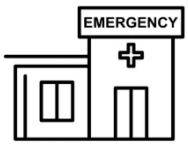
Part B – Health Facility Briefing & Design

425 Trauma Unit



iHFG

International Health Facility Guidelines

2022

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425 Trauma Unit

1 Introduction

The function of the Trauma Unit (TU) is to receive and treat patients who are critically injured or affected by regional disasters as part of the Unit's role within its geographical catchment.

A dedicated Trauma Unit can be provided separately from the Emergency Unit but in close proximity. Alternatively, Trauma facilities may be fully incorporated as part of Emergency Units and act as a designated Trauma Centre. In some circumstances a fully independent Trauma Centre may be provided, but with additional built-in services such as Operating Unit, Intensive Care Unit and other support facilities.

Refer also to separate FPU – Emergency and Urgent Care Unit in these Guidelines.

The provision of a Trauma Unit does not replace the requirement of an Emergency Unit in hospitals. A Trauma Unit is rather supplementary to a traditional Emergency unit.

This Functional Planning Unit (FPU) covers the Trauma Unit. A separate FPU for Emergency and Urgent Care Unit is also available in these Guidelines.

A Trauma Unit is a highly specialised Emergency Unit. If offers 24-hour specialised treatment for the most critically injured patients, often in life-threatening condition. Trauma services, by a team of specialty care medical staff, will provide treatment to minimise the possibility of permanent disability and death of received patients.

A dedicated Trauma Unit can be either a part of a hospital or a separate stand-alone facility often known as a Trauma Center. Under the requirements of the Local Health Authority, the provision of a Trauma Unit is by allocation and within a public hospital precinct having RDL 5 or 6.

Trauma Units provide access to a range of specialists, 24-hour Medical Imaging, Pathology, Surgery and ICU.

Patients assessed with less critical injuries and conditions are usually re-directed to a regular Emergency Unit within the same facility or another facility nearby.

While there is no typical “efficient” unit size for a Trauma Unit, this FPU describes the minimum requirements for support spaces for Trauma Units with 10 or 20 treatment spaces. The typical unit Schedule of Accommodation is provided using Standard Components (typical room templates) and quantities for these numbers. For stand-alone facility, additional inclusions such as ICU beds, operating rooms, laboratories, medical imaging are listed separately. Users should follow the principles established in these guidelines if they wish to create units of different sizes and configurations.

These have been shown in Functional Relationship Diagram depicted in this FPU demonstrates the planning principles and preferred relationship of the components of a typical Trauma Unit.

Further reading material is suggested at the end of this FPU but none are mandatory.

Users who wish to propose minor deviations from these guidelines should use the **Non-Compliance Report** (**Appendix 4 in Part A**) to briefly describe and record their reasoning based on models of care and unique circumstances.

The details of this FPU follow overleaf.

2 Functional & Planning Considerations

Operational Models

Trauma Units are currently provided in designated public hospitals with a RDL of 5 or 6.

The Trauma Unit is configured to optimise efficiency of patient flows from the moment they arrive at the Unit and to minimise fatality rates. These factors must be well-understood and reflected in the planning of the Unit.

Triage and Registration

Patient assessment in Triage is the patients first point of contact followed by registration by clerical staff. In this model, the Reception and Triage are adjacent but separate. The patient must be seen by a triage nurse soon after entry, without waiting for clerical processes. The patient is rapidly assessed

and assigned to the appropriate care zone according to the 5 internationally recognised triage categories as follows:

Triage Category	Patient Condition
Category 1	People who require to have immediate treatment and assessment simultaneously
Category 2	People who require treatment within 10 minutes, deemed as having an imminently life-threatening condition
Category 3	People who require treatment within 30 minutes, deemed as having a potentially life-threatening condition
Category 4	People who require treatment within 60 minutes, deemed as having a potentially serious condition which may also be treated by a GP or a Family Clinic
Category 5	People who require treatment within 120 minutes, deemed as having a less urgent condition which may also be treated by a GP or a Family Clinic

Patients that have been assessed and assigned in Category 4 and 5 will be referred to a regular Emergency Unit or Outpatient Unit. Trauma Unit is designed to treat the critically injured patients rather than those displaying less severe symptoms.

Grouping by Patient Acuity

Patients of similar acuity (urgency) or staff intensity may be treated in the same zone. Facilities for this model include separate areas for resuscitation, acute monitored beds, acute non-monitored beds and ambulatory treatment spaces. There may be separate entry-points (or triage points) for the different areas, or one triage point for all. Staff may be separately allocated to different areas for each shift and may require separate Staff Stations and private workspace.

Examples of Grouping by Patient Acuity include:

Resuscitation and Trauma

This model sets out how resuscitation and trauma patients are assessed and managed in order to streamline the process and ensure the correct team and diagnostic services are available. This model ensures that when emergency or trauma patients arrive, trained staff are available to attend immediately. Resuscitation is intended for the most serious patients who have recently deceased (typically on the way to the Emergency Unit) or are in imminent danger of death, requiring immediate resuscitation. Resuscitation rooms should be vacated as soon as the patient is sufficiently stabilised. Therefore, Resuscitation rooms should not become de-facto ICU for the longer-term patient treatment.

Trauma rooms are provided for the immediate treatment and stabilisation of trauma patients before transfer to other facilities such as Surgery, ICU or IPU. Trauma rooms may be regarded as a step-down from Resuscitation, where the clinicians work on the patient for a longer period of time.

Most trauma patients are expected to be:

- Road Accidents
- Construction accidents
- Workplace accidents
- Criminal acts and violence
- Natural or man-made disasters

A separate, dedicated Trauma Unit may be provided within a major hospital campus for the immediate treatment of patients with life-threatening conditions. Such a Trauma Unit will require sufficient connectivity with the rest of the hospital's facilities.

A "Trauma Centre" refers to a stand-alone Trauma Unit, separate from a Hospital. Such a Trauma Centre will need to provide several components of hospitals which are necessary for trauma patients and listed in this FPU under the Functional Zones.

Acute Care

The Acute Care model is aimed at assessment and treatment of patients that are acute or unstable with complex injuries but not in imminent danger of death. Acute Care may be provided in a separate zone or allocated beds that require a high level of care and endeavours to improve the patient's access to specialist care. The acute care environment typically uses a standardised clinical environment for each treatment space to maintain flexibility.

Grouping by Specialty

Patients may be managed in different areas (or Pods) according to the specialty of service they require e.g. Spinal Injuries, Head Trauma, Construction Accidents, Childrens Trauma etc. It is necessary to have zonal separation for paediatric patients. Patients may be triaged from a central arrival point, or from separate ambulance and ambulant entry points. Within each Functional Area, patients would be prioritised according to acuity and specialty. For the most severe cases, triage is done within the ambulance, on the way to the facility.

In this model, separate specialist staffing for each area is required, which would also include workspaces for staff.

3 Unit Planning Models

Planning of the Trauma Unit depends on the Operational Model/ Model of Care adopted, the patient mix, and the service plan which establishes the role delineation and size of the service. Planning should provide maximum flexibility of patient spaces to allow adaption to alternative models of care easily.

Where patients are grouped by acuity or by specialty grouping or by agegroup (Adults vs Paediatrics) or Gender. Most spaces within the facility will be standardised, so the Management can allocate such zones on demand.

