SECOND EDITION ACCREDITATION STANDARDS

of the

Commission on Accreditation of Medical Transport Systems Global

Standards apply to each transport mode unless specifically designated as
Rotorwing (RW), Fixed Wing (FW), Surface (S), and Medical Escort (ME)
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— PREFACE —

The medical transport system's mission statement and scope of care set the foundation for the policies, procedures, and programs to ensure quality patient care and safety. Recognizing the uniqueness of each air medical and ground transport service, the Commission will apply the standards in the context of the program mission statement, scope of care, and available resources. Accreditation is based on the principle of substantial compliance – demonstration of overall quality of service consistent with the essential elements of the accreditation standards in the professional judgment and discretion of the Board. The accredited service will demonstrate a steady balance in all dynamic components which comprise their specific program.

The standards are as appropriate to the country of residence and the specific regulator of that country as referenced by the term "Authority Having Jurisdiction" (AHJ). CAMTS Global Accreditation Standards, as a measure of quality, are part of a voluntary process and frequently exceed the AHJ's regulations.

The Term "Surface" as used throughout this document refers to any service other than air, and the term "surface vehicle includes ground ambulance, boat, snowmobile, all-terrain vehicle (ATV), etc., used for patient care and transport. The term "ambulance" in this document is specific to a ground ambulance.

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Churerstrasse 135
8808 Pfaeffikon
Switzerland

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CAMTS Global Accreditation Standards - Second Edition

By the Commission on Accreditation of Medical Transport Systems (CAMTS Global)
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4124 Clemson Blvd. Suite H, Anderson, SC 29621
Contact: eileen.frazer@camts.org

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MISSION STATEMENT

CAMTS Global is a peer review organisation dedicated to improving patient care and safety by providing a dynamic accreditation process through the development of standards, education, and services that support our vision.

VISION STATEMENT

All patients receive appropriate care and safe transport, when necessary, by qualified healthcare providers

VALUES

FAIR
ETHICAL
CONSISTENT
ACCOUNTABLE
PATIENT AND SAFETY FOCUSED

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PREAMBLE

The Commission on Accreditation of Medical Transport Systems Global Accreditation Standards (CAMTS Global) - Second Edition - reflects the dynamic evolution in healthcare and the medical transport professions. Commitment to patient care and safety of the transport environment form the foundation of these voluntary standards. A service is not required to meet each criterion listed unless it is part of the service's scope of care. The Board also recognizes that in some cases, a specific type of care may not be available, but the patient still needs transport. These classifications are not meant to prohibit any transport but are meant to serve as criteria for the best available care. It is also important to know that accreditation decisions are based on substantial compliance with the accreditation standards - not 100% compliance. The comprehensive nature of the standards may lead to various interpretations, but the emphasis is on outcomes, especially on standards that address education, safety, and Quality Management.

One principal change in the Second Edition for both CAMTS and CAMTS Global was the definition of Critical Care. In previous editions, there were separate definitions for Emergency Critical Care and Intensive Critical Care with the intent to accredit under one or the other in subsequent editions. But critical care is difficult to define and even more difficult to apply measurable criteria that would differentiate one from the other. The process has always relied on the individual program's scope of care. If the training, equipment, and interventions match what is outlined in the scope of care, the program meets compliance for BLS, ALS, Critical Care, or Specialty Care. Therefore, it was decided to combine the previous two critical definitions under a single Critical Care type of care.

The other significant change is the addition of Mobile Integrated Health Standards. Recognizing this evolving segment of healthcare both in the U.S. and worldwide, out-of-hospital care was determined to be within the mission of CAMTS and CAMTS Global. A special committee was established to develop standards – the first MIH standards to be published by a body of experts in the U.S. This will be a separate document from the transport standards and will be finalized and available by January 2023 for CAMTS Global. Due to including Mobile Integrated Health (MIH), the Mission and Vision of CAMTS Global, as seen on the previous page, were also revised to include out-of-hospital care, which is inclusive of transport and integrated mobile health.

Due to the diversity of regulations that may govern services in countries outside of North America, CAMTS Global addresses international medical transport services as appropriate to the country of residence and the specific regulator of that country as referenced by the term "Authority Having Jurisdiction" (AHJ).

Specific standards addressing medical escort services are also a separate section at the end of this manual. Applicants may include medical escort with their application for fixed-wing services or may apply exclusively as medical escort services.

Special Operations – Medical Retrieval standards are not included in this manual but can be found as a separate document for services that provide tactical rescue or "SWAT" callouts and citizen recovery from potentially unstable environments. The Second Edition of Special Ops will also be approved and available by January 2023.

The Accreditation Standards will serve not only as a resource for site survey visits and as criteria for accreditation decisions but also can be used as a blueprint for organisational planning and by medical transport services on a worldwide basis. CAMTS Global recognizes and accepts its responsibility to review and evaluate the relevance and applicability of its standards. These standards are written by and for those involved in out-of-hospital care, which includes medical transport and community healthcare providers. As standards are dynamic and not static, CAMTS Global values its constituents' comments and suggestions for future changes.

Eileen Frazer, Executive Director

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01.00.00 – MANAGEMENT AND STAFFING

01.01.0 MISSION STATEMENT AND SCOPE OF CARE

01.01.01 There is a Mission Statement written in the present tense that describes the purpose of the service, mode(s) of transport provided and its constituents. The Mission Statement directs employees toward the values the service was founded upon.

01.01.02 There is a written scope of service that describes the types of patients accepted (Scope of Care), transport modalities and exceptions (service that is not provided). Scope of Service includes the range of each mode, response time, staffing configuration(s)**,** number of patients transported simultaneously, and any exceptions to types of requests that are accepted.

The Scope of Care is commensurate with the qualifications and level of initial and ongoing education required for medical personnel. The Scope of Care should address, as applicable to the programme, patient populations served, age groups and their definition.

Examples of evidence to meet compliance:
The Mission Statement describes what you do in a clear and concise manner. The vision and mission are strategic statements developed by and unique to each organisation. Values statements are separate but key underpinnings of these statements. The modes of transport and constituents are not, and must not be part of these statements, but rather must be included under a "scope of service and care" statement.

01.02.00 FINANCIAL COMMITMENT

01.02.01 There must be evidence of financial commitment to the programme by the administrative structure and through financial resources that provide excellence in patient care and safety of the transport environment.

Examples of evidence to meet compliance:
Transport vehicle is well kept – equipment and supplies are well maintained, accessible and adequate for patient population(s)/volume. Physical surroundings are well maintained. There are adequate management and staff personnel for transport volume. Education appropriate to the scope of care and to all aspects of the organisation (communications, transport crew, medical crew, etc.) is provided.

01.02.02 Insurance – The transport service must have and maintain insurance against loss or damage of the kinds customarily insured against and in such types and amounts as are customarily carried under similar circumstances by similar businesses. The insurers must be financially sound and reputable, and they must be qualified to do business in the country in which the transport service is located.

The following types of insurance are limited to the operational and regulatory environment:

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1. Liability insurance for each operating aircraft

a. Fixed Wing

b. Rotorwing

2. Auto insurance (for ground vehicles and ambulances owned by the service)—$1 million (U.S. dollars) and includes accidental death and disability

3. Medical Professional Liability and/or Error and Omissions (Organisations who have medical directors and staff who are not providing direct patient care may have coverage under Errors and Omission rather than medical malpractice.)

4. Worker's compensation or employer's liability—per state or equivalent government guidelines

5. Group life insurance or accidental death and disability—whether paid for by the employer or employee

01.03.00 MARKETING AND EDUCATION FOR THE PUBLIC

01.03.01 There is a professional and community education programme and/or printed information with the target audience to be defined by the medical transport service.

1. Clear identification pertinent to the aviation authority of the company that is operating the aircraft is on the programme's website, in marketing materials, and on the aircraft. (RW/FW)

2. Website information and printed materials are accurate and consistent with programme documents, practise, and capabilities.

3. Evidence of licensure appropriate to the AHJ is provided for each transport vehicle.

4. Hours of operation, phone number, and access procedure are accessible to the public.

5. Capabilities of medical transport personnel—including current scope of care, a list of types of patients who are accepted based on personnel training, and configuration and equipment capabilities—are included.

6. Type of aircraft/ambulance(s) used and operational protocols specific to type are included.

7. Coverage area for the transport service is specified.

8. Preparation and stabilization of the patient prior to transport is outlined.

9. Patients considered appropriate for transport by the medical transport service are specified. An appropriate transport enhances patient outcome, safety, and cost-effectiveness over other modes of transport with the least amount of out-of-hospital time. Includes non-emergent transports for repatriation, to centres of excellence, and/or rehab long-term care facilities.

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Examples of evidence to meet compliance:
Marketing materials are up to date, consistent with mission and scope, depict actual types of transport vehicles, etc., and do not exaggerate the scope of care or transport vehicle capabilities.

01.04.00 ETHICAL BUSINESS PRACTISES

01.04.01 The transport service develops and demonstrates use of a written code of ethical conduct in all areas of business that demonstrate ethical practices in business, marketing, and professional conduct.

1. The code of conduct guides the service when confronted with potential compliance or ethical issues.

2. The code of conduct outlines the service's standards for ethical behaviour as well as contact information and reporting protocols if a standard has been violated.

3. The code of conduct outlines ethical billing practises.

4. Upon request, for elective and/or non-emergent transports, the programme provides a patient, patient family member or third-party payor with a timely written, honest best estimate of the total cost of the patient transport.

5. There is a policy that addresses privacy rights in regard to photographing and the use of photos or other media that includes prohibiting photos placed on social media that would compromise GDPR or privacy requirements without a patient's written permission.

Examples of evidence to meet compliance:
Policies may address such issues as proper/improper behaviour toward other programmes' marketing materials, honesty in reporting data, personal cell phone use, use of social media sites, how ethical issues are addressed, conflicts of interest, phone etiquette, acceptable and unacceptable behaviours on the worksite/on transport, acceptance of gifts from patients/vendors, etc.

01.04.02 The Board of Directors, administrative, and management staff are encouraged to complete an annual conflict-of-interest statement or form, disclosing any actual or potential conflicts.

01.04.03 Ethical business practises must be maintained in policy and practise and include specific guidelines for transport requests that are not performed directly by the CAMTS Global accredited service or service seeking accreditation as follows: (RW/FW/S)

1. Referring transport requests – Referring is defined as transferring the transport request to another programme or service. There is no further involvement on the part of the original services, and there is no monetary exchange for the referral. If an accredited programme refers a transport to another service, the accredited service/service seeking accreditation will attempt to refer a transport to another CAMTS Global-accredited service whenever possible if unable to perform the transport.

2. Subcontracted transport requests – Subcontracted is defined as the occasion when another service is used to supply a portion of the transport, such as the vehicle or the medical team if the service's vehicle or medical team is not available or is not appropriate.

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3. Outsourcing transport requests – Outsourcing is defined as transferring a request to another service but retaining control of the coordination throughout the transport (which may include flight following, arranging for surface transport, hotels, medical direction, etc.) The service may add a fee for coordinating the transport, but full disclosure of the name of both the medical provider and the vehicle provider must be made to the patient, his/her advocate, and the payer source(s). Ten per cent or less of the total number of transports is acceptable for transports in North America or within the same continent and whenever possible should be done by CAMTS Global-accredited services.

4. Brokering transport requests – Brokering is defined as arranging for transport and collecting a fee but not actually performing the transport. This is not an acceptable practice of an accredited service. If the accredited service or service seeking accreditation cannot fulfil a request for transport, the service may elect to subcontract or refer the request.

01.04.04 If an accredited service or CAMTS Global accreditation applicant subcontracts or outsources a request for transport, the following conditions are maintained in practice and policy: (RW/FW/S)

1. The other service shall be CAMTS Global or CAMTS accredited whenever possible unless there is not one in the service range, or the CAMTS Global or CAMTS-accredited service is not available within an appropriate response time based on patient condition and needs.

