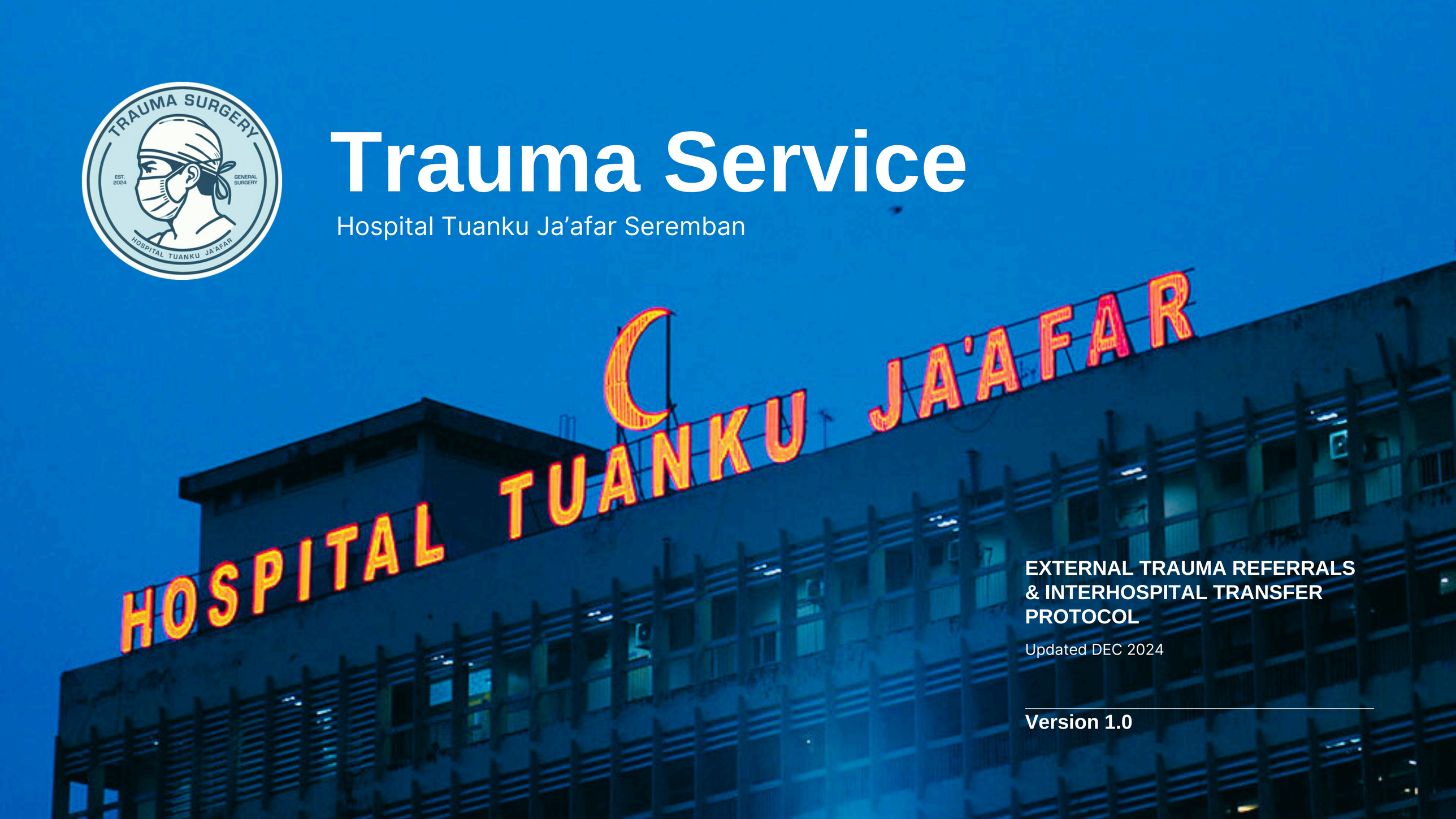
Trauma Service

Hospital Tuanku Ja’afar Seremban



EXTERNAL TRAUMA REFERRALS & INTERHOSPITAL TRANSFER PROTOCOL

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Version 1.0

External Trauma Referral

During regular work hours, external referrals from other hospitals can be initiated through a dedicated phone line. This direct line connects to a member of the Trauma Service capable of promptly making informed decisions. While all Trauma Service members, with the exception of House officers, have the authority to decide whether to accept or divert external referrals, the Medical Officer (MO) receiving the referral is required to consult with the Trauma surgeon/Fellow before deciding on diversion.

