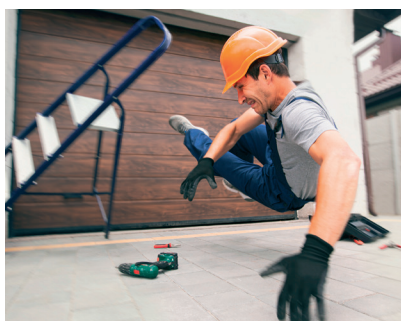


MAJOR TRAUMA AUDIT

NATIONAL REPORT 2021 APPENDICES



APPENDICES	2
APPENDIX 1: AUDIT OBJECTIVES	2
APPENDIX 2: INCLUSION CRITERIA.....	3
APPENDIX 3: ABBREVIATED INJURY SCALE (AIS)	6
APPENDIX 4: DATA ENTRY COLLECTION PERIOD	7
APPENDIX 5: MTA GOVERNANCE COMMITTEE MEETING ATTENDANCE, 2022	8
APPENDIX 6: HOSPITALS AND PEOPLE THAT WE WORK WITH	9
APPENDIX 7: FREQUENCY TABLES.....	10
APPENDIX 8: SUPPLEMENTARY FREQUENCY TABLES	24
APPENDIX 9: SUPPLEMENTARY BLOOD PRODUCT SUPPLY 2017-2021 courtesy of the IBTS.	24

APPENDICES

Accessing report appendices

National Office of Clinical Audit (2023). *Major Trauma Audit National Report 2021 – Appendices*.

Dublin: National Office of Clinical Audit. Available at:

<https://www.noca.ie/publications/publications-listing/P0/category/3>.

APPENDIX 1: AUDIT OBJECTIVES

AIM AND OBJECTIVES

Aim

The Major Trauma Audit (MTA) will drive system-wide quality improvement to achieve the best outcomes for trauma patients in Ireland.

Objectives

- To support the collection of high-quality data (in line with Health Information and Quality Authority standards) on all major trauma patients in Ireland for local, national and international reporting and comparison.
- To promote the use of the data for reflective clinical practice, peer review and quality improvement in order to improve quality of care and reduce death and disability from trauma.
- To provide high-quality data in order to enable research.
- To work towards collecting health-related quality-of-life and functional outcome measures that provide greater sensitivity to patient-centered outcomes.
- To capture the patient voice/experience and disseminate audit findings to patients and the public in an accessible manner.

APPENDIX 2: INCLUSION CRITERIA

The decision to include a patient should be based on the following 3 points:

1. ALL TRAUMA PATIENTS IRRESPECTIVE OF AGE

2. WHO FULFIL ONE OF THE FOLLOWING LENGTH OF STAY CRITERIA

DIRECT ADMISSIONS	PATIENTS TRANSFERRED IN
<p>Trauma admissions whose length of stay is 3 days or more OR Trauma patients admitted to a High Dependency Area regardless of length of stay OR Deaths of trauma patients occurring in the hospital including the Emergency Department (even if the cause of death is medical) OR Trauma patients transferred to other hospital for specialist care or for an ICU/HDU bed.</p>	<p>Trauma patients transferred into your hospital for specialist care or ICU/HDU bed whose combined hospital stay at both sites is 3 days or more OR Trauma admissions to a ICU/HDU area regardless of length of stay OR Trauma patients who die from their injuries (even if the cause of death is medical)</p> <p><i>Patients transferred in for rehabilitation only should not be submitted to TARN.</i></p>

3. AND WHOSE ISOLATED INJURIES MEET THE FOLLOWING CRITERIA

BODY REGION OR SPECIFIC INJURY	INCLUDED – IN ISOLATION (EXCEPT WHERE SPECIFIED)	EXCLUDED – IN ISOLATION (EXCEPT WHERE SPECIFIED)
HEAD	All brain or skull injuries	LOC or injuries to scalp
THORAX	All internal injuries	
ABDOMEN	All internal injuries	
SPINE	Cord injury, fracture, dislocation or nerve root injury.	Spinal strain or sprain.
FACE	Fractures documented as: Significantly Displaced, open, compound or comminuted. All Lefort fractures All panfacial fractures. All Orbital Blowout fractures	Fractures documented as Closed and simple or stable.
NECK	Any Organ or vascular injury or hyoid fracture	Nerve Injuries Skin Injuries
FEMORAL FRACTURE	All Shaft, Distal, Head or Subtrochanteric fractures, regardless of Age. Isolated Neck of Femur or Inter/ Greater trochanteric fractures <65 years old	Isolated Neck of femur or Inter/Greater trochanteric fractures ≥ 65 years.
FOOT OR HAND: JOINT OR BONE	Crush or amputation only.	Any fractures &/or dislocations, even if Open &/or multiple
FINGER OR TOE	None	All injuries to digits, even if Open fractures, amputation or crush &/or multiple injuries.

BODY REGION OR SPECIFIC INJURY	INCLUDED – IN ISOLATION (EXCEPT WHERE SPECIFIED)	EXCLUDED – IN ISOLATION (EXCEPT WHERE SPECIFIED)
LIMB – UPPER (EXCEPT HAND/FINGERS)	Any Open injury. Any 2 limb fractures &/or dislocations.	Any Closed unilateral injury fractures, (including multiple closed fractures & or dislocations or the same limb)
LIMB – BELOW KNEE (EXCEPT FEET/TOES)	Any Open injury. Any 2 limb fractures &/or dislocations.	Any Closed unilateral injury fractures, (including multiple closed fractures & or dislocations or the same limb)
PELVIS	All isolated fractures to Ischium, Sacrum, Coccyx, Ilium, acetabulum. Multiple pubic rami fractures. Single pubic rami fracture <65 years old. Any fracture involving SIJ or Symphysis pubis.	Single pubic rami fracture >65 years old.
NERVE	Any injury to sciatic, facial, femoral or cranial nerve.	All other nerve injuries, single or multiple.
VESSEL	All injuries to femoral, neck, facial, cranial, thoracic or abdominal vessels. Transection or major disruption of any other vessel.	Intimal tear or superficial laceration or perforation to any limb vessel.
SKIN	Laceration or penetrating skin injuries with blood loss >20% (1000mls) Major degloving injury. (>50% body region)	Simple skin lacerations or penetrating injuries with blood loss < 20% (1000mls); single or multiple. Contusions or abrasions: single or multiple. Minor degloving injury. (<50% body region)
BURN	Any full thickness burn or Partial/superficial burn >10% body surface area	Partial or superficial burn <10% body surface area.
INHALATION	All included	
FROSTBITE	Severe frostbite	Superficial frostbite
ASPHYXIA	All	None
DROWNING	All	None
EXPLOSION	All	None
HYPOTHERMIA	Accompanied by another TARN eligible injury	Hypothermia in isolation
ELECTRICAL	All	None

ANATOMICAL INJURY DESCRIPTIONS

INJURY DETAIL

Injury detail is of **paramount importance to any TARN submission**, therefore all injuries sustained by a patient must be recorded on every submission.

