MOH STANDARDS FOR MEDICAL TRANSPORT SERVICE (2017) [Updated 21 Nov 2018]

These Standards are for the reference of agencies operating or intending to operate a <u>Medical Transport Service (MTS)</u>.

These Standards spell out the <u>minimum</u> requirements which the agency must comply with when operating a MTS.

These Standards and the 'MOH Standards for Emergency Ambulance Service (2017)' will supersede the 'Guidelines for Private Ambulance Service' issued by the Ministry of Health (MOH) on 23 April 1998.

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MEDICAL TRANSPORT SERVICE (MTS) STANDARDS

1. Definition

- 1.1 "Medical Transport" means a ground conveyance that is used or intended to be used for the transport by land, of patient(s) (as described in para 1.3) who is being provided with non-emergency clinical care or monitoring en-route.
- 1.2 "Medical Transport Service" or "MTS" means a service to transport by land, patient(s) (as described in paragraph 1.3) who is being provided with non-emergency clinical care or monitoring en-route.
- 1.3 Suitable cases for Medical Transport Service include:
 - a. Patients requesting for transport for elective outpatient clinic attendances or other hospital ambulatory services;
 - b. Patients requesting for transport for other clinical services such as rehabilitation therapy, nursing care and/or day care in a community-based setting;
 - c. Inter-hospital transfers of patients who are clinically stable;
 - d. Patients discharged from hospital to home or a step-down facility such as a community hospital or a nursing facility; and
 - e. Patients with medical conditions that do not fulfil the Ministry of Health (MOH)'s criteria for medical emergencies (see <u>Appendix 1</u>).
- 1.4 Non-emergency medical problems include:
 - a. Conditions that do not require immediate treatment and for which there is no imminent threat to the patient's life or limb;
 - b. Pre-existing illnesses or injuries that are stable; and
 - c. Pre-existing conditions that give rise to problems of ambulation and mobility.
- 1.5 "Medical Transport Service Provider" or "Medical Transport-SP" means any entity that is approved by MOH to provide a MTS.
- 1.6 "Emergency patient" means an individual suffering, or believed to be suffering, from a medical emergency as defined in <u>Appendix</u> <u>1</u>. Such patients include, but are not limited to, those being conveyed to emergency departments of hospitals, or facilities with appropriate medical, nursing and resuscitation support for immediate attention or critically ill patients.

- 1.7 "Medical Transport Service Crew" or "MTS Crew" refers to persons meeting the requirements set out in paragraph 4.1 below.
- 1.8 "Clinical Director" means a medical practitioner holding the qualifications and performing the roles and responsibilities as set out in Appendix 2 of these Standards.
- 1.8 "Medical Transport Driver" means a person meeting the requirements set out in paragraph 4.2 below.
- 1.9 "Emergency Medical Technician (EMT)" means a person meeting the requirements set out in paragraphs 4.3 to 4.5 below.
- 1.10 "Paramedic" means a person meeting the requirements set out in paragraphs 4.6 to 4.8 below.

1.11 "Ambulance Nurse" means a person meeting the requirements set out in paragraphs 4.9 to 4.10 below.

2. Medical Transport Service Provider

- 2.1 All entities that provide or intend to provide the Medical Transport Service must be approved as Medical Transport-SP by MOH.
- 2.2 The Medical Transport-SP shall comply with the following:

Personnel

- a. engage a qualified Clinical Director with roles and responsibilities as stipulated in <u>Appendix 2</u>, to supervise and advise on the patient care provided;
- ensure the required training, competency and certification of all Medical Transport Service Crew as stated in these Standards, including registration of personnel on professional nominal rolls as required by the Ministry of Health;
- c. develop written protocols of care for patients transported and a training programme to ensure the proficiency of all staff in carrying out these protocols in accordance with such regulatory standards and guidelines issued by the Ministry of Health;

Communications

d. set up a system compatible for communication with the Singapore Civil Defence Force (SCDF) or other designated medical dispatch system for Medical Transport Service;

Documentation

e. maintain a medical record system and a Medical Transport Service log system for purposes of quality assurance and audits;

Equipment and Medication

f. ensure that the Medical Transport is duly equipped and carry the required supplies as detailed in <u>paragraph 5</u>;.

