

Assessing the accuracy of Newcastle head injury data from the Trauma Audit & Research Network (TARN)

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Background

TARN is a database of trauma patient demographic and clinical data. It was conceived in 1989 to audit trauma data to advance trauma care through research and incorporates more than half of the trauma receiving hospitals in England and Wales. The RVI, Newcastle is one such hospital. Trauma patients must meet a certain criteria (detailed below) to be considered eligible for submission to TARN. If severe head injury patients who are eligible for TARN are being missed this may be causing an artificially low mortality rate for the RVI.

Aim

To evaluate the accuracy of the recent TARN data for the period 1st January 2011 – 31st March 2013 (anniversary of the opening of the major trauma centre at the RVI).

TARN Inclusion Criteria

- All Trauma patients regardless of age
- Patients admitted to a hospital ward for a minimum of 3 days, receive intensive or high dependency care, are transferred to a Neurosurgical unit or die within 30 days
- Injuries based on ICD10 codes (S02, S04-S07 and SO9)

Methods

Head injury patients admitted to the RVI were identified from:

- 1) patient data compiled by a head injury specialist nurse
- 2) patient data from the IT department
- 3) data from Hospital Episode Statistics (HES)

TARN software excluded those patients ineligible or already included in the TARN database from the HES data using the patient NHS number

Due to some of the patients in TARN database having missing NHS numbers, this meant that the remaining HES patients had to be manually checked to ensure they weren't already present in the TARN database

Patients were excluded from sources 1) and 2) who were already present in TARN or already present in the HES data as being TARN eligible

Remaining patients had their data assessed for suitability of inclusion to TARN

Results

- Decreasing trend of eligible TARN patients missed by the RVI for the study period
- Relatively small difference between the mortality rates of eligible TARN patients submitted and missed

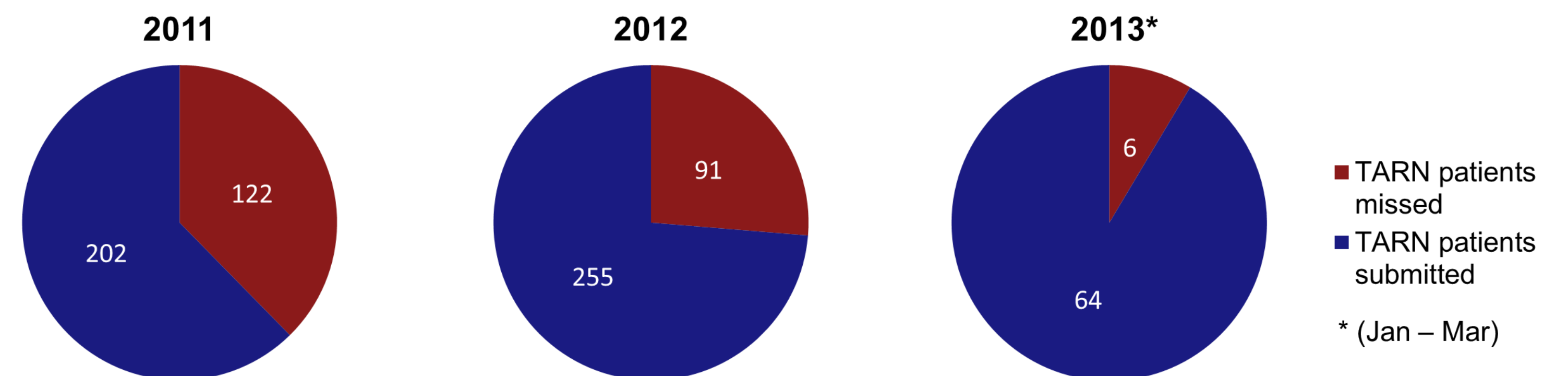


Fig 1: The numbers of patients admitted to the RVI with head injuries per year submitted or missed on the TARN database

Mortality	2011	2012	2013*	Total
TARN patients submitted (%)	20 (10)	29 (11)	7(11)	56 (11)
TARN patients missed (%)	12 (10)	16 (18)	1(17)	29 (13)

Fig 2: The numbers of deaths from patients with a head injury admitted to the RVI per year submitted or missed on the TARN database

Discussion & Conclusions

- Accurate data is essential if used for research purposes, improving the accuracy of the TARN data benefits TARN and the RVI
- The RVI has made significant improvements in reducing the number of TARN eligible patients being missed
- The difference in mortality between the eligible TARN patients submitted and missed is minor meaning an artificially low mortality rate is not being created