Distinct zones may be provided with good functional relationships to key areas of the unit and external units as noted in Functional Relationships. Planning should provide a clear path of travel for each zone with a minimum of cross traffic, for maximum unit efficiency.

Reception and Triage areas should be located to allow maximum visibility for both incoming ambulant patients (and waiting areas) and ambulance entry for those delivered via ambulance. In a Trauma Unit, it is more common to separate the triage for ambulant patients from ambulance deliveries. However this role can be performed by the same triage nurses.

Trauma Units are not optimised for the care of infected patients or pandemics. However, sufficient isolation facilities should be provided for infected patients in the same manner as an Emergency Unit.

Decisions regarding the site location have a major influence on the eventual cost and operational efficiency of the Trauma Unit staff. The site of the Unit should, as much as possible, maximise the choices of layout. In particular, the access points must be carefully considered.

The entrances of the Trauma unit must be located on grade level for easy access by ambulant patients and ambulances. Dedicated vehicle drop-off zone must be located immediately at the front of the Unit's entrance with shelter. Separate drop-off zone for ambulance arrival visually shielded from the public is strongly recommended. Ambulance parking should also be available in proximity.

Ample car parking should be provided close to the Entrance, well-lit and available exclusively for patients, their relatives and staff. Reserved staff parking areas should be available close to the Trauma Unit, ideally next to a dedicated staff entrance, for urgent call-in staff.

Undercover car parking should be available for:

- Appropriate number of ambulances which are determined by the case load and the availability of ambulance access to other parts of the hospital for non-emergency patients
- Taxis and private vehicles that drop off/pick up patients adjacent to the ambulance entrance.

A guide for the number of ambulances drop-off bays required by the number of Trauma beds is as follows.

- Up to 5 beds – 1 ambulance bay
- Up to 10 beds – 2 ambulance bays
- Up to 15 beds – 3 ambulance bays

- Up to 20 beds- 4 ambulance bays
- Up to 25 beds- 5 ambulance bays
- Up to 30 beds- 6 ambulance bays
- 30+ beds- based on traffic assessment

Note: Beds which are counted as part of the Trauma Unit KPU's are defined as: Resuscitation beds + Trauma beds +Acute bed bays + Observation bed bays (excluding triage beds/bays)

Functional Zones

A Trauma Unit may include the following Functional Zones, according to the facility's agreed Service Plan:

Entrance/ Reception/ Waiting

- Receiving of patients and visitors and administration
- Patient waiting with areas for refreshments and amenities
- Security room

Ambulance Entrance

- Ambulance support rooms
- Decontamination Shower (adjacent ambulance entrance)

Triage and Assessment

- Triage Assessment for ambulant patients
- Triage Assessment for ambulance patients

Patient Resuscitation/ Treatment Areas

- Resuscitation Bays
- Trauma Rooms
- Acute Treatment bays/ rooms for assessment and treatment of severe conditions including a separate zone for paediatric patients
- Treatment & Procedure Rooms
- Observation Rooms/Bays

Support Areas

- Bays for Handwashing basins, Linen, Mobile Equipment and resuscitation trolleys
- Clean Utility and Medication rooms
- Cleaners Room
- Dirty Utility and Disposal Rooms
- Meeting/ Grieving Room
- Storerooms

Staff Areas:

- Change Rooms with toilets, shower and lockers
- Staff Room
- Offices and Workstations
- Meeting rooms that may be used for education and teaching functions.

Other Areas include:

For a Trauma Unit provided as a stand-alone facility (Trauma Centre), it must have access to the following FPU's either within the Centre or part of the Hospital Campus when located adjacent a hospital at a suitable scale to meet the demands:

- Main Entrance Unit
- Operating Unit
- Imaging Unit
- Intensive Care Unit
- Laboratory Unit
- Pharmacy Unit
- Other required Support services as required by the service plan

In addition to standard treatment areas, depending on the service plan and models of care, some functions may require additional, specifically designed areas to fulfil special roles, such as:

- Streaming of patients to improve throughput and access to care which may require specialist areas such as Fast Track zone
- Management of paediatric patients
- Management of major trauma patients
- Management of patient following domestic violence
- Undergraduate and postgraduate teaching
- Transport and retrieval services
- Tele-medical referral/ consultation service

The inclusion of the above functional areas or specialist treatment zones are dependent on the size of the unit and the Service Plan of the facility.

The above zones are briefly described here:

Entrance/ Reception/ Waiting Areas

Entrance

The Trauma Unit should be accessible by two separate entrances: one for ambulance patients and the other for ambulant patients. The Ambulance Entrance should be screened as much as possible for sight and sound from the ambulant patient entrance.

Patients delivered via ambulance stretches must not enter from the ambulant entrance via the waiting area. They must enter from a separate ambulance entrance and move to the interior of the unit without passing through the public waiting area.

The entrances to the Trauma Unit must be at grade-level, well-marked, illuminated, and covered. It shall provide direct access from public roads for ambulance and vehicle traffic, with the entrance and driveway clearly marked. A ramp shall be provided for pedestrian and wheelchair access where necessary.

The ambulant entrance to the Trauma Unit should be paved to allow discharge of patients from cars and ambulances. Temporary parking should be provided close to the entrance.

The external signage should not direct the general public towards the ambulance entrance. Similarly family members for the patients should not be admitted through the ambulance entrance.

The signage of the facility should refer to Trauma and not be confused with a general Emergency Department, in order to focus the use of the facility on its main purpose, being Trauma treatment.

Waiting Areas

The Waiting Area should provide sufficient space for waiting patients as well as relatives/ escorts. The recommended area for Waiting is 1.5m^2 per 1,000 presentations per annum or 15m^2 as a minimum guide. The area should be open and easily observed from the Triage and/ or Reception areas. Seating should be comfortable and adequate. Space should be allowed for wheelchairs, prams, walking aids and patients being assisted. There should be an area where children may play.

Support facilities such as a television should also be available. Fittings must not provide the opportunity for self-harm or harm towards staff.

From the Waiting Area there must be access to:

- Triage and Reception Areas
- Toilets
- Baby Change Room
- Light refreshment facilities which may include automatic beverage dispensing machines and drinking water
- Telephones
- Health literature.

It is desirable to have a separate Waiting Areas particularly for children. Child play areas are to provide equipment suitable for safe play activities, including a television. It shall be separated for sound from the general Waiting Rooms and must be visible to the Triage Nurse. The area should be monitored to safeguard security and patient well-being.

Consideration should be given to provision of a separate, negatively pressured Waiting area for use by patients presenting with suspected pandemic infections. All Waiting Area seats must be visible from the Reception and/ or Triage Station. When separate waiting areas are provided for pandemic conditions, then a matching external (visual) triage area should be provided before the patients enter the building. The purpose of the visual triage is to stream the patients towards the general waiting area vs the isolated waiting area.

Reception/ Clerical Areas

The Reception Area is required to accommodate:

- Reception of patients and visitors
- Registration interviews of patients
- Clinical records
- Printing of identification labels.

The counter should provide seating and be partitioned for privacy at the interview area. There should be direct communication with the Reception/ Triage area and the Staff Station in the Acute Treatment/ Observation Area.

The Reception/Clerical Area should be designed with due consideration for the safety of staff. This area requires a duress alarm easily accessible for staff. The Reception desk should be located where staff can observe and control access to treatment areas, pedestrian and ambulance entrances, and public waiting areas. The Reception should have direct observation of Waiting areas and Paediatric play areas if provided.