Quality assurance

- g. develop a system for performance monitoring, reporting and evaluation of the Medical Transport Service provided;
- develop a framework to record, review and improve on all adverse events such as events relating, but not restricted, to lapses in patient care and safety, or the safety and health of crew;
- i. develop road and vehicular safety standards to ensure that patients and the MTS crew are protected from unnecessary risks as provided under any written law or as directed by the Land Transport Authority (LTA).

Infection Control

- j. ensure that there shall be measures and protocols in place to ensure adequate infection control, including:
 - handling patients with infectious diseases, including instructions on appropriate action to take in the event of an exposure to blood or body fluids/substances including needle-stick injuries and other incidents;
 - training and use of Personal Protective Equipment (PPE) such as N95 mask, gloves, gown/apron, face shield/goggles and disinfectants;
 - decontamination of Medical Transports after transport of patients with infectious diseases, or in the event of contamination by body fluids, and protocols for storage, transportation and disposal of waste in accordance with any written law or such standards/guidelines issued by the Director of Medical Services (DMS) from time to time; and
 - immunisations for Medical Transport Service Crew in accordance to requirements for healthcare workers under the Workplace Health and Safety Act and its regulations.
- 2.4 The Medical Transport-SP shall be subjected to a system of

oversight as determined by MOH. This could include, but not limited to inspections or audits of the Medical Transport-SP by MOH and/or its appointed agents for compliance with these Standards.

2.5 A Medical Transport can ferry patients only if all Standards prescribed herein are complied with.

3. Medical Transport

- 3.1 Each Medical Transport shall meet such vehicle specifications as may be prescribed by LTA, including any requirements for inspection and maintenance to ensure that the Medical Transport is fit for its purpose. All Medical Transport-SPs shall also obtain and maintain all licences, permits, certifications and regulatory authorisations pertaining to the Medical Transports without any restriction or qualification whatsoever so as to enable them to fulfil these Standards.
- 3.2 The minimum equipment in each Medical Transport shall be maintained as listed in <u>paragraph 5</u>. All equipment shall be functional and effective at all times when the Medical Transport is in operation.
- 3.3 Each Medical Transport shall bear the letterings "**MEDICAL TRANSPORT**", or words to similar effect, on the front, both sides and rear of the Medical Transport.
- 3.4 The Medical Transport will <u>not</u> be permitted to bear or identify themselves as '**EMERGENCY AMBULANCE**' or similar, nor permitted to use sirens and beacon lights.

[Note: All vehicles that are not recognised by MOH as "Emergency Ambulances" as defined in the "MOH REGULATORY STANDARDS FOR EMERGENCY AMBULANCE SERVICE (2017)" will be required to modify the lights and sirens in a way that precludes their usage once the legislation governing Emergency Ambulances and Medical Transport vehicles is brought into force. (This may include physical dismantling, painting over of lights and disconnection of the wiring)]

4. Medical Transport Service Crew

- 4.1 Each Medical Transport shall be staffed by at least a 2-man crew with the following composition:
 - a. a crew leader who is qualified to perform the tasks stipulated in paragraph 4.5. This person must be either an Emergency Medicine Technician (EMT), Paramedic or Ambulance Nurse; and

b. a crew member who shall drive the Medical Transport, and be minimally qualified as a Medical Transport Driver.

Medical Transport Driver

- 4.2 The Medical Transport Driver shall have the minimum qualifications and experience as follows:
 - a. possess a valid licence to drive the Medical Transport;
 - b. possess a valid certificate issued by the Bukit Batok Driving Centre, Singapore Safety Driving Centre (SSDC), ComfortDelGro Driving Centre or Civil Defence Academy to prove that the driver has completed a course in defensive driving at one of these centres;
 - c. possess valid certification for Cardio-Pulmonary Resuscitation (CPR) and Automated External Defibrillation (AED) usage issued by a centre accredited by the Singapore Resuscitation and First Aid Council (SRFAC), the National Resuscitation Council Singapore (NRC) or the National First Aid Council (NFAC) for the purpose; and
 - d. understand the usage of stretchers and able to assist in the care of and evacuation of a patient or casualty.

