Trauma Centers Inspection Checklist- Random

Name of the Facility: _____

Date of Inspection:_____/_____/_____

Ref.	Description	Yes	No	N/A	Remarks
5	**STANDARD ONE: REGISTRATION AND LICENSURE PROCEDURES**				
5.3.	Licensed health facilities opting to add trauma services shall inform Health Regulation Sector (HRS) and apply for "amend facility license" to obtain permission to provide the required service.				
5.5.	The health facility shall maintain charter of patients' rights and responsibilities posted at the entrance of the premise in two languages (Arabic and English).				
5.7.	The health facility shall ensure it has in place adequate lighting and utilities, including temperature controls, water taps, medical gases, sinks and drains, lighting, electrical outlets and communications.				
6	**STANDARD TWO: HEALTH FACILITY REQUIREMENTS**				
6.2.	All trauma centers should install and operate medical equipment in accordance to the manufacturer's specifications.				
6.3.	The trauma center design shall provide assurance of patients and staff safety.				
6.4.	All trauma centers shall ensure easy access to the health facility and treatment areas for all patient groups.				
6.5.	Trauma Centers should be clearly identified from all approaches with Illuminated signposting to allow visibility at night.				
6.6.	All trauma centers shall be equipped to receive				

	people of determination.				
6.7.	The emergency unit must be located on ground floor, with an easy access for walk-in patients and for patients brought by ambulance. It must be equipped and staffed sufficiently.				
6.9.	Ambulance drop-off bays must be available according to the number of emergency beds as per the table in (Appendix 1).				
6.10.	Well-equipped ambulance vehicles must be ready with qualified medical staff for patient transportation if required.				
6.11.	There must be a Decontamination area for patients who are contaminated with toxic substances. It may be integrated with the Ambulance bay or directly accessible from the ambulance bay without entering any other part of the unit. The decontamination area consists of shower heads in a section of the ambulance bay ceiling or a dedicated internal room with a shower hose spray. The decontamination area should have a separate drainage system.				
7	**STANDARD TWO: GENERAL TRAUMA CENTER REQUIREMENTS**				
7.1.	Staffing:				
7.1.1.	All healthcare professionals shall hold an active DHA full time professional license and work within their scope of practice.				
7.1.2.	A Consultant physician/surgeon should be available full-time to lead the service. (Refer to each trauma level staff requirements)				
7.5.	All trauma centers shall have IT, Technology and Health Records services which include but are not limited to:				

7.5.1.	Electronic Medical Record (EMR) System (with Medical file, nursing notes, lab, pharmacy and radiology systems availability/integration)				
7.5.2.	An integration with NABIDH platform.				
7.5.3.	Picture archiving communications systems (PACS) should be in place for access to patient imaging results.				
7.5.4.	Wireless network setup for ease of communication.				
7.5.7.	Patient call, nurse assist call, emergency call systems must be available.				
7.5.8.	Telephones should be available in all offices, at all staff stations, in the clerical area and in all consultation and other clinical rooms.				
7.6.	Requirements for Triage, Referral and Patient Transfer:				
7.6.2.	Direct contact of the physician or midlevel provider with a physician at the receiving hospital is essential.				
7.6.4.a.	Both sending and receiving trauma centers must maintain a transfer registry including documented approvals with the date, time and case details prior to patient transfer.				
7.6.5.	The patient must be rapidly assessed and assigned to the appropriate care zone according to the 5 triage categories:				
a.	Category 1: - People who require to have immediate treatment and assessment simultaneously.				
b.	Category 2: - People who require treatment within 10 minutes, deemed as having an imminently life-threatening condition				
c.	Category 3: - People who require treatment within 30 minutes, deemed as having a potentially life-				

	threatening condition				
d.	Category 4: - People who require treatment within 60 minutes, deemed as having a potentially serious condition				
e.	Category 5: - People who require treatment within 120 minutes, deemed as having a less urgent condition.				
7.6.7.	Transfer agreements must exist with appropriate Level I and Level II trauma centers.				
7.6.9.	Trauma patients must not be admitted or transferred by a primary care physician without the knowledge and approval of the trauma lead.				
7.6.10.	If complex cases are being transferred out, a contingency plan should be in place and must include the following:				
a.	Initial evaluation and stabilization of the patient by the trauma surgeon to provide.				
b.	Transfer agreements with similar or higher-verified trauma centers.				
c.	Direct contact with the accepting facility to arrange for expeditious transfer or ongoing monitoring support.				
d.	Monitoring of the efficacy of the process by the PIPS programs.				
7.6.11.	For all patients being transferred for specialty care, such as burn care, microvascular surgery, cardiopulmonary bypass capability, complex ophthalmologic surgery, or high-complexity pelvic fractures, agreements with a similar or higher-qualified verified trauma center should be in place.				
7.6.12.	As per the Executive Regulations Law No. (11) of the year 2013 concerning Health Insurance in Dubai and				

