

1. Business Ethos and Processes

1.1. Business ethos

1.1.1. The aeromedical service has a written mission statement.

1.1.2. The aeromedical service clearly specifies its scope of care.

1.1.3. The aeromedical service has a written code of ethical conduct that demonstrates ethical practices in business and marketing.

1.1.4. The aeromedical service has a professional code of conduct for its employees.

1.1.5. The aeromedical service audits its routine external providers of patient transport and care to ensure they offer the same level of ethical service.

1.1.6. The aeromedical service shall compete fairly for all business opportunities and individual aeromedical transport missions.

1.1.7. The service shall not offer or solicit improper payments or gratuities in connection with obtaining a contact.

1.1.8. The aeromedical service is properly directed and staffed according to the mission statement, anticipated individual needs, and scope of services offered.

1.1.9. The aeromedical service has a clearly defined governance system and shall demonstrate its methods used to develop and maintain high standards.

1.1.10. The aeromedical service operates an accredited management system such as ISO9001.

1.2. Legal compliance

1.2.1. The aeromedical service demonstrates compliance with the legal requirements and regulations of the government, aviation regulatory body and local agencies under whose authority it operates.

1.2.2. The aeromedical service complies with confidentiality and data protection laws in the areas in which it offers service cover.

1.2.3. The service ensures that its employees and those subcontracted to work on the behalf of the service shall maintain due confidentiality in respect of all third parties.

1.3. Financial requirements

1.3.1. The aeromedical service must declare its source(s) of funding and provide evidence of financial security. A statement from the accountant is sufficient.

1.3.2. The service must provide a description of the way the service is funded, supported by evidence from audited accounts. A statement from the accountant is sufficient.

1.3.3. There must be evidence in audited accounts to demonstrate that the service has sufficient financial reserves to sustain normal operations for at least three months. A statement from the accountant is sufficient.

1.3.4. Independent auditors must report on the business financials at the intervals required under corporation law in the service's base country. A statement from the accountant is sufficient.

1.4. Insurance

1.4.1. The aeromedical service shall hold an appropriate level of insurance cover (according to the scale of the scope of its business) in the following areas:

1.4.1.1. Third party liability indemnity cover for each aircraft with limits set by the relevant aviation regulatory body

1.4.1.2. Malpractice indemnity cover for health care professionals with limits of USD 3 million or above

1.4.1.3. Health insurance, including injury and accident cover with death in service benefits

1.4.1.4. Loss or damage of essential assets (aircraft, medical equipment)

1.5. Human resources

1.5.1. There is a clear indication that service personnel are the most important factor for success, in that their motivation and education and training contribute decisively to meet high-level quality standards.

1.5.2. There shall be evidence that staff are valued and recognised for their contributions to the success of the service.

1.5.3. Staff shall receive feedback and appraisals at regular intervals.

1.5.4. Staff shall have a means of being kept informed about key HR issues, business policy and other management issues associated with their roles within the service.

1.5.5. There is a clear reporting mechanism to upper level management.

1.5.6. Staff members shall have a nominated manager with whom they can discuss concerns about the service, its procedures, safety, or any other issue, without fear of detriment.

1.5.7. There is a clear disciplinary process that protects employees from capricious actions.

1.5.8. A business policy manual or 'handbook' is issued to all personnel.

1.6. Management hierarchy

1.6.1.	There shall be a well-defined line of authority.
1.6.2.	An organisational chart defines how the aeromedical transport service fits into the corporate business and/or governing or sponsoring institution(s).
1.6.2.1.	The aeromedical service should have a minimum of three departments:
1.6.2.1.1.	Aviation (which may include Flight Operations, Safety and Compliance, Engineering and Aircrew)
1.6.2.1.2.	Medical (which may include Medical Operations, Clinical Services and Medical Support)
1.6.2.1.3.	Business Support (to include all aspects of supporting the service)
1.6.3.	There shall be a policy that specifies the lines of communication and authority between the medical management team and the aviation team.
1.6.4.	There shall be formal, periodic departmental and inter-departmental meetings for which minutes are kept.
1.6.5.	Evidence shall demonstrate management encouragement for ongoing communication between aircrew, flight medical crew, operations/communications personnel, engineers and other personnel.
1.6.6.	Evidence shall demonstrate that medical, logistic, safety and management information is disseminated between meetings to all staff via email, newsletter or other method of promulgation.
1.7.	Air ambulance philosophy
1.7.1.	The service acknowledges that an appropriate transport should enhance the patient's outcome, whether this is a transfer to an increased level of medical care, or a transfer for palliative or social reasons.
1.7.2.	Evidence shall demonstrate that all transfers of patient care occur from a lower level of care to an equal or higher level of care, with the exception of elective transfers for palliative care, patient convenience, patient's desire, or to return a patient to the original referring facility.
1.7.3.	Evidence shall demonstrate that quality patient care is not compromised by financial pressures
1.7.4.	If the aeromedical service operates its own aircraft the service must declare which of its fleet are dedicated air ambulances.
1.7.5.	If aircraft are chartered from business partners instead of or to supplement the service's own fleet, these aircraft conform to national/international requirements in terms of safety and appropriateness as well as to the same requirements in terms of patient care, treatment and monitoring as stated in the EURAMI standards.
1.7.6.	Brokering of aeromedical transport services runs the risk of loss of control of the quality of the service being provided. If the company offers a brokerage service, it must provide evidence of the checks undertaken to ensure that the new provider(s) adhere to the current EURAMI Standards for the specific services that they provide.

1.7.7. When the service uses another company by brokerage, evidence must be provided that the agent commissioning the mission, and the patient (or patient's next of kin/family), are made aware that the service is not using its own resources.

1.7.8. Commercial airline aircraft may be used, if they conform to national/international requirements in terms of safety and the service can provide medical escorts which can comply to EURAMI's standards in terms of patient care, treatment and monitoring on board.

1.7.9. There shall be evidence that medical transport missions are planned and performed preferably as bed to bed, or point of injury to bed transfers.

1.7.10. There shall be clear procedures for the exceptional use of tarmac transfers which interrupt the continuity of patient care by a single medical crewmember or team.

1.7.11. Patient care treatment and monitoring must be provided continuously and without any disruption during the whole transport.

1.8. Marketing

1.8.1. The aeromedical service must use ethical and transparent marketing to ensure that potential clients and end users of the service are informed of:

1.8.1.1. Capabilities of the aeromedical service.

1.8.1.2. Patients (defined by age group, level of care and specialty needs) considered appropriate for transport by the aeromedical service.

1.8.1.3. Type of aircraft used and their registration numbers.

1.8.1.4. When patients may be transported by aircraft chartered from external providers

1.8.1.5. When patients may be transported by commercial airliner.

1.8.1.6. Coverage areas for each transport mode of the aeromedical service.

1.8.1.7. Hours of operation, phone number, and access procedure.

1.8.2. Social media advertising shall be frequently scrutinised to ensure that no lapse of confidentiality or inappropriate entries appear online.

1.8.3. In its advertising, the service shall be completely honest and transparent when acting as a broker for the provision of aeromedical transport services from external sources.

1.8.4. The senior management shall set guidelines for press related issues and marketing activities.

1.9. Working environment

1.9.1. The physical base of operations demonstrates an appropriate safe work environment for all personnel with adequate lighting, heating, ventilation, individual workspace, and storage of equipment for patient care and care of the transport aircraft and/or other vehicles.

1.9.2. Evidence must demonstrate compliance with health and safety legislation and regulations.

1.9.3. All patient care resources, including personnel and equipment; necessary to the service's mission must be readily available in the aircraft or available for placing in the aircraft and operational prior to initiating a mission.

2. Safety and Quality Management

2.1. Quality Control

2.1.1. The aeromedical service has a quality manager who oversees all aspects of quality assessment and control across the complete range of services provided by the organisation.

2.1.2. The aeromedical service has a quality management committee that meets on a regular basis.

2.1.3. There is a clear trail of accountability for quality management in all areas of the service.

2.1.4. The aeromedical service has a written policy defining the quality management system and its processes.

2.1.5. The quality policy is understood and followed at all levels and by all staff and each employee and/or subcontractor works towards measurable objectives.

2.1.6. The aeromedical service has defined key performance indicators (KPIs) and quality targets (QTs).

2.1.7. Medical KPIs and QTs are based on clinical 'best-evidence' whenever possible, including international, national or local patient care guidelines or protocols, and supported by the service's own policies.

2.1.8. Mission KPIs and QTs are based on written logistics and operations guidelines, policies or protocols written by the aeromedical service according to its mission statement, scope of service and capabilities.

2.1.9. Aviation KPIs and QTs are based on international and national regulations from the aviation regulatory body or bodies that have jurisdiction in the service's operating area.

2.1.10. The aeromedical service produces regular quality control reports:

2.1.10.1. Annually, or

2.1.10.2. Six monthly

2.1.11. The aeromedical service has a continuous quality management monitor that allows identification of deviations from the defined KPIs and QTs in real time.

2.2. Quality audit processes

2.2.1. The aeromedical service has quality management tools designed to collect, monitor and assess the activities and performance of the service continuously and in real time.

2.2.2. KPIs and QTs are designed to monitor patient care, operational efficiency, aviation safety, and financial control.
2.2.3. KPIs and QTs are reviewed regularly:
2.2.3.1. Annually, or
2.2.3.2. Every two years
2.2.4. The quality system is regularly audited and evaluated for conformance and effectiveness.
2.2.5. Failure to meet KPIs and/or non-compliance to QTs are identified and highlighted by the Quality Manager or Quality Committee and corrective issues are addressed in a written action plan.
2.2.6. Action plans are audited, evaluated to ensure corrective action is being achieved, and re-evaluated for further action if KPIs and/or QTs are still not being met.
2.2.7. All action plans are reviewed on a regular basis and feedback is sent to relevant staff and management until the action plan is closed by the Quality Manager.
2.3. Quality audit processes review
2.3.1. The regular quality management meetings are considered quorate when at least one representative from each of the relevant departments within the service are present (such as aviation, operations, and medical departments).
2.3.2. The periodic quality control reports are reviewed at senior management meetings.
2.3.3. Internal documents that form the basis for KPIs and QTs, such as patient care guidelines, policies, and protocols must be reviewed annually for currency, accuracy and appropriateness of the content.
2.4. Data used for quality control
2.4.1. The aeromedical service makes decisions about quality based on recorded data.
2.4.2. The aeromedical service shall record the following quantitative (qn) and qualitative (ql) items:
2.4.2.1. Transport (qn)
2.4.2.1.1. Total number of transport missions.
2.4.2.1.2. Total aborted or cancelled flights (for any reason).
2.4.2.1.3. Total flight time per aircraft.

2.4.2.1.4.	Total mission time.
2.4.2.1.5.	Total aborted or cancelled flights due to weather.
2.4.2.1.6.	Total aborted or cancelled flights due to maintenance.
2.4.2.1.7.	Total aborted or cancelled flights due to patient condition.
2.4.2.1.8.	Total aborted or cancelled flights due to crew issues.
2.4.2.1.9.	Total aborted or cancelled flights due to other reasons.
2.4.2.1.10.	Total diversions due to weather.
2.4.2.1.11.	Total diversions due to aircraft faults
2.4.2.1.12.	Total diversions due to deteriorating patient condition
2.4.2.1.13.	Total diversions due to crew issues
2.4.2.1.14.	Total diversions due to other reasons
2.4.2.2.	Classification of missions by flight medical crew (qn)
2.4.2.2.1.	Total flights with single paramedic crew.
2.4.2.2.2.	Total flights with single nurse crew.
2.4.2.2.3.	Total flights with single doctor crew.
2.4.2.2.4.	Total flights with two paramedic crew.
2.4.2.2.5.	Total flights with two nurse crew.
2.4.2.2.6.	Total flights with paramedic and nurse crew.
2.4.2.2.7.	Total flights with paramedic and doctor crew.

