Pressure < 90 or Glasgow Coma Scale  $\leq$  8, elapsed time between emergency department arrival and discharge to another acute care facility does not exceed 1 hour.

Much discussion centered around the difficulty of assessing and transferring a patient in one hour. The majority of the group agreed the limit is impractical and should be increased to 2 hours. Rosanne believed the original limit of 1 hour may have come from a Texas model used in the beginning of the registry. The group agreed the 2 hour mark is a much better guideline for Kansas.

Airway: There was no proposed change for this indicator.

Head injury: This indicator states: Patients with suspected traumatic brain injury (moderate to severe coma, GCS  $\leq$  12) are transferred to a level I or level II trauma center for treatment.

There was no proposed change for this indicator but Liz asked if the GCS is the best indicator for this benchmark or would an AIS score through a retrospective review be better? There was some discussion about measurement issues and false positives on the data reports. Dr. Bandy explained the benchmark report is only a mechanism to trigger a review. There was some discussion about creating separate benchmarks for the level 1 and 2 centers. Lois asked if the level 3 and 4's also needed a separate benchmark report. The group decided to keep this benchmark the same for now.

Chest tube: No proposed change for this indicator.

On time: This indicator states: Trauma surgeon response time is timely.

There was much discussion about the subjective nature of this benchmark. The field that is used for this indicator is facility specific and the group was not convinced that this is a useful measurement for an indicator. Dr. Bandy stated that if a hospital is not given a benchmark or a guideline there will be no way to gauge their performance. If the facility is not a trauma center, it would be nice to know if the physician arrives in 30min. The group agreed this particular benchmark is important for performance improvement at the facility level, but it is not important for the state to collect. The committee motioned to delete this benchmark and take it out as a core data field.

Open fracture: This indicator states: Open fractures undergo debridement within 8 hours of ED arrival. Excludes patients who were discharged or who died within 8 hours of ED arrival.

There was discussion over the wording at the beginning of the slide: "Open fractures undergo debridement within 8 hours of ED arrival." The group questioned the 8 hour time limit and said the actual clinical issue is "washout" not "debridement." This indicator includes all open fractures. Because not all open fractures are washed out, it was proposed that only long bone fractures be tracked. A question was asked about the coding for washout. It was explained the code for washout is irrigation without debridement. Liz called an orthopedic physician to determine the time standard for washing out open fractures. The physician stated the standard is that all open fractures will undergo a washout (not debridement) within 6 hours. Dr. Warren asked if this change is necessary since the data report is a data management tool not a clinical management tool. Liz replied the benchmark report is a data management tool and should drive clinical management of patients. The group decided to change the 8 hour standard to 6 hours and only use long bone fractures. They also decided the indicator should cover all areas of the hospital where open fractures are treated, not just the OR.

Dislocation: No proposed change for this indicator.

Non-operative management of low grade spleen injuries: This indicator states: Patients with low-grade splenic laceration, AIS  $\leq$  3, do not undergo splenectomy. The issue is that the analysis for this indicator only includes spleen injuries with AIS severity levels of 1 or 2 so the data report should reflect this. The proposed change is to edit the data report and change the wording AIS  $\leq$  3 to AIS  $<$ 3.

Dr. Bandy said we should stay with the benchmark. This benchmark is make sure spleens are not being removed unnecessarily; therefore, grades 1 and 2 should not have surgery. The group decided to include only AIS 1 or 2 severity.

Hypovolemic: No proposed change for this indicator. Some concern was addressed about the facilities without surgeons and how this benchmark relates to those facilities. Dr. Bandy said if a particular facility has enough cases where this becomes a problem, then maybe the facility needs a surgeon. Dr. Allin said the only thing that seemed a little inconsistent is the facility has 1 hour to operate and 2 hours to transfer. Is there any way to sift through and identify non-transferred patients by transferred patients? The group decided this benchmark should only apply to patients who are not transferred and to patients live greater than 1 hour.

Documentation: Lois expressed her desire to have location of where the incident occurred to be added in the documentation. Sharon said she thinks there is another report to help get this on the ER report. A question was asked why the current documentation was chosen. The current documentation was chosen for TRISS scores. Rosanne emphasized temperature is part of the documentation for compliance reasons.

Proposed new indicators:

Undertriage: % of patients with severe injury (e.g., ISS  $>$ 15) who do not receive definitive care at a Level I or Level II center.

Overtriage: % of patients with less injury severity (e.g.,  $<$  9) who are transferred to a Level I or Level II trauma center.