Triage

Upon the entry of ambulant patients into the Trauma Unit, Triage rooms must be easily visible and clearly signposted as the first point of contact.

The Triage may be immediately adjacent to the Reception desk and should have clear a vision to the Waiting Room and the ambulant entry point. The same triage rooms may have rear access to the ambulance entrance and ambulance triage area. The Triage nurse may interview patients, perform observations and provide first aid in relative privacy in a Bed Bay or Triage Cubicle. Triage must include an examination couch with appropriate privacy screening.

Triage is also required for ambulance deliveries in order to correctly direct the patient to the appropriate treatment area such as Resuscitation, Acute treatment area, Specialised treatment pods, Operating Theatres, ICU etc. The triage nurses for Ambulance Triage area may be dedicated for this purpose or be shared with the ambulant triage. Ambulance Triage area is a discrete area off the ambulance entrance area. The corridor itself is not regarded as an Ambulance Triage area.

Ambulance triage area is also used in cases of major road accidents and disasters to provide additional capacity for holding stretches or beds with patients.

Decontamination Area

Trauma Units require a Decontamination area for patients who are contaminated with toxic substances. This requirement is mandatory for all Trauma Units. The Decontamination area may be integrated with the Ambulance bay/s and directly accessible from the ambulance bay/s without

entering any other part of the unit. The Decontamination area consists of a dedicated room with pass-through access. It will incorporate a shower hose spray.

For any hospital that may be called upon for major disaster management (by the Local Health Authority), consideration should be given to provide a large external decontamination area with deluge showers incorporated into the ceiling of the ambulance bay area.

Additional requirements include:

- A retractable plastic screen to contain the water flow if located in an external area
- A flexible water hose, floor drain and contaminated water trap; all water flowing out of such a decontamination area shall be treated as contaminated water and treated accordingly.

Treatment Areas

Resuscitation Area

The Resuscitation Room/ Bay is used for the resuscitation and treatment of critically ill or injured patients. The Resuscitation Room/ Bay requires:

- Space to fit a specialised resuscitation bed
- Space to ensure 360-degree access to all parts of the patient for uninterrupted procedures (this means all services to come from pendants in the ceiling not from outlets on the walls)
- Circulation space to allow movement of staff and equipment around the work area
- Maximum possible visual and auditory privacy for the occupants of the room and other patients and relatives
- Easy access from the ambulance entrance and separate from patient circulation areas
- Easy access to the Acute Treatment/Observation area from the Staff Station
- A full range of physiological monitoring and resuscitation equipment
- Workbenches, storage cupboards, X-ray viewing facilities (or digital electronic imaging system) and computer access
- Access to dirty utility and disposal facilities
- Solid partitions between this and other areas are recommended.

Each Resuscitation Bay should be equipped with:

- Service panel, service pendants or pods to maximise access to patients
- Physiological monitor with facility for ECG, printing, NIBP, SpO2, temperature probe, invasive pressure, CO2 monitor
- A procedure light similar to a small, single arm operating light
- Equipment to hang IV fluids and attach infusion pumps
- Resuscitation patient trolley
- Wall mounted diagnostic set (ophthalmoscope/ auroscope)
- Clinical scrub basin with paper towel and soap fittings

Imaging facilities should include:

- Overhead X-ray or mobile digital x-ray
- X-ray screening (lead lining) of walls and partitions between beds
- Patient resuscitation bed/ trolley with X-ray capacity

Trauma Rooms

Trauma rooms are required for the immediate treatment of trauma injuries which do not require resuscitation. Such trauma treatment requires maximum privacy and therefore Trauma rooms must be fully enclosed but with glass front (sliding doors are recommended) for observation.

Trauma rooms requirements are as follows:

- Bedroom to fit a standard mobile bed
- Solid side and rear walls; glazed front wall with glazed sliding or swing doors
- Storage space for essential equipment and supplies used at the bedside
- Fixed monitors
- Service panel with medical gases, power and data
- Examination light; the examination light must be a high standard focused light with a power output of 30,000 lux, illuminate a field size of least 150 mm and be of robust construction
- Wall mounted sphygmomanometer
- Waste bins and sharps containers
- Patient call and emergency call facilities
- Hand Wash Basin.

Acute Treatment Areas

Acute Treatment Areas are used for the management of patients with acute illnesses. Requirements are as follows:

- Bed Bays to fit a standard mobile bed; either solid walls or privacy curtain separation
- Storage space for essential equipment and supplies used at the bedside
- Space to allow monitoring equipment to be housed

All Treatment bays including Triage, require the following:

- Service panel with medical gases, power and data
- Examination light; the examination light must be a high standard focused light with a power output of 30,000 lux, illuminate a field size of least 150 mm and be of robust construction
- Wall mounted sphygmomanometer
- Waste bins and sharps containers
- Patient call and emergency call facilities
- Hand Wash Basin.

A separate and dedicated zone, may also be referred to as the Paediatric Pod, must be provided and customised for paediatric patients with:

- Controlled access for the safety and security of paediatric patients
- Paediatric play area, within the zone
- Bed/ cot bays and chair bays for nebuliser therapy
- Dedicated Staff Station with direct visibility to all treatment bays and areas
- Support areas contained within the zone for staff convenience.

Observation Areas

Following Acute Treatment, patients may require an extended period of observation before they can be safely transferred to an Inpatient Unit or discharged. The design and facilities for the Observation Area will be almost identical to Acute Treatment area but used for the purpose of longer-term observation (usually up to 24 hours).

Based on the nature of a specialised Trauma Unit, it may not be appropriate to strictly separate an Observation area from the Acute Treatment areas. Therefore, the Unit Management may decide not to move the patients but change the level and type of care on a case to case basis. In other words the exact division between Acute Treatment and Observation Areas may be decided by the unit Management on as-needed basis.

When necessary, part or all of the Observation Area can be used for Acute Treatment.

Patient Toilets/ Showers

In a Trauma Unit the following Patient Toilet/ Ensuite facilities are required (separate Male and Female):

- Up to 12 treatment bays – two Patient Toilets/ Ensuite, one each for male/ female
- Between 13 and 24 treatment bays – four Patient Toilets/ Ensuite, two each for male/ female
- Between 25 and 40 treatment bays – six Patient Toilet/ Ensuite, three each for male/ female
- More than 40 treatment bays – eight Patient Toilet/ Ensuite, four each for male/ female
- At least two of the above Toilets/ Ensuites to be Accessible for wheelchairs, one each for male/ female.

Support Areas

Support areas include Clean and Dirty utilities, Disposal room, Bays for linen, handwashing, mobile equipment and resuscitation trolley and Store Rooms to comply with Standard Components as identified in the Schedule of Accommodation.

Staff Station/s

The Staff Station/s should have an uninterrupted vision of the patients. It should be centrally located and may be constructed with an enclosed area to ensure confidential information can be conveyed without breach of privacy and to provide security to staff, information and privacy. The use of sliding windows and adjustable blinds can be used to modulate external stimuli and a separate write-up area may be considered.

Pathology Bay

A designated area for performing immediate laboratory investigations such as arterial blood gas analysis and microscopy should be available within the Unit. If the Trauma Unit is located within a larger Hospital, a mechanical or pneumatic tube transport systems for specimens and electronic reporting of results are recommended.

