

Validation Project

Overview

In Ohio there are six regional trauma systems that include the Central Ohio Trauma System (COTS), Northeastern Ohio Regional Trauma Network (NORTN), Northern Ohio Trauma System (NOTS), Northwest Ohio Regional Trauma Registry (NORTR), Southwest Ohio Regional Trauma System (SORTS), and the Tristate Trauma Coalition (TSTC).

The six regional systems collaborated to improve data submitted to the Ohio Trauma Registry (OTR) with quarterly validation and comparisons. The regional trauma systems strived for a 90% accuracy rate.

Methodology

The regional trauma systems performed a quarterly data review on records in their registry for the period of 15 months (January 1, 2017 – March 31, 2018) based on the OTR definitions. A standardized approach on how to generate the report from the registry was developed prior to pulling the data. This standardized approach was used by the six regions to generate their regional reports.

Of the facilities that participate in one of the six Ohio regions over 80% (~82-89% depending on the quarter) of them were included in each quarter's review (Chart 1). On average, 31% (31-32% depending on quarter) of facilities participating in the validation project were from trauma centers, 52% (50-52% depending on quarter) were from acute care hospitals, and 17% (15-18% depending on the quarter) were from free-standing emergency departments (FSED) (Chart 2).

Data from a facility was not included in the analysis if the information had not been provided to the region by the time the quarterly review was completed. If a facility updated data or provided data after the region's initial review the new or revised information was not incorporated into the results.

Chart 1: Number of Participating Facilities in Region and Validation Project

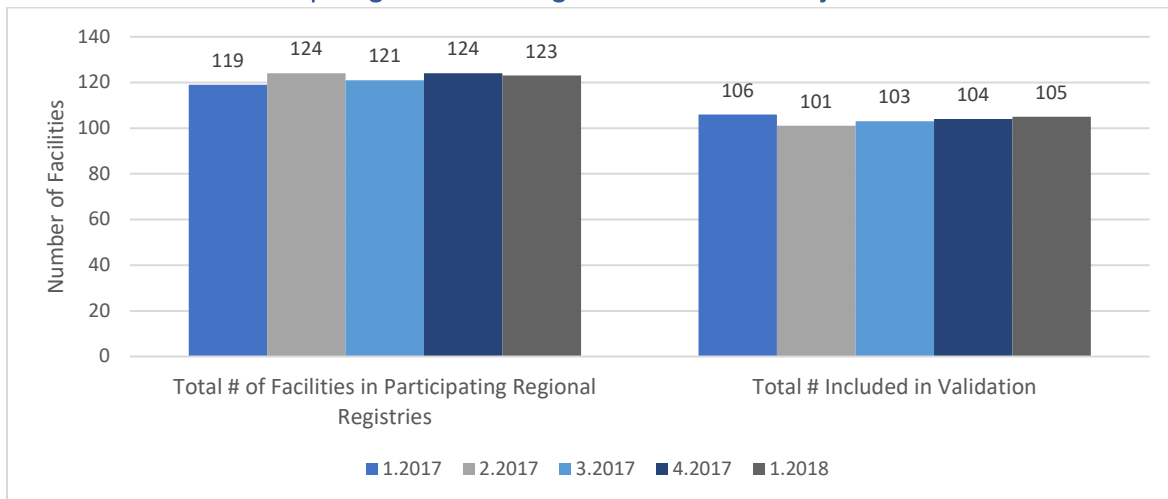
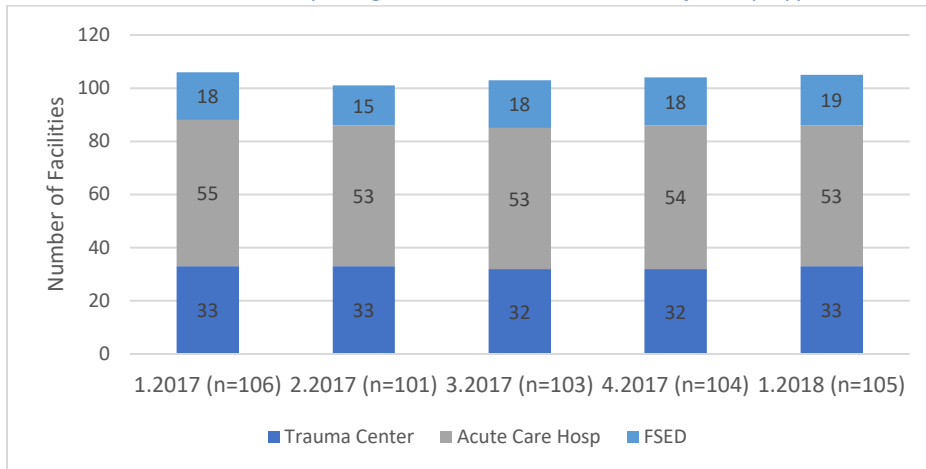


Chart 2: Number of Participating Facilities in Validation Project by Type



Due to the regions not having access to the medical records, data validation could only be based on logic edits.