Some members stated that over-triage should not be an indicator because we do not want people second guessing themselves. Dr. Bandy explained the purpose of the program is to develop a system of trauma care in the state, and currently there is no actual system. He further explained local facilities do not want to take care of their patients and they send them on to one of the five trauma centers. Implementing an over-triage as an indicator is a method the program can use to build a working trauma system by evaluating if local facilities are serving the patients they can or if they are just transferring all of the patients to trauma centers. Lois said this is a local indicator; so when the trauma centers see a pattern, they can educate the transferring facility on the appropriate procedures. Lois and Liz expressed concern over the proposed over-triage indicator because they believe the indicator is looked at by facilities as a type of report card. Dr. Bandy explained that all trauma centers receive over-triage patients and there needs to be a mechanism in place to prevent unnecessarily transferred patients from gumming up the trauma system. Discussion continued over the need for an under-triage and/or over-triage indicator.

Lois suggested changing over-triage to an indicator that looks at patients who are transferred to trauma centers and are discharged within the same day. It was mentioned that flying patients who not seriously injured is not safe. The group decided to start with an indicator that examines patients who are transferred to a level 1 or 2 center and are discharged within 24 hrs of arrival. This indicator will only be on data reports sent to Level I or Level II trauma centers. A question came up asking how will the state identify and send reports to the facilities in question because the registry system lacks a linkage mechanism. Liz explained the trauma centers have the responsibility of informing and educating referring facilities if they are transferring inappropriate patients.

Patients with initial ED systolic blood pressure  $< 90$  or GCS  $\leq 8$  are transferred to a Level I or Level II trauma center was proposed as an undertriage indicator for non Level I and Level II centers.

### **Proposed new variable in registry**

Stormont-Vail has proposed a new variable ([look in packet](#)) that will collect mode of transport for patients transferred to another hospital. Lois described the pick list from the NTDB which can be used for the new variable. The decided EMS option should be changed to “transport” in order to capture all the modes of transportation that fall under EMS. The group decided it should be a core variable.

Liz declared her desire to add a variable stating intentional, unintentional or unknown. This would not be a core variable. She said it would be helpful in running reports, and it would be called “Intent.” Some members of the group suggested instead of labeling the variable as “intent,” it should be labeled as accidental or non-accidental. Liz remarked in the past there was a movement trying to get away from using the word “accident” in describing trauma, but the movement has waned in recent years. She thought using the label of accidental or non-accidental might be fine. No official position was made regarding this request.

Liz also declared her desire to have the registry collect more burn information. She said the state is missing a lot of information on burn patients because collector does not contain burn pages. Liz said the burn information for trauma is not accurate because patients who are inflicted with burns received by the burn centers (KU and Via-Christi), even if they also possess traumatic injuries, are immediately sent to the burn unit and are not seen by the ER. Therefore, the program is excluding all the burn patients which qualify for trauma. A solution is to transfer the data from the burn registry to the trauma registry. Liz said she is not going to double enter burn patients into both registries. Lois was not clear on the details but said James Pou from Digital Innovation is working on an interface which could be used to link the burn registry at the burn centers with the trauma registry. Discussion arose over the burn registry in the state. There is a sheet that hospitals fill out and fax to the fire marshal for 2<sup>nd</sup> and 3<sup>rd</sup> degree burns.

Chris Alexander stated EMS is not served by the trauma registry because data does not come back to EMS even though his EMS service the trauma centers. The lack of feedback from the state level hinders Chris from seeing how his service is performing. The group discussed making an EMS benchmark report for the EMS specifically. Chris explained the EMS crews get excited about the feedback they get from the trauma centers because they really want to know how they are performing. The group saw the need for an EMS benchmark, but stated that required fields are not in the core data set to make this possible and the trauma program currently does not have the capacity to accomplish this task. Chris explained in order to build a comprehensive trauma system, the trauma program will need to generate a mechanism that offers EMS feedback on performance. Rosanne suggested this might be a topic for the another meeting.

Adjourned: 3:55

**Kansas Trauma Registry Subcommittee  
April 29, 2009 1 pm – 4 pm  
At Saint Francis Hospital & Medical Center  
Meeting Room 2  
1700 W 7  
Topeka, Kansas**

**Agenda Items**

- |      |  |                   |
|------|--|-------------------|
| 1:00 | Call to order                                  | Dr. Chris Bandy   |
| 1:05 | State Program Update                           | Rosanne Rutkowski |
| 1:15 | AIS 2005                                       | Dee Vernberg      |
| 1:45 | Benchmark Review                               | Dee Vernberg      |
| 2:15 | Issues Review<br>Stormont Vail                 | Dee Vermberg      |
| 3:00 | Open Discussion of new issues<br>or benchmarks | Dr. Chris Bandy   |
| 4:00 | Adjourn  |                   |

## AIS 2005

### Nature of Issue:

AIS 2005 is an update of AIS 98 which is currently being used in Collector.