Medication Room

A Medication Room is required for the storage of medications used within the Trauma Unit. Entry should be secure with a self-closing door. The area should be accessible to all clinical areas and have sufficient space to house a drug refrigerator for the storage of heat sensitive drugs. The drug refrigerator should be temperature monitored and alarmed. The provision of this room must comply to the requirements as set out by MoH.

Ambulance Service Requirements

Specific requirements of the Ambulance Service(s) serving the area shall be obtained and complied with. These requirements relate to areas such as ramp gradients, ambulance parking/ unloading area gradients, height clearance and ambulance bay dimensions.

Specific information about emergency vehicles and ambulances that are used for the facility should be acquired from local public and private Ambulance Services.

The following consideration shall be given while designing the ambulance areas:

- Access for Ambulances shall not conflict with other vehicular or pedestrian traffic
- The Ambulance access shall be located away from public entrances (if attached to a hospital or part of a larger hospital campus) and shall be reasonably screened from public view; a separate entrance is required and cannot be shared with other entrances
- The Ambulance access is to be directly connected to the Trauma Unit; an air lock shall be provided between the inside and the outside
- The Ambulance collection/ drop off points must be discreet and shall be covered
- A lockable storage cupboard or room no less than $2m^2$ shall be provided for Ambulance supplies. The cupboard or room shall have adjustable shelves and be lockable with a separate key or keypad lock.
- A hose cock with attached hose shall be located close to an Ambulance bay for washing down the vehicle or trolleys; it is recommended that the hose cock and hose be located in a discrete cabinet or recessed bay.

- An intercom system shall be provided between the Ambulance door and the Trauma Unit Reception/Clerical Area, Triage Area or Staff Station; the Intercom system shall be integrated with a security CCTV system located to clearly show those requesting entry
- All Ambulance Bays shall be clearly marked and sign-posted; the external signage system shall direct ambulances and vehicles carrying emergency cases to the Ambulance Bays. These signs shall be clearly visible at the entrance to the Trauma Centre or the Hospital as well as any major change of direction. Signs directed to ambulance bays intended for trauma units shall be permanently lit during the night. In order to avoid confusion, the signage system shall be designed in such a way that ambulant patients, including ambulant access to a trauma unit are not to be directed to the ambulance bay or ambulance door.
- A Communications Room is required, for up to three ambulance officers to communicate between major hospital centres and the ambulance service for coordination of Ambulance movements; the communications base is also a critical co-ordination centre in the event of a disaster.
  - The room should be immediately adjacent to the Ambulance entry of the Trauma Unit with direct line of sight to incoming ambulance vehicles and the parking bays
    The room should include workstation benches and chairs for 3 persons, telephones, computer and radio communications systems.

4 Functional Relationships

A Functional Relationship can be defined as the correlation between various areas of activity which work together closely to promote the delivery of services that are efficient in terms of management, cost and human resources. Correct Functional Relationships are identified below.

External Relationships

Regardless if the Trauma Unit is provided as a stand-alone facility or part of a larger hospital, it requires close and efficient access to the following units:

- Medical Imaging Unit; The Medical Imaging Unit is to provide general X-Ray diagnostic investigations and other diagnostic screening services such as fluoroscopy, ultrasound, mammography, computed tomography (CT), magnetic resonance imaging (MRI) and other interventional radiographic procedures and immediate access to those modalities are highly recommended for effective Emergency Unit's operational procedure;
  - Medical Imaging may be provided as a satellite facility within the Emergency Unit; the requirement for film processing is dependent upon close proximity to the Medical Imaging Department and the use of digital radiology;
  - A system of electronic display of imaging is desirable.
- Operating Unit – to transfer patients requiring emergency surgical procedures
- Intensive Care Unit/ High Dependency Unit/ Coronary Care Unit - for admission of patients with severe conditions requiring close monitoring or life support
- Laboratory Unit – for sending patient specimen for testing and examination.
- Other Service Units including:
  - Catering Unit – for providing meals, beverages, and snacks for patients
  - Mortuary – to transfer deceased patients for storage and undertaking postmortems examination/ autopsies
  - Pharmacy Unit – pharmacy services for dispensing medications for discharged patient and enabling prescriptions to be filled by patients
  - Sterile Supply Unit – to obtain sterile equipment for surgical emergencies in Emergency Department

These key external functional relationships are demonstrated in the diagrams below including the following:

- Separate entries are provided for ambulant and ambulance patients
- Ambulant entry is in close proximity to urgent short-term parking
- Rapid and ready access to key clinical units such as Operating Unit, Medical Imaging, ICU/ HDU
- Patient transfer to other Units via service corridor (if a Trauma Unit is located within a hospital)

- Access to support units including Clinical Information Unit, Supply, Sterile Supply Housekeeping, Catering Waste management and Mortuary should be readily accessible for staff via a service corridor
- Access to Laboratory and Pharmacy via a service corridor and may be via a pneumatic tube or automated transport system.

Internal Relationships

Within the Unit, key functional relationships include the following:

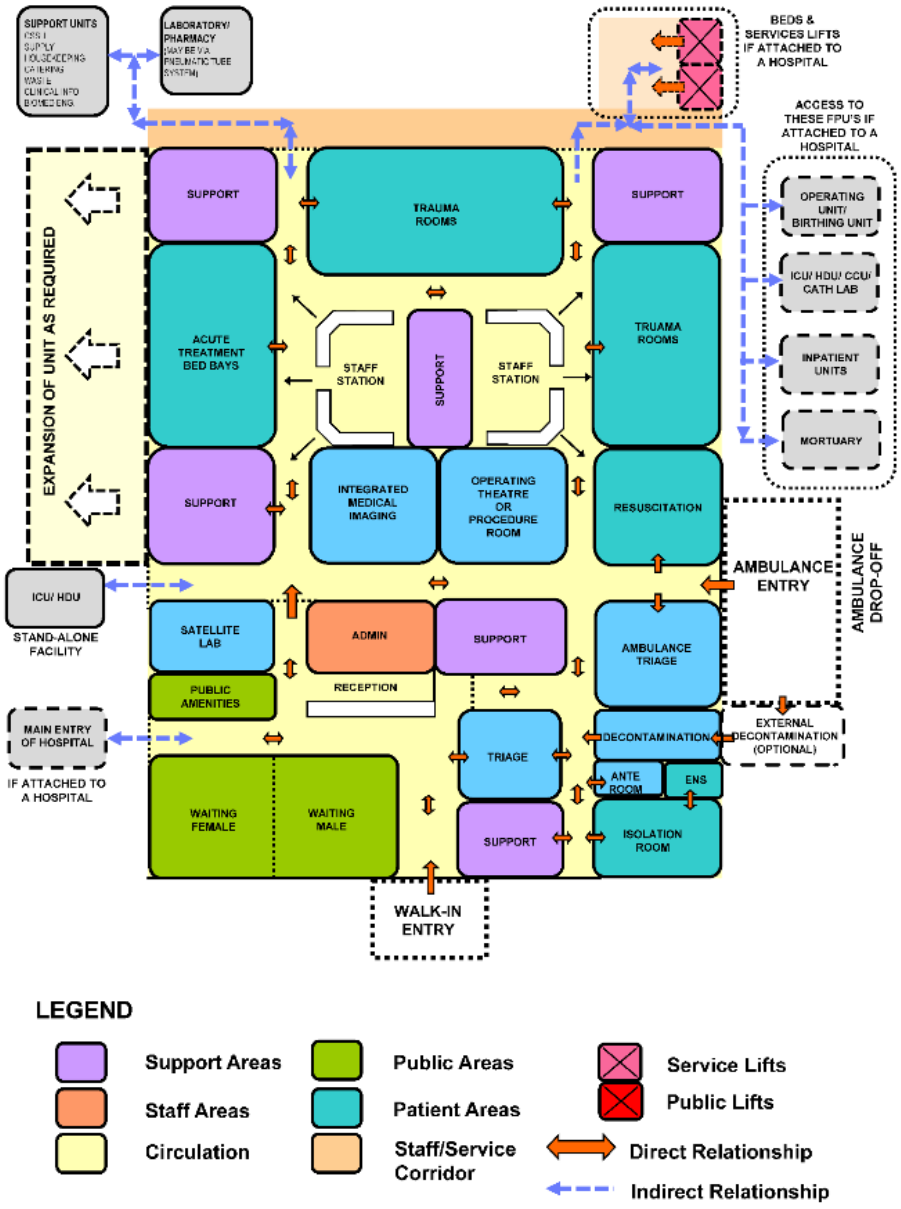
- The design should allow for rapid access to every space with a minimum of cross traffic
- There must be close proximity between the Resuscitation / Trauma Rooms/ Acute Treatment areas for non-ambulant patients, other treatment areas for ambulant and non-ambulant patients, so that staff may be relocated at times of high workload
- Visitor and patient access to all areas should not traverse clinical areas
- Protection of visual, auditory and olfactory privacy is important whilst recognising the need for observation of patients by staff.