	related administrative decision; patients presenting with medical emergencies and/or trauma must be granted immediate emergency care regardless of the facilities network of health insurance providers.				
7.8.	Disaster Preparedness:				
7.8.2.	The trauma center must appoint a Disaster Management Committee.				
7.8.3.	The trauma center must participate in regional disaster management plans and exercises.				
7.8.4.	Drills that test the hospital's disaster plan must be conducted at least twice a year, including actual plan activations that can substitute for drills.				
7.9.13.	At least one Airborne Infection Isolation (AII) Room must be provided. This room should be located at the entry to the Inpatient Unit and must have a viewing window from outside the room and a dedicated toilet.				
7.9.14.	Triage room:				
a.	The Triage may be performed at the reception desk.				
b.	Triage areas should be located to allow maximum visibility for incoming ambulances, incoming ambulant patients and waiting areas.				
d.	Triage should have an examination couch with appropriate privacy screening.				
g.	There must be a display of triage schemes.				
7.10.	Trauma Centers must have dedicated rooms for the following:				
7.10.4.	Consultation/ Examination rooms				
7.10.8.	Support Areas:				
a.	Handwashing stations, Linen and mobile Equipment				
c.	Cleaners Room				
f.	Store rooms (Storage available for general				

	medical/surgical supplies, medications and equipment. The area is under staff control and out of the path of normal traffic).				
7.11.	The trauma center must have a Performance Improvement and Patient Safety (PIPS) program (adult/pediatric). The trauma center's PIPS program must have a multidisciplinary trauma peer review committee chaired by the TMD and with representatives from the following specialties if available in that facility level:				
7.11.1.	General Surgery				
7.11.2.	Orthopedic Surgery				
7.11.3.	Emergency Medicine				
7.11.4.	ICU				
7.11.5.	Anesthesia				
7.11.6.	Neurosurgery				
7.11.7.	Radiology				
7.11.8.	Each member of the committee must attend at least 50 percent of all multidisciplinary trauma peer review committee meetings and must be involved in protocol development and trend analysis that relate to their specialty.				
7.11.12.	The following must be continuously evaluated by the trauma PIPS process:				
a.	Mortality data, adverse events and problem trends, and selected cases involving multiple specialties.				
b.	Availability of the operating room personnel and timeliness of starting operations.				
c.	The need for pulse oximetry, end-tidal carbon dioxide detection, arterial pressure monitoring, pulmonary artery catheterization, patient rewarming, and				

	intracranial pressure monitoring.				
d.	All ICU admissions and transfers of ICU patients to ensure that appropriate patients are being selected to remain at the trauma center vs. being transferred to a higher level of care.				
e.	Provision of timely and appropriate ICU care and coverage.				
7.11.13	The trauma center must implement at least two programs that address one of the major causes of injury in the community and means of prevention.				
7.12.	Documented Evidence:				
7.12.1.	Trauma registry data must be collected and used.				
7.12.2.	Reports on Monthly Percentage of Emergency Admissions must be provided.				
7.12.3.	Reports on total number of emergency cases categorized based on the emergency/ triage category must be provided.				
7.12.4.	Reports on total number of Functioning Beds in the EU and beds outside the EU.				
7.13.	Other Required Services:				
7.13.1.	Laundry.				
7.13.2.	Equipment maintenance.				
7.13.3.	Medical waste management as per Dubai Municipality requirements.				
7.13.4.	Housekeeping.				
8	**STANDARD THREE: LEVEL IV TRAUMA CENTER REQUIREMENTS**				
	(In addition to the above General Trauma Center Requirements)				
8.1.	Scope:				
8.1.1.	Level IV trauma centers provide initial evaluation and assessment to minor and moderately injured patients				

	that require basic resuscitation; stabilization and minor procedures along with medical services provided by General Practitioners or specialists and shall be supported by Registered Nurses. Most patients will require transfer to higher-level trauma centers				
8.1.2.	Level IV trauma centers shall be equipped to provide Advanced Trauma Life Support (ATLS) if needed.				
8.1.3.	General Hospitals <100 beds				
8.2.	Operating Hours:				
8.2.1	Level IV trauma centers must be Open 24 hours a day/ 7 days a week.				
8.3.	Staffing: (In addition to the requirements in point 7.1)				
8.3.2.	Level IV trauma centers shall be led by a Trauma Medical Director (TMD) who must be a DHA licensed Consultant physician/surgeon or General Practitioner with previous experience in emergency or trauma centers and with enough time and leadership capabilities to manage the connection with other trauma centers.				
8.3.3.	At least one consultant, specialist, or GP is required to be available per shift.				
8.3.4.	The attending surgeon is expected to be present in the EU upon patient arrival.				
8.4.	Response Time (tracked from patient arrival):				
8.4.1.	Maximum acceptable response time is 30 minutes.				
8.5.	Staff Training and Certifications:				
8.5.1.	Level IV trauma healthcare professionals who participate in the initial evaluation of trauma patients must demonstrate current verification in:				

a.	Basic life support (BLS)				
b.	Advanced Trauma Life Support (ATLS)				
c.	Advanced Cardiac Life Support (ACLS)				
d.	At least one (1) healthcare professional with Pediatric Advanced Life Support (PALS) available in each shift.				
e.	Basic Hazmat Life Support (BHLS)				
f.	All providers should attend trauma-related continuing medical education (CME) of at least 8 hours yearly.				
g.	The TMD should attend Medical Disaster Management and Emergency Preparedness Course				
8.6.	Radiology and Laboratory Requirements:				
8.6.1.	On-site Conventional radiography must be available 24/7				
8.6.2.	On site laboratory services must be available 24/7 for the standard analysis of blood, urine, and other body fluids, including micro-sampling when appropriate.				
8.6.3.	The blood bank must be capable of blood typing and cross-matching. (Refer to Standards for Blood Bank Services).				
9	**STANDARD FOUR: LEVEL III TRAUMA CENTER REQUIREMENTS**				
	(In addition to the above General Trauma Center Requirements)				
9.1.	Scope:				
9.1.1.	Level III trauma centers manage Minor and moderate injuries.				
9.1.2.	Hospitals with <100 beds.				
9.2.	Operating Hours:				