Information relating to injuries should be obtained from the following sources: clinician's notes, nursing notes, radiology reports, operative notes, discharge summaries and post mortem reports.

Guidelines to help with injury documentation, record:

- Length, depth or grade of lacerations (especially to internal organs)
- Depth, size and location of haemorrhages and contusions (especially in the brain)
- Open or closed fractures
- Stability & site of fractures (e.g. comminuted/displaced shaft/proximal/distal fracture)
- Articular (joint) involvement (e.g. intra-articular, extra-articular)
- Blood loss
- Vessel damage
- Location & number of rib fractures
- Compression or effacement of ventricles/brain stem cisterns
- Neurology associated with spinal cord injuries
- Instability, blood loss, joint involvement or vascular damage associated with pelvic fractures
- Cardiac arrest associated with asphyxia or drowning

UNCONFIRMED INJURIES

Injuries should only be recorded when the diagnosis is confirmed.
Never record possible, probable or suspected injuries.

RADIOLOGY REPORTS AND POST-MORTEMS

The user should paste a radiology report into the relevant imaging section of any electronic data collection and reporting (EDCR) submission.

When a report is pasted into an EDCR submission, it will automatically appear on the AIS coding section, thus ensuring that the TARN coder has all the information in front of them before assigning AIS codes.

Post mortem results should be used whenever available even if this results in a delay in dispatching your submission.

All injury coding using AIS is done centrally at TARN, but users can see every AIS code issued by TARN by clicking into the AIS coding section once a submission has been approved.

Accurate and detailed injury descriptions will enable a more precise Injury Severity Score and therefore a more accurate Probability of Survival calculation.

APPENDIX 3: ABBREVIATED INJURY SCALE (AIS)

ABBREVIATED INJURY SCALE (AIS)

BACKGROUND INFORMATION

A.I.S. was first published in 1969 by the Association for the Advancement of Automotive Medicine (A.A.A.M.). The latest edition (AIS2005) is now available from the AAAM website: www.AAAM.org at cost of \$250 per dictionary.

STRUCTURE

- Based on anatomical injury.
- A single AIS score for each injury.
- More than 1500 injuries listed.
- Scores range from 1 to 6, the higher the score the more severe the injury.
- The intervals between the scores are not always consistent e.g. the difference between AIS3 and AIS4 is not necessarily the same as the difference between AIS1 and AIS2.

EXAMPLE AIS CODES

INJURY	NUMERICAL IDENTIFIER	AIS	SEVERITY
Fracture 1 rib	450201	1	Minor
Fractured 2 ribs	450202	2	Moderate
Haemopneumothorax	442205	3	Serious
Bilateral lung lacerations	441450	4	Severe
Bilateral flail chest	450214	5	Critical
Massive chest crush	413000	6	Maximum

CODING STRUCTURE EXPLAINED

BODY REGION	TYPE OF ANATOMICAL STRUCTURE	SPECIFIC ANATOMICAL STRUCTURE	SPECIFIC ANATOMICAL STRUCTURE	LEVEL	LEVEL	AIS
4	5	0	2	0	2	2

All existing codes on the TARN database that were coded with AIS98 (previous version of Dictionary) were successfully mapped to corresponding AIS2005 codes, so continuing comparisons can be made.

ISS CLASSIFICATION	ISS SCORE	EXAMPLES OF INJURIES
Low-severity injury	1-8	Fractured wrist and ankle Simple skull fracture Small bleed in liver
Moderate-severity injury	9-15	Fractured femur Small brain contusion (bruising)
Severe injury	> 15	Large subdural haematoma (bleed between skull and brain) Fracture of the pelvis with significant blood loss Severe injuries to multiple body regions

APPENDIX 4: DATA ENTRY COLLECTION PERIOD

TABLE 2.1: DATA COLLECTION CALENDAR

Data collection period	Closure date for data entry
1 January 2021 – 31 March 2021	31 December 2021
1 April 2021 – 30 June 2021	31 March 2022
1 July 2021 – 30 September 2021	30 June 2022
1 October 2021 – 31 December 2021	31 November 2022

