Scottish Trauma Audit Group (STAG)
Re-auditing Trauma Management in Scotland

AUDIT INSTRUCTIONS

Document Control

Document Control	
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Author(s)	LR
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Comments to	Lynn Ralph

Document History			
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V1.1		Updates following pilot	KW
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V2.1	11.05.11	Updated	KW
V2.2		Updated	KW
V2.3	11.01.12	Updated for use with proforma V4.1	RB
V3.0	14.02.12	Regional number allocation added version updated for consistency	KW
V3.1	24.04.12	Updated following review of revised documentation and processes	LR/RB/MW/DM/FL/MN
V3.2	08.02.13	Updated for 2005 AIS	RB
V3.3	18.02.13	Updated for 2005 AIS	ALL
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V3.5	04.03.13	Updated for 2005 AIS	MW/RB/LR
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V4.1	11/12/13	Updated for minor changes	RB/LH
V4.2	22.05.14	Updated for Appendix 5: SICSAG Unit Codes	SP
V4.3	15.09.14	Updated for Ps12 and removed TRISS	SP
V4.4	05.11.14	Updated for website Added Appendix 6 LAC Guidance	LR LH

General point

This document is intended to act as a written guide for clarity of the audit process. There are some areas in which the written word may appear more complicated than the process is in practice but a document of this type is required for reference. If there are any doubts about interpretation or further clarity is required then this should be discussed with the regional coordinator.

Aim of the Audit

The overall aim of the 'STAG Re-auditing Trauma Management in Scotland Audit', is to 'Improve the emergency management of seriously injured patients in Scotland'.

Main Objectives of the Audit

- To measure current practice against accepted evidenced based standards of care.
- To revisit the urban/rural outcome debate in light of the recommendations by the National Audit Office for regionalisation of trauma services in England and Wales.
- To lead a Quality Improvement Program for trauma by providing high quality national trauma data.

Introducing a New Audit

Task	*Title*	*Who*	*Task Description*
1.0	**OBJECTIVES**		To ensure that each new audit has comprehensively collected, robust, standardised data.
1.1	**A NEW AUDIT**	LC	When starting any new audit it is vital that the collector of the information alerts all relevant departments and personnel prior to the start of the audit in order to gain their support and co-operation. Showing an interest in different departments, finding out how they work, asking questions and making yourself known are the first steps involved in building up a network of contacts which will make the collection of accurate data 'as easy as possible'.
2.0	**GETTING STARTED**	LC	Always try to speak to the head of department in first instance e.g. Clinical Nurse Manager, Clinical Director, Superintendent Radiographer. Alert them to the information you require. Once you have their co-operation the rest should be easy.
2.1	List of all departments	LC	All those involved in the audit, e.g. ED, Theatre, ITU, Orthopaedic/Surgical Wards, Laboratories, X-ray.
2.2	List of all staff	LC	All who are involved in the patient pathway, e.g., Nursing & Medical Staff, Specialist Nurses, Porters, Theatre Staff, Receptionists /Clerks, Secretaries, Medical Records staff.
2.3	List other services involved	LC	Any other individuals or organisations who may have an interest in the audit e.g. Scottish Ambulance Service.
2.4	List other departments	LC	Any other which may be a useful resource, e.g. Local Audit Office, Clinical Governance, Clinical Effectiveness, I.T.
3.0	**CHECKLIST**	LC	The following are additional positive steps to ensure a successful audit.
3.1	Draft a letter	LC	This should introduce yourself and the audit. Give a contact telephone number / email address for anyone requiring further information. Send this to departments / personnel with whom you will have limited contact.
3.2	Formulate an introduction to the audit	RC LC	Make it clear, concise in notes or booklet form for display in the relevant areas.
3.3	Make a poster	RC LC	This should include the proposed start date of the audit and other key bits of information. Display in relevant areas.
3.4	Locate a staff list	LC	Find out the names and job titles of all staff in the areas most

			affected by the audit.
3.5	Arrange to see staff	LC	This can be individually or in small groups, over a given period of time (i.e. 2 weeks). This will allow you to introduce yourself and the audit and to outline what you expect from them.
3.6	Identify staff not seen	LC RC	Send out individual letters to the remaining staff who you have been unable to see, introducing yourself, directing them to the booklet/poster on display in the work area, and giving your contact details.
3.7	Visit all departments	LC	Visit all who will be instrumental in you gaining information for the audit. Speak to the staff to find out the easiest way of collecting the required information. (Be aware of how effective this will be during periods of sick / annual leave, and try to build in a back up plan to cover this).
3.8	Familiarise yourself with documentation	LC	Ensure you are familiar with all documentation that is used in the areas you will be visiting. Use resources open to you to extract information.
3.9	Gain access to information	LC	If you are unable to gain access to a piece of information, ask around to see if anyone knows where the information may be found. Contact the appropriate departments to seek advice re: passwords etc. (Computer access for information on x-rays, blood results, patient admissions etc).
4.0	**AUDIT START APPROACHING**		
4.1	Prepare for start of audit	LC	As the date for commencement of the audit approaches, put up a range of countdown posters in relevant areas. Make posters eye catching, simple and concise.
5.0	**AUDIT PROGRESS**		
5.1	Inform staff	LC	As the audit progresses, keep changing the posters to: • Alert staff to how well they are doing • Highlight any deficiencies that have arisen in the data available for collection If there are excessive problems, arrange to see the manager of the area concerned.
5.2	Feedback	LC	More formal feedback in person should be given regularly (i.e. 3 months) in appropriate departments to illustrate what the data is showing. Feedback also provides an opportunity for staff to ask questions as well as see the current practice.
5.3	Distribute information	ALL	To the Heads of Departments either as formal feedback in person, individually or in booklet form. Provide them with the evidence, which will allow them to make any necessary changes in practice.

Gathering Data

Task	*Title*	*Who*	*Task Description*
1.0	**OBJECTIVES**	ALL	To ensure that each new audit has comprehensively collected, robust, standardised data.
2.0	**PREPARATION**		
2.1	Inform clinical staff of plans	CC LC	Prior to the start of the trauma audit in 2011, the Caldicott Guardians of all participating centres were contacted by the Clinical Coordinator / Chairman outlining the audit and advising of date of commencement. A copy of the communication was also sent to each Chief Executive, Clinical Governance Lead, STAG Clinical Lead and STAG Local Audit Coordinator. Each LC should discuss plans with their clinical leads and discuss methods of obtaining required data.
2.2	Make necessary documentation available	CC	AIS Dictionary (2005 version with 2008 updates entered). Proforma (main set plus additional injury pad) Refer to Documents in Appendix 1 and reference documents in Appendices 2 – 5. **All documents should be stored in electronic form, on a password protected hard drive to ensure patient confidentiality and compliance with Data Protection Act. Any documents which are unable to be stored electronically should be kept in a locked drawer/cupboard with single key access.**
3.0	**PROCESS**		
3.1	Daily tracking	LC	Check Emergency Department (ED) computer system for all daily attendances. Enter daily attendance numbers to ED onto tracking sheet. *Refer to STAG Trauma Tracking* Sheet or use local system generated tracking sheet e.g. Crystal Report. Apply the inclusion/exclusion criteria to **all** ED attendees. **Note:** Apply the inclusion criteria then the exclusion criteria. **All patients who have presented following trauma and may possibly meet the inclusion criteria and who are admitted to hospital should be entered onto the tracking sheet and tracked to determine proforma completion criteria.**
3.2	Gather and Record Data	LC	Follow up case notes, in ED / wards for all patients on tracking sheet until all inclusion/exclusion criteria have been established, this could be several days following attendance. Record the reason for exclusion on the tracking sheet. Commence a *STAG Trauma Proforma* for patients who meet the inclusion criteria and record this on the tracking sheet.