Emergency Medical Technician (EMT)

- 4.3 The EMT shall have the minimum qualifications and experience as follows:
 - a. be certified through an EMT course, approved by MOH (see <u>Appendix 3</u>);
 - hold valid certification in Basic Cardiac Life Support (BCLS) issued by a centre accredited by SRFAC, NRC or NFAC for the purpose; and
 - c. be certified in AED usage and first aid by a centre accredited by SRFAC or NFAC for the purpose.
- 4.4 The EMT shall undergo recertification of the above at least once every two years.
- 4.5 The EMT shall be able to perform the tasks as stipulated below:
 - a. be familiar with and be able to properly handle and operate all equipment on board the Medical Transport and be familiar with the MTS-SP's relevant medical protocols;

- b. use various types of stretchers and body immobilisation devices;
- c. perform basic life support on infants, children and adults. Proficient with the use of bag valve mask;
- d. independently initiate the use of an AED;
- e. perform standard first aid and give oxygen supplement;
- f. measure and monitor the patient's vital signs, i.e. pulse rate, blood pressure, temperature, respiratory rate and give oxygen saturation;
- g. monitor intravenous peripheral lines and flow of drip of stable patients;
- h. transfer and maintain patients with nasogastric tubes, tracheostomy tubes, and/or urinary catheters;
- i. perform basic emergency procedures such as control of external bleeding and application of dressings, bandages, slings and splints;
- j. establish contact with the receiving hospital if the need arises;
- k. appropriately use PPE and apply standard precautions to prevent the transmission of infectious agents during patient care; and
- I. assist the crew leader in the conduct of the various procedures for the care of the patient who is being managed.

Paramedic

- 4.6 The Paramedic shall have the minimum qualifications and experience as follows:
 - a. be qualified under a Paramedic course approved by MOH (see <u>Appendix 3</u>);
 - b. hold valid certification in BCLS issued by a centre accredited by SRFAC, NRC or NFAC for the purpose; and
 - c. be certified in CPR and AED usage by a centre accredited by SRFAC, NRC or NFAC for the purpose.
- 4.7 The Paramedic shall undergo recertification at least once every two years.

- 4.8 The Paramedic shall be able to perform the tasks as stipulated below:
 - a. assess and independently manage trauma and nontrauma emergencies in patients of all age groups in accordance with the MTS-SP's medical protocols;
 - b. organise and prioritise treatment and evacuation in multiple casualty incidents;
 - c. use various types of stretchers and body immobilisation devices provided by the Medical Transport Service;
 - d. carry out emergency basic procedures to control external haemorrhage, apply dressings, bandages, slings and splints;
 - e. provide immediate care to casualties during the process of extrication and disentanglement from entrapments;
 - f. assess and maintain the patient's airway, including the use of adjuncts such as the oropharyngeal airway or Laryngeal Mask Airway (LMA);
 - g. perform basic life support on infants, children and adults;
 - h. perform a 12-lead electrocardiogram, monitor the patient's electrical rhythm and transmit the 12-lead electrocardiogram to the receiving hospital, if appropriate and required;
 - i. independently initiate the use of an AED;
 - j. obtain intravenous access, administer designated intravenous medications and perform intravenous infusions as per SP's ambulance care protocols;
 - k. obtain capillary blood glucose sample and institute treatment for hypoglycaemia;
 - I. assess and manage an emergency childbirth;
 - m. administer basic emergency medications including nebulisation;
 - n. identify abnormal chest sounds through auscultation;
 - o. appropriately use PPE and apply standard precautions to prevent the transmission of infectious agents during patient care; and

p. manage patients with nasogastric tubes, intravenous plugs or urinary catheters or other tubes and cannula.

Ambulance Nurse

- 4.9 The Ambulance Nurse shall be registered or enrolled with the Singapore Nursing Board, hold a valid practising certificate, and be assessed by the Clinical Director to be able to perform the tasks stipulated in paragraph 4.8.
- 4.10 The Ambulance Nurse, regardless of his/her role as a crew leader or member, shall, as a minimum requirement, hold valid certifications in BCLS and AED issued by a centre accredited by SRFAC, NRC or NFAC for the purpose.