For cases originating from district hospitals lacking specialists that necessitate urgent transfer, immediate transfer is facilitated without any unnecessary delays, contingent upon the patient meeting the criteria for urgent transfer (refer to **Appendix D)**.

Regardless of urgency, all trauma transfers are routed through the Emergency Department (ED). Stable patients may undergo triage by the ED team and be assessed by the Trauma Surgeon/Fellow/Registrar/MO.

After normal working hours, referrals and transfers are channeled to the respective on-call team. It is crucial to note that regardless of the timing, all patients in transit must pass through the ED.

TRAUMA SURGERY

External Trauma Referral

WORKING HOURS - To call Trauma Surgeon / Oncall Surgeon / Oncall Surgical MO (ED)

AFTER HOURS - To call Oncall Surgeon / Oncall Surgical MO (ED)

Ideally Surgeon to Surgeon referral.

All trauma transfers **MUST** go through the ED. No ward transfer.

Immediate transfer (unstable patient) from the District Hospital without a specialist as per protocol **(Appendix D).**

APPENDIX D

Inter-Hospital Transfer Protocol

INTER-HOSPITAL TRANSFER PROTOCOL

TRANSFER PROTOCOL

This is the transfer protocol between Hospital Tuanku Ja'afar, Seremban, and a non-specialist district hospital. Eg. Hosp ...

TERMS OF REFERENCE

1	This transfer protocol is between Hospital X (Level IV) and the Department of Surgery Hospital Tuanku Ja'afar, Seremban.
2	The duration of use of this protocol is from the date of issue (as stated in the covering letter) until further review.
3	This protocol pertains to only trauma patients who fulfill the immediate transfer criteria.

IMMEDIATE TRANSFER CRITERIA

The criteria listed below will be used to determine immediate transfer from X (Level IV) Hospital ED to Hospital Tuanku Ja'afar, Seremban

Criteria apply only to **TRAUMA** patients :

1. **SBP of 90 mmHg or less at any time**
2. **HR of >120/min after 1L of crystalloids rapid infusion for adult patients**
3. **Peritonitis**
4. **Positive FAST**
5. **Any penetrating wound to the torso (abdomen/chest) or neck (gunshot wounds, stab wounds, impalement injuries)**
6. **Unstable polytrauma patient and requires intubation**
7. **Obvious signs of vascular injury (i.e massive external haemorrhage)**

The criteria listed stand independent of each other (i.e. do not require correlation with another existing entity).

All other patients not satisfying the criteria above are to be referred through the usual existing channels of communication.

INTER-HOSPITAL TRANSFER PROTOCOL

PRE-TRANSFER WORKUP

LABORATORY

1	**NO** haematological/biochemistry tests need to be done.
2	**Group-specific blood** (whole blood or PRC) should be typed and available for use during transport of the patient (any amount available), group specific implies **emergency typing** only and NOT a complete cross-match. If blood is not available at all, this should NOT delay transfer.

RADIOLOGY

1	**NO** radiologic investigations are required unless they are readily available. The basic trauma series **(AP supine chest x-ray and supine AP pelvic x-ray)** may be obtained provided these do not delay rapid transfer of the patient.
2	**NO** other imaging is required other than CXR and Pelvic X-ray if the patient is haemodynamically unstable.
3	**DO NOT** perform Skull and Cervical X-ray for a patient with low GCS and suspected to have Traumatic Brain Injury as a CT scan is mandatory for this patient.

TRANSFER REQUIREMENTS

1	Secure airway. Patients will require endotracheal intubation if the upper airway is not secured or in imminent threat of control being lost en route or where consciousness is impaired sufficiently to endanger the airway. **DO NOT** transfer the patient unless airway control is ensured.
2	Supplemental oxygen will be administered to all patients (the modality to be decided by the attending doctor based on the clinical condition of the patient).
3	A hard collar and spinal board should be used for all patients to be transferred.