			Refer to Proforma Completion notes Use **all** resources available e.g. administration staff, medical and nursing staff, admission books, daily bed states etc. Identify destination if patient is transferred to another centre for specialist treatment, and note on tracking sheet. Follow up patients for 30 days or until death/discharge. e.g. patient admitted on 18th of Oct , if still a continuous in patient on 17th Nov, would have a discharge date from the audit of 17th Nov. Complete electronic Monthly Summary Sheet for daily attendances and number of patients meeting the entry requirement for the audit. **For discharges :** Check each proforma to ensure all data fields are complete and that data makes sense. Pay particular attention to flow of dates and times. **For transfers:** Refer to Transfer protocol **For deaths:** Add to electronic STAG Trauma Cross Index Contact Pathology to ascertain whether post mortem is being performed. Advise RC of any patients who are to have a post mortem.
3.3	Advise of Any Problems	LC	Advise clinical leads and RCs of any issues experienced with data collection.
3.4	Anonymise Data	LC	Complete electronic *STAG Trauma Cross index* with the details of all completed proforma. Remove identifying name slips from proforma and destroy as per local confidentiality guidelines to ensure confidentiality and compliance with Data Protection Act.
3.5	Submit Data	LC	Once a month and no later than the 10th of the following month. a) Advise central office of number of forms being sent using the *STAG Trauma Proforma Submission*. When saving the completed *STAG Trauma Proforma Submission* form for each month include the year, month and ISD Hospital Code in the file name. Refer to the batch by the month data (proforma) are completed, e.g. forms submitted for 10th Nov will be October batch (even though batch may contain forms which were commenced in months other than October). e.g. 2010-10 G516H STAG Trauma Proforma Submission.xls Record details of the number of proforma sent and date on Cross Index.

			b) To comply with data protection, forms should be sent in a double envelope. Ensure reinforcement of envelope edges with sellotape to avoid damage of forms during transit. c) Post to central office. Local board policy for posting of data should be adhered to. d) Submit STAG Proforma Submission form to Central Office QAM via ISD mailbox (NSS.isdstag@nhs.net). ***Refer to STAG Trauma Proforma Submission***
3.6	Record receipt of data	Cent. Offic.	Record receipt of data and save in appropriate folder.
3.7	Submit Monthly Summary	LC	Once a month and no later than the 25th of the following month: a) Advise central office of daily attendance and number of patients who met the entry requirements for the audit using the *STAG Trauma Monthly Summary* and submit to the central office QAM When saving the completed *STAG Trauma Monthly Summary* form for each month include the year, month and ISD Hospital Code in the file name, e.g.: 2010-10 G516H STAG Trauma Monthly Summary.xls b) Submit Monthly Summary to QAM via ISD mailbox NSS.isdstag@nhs.net

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Inclusion/Exclusion criteria

(updated November 2014)

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

A. ALL TRAUMA PATIENTS AGED 13 AND OVER

B. WHO FULFILL THE FOLLOWING LENGTH OF STAY CRITERIA

DIRECT ADMISSIONS	TRANSFERRED PATIENTS (IN/OUT)
Trauma admissions whose length of stay is at least 3 days or more **(patients are discharged from the audit at a maximum of 30 days)** *e.g.* *into ED 18th discharged 21st (include)* *into ED 18th discharged 20th (exclude)* **OR** Trauma patients who die in hospital within 3 days of attendance (do not include patients who enter ED with no recordable obs and declared dead within 15 mins) **OR** Trauma patients managed in Resus who meet inclusion criteria	Trauma patients transferred in/out of ED for specialist care whose combined hospital stay at both sites is 3 days or more

C. AND WHOSE INJURIES MEET THE FOLLOWING CRITERIA:

BODY REGION OR SPECIFIC INJURY	INCLUDED	EXCLUDED
HEAD	All brain or skull injuries	Isolated minor head injury (no fracture and GCS>13)
FACE	Fractures documented as significant displacement, open, compound or comminuted. All - Lefort fractures panfacial fractures Orbital Blowout fractures	Fractures documented as simple or stable.
THORAX	All patients	Isolated superficial lacerations, contusions, puncture wounds/bites with no underlying injury.
ABDOMEN	All patients	Isolated superficial lacerations, contusions, puncture wounds/bites with no underlying injury.
SPINE	All	None
PELVIS	All (incl. Acetabulum)	≥65 years with pubic rami fracture with one other isolated injury. ≥65 years with isolated pubic rami fracture
FEMORAL FRACTURE	All (open or closed)	Subtrochenteric fracture treated as a hip fracture.

