



# TARN

THE TRAUMA AUDIT & RESEARCH NETWORK

Updated February 2016

HES V TARN 2013

DATA COMPARISON EXERCISE

## 1. Data Completeness

TARN acquires HES (Hospital Episode Statistics) data from the HSCIC each year. HES data contains certain information about patients admitted to every Hospital in England the previous year including their ICD10 codes, Length of stay and NHS numbers, but no other patient identifiers.

Using a specially written SQL script, TARN can identify the number of eligible cases in the HES dataset, based on LOS, Age, Discharge destination and ICD10 codes. This is then used as the 'expected number of cases' denominator for each Hospital. The denominator is then compared to the numerator (actual number of cases submitted) by each Hospital and shown as a Data completeness % on the TARN website and in the Clinical reports.

**Note:** The denominator is used as a guide, as it is based on HES data from the previous year and only includes patients admitted to the hospital, therefore some Hospitals have >100% data completeness. However, if data completeness is low then the published results may not reflect true practice at that Hospital.

## 2. Exercise Aim

To enable Hospitals to identify reasons for the variance between the HES and TARN numbers, thus improving their data completeness going forward and therefore the validity of their published results.

## 3. Methodology

In early 2015 TARN produced a HES13 v TARN13 comparison spreadsheet for each Hospital, highlighting which eligible cases identified in the HES data had and had not been entered onto the TARN database.

Cases found in both datasets were *highlighted in Green*, with the TARN Submission ID shown. Cases found only in HES dataset were *highlighted in Black* and Hospitals were asked to review these cases only.

An example spreadsheet is shown below and includes a comments field which Hospitals used to annotate whether each case was:

- Missed, these cases were then entered onto the database, thus increasing the Hospitals' numerator, or
- Ineligible (stating the reason), these cases were then removed from the Hospitals' denominator.

20	21	Arrival date	Age	LOS	Destination	Inclusion Category	ICD1	ICD1 description	ICD2	ICD2 description	ICD3	Submission ID	Not TARN eligible
22		03/01/2013	12	165	Home	Always included	S0620	Diffuse traumatic brain injury CLOSED	S4241	Fracture of lower end of humerus OPEN	S364	999900061432	
23		03/01/2013	0	5	Home	Always included	T741	Physical abuse, confirmed	S0200	Fracture of vault of skull CLOSED	S008	999900061372	
26		10/01/2013	8	10	Home	Always included	S7240	Fracture of lower end of femur CLOSED					Not traumatic - pathological
27		15/01/2013	4	8	Home	Always included	S0210	Fracture of base of skull CLOSED	S2700	Traumatic pneumothorax		999900061367	
28		16/01/2013	12	8	Home	Multiple minor	S8230	Fracture of lower end of tibia CLOSED	S4200	Fracture of clavicle CLOSED	S008	999900061799	now submitted
44		08/03/2013	0	5	Other hospital	Always included	S251	Injury of innominate or subclavian artery					not trauma injury. Incorrect code
45		15/03/2013	13	4	Home	Always included	S0640	Epidural hemorrhage CLOSED	S0200	Fracture of vault of skull		999900061396	
46		16/03/2013	15	3	Home	Always included	T71X	Asphyxiation				999900061798	now submitted
47		21/03/2013	13	4	Home	Under 65 NOF	S720	Fracture of head and neck of femur				999900061397	
48		26/03/2013	9	10	Home	Always included	S0650	Traumatic subdural hemorrhage	S0640	Epidural hemorrhage CLOSED		999900061412	
49		28/03/2013	0	43	Home	Always included	S2230	Fracture of one rib CLOSED					rib fracture result of surgery not TARN applicable

The comparison between HES and TARN data was made using the NHS Number, therefore missing NHS numbers (in either dataset) would result in no match being found. Hospitals were then guided to use the Arrival date, Age and ICD10 codes to identify potentially missing cases.

#### 4. Results

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- 44 Major Trauma Centres/Trauma Units took part in the exercise.
- 3,936 total cases were removed from the denominator.
- Overall denominator reduction of 17.1%.
- Comparable data completeness increase.

##### Common reasons for removal of cases from denominator:

- Patients admitted for Rehabilitation only
- Incorrect LOS
- Old injuries
- Incorrect ICD10 coding
- Non-traumatic injuries

##### Commonly missed patient groups:

- Non isolated 65+ Hip fractures
- Traumatic Subdural Haematomas admitted to medical wards
- Spinal fractures
- LOS of exactly 3 days

List of all Major Trauma Centres & Trauma units that completed the exercise, shown below.

Site	Cases removed from denominator	Percentage reduction
Alder Hey Children's Hospital	7	6.1
Barnet Hospital	41	18.3
Blackpool Victoria Hospital	13	3.0
Countess of Chester Hospital	82	27.5
Croydon University Hospital	40	14.5
Darlington Memorial Hospital	70	31.0
East Surrey Hospital	106	22.6
Frenchay/Southmead Hospital	96	8.8
John Radcliffe Hospital	227	18.0
Leeds General Infirmary	136	11.6
Leighton Hospital	73	22.7
Manchester Royal Infirmary	108	20.4
Newham General Hospital	72	40.4
Norfolk & Norwich University Hospital	35	4.3
North Tyneside General Hospital	40	18.6
Nottingham University Hospital	244	16.7
Princess Alexandra Hospital	76	22.8
Queen Elizabeth Hospital Birmingham	105	8.2
Queen Elizabeth Hospital Kings Lynn	62	20.3
Queen Elizabeth Queen Mother Hospital	79	22.4
Rotherham General Hospital	117	30.5
Royal Albert Edward Infirmary	31	8.0
Royal Berkshire Hospital	111	24.0
Royal Free Hospital	103	33.3
Royal Liverpool University Hospital	111	19.4
Royal London Hospital	140	9.7
Royal Stoke University Hospital	231	21.2
Southampton University Hospital	200	16.7
St Helier Hospital	40	13.0
St Peters Hospital Chertsey	59	16.0
St. James University Hospital (Leeds)	79	18.8
Stepping Hill Hospital	99	22.0
Stoke Mandeville Hospital	86	29.3
Sunderland Royal Hospital	76	21.2
University College Hospital	28	14.4
University Hospital Aintree	136	20.5
University Hospital of North Durham	81	29.9
Walton Centre for Neurology	45	12.9
Wansbeck General Hospital	61	23.1
West Suffolk Hospital	59	19.4
Whipps Cross University Hospital	77	26.8
William Harvey Hospital	116	23.8
Worthing Hospital	90	24.7
York Hospital	48	11.4
	<b>3936</b>	<b>17.1</b>