2.4.2.2.8.	Total flights with nurse and doctor crew.
2.4.2.2.9.	Total flights with paediatric ICU team
2.4.2.2.10.	Total flights with neonatal ICU team
2.4.2.2.11.	Total flights with psychiatric team
2.4.2.2.12.	Total flights with other specialist teams
2.4.2.3.	Classification of missions by medical (qn)
2.4.2.3.1.	Total flights by primary diagnosis (parameters must be given).
2.4.2.3.2.	Total flights by level of care.
2.4.2.3.3.	Total flights by age group of patient.
2.4.2.3.4.	Total flights with altitude or cabin pressurisation limitation.
2.4.2.3.5.	Total flights with other limitation requested by medical crew.
2.4.2.3.6.	Total flights by reason for the patient transfer (parameters must be given).
2.4.2.4.	Clinical data (ql)
2.4.2.4.1.	Medical adverse events during the mission (parameters must be given).
2.4.2.4.2.	Clinical outcomes in case of adverse events (parameters must be given).
2.4.2.5.	Performance feedback (qn and ql)
2.4.2.5.1.	Total complaints reported and outcomes.
2.4.2.5.2.	Total operations/logistics incidents reported and outcomes
2.4.2.5.3.	Patient and/or family satisfaction.

2.4.2.5.4. Commissioning agent/person satisfaction.
2.4.2.6. Aviation safety
2.4.2.6.1. Total aviation incidents reported and outcomes
2.5. Safety management
2.5.1. Safety management system
2.5.1.1. The aeromedical service has a safety manager who oversees all aspects of aviation related safety issues across the complete range of services provided by the organisation.
2.5.1.2. The aeromedical service follows the generic recommendations of ICAO (International Civil Aviation Organization) Annex (19) on Safety Management and the ICAO Safety Management Manual.
2.5.1.3. The service operates its safety management system (SMS) in conformance to the regulations promulgated by the aviation regulatory body which has jurisdiction in the area(s) of the service's operations.
2.5.1.4. The aeromedical service has adopted a culture of safety that is recognised and followed in by its staff.
2.5.1.5. The aeromedical service has a safety committee that meets on a regular basis.
2.5.1.6. There is a clear trail of accountability for safety management in all areas of the service.
2.5.1.7. The aeromedical service has a written policy defining the SMS and its processes.
2.5.1.8. The safety management system is understood and followed at all levels and by all staff and and/or subcontractors.
2.5.1.9. The service has a safety management system (SMS) that provides a systematic way to identify hazards and control risks while maintaining assurance that these risk controls are effective.
2.5.1.10. The SMS policy shall:
2.5.1.10.1. Define how the service is set up to manage risk.
2.5.1.10.2. Describe a safety reporting system.
2.5.1.10.3. Allow identification of risk.
2.5.1.10.4. Support the implementation of suitable controls.

2.5.1.10.5.	Provide a process to identify and correct non-conformities.
2.5.1.10.6.	Define a continual improvement process.
2.5.2. Safety committee	
2.5.2.1.	The safety committee must comprise of at least one representative from each of the arms of the service (aviation, operations and medical).
2.5.2.2.	The committee shall meet regularly to discuss risks, actual occurrences and actions following previous reports.
2.5.2.3.	Committee meetings shall be held:
2.5.2.3.1.	Weekly, or
2.5.2.3.2.	Monthly
2.5.2.4.	Written reports on the activities of, and decisions made by, the safety committee shall be submitted to senior management meetings.
2.5.2.5.	Recommendations for amendments to operational and safety issues must be reviewed by senior management.
2.5.3. Safety reporting	
2.5.3.1.	The aeromedical service encourages all staff to complete safety deficiency reports on any occasion that a hazard or potential hazard is encountered.
2.5.3.2.	The reporting system shall not be confined only to aviation events.
2.5.3.3.	Safety reports are dispatched to the Safety Manager (or nominated deputy) as soon as possible after the occurrence/incident so that remedial action can be expedited.
2.5.3.4.	All safety reports are discussed a safety committee meetings.
2.5.3.5.	The Safety Manager has authority to escalate safety reports to senior management at any time.
2.5.3.6.	Every safety reports is followed by an action plan
2.5.3.7.	All action plans are reviewed on a regular basis and feedback is sent to relevant staff and management until the action plan is closed by the Safety Manager or senior management.
2.6. Risk management	

2.6.1. The SMS is linked with risk control/management, so that concerns raised through the risk management process can be followed up through the continuous quality control program.

2.6.2. The aeromedical service operates a risk control process that:

2.6.2.1. Allows identification of hazards and risks

2.6.2.2. Assesses the worst case impact of individual hazard, should they occur

2.6.2.3. Assigns a likelihood of each risk actually occurring

2.6.2.4. Proposes risk management strategies designed to eliminate, ameliorate or mitigate either the hazard itself, or the consequences of the hazard.

3. Mission Operations

3.1. Operations

3.1.1. The logistic management and handling of aircraft, aircrew, engineering, medical crew, and all the support needed to successfully complete an air ambulance transport is undertaken by an operations department.

3.1.2. The functions of the operations department are subdivided in to:

3.1.2.1. Flight Operations (also sometimes known as Aviation Ops, Air Ops, Flying Ops)

3.1.2.2. Medical Operations

3.1.2.3. The operations department contains a communications centre responsible for:

3.1.2.3.1. Receiving calls from clients and commissioners of air ambulance transfers

3.1.2.3.2. Sending and receiving patient medical reports

3.1.2.3.3. Tracking mission progress (flight following)

3.1.2.3.4. Communications with air traffic services

3.1.2.3.5. Communications with aircraft on-mission

3.1.2.3.6. **[Rotary wing only]** Communications with emergency medical service agencies

3.2. Communications

3.2.1. There is a communications policy and procedures manual.

3.2.2. The communications centre is available 24 hours a day all year round.

3.2.3. There is at least one dedicated phone line for aeromedical transport co-ordination.

3.2.4. There is at least one dedicated email and mobile phone number for aeromedical transport communications.

3.2.5. Staff are aware that noise and other distractions must be minimised in the communications area while personnel are involved with a medical transport mission.

3.2.6. All incoming and outgoing phone calls are recorded.

3.2.7. All parties are informed that their conversation is recorded as per national human rights and/or data protection regulations.

3.2.8. Recordings are time stamped and may be played back directly by communications personnel.

3.2.9. There is an electronic case management software tool. This tool shall be used to gather medical, logistics, and aviation data centrally.

3.2.10. There is a real or virtual status board with information about:

3.2.10.1. Booked flights.

3.2.10.2. Current flights (missions in progress).

3.2.10.3. Aircrew on duty and standby (availability).

3.2.10.4. Flight medical crew on duty and standby (availability).

3.2.10.5. Aircraft availability.

3.2.10.6. Maintenance status of aircraft.

3.2.10.7. Weather information.

3.2.11. In case of loss of mains power to the communication equipment there is either:

3.2.12. Back-up emergency power source for communications equipment

3.2.13. Policy and system for maintaining communications by other means

3.3. Flight planning

3.3.1. Maps and navigation charts for the entire area(s) of operation are readily available:

3.3.1.1. Hard copies.

3.3.1.2. Electronic copies.

3.3.2. Flight planning hardware and software must be updated on a continuous basis, so that all charts, maps, documents, and references are always current.

3.3.3. A quiet area with computer access and flight planning documents is available for aircrew to plan and prepare for flights

3.3.4. A daily briefing facility allows constant updating of NOTAMS, Danger Areas, Weather and any other such information that may be necessary in order to conduct a flight safely.

3.4. Operations personnel

3.4.1. An Operations Manager shall be employed to control and manage the daily activities of the operations department(s).

3.4.2. There shall be adequate personnel to provide full coverage of all operations activities using a staff rota that enables 24 hour cover all year round.

3.4.3. Shall have a full command of the official languages of the country in which the aeromedical service is based, as well as of English if the service is not based in an English-speaking nation.

3.4.4. Training of operations personnel shall include::

3.4.3.1. Use of the service's case management IT system.

3.4.3.2. Financial aspects of quoting and estimating missions

3.4.3.3. Geographical limits and other considerations applicable to the aeromedical service.

3.4.3.4. National and international aviation regulations.

3.4.3.5. Border control regulations (immigration and customs).

3.4.3.6. Company Operations Manual

3.4.3.7. Company safety regulations and emergency procedures.

3.4.3.8. Dangerous Air Cargo (DAG) regulations and procedures

3.4.3.9. Safety Management System (SMS).

3.4.3.10. Human factors (crew resource management)

3.4.3.11. Flight manifest documentation.
3.4.3.12. Mission logistics planning
3.4.3.13. Aircrew flight time limitations
3.4.3.14. Filing flight plans
3.4.3.15. Flight following (tracking) procedures.
3.4.3.16. Radio Telephony (RT) procedures
3.4.3.17. Major incident co-ordination
3.4.3.18. Ground handling of aircraft
3.4.3.19. The capabilities and resources of airports, ground ambulance suppliers, receiving hospitals and other facilities that are needed for a successful mission outcome
3.4.5. Duties of operations personnel shall include:
3.4.5.1. Central co-ordination for communications between external individuals and agencies, and between departments within the operational arm of the service, in all aspects related to the safe and efficient undertaking of an aeromedical transport mission.
3.4.5.2. Issue quotes and/or estimates for missions when requested by outside agencies.
3.4.5.3. Receive and co-ordinate requests for aeromedical transports.
3.4.5.4. Assignment of crew according to rotas which conform with national regulations.
3.4.5.5. Set up logistic stages of each sector in the mission plan.
3.4.5.6. File and/or change flight plans.
3.4.5.7. Access to medical crew and flight crew visas and passport information in order to complete flight manifest documentation.
3.4.5.8. Continuous flight following (mission tracking) shall be routine, and the following data collected for audit purposes
3.4.5.8.1. Pre-take-off

3.4.5.8.1.1. Date and time (with time-zone) when initial request is received.
3.4.5.8.1.2. Name and phone number of requestor and the commissioning organisation or individual.
3.4.5.8.1.3. Patient name, age, date of birth and gender.
3.4.5.8.1.4. Diagnosis and/or reason for transfer.
3.4.5.8.1.5. Referring and receiving medical team details.
3.4.5.8.1.6. Referring and receiving facilities details.
3.4.5.8.1.7. Whenever possible, confirmation of bed availability and acceptance by receiving physician and facility.
3.4.5.8.1.8. Departure airport or landing zone.
3.4.5.8.1.9. Destination airport or landing zone.
3.4.5.8.1.10. Refuelling stops if applicable.
3.4.5.8.1.11. Ground transportation service details at sending area.
3.4.5.8.1.12. Ground transportation service details at receiving area
3.4.5.8.2. Transfer
3.4.5.8.2.1. Time of departure from base.
3.4.5.8.2.2. Aircrew details
3.4.5.8.2.3. Flight medical crew details.
3.4.5.8.2.4. Estimated time of arrival at destination (if applicable).
3.4.5.8.2.5. Pertinent landing zone or airport information.
3.4.5.8.2.6. Time of arrival at patient collection facility

3.4.5.8.2.7. Time of departure from patient collection facility
3.4.5.8.2.8. Time of arrival at patient receiving facility.
3.4.5.8.2.9. Time departure from patient receiving facility.
3.4.5.8.2.10. Time arrival at base.
3.4.5.8.2.11. Time of end of mission.
3.4.5.8.3. If flight cancelled
3.4.5.8.3.1. Time flight is aborted or cancelled after dispatch.
3.4.5.8.3.2. Reason for cancellation of flight.
3.5. Use of operations data
3.5.1. The aeromedical service demonstrates that the security of the data collected meets the high standards required for national data protection/confidentiality laws.
3.5.2. The aeromedical service demonstrates that the data is accurate and complete.
3.5.3. The aeromedical service provides evidence that these data are used to improve the quality, safety, efficacy and efficiency of the service.
3.5.4. The aeromedical service provides evidence that the findings and conclusions of the audited data are promulgated to:
3.5.4.1. Key players within the service's own operations.
3.5.4.2. External publication for the benefits of the wider aeromedical fraternity.
3.6. Incident plan
3.6.1. The aeromedical service must have a readily accessible post incident plan as part of the flight following policy so that appropriate search and rescue efforts are initiated in the event that an aircraft is overdue or radio communications cannot be established or verified.
3.6.2. The plan shall include
3.6.2.1. List of personnel/telephone numbers to notify as well as their priority to activate in the event of an accident or incident.