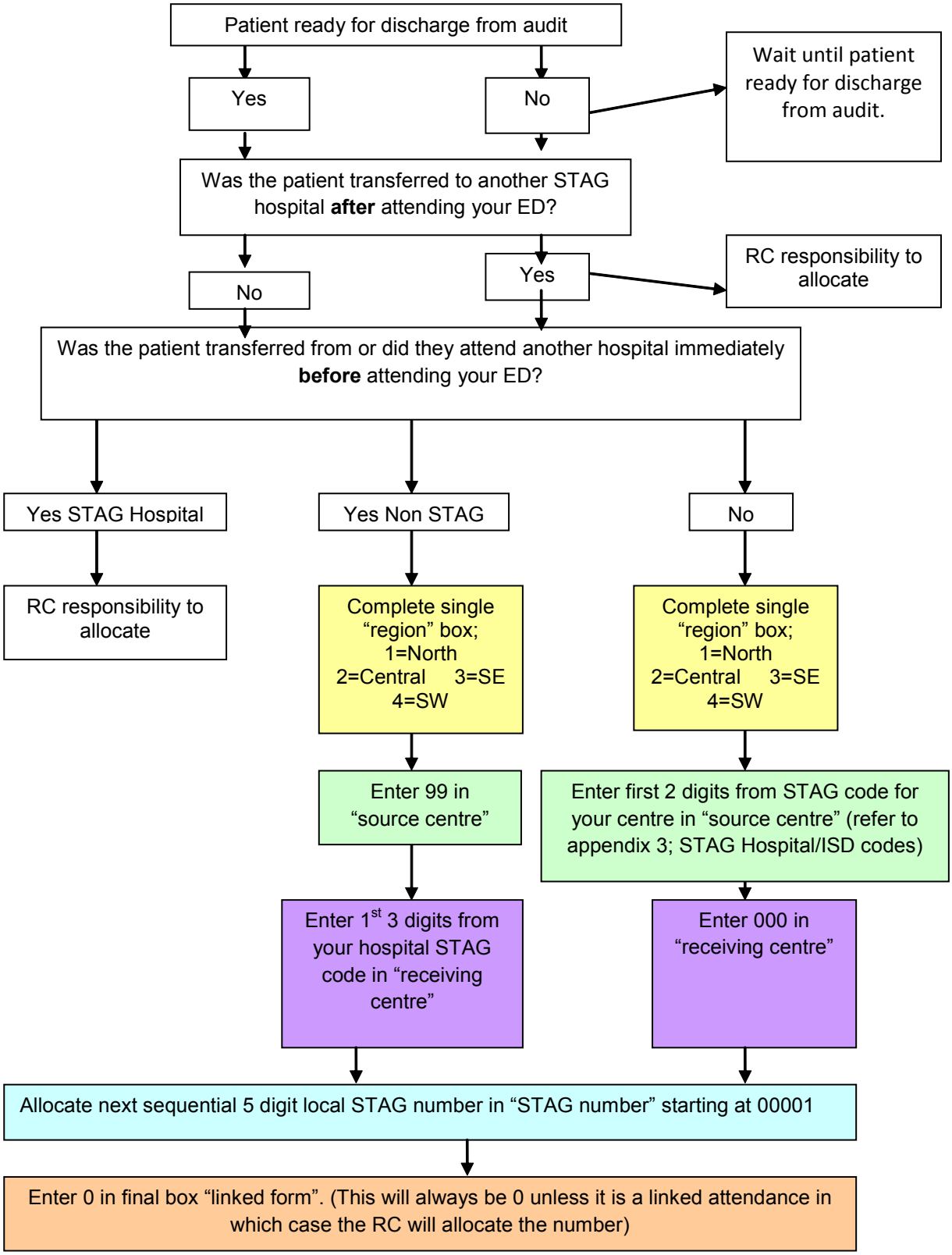
BODY REGION OR SPECIFIC INJURY	INCLUDED	EXCLUDED
HIP FRACTURE**(NOF)** or PUBIC RAMI FRACTURE	All	≥65 years with hip fracture OR pubic rami fracture with one other isolated injury. ≥65 years with isolated hip fracture (subcapital, intracapsular, intertrochanteric, or basal) OR pubic rami fracture
FEET OR HAND: JOINT OR BONE	Crush or amputation only	Any fracture &/or dislocations, even if open &/or multiple
FINGERS OR TOES	None	All injuries to digits, even if open fractures, amputation or crush &/or multiple injuries
LIMB - UPPER (**EXCEPT Hands/Fingers**)	Any open injury Any 2 limb fractures (open or closed)	Any closed unilateral injury (including multiple closed fractures of same limb)
LIMB - LOWER ***(KNEE and BELOW)*** (EXCEPT Feet/Toes)	Any open injury Any 2 limb fractures (open or closed)	Any closed unilateral injury (including multiple closed fractures of same limb)
FRACTURE DISLOCATIONS	*Score the fracture and the dislocation as two separate codes unless spinal #*	Isolated periprosthetic or pathological fractures Isolated dislocation Isolated dislocation of prosthesis
NERVE	Any injury to sciatic, facial, femoral or cranial nerve	All other nerve injuries, single or multiple
SKIN	All Major degloving injury (see AIS dictionary for guidance ie. If not in dictionary then not scoreable)	Simple skin lacerations, contusions, puncture wounds and bites with no underlying injury. Minor degloving injury (if not in AIS dictionary)
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.
BURN	**No Burns Included In Audit**	
AMPUTATION/CRUSH	All (includes hands or feet)	Fingers/toes
ASPHYXIA (e.g. hanging)	All	None
DROWNING	All	None
ELECTRICAL	All	None
EXPLOSION	All	None
FROSTBITE	Severe frostbite (deep; full thickness; multi body sites e.g. fingers, toes, ears)	Superficial frostbite
HYPOTHERMIA	≤ 31° And accompanied by another (non skin) injury	>31° Or Hypothermia in isolation

Further exclusions

- Injuries older than 1 week
- Patients whose initial reason for admission is social
- Patients for whom the only reason they are managed in Resus is to carry out a procedure
- Patients admitted to medical wards under the care of physician only should be excluded. ***However if the patient was admitted to a medical ward as a surgical boarder, or if they were under shared care of a physician and surgeon they should be included.***

Allocation of STAG Audit number

Region	Source Centre	Receiving Centre	STAG Number	Linked Form
(1 digit)	(2 digits)	(3 digits)	(5 digits)	(1 digit)



Complete Cross Index and save on password protected server for local storage: *Refer to STAG Trauma Cross Index*

Allocating a number to the late transfer boxes on the trauma pro forma

A late transfer is when a patient has been admitted to the source hospital initially and is then transferred to another STAG hospital.

The late transfer number section of the proforma needs completion only if the patient is admitted and then transferred to another STAG hospital, otherwise the late transfer boxes should have 8 entered into each box to denote “not applicable”.

Allocation of the late transfer number is as follows;

The single digit box “R” should reflect the ***original*** source centre’s regional code.

The double boxes marked “SC” should reflect the first 2 digits of the ***original*** source centre’s hospital code.

The triple boxes marked “RC” have two components to their completion. The first 2 of these boxes should reflect the first 2 digits of the ***receiving*** hospital’s hospital code. The last digit should reflect the area within the receiving hospital that the patient was transferred to, as per the list below:

0 = Emergency Department
1 = Ward
2 = ITU
3 = Neuro
4 = Spinal Injuries Unit

This will be verified by the RC on allocation of the STAG number.

Examples;

A patient transferred from a ward in ARI to SIU.
STAG Number 1 34 000 9xxxx. 0
Late transfer number 1 34 364

A patient transferred from a ward in Ninewells to a ward in Crosshouse
STAG number 2 58 000 9xxxx. 0
Late transfer number 2 58 511

Proforma Completion Notes

Task	*Title*	*Who*	*Task Description*
0.1	**OBJECTIVES**	ALL	To ensure that each new audit has comprehensively collected, robust, standardised data.
0.2	**PROCESS**		
0.2	Completion of data fields	LC	*Refer to STAG Trauma Proforma* Do not leave any boxes blank, unless specified. Enter the relevant codes as specified on the proforma. Additional codes are contained within these notes where there was limited space on the proforma. Where there are more boxes on the proforma than the value, prefix the value with a 0 (e.g. SBP = 66 should be recorded as 066). In all cases where "not applicable" applies, enter 8 in each box, e.g. if patient was not retriaged to resus then retriage time would be recorded as 88.88. In all cases where "not recorded" applies, enter 9 in each box e.g. if the time that a Dr was called was not recorded, 99:99 would be entered into the time called boxes. This option should only be used when all possible sources of information have been exhausted. For all boxes where the answer should be "No" (00) or "Yes" (01), enter "not recorded" (99) if the necessary information was not recorded and it is not possible to answer the question. If the question is "not applicable" enter 88. **Do not substitute date/times for anything other than what is described in the following notes– if it's not available then 99 should be used.** Do not use any symbols, in any of the boxes. For all dates, use the format (DD,MM,YY) For all times**,** use the format (HH, MM,) - use the 24 hour clock. - midnight must be recorded as either 23.59 or 00.01 These guidelines will make reference, in bold, to areas where it is good practice to record information in the comments section. This section is also useful to verify anything that is out of the ordinary, e.g. excessive time spent in ED or widely deranged observations, etc. The comments section is for **Local Audit Coordinator use only;** it is intended that it will act as a memory jogger should further clarification be needed during the validation process. However it can prove useful during Quality Assurance procedures where some clarity may be required. **Please ensure that no identifiable information is recorded in the comments section e.g. staff names, hospital wards etc.**
	Comments section		