***The target date was extended multiple times due to the COVID-19 pandemic and the 2021 HSE cyberattack.**

APPENDIX 5: MTA GOVERNANCE COMMITTEE MEETING ATTENDANCE, 2022

MTA Governance Committee Attendance 2022					
Representative	Name	19.01.22	13.04.22	28.09.22	30.11.22
MTA Audit Manager	Louise Brent	✓	✓	✓	n/a
Irish Association for Emergency Medicine/Academic Committee	Dr Tomás Breslin	✓	x	✓	✓
Emergency Medicine Nursing Interest Group	Ann Calvert	x	x	✓	x
National Rehabilitation Hospital	Amanda Carty	n/a	n/a	✓	✓
Royal College of Surgeons in Ireland-Neurosurgery Programme	Mr Darach Crimmins	x	x	x	x
National Board for Ireland of the College of Emergency Medicine	Prof Conor Deasy	✓	✓	✓	Chair
HSE National Clinical Programme for Older People	Dr Rachael Doyle	✓	x	x	x
Royal College of Physicians Ireland - Pathology	Dr Joan Fitzgerald	x	✓	✓	✓
Representing Audit Coordinators	Rosita Guidera	n/a	n/a	n/a	✓
Joint Faculty of Intensive Care Medicine of Ireland	Dr Jennifer Hastings	x	x	x	x
MTA Assistant Manager	Pamela Hickey	n/a	n/a	✓	✓
MTA Assistant Manager	Breda Horan	n/a	n/a	n/a	✓
National Ambulance Service, Head of Education	Macartan Hughes	✓	✓	✓	x
Royal College of Surgeons in Ireland - General Surgery	Mr Dara Kavanagh	x	x	x	x
HSE National Clinical Programme for Emergency Medicine/Nominee	Dr George Little	✓	✓	✓	x
MTA Audit Coordinator Representative	Marion Lynders	✓	x	✓	x
Royal College of Surgeons Ireland - Faculty of Radiologists	Dr Peter MacMahon	x	x	x	✓
Children's Health Ireland - Paediatric Emergency Medicine	Dr Ciara Martin	✓	x	✓	x
Royal College of Physicians of Ireland - Public Health	Dr Caroline Mason Mohan	✓	x	x	✓
Emergency Medicine Nursing Interest Group	Fiona McDaid	✓	✓	x	✓
Royal College of Physicians Ireland - Rehabilitation Medicine	Dr Jacinta McElligott	x	✓	✓	x
Royal College of Surgeons in Ireland - Irish Association of Vascular Surgeons	Mr Morgan McMonagle	Chair	Chair	Chair	x
Public/Patient Interest Representative	Richard Murray	n/a	n/a	✓	x
IITOS - Trauma and Orthopaedic Programme	Mr Brendan O'Daly	x	x	x	x
Dublin Fire Brigade	Martin O'Reilly	x	x	x	✓
Irish Association of Plastic Surgeons - Trauma and Reconstructive Surgery	Mr Barry O'Sullivan	x	x	x	x
Public/Patient Interest Representative	Donna Price	x	x	x	x
Therapy Representative	Rosie Quinn	x	✓	✓	✓
✓ = attended					
n/a = not applicable					
x = did not attend					
P = Proxy					

APPENDIX 6: HOSPITALS AND PEOPLE THAT WE WORK WITH

Hospital	Clinical lead	Audit coordinator
Beaumont Hospital	Dr Michael Quirke	Anna Duffy Ruth Kavanagh Anthony O'Loughlin
Cavan General Hospital	Mr Ashraf Butt	Eilish Sweeney Deborah Reily
Children's Health Ireland at Crumlin	Dr Carol Blackburn Mr Brian Sweeney Dr Laura Melody	Vacant
Children's Health Ireland at Temple Street	Dr Nuala Quinn	Jennifer Doyle
Connolly Hospital	Dr Philip Darcy	Marguerite Acarreta
Cork University Hospital	Mr James Clover	Ann Deasy Margaret Keohane
Letterkenny University Hospital	Dr Sinead O'Gorman	Patrick McGonagle Sarah Meagher
Mayo University Hospital	Dr Ciara Canavan Dr Ann Shortt	Paul Crisham
Mater Misericordiae University Hospital	Dr Francis O'Keeffe Dr Tomás Breslin	Marion Lynders
Mercy University Hospital	Dr Darren McLoughlin	Vacant
Midland Regional Hospital Portlaoise	Dr Suvarna Maharaj	Tracy Kelly
Midland Regional Hospital Tullamore	Dr Carla Hopper Dr Anna Moore	AnneMarie Barnes Anita Sawyer
Naas General Hospital	Mr George Little	Jennifer Kehoe Jobi Ann John
Our Lady of Lourdes Hospital Drogheda	Mr Niall O'Connor	Deborah McDaniel
Regional Hospital Mullingar	Dr Sam Kuan	Maura McGuire
Sligo University Hospital	Dr Kieran Cunningham Dr Micheal Sweeney	Erin Lyons Marie Lohan Fidelma Tully
South Tipperary General Hospital	Dr Oisin Powell	Susan Ryan
St James's Hospital	Mr Niall Hogan Dr Geraldine McMahon	Ricardo Paco Genevieve Wynne
St Luke's General Hospital, Kilkenny	Dr David Maritz	Frances Walsh
St Vincent's University Hospital	Dr John Cronin	Jennifer Beatty Wilfredo Coniendo
Tallaght University Hospital	Dr Jean O'Sullivan Dr Aileen McCabe Dr Ciara Martin	Noel Redmond
University Hospital Galway	Mr Alan Hussey	Paul Crisham
University Hospital Kerry	Dr Niamh Feely	Esther O'Mahony
University Hospital Limerick	Dr Cormac Mehigan	Michael Fitzpatrick
University Hospital Waterford	Mr Morgan McMonagle	Margaret Mulcahy
Wexford General Hospital	Dr Paul Kelly Dr Michael Molloy	Roisin O'Neill

APPENDIX 7: FREQUENCY TABLES

The numbering of tables in this appendix corresponds to the relevant chapters of the main report.

FIGURE 3.1: DATA COVERAGE PERCENTAGES BY HOSPITAL AND YEAR, 2021

Hospital	%
Beaumont Hospital	90%
Cavan General Hospital	35%
Children's Health Ireland at Crumlin	0%
Children's Health Ireland at Temple Street	11%
Connolly Hospital	100%
Cork University Hospital	25%
Letterkenny University Hospital	0%
Mater Misericordiae University Hospital	100%
Mayo University Hospital	100%
Mercy University Hospital	0%
Midland Regional Hospital Portlaoise	29%
Midland Regional Hospital Tullamore	88%
Naas General Hospital	29%
Our Lady of Lourdes Hospital Drogheda	100%
Regional Hospital Mullingar	13%
Sligo University Hospital	0%
St James's Hospital	22%
St Luke's General Hospital, Carlow/Kilkenny	52%
St Vincent's University Hospital	92%
Tallaght University Hospital	71%
Tipperary University Hospital	100%
University Hospital Galway	97%
University Hospital Kerry	76%
University Hospital Limerick	31%
University Hospital Waterford	95%
Wexford General Hospital	100%
National	76%

FIGURE 3.2: DATA ACCREDITATION PERCENTAGES BY HOSPITAL, 2021

Hospital	%
Beaumont Hospital	94%
Cavan General Hospital	99%
Children's Health Ireland at Crumlin	n/a
Children's Health Ireland at Temple Street	100%
Connolly Hospital	94%
Cork University Hospital	97%
Letterkenny University Hospital	n/a
Mater Misericordiae University Hospital	98%
Mayo University Hospital	98%
Mercy University Hospital	n/a

