



دائرة الصحة
DEPARTMENT OF HEALTH

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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 to follow in order to pass concise and reliable information to the receiving facilities (see Appendix 3 for details).
- **Cath Lab:** Catheterization laboratory
- **ED:** Emergency Department.
- **EMS:** Emergency Medical Services.
- **PCI:** Percutaneous coronary intervention.
- **STEMI:** ST-Elevation Myocardial Infarction.

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 ST-Elevation Myocardial Infarction (STEMI) emergencies and seeks to ensure that:

- No STEMI emergency case is rejected irrespective of healthcare insurance coverage.
- EMS take STEMI 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 STEMI 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 STEMI Taskforce, under the Multi-stakeholder platform to drive integration of care. For a list of member organizations 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 STEMI 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 STEMI Activation Criteria (Appendix 2).
- 3.2. Specify the required data and reporting mechanism to be followed when conveying patient information to the “Emergency Operations Coordination Centre” and the STEMI Centre. (Appendix 3).
- 3.3. List of designation criteria for STEMI Centres (Appendix 4).
- 3.4. List of currently designated STEMI Centres (Appendix 5).

4. Scope

This Protocol applies to all healthcare facilities within the Emirate of Abu Dhabi, Emergency Medical Services and the “Emergency Operations Coordination Centre”.

5. Definitions

- 5.1. **Cath Lab:** a catheterization laboratory or a Cath lab is an examination room in a hospital or clinic with diagnostic imaging equipment used to visualize the arteries

of the heart and the chambers of the heart and treat any stenosis or abnormality found.

- 5.2. **STEMI Centre:** is a referral facility that provides the specialized medical services and resources to patients suffering from ST-Elevation Myocardial Infarction. A list of designation criteria for STEMI Centre is available in Appendix 4 and a list of current designated STEMI Centres in Abu Dhabi is available in Appendix 5.
- 5.3. **Door-to-Balloon Time:** is a time measurement in emergency cardiac care, specifically in the treatment of ST segment elevation myocardial infarction (STEMI).
- 5.4. **Emergency Department (ED):** every facility that complies with DOH's definition as per HAAD's Standard for Emergency Departments.¹
- 5.5. **Emergency Medical Services:** ambulances deployed through the emergency number 999.
- 5.6. **Emergency Operations Coordination Centre:** is the coordinating unit for all pre-hospital services with ambulances. At the time of publication, SEHA service is managing this Centre and can be contacted through the number 02-4102111.
- 5.7. **Percutaneous coronary intervention (PCI):** is a nonsurgical technique for treating obstructive coronary artery disease, including unstable angina, acute myocardial infarction (MI), and multi vessel coronary artery disease (CAD). It is also known as coronary angioplasty.
- 5.8. **Primary PCI:** is the very urgent use of PCI (within 90mins door-to-balloon time) in people with acute myocardial infarction (heart attack), especially where there is evidence of severe heart damage on the electrocardiogram (ST elevation MI).

6. Triage for EMS-Driven STEMI Emergencies

EMS conduct triage as per Ambulance Field Triage Criteria² to establish a STEMI emergency. All STEMI emergencies shall be directly transferred to the closest designated STEMI Centre. In case the designated STEMI Centre is not within a reasonable transport distance³, all STEMI emergencies will be first transported to the closest ED to be stabilised:

- 6.1 EMS contact the Emergency Operations Coordination Centre to alert them about the incoming emergency and request an appropriate designated STEMI Centre.
- 6.2 EMS communicate the patient's data to the Emergency Operations Coordination Centre as per CASMEET (Appendix 3).
- 6.3 The Emergency Operations Coordination Centre communicates the patient's data to the designated STEMI Centre/Intervention Cardiologist on duty as per CASMEET (Appendix 3).
- 6.4 The designated STEMI Centre activates the Cath Lab to perform Primary PCI as per their established hospital protocol.
- 6.5 EMS transfer the STEMI emergency case to the designated STEMI Centre.
- 6.6 If the patient is transported to the nearest ED and not a designated STEMI Centre, the ED should assess the patient for potential transfer (Appendix 2). If the patient

¹HAAD Standard for Emergency Departments in the Emirate of Abu Dhabi (2017).

² As per Ambulance Clinical practice Guidelines 2015

³ Defined as 45 minutes as per Ambulance Clinical practice Guidelines 2015.

needs to be admitted to the designated STEMI Centre, the patient should be transferred immediately after stabilisation.