5. Medical Transport and Medical Equipment

- 5.1 Each Medical Transport shall be fitted and equipped with the following, and ensure they are in good working condition and properly maintained:
 - a. VHF radio network communication or mobile phone or other ambulance to hospital communication equipment;
 - b. fire extinguisher;
 - c. current Singapore street directory or electronic equivalent;
 - d. global positioning system (GPS) /automatic vehicle location/ other navigation system;
 - e. passenger seat and safety belts;
 - f. attendant seat and safety belts;
 - g. frosted or tinted windows in patient compartment to ensure patient privacy;
 - h. clear side windows in driver's cabin;
 - i. medical equipment as specified in <u>Appendix 4</u>, which should be regularly checked, re-stocked and be in good working condition when the Medical Transport is despatched; and
 - j. any other equipment specified by MOH or any other authority.
- 5.2 All Medical Transport-SPs shall obtain and maintain all licences, permits, certifications and regulatory authorisations pertaining to

the above equipment (including medical equipment) without any restriction or qualification whatsoever so as to enable them to fulfil these Standards.

Appendix 1

DEFINITION OF MEDICAL EMERGENCY

A "medical emergency" for the purposes of these Standards is an injury or a condition of acute or sudden onset that poses an immediate threat to a person's life or long term health. These include bleeding, severe or increasing pain or a change in the vital signs of life, such as the level of consciousness or signs of difficulty in breathing. A chronic condition or a condition for which a patient is currently receiving treatment may suddenly deteriorate into a Medical emergency. A medical emergency does not include conditions that do not require immediate treatment and for which there is no imminent threat to the patient's life or limb, pre-existing illnesses or injuries that are stable, and pre-existing conditions that give rise to problems of ambulation and mobility. A Medical Transport should not be transporting Emergency patients and an Emergency Ambulance should be called as soon as is practicable. Should a Medical Transport, instead of an Emergency Ambulance, be wrongly called to attend to the case, basic life support and resuscitation should be provided until proper assistance (from Emergency Ambulance crew) arrives.

Common Medical Emergencies (Non-exhaustive)

Acute altered mental states and/or loss of consciousness Acute chest pain, heart attack or other acute coronary syndromes Acute, non-traumatic surgical emergencies All limb threatening conditions Bee and insect sting, snake or animal bite Burn (thermal or chemical) or scald Cardiac Arrest Choking, shortness of breath or other breathing difficulties Fracture of bones or dislocation of joints Haemorrhagic or ischaemic stroke or other acute neurological disorders Head injury Internal bleeding, including haematuria, haematemesis or melena Laceration, stabbing or other penetrating injury Large or open wound Multiple injuries Near-drowning, poisoning or suicide Patients requiring ventilation or on life support Poisoning Seizures Sepsis Severe allergic reaction (anaphylaxis) Severe pain or increasing pain Sudden onset weakness or paralysis Trauma

NB The above descriptions serve only as a guide. Wherever possible, and in situations of doubt, appropriate medical advice should be sought from a registered medical practitioner.

Appendix 2

ROLES AND RESPONSIBILITIES OF CLINICAL DIRECTOR FOR MEDICAL TRANSPORT SERVICE

Introduction

The function of a Medical Transport Service (MTS) is to provide a safe and reliable means of transporting patients with stable non-emergency medical conditions. This group of patients do not require advanced life support measures and continuous monitoring during their transport. However, there should still be a set of basic minimal standards for which patients are managed regardless of their prevailing medical condition (such as maintenance of airway, pressure etc.). At the same time MTS providers should be able to provide basic support for medical emergencies until further help is available. The Clinical Director's role is to ensure protocols for such minimal standards are in place and followed at all times. Agencies may refer to this document as a guide when engaging a Clinical Director to ensure the potential candidate is qualified.

Qualifications

The Clinical Director should be:

- a medical practitioner registered in the Singapore Medical Council (SMC) Register of Medical Practitioners with a minimum of 5 years' medical practice experience comprising a minimum of one year of supervised practice in either Emergency Medicine, Intensive Care, General Surgery, Anaesthesia or any other discipline* that manages acute and critical patients with a valid practising certificate and in good standing with the SMC; or
- b. a nurse registered with the Singapore Nursing Board (SNB) as a registered nurse with a minimum of 5 years' experience in Emergency Medicine, Intensive Care, General Surgery, Anaesthesia or any other discipline* that manages acute and critical patients, preferably with relevant post-graduate qualifications, with a valid practising certificate; or
- c. Current existing Clinical Directors of ambulance service providers*, who may not fulfil the above but, with at least 5 years' experience in patient transport and of good standing.

