Document Title:	Triage Protocol for Burns Emergencies and their Referrals in Pre-Hospital and Emergency Department (ED) Setting: EMS and Self-Presenting Emergency Departments' Arrivals		
Document Ref. Number:	Protocol/Burns/1.0	Version	1.0
Approval Date:	7 December 2017	Effective Date:	10 December 2017
Document Owner/Control	DOH Policy and Standards Department		
Applies to	The entire healthcare sector of Abu Dhabi.		
Document Classification	Public		
Governing Theme	Integrated Continuum of Care: Care Coordination		
Related Laws, Policies, Standards, Circulars, Guidelines	• Ambulance Clinical practice Guidelines 2015. • HAAD Circular on Treatment of Emergency Cases For non UAE Nationals (HSS-33/2007). • HAAD Standard for Emergency Departments In the Emirate of Abu Dhabi • HAAD Standard for Minimum Preparedness for Common Medical Emergencies In Inpatient Care Setting, Outpatient Care Setting, Ambulance Services and Interfacility Patient Transfer (HAAD/EMS/SD/0.9)		

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ABOUT DEPARTMENT OF HEALTH ABU DHABI (DOH)

The Department of Health (DOH) previously known as the Health Authority Abu Dhabi (HAAD) is the regulative body of the Health System in the Emirate of Abu Dhabi and seeks excellence in Health for the community by regulating and monitoring the health status of the population. DOH shapes the regulatory framework for the health system, inspects against regulations, enforces regulations, and encourages the adoption of best practices and performance targets by all health service providers. DOH also drives programmes to increase awareness and adoption of healthy living standards among the residents of the Emirate of Abu Dhabi in addition to regulating scope of services, premiums and reimbursement rates of the health system in the Emirate of Abu Dhabi.

The Health System of the Emirate of Abu Dhabi is comprehensive, encompasses the full spectrum of health services and is accessible to all residents of Abu Dhabi. The health system encompasses, providers, professionals, patients, insurers and the regulator. Providers of health services include public and private services and the system is financed through mandatory health insurance (with the exception to Thiqa) and has three main sources of financing: Employers or Sponsors, the Government and Individuals. The Health Insurance scheme places responsibilities on any Insurer, Broker, Third Party Administrator, Health Provider, Employer, Sponsor (including educational establishments), Limited Income Investors and Insured Persons to participate in the Health Insurance Scheme.

ABBREVIATIONS

- CASMEET: The necessary information and reporting mechanism that EMS or ED staff are required follow in order to pass concise and reliable information to the receiving facilities (see Appendix 4 for details).
- ED: Emergency Department.
- EMS: Emergency Medical Services.
- ESL1: Emergency Severity Level 1.
- TBSA: Total Body Surface Area.

1. Introduction

One of the priorities of the Department of Health (DOH) is to achieve an integrated patient-centric model of care, where the right care of time critical emergencies is coordinated and delivered in the right place, by the right expertise, at the right time without interruption, unless clinically justified, and irrespective of healthcare insurance coverage.

This Protocol focuses on burns emergencies and seeks to ensure that:

- No burns emergency case is rejected irrespective of healthcare insurance coverage.
- EMS take burns emergency cases to a facility capable of dealing with the specific type and level of emergency.
- Facilities that are not designated to dealing with the specific type and level of self-presented burns emergencies transfer patients to designated facilities as quickly as possible.
- EDs designated to dealing with the specific type and level of self-presented emergencies keep and treat them.

This protocol was developed in consultation with the DOH (previously HAAD) - led Burns Taskforce, under the Multi-stakeholder platform to drive integration of care. For a list of member organisation and their representatives, refer to Appendix 1.

2. Main Objective

The main objective of this document is to define the triage process that EMS and healthcare facilities must follow for burns emergencies for both EMS-driven and self-presenting arrivals.

3. Sub-Objectives

The above objective is achieved through the fulfilment of the following sub-objectives:

3.1 Define Burns and Wounds Assessment Criteria applied by EDs, to govern burn patients' flow to the appropriate level of care (Appendix 2).
3.2 Define Burns Unit admission criteria (Appendix 3).
3.3 Define Paediatric Emergency Service admission criteria for burns (Appendix 3).
3.4 Specify the required data and reporting mechanism to be followed when conveying patient information to the receiving facility (Appendix 4).
3.5 List of designation criteria for Specialised Burn Services (Appendix 5).
3.6 List of currently designated facilities with Specialised Burn Services (Appendix 6).