2. If unable to subcontract or outsource to a CAMTS Global or CAMTS-accredited service, the service must ensure that the patient and/or requesting agent is notified of the actual medical team, service, or aviation operator conducting the transport through a written contract or other means of written notification.

a. Attempts to contact a CAMTS Global or CAMTS-accredited service will be documented (which service and date and time of contact) along with reasons for not contracting with a CAMTS Global or CAMTS-accredited service, such as a viable alternative based on time and proximity.

b. Transport requests that are outsourced to or subcontracted will be tracked and trended as part of the Quality Management process.

3. If an unfamiliar transport vehicle is used (either by the originating team or the other team), a medical team member familiar with the operation of medical systems, communications, and emergency procedures must accompany the transport team.

4. Unless already specified in a written contract, the accredited programme will disclose through a signed agreement (that may be signed on-site, faxed, or electronically transmitted) with the requesting agent, patient, and payer source whenever the transport is not performed by their programme, medical teams and/or aircraft. (This does not apply to speciality teams that are listed as part of an accredited service.)

<u>Examples of evidence to meet compliance:</u>

Signed agreements reflect when part of the service is not provided by a CAMTS Global-accredited entity, such as a subcontracted aircraft or medical team. All referred, subcontracted, and/or outsourced requests are tracked and trended in the QM review process.

01.04.05 The transport service will know the capabilities and resources of receiving facilities and will transport patients to appropriate facilities within the service region based on direct referral, approved EMS plan, or services available when no direction is provided.

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1. Whenever possible, services that respond directly to the scene will transport patients to the nearest appropriate hospital (i.e. major trauma to the nearest Level I or II Trauma Centre stroke patients to a hospital with specialised stroke care, acute myocardial infarction patients to a hospital with a staffed cardiac catheterization lab, major burns to a Level I or II burn centre, high-risk OB patients to a hospital with OB services and a Level II or III NICU, etc.). See References for Centers for Disease Control trauma triage guidelines.

2. Management ensures, through policy, that all transfers of patient care occur from a lower level of care to an equal or higher level of care except for elective transfers for patient convenience or returning a patient to a referring facility/residence.

3. Accurate estimated time of arrival (ETA's) are always provided regarding arrival of the service to the patient for emergency requests.

4. Contractual relationships with public services or health care agencies do not reflect implied referrals.

5. Subscription services do not reflect implied referrals that could negatively impact expeditious transport of patients to the most appropriate facility.

Examples of evidence to meet compliance:
Contracts do not exceed current market value for goods and/or services or severely discount current market value with the intent to influence requests or referral patterns.

01.04.06 All patient care resources, including personnel and equipment, necessary to the programme's mission must be readily available in the transport vehicle or available to place in the transport vehicle, and they must be operational prior to initiating the mission. This includes resources, personnel, and equipment provided by Specialty Care Providers.

01.05.00 COMPLIANCE

There is a corporate compliance officer or designated person responsible for ensuring that the service is in compliance with external laws and regulations, payer requirements, and internal policies and procedures.

01.05.01 The compliance programme includes:

1. Written policies and procedures

2. Designation of a compliance officer or assignment of responsibility to a specific individual or individuals

3. Effective training and education for staff documents both initial and continuing competency

4. Effective lines of communication

5. Enforced standards based on published disciplinary guidelines

6. Auditing and monitoring

7. Procedures for responding to detected offences and taking corrective action

8. Or applicable national regulations

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9. For FW International – Services must have processes in place to ensure they comply with specific laws in the countries within which they operate

01.05.02 The programme provides timely reporting on requested data to the AHJ, or other agencies, to which it responds.

Examples of evidence to meet compliance:
Staff is knowledgeable about current compliance issues.

01.06.00 MANAGEMENT/POLICIES

01.06.01 There is a well-defined line of authority.

1. There is a clear reporting mechanism to upper-level management. An organisational chart defines how the medical transport service fits into the governing/sponsoring institution, agency, or corporation.

2. For public or private institutions and agencies that contract with an aviation or ambulance company for transport, there must be a policy that specifies the lines of authority between the medical management team and the aviation/ambulance management team.

3. All personnel understand the chain of command. Medical personnel understands that the pilot in command has ultimate authority for the aircraft and safe operations. (RW/FW)

4. Managers are oriented to aviation regulations as pertinent to the Federal Aviation Regulations, (FARs) in the U.S. or authority having jurisdiction (AHJ) that apply to the medical transport service.

5. Managers are oriented to ambulance standards and state regulations or AHJ pertinent to ambulance services. (S)

6. There is a policy that addresses encounters with an unmanned aerial system (UAS), laser or bird while in flight, which includes:

   a. Reporting to local law enforcement and/or AHJ on a timely basis

   b. The responsible person for the reporting

   c. Assessment of those impacted by a laser strike for the need for medical follow-up

   d. Limiting additional exposure by leaving the area of encounter or taking other countermeasures

   e. Incidences/occurrences are tracked and reported annually to the Safety Committee

7. Managers are trained to recognize real and perceived pressures that may influence unsafe acts by staff.

8. The programme adheres to state/provincial, national, and/or local ambulance (air and surface) rules and regulations, including licensure requirements.

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9. A policy must be in place that documents the employer's disciplinary process and protects employees from capricious actions.

10. There is a policy that addresses Do Not Resuscitate (DNR)/Limitation of Therapy Agreement (LOTA) orders as permitted.

11. There is a policy that addresses transfer and security of patient's personal property.

12. There is a policy that prohibits "freelance responses" to individual events or disasters (responding without being specifically requested)

13. Management:

a. Demonstrates strategic planning that aligns with the mission, values, and vision of the service.

b. Sets written guidelines for press-related issues and marketing activities.

c. Sets an Emergency Response Plan that includes a PAIP and responses to unexpected occurrences involving personnel, vehicles, and facilities to include helipads and aerodromes (including foreign or less frequented airfields) as appropriate to the base of operations.

d. Requires shift briefings be conducted at the beginning of each shift to assure continuity between shifts.

e. Requires a post-flight debrief be conducted after each flight. If there were issues involving the communications centre, the debriefing includes the communications specialists. (RW/ FW)

f. Requires a post-transport debrief be conducted after each transport or groups of transports as response readiness permits. (S)

g. Has a policy and a mechanism to track, investigate, disclose, and close the loop on any medical incident reports including those classed as Serious Reportable Events or Never Events.

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Examples of evidence to meet compliance:
Business plans demonstrate a needs and risk assessment when expanding the service or adding bases, and those plans include staffing, training, and management restructuring for added responsibilities.

Examples of evidence to exceed compliance:
Management is educated to Just Culture and applies Just Culture principles throughout the organisation.

01.06.02 Employment Policies

1. A policy addresses pre-employment background checks that include, at a minimum, criminal background, licence verification, and previous employer.

2. A policy requires staff to self-report any investigations, arrests, or convictions.

3. A policy addresses pre-hire (whether or not it is required) drug screening.

4. A policy addresses criteria to require “for cause” drug screening.

5. A policy addresses a procedure for employee terminations that ensures protection of programme information, physical and electronic data, property, and security. This may include securing the individual’s badge/keys/other access devices, deactivating e-mail accounts/computer sign-on/remote access/codes, remaining with employee until leaving the premises, inspecting items employee takes with him or her, providing prompt notification of relevant departments/vendors/contractors, procuring property that belongs to the programme that the employee may have off-site, etc.

01.06.03 Policy Manual (electronic or hard copy) is available and familiar to all personnel

1. Policies are dated and signed by the appropriate manager(s).

2. Operational policies and medical protocols are reviewed on a biennial basis as verified by dated manager’s signature on a cover sheet or on respective policies.

Examples of evidence to meet compliance:
Policies can be broken out by department/division; however, there must be signatures and revision dates on each specific policy or a cover sheet that represents annual review with respective review dates and signatures.

01.06.04 Programmes are encouraged to develop a plan for succession and unanticipated extended absence for key positions. The plan should address position vacancies, including when there is no incumbent to provide transition training, as well as unplanned extended temporary absences, designed to preserve the integrity of the programme.

Examples of evidence to meet compliance:
This may include cross-training, identification of successors with support of formal and informal education, mentorship, opportunities to participate in projects/presentations/events in the future role, scenarios/case studies, shadowing, job expansion, mechanisms to preserve and provide access to needed information/documents, contacts lists, task lists, detailed instruction on processes that are critical/known only to the position and periodic review/updating of the plan’s references.

01.07.00 STAFFING

The service must have written operational policies to address each of the areas listed below:

01.07.01 Scheduling and individual work schedules demonstrate strategies to minimise duty-time fatigue, length of shift, number of shifts per week, and day-to-night rotation. (See References for circadian rhythm, Fatigue Risk Management System (FRMS), and other fatigue studies.)

1. The following criteria must be met for shifts scheduled more than 12 hours:

    a. Personnel are not required to routinely perform any duties beyond those associated with the transport service.

b. Personnel is provided with access to and permission for uninterrupted rest after daily duties are met.

c. The physical base of operations includes an appropriate place for uninterrupted rest.

d. Personnel must have the right to call "time out" and be granted a reasonable rest period if the team member (or fellow team member) determines that he or she is unfit or unsafe to continue duty, no matter what the shift length. There must be no adverse personnel action or undue pressure to continue in this circumstance.

e. Management must monitor transport volumes and personnel's use of a "time out" policy.

f. A fatigue-risk management process is utilised, and there is a policy that outlines when and how frequently the process should be used.

Reference ICAO DOC 9966 – Manual for Oversight of Fatigue Management Approaches Second Edition – 2016

2. Without a fatigue-risk management process in place (see No. 1 lit. g. above), any regularly scheduled shifts that exceed 24 hours must follow the additional criteria below:

a. A programme's base averages less than 1 transport per day.

b. The programme provides at least 10 hours of rest in each 24-hour period.

c. The location of the base or programme is remote, and one-way commutes are more than 2 hours.

3. A written policy addresses the scheduling of on-call shifts, and that policy addresses fatigue by requiring managers to monitor duty times, tracking QM, and using fatigue risk management.

4. Policies for long-range transports address rest during transport, after patient is at the destination and acceptance of back-haul missions. Medical personnel must have 10 hours free from all company-assigned duties before accepting another mission, or crews need to be swapped out. (FW)

a. Policies addressing overnight stays must not exceed more than 16 hours on duty in a 24-hour period OR a minimum of two medical team members are provided to allow one member rest during the transport and insure another attends the patient.

b. Missions extending beyond three days (i.e., international, or multi-overnight mission) must allow crew members adequate rest periods using a fatigue-risk management process to assess crew readiness.

5. Personnel (including communications specialists and surface ambulance operators) must have at least 10 hours of rest (pilots must have 10 hours of rest as consistent with Part 135 regulations or as consistent with AHJ regulations) with no work-related interruptions prior to any scheduled shift of 12 hours or more or prior to any on-call shift of greater than 12 hours that is scheduled to precede or follow a scheduled on-duty 12-hour shift. The intent is to preclude back-to-back shifts

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with other employment, educational requirements or school, commercial or military flying, or significant fatigue-causing activity prior to a shift.

6. The number of consecutive shifts and day-to-night rotations must be closely monitored by management for pilots, medical crews, communication specialists, surface vehicle operators, and aircraft maintenance personnel.

7. Policies address crew interface so that team members are expected to stay alert on all legs of the transport, including at least one team member on empty legs, to assist the pilot in staying alert (especially in one-pilot operations) and the vehicle operator to stay alert for surface transports.

8. For all positions (aviation, clinical, communications, maintenance), a written policy addresses scheduling to avoid new employees working together (Green-on-Green).

9. A written policy addresses safety and clinical competency requirements for part-time or full-time staff experiencing a low volume of transports. The policy should assure all onboard staff are current and competent to the level of full-time, active staff in flight/transport safety and the use of aviation (NVG, etc.) and clinical equipment.

Examples of evidence to meet compliance:
Management monitors fatigue in terms of staffing patterns, patient outcomes, and incidents or accidents with implementation to include Just Culture.