The optimal internal relationships are outlined in the diagrams below include the following:

- Triage and Waiting located at the Ambulant Entry of the Unit; Ambulance Triage located at the Ambulance Entry
- Direct link from Ambulance Entry, to Ambulance Triage and Resuscitation areas
- Close proximity of Resuscitation and Patient Treatment Areas
- Patient treatment areas divided into Trauma Rooms and Acute Treatment Areas with the dedicated zone for specialist areas such as Paediatrics and Mental Health
- Staff Station/s located centrally within Treatment Areas, with direct oversight of Resuscitation, Trauma Rooms and Acute Treatment bays
- Access from all Patient Treatment areas to the Integrated Medical Imaging facilities
- Support areas for Treatment zones located adjacent to the zones for ready access
- Staff amenities and Administration may be accessed externally from staff/ service corridors and located on the perimeter of the Unit.

Functional Relationship Diagrams

The functional relationships of a typical Trauma Unit is demonstrated in the diagram below. Other models need to have similar relationships but implemented in different ways. Refer to the typical models below.



5 Design Considerations

Refer to Part C for ergonomic issues, Part D for Infection Control, and Part E for Engineering Requirements.

Patient Treatment Areas

Patients must be situated so that healthcare providers have direct visualization, as far as possible. This permits the monitoring of patient status under both routine and emergency circumstances. The preferred design is to allow a direct line of vision between the patient and the Staff Station.

Trauma Rooms must be enclosed with glazed front for optimal visual patient monitoring. Other treatment spaces for acute patients may be fully or partially enclosed to ensure that confidential information can be conveyed without breach of privacy and to provide security to staff. Treatment bed spaces should be designed as acuity adaptable - to suit any patient acuity in order to provide maximum flexibility for patient placement within the Unit.

Paediatric Treatment Zone

Paediatric assessment and treatment should be designed as a separate zone and have restricted access for safety and security of paediatric patients.

Paediatric Bed Bays should be provided at the same size as Adult Bed Bays in order to provide future flexibility.

Environmental Considerations

Acoustics

The Trauma Unit should be designed to minimise the ambient noise level within the unit and transmission of sound between patient areas, staff areas and public areas. Consideration should be given to the location of noisy areas or activity, preferably placing them away from patient treatment areas.

Acoustic treatment is required to the following:

- Triage and interview areas for discussions/ interviews with clients
- Seclusion and psychiatric assessment rooms
- Treatment and Procedure Rooms
- Waiting areas
- Staff Stations

Refer to **Part G – Acoustics** of these Guidelines for more information.

Natural Light

The use of natural light should be maximised throughout the Unit. Windows are an important aspect of sensory orientation and psychological well-being of patients and staff.

Natural light should be favourably considered when planning Trauma Units in patient areas and is desirable in other support areas such as waiting and family areas.

Privacy

The design of the Trauma Unit needs to consider the contradictory requirement for staff visibility of patients while maintaining patient privacy. Unit design and location of staff stations offer varying degrees of visibility and privacy. The patient acuity and their correlating treatment zones are a major influence.

When treatment spaces are not enclosed, they shall be provided with bed screens to ensure privacy of patients undergoing treatment in both private and shared areas. Refer to the Standard Components for examples.

The following features shall be integrated to the design of the Unit:

- Doors and windows to be located appropriately to ensure patient privacy and not comprise staff security
- Discreet spaces to enable confidentiality of discussions related to a patient and storage of patients' medical records
- Privacy screening to bed bays (open bays should be enclosed by 3 walls)
- Interview bays, Resuscitation bays, Trauma Rooms and Patient Bed Bays should not be visible from public or waiting areas; examination couches should not face the door.

Space Standards and Components

Bed Spacing

Provide a minimum of 900mm clear space on both sides and foot of each bed. If solid walls are used between treatment spaced (recommended), the minimum clear space should be 2800mm from centre to centre of walls. In open plan treatment bed areas where there are no dividing walls between two bed bays, there should be at least 2400mm of clear floor space between the centres of each bed.

Accessibility

Design should provide ease of access for wheelchair bound patients to Reception desks, Staff Stations and Interview/ Meeting Rooms in accordance with relevant standards. Waiting areas should include spaces for wheelchairs and suitable seating for patients with disabilities or mobility aids.

Doors and Corridors

Doors used for bed transfer to Operating Unit, Medical Imaging Unit, Critical Care Units or other units, must be appropriately positioned and sized. A minimum of 1350mm clear opening (ideally 1400mm clear opening) is required for easy movement of beds and equipment.

Corridor width in the Trauma Unit must allow the passage of two hospital beds without difficulty. There should be adequate space for trolleys to enter or exit Treatment, Procedure and any enclosed patient rooms. Corridors should not be used for storage of equipment and bays provided for storage should not impede Corridor access.

Note: Refer to **Part C - Access, Mobility and OH&S** in these Guidelines - Space Standards & Dimensions for further information on corridor standards.

Safety and Security

Trauma Units shall provide a safe and secure environment for patients, staff and visitors, while remaining a non-threatening and supportive atmosphere conducive to recovery.

The facility, furniture, fittings and equipment must be designed and constructed in such a way that all users of the facility are not exposed to avoidable risks of injury.

Security issues are important due to the increasing prevalence of violence in trauma units and health care facilities.

The arrangement of spaces and zones shall offer a high standard of security through the grouping of like functions, control over access and egress from the Unit and the provision of optimum observation for staff.