3.6.2.2. Guidelines to follow in attempts to communicate with the aircraft.

3.6.2.3. Guidelines to initiate search and rescue.

3.6.2.4. Time frame to activate the post-incident plan for overdue aircraft.

3.6.2.5. Communications policies to ensure accurate information dissemination.

3.6.2.6. Procedures to secure all documents, and recordings related to the particular incident.

3.6.2.7. Procedure to deal with releasing information to the press.

3.6.3. An annual exercise is conducted to test the post incident plan. This exercise should involve pilots, flight medical crew, operations personnel, ground staff and management staff.

4. Medical Management

4.1. Medical department overview

4.1.1. The service has a dedicated and integrated medical department, the structure of which is described using one or more hierarchy charts. The charts show the following details of the medical management structure:

4.1.1.1. The relationship of the medical department within the structure of the air ambulance company and its key executives.

4.1.1.2. The relationship between the medical department and other key areas which impinge on the operational capability of the air ambulance service.

4.1.1.3. All medical personnel shall understand the medical department management hierarchy ('chain of command').

4.1.2. Department documentation

4.1.2.1. Management ensures that patient care records, meeting minutes, policies and procedures are stored according to aeromedical service's policy and are indicative of the service's sensitivity to patient confidentiality.

4.1.2.2. A copy of the patient care record remains at the receiving facility for appropriate continuity of care.

4.1.2.3. Standard operating procedures and policies define what treatment may be performed without direct medical supervision and in which situations

4.1.2.4. Policies are dated and signed by at least two appropriate managers.

4.1.2.5. Policies are reviewed on an annual basis as verified by at least two manager's signatures on a cover sheet or on respective policies.

4.1.3. The medical department of the service employs appropriately qualified and experienced personnel in key office-based appointments. The following list is recommended, but individual services may utilise their staff in different ways to cover the recommended roles:

4.1.3.1. Medical Director (may be called 'Chief Medical Officer', 'Senior Flight Physician' or such other term as is preferred by the air ambulance service).

4.1.3.2. Clinical Manager, which may be:

4.1.3.2.1. If appropriate to the service: Flight Nurse Manager (may be called Senior Flight Nurse, Chief Nurse, etc.).

4.1.3.2.2. If appropriate to the service: Flight Paramedic Manager (may be called Senior Flight Paramedic, Chief Paramedic, etc.).

4.1.3.2.3. If appropriate to the service: Flight Nurse Co-ordinator(s) (may be called Flight Nurse Ops, Office Flight Nurse, etc.).

4.1.3.2.4. If appropriate to the service: Flight Medical Operations Co-ordinator(s). (may be called Medical Ops Manager, etc).

4.1.4. The medical department of the service employs appropriately qualified and experienced personnel (as defined below) in the following flying full-time, part-time, or mission-specific contracted appointments:

4.1.4.1. If appropriate to the service: Flight Doctors.
4.1.4.2. If appropriate to the service: Flight Nurses.
4.1.4.3. If appropriate to the service: Flight Paramedics.
4.1.4.4. If appropriate to the service: Other non-physician health care professionals
4.1.4.5. If appropriate to the service: Expert medical personnel key to any specialist aspects of the air ambulance service (e.g. neonatal care, psychiatric care, ECMO, IABP).
4.2. Human resources
4.2.1. There must be adequate personnel to provide full coverage of all clinical activities using flight nurses, flight physicians, or other health care professionals who are assigned to the air ambulance service and are readily available within the response time determined by the service.
4.2.2. All flight medical crew must be licensed, registered, certified or permitted according to the national regulations of the country in which the service is based, and, on recruitment, must meet minimum educational requirements specific to the mission statement and scope of service and set by the company.
4.2.3. Flight medical crew scheduling must demonstrate strategies to minimise duty time fatigue, including such strategies as planning of crew constitution, rest periods, management of jet lag and time on shift, length of shifts per week and day-to-night rotation, according to any flight time limitations or working-time laws or regulations required in the country in which the service is based.
4.2.4. Currency shall be ensured and documented by way of a flight/mission log book, which must be kept up-to-date by both the individual crew member and also by the management of the service.
4.2.5. Training programs are planned and structured to include both initial (induction/introduction) education, as well as ongoing (continuation) training.
4.2.6. Training is available to all flight medical personnel and is guided by the mission statement and scope of care of the service.
4.3. Standards for medical personnel
4.3.1. Training is mapped against aeromedical competencies as clearly defined by the Medical Director.
4.3.2. Successful completion of the educational components specified by the training program are documented for each member of the flight medical personnel.
4.3.3. Each individual member of the medical department is appraised at a regular assessment/evaluation meeting by one or more senior medical managers, during which their training record and mission logbook are checked to ensure the established minimum standards of the service are upheld.
4.3.4. Evidence should demonstrate that routine appraisals for each individual member of the medical department are staged at regular intervals.
4.3.5. Evidence should demonstrate that extraordinary appraisals are performed in exceptional circumstances, such as following critical incidents or to evaluate performance considered to be either well below what is considered safe, or when performance is exceptionally good and considered worthy of
4.3.6. The service has occupational health policies. These address the following topics:
4.3.6.1. Pre-employment and physical examination or medical screenings, as well as immunisation history.
4.3.6.2. The recruitment or ongoing employment of flight medical personnel with a psychiatric history.

4.3.6.3.	Dress codes and the use of protective clothing pertinent to the mission profile and safety procedures of the air ambulance service.
4.3.6.4.	Crew duty time limitations for flight medical personnel that addresses the issues of fatigue, performance, maximum duty time and advice with regards to adequate rest.
4.3.6.5.	Hearing protection on the ground and in the air.
4.3.6.6.	Duty status during pregnancy.
4.3.6.7.	Duty status during acute illnesses.
4.3.6.8.	Duty status while taking any chronic medication.
4.3.6.9.	Duty status after diving.
4.3.6.10.	Manual handling (lifting and loading).
4.3.6.11.	Drugs and alcohol abuse policy.
4.4. Medical training	
4.4.1.	The service holds current and historical evidence of planned and structured training programs including attendance records of all flight medical personnel employed or contracted by the service.
4.4.2.	Performance of each flight medical crew person at each training session is measured against a set of minimum standards of competency and currency, as established by the Medical Director and based on the Mission statement and scope of the service.
4.4.3.	Individuals' performance in training is documented in a training record that includes a minimum of a two part induction training program for new recruits to the service, and a continuing education program for all personnel, as well as a personnel appraisal system.
4.4.4.	The following list of subjects is covered in Part 1 of the induction training program:
4.4.4.1.	The flight environment.
4.4.4.2.	Altitude physiology.
4.4.4.3.	Biodynamics of movement.
4.4.4.4.	Limitations of in-flight management of patients.
4.4.4.5.	Clinical considerations in the transport of specific adult patients:
4.4.4.5.1.	Respiratory.
4.4.4.5.2.	Cardiac/cardiovascular/haematological.
4.4.4.5.3.	Neurologic/neurosurgical.

4.4.4.5.4. Orthopaedic/spinal.
4.4.4.5.5. Otorhinolaryngeal/maxilla-facial/ophthalmic.
4.4.4.5.6. Environmental injuries.
4.4.4.5.7. Major and/or multiple trauma.
4.4.4.5.8. Burns.
4.4.4.5.9. Post-surgical.
4.4.4.5.10. Intensive care patients.
4.4.4.6. Advanced cardiac life support.
4.4.4.7. Human factors and CRM (crew resource management)
4.4.5. The following list of subjects is covered in Part 2 of the induction training program:
4.4.5.1. Introduction to the service:
4.4.5.1.1. Introduction to the philosophy, capabilities and structure of the air ambulance service.
4.4.5.1.2. Overview of the operations of a complete repatriation, retrieval and/or transfer mission.
4.4.5.1.3. Brief overview and summary of company policies, procedures and guidelines, with information on how to access and use them.
4.4.5.2. Essentials for successful mission completion:
4.4.5.2.1. Essential procedures for flight medical personnel pre-, intra-, and post-mission.
4.4.5.2.2. Familiarisation and competency using the service's medical equipment.
4.4.5.2.3. Infection control philosophy and procedures.
4.4.5.2.4. Aircraft essential knowledge, specific to the aircraft type(s) flown by the air ambulance service.
4.4.5.3. Personal health and safety.
4.4.5.3.1. Aircraft emergency procedures, specific to the aircraft type(s) flown by the air ambulance service.
4.4.5.3.2. Essential survival training appropriate to local geographic requirements.
4.4.5.3.3. Occupational health, fitness to fly and stress management.
4.4.5.4. Clinical governance.

4.4.5.4.1. Aeromedical risk analysis and management.
4.4.5.4.2. Quality management and audit systems.
4.4.6. There is a planned and structured continuing professional development (CPD) program which provides continuation training at least twice a year.
4.4.7. All of the topics addressed in the induction program are reviewed and updated over a rolling two year CPD program.
4.4.8. The CPD program includes case-related clinical governance sessions which provide a forum for discussing the successes as well as the problems encountered during recent missions.
4.5. Medical personnel
4.5.1. Medical Director
4.5.1.1. The service employs a Medical Director (may be called 'Chief Medical Officer', 'Senior Flight Physician' or such other term as is preferred by the air ambulance service) who is available for consultation within normal day-time working hours.
4.5.1.2. Where a Medical Director works only part-time for the service, one or more nominated deputies share the on-call availability rota as long as other members of the medical department are aware of who has overall responsibility at all times.
4.5.1.3. The Medical Director is responsible for the establishment and maintenance of the highest quality of medical care provided by its flight medical personnel.
4.5.1.4. The service must provide a resume (CV) of the Medical Director and supporting documentation which demonstrate the following criteria:
4.5.1.4.1. An unrestricted license to practice and professional registration in the country in which the air ambulance service is based.
4.5.1.4.2. More than four years of relevant clinical experience, and senior (higher) qualifications in intensive care medicine, anaesthesia, or emergency medicine.
4.5.1.4.3. A minimum of 2 years' experience in a critical care environment.
4.5.1.4.4. Maintain clinical currency in an acute medical role on a weekly or monthly basis.
4.5.1.4.5. Full command of the official languages of the country in which the air ambulance service is based.
4.5.1.4.6. A good working knowledge of the English language if the service is operating internationally.
4.5.1.4.7. Received postgraduate training and qualification in patient transport which is accredited or otherwise recognised by a national or international academic body, such as university, health board, professional accrediting board or college, or other acknowledged and acclaimed education provider.
4.5.1.4.8. A thorough understanding of the general concepts of safe and efficient utilisation of aeromedical and ground resources.
4.5.1.4.9. The Medical Director demonstrates sufficient expertise and currency pertinent to the mission statement and scope of care of the air ambulance service and according to international standards.
4.5.1.4.10. The Medical Director demonstrates sound clinical and logistic decisions affecting medical care provided by the whole service.