01.08.00 PHYSICAL WELL-BEING

01.08.01 Physical and psychological/emotional well-being is promoted through:

1. Wellness programmes that promote healthy lifestyles (e.g., balanced diet, weight control, no smoking).

2. Resources to promote psychological and emotional well-being, such as suicide prevention training, trained peer support team, and employee assistance programmes (strongly encouraged).

3. Evidence of an injury prevention programme and ergonomic strategies to reduce employee injuries.

4. Protective clothing and dress code pertinent to:

a. Mission profile, such as turn-out gear available at scene for medical personnel who assist with heavy extrication. (RW)

b. Safe operations, which may include the following, unless specified as “required” below:

- Boots or sturdy footwear (required)
- Reflective material or striping on uniforms for night operations
- High-visibility reflective vests or appropriate clothing worn by flight and ambulance crews in accordance with AHJ national standard (required for medical crews and vehicle operators responding to night scene requests)

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- Flame-retardant clothing (strongly encouraged for rotorwing services according to a risk assessment)

- Appropriate outerwear pertinent to survival in the environment (required)

5. Exposure control – dress codes address jewellery, hair, and other personal items of medical personnel that may interfere with patient care.

6. Written policies addressing:

a. Hearing protection and conservation requirements

b. Duty status during pregnancy

c. Duty status during acute illnesses, such as sinusitis or otitis

d. Duty status while taking medications that may impair performance related to safety

e. Weight/height and/or lifting ability as specified in pre-hire requirements

Examples of evidence to meet compliance:
Personnel is observed following the programme's dress codes and are knowledgeable about policies regarding physical well-being. Pregnancy policies are consistent with current national laws and may address notification to employer requirement, written documentation requirements to continue on duty, possible alternative duty assignments if team member is restricted from transport duty.

01.09.00 MEETINGS AND RECORDS

01.09.01 Meetings

1. There are formal, periodic staff meetings for which minutes are kept on file and accessible for reference.

2. All meeting minutes (Staff, Safety, QM, etc.) include the following:

a. Date and time of the meeting.

b. Base identification (if multiple bases).

c. Meeting type (Staff, Safety, QM, etc.).

d. List of those in attendance by both name and title or function (i.e., Director, RN, EMT-P, RRT).

e. Name of the person presiding.

f. Discussions (versus agenda/topic headings).

g. Assignments and responsibilities for open issues.

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h. Progress reports on open issues.

i. Clear identification that an issue has been resolved (loop closure).

3. There are defined methods, such as a staff notebook or electric mechanism, for disseminating information to all staff members between meetings.

4. All meeting minutes (Staff, Safety, QM meetings, etc.) are kept on file and maintained for a minimum of three years.

Examples of evidence to meet compliance:
Meeting minutes indicate attendance and representation by all disciplines. Action items, timelines, and areas of responsibility are well documented and demonstrate a flow of information that indicates tracking, trending, and loop closure.

01.09.02 Records Management ensures that patient care records, meeting minutes, policies and procedures are stored according to hospital or agency policies, and GDPR or privacy regulations are indicative of the individual medical transport service's sensitivity to patient confidentiality in accordance with local and national standards.

1. A record of patient care is completed, and a copy remains (electronic or other format) at the receiving facility for appropriate continuity of care.

a. A policy outlines minimum requirements based on the transport service's scope of care:

- Purpose of the transport

- History of present illness/injury, physical exam, initial vital signs as well as periodic vital signs, including waveform capnography for patients with an advanced airway, patient temperature, and pain assessments, per patient needs assessment and programme's guidelines

- Treatments, medications, intake and output, and patient's response to treatments, procedures, and medications

- Ventilator settings and changes in ventilator settings are recorded

- Documentation of pertinent radiologic and laboratory reports on interfacility transports

- Signature of each care provider and clarity about what care was performed by each provider (administering medications and performing procedures) and indicates who actually documented patient information

- Transport facilities (to and from) and to whom report was given at the receiving facility

- Patient condition at certain predetermined altitudes

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b. A policy and appropriate training address prearrival and hand-off communications to receiving personnel/facilities.

c. A policy outlines approved abbreviations for use in patient care records. Medication abbreviations are avoided.

d. A stored permanent electronic patient care record is preferred but scanned hard copies are acceptable.

Examples of evidence to meet compliance:
Patient records are signed and initialled by the crew member who performed the treatment or procedure. Records are stored in a secure area that is inaccessible to the public with accessibility limited according to applicable guidelines.

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02.00.00 – QUALITY MANAGEMENT

This section includes Performance Improvement (PI or QM), Utilisation Management, and Safety Management.

02.01.00 The QM programme has written, objective evidence of actions taken in potential and identified problem areas and the evaluation of the effectiveness of that action.

02.01.01 A QM flow chart diagram or comparable tool is developed demonstrating organisational structure in the QM plan and linkage to the Safety Management System.

02.01.02 The QM programme is linked with risk management so that concerns raised through the risk management programme can be followed up through the quality management programme:

1. There is a written policy that outlines a process to identify, document, and analyse sentinel events, never events, adverse medical events, or potentially adverse events (near misses) with specific goals to improve patient safety and/or quality of patient care.

2. There is follow-up on the results of actions/goals for specific events until loop closure is achieved.

3. The process encourages personnel to report adverse events even if it is a sole-source event (only the individual involved would know about it) without fear of punitive actions for unintentional acts.

02.01.03 The QM programme must be integrated and include activities related to patient care, such as:

1. Customer and staff satisfaction.

2. Communications.

3. Equipment maintenance.

4. All aspects of transport operations pertinent to the service's mission statement.

02.01.04 There is a written QM plan that should include but not be limited to the following components:

1. Responsibility/assignment of accountability.

2. Scope of care.

3. Important aspects of care and quality metrics that are identified, measured and compared to metrics/outcomes of evidence-based standards.

4. Operational processes such as financial outcomes.

5. Thresholds for evaluation that are appropriate to the individual service.

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6. Methodology – the QM process or QM tools utilised.

7. Assembly of groups to address each identified area of quality concerns that represent all disciplines involved, ensuring optimal communications and problem-solving.

8. Emphasis on the quality of services offered on a continuing basis with constant attention to developing new strategies for improving; maintaining the status quo or achieving arbitrary goals are not considered the end-measures.

9. Evaluation of the improvement process.

Examples of evidence to meet compliance:
The QM plan is current and describes the process with evidence of loop closure in subsequent reports.
QM does not consist only of medical record reviews.

Examples of important aspects of care may be:

- *Response time on emergent transports*
- *Controlling life-threatening dysrhythmias*
- *Managing cardiac chest pain*
- *Managing respiratory distress*
- *Patient and user satisfaction*
- *Complete and accurate documentation of care delivered*
- *Efficient turnaround time in referring hospitals on emergent transfers*

Other criteria may include:

- *Communications among parties involved in transfer*
- *Facilitating transfer of patients for referring physicians*
- *Appropriateness of use of transport service (if an issue) and absence of patient/staff injuries incurred during transfer.*

Indicators may also be in regard to:

- *Meeting response time*
- *Advanced procedure success rate*
- *Patient, employee, or referring/receiving staff satisfaction*
- *Periodic maintenance of medical equipment*
- *Communicating vehicle status*
- *Improving appropriate mode use*

Documentation requirements, policy/procedure compliance, etc.

Thresholds are appropriate for the indicator and may be based on published standards/results, programme historical results/goals and/or intuitive appropriateness, i.e., 100% is desired for correct referring location. However, 100% is not realistic for success on first attempt of intubation. Examples of methodologies: these include sources of data such as questionnaires, databases, medical records, administrative reports,

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incident reports, how numerical results are calculated, fishbone diagrams, six sigma, control charts, Pareto charts, flowcharts, etc.

Examples of evidence to meet compliance:
Business indicators should be developed that allow the programme to improve its processes and that focus on every aspect of the programme (i.e., communications, clinical, aviation, safety, etc.). A flow chart should show the steps by which outliers are addressed and how loop closure for each outlier is assured. Subsequent action to trends in activity should be noted with constant evaluation of the performance improvement process (i.e., Deming Cycle; Plan Do, Study/Check, Act). The QM plan is current and describes the process with evidence of loop closure in subsequent reports.

02.01.05 There will be regularly scheduled QM meetings providing a forum for all disciplines involved in the medical transport service.

02.01.06 The monitoring and evaluation process has the following characteristics:

1. It is driven by important aspects of care and operational practices identified by the medical transport service's QM plan.

2. It has metrics and thresholds or other criteria—identified to objectively monitor the important aspects of care.

3. It provides evidence of QM studies and evaluation in compliance with written QM plan.

4. It provides evidence that action plans are developed when problems are identified through QM, and these plans are communicated to the appropriate personnel.

5. It includes an annual summary Quality Management report.

6. It provides evidence of ongoing re-evaluation of action plans until problem resolution occurs.

7. It provides evidence of performance data, tracking and trending, and sharing with all members of the service.

8. It provides evidence of annual goals established prospectively for the QM programme that provides direction for the workgroups and results that are measurable.

9. It puts emphasis on loop closure and the resolution of problems within a finite time period.

Examples of evidence to meet compliance:
QM goals may be educational, such as developing a particular subject content, revising orientation, improving the process to carry out ongoing education/skills or recordkeeping; operational, such as improving a process or policy that isn't working well, tracking of skills/advanced procedures, developing a system of how medical equipment is shared/returned among multiple bases, employee/patient/user satisfaction; clinical, such as improving medical record documentation forms/implementing or improving electronic medical records, evaluating and acquiring a new item of medical equipment, expanding medical capabilities, developing a reference or resource for team members/orientees; communications, such as improving ongoing education, studying ergonomics or C communications S specialists' work stations.

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02.01.07 Performance metrics, as identified by the programme, must be multidisciplinary and reviewed at least quarterly (at a senior executive level). Based on the scope of care of the service, in addition to those marked "required," at least one performance metric from each of the following groups, (with examples) is required to be tracked and trended on an annual basis.

1. Patient safety

    a. Out-of-range cabin temperatures without risk mitigation

    b. Arrest during transport (i.e., CPR)

    c. Two-patient transports (Volume required for Programme Information Form, (PIF), CAMTS Global application)

    d. Single-medical-provider transports

    e. Transports of infectious-disease patients realized during/after transport

    f. Number of Never Events (see References) (required)

2. Rotorwing Operations

    a. Fatigue-risk management (such as use of time-outs, and utilisation of defined and approved fatigue-risk management processes)

    b. Adding unscheduled crew

    c. VFR to IFR

    d. Contact with Operational Control Centre (OCC) not performed as required by programme's policy

    e. Deviation from programme's policy on use or lack of use of night vision goggles

    f. Deviation from flight plan (Volume required for PIF)

    g. Flight interruptions or delays due to weather or maintenance (Volume required for PIF)

    h. Flight data recorder device reviews

3. Fixed Wing Operations

    a. Interfacility patients not transported bedside to bedside (required)

    b. Fatigue risk management (such as use of time-outs, utilisation of fatigue risk management tools)

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c. Adding unscheduled crew

d. VFR to IFR

e. Deviation from flight plan (Volume required for PIF)

f. Flight interruptions or delays due to weather or maintenance (Volume required for PIF)

g. Flight data recorder device reviews

4. Fixed Wing International

a. Complying with contracts and referrals

b. Receiving hospital acceptance

c. Unanticipated interruptions such as tech stops.