Midland Regional Hospital Portlaoise	82%
Midland Regional Hospital Tullamore	90%
Naas General Hospital	87%
Our Lady of Lourdes Hospital Drogheda	99%
Regional Hospital Mullingar	87%
Sligo University Hospital	n/a
St Luke's General Hospital, Carlow/Kilkenny	97%
St Vincent's University Hospital	89%
Tallaght University Hospital	94%
Tipperary University Hospital	95%
University Hospital Galway	98%
University Hospital Kerry	94%
University Hospital Limerick	93%
University Hospital Waterford	96%
Wexford General Hospital	94%
National	95%

FIGURE 3.3: DATA ACCREDITATION BY KEY DATA FIELDS

	%
Pre-existing conditions	99%
Arrival time	100%
Operation details	100%
First computed tomography (CT) details	100%
CT report time	95%
CT review time	95%
Pupil reactivity, Abbreviated Injury Scale (AIS) and head injury	96%
Doctors in the emergency department	96%
Injury details	96%
Transfer details	97%
999 call details	85%
Incident time	83%
Glasgow Coma Scale (GCS)	97%
Intubation	99%
Tranexamic acid	95%
Overall	95%

FIGURE 4.1 PERCENTAGE OF MTA PATIENTS, BY GENDER AND AGE GROUP (N=4,055)

AGE GROUP	FEMALE		MALE		TOTAL	
	N	%	N	%	N	%
0–14	17	34.0%	33	66.0%	50	100.0%
15–24	71	24.8%	215	75.2%	286	100.0%
25–34	58	23.2%	192	76.8%	250	100.0%
35–44	74	23.0%	248	77.0%	322	100.0%
45–54	135	30.1%	313	69.9%	448	100.0%
55–64	255	39.4%	392	60.6%	647	100.0%
65–74	276	44.3%	347	55.7%	623	100.0%
75–84	456	56.3%	354	43.7%	810	100.0%
85+	409	66.1%	210	33.9%	619	100.0%
Total	1,751	43.2%	2,304	56.8%	4,055	100.0%

FIGURE 4.2: MECHANISM OF INJURY, BY AGE GROUP (N=4,055)

AGE GROUP	FALL LESS THAN 2M		FALL MORE THAN 2M		ROAD TRAUMA		BLOW(S)		OTHER		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
0–14	26	52.0%	6	12.0%	10	20.0%	~	*	~	*	50	100.0%
15–24	48	16.8%	26	9.1%	127	44.4%	54	18.9%	31	10.8%	286	100.0%
25–34	45	18.0%	31	12.4%	99	39.6%	50	20.0%	25	10.0%	250	100.0%
35–44	84	26.1%	55	17.1%	79	24.5%	53	16.5%	51	15.8%	322	100.0%
45–54	193	43.1%	79	17.6%	102	22.8%	38	8.5%	36	8.0%	448	100.0%
55–64	425	65.7%	85	13.1%	90	13.9%	23	3.6%	24	3.7%	647	100.0%
65–74	446	71.6%	78	12.5%	66	10.6%	17	2.7%	16	2.6%	623	100.0%
75–84	694	85.7%	52	6.4%	43	5.3%	6	0.7%	15	1.9%	810	100.0%
85+	571	92.2%	22	3.6%	15	2.4%	~	*	*	*	619	100.0%
Total	2532	62.4%	434	10.7%	631	15.6%	251	6.2%	207	5.1%	4,055	100.0%

~ Denotes five cases or fewer.

* Further suppression required in order to prevent disclosure of five cases or fewer.

FIGURE 4.3: PERCENTAGE OF PATIENTS BY ISS, BY AGE GROUP (N=4,055)

AGE GROUP	LOW-SEVERITY INJURY		MODERATE-SEVERITY INJURY		SEVERE INJURY		TOTAL	
	N	%	N	%	N	%	N	%
0–14	7	14%	21	42%	22	44%	50	100%
15–24	49	17%	107	37%	130	45%	286	100%
25–34	48	19%	82	33%	120	48%	250	100%
35–44	68	21%	117	36%	137	43%	322	100%
45–54	67	15%	207	46%	174	39%	448	100%
55–64	114	18%	363	56%	170	26%	647	100%
65–74	139	22%	258	41%	226	36%	623	100%
75–84	184	23%	346	43%	280	35%	810	100%

85+	162	26%	261	42%	196	32%	619	100%
Total	838	21%	1762	43%	1,455	36%	4,055	100%

FIGURE 4.4: PLACE OF INJURY BY AGE GROUP (N=4,055)

AGE GROUP	HOME		PUBLIC AREA OR ROAD		INSTITUTION		FARM		INDUSTRIAL		OTHER		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
0–14	20	40%	17	34%	~	*	~	*	0	0%	~	*	50	100%
15–24	35	12%	202	71%	*	*	16	6%	~	*	21	7%	286	100%
25–34	44	18%	157	63%	~	*	14	6%	~	*	27	11%	250	100%
35–44	106	33%	148	46%	6	2%	10	3%	22	7%	30	9%	322	100%
45–54	168	38%	182	41%	16	4%	21	5%	30	7%	31	7%	448	100%
55–64	351	54%	169	26%	32	5%	27	4%	31	5%	37	6%	647	100%
65–74	418	67%	125	20%	28	4%	19	3%	14	2%	19	3%	623	100%
75–84	602	74%	112	14%	58	7%	18	2%	~	*	*	*	810	100%
85+	474	77%	47	8%	87	14%	~	*	0	0%	*	*	619	100%
Total	2218	55%	1159	29%	243	6%	135	3%	110	3%	190	5%	4,055	100%

~ Denotes five cases or fewer.

* Further suppression required in order to prevent disclosure of five cases or fewer.