4.5.1.4.11.	The Medical Director demonstrates personal high standards of care for all patients, but especially those who are critically ill or injured
4.5.1.4.12.	The Medical Director has related areas of responsibility which include:
4.5.1.4.12.1.	Overall management and direction of recruiting, training and continuing education for all health care professionals in the service
4.5.1.4.12.2.	Ensuring the competency and currency of all medical personnel working with the service.
4.5.1.4.12.3.	The development and maintenance of guidelines concerning diseases and injuries that require specific management or medical control input during patient transport.
4.5.1.4.12.4.	Ensuring timely review of patient care, utilising audit tools and patient transport documentation, with the guidance of pre-established criteria.
4.5.1.4.12.5.	Development and maintenance of processes to identify, document and analyse adverse medical events or potential adverse events with the specific goal of improving patient safety and quality of patient care.
4.5.1.4.12.6.	Overview of the air ambulance quality management (QM) program.
4.5.2.	Clinical manager
4.5.2.1.	The service employs a clinical manager, who may be a Flight Nurse Manager (otherwise known as 'Chief Flight Nurse', 'Senior Flight Nurse' or such other term as preferred by the air ambulance service) or other health care professional of similar seniority.
4.5.2.2.	The clinical manager shall have experience in both air and ground patient transport apposite to the mission statement and scope of service. The includes responsibility or oversight of the following:
4.5.2.2.1.	Day-to-day overview of office management in the medical department.
4.5.2.2.2.	Daily 'ward round' of current ongoing and planned cases, with clear communications between the Medical Director and others in the medical department.
4.5.2.2.3.	Interface with Medical Operations and Flight Operations.
4.5.2.2.4.	Clinical case management.
4.5.2.2.5.	Initial screening of completed case documentation, identification of issues for follow-up and reporting to the Medical Director.
4.5.2.2.6.	Human resources issues.
4.5.2.2.7.	Recruiting, interviewing, training records, currency and competency status.
4.5.2.2.8.	Maintenance of rotas, availability calendar, and key operability status board(s).
4.5.2.2.9.	Stock management and procurement of:
4.5.2.2.9.1.	Pharmacy items.
4.5.2.2.9.2.	Medical equipment.

4.5.2.2.9.3.	Medical consumables.
4.5.2.2.9.4.	Medical gases.
4.5.2.2.10.	Refurbishment of medical equipment and pharmacy bags/stores after each mission.
4.5.2.2.11.	Organisation of external contracts for service requirements, including:
4.5.2.2.11.1.	Routine cleaning and infection control.
4.5.2.2.11.2.	Waste and sharps disposal.
4.5.2.2.11.3.	Maintenance of medical equipment servicing.
4.5.2.2.11.4.	Resupply, filling and maintenance of medical gas supplies.
4.5.2.3. Other roles of the clinical manager may be shared with the Medical Director, and may include:	
4.5.2.3.1.	Validation of the service's medical policies and guidelines.
4.5.2.3.2.	Recruitment, training and continual education of all non-physician medical personnel.
4.5.2.3.3.	Administrative decisions regarding patient care.
4.5.2.3.4.	Daily assignment of flight medical crew members to individual missions.
4.5.2.3.5.	Active involvement in the quality management program.
4.5.2.3.6.	Provision and promulgation of mission briefing notes covering all relevant personal, clinical and logistic details.
4.5.3. Service coordinator	
4.5.3.1. If the service employs one or more Flight Nurse (or other health care professional) Coordinators (may be called 'Flight Nurse Ops', 'Office Flight Nurse' or such other term as preferred by the air ambulance service), the coordinator shall have experience in both air and ground patient transport apposite to the mission statement and scope of service.	
4.5.3.2. The responsibilities for this role include:	
4.5.3.2.1.	Deputising for all the roles of the clinical manager.
4.5.3.2.2.	Provision of day-to-day continuity of case management with clear, concise and accurate handover of clinical and logistic information between shifts.
4.5.3.2.3.	Day to day interface with Medical Operations and Flight Operations personnel.
4.5.3.2.4.	Daily refurbishment of medical consumables and equipment.
4.5.4. Flight Doctors	

4.5.4.1. If the service employs its own Flight Doctors (also known as Flight Physicians). Every flight physician employed by the service, both full and part-time, shall comply with the following criteria:	
4.5.4.1.1.	Possesses a license to practice and is professionally registered in the country in which the air ambulance service is based.
4.5.4.1.2.	Has at least two years of relevant clinical experience, in either anaesthesia, intensive care medicine, or emergency medicine.
4.5.4.1.3.	(If undertaking critical care transfers) – Has at least 12 months experience in a critical care environment.
4.5.4.1.4.	Maintains clinical currency in an acute medical role on a weekly or monthly basis.
4.5.4.1.5.	Has full command of the official language of the country in which the air ambulance service is based.
4.5.4.1.6.	Has a good working knowledge of the English language if the service is operating internationally.
4.5.4.1.7.	Continuing education is provided and documented for flight doctors and is specific and pertinent to the mission statement and scope of care of the air ambulance service.
4.5.5. Other non-physician health care professionals	
4.5.5.1.	The service may employ Flight Nurses for routine in-flight care during patient transport. If so, each Flight Nurse must meet the essential national regulatory criteria for employment as a qualified and registered nurse, as well as any criteria set by the Medical Director of the service.
4.5.5.2.	The service may employ Flight Paramedics for routine in-flight care during patient transport. If so, each Flight Paramedic must meet the essential national regulatory criteria for employment as a qualified and registered paramedic, as well as any criteria set by the Medical Director of the service.
4.5.5.3.	The service may employ Flight Respiratory Technicians for routine in-flight care during patient transport. If so, each Flight RT must meet the essential national regulatory criteria for employment as a qualified and registered RT, as well as any criteria set by the Medical Director of the service.
4.5.5.4.	The service may employ other categories of health care professionals for routine in-flight care during patient transport as long as there is a clear clinical requirement, all national, local and company criteria are met, and there is evidence of supervision by the Medical Director and/or other physicians working for the service.
4.5.5.5.	The service must have evidence of a clear legal framework to support the use of non-physician/non-nurse personnel for the interhospital transfer of critically ill or injured patients.
4.5.5.6.	The service must demonstrate the means by which non-physician/non-nurse personnel may be legally utilised as flight medical crew in countries where similar groups of allied health care professionals do not exist or where they do not share the same privileges of
4.5.5.7.	The service must provide evidence of current corporate and/or individual professional indemnity insurance for the use of non-physician/non-nurse personnel in the interhospital transfer role.
4.5.5.8.	Each individual is licensed to practice and is professionally registered in the country in which the air ambulance service is based.
4.5.5.9.	Only personnel who are deemed by the Medical Director to have the necessary training, qualifications, knowledge, experience and competency are employed to undertake such missions.

4.5.5.10. Non-physician/non-nurse flight medical personnel receive the same initial induction training, with didactic operational and clinical components as offered to the doctor and nurse flight medical crew.
4.5.5.11. Non-physician/non-nurse flight medical personnel receive the same ongoing regular education programs with didactic operational and clinical components as offered to the doctor and nurse flight medical crew.
4.5.5.12. There is documentary evidence that clinical competency in the relevant fields has been achieved, according to standards set by the Medical Director.
4.5.5.13. The service must provide evidence of the means by which non-physician/non-nurse personnel are supervised both on-line and off-line.
4.5.6. Specialist Personnel
4.5.6.1. Specialist personnel may be employed or sub-contracted for neonatal, paediatric, advanced critical care transfers (such as extra-corporeal membrane oxygenation transports), or other highly specialised areas of clinical practice.
4.5.6.2. When these specialists are not part of the company's core team of flight medical crew (i.e. they are added to supplement the service's own employed flight medical personnel), they are obliged to meet the following requirements:
4.5.6.2.1. Compliance with national licence, registration and/or certification requirements of the country in which the service is based.
4.5.6.2.2. Recognised relevant specialist knowledge, experience and currency, as defined by the requirements of the mission and established by the Medical Director.
4.5.6.3. When the specialists are part of the service's core team of flight medical crew, they must receive an abbreviated specific induction training, designed to introduce 'medical passengers' or 'temporary flight medical crew members' to the air ambulance service. This training covers
4.5.6.3.1. Flight environment.
4.5.6.3.2. Altitude physiology.
4.5.6.3.3. Biodynamics of movement.
4.5.6.3.4. In-flight management of patients.
4.5.6.3.5. Aircraft safety.
4.5.6.3.6. Emergency procedures.
4.5.6.3.7. Essential survival training pertinent to local geographic requirements.
4.5.6.4. To support specialist personnel in their temporary airborne role, all specialist care personnel are accompanied by at least one of the service's own flight medical crew personnel.
4.5.6.5. Continuing education is offered to specialist care professionals with an interest in continuing their service. The training is specific and pertinent for the mission statement, scope of care of the air ambulance service and the specialist's role within the service.

5. Clinical Practice

5.1. Scope of service

5.1.1. The air ambulance service has a written mission statement and a document which details the scope of the service.

5.1.2. There is evidence that staff are completely cognisant of with the mission statement and scope of care of the service.

5.1.3. All the aircraft to be accredited are configured to match the specific needs of each patient by the instillation of a stretcher system with monitoring and therapeutic devices and by the carriage of medical gases and other Medical consumables, as well as by resourcing appropriate medical staffing for the level of patient care required.

5.1.4. The air ambulance service has documented criteria with regards to the provision of appropriate care required by patients requiring aeromedical transport. This shall include:

5.1.4.1.1. A description of the levels of care of patients that can be transported.

5.1.4.1.2. Associated types and numbers of health care professionals that are required for each level of care.

5.1.4.1.3. The minimum equipment set(s) that must be carried for each level of care.

5.2. Medical resources

5.2.1. Medicines Management

5.2.1.1.1. The service must demonstrate compliance with national medicines management laws, regulations and procedures. The following information must be provided:

5.2.1.1.2. Details of an accountable person, chosen from the senior management in the medical staff, who has overall responsibility for pharmacy management.

5.2.1.1.3. Details of persons or personnel roles that have access to pharmacy stores.

5.2.1.1.4. Demonstration of a pharmacy room or store cupboard which complies with the security demands of the national regulatory body. At a minimum, the service must have a locked cupboard within another locked cupboard or room.

5.2.1.1.5. Evidence of compliance with national laws, regulations and recommendations for the storage, carriage, supply and use of controlled drugs.

5.2.1.1.6. Evidence of compliance with national and/or international recommendations for the storage, carriage, supply and use of refrigerated drugs.

5.2.1.1.7. There must be a system to ensure that expiration dates of medications and other consumables are checked regularly.

5.2.1.1.8. Evidence of accurate and precise stock checking and procurement of medicines.
5.2.1.1.9. Evidence of medicines wasted, destroyed or returned.
5.2.1.1.10. Examples of patient-specific directions which authorise non-physicians to dispense medicines to by off-line supervision (under the guidance of national, international or local regulations).
5.2.1.1.11. Examples of generic directions which authorise non-physicians to dispense medicines to by off-line supervision (under the guidance of national, international or local regulations).
5.2.1.1.12. Evidence of the licence or permissions needed to import or export medicines.
5.2.1.1.13. Evidence for the thorough checking and refurbishing of medical equipment bags to ensure all pharmacy items are in place and in-date.
5.2.2. Medical Gases Management
5.2.2.1. Evidence must be provided to demonstrate compliance with national and/or local regulations and recommendations concerning medical gases. The following information must be provided:
5.2.2.1.1. Details of an accountable person, chosen from the medical staff, who has overall responsibility for medical gases management.
5.2.2.1.2. Evidence of compliance with national laws, regulations and recommendations for the procedures of storage, carriage, supply and use of medical gases.
5.2.2.1.3. Demonstration of a medical gases storage facility which complies with national health and safety recommendations. At a minimum, this will be provision for a lockable cylinder store within a secure area.
5.2.2.1.4. Evidence of clearly marked separation of full and used cylinders in the storage area.
5.2.2.1.5. Evidence of accurate and precise stock checking and procurement of medical gas cylinders, and also of timely servicing or replacement of the cylinders.
5.2.2.1.6. Instructions to flight medical personnel on the following:
5.2.2.1.6.1. Understanding the benefits and hazards of supplemental oxygen in flight.
5.2.2.1.6.2. National and international cylinder specifications and differences.
5.2.2.1.6.3. Safe storage and use of portable oxygen cylinders in flight and on the ground.
5.2.2.1.6.4. Safe handling and use of aircraft fixed oxygen systems.
5.2.2.1.6.5. Calculation of patient-specific oxygen and medical air requirements.
5.2.2.1.6.6. Safe and efficient use of oxygen flow regulators and delivery devices.