INTER-HOSPITAL TRANSFER PROTOCOL

4	Ensure adequate breathing during transport (i.e. bag or portable ventilation during transfer, if required).
5	Tension pneumothorax is a **CLINICAL** diagnosis, a chest drain should be inserted before transfer in the presence of a combination of; unilateral decreased air entry of a hemithorax, distended neck veins, and hypotension. A confirmatory CXR is **NOT** required if a transfer is imminent, however, the receiving team should be informed that a confirmatory CXR has not been done.
6	Chest tubes should **NOT** be clamped at any time during transfer.
7	All patients shall have 2 large bores (16G or 18G) IV lines in situ at any convenient site.
8	One liter of crystalloid should be infused in ED and en route. Subsequently, blood should be transfused. **DO NOT** give more than one liter of crystalloid.
9	Control all external haemorrhage with dressings and apply pressure/compression where and when necessary.
10	The patient's BP need **NOT** be normal for transfer and this should NOT delay transfer (i.e. do not wait for the BP to be "stable"), resuscitation should continue during the journey. Aim of a SBP of 80-90mmhg and MAP of 50-60mmhg before transfer provided there is no Head Injury. Fluids and infusions should NOT be stopped en route.
11	An indwelling urinary catheter and a nasogastric tube should be in place before transfer.
12	Patients shall have an accompanying doctor who is competent to secure the airway (ie. able to perform endotracheal intubation) if the need arises en route or if the tube dislodges.
13	The Trauma Team (*refer to contact list) shall be informed prior to transfer (once initially and once more just as the patient leaves Hospital X (Level IV) ED) during working hours of the weekdays and the On Call Surgical MO or On Call Surgeon of the day during after hours and weekends.
14	The **receiving team's (Trauma/General Surgery)** medical officer will notify the ED red zone of the impending transfer or vice versa if the ED is notified, the ED team will notify the Trauma Team of the impending arrival of the patient. One party (either Trauma/General Surgery or ED red zone team) notification is sufficient (i.e. the transferring hospital need not make multiple phone calls to multiple units.

INTER-HOSPITAL TRANSFER PROTOCOL

15	If the patient has other concurrent injuries that may involve other disciplines, the appropriate referrals will be made by the Trauma Team in HTJ. The referring hospital need not refer separately.

TRANSFER DESTINATION

All patients shall be admitted via **HTJ Emergency and Trauma Department**. No ward transfers are allowed. Upon arrival, the Surgical MO/Trauma MO will attend to the patient in ETD.

CONTACT LIST

1. Trauma Surgery Unit HTJ (via HTJ switchboard)
2. General Surgery - Medical Officer on call (ward), via HTJ switchboard
3. General Surgeon - Fellow/Trauma Surgeon or Gen Surgeon on-call via HTJ switchboard.
4. Emergency RED ZONE, medical officer/specialist, via HTJ switchboard.

Sequence of contact in descending order (one phone call only to any personnel below in the order listed):

During normal work hours on weekdays:

1. Trauma Surgery Medical officer, if unavailable-
2. ED RED ZONE Medical officer-in-charge, if unavailable-
3. Trauma Surgery Fellow/Surgeon in the Trauma Surgery Unit, if unavailable-
4. ED RED ZONE Specialist in charge, if unavailable
5. On-call Medical Officer, General Surgery, if unavailable-
6. On-call Surgeon of the day, if unavailable -
7. Director of Trauma Surgery / Consultant Trauma Surgeon if unavailable
8. ED Head of Department