### I. Coding Changes in AIS 2005

- **More precise injury descriptions**
  - Fractures  
(e.g., 1) proximal & distal long bone fractures are further classified by extent of joint involvement, shaft fractures are classified by degree of complexity; 2) (closed fractures combined with not further specified - NFS for extremities)
  - Thoracic trauma (e.g., trauma such as hemothorax or pneumothorax is coded separately and in addition to anatomically-described injuries)
  - Brain injury (e.g., finer discrimination of size of brain contusions, hematomas, brain lacerations and penetrating injuries to brain), etc.
- **Bilaterality of injuries has been addressed**
  - Expanded codes for bilateral injuries recognizing that they present a more serious traumatic situation
  - AIS severity may be higher for bilateral situation (This occurs in some but not all cases).
- **New non-specific descriptors designated by 9**
  - There are a small number of non-specific descriptors that classify trauma by body region but no severity code is assigned (e.g. vascular injuries in the face NFS). This allows non-specific trauma to be counted for epidemiologic purposes but not for analysis of AIS severity.

### II. Impact on Research

- **Severity codes for certain injuries has changed** based on current clinical substantiation of the relative severity of injuries in terms of threat to life and tissue damage.
  - In a few cases, injury severity is lower than AIS 98 because AIS 2005 discriminates more finely as to the size or extent of a lesion.
  - In a few cases, injury severity is higher for AIS 2005 – see bilaterality of injuries.
  - Overall, hospitals may have a fewer patients in most severe ISS range.
- No updated models exist for **probability of survival** in trauma.
- **Comparability between AIS 98 and AIS 2005**
  - Many codes have a direct AIS 98 – 2005 match
  - Several new descriptions (e.g., panfacial fractures, torso transaction) do not have a match to AIS 98

- This may make longitudinal or comparative studies challenging if some records are coded with AIS 98 and other records are coded with AIS 2005.

III. **Cost of using AIS 2005**

- Licensing fee for using AIS 2005. The Trauma Program will pay for statewide licenses.

**What type of Collector user is the issue affecting?**

All Collector Users.

**Proposed Change:**

DI will provide an update to the current software with the AIS 2005 module in place of the current AIS 98 module. Coding is essentially the same in these modules.

**What software modifications will be necessary?**

A full update of Collector with the appropriate mapping of the ICD-9 codes to AIS -2005.

**What procedural changes will be necessary to accommodate this change?**

No update to the data dictionary is necessary. This will require some update to training materials, but the data collection process is very similar to the present one. Narrative coding for AIS 2005 is not currently available, but there is narrative coding for the ICD-9 codes. ICD-9 codes can be mapped to AIS 2005

# Kansas Trauma Registry

## State-Required Core Data Elements



<u>Demographic Information</u>	<u>Emergency Department</u>
Facility Number Trauma Number ED/Arrival Date/Time Gender Race Ethnicity Date of Birth Age Residence City, County, State, Zip-Code	Admitting Service Transferring Facility ID ED Disposition/Admit to OR Disposition Unassisted Respiratory Rate Systolic/Diastolic Blood Pressure Heart Rate Oxygen Administered Oxygen Saturation Base Deficit Temperature Glasgow Coma Score (Motor, Eye, Verbal, Total) Glasgow Coma Score Assessment Qualifier Revised Trauma Score (weighted) EtOH/BAC Test Results Drug Screen Results Abdominal CT Results Head CT Results Airway Trauma Surgeon timely Arrival
<u>Prehospital Injury Information</u> Incident Date/Time Primary Injury Type ICD-9-CM E-code (External Cause of Injury) Description of Injury Circumstances Off-Road Vehicle Place of Injury Category Injury Location City, County, State, Zip-Code Protective Devices – Restraints Protective Devices – Airbag Protective Devices – Equipment	<u>Procedures &amp; Diagnoses</u> ICD-9-CM Procedure Code Procedure Date, Start Time, Stop Time ICD-9-CM Diagnosis Code – Injury Abbreviated Injury Score (AIS) Injury Severity Scores (ISS and TRISS) ICD-9-CM Diagnosis Code – Comorbid Condition
<u>Other Prehospital Information</u> <i>Section Repeats for each Transport Provider</i> Mode of Transportation Run Sheet Received/Complete Call Received Date/Time Dispatched Date/Time In Route Date/Time Arrived Location Date/Time Patient Contact Date/Time Departed Location Date/Time Arrived Facility Date/Time Systolic/Diastolic Blood Pressure Heart Rate Initial Unassisted Respiratory Rate Glasgow Coma Score (Motor, Eye, Verbal, Total) Glasgow Coma Score Assessment Qualifier Revised Trauma Score (unweighted) Airway CPR Fluids MAST	<u>Outcomes</u> Discharge Date/Time Discharge Vital Status Discharge to (Facility ID) Days on Ventilator Days in Intensive Care Unit Disabilities at Discharge – Feeding Score/Qualifier Disabilities at Discharge – Ambulation Score/Qualifier Disabilities at Discharge – Communication Score/Qualifier Primary Payor Source Total Hospital Charges Total Hospital Collection Autopsy Performed
	<u>Quality Assurance/Quality Improvement</u> Non-Injury-Related Occurrences

