

IRR – Inter-Rater Reliability

CTN Education Committee

What is IRR?

IRR is a method used to ensure trauma data quality and validity.

IRR measures the level of agreement between separate chart abstractions expressed as a percentage.

After initial abstraction another team member reviews the chart for specific data points to ensure accuracy.

The state and ACS have different guidelines surrounding IRR.

State Trauma Rules

Level I/II

- 6 CCR 1015-4, Chapter 3, Section 303.12.F
- *The facility shall monitor data validity*

Level III/IV/V

- Level III: 6 CCR 1015-4, Chapter 3, Section 306.1.M
 - *A trauma registry as required in Chapter Two of these rules, and trauma data entry support.*
- Level IV/V: 6 CCR 1015-4, Chapter 3, Section 307.1.M
 - *Participation in the state trauma registry as required in Chapter Two.*

State Trauma Rules

- There is no regulation over how data validity is monitored, only that data validity is monitored.
- Rule does state ‘maintenance’ of the trauma registry as an essential responsibility of the Trauma Nurse Coordinator/Trauma Program Manager at all levels.
- A facility is free to determine whatever data validation strategy they like
 - Timing, responsibility, and quantity.

ACS Rules

- **Page 112 of the Orange Book**
- **“A plan for ensuring that the data entered are accurate and reflect the observations made on the patient should be established”**
- **You must have a developed process for validation of data.**
 - **CD 15-10: Strategies for monitoring data validity are essential. (Type II deficiency)**
- **Recommendation: Re-abstract 5-10% of patient records**
- **“Ongoing review and evaluation are important to ensure the quality, reliability, and validity of local registry data”**

Ways to do IRR

- Random chart selection
- Specific chart inclusion criteria (e.g. all ISS > 15) with random chart selection
- Determine who is responsible for IRR – The orange book lists “ongoing data validation” as a core task of the trauma registrar. Ensuring data integrity is part of the trauma program manager’s responsibility. Chapter 15 suggests that the TMD should review discrepancies identified in the validation process.
- Monitor validity – base education on IRR results
- Report results back to trauma registrars
- Select data fields versus all data fields, it is appropriate to focus on key elements
 - If the accuracy rate of a specific field is 99-100% consider removal from the IRR process
- Timing of IRR – monthly IRR makes this process more manageable
- TQIP participation is not enough to ensure data validity for the hospital trauma registry.

Ways to do IRR

- Use of a hospital internal trauma registry data dictionary
 - Reflect findings of IRR process
 - Provide a hierarchy for finding information
 - Can help to ensure consistency across multiple abstractors
 - Correlate your internal dictionary with the state and NTDB dictionaries as applicable
- 5-10% of charts? Minimum of 15 charts is recommended to get an accurate view of total abstraction quality.
- Track IRR rates and trends and maintain IRR records.
- Report results back to trauma registrars
- Smaller facilities: contract out, partner with sister facility, TMD involvement
- Do what works for you!

Trauma Number	Test
Month of Patient Arrival	April-21
First Abstractor	Test
Element	Your Response1
Last Name	Agree
First Name	Agree
Prehospital Residence	Agree
ZIP of Residence	Disagree
County (Residence)	Agree
Location of Incident ICD-10 [LOCATION]	Agree
Injury Code (e-CODE 10)	Agree
EMS Scene Vital Signs -Pulse [PULSE]	Agree
ED Disposition [ED DISPOSITION]	Agree
ED D/C ORDER DATE	Agree
ED D/C ORDER TIME	Agree
Hosp/ED Arrival Vitals- Systolic BP [SBP]	Disagree
Alcohol BAL [ETOH LEVEL]	Agree
Hospital Discharge Disposition [DISCHARGE DISPO]	Agree
Hospital Discharge Order Time [D/C ORDER TIME]	Agree
Number of Injury Diagnoses First Abstractor Identified	5
Number of Injury Diagnoses Second Abstractor Agrees With	5
Number of Pre-existing Conditions First Abstractor Identified	2
Number of Pre-existing Conditions Second Abstractor Agrees With	1
Number of Hospital Procedures First Abstractor Identified	7
Number of Hospital Procedures Second Abstractor Agrees With	7
IRR %	90%

References

Resources for the optimal care of the injured patient. (2014). Chicago, IL: American College of Surgeons, Committee on Trauma

Code of Colorado Regulations. (2020). State of Colorado: Department of Public Health and Environment.