The Trauma Unit receives a large number of patients and their visitors, many of whom may be distressed or involved in violence. The hospital has a duty of care to provide for the safety and security of employees, patients and visitors. Both policies and structures should be in place to minimise injury, psychological trauma and damage or loss of property. The precise details of security features should be designed in conjunction with a security risk assessment for the specific site.

The location of an office for security personnel near the entrance should be considered. This room should be positioned so that it allows Security Staff a clear view of the Waiting Room, Triage and Reception Areas. Immediate access to these areas is essential. Remote monitoring of other areas in the department by CCTV and of staff duress/personal alarms should also occur from this area.

Drug Storage

Controlled and dangerous drugs must be kept in a secure cabinet with alarm according to operational and drug storage policies. The room should be secured with staff only access and may include CCTV surveillance.

A lockable refrigerator or a refrigerator located within a lockable room is required to store restricted substances.

Drug storage must be provided in accordance with the requirements from MoH.

Perimeter Access Control

Ambulatory and Ambulance entrances should be separate, with electronically operated locks. Access from the Waiting Areas to the treatment areas should be controlled. There should be restricted access from the waiting/ reception area of the Unit into the Patient treatment zones.

Reception/ Triage Areas

The interface between the Waiting Areas and the Reception/ Triage Areas should be carefully designed so as to permit communication and reassurance to distressed patients or visitors yet provide safety and security for staff.

Counters should be of sufficient height and depth to minimise the possibility of them being jumped over or reached over.

The Reception Area should be designed so that staff may sit at eye level with standing patients or visitors. The Reception/ Triage area should have an unobstructed view of the entire Waiting Area.

Fixed and/or personal duress alarms should be positioned in suitable areas as suggested by the security risk assessment, particularly Reception and Staff stations. Uniformed security personnel may be required at very short notice to assist with a safety or security issue.

Relatively secluded or isolated areas should be monitored electronically (for example, by closed circuit television), with monitors in easily visible and continuously staffed areas.

Finishes

Finishes including fabrics, floor, wall and ceiling finishes, should be appropriate to the nature of this unit including the following considerations:

- Ease of cleaning
- Infection control
- Acoustic properties
- Durability
- Fire safety
- Movement of equipment and impact resistance.

In areas where clinical observation is critical such as patient treatment areas, lighting and colour selected must not impede the accurate assessment of skin tones. Walls shall be painted with lead free paint.

The floor finishes in all patient care and treatment areas should have a non-slip surface and be impermeable to water and body fluids.

Refer also to **Part C – Access, Mobility, OH&S** and **Part D - Infection Prevention and Control** of these Guidelines.

Curtains/ Blinds

Window treatments should be durable and easy to clean. Consideration may be given to use double glazing with integral blinds, tinted glass, reflective glass, exterior overhangs or louvers to control the level of lighting.

Privacy bed screens must be washable, fireproof and cleanly maintained at all times. Disposable bed screens may also be considered.

Building Service Requirements

This section identifies unit specific services briefing requirements only and must be read in conjunction with Part E - Engineering Services for the detailed parameters and standards applicable.

Information and Communication Technology

Trauma Units are high volume users of telecommunications and information technology. The following items relating to IT/ Communication shall be addressed in the design of the Unit:

- Electronic Medical Records (EMR) which may form part of the Health Information System (HIS)
- Hand-held tablets and other smart devices
- Picture Archiving Communication System (PACS)
- Paging and personal telephones replacing some aspects of call systems
- Data entry including scripts and investigation requests
- Bar coding for supplies and X-rays/ Records
- Public Address system and Paging system for staff and emergencies
- Duress systems, personal mobile duress systems may be considered
- Data and communication outlets, servers and communication room requirements
- Optional availability of Wi-Fi for staff, patients and their visitors
- Videoconferencing requirements.

Patient Information Systems

An electronic Trauma Unit Information System may be installed to support clinical management, patient tracking and departmental administration. Sufficient terminals should be available to ensure that queuing does not occur, even at peak times. Workspace design should include sufficient bench-widths or suitable suspension devices for terminals, keyboards, drives and printers. Additional computer terminals, software and peripheral devices should be installed to enable other departmental functions

Public Address System

An intercom or public-address system that can reach all areas of the Trauma Unit should be considered.

Telemedicine

Trauma Units should be equipped with telemedicine facilities - a dedicated, fully enclosed room with appropriate power and communications cabling provided. This room should be of suitable size to allow simultaneous viewing by members of multiple service teams and should be close to the Staff Station. Cameras should be set up in such a way where all visual angles are possible from the patient trolley or examination couch.

Staff Call

Hospitals must provide an electronic call system next to each treatment space or zones including bathrooms to allow for patients to alert staff in a discreet manner at all times

All calls are to be registered at the Staff Stations and must be audible within the service areas of the Unit including Clean Utilities and Dirty Utilities. If calls are not answered the call system should escalate the alert accordingly. The Nurse Call system may also use mobile paging systems or SMS to notify staff of a call.

Heating, Ventilation, Air-conditioning (HVAC)

The air temperature and humidity in all treatment and procedure areas should be controllable from within the unit and adjustable to ensure patient comfort and safety.

All HVAC units and systems are to comply with services identified in Standard Components and **Part E – Engineering Services**.

Medical Gases

Medical gas is that which is intended for administration to a patient in anaesthesia, therapy, diagnosis or resuscitation. Medical gases shall be installed and readily available in each Patient Bay, Trauma Rooms, Resuscitation Bays, Treatment Room and Procedure or Operating Room according to the quantities noted in the Standard Components Room Data Sheets.

Radiation Shielding

The imaging rooms and areas where mobile imaging is used require radiation shielding. A certified physicist or qualified expert is to assess the plans and specifications for radiation protection as required by FANR. A radiation protection assessment specifies the type, location and amount of radiation protection required for an area according to the final equipment selections, the layout of the space and the relationship between the space and other occupied areas.

Radiation protection requirements must be incorporated into the final specifications and building plans. Consideration should be given to the provision of floor and ceiling shielding when rooms immediately above and below are occupied.

Pneumatic Tube Systems

The Trauma Unit may include a pneumatic tube station system, as determined by the facility Operational Policy. If provided the station/s should be located in close proximity to the Staff Stations within the treatment clusters or under direct staff supervision.

Infection Control

Handbasins for handwashing should be located in close proximity to each treatment bay and must be included in each enclosed bay or treatment room. Han basins should be accessible without traversing any other clinical area. All handbasins in clinical areas should be the surgical type with

hands-free activation (Type A). Dispensers for non-sterile latex gloves should be available in the vicinity of each handbasin and each treatment area.

Refer to **Part D- Infection Control** in these Guidelines for ratios of basins required in clinical areas.

Antiseptic Hand Sanitisers

Antiseptic hand sanitisers should be located so they are readily available for use at points of care, at the end of patient beds and in high traffic areas.

The placement of antiseptic hand sanitisers should be consistent and reliable throughout facilities. Antiseptic hand sanitisers are to comply with **Part D - Infection Prevention and Control**, in these guidelines.

Antiseptic Hand Sanitisers, although very useful and welcome, cannot fully replace Hand Wash Bays. Both are required.

Isolation Rooms

At least one negative pressure Isolation Room should be provided in each Unit. The need for additional negative pressure Isolation Rooms shall be determined by the infection control risk assessment and the Service Plan intended for the facility.

Refer also to **Part D - Infection Prevention and Control** in these Guidelines.