# Data Report

## Hospital

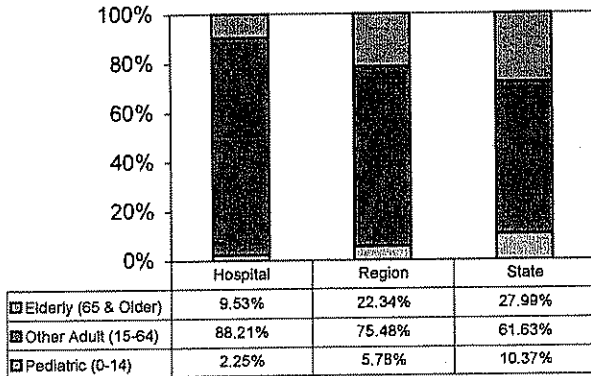


Institution ID: XXXXXX  
 Period: All 2004

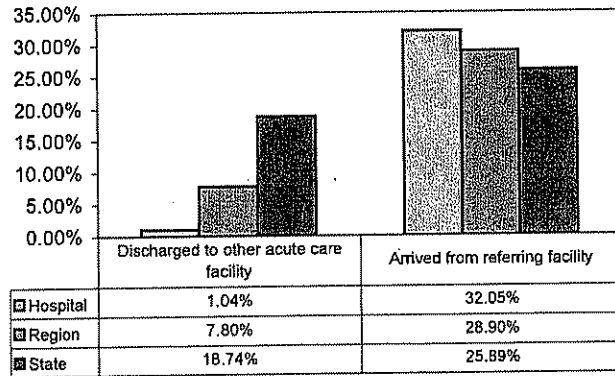
A total cases submitted, K in Kansas  
 Prepared on 7/18/2006

### Case Mix

#### Pediatric, Adult and Elderly Cases

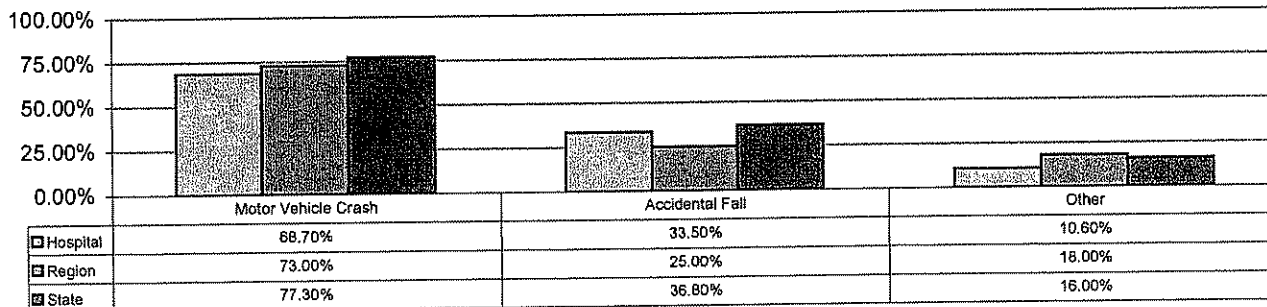


#### Transfers



	Hospital		Region		State	
<b>Age</b>						
0-14	x/y	%%	x/y	%%	x/y	%%
15-24	x/y	%%	x/y	%%	x/y	%%
25-34	x/y	%%	x/y	%%	x/y	%%
35-44	x/y	%%	x/y	%%	x/y	%%
45-54	x/y	%%	x/y	%%	x/y	%%
55-64	x/y	%%	x/y	%%	x/y	%%
65-74	x/y	%%	x/y	%%	x/y	%%
75+	x/y	%%	x/y	%%	x/y	%%
<b>Gender</b>						
% Male	x/y	%%	x/y	%%	x/y	%%
<b>Injury Type</b>						
Blunt	x/y	%%	x/y	%%	x/y	%%
Penetrating	x/y	%%	x/y	%%	x/y	%%
Burn	x/y	%%	x/y	%%	x/y	%%
Drowning	x/y	%%	x/y	%%	x/y	%%

#### External Cause



# Performance Review Indicators

The following clinical indicators have been chosen as filters for institutional performance review. The number of records that met, did not meet or could not be evaluated for the indicator are shown for your institution, your region and for the state. Outliers are patient records that did not meet the indicator and should be reviewed by medical/nursing staff. *Outliers do not imply less than standard of care but serve to identify cases where clinical review is warranted.* The trauma number for each outlier is reported in the attached spreadsheet. Details on outlier determination can be found in the report documentation.

## Transfers

For all transferred patients, elapsed time between emergency department arrival and discharge to another acute care facility does not exceed 6 hours.