5.2.2.1.7. Evidence of regular inspection and certification of in-flight oxygen cylinders.
5.2.3. Medical Equipment Management
5.2.3.1. The service must provide details of the accountable person who has day-to-day responsibility for medical equipment management.
5.2.3.2. The service must provide a list of all major items of medical equipment and evidence of:
5.2.3.2.1. The make and model of each item
5.2.3.2.2. Procurement, purchase or rental agreement.
5.2.3.2.3. Equipment is periodically tested and inspected to the manufacturer's guidelines and by a certified clinical engineer.
5.2.3.2.4. Compliance with health and safety regulations and manufacturer's instructions and recommendations for the storage and charging of medical equipment.
5.2.3.2.5. Maintenance and servicing records for each major item of medical equipment.
5.2.3.2.6. The presence of information manuals and other data pertinent to each item of equipment.
5.2.3.3. All flight medical crew must receive instruction and competency checking for each item of equipment they are likely to use in flight.
5.2.3.4. A handbook or other such document (electronic application, tagged label, etc) containing relevant information on the service's medical devices should be made available to flight medical personnel to serve as a reminder on the use of complex equipment when on a missions.
5.2.3.5. The service must use comprehensive checklists for medical equipment carried on board aircraft and in ground vehicles
5.2.3.6. Flight medical personnel shall ensure that all medical equipment is in working condition before flight.
5.3. All medical consumables
5.3.1. The service has stock-checking and supply systems which tracks shelf-lives, servicing due dates, and levels of consumables immediately available for use.
5.4. Medical capabilities
5.4.1. Clinical Management During Missions
5.4.1.1. There shall be a clear understanding within the service that by virtue of internal fitting of medical equipment designed for the transport of patients and the carriage of medical materials and flight medical personnel, the aircraft becomes a patient care unit (i.e. a clinical area analogous to a hospital bed area) which must be treated in the same way for purposes of cleaning, infection control, and any specific needs of the patient .

5.4.1.2. The service must demonstrate an appropriate method for selecting the number of flight medical crew on each mission, and their skill mix or specialty status.
5.4.1.3. The service must demonstrate that proper and adequate briefing and debriefing of flight medical teams and individuals is provided by the service.
5.4.1.4. Flight medical personnel are involved in the clinical decision making in terms of care provided during the mission.
5.4.1.5. The service must provide evidence of guidelines and other supporting documents aimed at ensuring the provision of optimum care (i.e. appropriate equipment, medical personnel and level of care) required for patients who are in need of aeromedical transport. These include:
5.4.1.5.1. Policies on the management of specific clinical dilemmas.
5.4.1.5.2. Policies on escalation of case management which require specialist or senior medical input.
5.4.1.5.3. Algorithm driven clinical and logistic flow charts.
5.4.1.5.4. Decision trees with clear end points on such issues as equipment, staffing, and logistics.
5.4.1.5.5. Risk analysis and risk management strategies.
5.4.1.6. Evidence of the following policies, protocols or procedures shall be provided:
5.4.1.6.1. Pre-flight preparation of the mission requirements.
5.4.1.6.2. Pre-flight assessment and preparation of the patient.
5.4.1.6.3. In-flight medical procedures and capabilities.
5.4.1.6.4. Clinical hand-over procedures.
5.4.1.6.5. Medicolegal issues in patient transport.
5.4.1.6.6. Procedures for tarmac transfers.
5.4.1.6.7. Transport of two or more patients simultaneously.
5.4.1.6.8. The transport of travelling companions.
5.4.1.6.9. Procedures for palliative/end of life transfers.
5.4.1.6.10. Patient care during long haul missions.

5.4.1.6.11. Patients with psychiatric disturbance.
5.4.1.6.12. Patients with latex and other allergies.
5.4.1.6.13. Venous thromboembolism risk assessment
5.4.1.6.14. Pressure area risk assessment
5.4.1.6.15. Safe management of complex patients
5.4.2. Patient Transport Documentation
5.4.2.1. Evidence must be provided that preparation for transport is based on a patient medical report, clinical and logistic risk analysis, assessment of medical equipment and supplies needed, as well as the logistics and geography of the mission.
5.4.2.2. Evidence shall also be provided that preparation for transport is based on a clinical and logistic risk analysis
5.4.2.3. A patient care transfer record is completed during every mission. Minimal requirements for items to be documented are:
5.4.2.3.1. Purpose of the transport.
5.4.2.3.2. Clinical assessment of patient prior to departure from point of origin.
5.4.2.3.3. Patient condition at predetermined time intervals during the transfer.
5.4.2.3.4. Treatment, medications and patient's response to treatment and medications.
5.4.2.3.5. Transport modalities for all stages of the transfer.
5.4.2.3.6. Transfer timings.
5.4.2.3.7. Names and professions of flight medical crew.
5.4.2.3.8. Details of the referring and receiving medical teams and confirmation of receipt of clinical handovers.
5.4.2.4. Completed transport documentation is summarised and the data used to maintain a database of missions which forms part of regular auditing procedure and quality management.
5.4.2.5. Where there is no national limit for the time period that patient documents must be kept, the service shall provide evidence that historic records are kept in a secure store (or electronic database) for at least 7 years.
5.4.3. Infection Control

5.4.3.1. Policies and procedures shall be in place, which address issues involving communicable diseases, infectious processes and health precautions for patients as well as for patient transport personnel.
5.4.3.2. The service must have a philosophy whereby all flight medical crew practice preventive measures reducing the likelihood of transmission of pathogens.
5.4.3.3. The management of communicable diseases and infection control policy covers the following areas:
5.4.3.3.1. Special precautions when transporting patients known to have communicable diseases.
5.4.3.3.2. Use of gloves, goggles and masks for protection.
5.4.3.3.3. Hand cleaning and disinfection procedures and facilities.
5.4.3.3.4. Disposal of sharps.
5.4.3.3.5. Disposal of waste and soiled products.
5.4.3.3.6. Cleaning and/or sterilisation of potentially contaminated instruments and equipment.
5.4.3.3.7. Cleaning and disinfecting of the patient cabin area, equipment, and personnel's soiled uniforms.
5.4.3.3.8. Mechanism for identifying those at risk for exposure to rubella, measles and other childhood diseases.
5.4.3.3.9. Additional (external) resources pertinent to infection control must be identified in the policy.
5.4.3.4. A generic dress code addresses issues which are also relevant to infection control, specifically: sleeve length, hair length, style and cleanliness, laundry of uniform items, and the wearing of jewellery, watches, and other personal items that increase the risk of contamination or the spread of pathogens.
5.4.3.5. These policies and procedures must be readily available to all personnel working for the air ambulance service.
5.4.3.6. A pathway exists for communication between the flight medical crew, aircrew, aircraft engineers, ground ambulance providers and hospitals when exposure is suspected. This is to include necessary follow-up.
5.4.3.7. Management maintains confidential records related to blood borne pathogens including exposure incidents, post-exposure follow-up, hepatitis B vaccination status and training for all employees with occupational exposure.
5.4.3.8. Contamination of food and drink shall be prevented by ensuring that they are not stored where clinically contaminated materials, blood or other potentially infective materials are present. Contamination of medical equipment and consumables shall similarly be prevented by ensuring foodstuffs are stored separately from all materials used in clinical care.
5.4.4. Medical Emergencies in Flight
5.4.4.1. The service provides guidance documents, such as policies, procedures and/or protocols that prepare flight medical crew for the possibility of medical emergencies in flight and recommends how these emergencies should be managed. These include:

5.4.4.1.1. Recognition and immediate management of the acutely deteriorating patient.
5.4.4.1.2. Management of cardiorespiratory arrest and peri-arrest in flight.
5.4.4.1.3. Management of paroxysmal cardiac failure.
5.4.4.1.4. Management of cardiac dysrhythmias.
5.4.4.1.5. Management of shock.
5.4.4.1.6. Management of anaphylaxis.
5.4.4.1.7. Management of emergencies in spinal patients.
5.4.4.1.8. Management of respiratory emergencies.
5.4.4.1.9. Management of neurologic and neurosurgical emergencies.
5.4.4.1.10. Management of endocrine emergencies.
5.4.4.1.11. Management of the combative patient.
5.4.4.2. Depending on the mission statement and scope of the service, these guidance documents might also include:
5.4.4.2.1. Difficult airway management.
5.4.4.2.2. Rapid sequence intubation.
5.4.4.2.3. Failure to oxygenate or ventilate.
5.4.4.3. There shall be evidence of training to support these policies, for all flight medical personnel, within the bounds of each crew member's professional limitations.
5.5. Equipment checklists (Each service is different. The checklists are a guide, and will vary according to the service's scope of service)
5.5.1. Medical Material and Equipment
5.5.1.1. Patient Carriage and Movement
5.5.1.1.1. Aircraft stretcher system(s) with loading device(s).
5.5.1.1.2. Vacuum mattress.

5.5.1.1.3. Carrying sheet or transfer mattress.
5.5.1.1.4. Memory foam mattress.
5.5.1.1.5. [Rotary wing only] Long spinal board with head blocks.
5.5.1.1.6. [Rotary wing only] Extrication device (e.g. Kendrick, Russell, etc)
5.5.1.1.7. Scoop stretcher
5.5.1.1.8. Isolated extremity immobilisation devices (Sager, Hare, Donway, etc).
5.5.1.1.9. Upper spinal immobilisation collars.
5.5.1.2. Airway
5.5.1.2.1. Onboard oxygen cylinder (min 3000 L) with regulator.
5.5.1.2.2. Portable oxygen cylinder (min 400 L) with regulator.
5.5.1.2.3. Flow meter (standard)
5.5.1.2.4. Flow meter (low flow)
5.5.1.2.5. Spare Bodok seals for independent cylinders.
5.5.1.2.6. Spare oxygen cylinder key/spanner for independent cylinders.
5.5.1.2.7. Oxygen masks (with and without reservoir/rebreathing; fixed fraction; anaesthetic).
5.5.1.2.8. Nasal cannulae.
5.5.1.2.9. Nebulisation device.
5.5.1.2.10. Oropharyngeal airways.
5.5.1.2.11. Nasopharyngeal airways.
5.5.1.2.12. A suction device and suction catheters.
5.5.1.3. Ventilation

5.5.1.3.1. Bag/valve/mask with oxygen reservoir and tube to connect to oxygen source.
5.5.1.3.2. Laryngoscope(s) with suitable blades.
5.5.1.3.3. Endotracheal tubes (range of sizes) with connectors.
5.5.1.3.4. ET Tube fixing materials.
5.5.1.3.5. Tracheostomy kit (range of tracheostomy tubes; insertion stylets; inflation tube clamp; inflation syringe).
5.5.1.3.6. Magill forceps
5.5.1.3.7. Alternative devices for difficult airway management kit (examples include but are not limited to: Combitube; LMA; FastTrach; Trachlight; straight blades, McCoy laryngoscope; bougie introducers)
5.5.1.3.8. Air portable transport ventilator (obligatory for advanced critical care transport):
5.5.1.3.9. Controlled and assisted ventilation.
5.5.1.3.10. PEEP-valve, adjustable.
5.5.1.3.11. CPAP system (intubated & non intubated patients).
5.5.1.3.12. BIPAP/Bi-level system.
5.5.1.3.13. Pressure and volume control.
5.5.1.3.14. Triggered/non-triggered.
5.5.1.3.15. Oxygen monitoring system.
5.5.1.3.16. Low pressure alarm.
5.5.1.3.17. Oxygen supply tubing with various connectors
5.5.1.3.18. Chest drainage kit (thoracostomy tube; drainage bag; surgical instruments)
5.5.1.3.19. Heimlich valve or Asherman seal
5.5.1.4. Circulation
5.5.1.4.1. Appropriate equipment for placing and maintaining intra-venous access.