* Subject to approval by MOH/MOH-appointed authorities

The Clinical Director must:

- a. have attended and received certification from a MOH-endorsed Emergency Medical Services (EMS) Medical Directors workshop (described below); and
- b. hold valid certification in BCLS and usage of AED issued by a centre accredited by SRFAC, NRC or NFAC for the purpose.

EMS Medical Director Workshop

The purpose of the workshop is to provide comprehensive information and sets the expected standard of potential and current Clinical Directors. This is a structured curriculum aimed at providing a level of understanding of the daily operations in managing a pre-hospital service, as well as raise awareness of roles in various situations such as mass disaster, Hazmat etc. This course is compulsory for all Clinical Directors of both Emergency Ambulance Service and Medical Transport Service.

Roles and Responsibilities of the MTS Clinical Director

Medical Oversight

- 1. The Clinical Director must develop, establish, implement and endorse clinical protocols adopted by the Medical Transport-SP.
- 2. The Clinical Director should develop protocols for specific unexpected emergency conditions in the event they are encountered at pick-up or enroute. These responses should consider the ability of the Medical Transport Service Crew and limitations of equipment. Modes of communication to request further assistance or support should be made available. Protocols should cover, but are not limited to, the following conditions:
 - a. Cardiac Arrest
 - b. Seizures
 - c. Shortness of breath
 - d. Loss of consciousness
 - e. Sudden weakness
 - f. Stroke
 - g. Chest pain
 - h. Severe abdominal pain
- 3. The Clinical Director shall conduct annual reviews of clinical protocols, and shall give the final endorsement. Protocols are subjected to review and inspection by MOH appointed consultants.
- 4. The Clinical Director should also be involved in developing operational protocols pertaining to patient care, such as the handling and transport of patients.

5. The Clinical Director should apprise himself of and ensure adherence by the Medical Transport-SP to prevailing measures related to provider health and safety, as well as to infection control and safety from crosscontamination.

Clinical Quality Improvement

- The Clinical Director should be involved in all audits of the Medical Transport-SP conducted by MOH. He/she should be informed of all identified deficiencies and take subsequent measures to ensure these Standards are adhered to.
- 2. The Clinical Director must endorse all audit documents and reports.
- 3. It is the responsibility of the Clinical Director to follow up on any Medical Transport Service deficiencies and ensure corrections are carried out within MOH's stipulated timeframe.
- 4. The Clinical Director must review of all patient care-related adverse events.
- 5. The Clinical Director should be informed of any other feedback pertaining to patient care, review such feedback and take such follow-up action as is necessary to rectify any problems identified.

Training and Education

- 1. The Clinical Director should recommend relevant training courses for Medical Transport Service Crew at least once a year.
- 2. The Clinical Director should review the MTS crew performance in terms of delivery of patient care, safety of patient transfers, infection controls, documentation of patient records and overall level of competency, at least once every six months.

Appendix 3

LIST OF APPROVED EMT AND PARAMEDIC COURSES

Emergency Medical Technician

- WSQ Higher Certificate for Emergency Medical Technician (effective 31 Dec 2014); or
- Any other Emergency Medical Technician (Basic) qualification as approved by DMS from time to time

Paramedic

- EMS Specialist Certification from SAF Medical Training Institute or Civil Defence Academy;
- Higher National Institute of Technical Education Certificate (NITEC) in Paramedic and Emergency Care;
- Justice Institute of British Columbia (JIBC) Paramedic Academy's 'Primary Care Paramedic";
- Diploma or Advanced Diploma in Paramedicine issued by a local institution; or
- Any other Paramedic qualification as approved by the Director of Medical Services from time to time

Appendix 4

MEDICAL EQUIPMENT FOR MEDICAL TRANSPORT SERVICE

(Note: this list describes the <u>MINIMUM STANDARDS</u> required and is not intended to be a comprehensive list)