0.3	**IDENTIFIER**		
	Family name	LC	Record the patient's surname.
	First Name	LC	Record the patient's first name.
	Postcode	LC	Record the full postcode of the patient's usual place of residence If postcode is unknown , enter 1 in each box for - Scottish Nationals For other UK nationals - enter 5 in each box. For internationals (any visitors from outwith UK) - enter 9 in each box.
	Case note number	LC	Record the local hospital case note number– numeric and alphabetical.
	CHI number	LC	Record the patient's CHI number. It is compulsory to provide a chi number this is required for data linkage.
	Date of birth	LC	Record the patient's date of birth.
	ED number	LC	Record the local hospital ED number for the patient.
	STAG no.	LC	Local STAG audit number allocation Refer to Allocation of Local STAG Audit number **Note**: the local STAG audit number is not fully allocated until the end of the patient's stay. This is to allow for patients who are transferred to another hospital during their acute hospital stay.
1.0	**STAG Trauma**		
1.1	Hospital Code	LC	Record the unique **ISD code** allocated to your hospital e.g. Western Infirmary Glasgow is G516H (see appendix 3).
1.2	STAG Number	LC	Copy STAG audit number as allocated on name slip.
1.3	Sex	LC	Record the sex of the patient.
1.4	Age	LC	Record the age of the patient in years on attendance.
2.0	**Incident**		
2.01	Date of Incident	LC	Enter the date of incident.
2.02	Time of Incident	LC	Enter the time of incident. If the time of the incident if not recorded enter 99.99 – **do not** substitute with any other time.
2.1	Population Density	LC	What was the population density according to the postcode of where the **incident** occurred? The postcode may be available on the PRF if the patient arrived by ambulance. *Refer to link to SIMD files in Appendix 1*

			01 = Urban 02 = Rural Accessible small towns and remote small towns are both classed as urban.
2.2	Alcohol	LC	Is there evidence to suggest that alcohol was involved in this incident? Take account of alcohol in relation to the incident not only the patient e.g. patient could have been assaulted by someone under the influence of alcohol so code would be 01 = yes.
2.3	Toxicity	LC	Is there evidence to suggest that drugs (which are illegal to the population of Scotland) were involved in this incident? Take account of drugs in relation to the incident not only the patient e.g. patient could have been assaulted by someone under the influence of drugs so code would be 01 = yes.
2.4	Locus:	LC	Record the location of the incident. 010=place of residence - The person's own home or the home of a third party. Home includes the main dwelling and any associated garden, driveway to home, garage, path (walk) to home, swimming pool in private house or garden, farmhouse, home premises, house, non-institutional place of residence, apartment, boarding house, private caravan park (residential), an institute with residential accommodation, e.g. home for the elderly, nursing home, prison, children's home, hospice, military institution, etc. 020=Transport area - Publicly owned and maintained highway, street, road, pavements or cycle path. Places where transport out-with a public highway, street or road takes place, e.g. private road, aircraft, ferry terminal, Parking area, Public transport area/facility such as bus terminal, railway station, underground station, airport etc. pedestrian mall, railway line etc. 030=business area non specified (use only if area cannot be further specified by codes 031,032,033). 031=industrial or construction - place primarily intended for industrial or construction purposes. Refers to buildings, other structures, excavations and adjacent grounds. Demolition sites, mines quarries, factory/plant, oil and gas extraction facility, power station etc. 032=farm (Excludes injuries occurring in the residential area of a farm, where the farm is the injured person's home). 033=commercial area - A commercial area not primarily intended for recreational purposes, e.g. shop, store, commercial garage, office building, café, hotel, restaurant, casino, bar, dance/ night club, swimming pool of hotel, etc. 040=school or educational area - Includes any educational establishment, e.g. nursery, college, university. Includes actual educational building and associated grounds, e.g. school playground. 050=sports and recreational areas - Any place specifically intended for formal sporting purposes, e.g. leisure centre. Excludes places where informal sporting recreation may take place. Place primarily intended for recreational or cultural purposes (whether public or commercially owned) or any other public building. Includes public park/ playground, amusement/ theme park, holiday park, campsite, public religious place. Refers to open nature area not classified elsewhere e.g. Beach, cave, forest. Includes injuries occurring in water or the sea, where not part of

			a formal transport area e.g. marsh/ swamp, river, loch. 060=medical service area – Any formal healthcare establishment, including hospital, heath centre, screening mobile van, etc.
2.5	Type of injury	LC	Record whether the injury has been caused by blunt or penetrating trauma. If both are present default to penetrating. **Note**: Either blunt or penetrating must be recorded. *Refer to Appendix 4 :STAG Penetrating injury definitions*
2.51	Mode of penetrating injury	LC	**If mechanism of penetrating injury was assault** enter the mode of penetrating injury. Otherwise enter 88 for "not applicable". 01 = Bladed or pointed instrument e.g. knife, machete, or any instrument adapted to have a blade/point such has sharpened screw driver. 02 = Firearm e.g. gun shot, pellets. 03 = both. 04 = Other e.g. glass, bites, wooden stake - **Specify in comments section.**
2.6	Mechanism of Injury	LC	**Record specific details in comments section.** 01 = MVA - refers to any motor vehicular accident e.g. train, and includes bicycles but not Motocross 02= assault – was there suspicion or confirmation of the injury being caused by an assault 03 = Fall>2m - a vertical drop of greater than 2 metres, e.g. this could be a witnessed fall down a flight of stairs or jumps/fall from bridge/scaffolding 04 = Fall<2m - e.g. a trip or slip from own height or documented fall of less than 2 metres 05 = other - use if mechanism of injury is none of the options given here 06 = sport - refers to any injury sustained during participation in a sport, including falling from a horse, motocross. **If the mechanism of injury was sport please record the details in the comments section**
2.61	MVA type	LC	If mechanism of injury was an MVA record details of MVA: 01 = motor vehicle versus motor vehicle 02 = motor vehicle versus pedestrian 03 = motor vehicle versus other e.g. wall, ditch, verge etc
2.62	MVA patient is	LC	If Mechanism of injury was an MVA record the following to describe the patient's involvement in the MVA 01 = driver (use for cyclists, and motorbikes as well as cars) 02 = front seat passenger (use for side car passenger as well as cars) 03 = rear seat passenger (use for pillion passenger as well as cars) 04 = pedestrian