Quarterly data was collected from each region via an anonymous electronic survey and collated together for reporting.

There were seven fields reviewed.

Data

Of the seven fields validated, two met the 90% accuracy rate in 1st quarter 2017, by 1st quarter 2018 five of the fields had met the threshold. The following seven fields were reviewed:

Vent Days

OTR DEFINITION: *Total Ventilator Days* documents the total number of days that the patient spent on mechanical ventilation (excluding time in the OR) while in your hospital.

INTENT: To verify vent days should be recorded “Not Applicable” or a numeric value; not as “0” (zero), “Not Documented” or blank.

RESULTS:

	1 Qtr 2017	2 Qtr 2017	3 Qtr 2017	4 Qtr 2017	1 Qtr 2018
Correct Responses	10, 572	12,228	13,934	12,795	12,488
Total # Occurrences	12,936	14,644	16,117	14,577	13,155
% Accuracy	81.7%	83.5%	86.5%	87.8%	94.9%

FINDINGS: Some facilities collected the data correctly at their hospital however, during the import to the regional repository the data value was being converted incorrectly.

ICU Days

OTR DEFINITION: *Total ICU Length of Stay* documents the total number of days that the patient spent in any intensive care unit (ICU) (including all episodes) while in your hospital.

INTENT: To verify ICU days should be recorded “Not Applicable” or a numeric value; not as “0” (zero), “Not Documented” or blank.

RESULTS:

	1 Qtr 2017	2 Qtr 2017	3 Qtr 2017	4 Qtr 2017	1 Qtr 2018
Correct Responses	8,399	9,312	10,327	9,779	10,014
Total # Occurrences	12,936	14,644	16,117	14,577	13,155
% Accuracy	64.9%	63.6%	64.1%	67.1%	76.1%

FINDINGS: Some facilities collected the data correctly at their hospital however, during the import to the regional repository the data value was being converted incorrectly. It was also noted that in some facilities they used the correct value of “not applicable”, would further complete the record and when they would return the “not applicable” value would change to “0” in their database.

AIS External Region

OTR DEFINITION: *AIS External Body Region* documents the body region codes that reflect the patient’s injuries.

INTENT: To verify that the correct AIS body region was being assigned per diagnoses/occurrence for patients with abrasions and contusions.

RESULTS:

	1 Qtr 2017	2 Qtr 2017	3 Qtr 2017	4 Qtr 2017	1 Qtr 2018
Correct Responses	6,227	9,131	11,928	16,845	11,799
Total # Occurrences	8,641	10,863	12,199	16,951	11,990
% Accuracy	72.1%	84.1%	97.8%	99.4%	98.4%

FINDINGS: During the review *AIS External Body Region* the following items were identified:

- Some regions did not receive this data because it was not a required field for their repository. This field is not collected in the OTR.
- A region had the *AIS Body Region* field in their data dictionary however it was inadvertently left out of the export and the data was not received in the regional repository.
- Some facilities had an export issue where the AIS body region of external as entered by the hospitals was being converted to the location on the body where the injury occurred proving incorrect data to the repository. The issue was fixed by 3rd quarter which increased the accuracy percentages.
- Education is needed on manually changing the body region in the database to follow the AIS coding rules. Especially at the hospitals that have not been trained in AIS.

Hospital Transfer

OTR DEFINITION: *Inter-facility Transfer* is whether the patient was transferred to your facility from another hospital. *ED Transfer to Hospital* is a subsequent hospital destination of the patient upon discharge from your ED.

INTENT: To verify patients that are transferred in from another acute care facility have the Other Transport Mode field is completed. Field should not be answered as not applicable if patient is transferred into facility from another acute care hospital.

RESULTS:

	1 Qtr 2017	2 Qtr 2017	3 Qtr 2017	4 Qtr 2017	1 Qtr 2018
Correct Responses	3,207	4,086	4,583	4,268	3,649
Total # Occurrences	3,604	4,313	4,682	4,344	3,710
% Accuracy	89.0%	94.7%	97.9%	98.3%	98.4%

FINDINGS: After education on the purpose of the field the percentage increased.

Discharge Status vs. Autopsy Performed

OTR DEFINITION: *Discharge Status* is whether the patient left your hospital alive or dead. *Autopsy Performed* documents whether an internal organ exam was performed on the patient by a trained pathologist.

INTENT: To verify patients that expire have the value of YES, NO or ND in the autopsy performed field.

RESULTS:

	1 Qtr 2017	2 Qtr 2017	3 Qtr 2017	4 Qtr 2017	1 Qtr 2018
Correct Responses	315	433	385	544	332
Total # Occurrences	347	466	421	567	364
% Accuracy	90.8%	92.9%	91.4%	95.9%	91.2%

FINDINGS: This field stayed above the 90% threshold during the project.

Alcohol Screen and Results

OTR DEFINITION: *Alcohol Screen* is a blood alcohol concentration (BAC) test was performed on the patient within 24 hours after first hospital encounter. *Alcohol Screen Results* is the first recorded blood alcohol concentration (BAC) results within 24 hours after first hospital encounter.