5. Surface Operations (ground ambulance, marine or other transport vehicle)

a. Fatigue risk management (such as use of time-outs and utilisation of fatigue risk management tools)

b. Lights and sirens use (tracking is required along with one additional metric)

c. Transport interruptions or delays

d. Diversion from original patient request to another request

e. Response to witnessed incident or an incident that was happened upon

f. Real-time feedback devices, event-recording cameras, speed governors, and/or weather alert system reviews

6. Communications

a. ETA accuracy

b. Accuracy of coordinates (RW) and/or accuracy of patient pick-up locations and destinations (FW and S)

c. Weather at time of request and during transport if changes

d. Request times from acceptance to lift-off or departure times

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e. Number of missed and aborted transports (Required)

f. Total number of auto launches and number of completed transports versus aborted transports as a result of the auto-launch (RW)

g. Total number of stand-bys and number of subsequent responses versus cancelled responses. (RW) (Required)

6. Business and Customer Service

a. Referred, subcontracted, or outsourced transports

b. Negative feedback from requesting/receiving agents

c. Negative feedback from patients (tracking is required along with 1 additional metric)

7. Maintenance

a. Foreign Objects Debris (FOD) incidents

b. Unscheduled maintenance rate

c. Missed/aborted transports for maintenance (Volume required for PIF along with 1 additional metric)

8. Clinical – The GAMUT (Ground and Air Quality Metrics Transport) May 2021 metrics are in the Addenda. However, for the most current version of the GAMUT metrics, go to https://www.gamutqi.org/GAMUT-Metrics-full.pdf.

02.01.08 Safety practises

1. Safety issues may be handled through the Safety Committee where a problem, incident, or accident must be identified with detailed reporting and analysis of aircraft and vehicular accidents, incidents, and resolution of issues with findings and action plans reported back to the QM committee.

2. QM personnel may collect data and refer to the Safety Committee for action and resolution.

02.01.09 For both QM and Utilisation Management (UM) programmes, there should be evidence of reporting of results through established organisational structure to the service's sponsoring institution(s) or agency (if applicable). For both QM and UM programmes, there is direct integration of the medical transport service's activities with the sponsoring institution or agency (if applicable).

<u>Examples of evidence to meet compliance:</u>

Outcomes from QM should drive education and training needs. Systems improvement tools are educational. The process is not punitive.

Tracking and trending lift-off times, response times and times on scene or at the referring/receiving hospital are evaluated in terms of benchmarks set by the programme in order to evaluate the effectiveness of policies/procedures, training and/or equipment needs.

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If transports are delayed, reasons for delays are tracked as are transport requests that are conducted by an alternative means of transport (within the same programme) such as FW or surface vehicle is used although RW was requested.

02.02.00 UTILISATION MANAGEMENT (UM)

Management ensures an appropriate utilisation management process through trending and tracking requests. There is evidence of feedback to the requesting agents and feedback from the patients' receiving facilities. Utilisation review may be prospective, concurrent, or retrospective.

02.02.01 The following are included in the Utilisation Management programme:

1. Medical denials or requests that should have been denied for a specific transport mode (such as RW when ground would have been appropriate) – tracked and evaluated specific to the programme's scope of care and mission.

2. Specialised medical transport personnel expertise and/or equipment available during transport that would otherwise not be available

3. Cost of the transport

a. Emergency transports do not require a guaranteed payment prior to transport.

b. Calling agents for non-emergent requests are assisted with information about the cost of the transport as well as alternative, more economical (and equally appropriate) means of transport, if available.

c. Advise of insurance eligibility and anticipated out-of-pocket costs for patient/family for non-emergent transports.

02.02.02 A structured, periodic review of transports (to determine transport appropriateness or that the mode of transport enhances medical outcome, safety, or cost-effectiveness over other modes of transport) performed at least semi-annually and resulting in a written report.

1. The following criteria may trigger a review of the record to determine the medical appropriateness of the transport based on patients:

a. Who are discharged home directly from the Emergency Department

b. Who are transported without an IV line or oxygen

c. Upon whom CPR is in progress at the referring location prior to transport

d. Who are "scheduled transports" (RW)

e. Who are transported more than once for the same illness or injury within 24 hours (RW/FW)

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f. Who are transported from the scene of injury that do not meet local/regional/state or national triage guidelines (RW)

g. Who are treated at scene or referring hospital but not transported

h. Who are transported interfacility, and the receiving facility is not a higher level of care than the referring facility (RW)

i. Who are flown initially by fixed wing and transported from the airport to the receiving facility by helicopter (RW/FW)

j. Who are served by an inappropriate vehicle in consideration of time, environment, distance, speed considerations, etc.

k. Who are served by an inappropriate team, i.e., ALS team used but patient requires critical care skills

l. Who are served by an inappropriate surface vehicle that met the aircraft to assume care of the patient and continue transport with the level of care, equipment and supplies appropriate to the patient's specific needs (RW/FW)

02.02.03 Continuity of Care – The medical service must ensure continuity of care and expeditious treatment of patients.

1. Where appropriate, the service should promote timely feedback to referring agency, facility, or physician about patient outcome and treatment rendered before, during, and after transport.

2. Patients are only transferred to surface vehicles (at sending and receiving destination) when care can be continued by the same level or higher qualified personnel as that provided by transport personnel (subject to rural capabilities and elective transport needs) and when ordered by the referring/receiving physician or medical director(s) to optimise the outcome of the patient. (RW/FW)

02.02.04 Management ensures that steps are taken to reduce those transports that are considered to be non-appropriate as identified by the programme's scope of service.

02.02.05 For international transports, travel assistance company's medical department requests that are under-triaged and over-triaged are tracked and trended by requesting agency, facility, region, country, etc.

<u>Examples of evidence to meet compliance:</u>
UM reports indicate trending and loop closure of patient outcomes. Requesting agents are contacted if there are trends that indicate over-triage or under-triage including communication with assistance company medical departments if they are the requestor/payor. Continuous review of utilisation review with applicable trending and loop closure of patient outcomes in the form of follow-up to receiving facility, documented phone calls to patient/family, etc. may provide adequate information about patient outcome. Outliers should be presented to Case Review Committee or during regularly scheduled staff meetings to discuss specifics of transport.

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Examples of evidence to exceed compliance:
There is written evidence that the programme routinely provides feedback and education to requesting agents regarding inappropriate requests for transport. Programme regularly meets with representatives of the EMS region and trauma centre to discuss scene transports that were both under-triaged and over-triaged.

02.03.00 SAFETY MANAGEMENT (includes Safety Management Systems and Safety and Environment)

02.03.01 Safety Management System (SMS) – Management is responsible for development of an effective SMS and training all staff. Both management and staff are responsible for making operations safer.

1. The designated safety director(s)/officer(s) receives formal safety-related training pertinent to the programme's scope of services.

02.03.02 The Safety Management System is proactive in identifying risks and eliminating injuries to personnel and patients and damage to equipment. A Safety Management System includes the four components of Safety Policy, Safety Risk Management, Safety Assurance, and Safety Promotion. Several elements of these components include:

1. A statement of policy commitment from the accountable executive

2. A risk identification process and risk management plan that include a non-punitive system for employees to report hazards, risks, and safety concerns

3. A system to track, trend, and mitigate errors or hazards

4. A system to track and document incident root cause analysis

5. A safety manual (electronic or hard copy)

6. A system to audit and review organisational policy and procedures, ongoing safety training for all personnel (including managers), a system of proactive and reactive procedures to insure compliance, etc.

02.03.03 There is evidence of management's decisive response to non-compliance in adverse safety or risk situations.

1. Senior management must establish a process to identify risk escalation to ensure that safety and risk issues are addressed by the appropriate level of management up to and including the senior level.

2. Operational Risk Assessment tools must include but not be limited to issues such as transport acceptance that includes tools for assessing vehicle operator and crew alertness and fatigue;

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aviation decision making; clinical, operational, and logistical considerations; country risk assessment for international operations; and surface transport weather/risk considerations. Risk assessment tool(s) are used for all patient transports, search and rescue, public relations, training, maintenance, and repositioning events/transports.

02.03.04 The programme has a process to measure its safety culture by addressing:

1. Accountability – employees are held accountable for their acts of commission and omission.

2. Authority – those who are responsible have the authority to assess and make changes and adjustments as necessary.

a. Standards, policies, and administrative control are evident.

b. Written procedures are clear and followed by all.

c. Training is organised, thorough and consistent according to written guidelines.

d. Managers represent a positive role model promoting an atmosphere of trust and respect.

3. Professionalism – as evidenced by personal pride and contributions to the programme's positive safety culture.

4. Organisational Dynamics

a. Teamwork is evident between management and staff and among the different disciplines regardless of employer status as evidenced by open bi-directional and inter-disciplinary communications that are not representative of a "silo" mentality.

b. Organisation represents a practise of encouraging criticism and safety observations, and there is evidence of acting upon identified issues in a positive way.

c. Organisation values are clear to all employees and embedded in everyday practise.

<u>Examples of evidence to meet compliance:</u>
The Safety Management System includes the criteria defined in the International Helicopter Safety Team (IHST) tool kit or equivalent. (RW/FW)

02.03.05 A Safety Management System includes all disciplines and processes of the organisation. A Safety Committee is organised to solicit input from each discipline and must meet at least quarterly with written reports sent to management and kept on file as dictated by policy.

1. Written variances relating to safety issues will be addressed in Safety Committee meetings.

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2. The committee will promote interaction among medical transport personnel, communications personnel, pilots, mechanics, and vehicle operators addressing safety practise, concerns, issues, and questions.

3. There is evidence of action plans, evaluation, and loop closure.

4. There must be a designated safety person/people that represents each mode of transport within the programme's scope of services.

5. The Safety Committee is linked to QM and risk management.

6. Aviation and surface-related events are identified and tracked to minimise risks. (See Glossary for definition of event.)

a. Medical transport services are required to report aviation and surface accidents to CAMTS Global and the appropriate government agencies and encouraged to report incidents to the CONCERN network. There is a written policy that addresses reporting incidents or accidents and assigns certain individual(s) with the responsibility to report. (See Glossary for definitions of accident and incident.)

02.03.06 Flight Data Monitoring Programme – A flight data monitoring programme is required if a flight data recorder is on the aircraft. The flight data monitoring programme is a systematic method of assessing, analysing, and acting upon information obtained from flight data to identify and address operational risks before they lead to incidents or accidents. (RW/FW)

Examples of evidence to meet compliance:
The IHST tool kit or similar criteria provides guidance for a flight data monitoring programme for both rotorwing and fixed-wing. (RW/FW)

02.03.07 Safety and Environment

1. There is evidence that the specific operational environment (i.e., weather, terrain, aircraft performance) safety issues are addressed.

Examples of evidence to meet compliance:
Helicopters operating at density altitudes of 5000 feet and above must have mission-appropriate lift capabilities in comparison to those operating at lower density altitudes.

a. The physical base of operations demonstrates an appropriate and safe work environment for all personnel with adequate lighting, ventilation, and equipment storage for patient care and care of the transport surface vehicle.

- Oxygen storage must be 10 feet from any open flame and 20 feet from combustibles in a well-ventilated area with no-smoking signs posted or in accordance with national regulations. (See FDA Section 211.42 guidelines in References).

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- Hangar or building facility under authority of the programme complies with OSHA, government, or national standard (see specifics in references).

b. Transport vehicle and personnel security – a policy addresses the security of the aircraft and/or vehicle and physical environment (i.e., hangar, fuel farm).

- Security of the aircraft or surface vehicle if left unattended on a helipad, hospital ramp, or unsecured airport or parking lot

- Training for vehicle operators and medical personnel to recognize signs of transport vehicle tampering

- Plan to address aircraft or vehicle tampering

Examples of evidence to meet compliance:
Vehicle operators and medical personnel are able to identify signs of aircraft/surface vehicle tampering as outlined in an education programme.

c. Personnel security – Medical team is required to carry photo IDs (driver's licence is acceptable) with first and last name while on duty.

d. Patient security – Family members or other passengers who accompany patients must be properly identified and listed by name (in compliance General Data Protection Regulation (GDPR) as appropriate) in the communications centre by the transport coordinator.

Examples of evidence to meet compliance:
Policy requires wearing or carrying ID's while on duty

2. Equipment and Operations Around the Transport Vehicle (For medical configuration see Section 03.06.01)

a. The transport vehicle configuration and patient placement allow for safe medical personnel egress.

- Doors must be fully operable from the interior.