4. Scope

This Protocol applies to all healthcare facilities within the Emirate of Abu Dhabi and Emergency Medical Services.

5. Definitions

5.1 **Specialised Burn Services**: Burns Centres and Burns Units.

5.2 **Burns Centres**: a facility that cares for the highest level of injury complexity and offers a separately staffed, geographically discrete ward. The facility is skilled to the ICU level of critical care and has immediate operating theatre access.[1]

5.3 **Burns Unit**: a facility that deals with the moderate level of injury complexity, with its separately staffed, discrete ward. These facilities are up to the HDU level of critical care and operating theatre access suitable for the case mix

5.4 **Emergency Department (ED)**: every facility that complies with DOH's definition as per HAAD's Standard for Emergency Departments.[2]

5.5 **Emergency Medical Services**: ambulances deployed though the emergency number 999.

5.6 **First-degree burn**: superficial burn.

5.7 **Second-degree burn (2a)**: partial thickness/dermal burn.

5.8 **Second-degree burn (2b):** deep dermal burn.

5.9 **Third-degree burn**: full thickness of burn affecting 40% TBSA or more.

5.10 **Paediatric Emergency Services**: any ED that can deal with ESL1 paediatric emergencies.[3]

5.11 **Urgent Care Centre**: every facility that complies with DOH's definition as per HAAD's Standard for Emergency Departments.[4]

[1] At the time of publication of this Protocol, there were no facilities in Abu Dhabi that meet the Burn Centre designation Criteria.

[2] HAAD Standard for Emergency Departments in the Emirate of Abu Dhabi (2017).

3 For details, refer to HAAD's "Triage Protocol for Paediatric emergencies and their Referrals in Pre-Hospital and Emergency Department (ED) Setting: EMS and Self-Presenting Emergency Departments' Arrivals.

[4] Ibid.

6. Triage for EMS-Driven Burns Emergencies

EMS conduct triage as per Ambulance Field Triage Criteria[5] to establish the type of burn injuries and the necessary level of care. Irrespective of burn type, all burns emergencies will be first transported to the closest ED to be stabilised:

6.1 EMS contact the closest ED to alert them about the incoming emergency.

6.2 EMS communicate the patient's data to the closest ED as per CASMEET (Appendix 4).

The receiving facility should assess patients for potential transfer to the Burns Unit (Appendix 3). Those who need to be admitted to a designated facility with specialised burns services will be transferred after stabilisation.

6.3 The referring ED should contact the closest designated Burns Unit to alert them about the incoming burns emergency:

6.4 Time limit: interfacility transfer must be carried out by an ambulance (either internal or external) that complies with DOH's (previously HAAD's) relevant Standard[6] within four hours of emergency arrival to the ED.

6.5 Unconditional acceptance: the receiving designated Burns Unit will accept the patient irrespective of bed availability or insurance cover.

6.6 Data exchange: the referring ED carries out a clinical handover to the designated Burns Unit to exchange all the necessary data (Appendix 4).

6.7 Ambulance Transfer: interfacility transfer must be carried out with an ambulance service that complies with HAAD's Ambulance related Standard.[7]

7. Triage for Self-Presenting Burns Cases

Any self-presenting patient with burns that arrives to any Urgent Care Centre or ED will be stabilised using the respective facility burns protocol regardless of the severity of the burn:

7.1 Self-presenting patients who need to be admitted to a Burns Unit (Appendix 3) will be transferred after stabilisation.

7.2 The referring Urgent Care Centre or ED should contact the closest designated Burns Unit to alert them about the incoming burns emergency:

- Ambulance Transfer: inter-facility transfer must be carried out with an ambulance service that complies with HAAD's Ambulance related Standard.[8]
- Data exchange: the referring Urgent Care Centre or ED carries out a clinical handover to the Burns Unit to exchange all the necessary data (Appendix 4).

[5] As per Ambulance Clinical practice Guidelines 2015

[6] HAAD Standard for Minimum Preparedness for Common Medical Emergencies In Inpatient Care Setting, Outpatient Care Setting, Ambulance Services and Interfacility Patient Transfer

[7] Ibid.

[8] Ibid.

- Time limit: interfacility transfer must be carried out by an ambulance (either internal or external) that complies with DOH's (previously HAAD's) relevant Standard[9] within four hours of emergency arrival to the ED.
- Unconditional acceptance: The receiving Burns Unit will accept the patient irrespective of bed availability or insurance cover.[10]

[9] Ibid.
[10] HAAD Circular on Treatment of Emergency Cases For non UAE Nationals (HSS-33/2007).