3.0	**Pre Hospital**		The primary source of information for this section should be the ambulance patient report forms (PRF) though ED notes may be used as a secondary source. If the case is a linked case , then 8 should be entered into each box in this section, on the 2nd ED form , regardless of how the patient was transported to the 2nd ED
3.1	Mode of Arrival	LC	Record mode of arrival at the hospital site – if the patient arrives at the hospital site in a helicopter, and is transferred to the A&E dept by road ambulance, please record this as arrived by air. Use 01 = self if patient arrives by any means other than SAS ambulance or air, e.g. car, police, taxi, private ambulance etc. If code 01 is used in this field, then enter 8 into all remaining boxes in section 3 **Note**: If the patient was transferred from a non-STAG hospital, record information pertaining to the journey to the STAG hospital.
3.2	SAS Incident No.	LC	Record all digits from ambulance incidence/ patient report form (PRF), ending up in the 11th box. The code *may* start with 2 letters and may have a suffix of 3 digits after the '.' (point) E.g. PA000123456.001 E.g. □□□□ 0001234.001 E.g. □□□□ 0001234. □□□ In the 2 examples above, the boxes with no number can be left blank. If there is no incidence form (PRF) available, enter 9 into all boxes. **Note:** If the patient was transferred from a non-STAG hospital record information pertaining to the journey to the STAG hospital.
3.3	Call Started Date and time	LC	Enter date and time that Scottish Ambulance Service received the call to attend the incident. This will be on the ambulance incidence form/Patient report form (PRF). **Note:** If the patient was transferred from a non STAG hospital record information pertaining to the journey to the STAG hospital.
3.4	Paramedic	LC	Record whether or not a paramedic attended the patient prior to arrival at the STAG ED.
3.5	Pre Hosp Medic	LC	Record whether or not there was any doctor in attendance prior to arrival at the STAG ED.
3.7	Cannulation	LC	Record whether or not the patient was cannulated prior to arrival at the STAG ED.
3.71	IV Fluid vol	LC	Record total volume given in litres regardless of type prior to arrival at the STAG ED. Record '0' in each box, if patient cannulated but no fluid given Record 8.8 = not applicable if patient was not cannulated. Record 9.9 if volume of fluid given was not known.
3.8	Air Transfer	LC	Record whether; at any point in the course of the patient's journey from the incident to this STAG hospital, he/she was transferred by air. In the updated version of the proforma there is a new option for provider

			unknown – please use this option if an air transfer was made but you can't determine which agency. **If 'other' specify in the comments section**
4.0	**Emergency Department**		**All care, interventions etc that occurred prior to discharge from the emergency department should be included in this section. E.g. details of a Dr seeing a patient in radiology prior to returning to ED should be recorded.**
4.010	Enter ED date and time	LC	Enter date and time that the patient attended ED i.e. the time that they entered the department.
4.020	Standby	LC	Record whether or not the Scottish Ambulance Service gave ED notice of arrival to allow preparation for patient e.g. standby call. If patient did not arrive via the SAS enter 88 = Not applicable.
4.030	Area	LC	Record the area of ED to which the patient was initially triaged to. If there is no official triage process you should still enter the first area that the patient was managed in.
4.031	Retriage to resus	LC	Record whether or not the patient was moved from a general area in ED to resus. If any patients are moved for routine procedures i.e. manipulation of fractures/dislocations enter 00=No. If the initial area was resus enter 88 = Not applicable.
4.032	Date &Time	LC	If re- triaged, enter date & time that the patient was transferred into the resuscitation area.
4.040	Depart ED date and time	LC	Enter date and time that the patient was finally discharged from ED i.e. the time that they left the department. If the patient dies in ED enter the time of death rather than the time of transfer to the mortuary.
4.041	Dest from ED	LC	Enter the first destination from ED. **Note:** 06=Neuro should be used for on site neurological wards only. Neuro ITU should be recorded as ITU.
4.042	Ult Dest	LC	If the destination from ED was to theatre, radiology or another hospital, enter the area to which the patient was ultimately admitted. **Note:** use the same codes as Destination from ED as above.
4.050	Spec. Ref.	LC	Enter whether or not a patient was referred to either of the following specialties whilst in ED, regardless of whether the specialty Dr actually attended the patient in ED. Enter 01=neuro, 02= SIU (spinal injuries unit), 03=both If patient was not referred to Neuro or SIU then enter 88 = Not applicable.
4.060	Late Transfer	LC	If the patient is admitted to your hospital from ED and is subsequently transferred to another hospital, this is known as a "late transfer". Enter date of transfer into electronic Cross Index. Refer to Transfer Protocol The RC for the source area will be responsible for allocating the late

		RC	transfer number unless the patient was transferred to a Regional centre i.e. Neuro, Cardiothoracic or Spinal injuries unit where there is a dedicated RC tracking these patients, in which case that RC will be responsible for allocation of the number. If the patient stays in your hospital throughout their stay, enter 8 into each box. If the patient is not transferred please enter 8s into all boxes.
4.070	Band of Nurse	LC	Record the band of nurse who triaged the patient. Use code 09 for an Emergency Nurse Practitioner, regardless of his/her grade. A list of nurse grades will be available from the Lead Nurse.
4.080	12 lead ECG	LC	Record whether or not a 12 lead ECG was performed whilst in ED.
4.090	O_2 Sats	LC	Record whether or not the patient had an oxygen saturation measured whilst in ED. This can be from a capillary or arterial measurement.
4.10	SBP, RR, GCS	LC	The first set of observations should be recorded. The GCS is a fundamental element in the calculation of probability of survival (Ps12). The reason that the first observations on attendance to ED is required is that any treatment given may alter these values. There are 4 options for the source of each of these observations and this source should be indicated in the box preceding the value. These options are 1=on attendance at ED 2=last set on PRF 3=first recorded within the first hour of attendance 4= allocated normal value (SBP= 120 RR=14 GCS= 15) **Allocated normal values should only be given as a last option.** Record the systolic blood pressure, respiratory rate and breakdown/total of Glasgow Coma Scale from the sources described above (the most favoured being source 1 and the least favoured being source 4). **Example**; Patient has temp, B/P, and GCS recorded on attendance at ED. - B/P and GCS values should be recorded noting source for each as 1. - RR is available on PRF (using last value on PRF if there is more than one recording) noting the source as 2. **Notes:** If the patients SBP is unrecordable from any of the first 3 sources a value of 00 should be entered. If a patient arrives at ED ventilated than the pre intubation SBP should be used, even if this is 0 and note should be made in comments section. In this situation the source would be 8. If a patient arrives at ED ventilated, then the pre intubation RR should be used, even if this is 0 and note should be made in comments section. In this situation the source would be 8. If the patient arrives at ED after having been sedated to allow intubation