- Doors must be capable of being opened fully and held by a mechanical device.

b. Transport vehicle operational controls and communications equipment are physically protected from any intended or accidental interference by the patient, medical transport personnel, or equipment, and supplies.

c. Lighting, electric power sources and communications equipment

- In an aircraft, a means to protect the pilot's night adaptation vision must be provided for night operations, either through the medical configuration or by a dividing curtain. (RW/FW)

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- In a surface vehicle, the interior lighting includes an overhead or dome light that is configured so as not to cause reflection and impair the vehicle operator's vision while driving.

- Electric power outlet and/or invertors required for specialised medical equipment must not compromise the operation of any electrical transport vehicle equipment.

- Medical or communications equipment will be functional without interfering with the avionics and the avionics must not interfere with function of medical equipment on the aircraft. Medical or communications equipment will be functional on the surface vehicle without interfering with the mechanical components of the vehicle or vice-versa.

d. Head-strike envelope:

- The interior modification of the aircraft is clear of objects/projections OR the interior of the aircraft is padded to protect the head-strike envelope of the medical personnel and patients as appropriate to the aircraft. (FW)

- The head-strike envelope in the surface vehicle must be clear of hard objects that could cause injury in the event of poor road conditions or sudden stops.

- Helmets are required for rotorwing operations. Helmets for crewmembers must be designed for aviation operations, appropriately fitted and maintained according to the programme's manufacturer's criteria or programme's policy. (RW) (Please reference Office of Aviation Services standards)

  - Helmets are inspected on a regularly scheduled basis – at least annually at a minimum.

  - The helmet intercommunication systems (ICS) cord shall not be hard-wired to the aircraft and should have a disconnect device or plug that will allow for a clean separation during egress. ICS cords shall be secured from potential snagging or entanglement with components such as flight controls and medical equipment.

e. Securing equipment and supplies – All aircraft equipment (including specialised equipment) and supplies must be secured according to national aviation regulations. (Use of bungee cords is not considered appropriate when securing equipment and supplies.) Surface vehicle equipment must be secured by an appropriate clamp, strap, or other mechanism to the vehicle or stretcher/isolette to prevent movement during a crash or abrupt stop.

- If an engineered mount is present for specific equipment, that equipment must be secured in the mount at all times during vehicle movement.

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- Softpacs and equipment bags are not to be stored with belts that loop through the handles (as these handles can easily tear and dislodge).

f. For long-range transports – Diversion & Contingency Plans

- If patient's condition deteriorates

- For mechanical issues

g. For international transports

- An international checklist is available that includes information about specific locations, use of medical assistance companies, networking, and local handlers.

- Repatriation insurance, ICAO (International Civil Aviation Organization) regulations.

- Controlled substances – International law states it is illegal to bring controlled substances onto foreign soil—they cannot be removed from the aeroplane.

- There must be a policy that details how controlled substances are secured when the medical crews depart the aircraft.

- Crew Safety – Policies address crew safety, including:

  - Cultural intelligence.

  - Assess travel risk to other countries and immunisation recommendations using a reliable source (for example, the ECDC, CDC, and WHO).

  - Tracking clinical crew during ground operations.

<u>Examples of evidence to exceed compliance:</u>
Policies addressing practises such as crews should never eat the same food; never leave the hotel alone—have a buddy system; have a specific time to be back at the hotel; behave and dress so as to blend in with locals; no high-risk activities, for example, bungee jumping.

h. Transport vehicle equipment

- Night vision goggles (NVGs) are strongly encouraged for programmes conducting rotorwing night operations. If NVGs are used by the service, a policy addresses use by personnel on board, and training is documented.

  - The certificate holder must have Operations Specifications approved by national aviation regulations indicating authorisation for operations utilizing night vision devices.

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○ The training programme must be approved by the AHJ and will specify initial qualifications and currency requirements.

○ If NVG's are used to the ground, the pilot must be trained and authorised to use the NVGs. In addition, one team member must be trained and authorised to use the NVG's.

- The helicopter must be equipped with a 180-degree controllable searchlight capable of at least 400,000 candle power. (RW)

- The aircraft must either have a 406 MHz emergency locator transmitter (ELT) OR must be monitored at 3-minute intervals or less by a satellite tracking system. (RW)

○ If using the satellite tracking system and the aircraft has not been upgraded to a 406 MHz ELT, a 121.5 MHz ELT must not be disarmed because it may be monitored by other aircraft.

- The aircraft must be equipped with a radar altimeter. (RW)

○ If the radar altimeter is inoperable, the Certificate Holder has policies and procedures that address operations with an inoperative radar altimeter.

- It is strongly encouraged to install the following on helicopters: (RW)

○ Terrain Awareness and Warning System (HTAWS)

○ Crash-resistant flight recorder systems which include cockpit audio and images with a view of the cockpit environment and as much of the outside view as possible and parametric data per aircraft and systems installation are encouraged. The cockpit image recorder should be equipped with an independent power source consistent with that required for cockpit voice recorders.

○ Flight control stabilization system for single pilots operations

○ Traffic Collision Avoidance System (TCAS)

○ Crash Resistant Fuel System

○ Energy-absorbing seats

○ Health and Usage Monitoring Systems (HUMS)

- A policy addresses how hypoxia risk is mitigated for RW pilots.

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i. Vehicle conspicuity (reflectivity/chevrons etc.) is strongly encouraged for ground ambulances. The ambulance is clearly identifiable during the night with reflective striping on all sides of the vehicle.

- Sides of the ambulance:

  ○ A retroreflective stripe(s) shall be affixed to at least 50 per cent of the cab and body length on each side.

  ○ The stripe or combination of stripes shall be a minimum of 4 inches (100mm) in total width.

  ○ The 4-inch (100mm)-wide stripe or combination of stripes shall be permitted to be interrupted by objects (i.e. receptacles, door handles) provided the full stripe is seen as conspicuous when approaching the vehicle.

  ○ A graphic design shall be permitted to replace all or part of the required striping materials if the design or combination thereof covers at least the same perimeter length.

- Back of the ambulance:

  ○ If the NFPA 1901 Guidelines for Reflective Striping of Emergency Vehicles are not followed for the reflective striping of the rear of the surface vehicle, then at a minimum, the reflective striping must follow the same standards as for the vehicle sides.

- Doors:

  ○ Any door of the ambulance designed to allow persons to enter or exit the vehicle shall have at least 96 square inches (62,000 square millimetres) of retroreflective materials affixed to the inside of the door.

j. It is strongly encouraged that ambulance be equipped with safety technology such as real-time feedback mechanisms, event-recording cameras, speed governors, and/or weather alert systems. (S)

<u>Examples of evidence to exceed compliance:</u>
All in-service helicopters are equipped with NVGs, TAWS, flight data recorders, and autopilots. (If collecting FOQA, Flight Operations Quality Assurance, data is reported to the air medical programme.) All in-service surface vehicles are equipped with real-time feedback mechanisms or video recorders.

k. The transport vehicle must be equipped with survival gear appropriate to the coverage area and the number of occupants.

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- Survival gear will be maintained appropriately per written policy and must be available to personnel on board.

- A written policy must be in place regarding checking survival kit contents and expiration dates on timed supplies.

- Individual survival gear carried on each crew member is strongly encouraged. At a minimum, the gear should include an appropriate signalling device.

l. A fire extinguisher must be accessible (meaning one of the medical personnel is able to reach a fire extinguisher) to medical transport personnel and vehicle operator while in motion.

m. “No smoking” signs are prominently displayed inside the cabin or vehicle.

n. There is a policy and an operations risk profile that addresses backup transport vehicle including:

- Checklists for medical configuration pertinent to the programme’s scope of care and patient population

- Clarification on which personnel are responsible for checking and ensuring the transport vehicle is ready for patient transports before the transport vehicle is put into service

- Realistic time frames for performing a maintenance check before the transport vehicle is put into service

o. Staff is oriented to the backup transport vehicle (including communications equipment), and appropriate competencies are assured and documented.

p. Use of occupant restraint devices:

- Air medical personnel must be in seat belts (and shoulder harnesses if installed) that are properly worn and secured for all takeoffs and landings according to national aviation regulations. A policy defines when seat belts/shoulder harnesses can be unfastened. (RW/FW)

- Surface vehicle personnel must be seat-belted when the vehicle is in motion unless emergent patient condition precludes it.

    - Front seat occupants must always be belted.

    - Overhead grab rails must be present in the patient care area.

    - In a surface vehicle it is strongly encouraged to have forward- and aft-facing individual seats. Side-facing bench seats are not recommended. If

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the ambulance has side-facing bench seats, seat belt mountings must be situated at the pelvic level in order to restrain personnel/passengers. Use of shoulder harnesses on side-facing bench seats is discouraged.

q. A written policy describing patient loading and unloading procedures for medical transports as follows: (RW/FW)

- Specific policies concerning circumstances for rapid patient loading or unloading if practised

- An established policy to ensure that the pilot is notified of any add-on equipment for weight and balance considerations

r. Refuelling policies for normal and emergency situations (for fuel systems see 05.10.00 and 06.10.00): For transport vehicle, refuelling with the engine running (prohibited for ambulances), rotors turning, and/or passengers on board is not recommended. However, emergency situations of this type can arise. Specific and rigid procedures must be developed by the certificate holder to handle these occurrences. Such “rapid refuelling” procedures will be covered by the certificate holder’s training programme. Refuelling policies must address (RW/FW):

- refuelling with engine(s) running or shut down

- refuelling with medical transport personnel or patient(s) on board, which includes a requirement that at least one medical transport person remain with the patient at all times during refuelling or stopover

- Rapid refuelling only if the location of the refuelling port does not block patient and crew egress in the event of a fire or other emergency while refuelling (Strongly encouraged)

- Fire hazard policies pertinent to refuelling procedures as addressed in the certificate holder’s Operation Specifications Manual (electronic or hard copy)

- Pilot’s responsibility to test, verify, or validate fuel quality before refuelling and stay with the aircraft at all times during refuelling

- Wearing proper PPE when refuelling. Gloves used for refuelling are prohibited for use during transport. PPE potentially contaminated with fuel may not be worn in the transport vehicle

s. The Programme/Certificate Holder has policies that govern operational limitations with specific equipment inoperative (for example, if the searchlight is not functioning). If night vision goggles are used, the policy must be appropriate to that specific mode of operation. (RW)

t. Specific policy to address the combative patient

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- Additional physical and/or chemical restraints must be available and used for combative patients who potentially endanger themselves, the personnel, or the transport vehicle.

- A policy must address refusal to transport patients, family members, or others who may be considered a threat to the safety of the transport and/or medical transport personnel.

u. Written policy to address response to hazardous materials requests or unanticipated contact with hazardous materials

- There is an outlined plan of action according to pre-established policies with appropriate training of the medical transport team.

- There is a plan for patient decontamination procedures prior to transport, including removal of patient clothing and other decontamination procedures for saturation of gasoline or other hazardous chemicals.

- The medical transport team must be fully informed about the nature of the hazardous materials.

- There is a readily available list of hazardous materials, which could pose a threat to the medical transport team or render transport inappropriate.

- The LZ or aircraft operational area must be a safe distance to avoid any downwind danger when approaching or departing. (RW)

- A policy addresses carry-on baggage of patient or passenger that must be physically inspected for hazardous materials that could endanger the medical transport team or compromise safety (such as weapons, sharp objects, chemicals, and obvious hazardous materials) before loading on the transport vehicle.

- A policy addresses the presence of firearms on the transport vehicle.

v. Written policy to address observers, third riders, or media being transported with or without a patient on board. At a minimum the policy should address:

- Understanding patient privacy and confidentiality laws (GDPR, etc.)
- Safety in and around the vehicle (safety briefing, sterile cockpit, etc.)
- Proper apparel (footwear, winter coats, helmet, etc.)
- Appropriate use of assigned equipment such as visors on helmets, intercom systems, etc.
- Securing personal equipment and items to avoid interference with safety or patient care

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03.00.00 – PATIENT CARE

03.01.00 MEDICAL MISSION TYPES AND PROFESSIONAL LICENSURE

Mission Types – Staffing must be commensurate with the mission statement and scope of care of the medical transport service. The aircraft or ambulance, by virtue of medical staffing and retrofitting of medical equipment, becomes a patient care unit specific to the needs of the patient. A well-developed position description for each discipline is written. All Equipment, Medications, and Interventions listed below are pertinent to the programme's mission and scope of service (which includes scope of care). Equipment, Medications, Interventions, and Quality listings in each type of care build on each other starting with BLS to ALS to Emergency Critical Care, Intensive Care, and Specialty Care.