FIGURE 4.5: TYPE OF BODY REGION INJURED (N=4,055)

Body region	N	%
Abdomen	97	2%
Chest	638	16%
Face	80	2%
Head	962	24%
Limbs	1,171	29%
Multiple	340	8%
Other	93	2%
Spine	674	17%
Total	4,055	100%

FIGURE 5.1: PRE-ALERTED BY AGE GROUP (N=3,672)

AGE GROUP	PRE-ALERTED		NOT PRE-ALERTED		NOT RECODED		TOTAL	
	N	%	N	%	N	%	N	%
0–14	9	21.4%	30	71.4%	3	7.1%	42	100.0%
15–24	76	32.1%	139	58.6%	22	9.3%	237	100.0%
25–34	50	23.3%	143	66.5%	22	10.2%	215	100.0%
35–44	71	25.6%	188	67.9%	18	6.5%	277	100.0%
45–54	76	19.1%	293	73.8%	28	7.1%	397	100.0%
55–64	73	12.1%	490	81.3%	40	6.6%	603	100.0%

65–74	60	10.7%	448	80.1%	51	9.1%	559	100.0%
75–84	50	6.6%	648	86.1%	55	7.3%	753	100.0%
85+	29	4.9%	518	87.9%	42	7.1%	589	100.0%
Total	494	13.5%	2,897	78.9%	281	7.7%	3,672	100.0%

FIGURE 5.2: DOCUMENTED RECEPTION BY A TRAUMA TEAM BY AGE GROUP (N=3,672)

AGE GROUP	RECEIVED BY A TRAUMA TEAM		NOT RECEIVED BY A TRAUMA TEAM		TOTAL	
	N	%	N	%	N	%
0–14	8	19.0%	34	81.0%	42	100.0%
15–24	49	20.7%	188	79.3%	237	100.0%
25–34	35	16.3%	180	83.7%	215	100.0%
35–44	50	18.1%	227	81.9%	277	100.0%
45–54	48	12.1%	349	87.9%	397	100.0%
55–64	40	6.6%	563	93.4%	603	100.0%
65–74	28	5.0%	531	95.0%	559	100.0%
75–84	26	3.5%	727	96.5%	753	100.0%
85+	8	1.4%	581	98.6%	589	100.0%
Total	292	8.0%	3380	92.0%	3672	100.0%

FIGURE 5.3: DOCUMENTED GRADE OF MOST SENIOR DOCTOR TREATING PATIENT ON ARRIVAL BY AGE GROUP (N=3,672)

AGE GROUP	CONSULTANT		SPECIALIST REGISTRAR		REGISTRAR		SHO		OTHER/NO GRADE RECORDED		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
0–14	15	35.7%	10	23.8%	15	35.7%	~	*	~	*	42	100.0%
15–24	73	30.8%	52	21.9%	94	39.7%	*	*	~	*	237	100.0%
25–34	60	27.9%	57	26.5%	83	38.6%	*	*	~	*	215	100.0%
35–44	73	26.4%	80	28.9%	99	35.7%	14	5.1%	11	4.0%	277	100.0%
45–54	86	21.7%	93	23.4%	171	43.1%	38	9.6%	9	2.3%	397	100.0%
55–64	124	20.6%	114	18.9%	259	43.0%	87	14.4%	19	3.2%	603	100.0%
65–74	96	17.2%	103	18.4%	276	49.4%	66	11.8%	18	3.2%	559	100.0%
75–84	126	16.7%	171	22.7%	344	45.7%	85	11.3%	27	3.6%	753	100.0%
85+	99	16.8%	102	17.3%	283	48.0%	88	14.9%	17	2.9%	589	100.0%
Total	752	20.5%	782	21.3%	1,624	44.2%	403	11.0%	111	3.0%	3,672	100.0%

~ Denotes five cases or fewer

* Further suppression required in order to prevent disclosure of five cases or fewer

FIGURE 5.4: DOCUMENTED MOST SENIOR DOCTOR SEEING PATIENT ON ARRIVAL IN THE EMERGENCY DEPARTMENT AND THOSE WITH AN INJURY SEVERITY SCORE >15

	ON ARRIVAL IN THE ED <30MINS		IN ED AFTER ARRIVAL		WITH AN ISS>15 ON ARRIVAL IN THE ED <30MINS		WITH AN ISS>15 IN ED AFTER ARRIVAL	
	N	%	N	%	N	%	N	%
Consultant	128	43.8%	752	20.5%	95	49.2%	374	29.0%
Specialist registrar	0	0.0%	782	21.3%	0	0.0%	304	23.5%
Registrar	52	17.8%	1624	44.2%	37	19.2%	492	38.1%
Senior house officer	98	33.6%	403	11.0%	53	27.5%	87	6.7%
Other/Not recorded	14	4.8%	111	3.0%	8	4.1%	34	2.6%
Total	292	100.0%	3,672	100.0%	193	100.0%	1,291	100.0%

FIGURE 5.5: SURGICAL INTERVENTION, BY BODY REGION AND AGE GROUP (N=2,784)

BODY REGION	0-14		15-24		25-34		35-44		45-54	
	N	%	N	%	N	%	N	%	N	%
Abdomen	~	*	39	12.3%	15	6.6%	19	6.0%	14	3.7%
Face	~	*	19	6.0%	15	6.6%	9	2.9%	~	*
General	~	*	~	*	*	*	7	2.2%	15	4.0%
Head and brain	8	22.2%	40	12.7%	27	11.8%	49	15.6%	45	11.9%
Limb(s)	19	52.8%	119	37.7%	93	40.8%	124	39.4%	199	52.5%
Skin/soft tissue	6	16.7%	51	16.1%	44	19.3%	77	24.4%	58	15.3%
Spine	0	0.0%	35	11.1%	25	11.0%	22	7.0%	37	9.8%
Thoracic	0	0.0%	*	*	~	*	8	2.5%	*	*
Total	36	100.0%	316	100.0%	228	100.0%	315	100.0%	379	100.0%
	55-64		65-74		75-84		85+		Total	
	N	%	N	%	N	%	N	%	N	%
Abdomen	21	4.2%	7	1.8%	~	*	~	*	118	4.2%
Face	~	*	~	*	~	*	0	0.0%	58	2.1%
General	*	*	11	2.8%	11	2.9%	7	3.0%	66	2.4%
Head and brain	43	8.5%	91	23.5%	94	24.4%	24	10.3%	421	15.1%
Limb(s)	361	71.6%	200	51.5%	215	55.8%	173	74.2%	1503	54.0%
Skin/soft tissue	36	7.1%	29	7.5%	20	5.2%	19	8.2%	340	12.2%
Spine	25	5.0%	38	9.8%	36	9.4%	7	3.0%	225	8.1%
Thoracic	10	2.0%	*	*	~	*	~	*	53	1.9%
Total	504	100.0%	388	100.0%	385	100.0%	233	100.0%	2,784	100.0%

~ Denotes five cases or fewer

* Further suppression required in order to prevent disclosure of five cases or fewer

FIGURE 5.6: AIRWAY MANAGEMENT OF PATIENTS WITH A GCS (N=120)

	N	%
No intubation	~	*
Intubated - ED	86	71.7%
Intubated - pre-hospital	0	0.0%

Intubated-both ED and pre-hospital	*	*
Not known	24	20.0%
Total	120	100.0%

~ Denotes five cases or fewer.

