

**NATO STANDARD**

**AAMedP-1.20**

**RECOMMENDED MEDICAL  
EQUIPMENT FOR AEROMEDICAL  
EVACUATIONS**

**Edition A Version 1**

**JULY 2018**



**NORTH ATLANTIC TREATY ORGANIZATION**

**ALLIED AEROMEDICAL PUBLICATION**

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**NATO LETTER OF PROMULGATION**

19 July 2018

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<b>CHAPTER 1    INTRODUCTION</b>
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**1.1. AIM**

1. The aim of this standard is to establish qualitative guidelines with respect to the medical materials required to ensure that Aeromedical Evacuation (AE) of casualties can be performed securely, from a medical and an aeronautical standpoint, during forward, tactical or strategic AE.
2. The medical state of the patient has to be managed with the best possible level of care and according to the most up-to-date medical practice.
3. Medical equipment will be chosen taking the specific constraints of the aeronautical environment into account. All equipment for AE must be airworthy, and has to be certified for the aircraft. It will be used on, according to the aircraft's certification standards and by the pertaining aviation authority.
4. AE may be delivered to a single patient or multiple casualties and the spectrum of disease/injury may range from minor to the critically ill. As a general rule, the composition of the medical team and the necessary equipment will be tailored to the patient's physical and psychological needs. In addition, the team and the equipment will be constrained by the size of the airframe particularly in the forward area.

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<b>CHAPTER 2 FORWARD AEROMEDICAL EVACUATION</b>
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**2.1. DEFINITION**

Forward AE (FwdAE) is defined as the phase of medical evacuation that provides airlift for patients under medical supervision between the point of injury or illness and the first Medical Treatment Facility within the area of operations.

**2.2. GOALS OF IN-FLIGHT MEDICAL TEAM** are to provide care in accordance with the Catastrophic Bleeding, Airway, Breathing, Circulation (CABC) principles, to perform appropriate handling and immobilization, to manage pain, infection and nursing care during the flight.

**2.3. SPECIFICS**

FwdAE is mostly accomplished with a helicopter. The mission is usually to save life, limb or eye-sight and fulfilled in a complex environment. Due to low available space, noise and vibrations, patient monitoring is difficult. On-board medical equipment, in-flight technical procedures and medical supervision are limited. Chosen medical equipment must be compatible with the available space and weight allowed for the mission. Electrical equipment has usually to be powered with batteries. The patient has to be prepared for the flight on the ground as much as possible.

**2.4. RECOMMENDED MEDICAL EQUIPMENT** for forward AE include, but are not limited to:

**2.4.1. Hemorrhage control:**

- Tourniquets,
- Wound packs
- Hemostatic bandages, agents and devices

**2.4.2. Airway and Breathing:**

- Bag Valve Mask
- Manual, pneumatic or electric ventilator
- Portable oxygen apparatus
- Oxygen delivery system, oxygen rebreathing bags
- Airway management equipment (naso/oropharyngeal airways, supraglottic airway devices, laryngoscope handle and blades, endotracheal tubes, surgical airway equipment)

- Suction device and suction catheters.
- Large bore needle for needle chest decompression (min 8cm-3.25inch)

**2.4.3. Circulation:**

- Intravascular and intra-osseous access equipment
- Intravenous solution in soft pouches: replacement fluid (e.g. Ringer Lactate or normal saline solution), osmotherapy fluid
- Fluid infusion pressure device
- Defibrillator (Automated (AED), semi-automated or manual)

**2.4.4. Medical examination and monitoring:**

- Single use examination gloves
- Waterless hand cleanser
- Strong scissors
- Stethoscope
- Vital signs monitoring to include: pulse, blood pressure, pulse oxymeter
- Surgical masks
- Individual lamp
- Waste collection bags, containers including sharps **containers**

**2.4.5 Medication as indicated by patient's clinical condition and team competencies.**

**2.4.6 Handling and immobilization equipment:**

- Stretcher (NATO standard litter, with restraint straps)
- Spine immobilization equipment (cervical collars, backboard)
- Upper and lower limbs immobilization equipment, traction splint
- Patient warming/cooling equipment



<b>CHAPTER 3 TACTICAL AEROMEDICAL EVACUATION</b>
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**3.1. DEFINITION**

Tactical Aeromedical Evacuation (TacAE) is defined as the phase of medical evacuation that provides air transport for patients under medical supervision between medical treatment facilities within the area of operations.