9.2.1.	Level III trauma centers must be open 24 hours / 7 days a week with access to comprehensive emergency services.				
9.3.	Staffing: (In addition to the requirements in point 7.1)				
9.3.2.	Level III trauma centers shall be led by a Trauma Medical Director (TMD) who must be a DHA licensed Consultant physician/surgeon with previous experience in emergency or trauma centers and with enough time and leadership capabilities to manage the connection with other trauma centers.				
9.3.3.	Trauma Resuscitation Team must be available 24/7				
9.3.4.	The attending surgeon is expected to be present in the operating room for all operations.				
9.3.5.	The patient-to-nurse ratio in the ICU must not exceed two to one.				
9.3.6.	A surgeon must serve as co-director or director of the ICU and be actively involved in, and responsible for, setting policies and administrative decisions related to trauma ICU patients.				
9.4.	Response Time (tracked from patient arrival):				
9.4.1.	Maximum acceptable response time is 30 minutes.				
9.4.2.	The consultant/specialist surgeon should be in the emergency unit on patient arrival, with adequate notification from the field.				
9.4.3.	Anesthesiology services must be available within 30 minutes for emergency operations and managing airway problems.				
9.4.4.	In-house anesthesia services are not required, but an anesthesiologist must be available within 30 minutes.				
9.4.5.	Qualified radiologists must be available within 30				

	minutes in person or by teleradiology for the interpretation of radiographs.				
9.4.6.	Physician coverage of the ICU must be available within 30 minutes, with a formal plan in place for emergency coverage.				
9.4.7.	The trauma resuscitation team must be available within 15 minutes				
9.5.	Radiology, Imaging, Diagnostics:				
9.5.1.	Medical Imaging Unit:				
a.	Conventional radiography must be available 24/7				
b.	Computed tomography (CT) scan 24/7				
9.6.	Laboratory:				
9.6.1.	Clinical Laboratory services must be available 24/7.				
9.6.2.	The lab must be able to cover the following minimum specialties: hematology, clinical chemistry, Immunology and serology, microbiology, anatomic pathology, cytopathology to meet the expected workload.				
9.6.3.	Coagulation studies, blood gas analysis and microbiology studies must be available 24/7.				
9.6.4.	Blood bank must be capable of blood typing and cross-matching.				
9.6.5.	The blood bank must have an adequate supply of packed red blood cells and fresh frozen plasma available within 15 minutes.				
9.6.6.	The blood bank must have an adequate supply in-house of red blood cells, fresh frozen plasma, platelets, cryoprecipitate and coagulation factors.				
9.7.	Medical Equipment & Supplies must be available as listed in the table in (Appendix2) in addition to:				
9.7.1.	Intracranial pressure monitoring equipment must be				

	available in facilities that admit neurotrauma patients.				
9.7.2.	Equipment to perform a craniotomy must be available in facilities that offer neurosurgery services.				
9.7.3.	Dialysis capabilities or a transfer agreement with a facility that provides it.				
9.8.	Staff Training and Certifications:				
9.8.1.	All healthcare professionals who provide patient care must maintain valid training/certification in:				
a.	Cardiopulmonary Resuscitation (CPR).				
b.	Basic Life Support (BLS)				
c.	Advanced Cardiac Life Support (ACLS).				
d.	Advanced Trauma Life Support (ATLS)				
e.	Prehospital trauma life support (PHTLS)				
f.	Trauma nursing core course (TNCC)				
g.	Basic Hazmat Life Support (BHLS)				
h.	At least one (1) healthcare professional with Pediatric Advanced Life Support (PALS) available in each shift				
i.	The TMD should attend Medical Disaster Management and Emergency Preparedness Course.				
j.	All providers should attend trauma-related continuing medical education (CME) of at least 8 hours yearly.				
k.	Trauma surgeons must be credentialed for pediatric trauma care if the trauma center admits more than 100 injured children /year.				
l.	Radiologists and Anesthesiologists taking call must have successfully completed an anesthesia residency program and must be currently board certified.				
m.	The trauma medical director, trauma program				

	manager, and liaisons to the trauma program in: emergency medicine, orthopedics, critical care, and neurosurgery must obtain 16 hours annually or 48 hours in 3 years of trauma-related education (continuing medical education [CME] or CE).				
9.9.	Specialty Care Units: (in addition to point 7.9)				
9.9.1.	Intensive Care Unit (medical and pediatric)				
9.9.2.	Mortuary Unit				
9.9.3.	Operating Unit (Emergency OT available within 15 minutes).				
9.9.4.	Obstetric and Gynecologic Unit.				
9.9.5.	Neonatal Intensive Care Unit (NICU).				
9.9.6	Pediatric trauma.				
9.10.	Academia:				
9.10.1.	Educational committees for physicians must be in place.				
9.10.2.	The trauma center should be able to offer trauma-related education to nurses involved in trauma care				
10	**STANDARD FIVE: LEVEL II TRAUMA CENTER REQUIREMENTS**				
	(In addition to the above General Trauma Center Requirements)				
10.1.	Scope:				
10.1.1.	Level II trauma centers manage moderate and severe injuries.				
10.1.2.	General Hospital >100 beds.				
10.2.	Operating Hours:				
10.2.1.	Must be Open 24hours a day / 7 days a week with access to comprehensive emergency services.				
10.3.	Staffing: (In addition to the requirements in point 7.1)				