During off hours, weekends, and public holidays

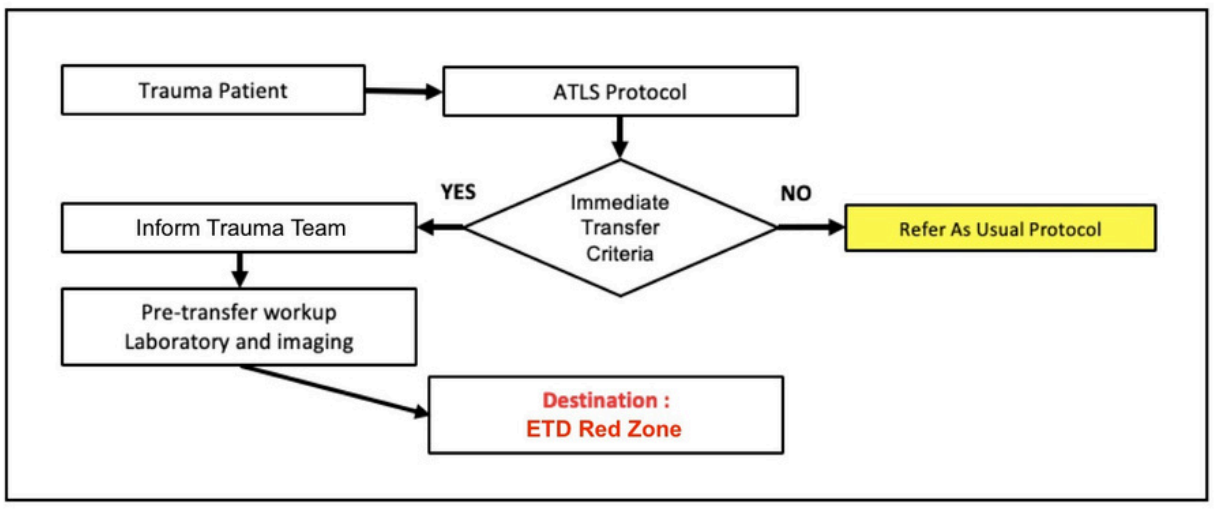
1. On-call Medical Officer, General Surgery, if unavailable-
2. ED RED ZONE Medical officer-in-charge, if unavailable-
3. On-call Surgeon of the day, if unavailable -
4. Trauma Fellow/Trauma Surgeon

QUALITY INDICATORS

1. Time lapsed between the decision of criteria met and transfer decided by the attending doctor in Hospital X (Level IV) Hospital and the ambulance leaving Hospital X (Level IV) Hospital ED with the patient on board shall not be more than 50 minutes.
2. Fulfills all necessary transfer requirements.
3. No unnecessary investigations were done by the attending team in Hospital X (Level IV) Hospital or requested by the receiving team in HTJ.

INTER-HOSPITAL TRANSFER PROTOCOL

INTERHOSPITAL TRANSFER PROTOCOL FOR TRAUMA CASES



IMMEDIATE TRANSFER CRITERIA

- SBP ≤ 90 mmHg
- HR of > 120 bpm after 1L of crystalloids
- Peritonitis
- Any penetrating wound to torso or neck, impalement injuries
- Obvious signs of vascular injuries
- Positive FAST
- Low GCS with polytrauma

(The listed criteria stand independent of each other)

AIRWAY

- Secure the airway
- Provide supplemental oxygen
- Apply cervical collar/spinal board

BREATHING

- Ensure adequate breathing and ventilation
- Chest tube : DO NOT CLAMP Chest tube during transfer
- Confirmatory CXR post CT insertion is not required if transfer is imminent

CIRCULATION

- Secure external active bleeding
- 2 large bore IV access with concurrent infusion of 500mls of IVF
- SBP 80-90 mmhg/MAP 50-60 mmhg is acceptable
- SBP need not be normal prior to transfer
- SBP > 110 mmhg for patient with TBI
- Resuscitation need to be continued en-route

DISABILITY

- Secure the airway if GCS < 11

EXPOSURE

- Quick secondary survey and secure any external bleeding
- Apply splint accordingly

PRE-TRANSFER WORKUP
LABORATORY

- Haematological / biochemistry test are not required
- Group Specific Blood should be done and available for use (provided it does not delay transfer)

RADIOLOGY

- CXR and Pelvic X-ray may be obtained provided it does not delay transfer
- Omit Cervical and Skull x-ray if CT Brain is indicated
- X-ray of other extremities are not required for unstable patient.

TRANSFER REQUIREMENT

- CBD and RT should be in place
- All intubated patient must be accompanied by a trained medical officer.

INFORMATIONS NEEDED BY TRAUMA TEAM

M : Mechanism of injury
I : Injuries observed
S : Vital Signs
T : Treatment given

INFORM TRAUMA TEAM
(IT IS SUFFICIENT TO CALL ONLY ONE PERSONAL BELOW IN ORDER AS LISTED):
OFFICE HOURS:

1. Trauma Surgery MO
2. ED Red Zone MO/Specialist
3. Trauma Surgeon
4. On call MO or Surgeon
5. Consultant Trauma Surgeon
6. Consultant EP

OFF HOURS / WEEKEND / PUBLIC HOLIDAYS

1. On Call Surgical MO
2. ED Red Zone MO/Specialist
3. On call Surgeon

TRAUMA SURGERY SERVICE

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