6 Components of the Unit

Standard Components

Standard Components are typical rooms in a health facility, each represented by a Room Data Sheet (RDS) and Room Layout Sheet (RLS). Sometimes, there are more than one configuration possible and therefore, more than one room layout sheet can be found in the Standard Components for a room with same function. They may differ in room size and/or the requirement of FF&FE items.

The Room Data Sheets are presented in a written format, describing the minimum briefing requirements of each room type divided into the following categories:

- Room Primary Information; includes briefed areas, occupancy, room description, relationships and special room requirements
- Building Fabric and Finishes; describes fabric and finishes for the room's ceiling, floor, walls, doors and glazing requirements
- Furniture and Fittings; lists all the fittings and furniture typically located in the room; Furniture and Fittings are identified with a group number indicating who is responsible for providing the item according to a widely accepted description as follows:

Group	Description
1	Provided and installed by the Builder/ Contractor
2	Provided by the Client and installed by the Builder/Contractor
3	Provided and installed by the Client

- Fixtures and Equipment; includes all the serviced equipment commonly located in the room along with the services required such as power, data, water supply and drainage; Fixtures and Equipment are also identified with a group number as above indicating who is responsible for provision
- Building Services - indicates the requirement for communications, power, HVAC (Heating, Ventilation and Air Conditioning), medical gases, nurse/ emergency call and lighting along with quantities and types where appropriate. Provision of all services items listed is mandatory.

The Room Layout Sheets (RLS's) are indicative plan layouts and elevations illustrating an example of a good design. The RLS indicated are deemed to satisfy these Guidelines. Alternative layouts and innovative planning shall be deemed to comply with these Guidelines provided by the following criteria are met:

- Compliance with the text of these Guidelines
- Minimum floor areas as shown in the schedule of accommodation

- Clearances and accessibility around various objects shown or implied
- Inclusion of all mandatory items identified in the RDS.

Standard Components have considered the required design parameters described in these Guidelines. Each FPU should be designed with compliance to Standard Components - Room Data Sheets and Room Layout Sheets, nominated in the Schedules of Accommodation in Appendices of this FPU.

Non-Standard Rooms

Non-standard rooms are rooms are those which have not yet been standardised within these Guidelines. As such there are very few Non-standard Rooms. These are identified in the Schedules of Accommodation as NS.

Triage Cubicles (ambulant patients)

The Triage Cubicles are used for patient interview, observation and initial assessment, located adjacent to the Triage Desk or station. The cubicle may be enclosed or partly enclosed and include:

- Desk
- Chairs for patients and support person
- Exam couch with privacy screen curtains
- Equipment for measuring vital signs
- Handbasin with paper towel and soap fittings

The cubicle requires bed/ trolley access for patients requiring trolley transfer to other areas within the Unit.

Holding Room (Bodies)

The Holding Room for bodies is a secure room for deceased patients on trolleys awaiting transfer to the Mortuary. The room is to contain a handbasin with paper towel and soap fittings. The room should be located in a staff only, quiet area of the Unit and sized to accommodate a single trolley.

Pneumatic Tube Station

The Pneumatic Tube Station should be located at the Staff Station/s under the direct supervision of staff for urgent arrivals. The location should not be accessible by external staff or visitors.

Requirements include:

- The bay should not impede access within staff station areas
- Racks should be provided for pneumatic tube canisters
- Wall protection should be installed to prevent wall damage from canisters

7 Schedule of Accommodation

The Schedule of Accommodation (SOA) provided below represents generic requirements for this Unit. It identifies the rooms required along with the room quantities and the recommended room areas. The sum of the room areas is shown as the Sub Total as the Net Area. The Total area is the Sub Total plus the circulation percentage. The circulation percentage represents the minimum recommended target area for corridors within the Unit in an efficient and appropriate design.

Within the SOA, room sizes are indicated for typical units and are organised into the functional zones. Not all rooms identified are mandatory therefore, optional rooms are indicated in the Remarks. These guidelines do not dictate the size of the facilities, therefore, the SOA provided represents a limited sample based on assumed unit sizes. The actual size of the facilities is determined by Service Planning or Feasibility Studies. Quantities of rooms need to be proportionally adjusted to suit the desired unit size and service needs.

The Schedule of Accommodation are developed for particular levels of services known as Role Delineation Level (RDL) and numbered from 1 to 6. Refer to the full **Role Delineation Framework** (**Part A - Appendix 6**) in these guidelines for a full description of RDL's.

The table below shows two alternative SOA's for a Trauma Unit with 14 or 24 beds (treatment spaces).

Any proposed deviations from the mandatory requirements, justified by innovative and alternative operational models may be proposed and record in the **Non-Compliance Report** (refer to **Part A - Appendix 4**) with any departure from the Guidelines for consideration by the Local Health Authority for approval.

Trauma Unit located within a health facility

ROOM/ SPACE	Standard Component Room Codes	RDL 5-6 Qty x m²	RDL 5-6 Qty x m²	Remarks
		14 beds	24 beds	
Entry/ Reception/ Waiting				
Airlock – Entry (Walk-in)	airle-10-d	10	10	
Airlock – Entry (Ambulance)	airle-10-d	10	10	Separate entrance and air lock required for Ambulance
Reception/ Clerical	recl-15-d	15	15	Staff to observe & control access
Waiting	wait-15-d wait-20-d	15	20	May be separate Male/ Female - minimum
Waiting - Family	wait-10-d wait-15-d	10	15	Minimum
Play Area	plap-10-d similar	10	10	Optional; adjoining Waiting area
Bay - Vending Machines	bvm-3-d similar	3	5	Optional
Bay - Wheelchair Park	bwc-d similar	4	6	Wheelchairs & trolley holding
Parenting Room	par-d	6	6	May be shared with Main Entry
Police/ Security Room	secr-10-d similar	12	12	* Optional
Toilet- Accessible	wcac-d	6	6	May also include facilities for baby change; separate for M/F
Triage				
Triage - Nurse	sstn-5-d similar	5	5	may include with Reception; may be incorporated inside the triage room if serving a single triage space
Triage Cubicle(s)	NS	10	10	Includes exam couch and write-up desk
Ambulance Triage	ambtr-d similar	12	12	Adjacent to Ambulance Entry
Resuscitation/ Treatment Areas				
Decontamination Shower	shdec-d	8	8	Provision as designated by Local Health Authority; May be external with ambulance bays
Patient Bay - Resuscitation	pbtr-r-d	28	28	
Patient Bay – Trauma, enclosed	pbtr-r-d similar	28	28	Enclosed Room with fully glazed sliding doors at the front