10.3.2.	Level II trauma centers shall be led by a Trauma Medical Director (TMD) who must be a DHA licensed Consultant physician/surgeon with previous experience in emergency or trauma centers and with enough time and leadership capabilities to manage the connection with other trauma centers.				
10.3.3.	Trauma Resuscitation Team must be available 24/7				
10.3.4.	The attending surgeon is expected to be present in the operating room for all operations.				
10.3.5.	The patient-to-nurse ratio in the ICU must not exceed two to one.				
10.3.6.	The trauma surgeon on call must be dedicated to a single trauma center while on duty. A backup call schedule for trauma surgery must be available.				
10.3.7.	Qualified attending surgeons must: Participate in major therapeutic decisions, be present in the emergency unit for major resuscitations, be present at operative procedures, be actively involved in the critical care of all seriously injured patients.				
10.3.8.	A resident in postgraduate year 4 or 5 or an attending emergency physician who is part of the trauma team may be approved to begin resuscitation while awaiting the arrival of the attending surgeon but cannot independently fulfill the responsibilities of, or substitute for, the attending surgeon.				
10.3.9.	The emergency unit must have a designated emergency physician director supported by an appropriate number of additional physicians to ensure immediate care for injured patients. An emergency physician must be present in the EU at all times.				
10.3.10.	Neurotrauma director must be a neurosurgeon highly				

	experienced in the care of injured patients.				
10.3.11.	Neurotrauma care must be continuously present.				
10.3.12.	If one neurosurgeon covers two centers within the same limited geographic area, there must be a backup schedule.				
10.3.13.	Anesthesia services in Level II trauma centers must be available in-house 24/7.				
10.3.14.	Anesthetic care of injured patients must be supervised by an anesthesiologist who is highly experienced in the care of injured patients.				
10.3.15.	A surgeon must serve as co-director or director of the ICU and be actively involved in, and responsible for, setting policies and administrative decisions related to trauma ICU patients.				
10.4.	Response Time (tracked from patient arrival):				
10.4.1.	Maximum acceptable response time is 15 minutes.				
10.4.2.	The consultant/specialist surgeon should be in the emergency unit on patient arrival, with adequate notification from the field.				
10.4.3.	Orthopaedic Team must be available in the trauma resuscitation area within 30 minutes after consultation has been requested by the surgical trauma team leader for multiply injured patients.				
10.4.4.	Anaesthesiology services must be available within 30 minutes for emergency operations and managing airway problems.				
10.4.5.	Qualified radiologists must be available within 30 minutes in person or by teleradiology for the interpretation of radiographs				
10.4.6.	Qualified radiologists must be available within 30 minutes to perform complex imaging studies, or				

	interventional procedures.				
10.4.7.	The MRI technologist may respond from outside the hospital within 1 hour of being called.				
10.4.8.	Neurotrauma care must respond within 30 minutes				
10.5.	Specialty Care Units: (in addition to point 7.9)				
10.5.1.	Intensive Care Unit (medical and pediatric)				
10.5.2.	Mortuary Unit				
10.5.3.	Operating Unit (Emergency OT available within 15 minutes).				
10.5.4.	Obstetric and Gynecologic Unit.				
10.5.5.	Neonatal Intensive Care Unit (NICU).				
10.5.6.	Pediatric trauma.				
10.5.7.	Burn care				
10.5.8.	Microvascular surgery				
10.5.9.	Cardiopulmonary bypass capability				
10.5.10.	High-complexity pelvic fractures				
10.5.11.	Complex ophthalmologic surgery				
10.5.12.	Cardiac Investigation Unit (particularly Cardiac Catheter Laboratories)				
10.5.13.	Coronary Care unit				
10.5.14.	Endoscopy Unit				
10.5.15.	Mental Health Unit				
10.5.16.	Rehabilitation Unit				
10.5.17.	At least one Airborne Infection Isolation (AII) Room must be provided. This room should be located at the entry to the Inpatient Unit and must have a viewing window from outside the room and a dedicated toilet.				
10.5.18.	Mental Health Assessment Rooms				
10.5.19.	Short-Stay Unit/ Emergency Medical Unit for				

	extended observation and management of patients				
10.5.20.	Operating Rooms. Promptly available for emergency musculoskeletal operations and equipped with resources including instruments, equipment, and personnel.				
10.5.21.	A PACU with qualified nurses must be available 24 hours per day to provide care for the patient if needed during the recovery phase. The PACU must have the necessary equipment to monitor and resuscitate patients, consistent with the process of care designated by the institution.				
10.7.	Radiology, Imaging, Diagnostic:				
10.7.1.	Medical Imaging Unit:				
a.	Conventional radiography must be available 24/7.				
b.	Computed tomography (CT) scan must be 24/7.				
c.	Magnetic resonance imaging (MRI) must be available 24/7.				
d.	Fluoroscopy, ultrasound, Point of Care US, mammography, and other interventional radiographic procedures and immediate access to those modalities must be available 24/7.				
10.7.2.	trauma center must have a mechanism to view radiographic imaging from referring hospitals.				
10.7.3.	Interventional radiologic procedures and sonography must be available 24/7				
10.7.4.	The MRI technologist may respond from outside the hospital within 1 hour of being called.				
10.8.	Laboratory:				
10.8.1.	Clinical Laboratory services must be available 24/7.				
10.8.2.	The lab must be able to cover the following minimum specialties: hematology, clinical chemistry,				