	Hospital	Region	State
Met Benchmark:	100%	100%	100%
Outlier:	0	0	0
Qualified for Benchmark (cases):	100	100	100
Did Not Qualify (cases):	0	0	0
Couldn't Evaluate Due to Missing Data:	0	0	0

## Unstable Transfers

For transfers with Initial Systolic Blood Pressure < 90 or Glasgow Coma Score ≤ 8, elapsed time between emergency department arrival and discharge to another acute care facility does not exceed 1 hour.

	Hospital	Region	State
Met Benchmark:	100%	100%	100%
Outlier:	0	0	0
Qualified for Benchmark (cases):	100	100	100
Did Not Qualify (cases):	0	0	0
Couldn't Evaluate Due to Missing Data:	0	0	0

## Airway

A definitive airway will be established before transfer of a comatose patient (GCS ≤ 8). Definitive airways include: LMA, Combitube, oral endotracheal tube, nasal endotracheal tube, tracheostomy/cricothyrotomy.

	Hospital	Region	State
Met Benchmark:	100%	100%	100%
Outlier:	0	0	0
Qualified for Benchmark (cases):	100	100	100
Did Not Qualify (cases):	0	0	0
Couldn't Evaluate Due to Missing Data:	0	0	0

## Head Injury

Patients with suspected traumatic brain injury (moderate to severe coma, GCS ≤ 12) are transferred to a level I or level II trauma center for treatment.

	Hospital	Region	State
Met Benchmark:	100%	100%	100%
Outlier:	0	0	0
Qualified for Benchmark (cases):	100	100	100
Did Not Qualify (cases):	0	0	0
Couldn't Evaluate Due to Missing Data:	0	0	0

### Chest Tube

Patients with pneumothorax (or hemopneumothorax) receive a chest tube before transfer to another acute care facility.

	Hospital		Region		State	
Met Benchmark:	95%	95%	95%	95%	95%	95%
Outlier:	0%	0%	0%	0%	0%	0%
Qualified for Benchmark (cases):	10	10	10	10	10	10
Did Not Qualify (cases):	0	0	0	0	0	0
Couldn't Evaluate Due to Missing Data:	0	0	0	0	0	0

### On Time

Trauma surgeon response is timely.

	Hospital		Region		State	
Met Benchmark:	95%	95%	95%	95%	95%	95%
Outlier:	0%	0%	0%	0%	0%	0%
Qualified for Benchmark (cases):	10	10	10	10	10	10
Did Not Qualify (cases):	0	0	0	0	0	0
Couldn't Evaluate Due to Missing Data:	0	0	0	0	0	0

### Open Fractures

Open fractures undergo debridement within 8 hours of ED arrival. Excludes patients who were discharged or who died within 8 hours of ED arrival.

	Hospital		Region		State	
Met Benchmark:	95%	95%	95%	95%	95%	95%
Outlier:	0%	0%	0%	0%	0%	0%
Qualified for Benchmark (cases):	10	10	10	10	10	10
Did Not Qualify (cases):	0	0	0	0	0	0
Couldn't Evaluate Due to Missing Data:	0	0	0	0	0	0

### Dislocation

Patients with hip, knee, shoulder, elbow or ankle dislocation receive reduction within 6 hours of ED arrival. Excludes patients who died or who were discharged within 6 hours of ED arrival.

	Hospital		Region		State	
Met Benchmark:	95%	95%	95%	95%	95%	95%
Outlier:	0%	0%	0%	0%	0%	0%
Qualified for Benchmark (cases):	10	10	10	10	10	10
Did Not Qualify (cases):	0	0	0	0	0	0
Couldn't Evaluate Due to Missing Data:	0	0	0	0	0	0

### Non-Operative Management of Low-Grade Spleen Injuries

Patients with low-grade splenic laceration, AIS ≤ 3, do not undergo splenectomy.

	Hospital		Region		State	
Met Benchmark:	95%	95%	95%	95%	95%	95%
Outlier:	0%	0%	0%	0%	0%	0%
Qualified for Benchmark (cases):	10	10	10	10	10	10
Did Not Qualify (cases):	0	0	0	0	0	0
Couldn't Evaluate Due to Missing Data:	0	0	0	0	0	0

### Hypovolemic

Patients with penetrating abdominal injury and SBP ≤ 90 mmHg undergo laparotomy within 60 minutes of ED arrival.

	Hospital		Region		State	
Met Benchmark:	95%	95%	95%	95%	95%	95%
Outlier:	0%	0%	0%	0%	0%	0%
Qualified for Benchmark (cases):	10	10	10	10	10	10
Did Not Qualify (cases):	0	0	0	0	0	0
Couldn't Evaluate Due to Missing Data:	0	0	0	0	0	0

## Documentation

The following clinical measures will be documented in the ED.