ROOM/ SPACE	Standard Component Room Codes	RDL 5-6 Qty x m²	RDL 5-6 Qty x m²	Remarks
		14 beds	24 beds	
Patient Bay - Acute Treatment	pbtr-a12-d	12	12	Qty according to service plan; arranged in clusters of up to 12 beds
Patient Bay - Paediatric	pbtr-a12-d similar	12	12	
Observation Bay	pbtr-a12-d similar	12	12	May be flexibly used as Acute Treatment
Patient Bay - Enclosed, Isolation - Negative Pressure	pbtr-r-d similar	28	28	Qty according to service plan. Minimum of one.
Patient Bay - Enclosed, Isolation - Positive Pressure	pbtr-r-d similar		28	Not mandatory. Qty according to service plan.
General X-ray Room	genxr-d	30	30	Optional; if CT Scanning is provided, additional area is required plus separate Control room
Minor Operating Room	orms-d	36	36	Alternatively, procedure room or a combination can be provided in accordance to Service Plan
Scrub-up/ Gowning	scrb-6-d scrbs-d	6	10	Each OR with its own Scrub Up/ Gowning or a larger bay can be shared between 2 OR's
Procedure Room	proc-d	25	25	Note: This is not an Operating Room. If a minor OR is required, refer to the full requirements of Operating Unit, without any compromise.
Plaster Room	plst-14-d	14	14	
Treatment Room	trmt-14-d	14	14	
Anteroom	anrm-d	6	6	For isolation room (s)
Ensuite - Standard	ens-st-d	5	5	For Isolation room (s)
Meeting Room - Small	meet-9-d	9	9	For use as Interview, Grieving room or Telemedicine consult
Shower - Patient	shpt-d	4	4	May be combined with Toilet-Patient; separate for M/F
Toilet - Accessible, Patient	wcac-d	6	6	Separate for M/F
Toilet - Patient	wcpt-d	4	4	Separate for M/F
Support Areas				**May be shared between zones**
Bay - Beverage, Open Plan	bbev-op-d	5	5	
Bay - Handwashing, Type A	bhws-a-d	1	1	1 per 4 open treatment bays, minimum
Bay - Linen	blin-d	2	2	
Bay - Mobile Equipment	bmeq-4-d similar	4	4	
Bay - Pathology	bpath-1-d similar	1	3	

ROOM/ SPACE	Standard Component Room Codes	RDL 5-6 Qty x m^2	RDL 5-6 Qty x m^2	Remarks
		14 beds	24 beds	
Bay - Pneumatic Tube	NS	1	1	Optional
Bay - Resuscitation Trolley	bres-d	1.5	1.5	Adult and paediatric trolleys
Clean Utility	clur-8-d clur-12-d	12	12	
Cleaner's Room	clrm-6-d	6	6	
Dirty Utility	dtur-s-d dtur-12-d similar	10	12	
Disposal Room	disp-8-d	8	8	
Holding Room - Bodies	NS	12	12	Optional; also used as 'Brought in Dead' room
Medication Room	medr-10-d similar	10	12	
Office - Write-up, Shared	off-wis-d similar	12	12	
Staff Station	sstn-14-d similar sstn-20-d similar	20	30	Min. $2m^2$ per staff; may be divided for clusters
Store - Crutches	stgn-8-d similar	2	2	
Store - Disaster Equipment	stde-d	8	8	
Store - Equipment	steq-10-d similar	12	15	
Store - General	stgn-14-d similar	12	12	
Staff Areas				
Staff Room	srm-15-d similar srm-25-d similar	20	30	Min. $1.5m^2$ per staff member
Change – Staff (Male/ Female)	chst-12-d similar chst-20-d similar	14	20	Size for maximum staff per shift; separate M/F
Office- Single Person	off-s12-d	12	12	Director
Office- Single Person,	off-s9-d	9	9	Unit Manager, Staff Specialists
Office - Workstations	off-ws-d	5.5	5.5	Medical, Allied Health, Nursing, as required
Meeting Room - Medium/ Large	meet-l-15-d meet-l-30-d	15	30	

ROOM/ SPACE	Standard Component Room Codes	RDL 5-6 Qty x m^2	RDL 5-6 Qty x m^2	Remarks
		14 beds	24 beds	
Meeting Room - Small	meet-9-d similar	1 2	1 2	
Store - Photocopy/ Stationery	stps-8-d	8	8	
Toilet - Staff	wcst-d	3	3	with close access to treatment areas
Sub Total		**900.5**	**1407.5**	
Circulation %		**40**	**40**	
Area Total		**1261.0**	**1970.5**	

Please note the following:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the Standard Components
- Rooms indicated in the schedule reflect the typical arrangement according to the sample treatment spaces
- All the areas shown in the SOA follow the No-Gap system described elsewhere in these Guidelines
- Exact requirements for room quantities and sizes shall reflect Key Planning Units (KPU) identified in the Clinical Service Plan and the Operational Policies of the Unit
- Room sizes indicated should be viewed as a minimum requirement; variations are acceptable to reflect the needs of individual Unit
- Offices are to be provided according to the number of approved full-time positions within the Unit

Ambulance Base (optional)

For an Ambulance base located adjacent to the Trauma Unit or within the hospital precinct.

ROOM/ SPACE	Standard Component Room Codes	RDL 5-6 Qty x m²			Remarks
Ambulance Base					
Reception/ Clerical	recl-10-d similar			9	
Bay - Cleaning (Ambulances)	bcl-1.5-d similar			*	*Optional, External area for cleaning ambulances
Office – Single Person	off-s9-d			9	Manager
Communications Base	off-wis-d similar			20	4 person, shared
Overnight Accommodation - Bedroom	ovbr-10-d			10	As required, on-call staff
Overnight Accommodation - Ensuite	oves-4-d			4	One per overnight bedroom
Store – General	stgn-8-d similar stgn-14-d			14	Stock and supplies
Store – Drug	stdr-5-d			5	
Staff Room	srm-15-d similar			15	Size to suit no. of paramedics
Change – Staff	chst-12-d similar			10	Shower, Toilet, Lockers; Separate M/F
Sub Total				106	
Circulation %				**20**	
Area Total				127.2	

Note: If the Trauma Unit is collocated with an Emergency Unit, the above requirements can be combined with the Ambulance Base requirements for the Emergency Unit.

8 Further Reading

In addition to Sections referenced in this FPU, i.e. Part C- Access, Mobility, OH&S, Part D - Infection Prevention and Control, and Part E - Engineering Services, Part G-Acoustics readers may find the following helpful:

- DOH Standard for Emergency Departments and Urgent Care Centers, refer to website: https://www.doh.gov.ae/-/media/671B3425F92246459530838413860C47.ashx
- CDC (Center for Disease Control) US. Guidelines for Environmental Infection Control in Health-Care Facilities, US, refer to website: https://www.cdc.gov/infectioncontrol/guidelines/index.html
- Department of Health (UK) HBN 22; Accident and emergency facilities for adults and children; 2005, website: http://www.wales.nhs.uk/sites3/Documents/254/HBN%2022%20v2%20ed2005.pdf
- International Health Facility Guideline (iHFG) www.healthdesign.com.au/ihfg
- Ministry of Health UAE, Unified Healthcare Professional Qualification Requirements, 2017, refer to website: https://www.haad.ae/haad/tabid/927/Default.aspx
- The Facility Guidelines Institute (US), Guidelines for Design and Construction of Hospitals, 2018. Refer to website www.fgiguidelines.org
- The Facility Guidelines Institute (US), Guidelines for Design and Construction of Outpatient Facilities, 2018. Refer to website www.fgiguidelines.org
- The Building Regulation & Facilities for the Disabled United Arab Emirates Code
- https://www.moid.gov.ae/EPublications/The%20Building%20Regulation%20Facilities%20For%20the%20Disabled-en.pdf
- Dubai Universal Design Code, refer to:
- https://www.dha.gov.ae/Documents/HRD/RegulationsandStandards/Polocies/Dubai%20Universal%20Design%20Code%20Final%20Feb%202017.pdf