	Immunology and serology, microbiology, anatomic pathology, cytopathology to meet the expected workload.				
10.8.3.	Coagulation studies, blood gas analysis and microbiology studies must be available 24/7.				
10.8.4.	Blood bank must be capable of blood typing and cross-matching.				
10.8.5.	The blood bank must have an adequate supply of packed red blood cells and fresh frozen plasma available within 15 minutes				
10.8.6.	The blood bank must have an adequate supply in-house of red blood cells, fresh frozen plasma, platelets, cryoprecipitate and coagulation factors.				
10.9.	Medical Equipment & Supplies must be available as listed in the table in (Appendix2) in addition to:				
10.9.1.	Equipment to perform a craniotomy.				
10.9.2.	Cardiopulmonary bypass equipment and a contingency plan if it is not immediately available				
10.9.3.	End-tidal carbon dioxide detection.				
10.9.4.	Arterial pressure monitoring.				
10.9.5.	Pulmonary artery catheterization.				
10.9.6.	Intracranial pressure monitoring equipment.				
10.9.7.	All necessary equipment for musculoskeletal trauma care.				
10.9.8.	Cardiopulmonary bypass equipment immediately available, and an immediate transfer plan to an appropriate center if not available.				
10.9.9.	Acute hemodialysis.				
10.9.10.	The ICU must have the necessary equipment to monitor and resuscitate patients.				
10.10.	Staff Training and Certifications:				

10.10.1.	Cardiopulmonary Resuscitation (CPR).				
10.10.2.	Cardiopulmonary Resuscitation (CPR).				
10.10.3.	Basic Life Support (BLS)				
10.10.4.	Advanced Cardiac Life Support (ACLS).				
10.10.5.	Advanced Trauma Life Support (ATLS)				
10.10.6.	Prehospital trauma life support (PHTLS)				
10.10.7.	Trauma nursing core course (TNCC)				
10.10.8.	Basic Hazmat Life Support (BHLS)				
10.10.9.	At least one (1) healthcare professional with Pediatric Advanced Life Support (PALS) available in each shift.				
10.10.10.	Trauma surgeons must be credentialed for pediatric trauma care if the trauma center admits more than 100 injured children /year.				
10.10.11.	The TMD should attend Medical Disaster Management and Emergency Preparedness Course.				
10.10.12.	Radiologists and Anesthesiologists taking call must have successfully completed an anesthesia residency program and must be currently board certified.				
10.11.	Academia:				
10.11.1.	Educational committees for physicians must be in place.				
10.11.2.	The trauma center should be able to offer trauma-related education to nurses involved in trauma care.				
10.11.3.	The trauma center must have an Education Unit				
10.11.4.	The trauma center must provide training/ residency program.				
10.11.5.	There must be an Affiliated University with the trauma center				
10.11.6.	The trauma center must provide research.				

11	STANDARD SIX: LEVEL I TRAUMA CENTER REQUIREMENTS				
	(In addition to the above General Trauma Center Requirements)				
11.1.	Scope:				
11.1.1.	Level I Trauma Centers manage the most severe injuries.				
11.1.2.	General Hospitals >100 beds.				
11.2.	Operating Hours:				
11.2.1.	A Level I facility must be open 24 hours a day, 7 days a week with access to comprehensive emergency services.				
11.3.	Staffing: (In addition to the requirements in point 7.1)				
11.3.2.	Level I trauma centers shall be led by a Trauma Medical Director (TMD) who must be a DHA licensed Consultant physician/surgeon with previous experience in emergency or trauma centers and with enough time and leadership capabilities to manage the connection with other trauma centers.				
11.3.3.	Trauma Resuscitation Team must be available 24/7.				
11.3.4.	The attending surgeon is expected to be present in the operating room for all operations.				
11.3.5.	The patient-to-nurse ratio in the ICU must not exceed two to one.				
11.3.6.	The trauma surgeon on call must be dedicated to a single trauma center while on duty. A backup call schedule for trauma surgery must be available.				
11.3.7.	Qualified attending surgeons must Participate in major therapeutic decisions, be present in the emergency unit for major resuscitations, be present at operative procedures and be actively involved in				