* Further suppression required in order to prevent disclosure of five cases or fewer.

FIGURE 5.7: PERCENTAGE OF PATIENTS TO RECEIVE A CT SCAN WITHIN 1 HOUR (N=161)

	N	%
Within an hour	81	50.3%
After one hour	80	49.7%
Total	161	100.0%

FIGURE 6.1: PRESENTATION BY MONTH (N=4,055)

COVID-19 WAVES	MONTH	NUMBER OF ADMISSIONS
COVID-19 Wave 3	JAN	357
	FEB	326
	MAR	319
	APR	348
	MAY	316
COVID-19 Wave 4	JUN	371
	JUL	408
	AUG	323
	SEP	325
	OCT	343
	NOV	302
	DEC	317
Total		4,055

FIGURE 6.2: MODE OF ARRIVAL AT HOSPITAL (N=3,558)

	N	%
Ambulance	2817	79.2%
Ambulance and helicopter	33	0.9%
Car	560	15.7%
Helicopter	45	1.3%
Walking	103	2.9%
Total	3,558	100.0%

FIGURE 6.3: MOST SENIOR PRE-HOSPITAL HEALTHCARE PROFESSIONAL (N=2,895)

	N	%
Advanced paramedic	1,190	41.1%

Doctor	30	1.0%
Paramedic	1314	45.4%
Other	8	0.3%
Not known	353	12.2%
Total	2,895	100.0%

FIGURE 6.4: PERCENTAGE OF PATIENTS TRANSFERRED TO ANOTHER HOSPITAL (N=4,055)

	N	%
Not transferred	3,219	79.4%
Transferred	836	20.6%
Total	4,055	100.0%

FIGURE 6.5: TYPE OF BLOOD PRODUCT BY AGE AND SEX (2017-2021) (N=982)

		RED CELLS CONCENTRATE		FROZEN PLASMA		PLATELETS		FIBRINOGEN CONCENTRATE		TOTAL	
		N	%	N	%	N	%	N	%	N	%
Female	0–18	*	*	~	*	0	0.0%	0	0.0%	24	100.0%
	19–54	85	89.5%	*	*	~	*	0	0.0%	95	100.0%
	55+	130	78.3%	20	12.0%	*	*	~	*	166	100.0%
	Total	236	82.8%	31	10.9%	*	*	~	*	285	100.0%
Male	0–18	46	82.1%	~	*	~	*	~	*	56	100.0%
	19–54	292	80.4%	*	*	*	*	8	2.2%	363	100.0%
	55+	208	74.8%	37	13.3%	*	*	~	*	278	100.0%
	Total	546	78.3%	79	11.3%	58	8.3%	14	2.0%	697	100.0%
Total	0–18	67	83.8%	8	10.0%	~	*	~	*	80	100.0%
	19–54	377	82.3%	45	9.8%	28	6.1%	8	1.7%	458	100.0%
	55+	338	76.1%	57	12.8%	*	*	~	*	444	100.0%
	Total	782	79.6%	110	11.2%	75	7.6%	15	1.5%	982	100.0%

~ Denotes five cases or fewer.

* Further suppression required in order to prevent disclosure of five cases or fewer.

FIGURE 6.6: PERCENTAGE OF PATIENTS WHO RECEIVED BERIPLEX/OCTAPLEX, BY YEAR (2017–2021) (N=1,076)

	RED CELLS CONCENTRATE		FROZEN PLASMA		PLATELETS		FIBRINOGEN CONCENTRATE		BERIPLEX/OCTAPLEX		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
2017	172	68.0%	21	8.3%	*	*	~	*	37	14.6%	253	100.0%
2018	177	73.4%	*	*	19	7.9%	~	*	22	9.1%	241	100.0%
2019	127	71.8%	23	13.0%	*	*	~	*	17	9.6%	177	100.0%
2020	156	74.3%	22	10.5%	16	7.6%	~	*	*	*	210	100.0%
2021	150	76.9%	26	13.3%	14	7.2%	~	*	~	*	195	100.0%
Total	782	72.7%	110	10.2%	75	7.0%	15	1.4%	94	8.7%	1,076	100.0%

~ Denotes five cases or fewer.

* Further suppression required in order to prevent disclosure of five cases or fewer.

FIGURE 6.7: PERCENTAGE OF PATIENTS WHO RECEIVED BERIPLEX/OCTAPLEX, BY SEX AND AGE GROUP (2017–2021) (N=94)

	Female		Male		Total	
	N	%	N	%	N	%
0–18	0	0.0%	~	*	~	*
19–54	~	*	~	*	*	*
55+	*	*	47	54.7%	86	100.0%
Total	40	42.6%	54	57.4%	94	100.0%

~ Denotes five cases or fewer.

* Further suppression required in order to prevent disclosure of five cases or fewer.

FIGURE 6.8: PERCENTAGE OF PATIENTS WHO RECEIVED BLOODS WITHIN 6 HOURS (2017–2021) (N=943)

	N	%
1st hospital only	776	82.3%
1st and consecutive hospital(s)	37	3.9%
Consecutive hospital(s) only	130	13.8%
Total	943	100.0%

FIGURE 6.9: PLACE OF INJURY OF PATIENTS WHO RECEIVED BLOODS (2017–2021) (N=982)

		Home	Public area or road	Institution	Farm	Industrial	Other	Total
Red cells concentrate	N	272	406	*	36	*	25	782
	%	34.8%	51.9%	*	4.6%	*	3.2%	100.0%
Frozen plasma	N	40	52	~	*	~	~	110
	%	36.4%	47.3%	*	*	*	*	100.0%
Platelets	N	*	27	*	~	0	~	75
	%	*	36.0%	*	*	0.0%	*	100.0%
Fibrinogen concentrate	N	~	9	0	0	0	~	15
	%	*	60.0%	0.0%	0.0%	0.0%	*	100.0%
Total	N	354	494	31	44	27	32	982
	%	36.0%	50.3%	3.2%	4.5%	2.7%	3.3%	100.0%

~ Denotes five cases or fewer.