	Admission	Discharge	Transfer	Death
Glasgow Coma Scale	XX	XX	XX	XX
ED Arrival Date & Time	XX	XX	XX	XX
Injury Date & Time	XX	XX	XX	XX
Respiratory Rate	XX	XX	XX	XX
Systolic Blood Pressure	XX	XX	XX	XX
Heart Rate	XX	XX	XX	XX
Temperature	XX	XX	XX	XX
Procedure Start Time (for any procedure)	XX	XX	XX	XX
Discharge Date & Time	XX	XX	XX	XX

## Data Report Indicators

### Purpose of Indicators

1. Tool for comparing a hospital's performance on several standard trauma care indicators with the region and state.
2. Outliers are patient records that do not meet the indicator. These outliers are identified on the confidential data report so that the hospital can review the cases. They do not imply less than standard of care.

Since these indicators are filters, there will be some false positives. The intent is to develop indicators that capture potential issues without having too many cases that do not warrant review.

#### 1. Transfer Flow

For all transferred patients, elapsed time between emergency department arrival and discharge to another acute care facility does not exceed 6 hours.

Issue: This indicator captures too many cases that are not transfers to acute care facility for definitive care.

Proposed solutions:

- 1) In analysis, only include discharge to acute care facilities that have a trauma registry or to Level I or Level II hospitals outside state.
- 2) In Collector training, code transfer to acute care facility only for cases that are transferred to another facility for definitive care.

#### 2. Unstable transfers

For transfers with Initial Systolic Blood Pressure  $< 90$  or Glasgow Coma Scale  $\leq 8$ , elapsed time between emergency department arrival and discharge to another acute care facility does not exceed 1 hour.

Proposed change: (Delete GCS  $\leq 8$ )

For transfers with Initial Systolic Blood Pressure  $< 90$ , elapsed time between emergency department arrival and discharge to another acute care facility does not exceed 1 hour.

#### 3. Airway

A definitive airway will be established before transfer of a comatose patient (GCS  $\leq 8$ ). Definitive airways include: LMA, Combitube, oral endotracheal tube, nasal endotracheal tube, tracheostomy/cricothyroidotomy.

No proposed change

4. **Head Injury**

Patients with suspected traumatic brain injury (moderate to severe coma, GCS  $\leq$  12) are transferred to a level I or level II trauma center for treatment.

No proposed change

5. **Chest tube**

Patients with pneumothorax (or hemopneumothorax) receive a chest tube before transfer to another acute care facility.

No proposed change

6. **On time**

Trauma surgeon response time is timely.

No proposed change

7. **Open fractures**

Open fractures undergo debridement within 8 hours of ED arrival. Excludes patients who were discharged or who died within 8 hours of ED arrival.

Proposed change: (change ED arrival to

Open fractures undergo debridement within 6 hours from the time of injury. Excludes patients who died within 8 hours of ED arrival.

In analysis, only include long bone fractures (not fracture of foot, hand, or ankle).

8. **Dislocation**

Patients with hip, knee, shoulder, elbow or ankle dislocation receive reduction within 6 hours of ED arrival. Excludes patients who died or were discharged within 6 hours of ED arrival.

No proposed change

9. **Non-Operative Management of Low-Grade Spleen Injuries.**

Patients with low-grade splenic laceration, AIS  $\leq$  3, do not undergo splenectomy.

Proposed change: (Include only AIS 1 or 2 severity)

Patients with low-grade splenic laceration, AIS  $<$  3, do not undergo splenectomy.

**10. Hypovolemic**

Patients with a penetrating addominal injury and SBP  $\leq$  90 mmHG undergo laparotomy within 60 minutes of ED arrival.

No proposed change

**11. Documentation**

The following clinical measures will be documented in the ED.

Glasgow Coma Scale

ED Arrival Date & Time

Injury Date & Time

Respiratory Rate

Systolic Blood Pressure

Heart Rate

Temperature

Procedure Start Time (for any procedure)

Discharge Date and Time

No proposed change

**Proposed New Indicators**

For hospitals that are not Level I trauma centers

1. **Undertriage:** Percent of patients with severe injury (e.g., ISS > 15) who do not receive definitive care at a Level I or Level II trauma center.
2. **Overtriage:** Percent of patients with less injury severity (e.g., ISS <9) who are transferred to a Level I or Level II trauma center.

## **Proposed Mode of Transportation at Discharge**

### **Nature of Issue:**

Who proposed: Stormont Vail has requested that Collector be modified so that hospitals can collect mode of transport for patients transferred to another hospital.

What type of data currently are being collected: Currently, there is information in collector regarding the transport provider from the scene to a hospital (core variable) and from an intermediate facility to a hospital (Comprehensive data), but no variables indicate how a patient is transported from a hospital, if transferred.

How variable would be useful to hospitals: The American College of Surgeons asks for the number of patients transferred via emergency medical services transport, including air ambulance from one hospital to another hospital. This information is needed for transfers in and transfers out. Hospitals that collect comprehensive data can answer the question regarding transfers in, but can not answer the question regarding transfers out (unless they set a user-defined variable). Therefore, this variable would be useful for hospitals that are verified or would like to become verified as a Trauma Center.