8. Enforcement and Compliance

DOH will enforce the compliance of all concerned stakeholders with this Protocol to ensure that:

- No burns emergency case is rejected irrespective of healthcare insurance coverage.
- EMS take burns emergency cases to a facility capable of dealing with the specific type and level of emergency.
- Facilities that are not designated to dealing with the specific type and level of self-presented burns emergencies transfer patients to designated facilities as quickly as possible.
- EDs designated to dealing with the specific type and level of self-presented emergencies keep and treat them.

DOH may impose sanctions in relation to any breach of requirements under this Protocol in accordance with Chapter IX, HAAD Policy on Complaints, Investigations, Regulatory Action and Sanctions, The Healthcare Regulator Policy Manual Version 1.0.

9. Appendices

9.1 Appendix 1

Burns Task Force Members and Experts

Member	Organisation
Dr. Maitha Al Darei	Abu Dhabi Police Ambulance
Khaled Mohammed Al Kaabi	Abu Dhabi Police Ambulance
Mahmoud Mohammed Al Baloushi	Abu Dhabi Police Ambulance
Mohammed Naser Al Bahri	Abu Dhabi Police Ambulance
Dr. Mazin Alsaidi	ADNOC
Bunna Eng Tusitala	Al Mafraq Hospital
Dr Zaka Khan	Al Noor Hospital
Dr. Fawad Khan	Al Noor Hospital
Dr. Charles F Stanford	Burjeel Hospital (VPS)
Dr. Howard S. Podolsky	Cambridge Medical and Rehabilitation Centre
Jose Lopez	Cleveland Clinic Abu Dhabi (CCAD)
Dr. Hatem Abueida	Daman
Dr. Wafa Al Mahri	Daman
Mr. Mohammed Abu Jubara	Daman
Dr Muqdad Al Hammadi	Al Mafraq Hospital
Dr. Ayman Adel Ahmad	National Ambulance
Michelle Navalta	National Ambulance
Dr. Merezban Katrak	NMC Hospital
Ruth Taylor	SEHA Corporate
Dr. Saleh Fares	Zayed Military Hospital

9.2 Appendix 2
Burns Assessment Criteria to be applied by ED

Assessment	√ Yes X No	Findings	Initial
Primary Survey A: Airway Maintenance with Cervical Spine Control			
B: Breathing and Ventilation - Administer 100% Oxygen - Expose the chest and ensure chest expansion is adequate and bilaterally equal – consider escharotomy in full thickness chest burns - Consider early intubation in signs of inhalation injury - Record Respiratory Rate and SPO2			
C: Circulation with Hemorrhage Control - Inspect for obvious signs of bleeding - Monitor and record peripheral pulses for rate, strength (strong/weak) and rhythm in all burned limbs - Assess capillary refill - Record Heart Rate and Blood Pressure - Monitor circulation of peripheries if a circumferential burn is present - Elevate limb - - Consider escharotomy for patients with compromised circulation in circumferential burns			
D: Disability: Neurological Status - Evaluate level of consciousness: - A – Alert - V – Response to Vocal stimuli - P – Responds to Painful stimuli - U – Unresponsive - Examine pupils response to light for reaction and size - - Assess for restlessness and altered level of consciousness, which can indicate hypoxemia / Carbon Monoxide Poisoning			
E: Exposure with Environmental Control - Remove all clothing and jewelry near burned areas - Provide Burn First Aid: cool burn with tepid water for half hour, apply cling wrap/sterile non-adherent dressing - Keep patient warm (minimum room temp 24°C) - - Record patients temperature			
F: Fluid Resuscitation			

Assessment	√ Yes X No	Findings	Initial
- Fluid resuscitation is required for paediatric burns of ≥10% and - Adult burns of ≥15% - Estimate total body surface area burned, according to guideline - Insert 2 large bore (16-18 gauge) peripheral IV Cannulas preferably through unburned tissue (avoid burned tissue if possible) - Collect bloods simultaneously for essential base line bloods: CBC, Electrolytes, PT PTT, cross match- for every major burn patient - Obtain patients' body weight in kilograms			

Burns Wound Assessment (First, Second or Third Degree) to be applied by ED

REGION %	PT	FT
Head:		
Neck:		
Ant. Trunk:		
Post. Trunk:		
Right Arm:		
Left Arm:		
Buttocks:		
Genitalia:		
Right Leg:		
Left Leg		