03.01.01 Basic Life Support **(BLS)**

Preface – appropriate Authority Having Jurisdiction (AHJ) applies

1. Scope of Care – Capability to deliver pre-hospital basic life support care.

2. System – Recognized agency or AHJ with a medical director who meets requirements listed below.

3. Clinical Crew

   a. At a minimum, one crew member has EMT status (paramedic preferred) or equivalent national training.

   b. Vehicle operator is EVOC-trained (or equivalent) and keeps training properly updated.

4. Medical Director

   a. The medical director should be board-certified in emergency medicine, but if he or she is not, it is strongly recommended that the medical director be board-certified in family medicine, internal medicine, surgery, or paediatrics with demonstrated EMS education (e.g., NAEMSP medical director course) or 5 years of experience in emergency medicine.

5. Equipment

   a. Oral/pharyngeal airway

   b. Pulse oximeter

   c. Automatic external defibrillator

   d. Bag-valve mask

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e. Glucometer

f. Adequate oxygen source

g. Haemorrhage Control Supplies/Equipment (such as tourniquets, packing materials)

h. Depends on state/local or national requirements, or medical director requirements (e.g., auto-injector)

6. Medications

a. EMT may assist patient taking own medication

b. Depends on state/local or national requirements, or medical director requirements

7. Interventions

a. Bag-valve mask ventilation and oxygenation

b. Selective spinal immobilisation

c. Non-invasive vital sign measurement (e.g., blood pressure, pulse-oximetry)

d. Control of bleeding (reference www.stopthebleedingfoundation.org)

e. Exposure (Infection) control

f. Depends on state/local or national requirements, medical director requirements

8. Quality

Programmes should select a minimum of 5 GAMUT (Ground and Air Quality Metrics Transport) metrics. For the most current version of the GAMUT, metrics go to http://gamutqi.org/ metrics.html. – (see GAMUT Metrics Addendum). The chosen metrics may be those that are performing below the GAMUT ABC (Achievable Benchmarks of Care) scores and/or GAMUT averages; those deemed critical to the programme's performance; and/or those relevant to adverse events. Programmes are encouraged to report their metric results to the GAMUT database.

In addition:

a. Number of intercepts with ALS (Denominator = total number of BLS calls)

9. Volume

a. Total number of BLS transports

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03.01.02 Advanced Life Support **(ALS)**

Preface – Appropriate Authority Having Jurisdiction (AHJ) applies – also includes all aspects of BLS

1. Scope of Care – Capability to deliver pre-hospital advanced life support care

2. Clinical Crew

    a. A minimum of two medical personnel who are licenced/certified according to state and/or national requirements. The vehicle operator may be the second crew member for surface ALS if he/she is at minimum an EMT and is EVOC-trained (or equivalent) and his/her training is kept current.

    b. One is a paramedic with National Registered Paramedic (NRP) or national equivalent preferred.

3. Medical Director

    The medical director should be board-certified in emergency medicine, but if he or she is not, it is strongly recommended that the medical director be board-certified in family medicine, internal medicine, surgery, or paediatrics with demonstrated EMS education or 5 years of experience in emergency medicine.

4. Equipment – includes all equipment in BLS plus:

    a. Ventilation: Ventilators and non-invasive ventilators (CPAP / Bilevel Positive Airway Pressure) with the capability to utilise blended gases, as applicable to the scope of care.

    b. Cardiac monitoring, (pacemaker and defibrillator).

    c. Non-invasive monitoring (e.g., waveform capnography, pulse-oximetry).

5. Medications – include all medications in BLS plus:

    a. Resuscitative medications by national EMS education and practice standards.

6. Interventions – includes all interventions in BLS plus:

    a. Advanced airway management (Endotracheal intubation, Supraglottic airway).

    b. Needle thoracostomy.

    c. Intraosseous placement.

    d. Peripheral IV

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7. Quality – Programmes should select a minimum of 5 GAMUT (Ground and Air Quality Metrics Transport) metrics. For the most current version of the GAMUT metrics, go to http://gamutqi.org/metrics.html. (See GAMUT Metrics Addendum.) The chosen metrics may be those that are performing below the GAMUT ABC (Achievable Benchmarks of Care) scores and/or GAMUT averages; those deemed critical to the programme's performance; and/or those relevant to adverse events. Programmes are encouraged to report their metric results to the GAMUT database.

a. Ventilator use in patients with advanced airways

b. Scene transports

c. First attempt tracheal tube success

d. Definitive airway “sans” hypoxia/hypotension on first attempt (encouraged)

e. Verification of tracheal tube placement

f. Over-triage in mode of transportation (RW per GAMUT description—encouraged)

g. Medication errors on transport

h. Rapid sequence intubations protocol compliance

i. Unplanned dislodgements of therapeutic devices

j. Incidence of hypoxia during transport

k. ECG interpretation for STEMI patients

l. Adverse drug event during transport

8. Volume

a. Number of total surface transports (does not include those in support of air medical transports)

b. Number of surface ALS transports (does not include those in support of air medical transports)

c. Number of air ALS transports

d. Number of surface BLS transports

e. Number of air BLS transports

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03.01.03 Critical Care

Preface – appropriate Authority Having Jurisdiction (AHJ) applies—also includes all aspects of BLS and ALS

1. Scope of Care – Capability to deliver out-of-hospital care during the acute resuscitation phase before definitive care is provided (e.g., comparable to emergency department stabilizing care or an ICU transfer to more definitive care)

2. Clinical Crew

a. A minimum of two medical personnel (who are licenced according to state and/or national requirements) who provide direct patient care plus a vehicle operator

- The primary care provider of the clinical crew may be a resident or staff physician, advanced practise nurse, registered nurse, physician assistant or paramedic. The primary care provider must have 3 years of critical care experience. (Critical care experience is defined as no less than 4000 hours of experience in an ICU or an emergency department.) In addition, clinicians in the primary-care-provider role must have pre-hire experience and/or education in the medications and interventions as defined in the programme's scope of care and services.

b. Additionally, medical directors and clinical leadership must have direct responsibility to qualify the experience and competencies of applicants for a primary care provider role and set the minimums as they pertain to the autonomous care required for their specific scope of service.

c. If crewmember is a paramedic, 3 years (minimum of 4000 hours) of ALS experience is required. If crewmember is a respiratory therapist, then 3 years (minimum of 4000 hours) ED or ICU experience is required; ICU experience may be a combination of adult, paediatric, and/or neonatal. *(See section 03.05.01 3. Competencies for advanced certifications.)*

3. Medical Director – Board-certified based on the programme scope of care. Additional speciality and/or sub-speciality physician liaison(s) as required.

<u>Examples of compliance:</u>

- *A paediatric transport programme has a paediatrics board-certified physician with education in transport medicine.*
- *A rotory-wing programme that responds to scene and interfacility requests have an emergency medicine board-certified physician (EMS subspecialty or AMPA Medical Director Core Curriculum Course or equivalent encouraged). If not emergency medicine board-certified, then family medicine, internal medicine, surgery, or paediatrics board-certified with demonstrated EMS education and/or experience (5 years).*

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Examples that exceed compliance:
The transport clinician achieves additional advanced certifications other than those required in the Standards, such as CEN, CCRN, MTSP-C, and/or CMTE.

4. Equipment – Includes all equipment in BLS and ALS plus:

    a. Ventilation: Multimodality ventilators capable of invasive ventilation (pressure, volume, ventilator appropriate to all age groups transported)

    b. Invasive haemodynamic monitoring, central venous pressure, and arterial pressure

5. Medications – Includes all medications in BLS and ALS plus:

    a. Management of continuous infusions (e.g., vasopressors, anti-hypertensives, antidysrhythmics, bronchodilators, neuromuscular blockade, and sedation.

6. Interventions – Includes all interventions in BLS and ALS plus:

    a. Medication-facilitated airway (including intubation)

    b. Surgical airway

    c. Ability to manage tube thoracostomy

    d. Ability to manage central line

    e. Blood product management

    f. Targeted temperature management (i.e., therapeutic hypothermia) [in ALS]

    g. Ability to perform decompressive thoracostomy (if in scope of care)

7. Quality – Programmes should select a minimum of 5 GAMUT (Ground and Air Quality Metrics Transport) metrics. For the most current version of the GAMUT metrics go to http://gamutqi.org/metrics.html. (See GAMUT Metrics Addendum.) The chosen metrics may be those that are performing below the GAMUT ABC (Achievable Benchmarks of Care) scores and/or GAMUT averages; those deemed critical to the programme's performance; and/or those relevant to adverse events. Programmes are encouraged to report their metric results to the GAMUT database.

8. Volume - Volume requirements: number of transports in this category versus total number of transports will be tracked by the programme. CAMTS Global will track, trend, and analyse averages from all programmes to determine a volume requirement in the future.

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03.01.04 Specialty Care

1. Scope of Care – Capability to deliver out-of-hospital care at a speciality or subspecialty level during interfacility transport (e.g., comparable to that of a tertiary or quaternary such as an ICU, PICU, NICU, or tertiary perinatal centre).

a. A neonatal transport is defined as the ability to support the care of infants that continue to need mechanical thermoregulation and/or respiratory support. Neonatal Transport includes both preterm and term infants who require critical care or any infant under 5kg.

b. Speciality high-risk OB transports are defined as transports of obstetrical patients to a higher level of care for the benefit of mother and/or foetus.

c. A speciality care paediatric transport is defined as the ability to support an infant or child with life-threatening physiologic derangement, including respiratory, cardiac, and/or central nervous system, and meeting criteria for admission to a Paediatric ICU.

2. Clinical Crew (as appropriate to the scope of care)

3. Medical Director – Board-certified based on the programme scope of care. Additional speciality and/or sub-speciality physician liaison(s) as required by the scope of care.

4. Equipment – Includes all equipment in BLS, ALS, and Critical Care (as appropriate to the scope of care)

a. Transcutaneous ventricular assist devices (e.g., LVAD, BiVAD, RVAD)

b. Inhaled gases (e.g., nitric oxide, helium-oxygen, aerosolized prostacyclin)

c. Neonatal incubator with heart rate monitoring device and size-appropriate ventilator (with blender for adjustable oxygen delivery), thermoregulation control, and infusion devices (syringe pumps).

d. Foetal doppler/foetal heart rate monitoring device (if transporting High-Risk Obstetrics--HROB). For long-range transports, external cardiotocography monitoring device is required.

5. Medications - includes all interventions in BLS, ALS, and Critical Care plus (as appropriate to the scope of care):

a. Maintenance of tertiary/quaternary critical care formulary (tocolytics for HROB)

6. Interventions – Includes all interventions in BLS, ALS, and Critical Care plus: (as appropriate to the scope of care)

a. Ability to place central line (if in scope of care)

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b. Managing cardiac assist device

c. Managing extracorporeal oxygenation device

d. Ability to place endotracheal tube and maintain oxygenation and ventilation on a multi-modality ventilator with capabilities for all age populations transported, including the capability to deliver inhaled speciality gases.

7. Quality

a. GAMUT metrics (see GAMUT Metrics Addendum)

8. Volume requirements – Number of patients as pertinent to the following:

a. Number of neonatal transports to a NICU versus total number of transports

b. Number of back transports to a lower level of care versus total number of transports

c. Number of Specialty high-risk obstetric transports versus total number of transports

d. Number of ECMO transports versus total number of transports

e. Number of IABP transports versus total number of transports

f. Number of transports to a PICU versus total number of transports

g. Number of transports requiring VADS

h. Number of transports requiring inhaled gases

i. Number of central lines inserted

j. Number of arterial lines inserted

k. Number of tube thoracotomies performed

l. Number of intubated patients

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03.02.00 MEDICAL DIRECTION

The medical director(s) ensures the competency and currency of all medical personnel working with the service. He or she does so by working with the clinical supervisor and by being familiar with the scope of practise of the transport team members and the regulations in which the transport team practises.