* Further suppression required in order to prevent disclosure of five cases or fewer.

FIGURE 6.10: MECHANISM OF INJURY OF PATIENTS WHO RECEIVED BLOODS (2017–2021) (N=982)

	Fall more than 2m		Fall less than 2m		Road trauma		Blow(s)		Stabbing		Other		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Red cells concentrate	101	12.9%	210	26.9%	293	37.5%	52	6.6%	81	10.4%	45	5.8%	782	100.0%

Frozen plasma	8	7.3%	*	*	42	38.2%	*	*	*	*	7	6.4%	110	100.0%
Platelets	*	*	50	66.7%	13	17.3%	~	*	0	0.0%	~	*	75	100.0%
Fibrinogen concentrate	~	*	~	*	7	46.7%	0	0.0%	~	*	~	*	15	100.0%
Total	118	12.0%	303	30.9%	355	36.2%	61	6.2%	90	9.2%	55	5.6%	982	100.0%

~ Denotes five cases or fewer.

* Further suppression required in order to prevent disclosure of five cases or fewer.

FIGURE 6.11: PERCENTAGE OF PATIENTS WHO RECEIVED BLOODS, BY ISS (2017–2021) (N=982)

	LOW-SEVERITY INJURY		MODERATE-SEVERITY INJURY		SEVERE INJURY		TOTAL	
	N	%	N	%	N	%	N	%
Red cells concentrate	44	5.6%	192	24.6%	546	69.8%	782	100.0%
Frozen plasma	~	*	*	*	79	71.8%	110	100.0%
Platelets	~	*	*	*	64	85.3%	75	100.0%
Fibrinogen concentrate	~	*	~	*	12	80.0%	15	100.0%
Total	47	4.8%	234	23.8%	701	71.4%	982	100.0%

~ Denotes five cases or fewer.

* Further suppression required in order to prevent disclosure of five cases or fewer.

FIGURE 6.12: PRESENTATION BY TIME OF DAY (2017–2021) (N=812)

	N	%	
00.00	23	2.8%	00.00–7.59
01.00	26	3.2%	
02.00	25	3.1%	
03.00	20	2.5%	
04.00	22	2.7%	
05.00	19	2.3%	
06.00	13	1.6%	
07.00	15	1.8%	8.00–15.59
08.00	30	3.7%	
09.00	27	3.3%	
10.00	33	4.1%	
11.00	42	5.2%	
12.00	33	4.1%	
13.00	41	5.0%	
14.00	57	7.0%	16.00–23.59
15.00	51	6.3%	
16.00	44	5.4%	
17.00	40	4.9%	
18.00	43	5.3%	
19.00	53	6.5%	
20.00	37	4.6%	
21.00	47	5.8%	

22.00	35	4.3%	
23.00	36	4.4%	
Total	812	100.0%	

FIGURE 6.13: TYPE OF BODY REGION INJURED OF PATIENTS WHO RECEIVED BLOODS (2017–2021) (N=982)

		Abdomen	Chest	Face	Head	Limbs	Multiple	Other	Spine	Total
Red cells concentrate	N	109	156	~	165	152	151	*	30	782
	%	13.9%	19.9%	*	21.1%	19.4%	19.3%	*	3.8%	100.0%
Frozen plasma	N	*	17	~	36	24	*	~	~	110
	%	*	15.5%	*	32.7%	21.8%	*	*	*	100.0%
Platelets	N	~	~	0	61	~	~	0	~	75
	%	*	*	0.0%	81.3%	*	*	0.0%	*	100.0%
Fibrinogen concentrate	N	0	~	0	8	~	0	~	0	15
	%	0.0%	*	0.0%	53.3%	*	0.0%	*	0.0%	100.0%
Total	N	119	181	~	270	182	171	*	36	982
	%	12.1%	18.4%	*	27.5%	18.5%	17.4%	*	3.7%	100.0%

~ Denotes five cases or fewer.

* Further suppression required in order to prevent disclosure of five cases or fewer.

FIGURE 6.14: PROPORTION OF PATIENTS WHO RECEIVED BLOOD PRODUCTS WHO WERE PRE-ALERTED, (2017–2021) (N=813)

	Pre-alerted		Not pre-alerted		Not recorded		Total	
	N	%	N	%	N	%	N	%
Red cells concentrate	314	48.4%	253	39.0%	82	12.6%	649	100.0%
Frozen plasma	37	40.7%	18	19.8%	36	39.6%	91	100.0%
Platelets	*	*	39	63.9%	*	*	61	100.0%
Fibrinogen concentrate	~	*	6	50.0%	~	*	12	100.0%
Total	369	45.4%	316	38.9%	128	15.7%	813	100.0%

~ Denotes five cases or fewer.

* Further suppression required in order to prevent disclosure of five cases or fewer.

FIGURE 6.15: PROPORTION OF PATIENTS WHO RECEIVED BLOOD PRODUCTS, WHO WERE RECEIVED BY A TRAUMA TEAM, (2017–2021) (N=813)

	Received by a trauma team		Not received by a trauma team		Total	
	N	%	N	%	N	%
Red cells concentrate	248	38.2%	401	61.8%	649	100.0%
Frozen plasma	22	24.2%	69	75.8%	91	100.0%
Platelets	*	*	50	82.0%	61	100.0%
Fibrinogen concentrate	~	*	*	*	12	100.0%

Total	286	35.2%	527	64.8%	813	100.0%
--------------	------------	--------------	------------	--------------	------------	---------------

~ Denotes five cases or fewer.

* Further suppression required in order to prevent disclosure of five cases or fewer.