5.5.1.4.2. Appropriate equipment for placing and maintaining intra-osseous access.
5.5.1.4.3. Appropriate equipment for placing and maintaining intra-arterial access (obligatory for advanced critical care transport).
5.5.1.4.4. Syringe driver(s).
5.5.1.4.5. Infusion pump(s).
5.5.1.4.6. IV pole(s) got mounting fluids.
5.5.1.4.7. IV pressure bag(s).
5.5.1.5. Patient Monitoring
5.5.1.5.1. Cardiac monitor.
5.5.1.5.2. 12-lead ECG (obligatory for advanced critical care transport).
5.5.1.5.3. Defibrillator with rhythm display, recording, and documentation of patient data.
5.5.1.5.4. External transcutaneous pacing (obligatory for advanced critical care transport).
5.5.1.5.5. Automatic non-invasive BP monitoring system.
5.5.1.5.6. Invasive BP monitoring system (obligatory for advanced critical care transport).
5.5.1.5.7. Pulse oximeter.
5.5.1.5.8. Electronic temperature monitoring.
5.5.1.5.9. End tidal capnometer (obligatory for advanced critical care transport).
5.5.1.6. Diagnostic Equipment
5.5.1.6.1. Stethoscope.
5.5.1.6.2. Manual blood pressure device (sphygmomanometer or electronic).
5.5.1.6.3. Thermometer (min. range 15C – 42C).
5.5.1.6.4. Diagnostic light.

5.5.1.6.5. Blood gas analyser (obligatory for advanced critical care transport).
5.5.1.6.6. Blood labs analyser(s) for haemoglobin and electrolytes (obligatory for advanced critical care transport).
5.5.1.6.7. Blood glucometer.
5.5.1.7. Nursing
5.5.1.7.1. Vomit bag.
5.5.1.7.2. Kidney bowl.
5.5.1.7.3. Bed pan.
5.5.1.7.4. Bed pan inserts
5.5.1.7.5. Non-glass urine bottle or receptacle.
5.5.1.7.6. Absorbent gel.
5.5.1.7.7. Biological fluids spill kit.
5.5.1.7.8. Sharps container.
5.5.1.7.9. Bedding equipment (sheets; blankets; pillows; pillow cases).
5.5.1.7.10. Waste bags (standard and clinical).
5.5.1.7.11. Wound treatment materials.
5.5.1.7.12. Treatment materials for wounds caused by burns and corrosives.
5.5.1.7.13. Adhesive fixing materials.
5.5.1.7.14. Nasogastric tube with accessories.
5.5.1.7.15. Sterile surgical gloves.
5.5.1.8. Personal Protection
5.5.1.8.1. Skin cleaning and disinfection material.

5.5.1.8.2. Non-sterile gloves.
5.5.1.8.3. Aprons.
5.5.1.8.4. Goggles.
5.5.1.8.5. Face masks/guards.
5.5.1.9. Miscellaneous
5.5.1.9.1. Small surgical kit (e.g. scalpels, suture holder, forceps, scissors, clamps etc, as per scope of the service).
5.5.1.9.2. Emergency delivery set (as per scope of the service).
5.5.1.9.3. Physical restraint systems (as per scope of the service).
5.5.1.9.4. Electrical extension plug bank for medical equipment.
5.5.1.9.5. International electrical adaptors for medical equipment.
5.5.1.9.6. Cool box for medications and temperature sensitive consumables.
5.5.1.9.7. Temperature monitoring recorder (non-clinical) for cool box.
5.5.1.9.8. Electrically powered medical devices shall have a self-contained power supply so that the devices do not rely on the power supply from the aircraft.

6. Aviation Management

6.1. Aviation regulatory authority compliance

6.1.1. The service must identify the aeronautical regulatory authority and local/national legal system(s) under whose jurisdiction the service operates.

6.1.2. The aeromedical service must provide evidence of a license, permit or certification by an appropriate national, regional, or international aviation regulatory body.

6.1.3. The licence/permit/certificate holder must meet all national/regional/international aviation requirements specific to the operations of the aeromedical service in the country in which it is based.

6.1.4. Air ambulances shall be licensed and operated under regulations pertaining to commercial flight operations unless superseded by specific regulations for air ambulance operations.

6.1.5. The service must provide a copy of the following evidence:

6.1.5.1. An Operations Manual which complies with national/regional/international aviation regulations specific to the operations of the aeromedical service.

6.1.5.2. Air Operators Certificate (ACOC or Part 135 certificate).

6.1.5.3. Aircraft insurance certificate stating clearly the liabilities and limits of cover.

6.1.5.4. Airworthiness certificate for each aircraft to be accredited.

6.1.6. The service must identify the exact aircraft which will be accredited for use as air ambulances, by (1) name, (2) type, and (3) registration number.

6.1.6.1. The service must provide flight manifests or logs to prove that only the aircraft identified for accreditation are routinely used as air ambulances.

6.1.6.2. The service shall identify other aircraft that will supplement the air ambulance fleet solely to cover periods of servicing, maintenance and other unanticipated unavailability of the accredited fleet, by (1) name, (2) type, and (3) registration number.

6.1.6.3. Where unaccredited aircraft are used, evidence must demonstrate that they must meet the same standards, described herein, as those that are accredited for air ambulance work.

6.1.7. The service shall provide evidence that it operates its aircraft with the required number of flight crew as specified in any relevant national, regional or international regulations, local laws or company policies.

6.2. Operational capability

6.2.1. Pilots

6.2.1.1. The pilots' licenses are current and valid for the type of aircraft flown.
6.2.1.2. The pilots are all current with their instrument ratings.
6.2.1.3. There is a written policy for renewing currency requirements.
6.2.1.4. There are written recruitment qualification criteria for all pilots
6.2.1.5. Pilot flight medical examinations are documented and expiry dates are flagged.
6.2.1.6. Pilots' current passport and visas information are documented and expiry dates are flagged.
6.2.1.7. Pilot training
6.2.1.7.1. Pilots' training records are clearly documented and are available for review.
6.2.1.7.2. The service must offer upgrade/training programs for the pilots.
6.2.1.8. There may be a simulator training program for pilots.
6.2.1.9. Pilots shall attend Crew Resource Management (CRM) or other human factors training annually.
6.2.1.10. There shall be a night and IFR currency programme.
6.2.1.11. Pilots and co-pilots shall be certified and current in CPR and first aid (annually)
6.2.1.12. There shall be periodic, annual or semi-annual, check flights performed by a senior training captain.
6.2.1.13. Check flights shall be accompanied by written tests.
6.2.1.14. SMS (safety management system) training shall be undertaken annually.
6.2.1.15. Aircraft emergency drills training must be conducted annually.
6.2.1.16. Aircraft fire training must be conducted at least every three years.
6.2.1.17. Aircraft ditching drills and evacuation training must be conducted annually.

6.2.1.18. Training on the life support equipment used on the service's air ambulance aircraft shall be conducted two-yearly.

6.2.1.19. Aircrew shall receive training specific to the air ambulance role, including:

6.2.1.19.1.1. Basic altitude physiology.

6.2.1.19.1.2. Basic flight biomechanics.

6.2.1.19.1.3. Understanding the aircraft/patient interface.

6.2.1.19.1.4. Electrical supplies (invertor) for medical equipment.

6.2.1.19.1.5. Electromagnetic radiation between medical equipment and avionics.

6.2.1.19.1.6. The aircraft stretcher platform.

6.2.1.19.1.7. The equipment bridge and IV pole mounts.

6.2.1.19.1.8. Medical gases and suction onboard the aircraft.

6.2.1.19.1.9. Filling the onboard oxygen cylinder.

6.2.1.19.1.10. Operating the loading system.

6.2.1.19.1.11. Lifting, loading and manual handling of patients.

6.2.1.19.1.12. Loading and securing medical equipment.

6.2.1.19.1.13. Operating, loading and securing specialist medical equipment, e.g. incubator, baby pod, intra-aortic balloon pump.

6.2.1.19.1.14. Pre-flight safety briefings for patients and travelling companions.

6.2.1.19.1.15. Medical dangerous air cargo.

6.2.1.19.1.16. Assisting the flight medical crew on non-clinical tasks during medical emergencies.

6.2.1.20. There must be adequate pilots to provide full coverage of the aeromedical service.

6.2.1.21.	Planning must take in to account: aircrew rest periods and other flight time limitations to duty periods, according to national, regional or international laws, or aeronautical regulations.
6.2.1.22.	Pilots who are assigned (on duty) to the aeromedical service must be readily available within the response time determined by the service.
6.2.2. Flight Planning	
6.2.2.1.	The service has a standardised mission planning process.
6.2.2.2.	Weather data must be easily available in the flight planning process.
6.2.2.3.	NOTAMS are part of the process must be easily available for flight planning.
6.2.2.4.	Flight planning shall an airport security briefing for the air and medical crew.
6.2.2.5.	In high risk areas, there must be adequate provisions for ensuring the security of the personnel and the aircraft.
6.2.2.6.	Seasonal briefings for exceptional hot or cold weather shall be given to all crew.
6.2.2.7.	The service shall provide a flight following process.
6.2.2.8.	There is a flight operation manual approved by an aviation regulatory body.
6.2.2.9.	Pilots are notified of aviation regulatory body 'advisory circulars', and the notification is verified.
6.2.2.10.	Flight publications used by all aircrew are approved by an aviation regulatory body authority and are updated and current.
6.2.2.11.	There shall be a nominated staff member responsible for keeping flight publications and manuals updated.
6.2.2.12.	VFR or IFR flight plans are filed for every mission, and updated if and when necessary.
6.2.2.13.	Flight plans are filed by adequately trained personnel.
6.2.2.14.	[Rotary wing only] Operations/Communications staff conduct flight following with every take off and immediately post landing.
6.2.3. Key Flight Medical Personnel as 'Crew'	
6.2.3.1.	Medical personnel attend Crew Resource Management (CRM) training with the pilots annually.

6.2.3.2.	Annual SMS (safety management systems) training is held for medical aircrew annually.
6.2.3.3.	Aircraft emergency drills training is conducted with the pilots annually.
6.2.3.4.	Aircraft ditching drills or evacuation training are conducted with the pilots annually.
6.2.3.5.	There is a policy for mentored new recruits to take spare seats on at least one mission as part of their induction program.
6.2.3.6.	Medical aircrew shall receive aviation life support equipment training with the pilots every two years.
6.2.4. Passengers	
6.2.4.1.	A passenger manifest must be prepared for each flight.
6.2.4.2.	A weight and balance report must be prepared for each flight.
6.2.4.3.	Passenger(s), baggage and cargo weights are included in the weight and balance report.
6.2.4.4.	There shall be a policy for managing passengers' baggage.
6.2.4.5.	There shall be a written procedure for passenger safety briefings.
6.2.4.6.	Passengers must be provided with adequate aviation life support equipment (ALSE).
6.2.4.7.	In-flight meals or light refreshments and drinks must be provided to passengers on flights lasting more than 2 hours.
6.2.4.8.	In-flight nutrition shall be appropriate for cultural and religious orientation of crew, patient(s) and travelling companion(s).
6.2.4.9.	There must be a specific policy to address combative patients/passengers.
6.2.4.10.	Additional physical and/or chemical restraints should be available and used for combative patients who potentially endanger him/herself, the aircrew, flight medical crew, the aircraft or any other parties.
6.2.4.11.	The policy shall state clearly that patients or travelling companions who are considered a threat to the safety of the aircraft or any of the crew shall be refused embarkation.
6.3. Rotary wing operations [only]	
6.3.1. There shall be a structured safety training program provided to ground ambulance crews, fire and rescue personnel, police or other public safety agencies as well as hospital personnel who interface with the aeromedical service. The safety program for ground personnel includes:	

6.3.1.1.	Identifying, designating and preparing an appropriate landing zone.
6.3.1.2.	Personal safety in and around helicopters.
6.3.1.3.	Marshalling signals.
6.3.1.4.	Procedures for night operations.
6.3.1.5.	Procedures for day/night operations, conducted by the aeromedical team, specific to the aircraft.
6.3.2. Flight medical crew training may be regulated or recommended by a national, regional or international aviation regulatory body. The syllabus may include:	
6.3.2.1.	Introduction to becoming aircrew.
6.3.2.2.	Radio communications.
6.3.2.3.	Basic navigation.
6.3.2.4.	Basic meteorology.
6.3.2.5.	Basic rotary wing aerodynamics.
6.3.2.6.	Effects of helicopter controls.
6.3.2.7.	Safety in and around helicopters
6.3.2.8.	Helicopter standard daytime operations.
6.3.2.8.1.	High and low reconnaissance.
6.3.2.8.2.	Identifying, designating and preparing an appropriate landing zone.
6.3.2.8.3.	Two-way communications between helicopter and ground personnel to identify approach and departure obstacles and wind velocity.
6.3.2.8.4.	Marshalling signals.
6.3.2.8.5.	Approach and departure path selection.