03.02.01 The medical director(s) must be licenced and authorised to practise in the location in which the medical transport service is based.

03.02.02 The medical director(s) must have experience in both air and surface emergency medical services and have educational experience in those areas of medicine that are commensurate with the mission statement of the medical transport service (i.e., adult trauma, paediatric, neonatal transport, etc.) or utilise speciality physicians as consultants when appropriate. The medical director must have education as a medical director (see Section 03.01.00 for each type) as appropriate to the mission statement and be familiar with the general concepts of appropriate utilisation of air and surface interfacility services. In addition, the medical director must be current and demonstrate competency or provide documentation of equivalent educational experiences directed by the mission statement and scope of care. Certifications are required as pertinent to the programme's scope of care. If a physician is board-certified in an area appropriate to the mission and scope of the service, certifications #1., 2., 11., and 13. are optional.

1. Advanced Life Support (ALS) according to the current standards of the European Resuscitation Council or approved equivalent

2. European Trauma Course according to the current standards of the European Resuscitation Council or approved equivalent

3. Altitude physiology/stressors of flight if involved in rotor wing or fixed wing operations (RW/FW)

4. Appropriate utilisation of air medical/surface interfacility services

5. Emergency Medical Services

6. Ambulance rules/regulations (S)

7. Hazardous materials recognition and response (at least every three years)

8. Human Factors – Crew Resource Management – AMRM (Air Medical Resource Management) (at least every three years). (See References.)

9. Exposure control

10. "Just Culture" and "Informed Culture" or equivalent education is strongly encouraged. (See References.)

11. Neonatal Resuscitation Programme (NRP) according to the current standards of the European Resuscitation Council or approved equivalent.

12. Patient care capabilities and limitations (i.e., assessment and invasive procedures during transport).

13. European Paediatric Advanced Life Support (EPALS) according to the current standards of the European Resuscitation Council or approved equivalent.

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14. Stress recognition and management (at least every three years).

15. Sleep deprivation, sleep inertia, circadian rhythms, and recognizing signs of fatigue (at least every three years).

16. The medical director must demonstrate continuing education in transport pertinent to the programme's mission and scope of care.

03.02.03 The medical director(s) is actively involved in the quality management (QM) programme for the service.

03.02.04 The medical director(s) is actively involved in administrative decisions affecting medical care for the service.

03.02.05 The medical director(s) updates the medical guidelines at least biennially to ensure current best practices. The guidelines indicate what therapies can be performed without online medical direction and what therapies require contacting online medical direction. The medical guidelines are in a written format and include an updated attestation signed and dated by the medical director.

03.02.06 The medical director(s) is actively involved in the hiring process, training, and continuing education of all medical personnel for the service.

03.02.07 The medical director(s) is actively involved in the care of critically ill and/or injured patients; maintaining involvement in EMS or teaching medical students may be considered as active involvement.

03.02.08 The medical director(s) receives safety and risk management training on an annual basis (strongly encouraged).

Examples of evidence to meet compliance:
There is evidence of the medical director's involvement with the programme through meeting attendance records, education records, chart reviews, etc.

Examples of evidence to exceed compliance:
Medical director(s) attends Just Culture training and achieves advanced transport management certifications.

03.02.09 The medical director(s) is actively involved in orienting physicians providing online (in-transport) medical direction according to the policies, procedures, and patient care protocols of the medical transport service.

03.02.10 Specific policies must address diseases affected by altitude with maintenance of adequate oxygen saturation and treatment of oxygen desaturation. There is a mechanism to assure transports can be accomplished with the oxygen supply that is available according to patient needs and transport distances. Volume expansion in hollow organs must also be addressed. Policies will be consistent with principles of aeromedical physiology. (RW/FW)

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03.02.11 The medical director(s) ensures that surface transport is appropriate and safe for the patient's specific disease process/needs. (For example, patients requiring use of a hyperbaric chamber are usually transported by surface, but in some geographic locations, the distance would be prohibitive for surface transport.)

03.02.12 The medical director(s) must set a policy that ensures compliance with regional/national regulations. This policy must address bedside-to-bedside care for ALS and Critical Care providers to prevent any diminution in level of care. The policy must also address situations where it may not be necessary to proceed from bedside to bedside with the patient. These incidents must be examined by the QM process.

03.02.13 The medical director(s) should maintain open communications with referring and accepting physicians and be accessible for concerns expressed by referring and accepting physicians regarding controversial issues and patient management.

03.02.14. Medical Control

1. Medical Control Physicians – Online medical control physicians who are trained and identified by the service must be available 24/7/365 and have the appropriate knowledge base and experience sufficient to ensure proper medical care and medical control during transport for all patient types served by the medical transport service.

2. If the medical control physician's experience is lacking in a clinical area, he or she must seek prompt consultation as appropriate to ensure proper medical care and medical control during transport for all patient types served by the medical transport service. This consultant should be an appropriate designated physician or the patient's receiving attending physician.

3. Medical control physicians are provided with triage guidelines to determine appropriate transport mode and team composition and on-scene triage guidelines developed and accepted by the specific EMS region. See References. (RW)

a. Triage guidelines may include provisions for auto-launch if part of the scope of service

<u>Examples of evidence to meet compliance:</u>
There is a formal outline and names and dates of medical control physicians who have completed this training. There is a formal medical control schedule in place and crews are aware of who to call and how to call (i.e., through Communications Centre, etc.) in the event Medical Control is required. Additionally, formal names and documentation of respective training for all physicians considered medical control should be on file at the programme with evidence of said training readily available for review.

<u>Examples of evidence to exceed compliance:</u>
The medical director is involved in EMS on a regional and/or national basis. The medical director participates in peer-reviewed published research regarding medical transport.

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03.03.00 CLINICAL CARE SUPERVISOR

Clinical Care Supervisor – Responsibility for supervision of patient care provided by the medical personnel (i.e., EMT, NRP, RT, RN, RCP, etc.) must be defined by the service. All medical personnel must be supervised by someone knowledgeable and legally enabled to perform clinical supervision. The clinical care supervisor and medical director(s) must work collaboratively to coordinate the patient care delivery given by the various professionals and to review the overall system for delivery of patient care.

03.03.01 If transport nurses are part of the medical team, they must report to a nurse or physician on clinical issues.

03.03.02 The clinical supervisor is actively involved in the Quality Management/Quality Assurance/Performance Improvement of the programme.

03.03.03 The clinical supervisor is actively involved in all administrative decisions affecting patient care.

03.03.04 The clinical care supervisor is actively involved in hiring, training, and continuing education for all personnel who work for the service.

03.03.05 The clinical care supervisor must ensure adequate mechanisms for the evaluation of clinical practice of patient care providers.

03.03.06 The clinical care supervisor must demonstrate currency in the following or equivalent educational experiences as appropriate to the mission statement and scope of care and/or the clinical care supervisor must have immediate access to personnel with appropriate knowledge and experience as consultants.

1. Advanced Life Support (ACLS) – documented evidence of current ACLS according to the European Resuscitation Council (not required for neonatal teams who do not provide adult care).

2. European Trauma Course – according to the European Resuscitation Council or equivalent (not required for neonatal teams who do not provide paediatric/adult care). (See Education Matrix for equivalent criteria.)

3. Human Factors – Crew Resource Management – AMRM (Air Medical Resource Management) (see References).

4. “Just Culture” or equivalent education – strongly encouraged.

5. Neonatal Life Support (NLS) course or equivalent according to the current standards of the European Resuscitation Council – a required certification if medical personnel care for high-risk obstetric patients and/or neonatal patients. (See Education Matrix for equivalent criteria.) Also strongly encouraged for non-neonatal teams.

6. Paediatric Advanced Life Support (PALS) or Advanced Paediatric Life Support (APLS) according to the current standards of the European Resuscitation Council for neonatal team members transporting patients greater than 28 days.

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7. Patient care capabilities and limitations during transport (i.e., assessment and invasive procedures).

8. Exposure control and prevention.

9. Stress recognition and management/resilience.

10. Altitude physiology/stressors of flight if involved in rotorwing or fixed-wing operations (RW/FW).

11. Appropriate utilisation of medical/surface interfacility services (S).

12. Emergency Medical Services.

13. Hazardous materials recognition and response.

14. Sleep deprivation, sleep inertia, circadian rhythms, and recognizing signs of fatigue.

15. Safety and risk management training (strongly encouraged).

Examples of evidence to exceed compliance:
The clinical supervisor attends Just Culture training and achieves advanced certifications such as CEN, CCRN, CFRN, RNC, CTRN, and/or CMTE.

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03.04.00 PROGRAMME MANAGER

The programme manager may have overall responsibility for a programme or for a specific base with or without additional clinical responsibilities. (Follow criteria above if clinical responsibilities are part of the position description.)

03.04.01 The programme manager must demonstrate currency in the following or equivalent educational experiences as appropriate to the mission statement and scope of care. Didactic education initially and on an annual basis must include but not be limited to:

1. Crew Resource Management (CRM) – Aeromedical Crew Resource Management (ACRM). See References.

2. “Just Culture” or equivalent education – strongly encouraged.

3. Sleep deprivation, sleep inertia, circadian rhythms, and recognizing signs of fatigue.

4. Stress recognition and management/resilience.

5. Safety and risk management training on an annual basis (strongly encouraged).

6. Quality Management, QM/QA/PI of the programme and its implication to best practises.

7. Knowledge of FARs or national aviation authority's regulations as well as local and regional ambulance regulations as appropriate to scope of care.

8. Specific transport management certification, such as Certified Medical Transport Executive (CMTE) is strongly encouraged.

Examples of evidence to exceed compliance:
The programme manager attends Just Culture training and achieves advanced certifications, such as Certified Medical Transport Executive (CMTE).

03.05.00 ORIENTATION, TRAINING, AND CONTINUING EDUCATION PROGRAMME REQUIREMENTS

A planned and structured programme must be required for all regularly scheduled critical care and ALS providers. Competency and currency in these competencies must be ensured and documented through relevant continuing education programmes/certification programmes or their equivalent listed in this section.

03.05.01 Patient Care Education (See Education Matrix for determining education needed per type of care.) – The orientation, training, and continuing education must be directed and guided by the transport programme's scope of care and patient population, mission statement, and medical direction. A written education plan is required and updated on an annual basis. There is an education coordinator, or an employee designated to track and trend education requirements.