			the pre intubation GCS should be used. In this situation the source would be 8. In the absence of a GCS score patients can be given a total score of 15 in the following circumstances; • If they are documented as being alert and orientated (or other similar word to that effect) • If they have an AVPU of Alert In these circumstances enter the relevant value – 4, 5, 6 into "E", "V" and "M" and enter 15 into the GCS total box. **Where the GCS is recorded as a total but the breakdown is not available:** In these circumstances enter "99" in to E,M and V unless the score total is 15 or 3, in which case enter the values 4,5,6 or 1,1,1 respectively (as these are the only possible scores to give these total GCSs).
4.110	Medical speciality in attendance in ED -Time called -Time arrived - Dr Grade - Speciality - D1 – day called -D2 day arrived	LC	For each speciality attending the patient prior to discharge from ED, record details of the **most senior doctor** attending for each specialty: • the time that the doctor was called • the time that the doctor arrived • the grade of most senior doctor attending the patient for each speciality. • the speciality of the doctor attending the patient • the day they were called and the day they arrived (i.e. called on the 15th, arrived on the 16th) **If a doctor was telephoned, but did not attend, enter 8 = not applicable into the time arrived boxes. Use this rule in all circumstances where the doctor didn't see the patient before they left ED even if they were never expected to attend.** A list of names and grades should be available from secretarial staff in different specialties or from the local intranet. **If "other speciality" code used, specify the speciality in comments section.**
4.120	EWS	LC	Record whether or not an early warning system chart was used prior to discharge from ED. The term EWS also includes any resus charts accepted for use in your hospital
4.121	Date and time	LC	If yes record the date and time that the chart was first used.
4.130	Chest drain	LC	Record whether or not a chest drain was inserted prior to discharge from ED.
4.131	Date and time	LC	If yes record the date and time that the first chest drain was inserted.
4.140	IV ABX	LC	Record whether or not IV antibiotics were given prior to discharge from ED.
4.141	Date and time	LC	If yes, record the date and time of the first administration of IV antibiotics.

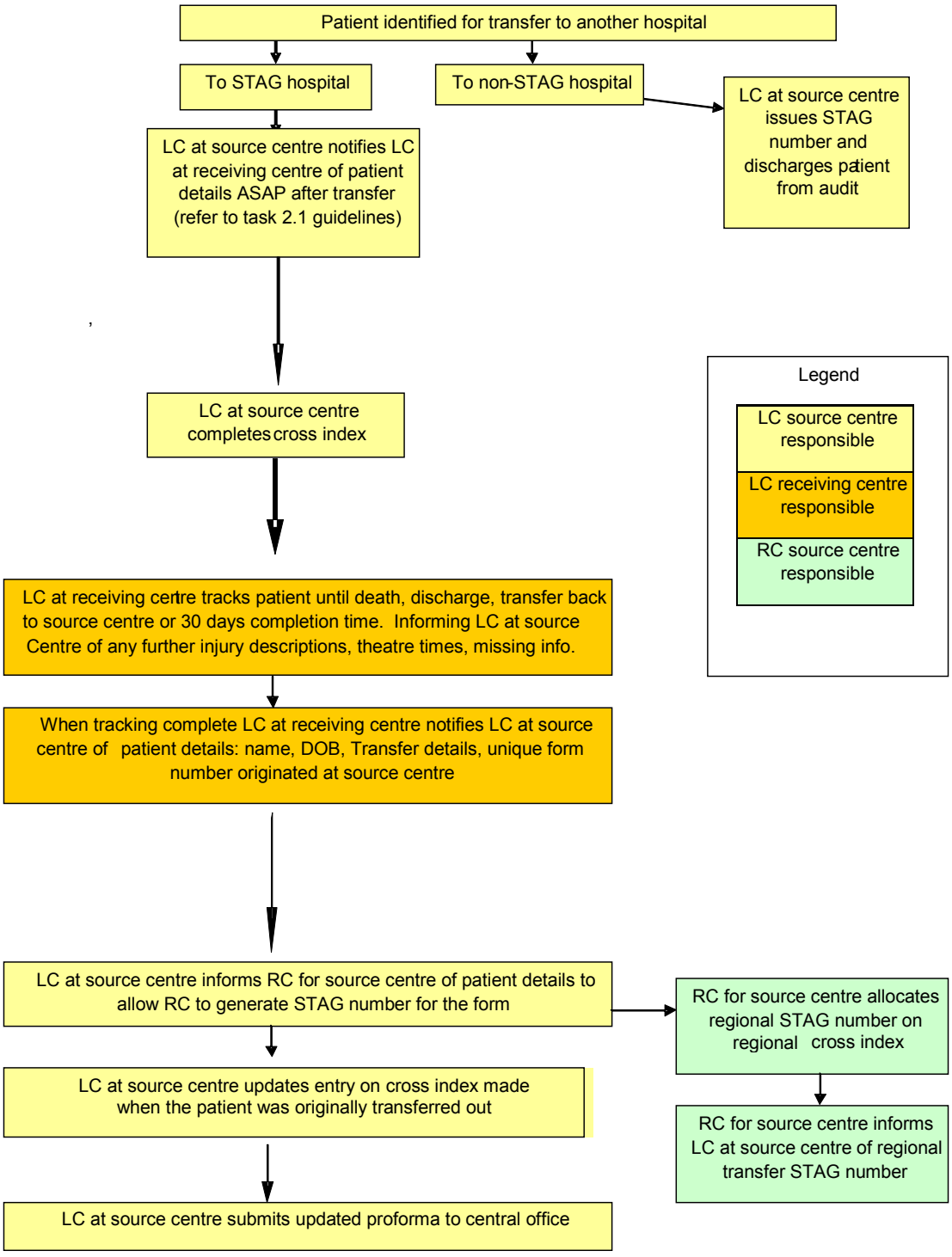
4.150	Chest XR	LC	Record whether or not a chest x ray was performed prior to discharge from ED.
4.151	Date and time	LC	If yes record the date and time that the first chest x ray was performed. Details should be available on ECRIS or PACS Radiology reporting systems,
4.160	Blood Gases	LC	Record whether or not arterial or venous blood gases were measured prior to discharge from ED,
4.161	Date and time	LC	If yes record the date and time of the first set of gases.
4.170	CT Scan	LC	Record whether or not a CT scan was performed prior to discharge from ED,
4.171	Date and time	LC	If yes record the date and time that the first CT scan was performed Details should be available on ECRIS or PACS Radiology reporting systems,
4.172	CT body Area	LC	Record on which area of the body the first CT scan was performed. Up to 2 areas can be recorded. If the patient received a full body scan, this can be recorded as 04=pan. If the full body scan included a head scan please record 01=Head and 04=Pan.
4.180	Intubation	LC	Record whether or not the patient was intubated prior to discharge from ED and record whether this occurred prior to arrival at hospital.
4.181	Date and time	LC	If yes record the date and time of the first intubation either pre hospital or prior to discharge from ED.
4.182	Intubated by	LC	Record who the patient was intubated by.
4.183	Dr Grade intubation	LC	If a doctor intubated the patient record the grade – use codes from 'medical specialty on attendance'.
4.184	Speciality	LC	Record the speciality of the doctor performing the intubation– use codes from 'medical specialty on attendance'.
4.185	An. Drugs	LC	If patient was intubated, were any anaesthetic drugs used? Please refer to BNF etc. for lists of current drugs.
4.190	Theatre	LC	Record whether or not the patient was taken to theatre at any point during their acute stay.
4.191	Date and time	LC	If yes, record the date and time of the first operation. This should be when the operation started. This may be available from an anaesthetic sheet, theatre register or electronic theatre system.
4.192	An grade	LC	Enter the grade of the most senior anaesthetist in theatre. Use the codes from 'medical specialty' on part 4.110 of the proforma.
4.193	Op type	LC	Record the type of operation (up to a maximum of two occurring under the same anaesthetic). If more than one type of operation was performed, enter the different types in chronological order. The new