**3.2. SPECIFICS**

TacAE is usually accomplished with a fixed-wing tactical asset, able to land on short and basic airways, and/or by using a rotary-wing asset. Flight times are expected to be longer than for FwdAEs; the available space and permissible weight may be, enabling a higher level of en route care and treatment with more sophisticated medical equipment.

**3.3. RECOMMENDED MEDICAL EQUIPMENT** for TacAE includes all the FwdAE equipment and is augmented with:

**3.3.1. Airways and breathing:**

- Consider backup resources as appropriate (number of patients, flight time, space, device malfunction, disposables etc)
- Additional airway management equipment (chest drainage equipment).
- End tidal CO<sub>2</sub> detection capability
- Electrical continuous suction device
- Nebulizer

**3.3.2. Circulation:**

- Consider backup resources as appropriate (number of patients, flight time, space, device malfunction, disposables etc)
- Electric infusion pumps
- Supplies for central venous access
- Volume expansion fluids (and blood/blood products if indicated by the mission)

**3.3.3. Medical examination and monitoring:**

- Portable, battery-operated monitor/defibrillator with tape write-out/recorder, defibrillator pads, ECG leads
- Glucometer or blood glucose measuring device with reagent strips
- Thermometer
- Otoscope

**3.3.4. Injectable drugs, as indicated by patient's clinical condition and team competencies**

**3.3.5. Nursing supplies:**

- Local antiseptics
- Dressing supplies
- Absorbent pads
- Disposable hand towels
- Waterproof pads / incontinence pads
- Comfort items : e.g. urinal, basin, diapers, ear covers, pillows, blankets
- Urinary catheters, urine bags
- Temperature management equipment
- Feeding adjuncts : disposable goblets, straws
- Nasogastric tubes
- Sterile cloths and sheets for burnt patients
- Disinfectant solution for cleaning equipment

<b>CHAPTER 4    STRATEGIC AEROMEDICAL EVACUATION</b>
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**4.1. DEFINITION**

Strategic Aeromedical Evacuation (StratAE) is defined as the phase of medical evacuation that provides air transport for patients from medical treatment facilities within the area of operations to medical treatment facilities outside the area of operations, or additional AE between medical treatment facilities outside the area of operations.

**4.2. SPECIFICS**

StratAEs are realized using fixed-wings assets, usually commercial-like assets, but can also be performed with tactical aircrafts. The assets must offer a long-range capability. StratAE missions are often long duration flights. These assets usually also allow several patients to be flown out of the theater at the same time, some of them potentially being critically ill. Available space and allowed weight for medical equipment are usually not a constraining issue. In many cases, the aircraft produces electrical power and oxygen, thus saving batteries and oxygen bottles. Once certified, the most updated and sophisticated medical equipment can be used on board.

**4.3. RECOMMENDED MEDICAL EQUIPMENT for StratAE includes all the above, plus:**

- Point of care testing e.g. for hemoglobin/hematocrit, lactate, glucose blood gas, electrolytes,
- Ultrasonography
- Spare batteries

**4.4. SPECIFIC DEVICES**

Some patients could imply specific devices, often with presence of specialized medical team (with their own equipment) such as:

- Invasive pressure monitoring,
- Intracerebral pressure monitoring
- Ultrasound imaging device
- Pressure sores fighting paddings.
- Negative pressure wound therapy
- Fiber optic bronchoscopy

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