6.3.2.8.6. Procedures for the pilot to ensure safety during ground operations in a landing zone with or without engines running.

6.3.2.8.7. Procedure for the pilot to have ground control during engine start and departure from a landing site.

6.3.2.9. Procedures for night operations.

6.3.2.10. Helicopter emergency drills.

6.3.2.11. Helicopter underwater escape training (HUET).

6.3.2.12. Specialist rescue training (depending on scope of service).

6.3.3. Dispatch and Flight Operations

6.3.3.1. Helicopter services offering a primary retrieval or search and rescue service must have staff designated to dispatch and communications. These roles may be separate or combined.

6.3.3.2. Dispatch staff must be provided with guidelines, protocols or policies which govern under what circumstances a helicopter should be dispatched.

6.3.3.3. Communications staff may provide an air traffic control service.

6.3.3.4. Communications staff may provide a link to ground based emergency services.

6.3.3.5. Operations, communications, or dispatch staff shall conduct flight following with every take-off.

7. Aviation

7.1. Aircraft performance data

7.1.2. The service shall provide a list of the aircraft types it uses for air ambulance work with details of the performance of each type. This shall include:

7.1.3. Cruise speed (kt)

7.1.4. Cruise ceiling (ft or m)

7.1.5. Best range (nm)

7.1.6. Best endurance (h:min)

7.1.7. Maximum payload (stretcher(s); passengers; crew)

7.2. Fixed wing requirements (The following criteria are applicable to every individual aircraft intended for accreditation)

7.2.1. Each aircraft shall be capable of carrying two medical trained personnel and at least one stretcher patient and the required medical devices and equipment within the patient compartment.

7.2.2. The number of engines on each aircraft shall be in accordance with the relevant national/regional/international regulations

7.2.3. Each aircraft shall have a minimum endurance of three hours flight time.

7.2.4. Each aircraft should be capable of cabin pressurisation or should fulfil the criteria for use of unpressurised aircraft (in 7.1.5).

7.2.5. **[Unpressurised aircraft only]** If unpressurised aircraft are used for the carriage of patients, the service must have a written policy which shows evidence of

7.2.5.1. Established rules about when an unpressurised flight is unacceptable.

7.2.5.2. Defined limits to the operation of the unpressurised service.

7.2.5.3. A management pathway, algorithm or decision chart which defines when a pressurised aircraft must be used (i.e. when an unpressurised aircraft would not be suitable).

7.2.5.4. A list of exceptions to the defined limits shall only be invoked if a risk analysis can demonstrate that the urgency of the need for the transfer will benefit the patient significantly and outweigh the risks of the unpressurised flight.

7.2.5.5. The name of a medical advisor or other person with experience and knowledge in altitude physiology who the service can contact for advice on a case by case basis.

7.2.5.6. A competency based altitude physiology training package for all flight medical personnel in the service.

7.2.5.7. Guidelines for the use of supplemental oxygen, and its delivery to patients, during unpressurised flights.

7.2.6. An unpressurised flight must only take place if there is considered to be no, or negligible, risk of deterioration in the patient's condition that cannot be mitigated by the use of supplemental oxygen alone.

7.2.7. The carriage of adequate reserves of oxygen and suitable means of oxygen delivery shall be able to provide high flow oxygen (15L/min) for the entire flight.

7.2.8. In principle (bearing in mind the constraints above), the use of unpressurised aircraft shall be confined to circumstances wherein the flight is undertaken at the lowest safe and legal altitude and for the shortest possible duration.

7.2.9. In principle (bearing in mind the constraints above), aeromedical transfers utilising unpressurised aircraft must not fly above 10,000ft [3048m] amsl.

7.2.10. In principle (bearing in mind the constraints above), if exceptional and unpreventable environmental circumstances require temporary flight above 10,000ft [3048m] amsl, the duration of flight above 10,000ft [3048m] must be kept to an absolute minimum and shall never exceed 20 minutes.

7.2.11. The type of unpressurised aircraft may be dependent on local conditions, the scope of the service and its mission statement. However, in principle:

7.2.11.1. Piston unpressurised aircraft must have two engines.

7.2.11.2. Turboprop aircraft may have a single engine if short take-offs and landings are required.

7.3. Rotary wing requirements (The following criteria are applicable to every individual aircraft intended for accreditation)

7.3.1. The helicopter must be capable of carrying two medical personnel and at least one stretcher patient with the required medical devices and equipment within the patient compartment.

7.3.2. There shall be a policy which states the limitations of elevation, ambient temperature, type of take-off and landing and other conditions which govern that the maximum all up weight (MAUW) of the air ambulance helicopter so that it can safely take-off, transit and land with the weight of the patient (state maximum weight), and the combined weight of the crew plus medical equipment (state maximum weight) on board. It should fly a minimum 1.5 hours plus the required fuel reserve.

7.3.3. The policy should state the minimum fuel requirement, i.e. for a flight lasting 1.5 hours, plus the required fuel reserve.

7.3.4. Air ambulance helicopters shall be able to land on hard soil or rough ground, up to a maximum slope of 8°.

7.3.5. The main rotor blades shall be a minimum of 2.2 m in height above level ground irrespective of rotor speed.

7.3.6. With rare exceptions, rotor blades must be stationary before on or off-loading of patients. A policy should state the exceptions, i.e. under what conditions a rotors-turning hot load or offload is permitted.

7.3.7. The number of engines shall be in accordance to the relevant national/regional/international regulations.

7.4. Aircraft communications

7.4.1. Communications equipment on board the aircraft must comply with national/regional/international regulations.

7.4.2. Radios on aircraft must be capable of transmitting and receiving transmissions from to/from air traffic service units.

7.4.3. **[Rotary wing only]** Radios on aircraft must be capable of transmitting and receiving transmissions to/from EMS agencies

7.4.4. The flight medical crew shall have use of an intercom system to improve communication with each other during flight.

7.4.5. The flight medical crew shall have use of an intercom system to improve communication with the pilot(s) during flight.

7.4.6. The flight medical crew shall have use of an intercom system to improve communication with the patient during flight.

7.4.7. Where an intercom is used between flight deck and flight medical crew, the pilot must be able to control and override intercom and/or radio transmissions from the cabin.

7.4.8. **[Rotary wing only]** When landing on unprepared sites, the pilot shall be able to communicate with ground personnel.

7.4.9. **[Rotary wing only]** When landing on unprepared sites, the medical crew shall be able to communicate with ground personnel.

7.5. Air ambulance cabin

7.5.1. General standards

7.5.1.1. The patient compartment can fit two medical personnel and at least one stretcher patient with the required medical devices and equipment.

7.5.1.2. Essential medical devices required for use outside the aircraft are easily accessible.

7.5.1.3. The medical crew shall have access the patient's vital body parts, e.g. head, chest and abdomen.

7.5.1.4. The medical crew can ensure adequate treatment, monitoring, care, emergency procedures, and effective CPR, if necessary.

7.5.1.5. The patient compartment is designed and constructed to accommodate and secure the required medical devices.

7.5.1.6. Medical devices are positioned to allow operation of the device without obstructing aisles, emergency exits or patient loading and unloading sites.

7.5.1.7. An aircraft cleaning policy must be provided. It should define how often each aircraft is:

7.5.1.7.1.1. Cleaned routinely.
7.5.1.7.1.2. Deep cleaned and decontaminated.
7.5.1.7.1.3. Swabbed and the samples sent for microbiology culture and sensitivity testing.
7.5.1.8. Floor coverings shall be durable and easy to clean and disinfect.
7.5.1.9. The ceiling, the interior walls and the doors of the patient compartment should be lined to allow easy cleaning and disinfection.
7.5.1.10. The interior of the patient compartment shall be designed to minimise the risk of injury.
7.5.1.11. Interior material shall be flame resistant/retardant according to relevant national. Regional or international standards.
7.5.1.12. The patient compartment must be large enough to provide enough space for the patient on a stretcher and for the flight medical crew to work safely around the patient:
7.5.2. Aircraft stretcher system
7.5.2.1. Stretcher systems must be securely fitted to the aircraft and not simply strapped to the seats or to the floor.
7.5.2.2. Each individual aircraft fitted with a stretcher system should have the appropriate STC (Supplemental Type Certificate) for all modifications made to specified individual aircraft.
7.5.3. Cabin environment
7.5.3.1. Temperature control - Heating
7.5.3.1.1.1. The patient compartment heating system must be capable of raising the temperature from 0°C to +18°C within 10 minutes, when the outdoor temperature is 0°C.
7.5.3.1.2. Temperature control - Cooling
7.5.3.1.2.1. The interior of the aircraft should be air conditioned.
7.5.3.1.2.2. There should be an auxiliary system to heat/cool the patient compartment when stationary and/or to preheat the engine, when operating in extreme environments.
7.5.4. Lighting
7.5.4.1. There sufficient light to be able to perform medical duties safely and without hindrance at all times.

7.5.4.2. Alternate sources of lighting shall be available in low lighting conditions.

7.5.4.3. It must be possible to dim lights within the patient compartment.

7.5.5. Noise

7.5.5.1. The interior noise level should not exceed the threshold of hearing normal conversation (approximately 85dBa).

7.5.5.2. If noise exposure to the patient compartment during transport exceeds 85 dBA, noise protection methods for both the patient and medical crew must be available.

7.5.5.3. If, under conditions of high ambient noise (over 85 dBA) sound attenuation methods are used, there must be an inbuilt system to allow communication (intercom) between the medical crew, the pilot, the patient(s) and travelling companion(s).

7.5.6. Electric Supply

7.5.6.1. The patient compartment may have a DC voltage power outlet of either 12 or 24 VDC.

7.5.6.2. The patient compartment may have an AC voltage power outlet of either 230 or 110 VAC supplied by an inverter which can be controlled from the cabin.

7.5.6.3. The outlets must be located in the area of the medical device(s).

7.5.6.4. The outlets for the medical devices shall be labelled with the nominal voltage and current rating.

7.5.6.5. Outlets must have a visible indication to show if the power is switched on.

7.5.6.6. Earth current leakage must be provided when AC is available.

7.5.6.7. Plug connectors must be designed to prevent short circuiting under the environmental conditions in the aircraft.

7.5.6.8. Electromagnetic disturbances caused by the aircraft must not influence the safe operation of the medical devices and vice versa.

7.5.7. Oxygen supply

7.5.7.1. Sources containing pressurised gas must be approved for use in aircraft (STC - Supplementary Technical Certification - or equivalent) and mounted according to relevant regulations.

7.5.7.2. Oxygen is installed in the aircraft in accordance with national/regional/international regulations and standards.

