

Standard 3.2 - Medical Equipment



Principles

Fixed wing aircraft and helicopters are both modes of transport, and not inherently therapeutic. To be of value to the patient, their advantages in speed, smoothness and access to hostile locations must be complemented by adequacy of medical care. This depends to a large part on provision of medical equipment equal to or better than that offered on the ground or within a hospital. Although these standards are principally directed toward air medical transport, the standards should also apply to any ground phase of the mission. Given the diversity of mission profiles in air medical transport, it is not possible to be prescriptive about medical equipment. Unforeseen circumstances will make compliance with the standard less important than making an informed clinical judgement in an individual case. However it is considered necessary and possible to have a planned, documented strategy for selection and carriage of equipment to meet a particular service's clinical needs.

3.2.1 Oxygen

Medical aircraft must be fitted with an approved oxygen system capable of supplying adequate oxygen for any foreseeable mission profile. In the event of main oxygen supply failure or exhaustion, there should be reserve oxygen supply capable of allowing continuing oxygen therapy while the mission is completed or aborted, as appropriate. There should be a warning device for main oxygen supply exhaustion.

3.2.2 Suction

Medical aircraft must be fitted with a suction system capable of performing to the relevant hospital standards in all foreseeable cabin pressures. There should be one suction outlet/apparatus per patient, plus one reserve method of applying suction.

3.2.3 Monitoring Equipment

Clinical observation remains the basis of patient monitoring in medical transport. Monitoring of appropriate physiological indices should however be carried out on all medical transports. Monitoring should be appropriate for the patient's clinical condition and should meet or exceed monitoring at the point of referral. It should be noted that some indices may be more difficult to monitor in a mobile environment. There should be a capacity to utilise an alternative monitor should one monitoring device fail to provide valid information. Certain specific monitoring devices should be available on all medical transports, including:

3.2.3.1 Oxygenation

A means of monitoring tissue oxygenation, such as pulse oximetry or transcutaneous oxygen tension must be available on all medical transports.

3.2.3.2 Electrocardiograph

Equipment to monitor and display the ECG must be available on all medical transports. A recording or screen freeze ability is desirable.

3.2.3.4 Temperature

A means of monitoring patient temperature must be available on all medical transports. Mercury thermometers should not be used.

3.2.4 Other Medical Equipment

The selection of equipment to be carried for patient support should be consistent with the air medical service's mission statement and the type of patients carried. Equipment should be available to continue all appropriate therapy from the point of referral and to deal with all reasonably predictable changes in condition and complications. An enhanced level of equipment should be available for particular patients, as required. Certain equipment should be available on all medical transport, including:

3.2.4.1 Self-inflating resuscitator(s) of sizes compatible with the age and size of patients carried by the service. It should be possible to ventilate the patient with air or oxygen or a mixture. A selection of masks and artificial airways should be available.

3.2.4.2 All medical aircraft should be equipped with intravenous infusions. A method of infusing intravenous fluids by means other than gravity should be available. Appropriate IV cannulae, fluids and giving sets should be carried. Overhead hooks for intravenous infusions are recommended if the infusion system is in any way gravity dependent.

3.2.4.3 Advanced life support air medical transport should have, in addition to the above:

- Equipment and drugs for the intubation of the trachea
- Appropriate drugs for advanced cardiac life support
- Equipment for needle or tube thoracostomy

3.2.4.4 Critical care medical transports should carry equipment complying with the ANZCA and ACEM Policy Document p. 23 *Minimum Standards for the Transport of the Critically Ill*

3.2.4.5 Medical transports in advanced or specialised areas should carry equipment appropriate for the management of actual and foreseeable patient conditions. These areas include: hyperbaric, obstetric, burns, [neonatal](#) and neurosurgical patients.

3.2.4.6 All patients dependent on a mechanical ventilator during medical transport should be protected with a disconnect alarm. A method of detecting hypoventilation is recommended (eg. capnography).