	the critical care of all seriously injured patients.				
11.3.8.	A resident in postgraduate year 4 or 5 or an attending emergency physician who is part of the trauma team may be approved to begin resuscitation while awaiting the arrival of the attending surgeon but cannot independently fulfill the responsibilities of, or substitute for, the attending surgeon.				
11.3.9.	A designated emergency physician director supported by an appropriate number of additional physicians to ensure immediate care for injured patients. An emergency physician must be present in the EU at all times.				
11.3.10.	Neurotrauma director must be a neurosurgeon highly experienced in the care of injured patients.				
11.3.11.	Neurotrauma care must be continuously present and respond within 30 minutes.				
11.3.12.	If one neurosurgeon covers two centers within the same limited geographic area, there must be a backup schedule				
11.3.13.	Anesthesia services must be available in-house 24/7.				
11.3.14.	Anesthetic care of injured patients must be supervised by an anesthesiologist who is highly experienced in the care of injured patients.				
11.3.15.	A surgeon must serve as co-director or director of the ICU and be actively involved in, and responsible for, setting policies and administrative decisions related to trauma ICU patients.				
11.4.	Response Time (tracked from patient arrival):				
11.4.1.	Maximum acceptable response time is 15 minutes.				
11.4.2.	The consultant/specialist surgeon should be in the emergency unit on patient arrival, with adequate				

	notification from the field				
11.4.3.	Orthopedic Team must be available in the trauma resuscitation area within 30 minutes after consultation has been requested by the surgical trauma team leader for patients with multiple injuries.				
11.4.4.	Anesthesiology services must be available within 30 minutes for emergency operations and managing airway problems.				
11.4.5.	Qualified radiologists must be available within 30 minutes in person or by teleradiology for the interpretation of radiographs.				
11.4.6.	Qualified radiologists must be available within 30 minutes to perform complex imaging studies, or interventional procedures.				
11.4.7.	The MRI technologist may respond from outside the hospital within 1 hour of being called.				
11.4.8.	Neurotrauma care must respond within 30 minutes.				
11.5.	Specialty Care Units: (in addition to point 7.9)				
11.5.1.	Intensive Care Unit (medical and pediatric)				
11.5.2.	Mortuary Unit				
11.5.3.	Operating Unit (Emergency OT available within 15 minutes).				
11.5.4.	Obstetric and Gynecologic Unit.				
11.5.5.	Neonatal Intensive Care Unit (NICU)				
11.5.6.	A pediatric emergency unit area.				
11.5.7.	A pediatric intensive care area.				
11.5.8.	Burn care.				
11.5.9.	Microvascular surgery				
11.5.10.	Cardiopulmonary bypass capability				

11.5.11.	High-complexity pelvic fractures				
11.5.12.	Complex ophthalmologic surgery				
11.5.13.	Cardiac Investigation Unit (particularly Cardiac Catheter Laboratories)				
11.5.14.	Coronary Care unit				
11.5.15.	Endoscopy Unit				
11.5.16.	Mental Health Unit				
11.5.17.	Rehabilitation Unit				
11.5.18.	Mental Health Assessment Rooms				
11.5.19.	Short-Stay Unit/ Emergency Medical Unit for extended observation and management of patients				
11.5.20.	Operating Rooms. Promptly available for emergency musculoskeletal operations and equipped with resources including instruments, equipment, and personnel.				
11.5.21.	A PACU with qualified nurses must be available 24 hours per day to provide care for the patient if needed during the recovery phase. The PACU must have the necessary equipment to monitor and resuscitate patients, consistent with the process of care designated by the institution.				
11.6	Radiology, Imaging, Diagnostic:				
11.6.1.	Medical Imaging Unit:				
a.	Conventional radiography must be available 24/7				
b.	Computed tomography (CT) scan must be 24/7				
c.	Magnetic resonance imaging (MRI) must be available 24/7				
d.	Fluoroscopy, ultrasound, Point of Care US, mammography, and other interventional radiographic procedures and immediate access to those modalities				

	must be available 24/7.				
11.6.2.	Trauma Centers must have a mechanism to view radiographic imaging from referring hospitals.				
11.6.3.	Interventional radiologic procedures and sonography must be available 24/7.				
11.6.4.	The MRI technologist may respond from outside the hospital within 1 hour of being called.				
11.7.	Laboratory:				
11.7.1.	Clinical Laboratory services must be available 24/7.				
11.7.2.	The lab must be able to cover the following minimum specialties: hematology, clinical chemistry, Immunology and serology, microbiology, anatomic pathology, cytopathology to meet the expected workload.				
11.7.3.	Coagulation studies, blood gas analysis and microbiology studies must be available 24/7.				
11.7.4.	Blood bank must be capable of blood typing and cross-matching				
11.7.5.	The blood bank must have an adequate supply of packed red blood cells and fresh frozen plasma available within 15 minutes				
11.7.6.	The blood bank must have an adequate supply in-house of red blood cells, fresh frozen plasma, platelets, cryoprecipitate and coagulation factors.				
11.8.	Medical Equipment & Supplies must be available as listed in the table in (Appendix2) in addition to:				
11.8.1.	Equipment to perform a craniotomy.				
11.8.2.	Cardiopulmonary bypass equipment and a contingency plan if it is not immediately available.				
11.8.3.	Intracranial pressure monitoring equipment.				
11.8.4.	End-tidal carbon dioxide detection.				