7.5.7.3. Each gas outlet must be clearly marked and colour coded for identification.

7.5.7.4. Each gas outlet must be able to connect only to the appropriate matching gas hose fittings.

7.5.7.5. All oxygen sources must provide a maximum flow of at least 15l/min
7.5.7.6. Flight medical crew must be able to visualise flow metering in non-ventilated patients
7.5.7.7. The gauges showing quantity of oxygen remaining in the cylinder and the measurement of flow, must both be accessible to the medical crew in flight.
7.5.7.8. Oxygen flow must have a stop valve/tap at or near the oxygen source inside the aircraft cabin.
7.5.7.9. Oxygen flow meters and outlets must be flush mounted, padded, or located so as to prevent injury to cabin occupants.
7.5.8. IV fluid management
7.5.8.1. At least two poles or hooks must be available at a maximum available height above the patient.
7.5.8.2. Pressure infusions bags must be available if the position of IV fluid bags cannot ensure sufficient infusion rates
7.5.8.3. All IV hooks are flush mounted, padded or located so as to prevent head trauma in the event of turbulence or a hard landing.
7.5.8.4. Glass IV containers must not be used unless required by specific medications and are properly secured and vented to equalise pressure changes within the bottle.
7.5.9. Medication storage
7.5.9.1. Medications that may be required on the flight must be easily accessible.
7.5.9.2. Access to controlled substances must be compliant with national requirements of the aircraft operator.
7.5.9.3. Storage of medications must allow for protections from extreme temperature changes if the environmental conditions are extreme.
7.5.9.4. The air ambulance shall have the capability of maintaining an uninterrupted cold chain for thermolabile medications.
7.5.9.5. A lockable compartment or other suitable alternative should be available for the storage of medications if they remain on the aircraft between missions.
7.5.10. Restraint systems in the patient compartment
7.5.10.1. Restraint systems must be available to secure the patient and crew, and are suitable for all age groups within the scope of the service.
7.5.10.2. [Rotary wing only] Medical personnel must be unimpaired and able to reach the patient(s) whilst seated and secured.

7.5.10.3.	[Rotary wing only] Medical personnel must be able to maintain and provide adequate ventilation support to the patient while in the sitting position with the seat belt fastened.
7.5.10.4.	[Rotary wing only] Essential medical devices for management of vital functions such as airway management and ventilation shall be in reach of the attendant while seated.
7.5.10.5.	A flight deck bulkhead or other barrier shall be in place to prevent intrusion of items into the cockpit area, specifically the pilots' seats, in the event of a rapid deceleration.
7.5.10.6.	Medical devices and other equipment must be secured to the aircraft by an approved mounting system or fixation device.
7.5.10.7.	All devices which are restrained within the aircraft shall be secured up to the G-load requirements applicable to the particular class or certification of the aircraft under national/regional/international aviation regulations.
7.5.10.8.	All medical devices and materials not immediately required in-flight must be stowed and secured in a specific and accessible location.
7.5.10.9.	Secure arrangements are in place to prevent medical equipment, baggage and other cargo from intruding into the patient compartment.
7.5.10.10.	Drawers of medical cabinets shall be secured to prevent from self-opening during turbulence.
7.5.10.11.	Stretcher patients must be restrained comfortably throughout flight, using straps across the trunk and legs.
7.5.10.12.	Stretcher patients laying longitudinally along the aircraft's fore-aft axis, with their head to the front of the aircraft must also be restrained by shoulder restraints at least for take-off and landing.
7.5.10.13.	Stretcher patients may only have restraints loosened or unsecured for nursing care or medical necessity.
7.5.10.14.	Stretchers with backrests must have the backrest laid flat for take-off and landing unless the patient cannot tolerate lying flat or if there is a neuroprotective need to maintain elevation to keep the intracranial pressure low.
7.5.10.15.	All aircraft occupants are advised to remain seated and restrained during the entire flight unless they have a need to move around the cabin.
7.5.10.16.	All aircraft occupants must obey the seatbelt signs and/or the orders of the Captain in matters of restraint, between engines start and engines off.
7.5.11.	Patient loading and unloading
7.5.11.1.	The safe loading and unloading of patients must be possible under all operational conditions.
7.5.11.2.	Approved manual handling techniques must be practiced by all staff.
7.5.11.3.	When other ground handlers, not employed by the service, are utilised to assist with lifting, a member of the flight medical crew shall instruct and lead the helpers to ensure proper teamwork and correct lifting techniques.
7.5.11.4.	The loading procedure must ensure that the patient's position remains horizontal.

7.5.11.5.	The service must have a policy on the management of bariatric patients, including on the correct processes for loading and restraint.
7.5.11.6.	The policy must also contain details of weight and dimensional limitations beyond which a bariatric patient will be refused carriage.
7.5.11.7.	The cabin door must be large enough to ensure the patient can be carried/rolled into the compartment in a horizontal position and that there is compromise of monitoring, intravenous lines, and oxygen supply or mechanical ventilation.
7.5.11.8.	During the loading and unloading of the patient, the medical crew must have access to the patient, all tubes, drains and wires, and to all attached medical equipment.
7.5.11.9.	A loading system should be used for the patients identified as too heavy for manual lifting, and for other heavy items such as incubators.
7.5.11.10.	The loading system must be inspected and maintained according to manufacturer's guidelines and local health and safety regulations.
7.5.11.11.	The loading system must be checked immediately prior to each mission.
7.5.12.	Emergency exits
7.5.12.1.	Aircraft emergency exits must be free from all obstructions during flight.
7.5.12.2.	An alternative exit from the patient cabin must be available, permitting the evacuation of both the patient and crew.
7.5.12.3.	The aircraft configuration and patient placement must allow for safe evacuation of aircraft occupants, i.e. doors must be fully operable from the inside and they must be capable of being opened fully and held open by a mechanical device.
7.6. Flight safety and inspections <i>(Also, see Section 2.6 – Safety Management)</i>	
7.6.1.	The service shall provide a list of all flight safety inspections conducted by the aviation regulatory body in the past three years.
7.6.2.	If any have occurred, the service shall provide copies of reports of all inspections conducted in the past three years.
7.6.3.	The service shall provide details of all reportable flight accidents and incidents in the past three years.
7.6.4.	The service shall provide details including dates, locations, categories and the number of fatalities or serious injuries in all reported flight accidents in the past three years.
7.6.5.	The service shall provide details of all reportable ground accidents and incidents in the past three years.
7.6.6.	The service shall provide details including dates, locations, categories and the number of fatalities or serious injuries in all reported ground accidents in the past three years.
7.6.7.	Periodic flight safety briefings are given to all aircrew, at least once every 6 months.

7.6.8. Periodic flight safety briefings are given to all flight medical crew.

7.6.9. The service shall provide copies of all flight safety briefings (notes or minutes) given to aircrew over the past year.

7.7. Safety equipment

7.7.1. The safety equipment of the aircraft must be in accordance with national/international regulations.

7.7.2. A policy must be in place regarding checking safety and survival equipment contents and expiration or maintenance dates.

7.7.3. A detailed list of all safety and survival equipment must be provided.

7.7.4. Safety and survival equipment must be available to all persons on board.

7.7.5. Safety and survival equipment must be appropriate to the geographical areas of operation and adequate for the maximum number of occupants.

7.7.6. Safety and survival equipment is periodically tested according to the manufacturer's guidelines or specifications

7.7.7. Safety and survival equipment must be maintained appropriately as per manufacturer's advice, local legal requirements, and/or company policy.

7.7.8. There must be an emergency locator transmitter (ELT) on board, or portable ELT(s) or radios carried by the aircrew.

7.7.9. The aircraft may be equipped with a Flight Data Recorder (FDR).

7.7.9.1. The service shall provide details of the FDR (i.e. equipment installed, location on the aircraft and parameters recorded).

7.7.10. The aircraft may be equipped with a Cockpit Voice Recorder (CVR).

7.7.10.1. The service shall provide details of the CVR (i.e. equipment installed, location on the aircraft and CVR details recorded)

7.7.11. The aircraft may be equipped with a Terrain Collision Avoidance System (TCAS).

7.7.12. The aircraft may be equipped with a weather radar.

7.8. Rescue and protective equipment

7.8.1. Basic protective clothing for every crewmember, according to local requirements, including:

7.8.1.1. High visibility reflective jacket

7.8.1.2. [Rotary wing only] Flight helmet with ear protection and communications.

7.8.1.3. [Rotary wing only] Flight suit (fire retardant)

7.8.1.4. [Rotary wing only] Safety helmet.

7.8.1.5. [Rotary wing only] Safety goggles.

7.8.1.6. [Rotary wing only] Safety / debris gloves.

7.8.1.7. [Rotary wing only] Protective boots.

7.8.2. Severe weather protection according to local requirements, for every crew member, including:

7.8.2.1. Cold weather suit

7.8.2.2. Cold weather gloves

7.8.2.3. Wet weather protection

7.8.3. Life jacket, per aircraft occupant.

7.8.4. Life raft, if operating over water

7.8.5. Torch, headlamp or spotlight.

7.8.6. Fire extinguisher.

7.8.7. [Rotary wing only] Seat belt cutter.

7.8.8. [Rotary wing only] Hazard warning lights.

7.8.9. [Rotary wing only] Light rescue tool set (saw, hammer, axe, etc. according to local practice).

7.8.10. [Rotary wing only] Bolt cutter

7.9. Dangerous air cargo and other hazards

7.9.1. The service has a policy on the management of dangerous air cargo and other hazardous substances used on board the aircraft, including a detailed list of hazards on its aircraft. The list must include:

7.9.1.1. Depleted uranium (used for ballast).
7.9.1.2. Radioactive material (sometimes in instruments).
7.9.1.3. Fluids other than standard aviation fuel, oil, and hydraulic fluids.
7.9.1.4. Explosive devices.
7.9.1.5. Hazardous materials in the structure (composite fibres, beryllium etc).
7.9.1.6. Pressurised vessels (e.g. pneumatic blow down, oxygen or nitrogen systems, etc).
7.9.1.7. Biocontaminants.
7.9.1.8. Any other hazardous medical substances.
7.9.2. Applicable tail numbers must be provided for each hazard.
7.9.3. One member of staff must be nominated as the person responsible for keeping the service up to date with information and actions in regards to dangerous air cargo.
7.9.4. Documentation of dangerous air cargo must conform with national/regional/international regulations from a relevant aviation authority.
7.10. Aircraft maintenance
7.10.1. A nominated employee is responsible for managing the aircraft maintenance schedules.
7.10.2. The service must provide evidence which states whether it has its own aircraft maintenance facility, or it uses one or more external organisation(s) for provision of aircraft maintenance.
7.10.3. Whether the service depends has its own aircraft maintenance facility, or it uses one or more external organisation(s), the service must provide details of the maintenance facility(s), the regulatory body under which it/they operate, and copies of the MAO (Maintenance Organisation Approval) certificate(s), such as for Part-145 compliance.
7.10.4. The service must provide evidence that the maintenance organisation(s) operate(s) a compliance matrix to demonstrate how they meet the requirements of (Part-145) MAO.
7.10.5. At the completion of every maintenance task a person authorised by the national, regional, or international airworthiness authority signs a release stating that maintenance has been performed in accordance with the applicable airworthiness requirements. In the case air ambulance aircraft this must be a certified Aircraft Maintenance Engineer or Aircraft Maintenance Technician.
7.10.6. The maintenance facility should operate its own safety management and/or safety quality assurance systems.

7.10.7. Where the maintenance facility does not operate its own safety management or safety quality assurance system, the service must provide evidence that its own safety system incorporates the work done by the maintenance facility.

7.10.8. The maintenance facility should operate its own quality management and/or quality assurance systems.

7.10.9. Where the maintenance facility does not operate its own quality management and/or quality assurance system, the service must provide evidence that its own quality system incorporates the work done by the maintenance facility.

7.10.10. A routine maintenance and servicing plan must be provided. It should give evidence of anticipated down time for each aircraft.

7.10.11. Historical servicing and maintenance records for each of the aircraft to be accredited must be provided by the service.

7.10.12. Where alternative aircraft are sourced as replacements for the aircraft in maintenance, the alternatives should meet all the standards as those aircraft that are being accredited.