How variable would be useful to Trauma Program: If these variable(s) were to be placed in the core dataset, then the State would be able to describe inter-facility transport (currently this is impossible).

What type of Collector user is the issue affecting? This variable could potentially affect local and web users.

### **Proposed Change:**

- 1) Add five fields in the Outcomes section of Collector that would be activated if a patient is discharged to an acute care facility.
  - a. Discharge Mode
    - 01 Land Ambulance
    - 02 Helicopter Ambulance
    - 03 Fixed-wing ambulance
    - 04 Charter fixed-wing
    - 05 Charter helicopter
    - 06 Private vehicle
    - ? unknown
  - b. Date EMS called
  - c. Time EMS called
  - d. Date EMS arrived at hospital
  - e. Time EMS arrived at hospital

**What software modifications will be necessary to accommodate the change?**

These are new data elements. It will require an alteration of the locally installed versions of CV4 in addition to report writer and to the central site.

**What procedural changes will be necessary to accommodate the changes?**

Update the data dictionary and training materials.

## AIS 2005



KTR Subcommittee, April, 2009

Our Vision - Healthy Kansas living in safe and sustainable environments



## Issues related to AIS 2005

- Currently use AIS 98 in collector
- AIS 2005 is the newest version
  - Revisions represent improvements
  - Training issues for data entry IF code injury diagnoses using AIS directly
  - Implications for Research
  - Implications for State Trauma Program
  - Require major update of Collector

Our Vision - Healthy Kansas living in safe and sustainable environments



## AIS

- Coding system that describes
  - **type of injury** (e.g., laceration of pericardium)
  - **severity of injury** (moderately severe injury)
  - Use AIS to calculate ISS (injury severity score)
- Anatomically based and classifies injury by body region
  - Superficial penetrating injury to skull

116002.3  
Predot Post dot

Our Vision - Healthy Kansas living in safe and sustainable environments



## Body Regions

- |                      |                         |
|----------------------|-------------------------|
| • Head               | • Notable Revision      |
| • Face               | • Notable Revision      |
| • Neck               | • Minor changes         |
| • Thorax             | • Notable Revisions     |
| • Abdomen            | • Minor changes         |
| • Spine              | • Minor changes         |
| • Upper Extremity    | • Significantly revised |
| • Lower Extremity    | • Significantly revised |
| • External and Other | • Minor changes         |

Our Vision - Healthy Kansas living in safe and sustainable environments



## Severity

1. Minor
2. Moderate
3. Serious
4. Severe
5. Critical
6. Maximum
9. Nonspecific code

Our Vision - Healthy Kansas living in safe and sustainable environments



## Coding Changes/Improvements

- **More precise injury descriptions** for some injuries
- Expanded codes for **bilateral injuries**
- **New non-specific descriptors**
- Some changes in **severity codes**

Our Vision - Healthy Kansas living in safe and sustainable environments



## Impact on Research

- Comparability between AIS 98 and AIS 2005
- No updated model for **probability of survival**

Our Vision - Healthy Kansas living in safe and sustainable environments



## Coding changes

- More precise injury descriptions
  - Fractures (more codes)
    - E.g., Proximal and long bone fractures are further classified by extent of joint involvement
  - Thoracic trauma
    - E.g., Hemothorax and pneumothorax is coded separately from other injuries
  - Brain injury
    - E.g., Finer discrimination of size of brain contusions, hematomas and lacerations

Our Vision - Healthy Kansas living in safe and sustainable environments



## Coding changes

- Bilaterality of injuries addressed
  - Expanded codes
  - AIS severity for bilateral injuries **MAY** be more serious (compared to AIS 98) but not always
- Non-specific codes designated by 9 severity code
  - Allows description of injury without severity coding
  - Useful for counting epidemiologically

Our Vision - Healthy Kansas living in safe and sustainable environments



## Coding Changes

- Severity codes compared with AIS 98
  - Many severity codes are same
  - Some injuries have lower severity codes
  - Some injuries have higher severity codes

Our Vision - Healthy Kansas living in safe and sustainable environments



## Comparability between AIS 98 & 2005

- Many severity codes are the same between AIS 98 & 2005 but some codes are different
- Some predot codes are same but many are different
  - More detail in injury descriptions in 2005
- No updated models of probability of survival in trauma

Our Vision - Healthy Kansas living in safe and sustainable environments



## Cost of AIS 2005

- Licensing fee
- State Trauma Program will pay for site license

Our Vision - Healthy Kansas living in safe and sustainable environments



## Switching to AIS 2005

- Major update to collector
- Mapping from IC9-9 code to AIS 2005 will be available
- Narrative coding for AIS 2005 not available