			proforma has an option 06 =plastics.
4.194	Surg grade 1	LC	Enter the grade of the most senior surgeon in theatre for the first operation type. Use the codes from 'medical specialty' on part 4.110 of the proforma.
4.195	Surg grade 2	LC	Enter the grade of the most senior surgeon in theatre for the second operation type. Use the codes from 'medical specialty' on part 4.110 of the proforma.
	STAG No.		Copy STAG audit number as allocated on name slip.
5.0	**Injury Scoring**		Use AIS Dictionary (2005 version with 2008 update). **Do not submit proforma until scoring is complete.**
5.01	Injury Description	LC	List the injuries in Rows 1 -18. If patient has more than 18 injuries, use Additional Injuries Sheet. Record individual injuries from the patient's case notes. Be as descriptive as possible, including length, and depth of lacerations, any underlying injuries, and specific bones and associated damage, whether unilateral or bilateral. If there is only minimal injury description in the case notes, clinical staff should be contacted to provide further description. Only if no further description is available enter NFS = Nothing Further Specified, after the injury description. The most accurate injury descriptions are likely to be obtained from X Ray /CT reports and theatre operation notes.
5.02	Region	LC	Record the code relevant to injured body region.
5.03	AIS - code(2005) - score	LC	Using the AIS dictionary (2005 version with 2008 update), determine the code most applicable to each injury. If injury descriptions do not appear concise enough to obviously allocate a code, then re-visit the case notes or check the radiology reporting system for more detail. The number following the point at the end of each injury code denotes the score and should be entered in the "score" box on the form.
5.04	Source	LC	The most accurate source of the injury description should be recorded: e.g. an injury description may initially be diagnosed from clinical observation by the doctor, and later be confirmed on X Ray. The injury source would be recorded as 5 = X Ray.
5.1	Open Limb	LC	If the patient had any limb fractures, were these fracture(s) open?
5.2	Additional injuries	LC	Record if an additional injury scoring sheet has been used. If using an additional sheet enter the unique form number from the main form to the boxes at the top and bottom left hand corners of the form. Do not use staples for original copies of forms when sending for submission.
5.3	ISS Score	LC	Calculate the Injury Severity Scale (ISS) score from the scores of the

			injury descriptions. **Note**: a maximum of 3 different body regions will contribute to this score, with only 1 score being from each body region. To calculate the ISS score, use a maximum of the three highest scoring regions. Square the highest score in each of the 3 regions and add together to give the Injury Severity Score.
6.0	**Outcomes**		
6.01		LC	Record whether patient was alive or dead at the point of discharge from the audit.
6.1	DOD	LC	This refers to which ever one of the following dates occurs *first*; the date of discharge from the acute hospital, the date of death or the date of discharge from the audit. Enter date of discharge from the acute hospital /date of death. Add information to electronic cross index. If the patient is still a continuous in patient after 30 days, then they should be discharged from the audit e.g. patient admitted on 18th of Oct , if still a continuous in patient on 17th Nov, would have a discharge date from the audit of 17th Nov.
6.2	Local audit	LC	If the LC or any member of the hospital staff has concerns about any stage of the patients' management, the appropriate code(s) should be entered. Specify the reason for audit e.g., delay to theatre, in the comments section. The LC should discuss these cases with their STAG Local Medical Director and/or RC.
6.30	LOS (days)	LC	Length of continuous in-patient stay. Record number of in - patient days, excluding the date of attendance, unless patient died on date of attendance, e.g. if attended on 18th , died on 18th - Length of stay would be 1 day If attended on 18th, died / discharged on 25th - Length of stay would be 7 days.
6.31	ITU	LC	Record the number of days the patient spent in an Intensive Care Unit. If patient stayed less than a whole day, record as 01 day. Record 00 if the patient did not spend any time in an Intensive Care Unit
6.32	Neuro ITU	LC	Record the number of days patient spent in Neurosurgical Intensive Care Unit. If patient stayed less than a whole day, record as 01 day. Record 00 if the patient did not spend any time in Neuro ITU.
6.33	SIU	LC	Record number of days spent in Spinal Injury Unit (including SIU HDU days). If patient stayed less than a whole day, record as 01 day. Record 00 if the patient did not spend any time in SIU.
6.34	HDU	LC	Record number of days spent in High Dependency Unit, If patient stayed less than a whole day, record as 01 day. **Do not record SIU HDU days here.** Record 00 if the patient did not spend any time in HDU.

6.40	First Critical care admission		If the patient is admitted to a Critical care area (i.e. HDU or ITU) at any time during their stay (up to 30 days)
6.40	WW unit code	LC	Enter SICSAG identifying code for the unit of 1st admission e.g. WIG01 *See Appendix 5 : SICSAG Unit Codes*
6.41	WW epikey	LC	Enter individual EPI /Key number for the 1st admission If the Critical Care area does not use Ward Watcher , record 9 in each box **Note**: admission to CCU = admission to a ward, not Critical care
6.5	RP1 - 4	LC	In the event of these boxes being used nationally, further guidance will be issued. If a local issue is identified, these boxes can be used to collect a snapshot of data for local feedback. If an issue is identified the use of the boxes should be discussed with the regional coordinator.
6.51	RP1		Record whether or not a pelvic binder was applied prior to leaving ED. Please note any form of pelvic binding should be recorded including use of a specific device or use of an improvised device such as a draw sheet. If the binder was applied prior to the ED please write this in comments section.
6.52	RP1 date		Record the date that the binder was applied.
6.53	RP1 time		Record the time that the binder was applied even if this was prior to arrival at ED.

Transfer Protocol



Data Protection Act and Caldicott Recommendations must be adhered to; therefore any patient identifiable information must be removed prior to sending the form.