A. Airway and Ventilation Equipment

- 1. Portable or fixed suction apparatus with a regulator
 - Wide-bore tubing, rigid pharyngeal curved suction tip; tonsillar and flexible suction catheters (suction catheter size 10 F and 16 F, min 1 each)
- 2. Portable oxygen apparatus capable of metered flow with adequate tubing
- 3. Portable and fixed oxygen-supply equipment
 - Variable flow regulator
- 4. Oxygen-administration equipment
 - Adequate-length tubing; oxygen face mask (adult and child sizes), non-rebreathing mask (adult and child sizes), nasal cannulas (min 1 each)
- 5. Bag-valve mask (manual resuscitator)
 - Hand-operated, self-re-expanding bag; adult (>1000 mL) and child (450–750 mL) sizes, with oxygen reservoir/accumulator; valve (clear, disposable); and mask (adult, child, infant, and neonate sizes)

6. Airways

Oropharyngeal (sizes 40 mm, 50 mm, 60 mm, 70 mm, 80 mm, 90 mm, 100 mm adult, child, infant and neonate sizes, min 1 each)

B. Cardiac

1. Automated External Defibrillator (AED). The AED should have paediatric capabilities, including child-sized pads and cables

C. Trauma Supplies/Equipment

- 1. Burn gels or equivalent (min 1)
- 2. Triangular bandages (min 5)
- 3. Elastic or crepe or gauze roll bandages (size 2.5 cm, 5 cm, 7.5 cm, 10 cm, 15 cm or nearest equivalent, min 2 each)

- 4. Sterile gauze pads (size 7.5 x 7.5 cm, 9 x 20 cm, 10 x 10 cm, 20 x 20 cm or nearest equivalent, min 2 each)
- 5. Adhesive tape hypoallergenic, $(\frac{1}{2})^{2}$ and 1", min 2 each)
- 6. Plasters (min 10)
- 7. Sterile saline solution for irrigation (500 ml, min 1)
- 8. pen torch/penlight

D. Miscellaneous

- 1. Automatic blood pressure device
- 2. Pulse oximeter with paediatric and adult function
- 3. Ear thermometer or digital thermometer (ear probe covers min 5 or thermometer probe covers, min 5)
- 4. Paramedic scissors for cutting clothing, belts, and boots
- 5. Flashlights (min 2)
- 6. Blankets, trolley sheets or linens and pillows (min 2 each)
- 7. Incontinence sheets (min 2)
- 8. Folding stretcher with restrainers
- 9. Patient care charts/forms (min 5)
- 10. Canvas litter (min 2)
- 11. Disposable emesis bags or basins (min 5)
- 12. Wheeled cot
- 13. Suction Device

E. Infection Control Equipment

- 1. Eye protection (e.g. full peripheral glasses or goggles, face shield, min 4/number of crew)
- 2. Face protection (e.g. surgical masks, min 4/number of crew)
- 3. Gloves, non-sterile, size M (min 4 pairs/number of crew)
- 4. Coveralls or gowns (min 4/number of crew)
- 5. Shoe covers (min 4 pairs/number of crew)

- 6. Hair Covers (min 4/number of crew)
- 7. Hand sanitizer (min 1)
- 8. Disinfectant solution for cleaning equipment (min 1)
- 9. Disposable trash bags for disposing of bio hazardous waste (min 4)
- 10. Respiratory protection (e.g. N95 or N100 respirator, min 4/number of crew)

OPTIONAL EQUIPMENT

This is intended to assist Medical Transport-SPs in choosing equipment that can be used to ensure delivery of quality pre-hospital care. Use should be based on certified capability of providers.

- 1. Traffic-signaling devices (reflective material triangles or other reflective, non-igniting devices)
- 2. Reflective safety wear for each crew member.
- 3. Stair chair or carry chair
- 4. Cervical collars
 - Rigid for children aged 2 years or older; child and adult sizes (small, medium, large, and other available sizes)
- 5. Head immobilisation device (not sandbags)
 - Firm padding or commercial device
- 6. Upper and lower extremity immobilisation devices
 - Joint-above and joint-below fracture (sizes appropriate for adults and children), rigid support constructed with appropriate material (cardboard, metal, pneumatic, vacuum, wood, or plastic)
- 7. Impervious backboards (long, short; radiolucent preferred)
- 8. Saline drops and bulb suction for infants
- 9. Disposable bedpan
- 10. Disposable urinal
- 11. Arterial tourniquet (windlass)
- 12. Glucometer
- 13. Sphygmomanometer/blood pressure monitor (paediatric, infant, adult regular- and large-sized cuffs)