6.7 The referring ED should contact the closest designated STEMI Centre to alert them about the incoming STEMI emergency:

- Ambulance Transfer: interfacility transfer must be carried out with an ambulance service (either internal or external) that complies with DOH's (previously HAAD's) Ambulance related Standard.⁴
- Data exchange: the referring ED carries out a clinical handover to the designated STEMI Centre/Intervention Cardiologist on duty to exchange all the necessary patient data (Appendix 3).
- Time limit: interfacility transfer must be carried out by an ambulance that complies with DOH's (previously HAAD's) relevant Standard⁵ within 120 mins from first medical contact-to-balloon time.
- Unconditional acceptance: the designated STEMI Centre will accept the patient irrespective of bed availability or insurance cover.⁶

7. Triage for Self-Presenting STEMI Cases

7.1. If a STEMI self-presenting patient arrives to the ED of a designated STEMI Centre, he will be cared for using the hospital's existing STEMI protocol.

7.2. If a self-presenting patient with symptoms of STEMI arrives at a facility that is not designated as a STEMI Centre:

7.2.1. ED Physician assesses patient against the Activation Trigger Criteria for STEMI (Appendix 2).

7.2.2. If the Activation Trigger Criteria for STEMI do not apply, the patient will be stabilised.

7.2.3. If Activation Trigger Criteria are met for STEMI the referring ED should immediately contact the closest designated STEMI Centre to alert them about the incoming STEMI emergency:

- Ambulance Transfer: interfacility transfer must be carried out with an ambulance service (either internal or external) that complies with DOH's Ambulance related Standard.⁷
- Data exchange: the referring ED carries out a clinical handover to the designated STEMI Centre/Intervention Cardiologist on duty as (to exchange all the necessary patient data (Appendix 3).
- Time limit: interfacility transfer must be carried out by an ambulance that complies with DOH's (previously HAAD's) relevant Standard⁸ within 120 mins from first medical contact-to-balloon time.

⁴ HAAD Standard for Minimum Preparedness for Common Medical Emergencies In Inpatient Care Setting, Outpatient Care Setting, Ambulance Services and Interfacility Patient Transfer.

⁵Ibid.

⁶ HAAD Circular on Treatment of Emergency Cases For non UAE Nationals (HSS-33/2007).

⁷ HAAD Standard for Minimum Preparedness for Common Medical Emergencies In Inpatient Care Setting, Outpatient Care Setting, Ambulance Services and Interfacility Patient Transfer

⁸ Ibid.

- Unconditional acceptance: the designated STEMI Centre will accept the patient irrespective of bed availability or insurance cover.⁹

8. Enforcement and Compliance

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

- No STEMI emergency case is rejected irrespective of healthcare insurance coverage.
- EMS take STEMI 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 STEMI emergencies do transfer patients to designated facilities as quickly as possible.
- EDs designated to dealing with the specific type and level of self-presented emergencies do 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 HAAD Circular on Treatment of Emergency Cases For non UAE Nationals (HSS-33/2007).

9. Appendices

9.1. Appendix 1

STEMI Task Force Members and Experts

Members	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
Captain Mohammed Naser Al Bahri	Abu Dhabi Police Ambulance
Dr. Mazin Alsaïdi	ADNOC
Dr. Zaka Khan	Al Noor Hospital
Dr. Charles F Stanford	Burjeel Hospital (VPS)
Dr. Howard S. Podolsky	Cambridge Medical and Rehabilitation Centre
Dr. Ahmad Edris	CCAD
Dr. Tomislav Mihaljevic	CCAD
Dr. Jose Lopez	CCAD
Dr. Mahmoud Traina	CCAD
Dr. Hatem Abueida	Daman
Dr. Wafa Al Mahri	Daman
Mohammed Abu Jubara	Daman
Dr. Omar Najim	DOH
Dr. Asma Al Mannaie	DOH
Dr. Kamleh Khatib	DOH
Dr. Zainab Khazaal	DOH
Mr. Mohamad Al Hameli	DOH
Ms. Samiya Naseer	DOH
Michelle Navalta	National Ambulance
Dr. Ravi Arora	NMC Hospital
Rizwana Altaf	SEHA
Dr Abdul Majeed Al Zubaidi	SKMC
Dr. Saleh Fares	Zayed Military Hospital

9.2. Appendix 2

STEMI Activation Criteria:

The symptoms of a STEMI can include the following:

- a) Chest pain
- b) Breathing difficulty
- c) Profuse sweating
- d) Nausea and vomiting
- e) Sudden loss of consciousness
- f) Low pulse rate
- g) Cardiogenic shock

In an emergency setting (EMS or ED) diagnosis is done by clinical signs and symptoms and by carrying out a 12-lead ECG. As the condition is time sensitive, this is all that is needed to activate a Cath lab and plan a Primary PCI.