Appendix 1: Reference to Documents

- STAG Trauma Tracking Sheet V1.3.xls
- STAG Trauma Cross Index V1.3.xls
- STAG Trauma Proforma Submission V2.0.xls
- STAG Trauma Monthly Summary V4.0.xls (electronic)
- http://www.scotland.gov.uk/Topics/Statistics/SIMD/SIMDPostcodeLookup

Appendix 2: Glossary of Terms

AIS – Abbreviated Injury Scale, numerical code given to describe trauma injuries

CC – (National) Clinical Coordinator

ED – Emergency Department, previously known as Accident and Emergency (A&E)

LC, LAC – Local Coordinator, Local Audit Coordinator, terms used interchangeably depending on space but mean the same

HDU – High Dependency Unit

ICU, ITU – Intensive Care Unit, Intensive Therapy Unit, terms used interchangeably depending on project but mean the same

ISD – Information Services Division of NHS National Services Scotland

ISS – Injury Severity Scale, used to allocate numerical score to indicate severity of injuries

SIMD - Scottish Index of Multiple Deprivation

RC - Regional Coordinator

Ps12 - Probability of Survival, according to Outcome Prediction Model developed by TARN (The Trauma Audit & Research Network).

Appendix 3: ISD and STAG hospital codes

Currently participating sites

ISD Hospital Code	Hospital Name	STAG No	STAG Region
N101H	Aberdeen Royal, Infirmary	3400	North=1
A210H	Ayr Hospital	3900	South West=4
A111H	Crosshouse Hospital, Kilmarnock	5100	South West=4
Y104H	Dumfries and Galloway Royal Infirmary	*4800*	*South West=4*
V217H	Forth Valley Royal Infirmary	7200	South East =3
G107H	Glasgow Royal Infirmary	3300	South West=4
L302H	Hairmyres Hospital	4200	South West=4
C313H	Inverclyde Royal Hospital, Greenock	5600	South West=4
L106H	Monklands Hospital, Airdrie	4400	South West=4
T101H	Ninewells Hospital, Dundee	5800	Central=2
T202H	Perth Royal Infirmary	5500	Central=2
F805H	Queen Margaret's Hospital	5200	South East=3
H202H	Raigmore Hospital, Inverness	4500	North=1
C418H	Royal Alexandra Hospital, Paisley	5400	South West=4
S226H	Royal Infirmary, Edinburgh	3100	South East=3
G405H	Southern General Hospital	3600	South West=4
F704H	Victoria Hospital, Kirkcaldy	6200	South East=3
G306H	Victoria Infirmary, Glasgow	3500	South West=4
G516H	Western Infirmary / Gartnavel General	3200	South West=4
L308H	Wishaw General Hospital	3700	South West=4

Appendix 4: STAG Penetrating Injury Examples

Blunt or Penetrating Injuries

- In general injuries are defined according to the mechanism of injury
- The exception to this is injuries caused by a penetrating object which results in a superficial injury, in which case they should be termed as blunt. In reality a patient who only has a superficial injury caused by a sharp object is unlikely to be included in the audit (see exclusion criteria)
- If both blunt and penetrating injuries exist, injuries are classed as penetrating

Blunt	**Penetrating**
Superficial skin laceration	gun shot pellets
Amputations	hand/foot through glass door or window
Crush injuries	stabbing e.g. abdominal, chest trauma circular saw/chain saw machete.
	Abdominal stabbing (With organ damage)
	Abdominal stabbing (No underlying organ damage)
	Machete to head causing compound, depressed fracture
	Gunshot wounds

Appendix 5: SICSAG Unit Codes 2013

WWUnitCodeDetails	WWUnitCode
Aberdeen Royal Infirmary ICU	ARI01
Aberdeen Royal Infirmary Surgical HDU (31/32)	ARI02
Aberdeen Royal Infirmary Neuro HDU	ARI03
Aberdeen Royal Infirmary Surgical HDU (35)	ARI04
Aberdeen Royal Infirmary Cardiothoracic HDU	ARI05
Aberdeen Royal Infirmary Cardiothoracic ICU	ARI07
Ayr Hospital ICU	AYR01
Ayr Hospital HDU	AYR02
Belford HDU	BEL01
Borders General Hospital ICU/HDU	BGH01
Crosshouse Hospital ICU	CRH01
Crosshouse Hospital Medical HDU	CRH02
Crosshouse Hospital Surgical HDU	CRH03
Dumfries & Galloway ICU	DMG01
Dumfries & Galloway Medical HDU	DMG02
Dumfries & Galloway Surgical HDU	DMG03
Dr Gray's HDU	DRG01
Victoria Hospital Kirkcaldy ICU	FIF01
Victoria Hospital Kirkcaldy SHDU	FIF02
Victoria Hospital Kirkcaldy MHDU	FIF03
Victoria Hospital Kirkcaldy Renal HDU	FIF04
Forth Valley Royal Hospital	FVH01
Gilbert Bain Hospital, Shetland	GBH01
Gartnavel General Hospital HDU	GGH01
Golden Jubilee Hospital ICU/HDU	GJH01
Glasgow Royal Infirmary ICU	GRI01
Glasgow Royal Infirmary Surgical HDU	GRI02
Glasgow Royal Infirmary Medical HDU	GRI03
Hairmyres Hospital ICU/HDU	HRM01
Hairmyres Hospital Medical HDU	HRM03
Inverclyde Royal Hospital ICU	IRH01
Inverclyde Royal Hospital Surgical HDU	IRH02
Monklands DGH ICU	MNK01
Monklands DGH Surgical HDU	MNK02
Monklands DGH Medical HDU	MNK03
Ninewells Hospital ICU	NWD01
Ninewells Hospital Medical HDU	NWD02
Ninewells Hospital Surgical HDU	NWD03
Ninewells Hospital Obstetric HDU	NWD05
Ninewells Hospital Obstetric HDU	ORK01
Perth Royal Infirmary ICU	PRI01
Perth Royal Infirmary HDU	PRI02
Royal Alexandra Hospital ICU	RAH01
Royal Alexandra Hospital Surgical HDU	RAH02
Raigmore Hospital ICU	RGM01
Raigmore Hospital Medical HDU	RGM02
Raigmore Hospital Surgical HDU	RGM03
RI Edinburgh ICU/HDU	RIE01
RI Edinburgh HDU	RIE02
RI Edinburgh Renal HDU	RIE03
RI Edinburgh Transplant HDU	RIE04
RI Edinburgh Vascular (level 1)	RIE05
RI Edinburgh Cardiothoracic	RIE07

RI Edinburgh Cardiothoracic	RIE08
Southern General Hospital ICU	SGH01
Southern General Hospital Surgical HDU	SGH02
Southern General Hospital Neuro ICU	SGH03
Southern General Hospital Neuro HDU	SGH04
St Johns Hospital, Livingston	SJH01
Victoria Infirmary ICU	VIG01
Victoria Infirmary Surgical HDU	VIG02
WGH, Edinburgh ICU/HDU	WGH01
WGH, Edinburgh Surgical(Level 1)	WGH03
WGH, Edinburgh Neuro HDU	WGH04
WGH, Edinburgh Level 1 Neuro HDU	WGH05
Western Infirmary ICU	WIG01
Western Infirmary HDU	WIG02
Western Isles Hospital Stornoway	WIH01
Wishaw General Hospital ICU	WSH01
Wishaw Surgical HDU	WSH02
Wishaw Medical HDU	WSH03