11.8.5.	Arterial pressure monitoring.				
11.8.6.	Pulmonary artery catheterization.				
11.8.7.	All necessary equipment for musculoskeletal trauma care				
11.8.8.	Cardiopulmonary bypass equipment immediately available, and an immediate transfer plan to an appropriate center if not available.				
11.8.9.	Acute hemodialysis.				
11.8.10.	The ICU must have the necessary equipment to monitor and resuscitate patients.				
11.9.	Staff Training and Certifications:				
11.9.1.	Cardiopulmonary Resuscitation (CPR)				
11.9.2.	Basic Life Support (BLS).				
11.9.3.	Advanced Cardiac Life Support (ACLS).				
11.9.4.	Advanced Trauma Life Support (ATLS)				
11.9.5.	Prehospital trauma life support (PHTLS)				
11.9.6.	Trauma nursing core course (TNCC)				
11.9.7.	Basic Hazmat Life Support (BHLS)				
11.9.8.	At least one (1) healthcare professional with Pediatric Advanced Life Support (PALS) available in each shift.				
11.9.9.	The TMD should attend Medical Disaster Management and Emergency Preparedness Course.				
11.9.10.	Trauma surgeons must be credentialed for pediatric trauma care if the trauma center admits more than 100 injured children /year.				
11.9.11.	Each trauma center must have someone in a leadership position that has injury prevention as part of his or her job description.				
11.9.12.	Level I trauma centers must actively participate in				

	national and citywide trauma system meetings and committees that provide oversight. A level I trauma center must also be the local trauma authority and assume the responsibility for providing training for prehospital and hospital-based providers.				
11.9.13.	Radiologists and Anesthesiologists taking call must have successfully completed an anesthesia residency program and must be currently board certified.				
11.10.	Academia:				
11.10.1.	Educational committees for physicians must be in place.				
11.10.2.	The trauma center should be able to offer trauma-related education to nurses involved in trauma care				
11.10.3.	The trauma center must have an Education Unit				
11.10.4.	The trauma center must provide training/ residency program.				
11.10.5.	There must be an Affiliated University with the trauma center.				
11.10.6.	The trauma center must provide research.				
11.10.7.	The trauma center must provide some means of referral and access to trauma center resources.				
11.10.8.	The facility must have peer reviewed publications related to the trauma team.				
11.10.9.	The administration of a Level I trauma center must demonstrate support for research by, for example, providing basic laboratory space, sophisticated research equipment, advanced information systems, biostatical support.				
APPENDIX 1:	**REQUIRED AMBULANCE DROP-OFF BAYS**				
	Number of ambulance drop-off bays required by the number of EU beds:				

a.	Number of EU beds Up to 15, Number of ambulance drop-off bays 2				
b.	Number of EU beds Up to 25, Number of ambulance drop-off bays 3				
c.	Number of EU beds Up to 35, Number of ambulance drop-off bays 3-4				
d.	Number of EU beds Up to 45, Number of ambulance drop-off bays 5				
e.	Number of EU beds Up to 55, Number of ambulance drop-off bays 6				
f.	Number of EU beds 55+, Number of ambulance drop-off bays 6+				
Note:	Beds = Acute beds + Resus + Trauma but not observation or fast track				
APPENDIX 2:	**MINIMUM MEDICAL EQUIPMENT AND SUPPLIES**				
A.	**Minimum Medical Equipment and Supplies**				
1	A crash cart equipped with a defibrillator, necessary drugs and other CPR equipment and test strips.				
2	Resuscitation Kit, Cardiac board and Oral airways				
3	Laryngoscope with blades				
4	Diagnostic set				
5	X-ray viewer				
6	Patient trolley with IV stand				
7	Wheelchair				
8	Nebulizer				
9	Autoclave				
10	Refrigerator with temperature control				
11	Floor Lamp (Operating light mobile)				
12	Pelvic binders				
13	Chest tubes				

14	Sets of instruments which include suturing set, dressing set, foreign body removal set or minor set and cut down set.				
15	Portable Vital Signs Monitor (ECG, Pulse-Oximetry, Temperature, NIBP, EtCO2)				
16	Portable transport ventilator with different ventilation mode (IPPV, SIMV, spontaneous, PS).				
17	Suction apparatus that meets operating room standards				
18	Glucometer				
19	Alcohol meter				
20	Rapid fluid infusers				
21	Thermal control equipment for patients				
22	Equipment for bronchoscopy				
23	Equipment for Gastrointestinal endoscopy				
24	Resuscitation fluids				
25	Intraoperative radiologic capabilities				
26	Equipment for fracture fixation				
B.	**Disposable supplies including:**				
1	Suction tubes (all sizes)				
2	Tracheotomy tube (all sizes)				
3	Catheters (different sizes)				
4	IV sets				
5	Blood transfusion set				
6	Syringes (different sizes)				
7	Dressings (gauze, sofratulle, etc.)				
8	Crepe bandages (all sizes)				
9	Splints (Thomas splints, cervical collars, finger splints)				

10	All types of fluids (e.g. D5W, D10W, Lactated Ringers, Normosol R, Normosol M, Haemaccel, etc.)				
19	Broslow tape, US				
C.	**Resuscitation Area Equipment:**				
1	Cardiac monitor machine with facility for ECG, printing, NIBP, SpO2, temperature probe, invasive pressure, CO2 monitor.				
2	A procedure light similar to a small, single arm operating light				
3	Equipment to hang IV fluids and attach infusion pumps				
4	Wall mounted diagnostic set (ophthalmoscope/auroscope)				
5	Clinical scrub basin with paper towel and soap fittings				
6	Overhead X-ray or mobile digital x-ray				
7	Display of resuscitation flow chart (as per scope of service)				
APPENDIX 3:	**MINIMUM MEDICATION SUPPLY**				
D.	**Required Items for Emergency Bag:**				
1	IV Tubing/Set, Quantity as required				
2	IV Cannulas, Quantity 2 in different sizes 3- way connectors as required				
3	Scalp Veins set - in different sizes, Quantity as required				
4	Syringes - in different sizes, Quantity as required				
E.	**Other consumables:**				
1	Airways with different sizes, Quantity 10				
2	Alcohol swabs, Quantity As required				
3	Cotton Balls, Quantity 3				