9.3. Appendix 3

CASMEET: The necessary information and reporting mechanism that EMS staff are required follow in order to pass concise and reliable information to the Trauma 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

9.4. Appendix 4

List of designation criteria for STEMI Centres:

1. Operator and institutional competency and volume criteria:
 - a) Primary PCI should be performed by operators with an acceptable annual volume (≥ 75 procedures, of which at least 11 are for STEMI) at high-volume Centres (> 200 procedures, of which more than 36 are for STEMI).
 - b) Primary PCI should be performed by operators and institutions whose current risk-adjusted outcomes statistics are comparable to those reported in data registries (This should serve as an opportunity to create an emirate-based registry) (Class I, LOE C).
 - c) Interventional cardiologists should meet at the minimum ACC/AHA criteria for competence and should be board certified in their respective field. General cardiologists without formal training or specialization in interventional cardiology should not be performing primary PCI for STEMI.
2. Protocols for triage, diagnosis, and cardiac catheterization laboratory activation should be established. A single hospital activation phone call should alert the entire STEMI team, including the on-call cardiologist/interventional cardiologist.
3. The STEMI-Receiving Centre should be available 24 hours/7 days a week to perform primary PCI.
4. The Cardiac Catheterization Laboratory staff, including interventional cardiologist, should arrive within 30 minutes of activation call.
5. There should be universal acceptance of STEMI patients (no diversion). There should be a plan for triage and treatment for simultaneous presentation of STEMI patients.
6. The STEMI-Receiving Centre should participate in data collection and analysis, including assessment of appropriate use criteria, door-to-device time, and outcomes measurement.
7. A program should be in place to track and improve treatment (acutely and at discharge) with ACC/AHA guideline based Class I therapies.
8. There should be monthly multidisciplinary team meetings to evaluate outcomes and quality improvement data. Operational issues should be reviewed, problems identified, and solutions implemented. The following measurements should be evaluated on an ongoing basis:
 - a) Door-to-balloon (first device used) time, non-transfer within 90 minutes

- b) STEMI receiving hospital ED door-to-balloon (first device used) time, transfer within 90 minutes.
- c) First Medical contact-to-balloon inflation (first device used) non-transfer within 90 minutes
- d) First Medical contact-to-balloon inflation (first device used) transfer within 120 minutes
- e) Proportion of eligible patients administered guideline-based Class I therapies
- f) In-hospital mortality

The designated STEMI-Receiving Centre must have the infrastructure in place to collect data for continuous performance improvement. The following ACC/AHA STEMI/NSTEMI performance measures are proposed:

- a) Aspirin at arrival: aspirin within 24 h before or after hospital arrival
- b) Aspirin prescribed at discharge: aspirin at hospital discharge
- c) Beta-blocker prescribed at discharge: beta-blocker at hospital discharge
- d) Statin at discharge: statin at hospital discharge
- e) Evaluation of left ventricular systolic function: documentation in the hospital record that LV function was evaluated during hospitalization or is planned after discharge
- f) ACEI or ARB for acute MI patients with LV systolic dysfunction who are prescribed an ACEI or ARB at hospital discharge (for purposes of this measure, LV systolic dysfunction is defined as chart documentation of an LVEF less than 40%)
- g) Time to PCI median time from hospital arrival to primary PCI in acute MI patients with ST-segment elevation or LBBB on the ECG performed closest to arrival time
- h) Time from ED arrival at STEMI referral facility to ED discharge from STEMI referral facility in patients transferred for primary PCI
- i) Time from ED arrival at STEMI referral facility to primary PCI at STEMI receiving facility among transferred patients
- j) Adult smoking cessation advice/counselling
- k) Cardiac rehabilitation patient referral from an inpatient setting: all patients hospitalized with a primary diagnosis of acute MI referred to an early outpatient cardiac rehabilitation program.

9.5. Appendix 5

List of Currently Designated STEMI Centres

1. SKMC
2. Mafraq Hospital
3. Cleveland Clinic Abu Dhabi
4. Tawam Hospital
5. Al Ain Hospital