INTENT: To verify patients who were tested and found to have positive results for alcohol use within the first 24 hours of treatment, have a documented numeric value of the BAC.

RESULTS:

	1 Qtr 2017	2 Qtr 2017	3 Qtr 2017	4 Qtr 2017	1 Qtr 2018
Correct Responses	1,293	2,089	3,096	2,594	2,130
Total # Occurrences	1,319	2,100	3,106	2,602	2,148
% Accuracy	98.0%	99.5%	99.7%	99.7%	99.2%

FINDINGS: This field stayed above the 90% threshold during the project.

Work Related vs Payment Source

OTR DEFINITION: *Work-related* is whether the injury occurred during paid employment. *Primary Method of Payment* is the patient's foremost source of payment for care while in your hospital.

INTENT: To verify patients that had work related injury have a primary method of payment equal to workman's compensation.

RESULTS:

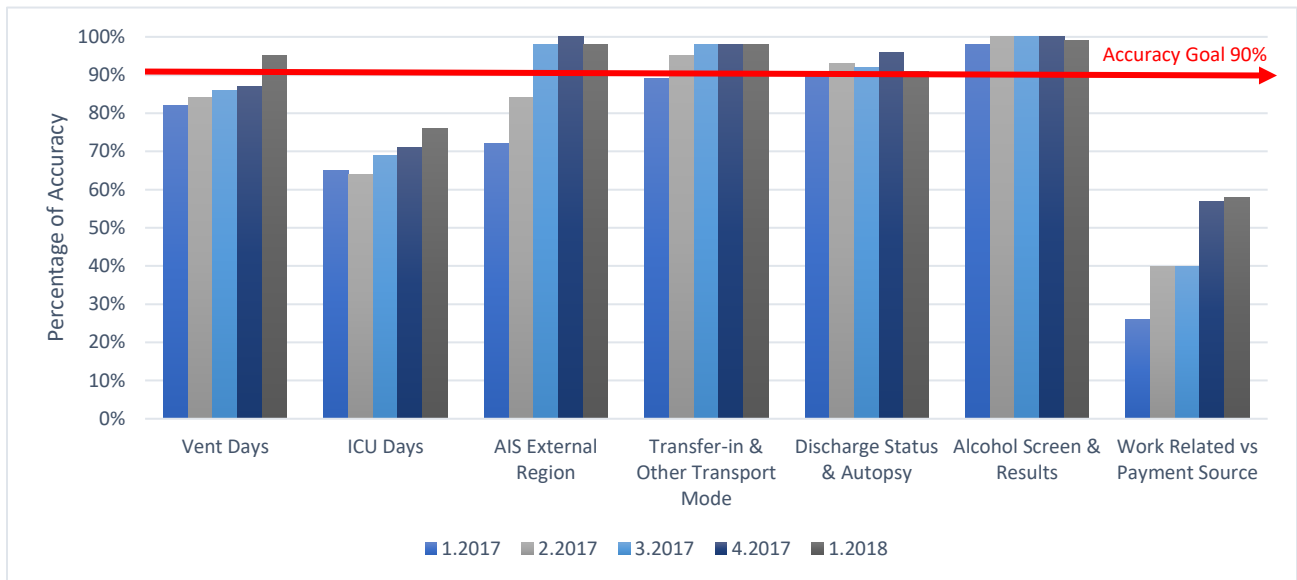
	1 Qtr 2017	2 Qtr 2017	3 Qtr 2017	4 Qtr 2017	1 Qtr 2018
Correct Responses	75	134	203	252	266
Total # Occurrences	288	339	473	451	460
% Accuracy	26.0%	39.5%	42.9%	55.9%	57.8%

FINDINGS: During the review of *Work-related* injuries the following items were identified:

- This threshold was an unrealistic expectation and doesn't meet data dictionary definitions, not all work-related injuries are reported to and paid by workers compensation.
- The payment source of workers compensation was removed from some systems. This occurred because the National Trauma Data Bank (NTDB) had now considered workers compensation as private/commercial insurance and the state of Ohio chose to keep them as two separate payment options. Education was provided about the difference in the values between the NTDB and the OTR and some facilities incorporated the workers compensation payment source into their database.

Data Analysis

Overall Accuracy



Data analysis identified issues related to following field definitions and importing/exporting of data. Education was provided to regions on definitions and exports/imports were adjusted. As shown by overall percentages, data accuracy has increased after education and adjustments to registries.

Recommendations

It should be noted some areas for focus include:

- Double check export of fields at hospital level prior to submission to the region
- Review data dictionary definitions and field values as the NTDB, OTR, and regional (may differ slightly)
- Provide uniform education throughout regions and state

Conclusion

In summary, this project provided the opportunity for collaboration among the six regional trauma systems to improve data submitted to Ohio Trauma Registry. It was determined that there are opportunities for improvement at the hospital and regional levels due to inconsistencies in the export and import of data. It was also concluded that if future studies were created the Ohio Division of EMS would be invited to participate at the beginning of the project so that exact data could be provided for comparison.

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