4	Sterile Gauze, Quantity 5				
5	Plasters/Tegaderm, Quantity 2				
6	Disposable Gloves, Quantity 2				
7	Dressing Set, Quantity 5				
8	Sterile Tongue Depressor, Quantity 2				
9	Tourniquets, Quantity 1				
10	Scissors, Quantity 1				
11	Pen Torch, Quantity 1				
12	BP apparatus, Quantity 1				
13	Stethoscope, Quantity as required				
14	Sterile Gloves in different sizes, Quantity as required				
15	Band aids, Quantity as required				
16	ambu bags, Quantity 1 adult and 1 pediatric				
APPENDIX 4:	**TRAUMA TEAM MEMBERS AND MINIMUM REQUIRED STAFF**				
A.	**Level I**				
1	General surgeon (team leader) 24/7				
2	Emergency physician 24/7				
3	Emergency unit nurses 24/7				
4	Trauma Resuscitation Team 24/7				
5	A laboratory technician On-call 24/7				
6	A radiology technologist 24/7				
7	Radiologist 24/7				
8	Radiographer On-call 24/7				
9	CT technologist On-call 24/7				
10	MRI technologist On-call 24/7				
11	Critical care physician/ Intensivist Full time				
12	Critical Care Nurses (24/7)				
13	An anesthesiologist 24/7				

14	Orthopedic Surgeon (on-call and promptly available 24/7)				
15	Internal medicine				
16	Neurosurgery				
17	Thoracic surgery				
18	Vascular Surgery				
19	Cardiac surgery				
20	Urology				
21	Cardiology				
22	Maxillofacial				
23	Ophthalmology				
24	Otolaryngology				
25	Gastroenterology				
26	Hand Surgery				
27	Plastic Surgery				
28	Obstetric and gynecologic surgery				
29	Otolaryngology				
30	Microvascular Surgery				
31	Infectious disease				
32	Pulmonary medicine				
33	Nephrology				
34	Dialysis team				
35	Surgical and emergency residents (if applicable)				
36	Occupational therapist				
37	Speech therapist				
38	Respiratory therapist (On-Call 24/7)				
39	Physical therapist				
40	Rehabilitation Specialists				

41	Nutrition support				
42	Social worker				
43	Administrator and Security officers				
B.	**Level II**				
1	General surgeon (team leader) 24/7				
2	Emergency physician 24/7				
3	Emergency unit nurses 24/7				
4	Trauma Resuscitation Team 24/7				
5	A laboratory technician On-call 24/7				
6	A radiology technologist 24/7				
7	Radiologist 24/7				
8	Radiographer On-call 24/7				
9	CT technologist On-call 24/7				
10	MRI technologist On-call 24/7				
11	Critical care physician/ Intensivist Full time				
12	Critical Care Nurses (24/7)				
13	An anesthesiologist 24/7				
14	Orthopedic Surgeon (on-call and promptly available 24/7)				
15	Internal medicine				
16	Neurosurgery				
17	Thoracic surgery				
18	Vascular Surgery				
19	Cardiac surgery				
20	Urology				
21	Cardiology				
22	Maxillofacial				
23	Ophthalmology				

24	Otolaryngology				
25	Gastroenterology				
26	Hand Surgery				
27	Plastic Surgery				
28	Obstetric and gynecologic surgery				
29	Otolaryngology				
30	Microvascular Surgery				
31	Infectious disease				
32	Pulmonary medicine				
33	Nephrology				
34	Dialysis team				
35	Surgical and emergency residents (if applicable)				
36	Occupational therapist				
37	Speech therapist				
38	Respiratory therapist (On-Call 24/7)				
39	Physical therapist				
40	Rehabilitation Specialists				
41	Nutrition support				
42	Social worker				
43	Administrator and Security officers				
C.	**Level III**				
1	General surgeon (team leader) 24/7				
2	Emergency physician 24/7				
3	Emergency unit nurses 24/7				
4	Trauma Resuscitation Team 24/7				
5	A laboratory technician On-call 24/7				
6	A radiology technologist 24/7				
7	Radiologist 24/7				

8	Radiographer On-call 24/7				
11	Critical care physician/ Intensivist Full time				
12	Critical Care Nurses (24/7)				
13	An anesthesiologist 24/7				
14	Orthopedic Surgeon (on-call and promptly available 24/7)				
15	Internal medicine				
38	Respiratory therapist (On-Call 24/7)				
39	Physical therapist				
41	Nutrition support				
42	Social worker				
43	Administrator and Security officers				
D.	**Level IV**				
1	General surgeon (team leader) 24/7				
2	Emergency physician 24/7				
3	Emergency unit nurses 24/7				
4	Trauma Resuscitation Team 24/7				
5	A laboratory technician On-call 24/7				
6	A radiology technologist 24/7				
41	Nutrition support				
42	Social worker				
43	Administrator and Security officers				