PARKLAND FORMULA FLUID CALCULATION:
Time of Burn:
Time of Arrival:
Weight (Kgs):
Total % Burn:
4mls/Kg X Percentage Burn
Fluid Volume 1st 8 hours: Maintenance Fluid:
Fluid Volume Next 16 hours: Maintenance Fluid:

RELATIVE PERCENTAGE OF BODY SURFACE AREA AFFECTED BY GROWTH						
AREA	AGE 0	1	5	10	15	ADULT
A = 1/2 of Head	9 1/2	8 1/2	6 1/2	5 1/2	4 1/2	3 1/2
B = 1/2 of One Thigh	2 3/4	3 1/4	4	4 1/4	4 1/2	4 3/4
C = 1/2 of One Leg	2 1/2	2 1/2	2 3/4	3	3 1/4	3 1/2

Children less than 30Kg require maintenance fluids in addition to resuscitation fluid. The infusion rate shall be guided by the urine output, not by the formula.

Burn Wound Depth Assessment Table

DEPTH	COLOUR	BLISTERS	CAPILLARY REFILL	SENSATION	HEALING
First degree (Superficial)	Red	No	Present	Present	Yes
Second degree (2a) (Partial Thickness/ Dermal Burn)	Pale Pink	Small	Present	Painful	Yes, 7-10 days
Second degree (2b) (Deep Dermal)	Blotchy Red	+/-	Absent	Absent	Prolonged
Third degree (Full Thickness)	White	No	Absent	Absent	No

9.3 Appendix 3
Burns Unit Admission Criteria

- All patients with circumferential burns involving extremities or chest.
- All patients with partial thickness burns sustained to special areas like the face, ears, neck, genitalia, perineum, hands and feet.
- Patients with a burn injury of Full Thickness affecting more than 1% TBSA.
- All patients with a Chemical / Electrical burn.
- All patients with a burn associated inhalation injury.
- All burn injury patients with a pre-existing medical disorder which could complicate the management of the injury and prolong recovery e.g. diabetes.
- Any burn injury with concomitant trauma whereby the burn injury poses the greatest risk of morbidity and mortality.
- Patient's that require specialised wound care resulting from specific skin diseases can request consultation through the head of Plastic Surgery or Consultant on Call. Should a patient require admission to the Burn Unit this will be at the discretion of the Consultant and Burn Unit Manager.

9.4 Appendix 4

CASMEET: The necessary information and reporting mechanism that EMS or ED staff are required follow in order to pass concise and reliable information to the receiving facilities (CASMEET).

- C – Call sign and CAD number
- A – Age of patient
- S – Sex of patient
- M– Mechanism of Injury or Mode of illness
- E – Examination, AVPU / GCS, RR, HR, BP & SPO2 (where possible)
- E – Estimated time of arrival
- T – Treatment given
- Trauma Level if available.

9.5 Appendix 5
Designation Criteria of Specialised Burn Services

Burn Centre: Such facility cares for the highest level of injury complexity and offers a separately staffed, geographically discrete ward. The facility is skilled to the ICU level of critical care and has immediate operating theatre access:

- Designated standalone ward for paediatric or adult admissions
- Cubicle accommodation with environment control
- Designated burns nursing and other health professionals with training and experience
- Immediate access to a dedicated burn theatre (<25 metres)
- Educated burn anaesthetic input with nominated lead consultant
- Intensive care provided by intensivists in BC critical care beds OR in a suitably equipped, adjacent (<50 metres) ICU or PICU
- Consultant burn surgeon on-call rota
- Full range of support services and specialties
- Care provision for complex, large skin area injuries

Burn Unit: This facility deals with the moderate to severe level of injury complexity, with its separately staffed, discrete ward. These facilities are up to the HDU level of critical care and operating theatre access suitable for the case mix:

- Designated stand-alone ward for paediatrics OR adult admissions
- Cubicle accommodation of adequate size
- Designated burns nursing and other health professionals with training and experience
- Access to operating theater (<50 metres) with fixed burn lists each week
- Intensive care access as for any surgical patient either paediatric or adult
- Plastic surgeon on-call rota
- Single, named consultant lead for the burn service
- General hospital level support services and specialties
- Care provision for complex, small skin area injuries

9.6 Appendix 6
List of Currently Designated Facilities with Specialised Burns Services

Burns Centres	None at the time of publishing
Burns Units	Mafraq Hospital