FIGURE 6.16: PERCENTAGE OF PATIENTS WHO RECEIVED TXA WITHIN THREE HOURS (2017-2021) (N=280)

	N	%
Received TXA within 3 hours	244	87.1%
Did not receive TXA within 3 hours	29	10.4%
Unknown	7	2.5%
Total	280	100.0%

FIGURE 6.17: PROPORTION OF SHOCKED PATIENTS WHO RECEIVED TXA (N=2,497)

	N	%
Received TXA	498	19.9%
Did not receive TXA	1,999	80.1%
Total	2,497	100.0%

FIGURE 6.18: PERCENTAGE OF PATIENTS WHO RECEIVED TXA, BY ISS (2017–2021) (N=280)

	N	%
Low-severity injury	8	2.9%
Moderate-severity injury	58	20.7%
Severe injury	214	76.4%
Total	280	100.0%

FIGURE 6.19: MORTALITY BY AGE GROUP AMONG PATIENTS WHO RECEIVED BLOOD PRODUCTS (2017–2021) (N=943)

AGE GROUP	ALIVE		DEAD		TOTAL	
	N	%	N	%	N	%
0–18	64	84.2%	12	15.8%	76	100.0%
19–54	368	84.0%	70	16.0%	438	100.0%
55+	329	76.7%	100	23.3%	429	100.0%
Total	761	80.7%	182	19.3%	943	100.0%

FIGURE 7.1: MORTALITY BY AGE GROUP (N=199)

AGE GROUP	DIED	
	N	%
0–14	0	0.0%
15–24	11	5.5%
25–34	9	4.5%
35–44	7	3.5%
45–54	11	5.5%

55–64	17	8.5%
65–74	20	10.1%
75–84	57	28.6%
85+	67	33.7%
Total	199	100.0%

FIGURE 7.2: MORTALITY BY MECHANISM OF INJURY (N=199)

	Died	
	N	%
Blow(s)	~	*
Fall less than 2m	145	72.9%
Fall more than 2m	17	8.5%
Road trauma	*	*
Other	20	10.1%
Total	199	100.0%

~ Denotes five cases or fewer.

* Further suppression required in order to prevent disclosure of five cases or fewer.

FIGURE 7.3: MORTALITY BY ISS CATEGORY (N=199)

	DEAD	
	N	%
Low-severity injury	13	6.5%
Moderate-severity injury	56	28.1%
Severe injury	130	65.3%
Total	199	100.0%

~ Denotes five cases or fewer.

* Further suppression required in order to prevent disclosure of five cases or fewer.

FIGURE 7.4: DISCHARGE DESTINATION (N=4,055)

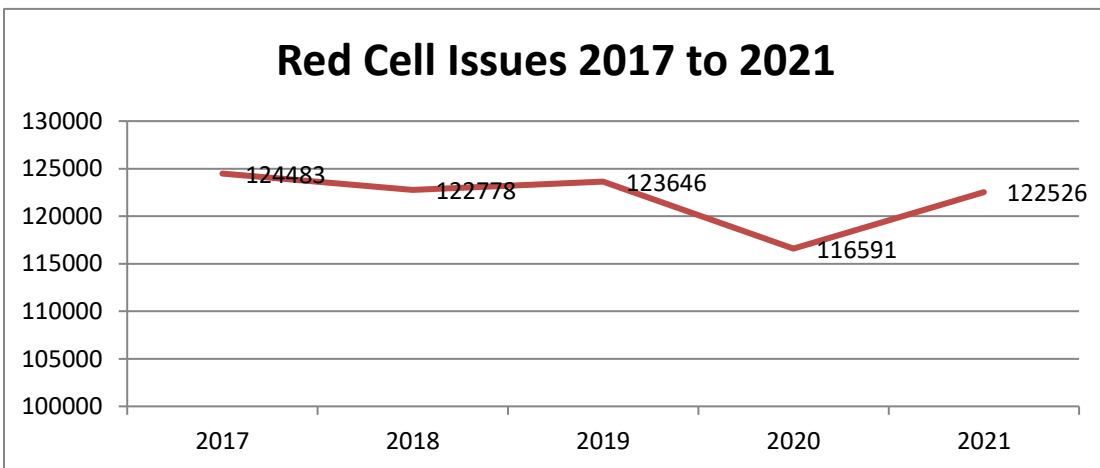
	N	%
Home	2,420	59.7%
Nursing home	488	12.0%
Other acute hospital	582	14.4%
Rehabilitation	298	7.3%
Mortuary	213	5.3%
Other	54	1.3%
Total	4,055	100.0%

APPENDIX 8: SUPPLEMENTARY FREQUENCY TABLES

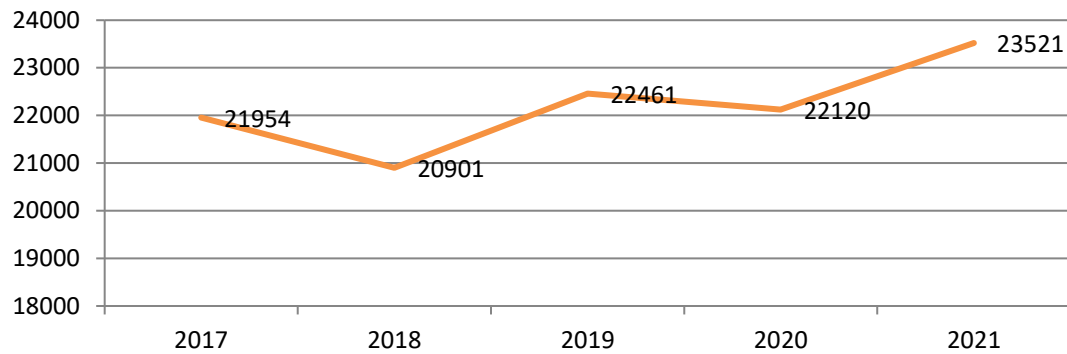
TABLE 8.1: PERCENTAGE OF PATIENTS WHO RECEIVED BLOODS WITHIN 6 HOURS (2017–2021) (n=649)

	N	%
Yes	283	43.6%
No	186	28.7%
Unknown	180	27.7%
Total	649	100.0%

APPENDIX 9: SUPPLEMENTARY BLOOD PRODUCT SUPPLY 2017-2021 courtesy of the IBTS.



Platelet Issues 2017 to 2021



LG-Octaplas and Riastap Issues 2017 to 2021