Our Vision - Healthy Kansas living in safe and sustainable environments



## Questions or comments?

Our Vision - Healthy Kansas living in safe and sustainable environments

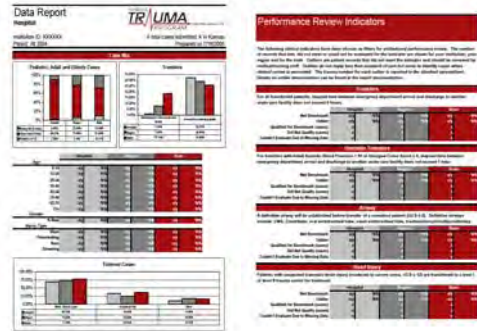


# Kansas Data Report



KTR subcommittee – April, 2009

Our Vision - Healthy Kansas living in safe and sustainable environments



Our Vision - Healthy Kansas living in safe and sustainable environments



## Transfer Flow

- For all transferred patients, elapsed time between emergency department arrival and discharge to another acute care facility does not exceed 6 hours.
- Issue: This indicator captures too many cases that are not transfers to acute care facility for definitive care.
- Proposed solutions:
  - In analysis, only include discharge to acute care facilities that have a trauma registry or to Level I or Level II hospitals outside state.
  - In Collector training, code transfer to acute care facility only for cases that are transferred to another facility for definitive care.

Our Vision - Healthy Kansas living in safe and sustainable environments



## Unstable Transfers

- For transfers with Initial Systolic Blood Pressure < 90 or Glasgow Coma Scale  $\leq 8$ , elapsed time between emergency department arrival and discharge to another acute care facility does not exceed 1 hour.
- Proposed change: (Delete GCS  $\leq 8$ )
  - For transfers with Initial Systolic Blood Pressure < 90, elapsed time between emergency department arrival and discharge to another acute care facility does not exceed 1 hour.

Our Vision - Healthy Kansas living in safe and sustainable environments



## Airway

- A definitive airway will be established before transfer of a comatose patient (GCS  $\leq 8$ ). Definitive airways include: LMA, Combitube, oral endotracheal tube, nasal endotracheal tube, tracheostomy/cricothyroidotomy.
- No proposed change

Our Vision - Healthy Kansas living in safe and sustainable environments



## Head Injury

- Patients with suspected traumatic brain injury (moderate to severe coma, GCS  $\leq 12$ ) are transferred to a level I or level II trauma center for treatment.
- No proposed change

Our Vision - Healthy Kansas living in safe and sustainable environments



## Chest Tube

- Patients with pneumothorax (or hemopneumothorax) receive a chest tube before transfer to another acute care facility.
- No proposed change

Our Vision - Healthy Kansas living in safe and sustainable environments



## On time

- Trauma surgeon response time is timely.
- No proposed change

Our Vision - Healthy Kansas living in safe and sustainable environments



## Open Fractures

- Open fractures undergo debridement within 8 hours of ED arrival. Excludes patients who were discharged or who died within 8 hours of ED arrival.
- Proposed change: (change ED arrival to time of injury)
  - Open fractures undergo debridement within 6 hours from the time of injury. Excludes patients who died within 8 hours of ED arrival.
- In analysis, only include long bone fractures (not fracture of foot, hand, or ankle).

Our Vision - Healthy Kansas living in safe and sustainable environments



## Dislocation

- Patients with hip, knee, shoulder, elbow or ankle dislocation receive reduction within 6 hours of ED arrival. Excludes patients who died or were discharged within 6 hours of ED arrival.
- No proposed change

Our Vision - Healthy Kansas living in safe and sustainable environments



## Non-operative Management of Low-Grade Spleen Injuries

- Patients with low-grade splenic laceration, AIS  $\leq$  3, do not undergo splenectomy.
- Proposed change: (Include only AIS 1 or 2 severity)
- Patients with low-grade splenic laceration, AIS < 3, do not undergo splenectomy.

Our Vision - Healthy Kansas living in safe and sustainable environments



## Hypovolemic

- Patients with a penetrating addominal injury and SBP  $\leq$  90 mmHG undergo laparotomy within 60 minutes of ED arrival.
- No proposed change

Our Vision - Healthy Kansas living in safe and sustainable environments



## Documentation

- The following clinical measures will be documented in the ED.
  - Glasgow Coma Scale
  - ED Arrival Date & Time
  - Injury Date & Time
  - Respiratory Rate
  - Systolic Blood Pressure
  - Heart Rate
  - Temperature
  - Procedure Start Time (for any procedure)
  - Discharge Date and Time
- No proposed change

Our Vision - Healthy Kansas living in safe and sustainable environments



## Proposed New Indicator

- **Undertriage**
  - % of patients with severe injury (e.g., ISS >15) who do not receive definitive care at a Level I or Level II center.
- **Overtriage**
  - % of patients with less injury severity (e.g., < 9) who are transferred to a Level I or Level II trauma center.

Our Vision - Healthy Kansas living in safe and sustainable environments