1. Initial training programme requirements for all full-time and part-time providers: each provider must successfully complete a comprehensive training programme or show proof of recent experience/training in the categories listed below prior to assuming independent responsibility.

   a. Pre-hire qualifications must include requiring experience relevant to the programme's scope of care and patient population(s).

   b. Initial and ongoing training need not be absolutely equivalent depending on roles in patient care for different providers as defined by the programme and/or state regulations, but training must have basic equivalencies. Both medical personnel members need to be didactically trained. (For example, a paramedic or nurse may not be allowed to do a procedure by regulation, but that provider needs to be familiar with the steps in the procedure in order to assist the other provider in the performance of that procedure.)

   c. Didactic Component of Initial Education must be specific and appropriate for the mission statement and scope of care of the medical transport service. Measurable objectives need to be developed and documented for each experience. The transport programme will provide a basic outline of initial education that is not limited to, but must include:

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- Transport specific topics
    - Altitude physiology/stressors of flight (RW/FW)
    - Disaster and triage
    - EMS radio communications
    - Highway scene safety management (RW/S)
    - Infection/exposure control and prevention in transport environment
    - Medical patient transport considerations (assessment/treatment/stabilization/preparation/handling)
    - Oxygen quality controls include hazard awareness, how to read cylinder levels, basic understanding of Compressed Gas Association (CGA) connexions; how to safely transport liquid oxygen cylinders (if utilised), and knowledge of cylinder durations as per local and national regulations (e.g., FDA Section 211.25(a) and NFPA 53M)
    - Scene management/rescue/extrication
    - State EMS rules and regulations (AHJ) rules regarding surface and air transport
    - Transport vehicle orientation/safety and in-transport procedures/general vehicle safety including all types of vehicles the team may be exposed to including depressurization procedures for fixed wing (as appropriate) (See Safety Education 03.05.02)
- General quality, safety, and compliance topics
    - Compliance issues and regulations (See Compliance 01.05.01)
    - Human Factors – Crew Resource Management – AMRM (Air Medical Resource Management)
    - “Just Culture” or equivalent education – strongly encouraged
    - Quality Management – didactic education that supports the medical transport service’s mission statement and scope of care

Examples of evidence to exceed compliance:
*TEAMSTEPPS and LEAN are examples of processes that provide teamwork, root cause analysis, and problem-solving (see References)

- Risk management training (strongly encouraged)
- Safety (see specific Safety Education – 03.05.02)

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    - Sleep deprivation, sleep inertia, circadian rhythms, and recognizing signs of fatigue
    - Stress recognition and management/resilience

- Didactic education that is mission-specific and specific to scope of care and patient population: Advanced airway management
    - Anatomy, physiology, and assessment for adult, paediatric and neonatal patients as included in the programme's scope of care and patient population
    - Burn emergencies (thermal, chemical, and electrical)
    - Cardiac emergencies and advanced cardiac critical care
    - Environmental emergencies
    - Equipment education specific to the equipment used by the programme
    - GI and abdominal emergencies
    - Infectious and communicable diseases
    - High-risk obstetric emergencies
    - Mechanical ventilation and respiratory physiology for adult, paediatric and neonatal patients specific to the equipment used by programme
    - Metabolic endocrine emergencies
    - Multi-system trauma
    - Neonatal emergencies (respiratory distress, surgical, cardiac)
    - Neurological emergencies
    - Paediatric medical emergencies
    - Paediatric trauma
    - Pharmacology
    - Respiratory emergencies
    - Sepsis
    - Shock
    - Toxicology

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*(See References for in-flight fire warnings from laptop battery failures and other high-energy batteries.)

d. Clinical Component of Initial Training – Clinical experiences will be based on the programme's mission, scope of care, and patient population. Measurable objectives need to be developed and documented for each experience listed below reflecting hands-on experience versus observation only.

If simulation teaching/learning modalities are used as an adjunct to or substitution for clinical experiences, there must be documentation that the scenarios and objectives are reviewed annually, references are current and learning objectives were met. A four-step process (found in the Education Matrix) provides guidelines to submit simulation education for approval by CAMTS Global (if simulation is the only training used to comply with ongoing clinical experiences). Simulation modalities may include the use of dynamic human patient simulators, standardized patients (trained medical actors), computerized interactive devices, virtual reality, and serious gaming. Examples can be found in references. The following areas will be included for the scope of practise areas in which the team transports.

- Critical care (adult, neonatal, paediatric)
- Emergency care (adult, neonatal, paediatric)
- Invasive procedures on mannequin equivalent for practising invasive procedures. An approved mannequin or simulator may be used (see Education Matrix for guidelines for use of a mannequin and HPS)
    - Neonatal intensive care
    - Obstetrics
    - Paediatric critical care
    - Pre-hospital care
    - Tracheal intubations
- Since airway management is an essential life-saving measure, no less than 5 successful live, (animal labs are also acceptable), cadaver, or HPS endotracheal intubations required for each age group in scope of care. Supraglottic, nasal, and other airway measures may be practised on static mannequins.
- Alternative airway management will be included for all transport team members. Alternative airways must be selected and utilised based on the mission and scope of practise of the transport team. For example, a combitube is not appropriate for a neonatal team, but a laryngeal mask airway (LMA) may be.

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2. Continuing education/staff development must be provided and documented for all full-time and part-time Critical Care and ALS Providers. These must be specific and appropriate for the mission statement and scope of care of the medical transport service.

a. Didactic continuing education must include an annual review of:

- Human factors – Crew Resource Management – AMRM (Air Medical Resource Management) (see References)
- Exposure control
- "Just Culture" or equivalent education – strongly encouraged.
- Safety and risk management training on an annual basis (strongly encouraged)
- Sleep deprivation, sleep inertia, circadian rhythms, and recognizing signs of fatigue
- EMS rules and regulations regarding surface and air transport
- Stress recognition and management/resilience

b. Clinical and laboratory continuing education must be developed and documented on an annual basis as pertinent to scope of care to follow. If simulation teaching/learning modalities are used as an adjunct to or substitution for clinical experiences, there must be documentation that the scenarios and objectives are reviewed annually, references are current, and the learning objectives were met. Simulation may include the use of dynamic human patient simulators, standardized patients (trained medical actors), computerized interactive devices, virtual reality, and serious gaming. Examples can be found in references.

- Critical care (adult, paediatric, neonatal)
- Emergency/trauma care
- Invasive procedure labs
- Labour and delivery
- Skills maintenance programme documented to comply with number of skills required in a set period of time according to policy of the medical transport service (i.e., endotracheal intubations, chest tubes)
    - No less than 1 successful live, cadaver, HPS, or static mannequin airway management experience per quarter is required for each provider, for each type of airway listed within the programme protocols

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(endotracheal, supraglottic, nasal, etc.) and for each age group in scope of care.

3. Competencies – Policies ensure that clinical competency is maintained by currency in the following or equivalent training as appropriate for the position description, mission statement, and scope of care of the medical transport service. The Education Matrix – Addendum B, contains a listing of the current national courses that are available for educational preparation of transport crews and is intended to assist in the determination of compliance with the standards. In addition, the supporting associations are listed. These associations have websites where additional information can be obtained.

There are other courses that have been developed by programmes, hospitals and agencies that may be used to meet educational requirements. No matter what is chosen, a national course as listed below or a locally developed course, specific objectives, content outlines and measurable outcomes need to be included in what is developed and must be submitted to CAMTS Global as an attachment to the PIF application and must include primary and secondary assessment, advanced physiology, and advanced skills. Trauma competency equivalents are noted in the Education Matrix. Education developed by the programme as an equivalent must be submitted to the CAMTS Global Education Committee for pre-approval. Courses offered outside Europe should mirror the courses below and must be submitted with an accreditation application.

a. Basic Life Support (BLS) – documented evidence of current BLS certification according to the European Resuscitation Council provider course

b. Advanced Life Support (ALS) – documented evidence of current ALS according to the European Resuscitation Council (not required for neonatal teams who do not provide adult care).

c. European Trauma Course according to the European Resuscitation Council or equivalent (not required for neonatal teams who do not provide paediatric/adult care). (See Education Matrix for equivalent criteria.)

d. Paediatric Advanced Life Support (PALS) according to the European Resuscitation Council or national equivalent required for neonatal team members transporting paediatric patients greater than 28 days old.

e. Neonatal Life Support (NLS) or equivalent (see Education Matrix for equivalent criteria) according to the current standards of the European Resuscitation Council or equivalent – NLS required if medical personnel care for high-risk obstetric and/or neonatal patients.

f. Current transport-specific nursing certifications (CFRN, or CTRN) pertinent to the scope of care and patient population (such as C-NPT for teams that transport neonatal or paediatric patients) required for nurses who have been employed for more than 2 years.

CAMTS Global will continue to accept non-transport-specific advanced nursing certification as meeting the standard until the current certification(s) expires.

g. Current paramedic certifications (such as NRP) strongly encouraged for paramedics who have been employed for more than 2 years and are conducting ALS/BLS transports. In addition, FP-C or CCP-C certifications required for paramedics who conduct critical care

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transports and have been employed for more than 2 years. Where available for the role and patient population(s) transported (such as C-NPT for teams that transport neonatal or paediatric patients), transport-specific speciality certification is strongly encouraged.

h. Respiratory therapists are required to be registry-eligible and obtain RRT within one year of hire. Respiratory Therapists are also required to obtain one of the following certifications as appropriate to the patient population(s) transported: ACCS (for adult teams) or NPS or C-NPT (for paediatric/neonatal teams within 2 years of hire). Where available for the role and patient population(s) transported, a transport-specific certification is strongly encouraged. If the respiratory therapist is a third team member/non-regularly scheduled crew member, these requirements are strongly encouraged but not required.

Examples of evidence to meet compliance:
Initial and ongoing education is tracked and documented that includes certifications, currencies, and clinical experiences. If education and clinical experiences are obtained outside the programme (or by the same employer, but different department) these are documented.

Examples of evidence to exceed compliance:
Just Culture courses are completed by more than 50% of the staff. Nursing and paramedic certifications are required and current for all staff.

4. Independent Specialty Care Providers

a. Education requirements for Independent Specialty Care Providers Education requirements will be similar to the initial training programme for Critical Care and ALS Providers (Didactic and Clinical Components) and specific for the speciality area (i.e. neonatal vs. paediatric).

b. Continuing education must be provided and documented for speciality care providers and must be specific and appropriate for the mission statement and scope of care of the medical transport service:

- Didactic continuing education programmes specific to the speciality
- Ongoing clinical experiences specific to the speciality
- Clinical competency maintained by currency in speciality education required by position description (i.e., American Heart Association/American Academy of Paediatrics, or Paediatric Advanced Life Support pertinent to appropriate speciality) or equivalent

03.05.02 Safety Education

1. Education Specific to the In-Flight and Surface Transport Environment – Completion of all the following educational components must be documented for each of the medical personnel. These components must be included in initial education as well as reviewed on an annual basis with all

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regularly scheduled, part-time, or temporarily scheduled medical personnel and speciality care providers as appropriate for the mission statement and scope of care of the medical service.

a. Altitude physiology

b. Day- and night-flying protocols

c. EMS communications (radios) and familiarisation with EMS system

d. Extrication devices and rescue operations (ranging from familiarity to explicit training depending on the service's mission statement) (RW)

e. General aircraft safety. (It is strongly recommended to have the aircraft physically present when providing this training.) This training addresses: (RW/FW)

- Aircraft evacuation procedures (exits and emergency release mechanisms) to include emergency shutdown—engines, radios, fuel switches, electrical and oxygen shutdown

- Aviation terminology and communication procedures to include knowledge of emergency communications frequency

- In-flight and surface fire suppression procedures (use of fire extinguishers)

- In-flight emergency and emergency landing procedures (i.e. position, oxygen, securing equipment). Training related to situations dealing with an incapacitated pilot is encouraged

- Safety in and around the aircraft, including national aviation rules and regulations pertinent to medical team members, patient(s), and lay individuals

- Specific capabilities, limitations and safety measures for each aircraft used, which includes specific training for backup or occasionally used aircraft

- Use of emergency locator transmitter (ELT)

- Minimal safety requirements on ground support ambulances used away from base for fixed-wing operations: for example, adequate number and functioning seat belts for all team members, no loose equipment

f. Ground operations (RW)

- Landing sites

    - On-scene requirements

    - Hospital landing site changes or special needs review

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- Patient loading and unloading policy for rapid loading/unloading procedures

- Refuelling policy for normal and emergency situations

g. Hazardous materials recognition and response (even if not part of the service's mission statement, personnel must be able to recognize a hazardous materials situation if encountered)

h. Highway scene safety management (see References)

i. Medical patient transport considerations (assessment/treatment/preparation handling/equipment)

j. Survival and egress training/techniques/equipment that is pertinent to the environment/geographic coverage area of the medical service (Includes water egress survival training if en route travels are routinely over large bodies of water such as rivers, lakes, bay areas based on the programme risk assessment)

- Smoke in the cockpit/cabin, firefighting in the cockpit/cabin

- Emergency evacuation of crew(s) and patient(s)

- Hands-on practice of survival techniques and the use of the items contained in the survival kit are conducted at least once every two years

<u>Examples of evidence to meet compliance:</u>
Water egress survival training should include hazards to aircraft and personnel during overwater operations; pre-ditching, considerations, and procedures; emergency ditching and evacuation procedures; upright emergency evacuation; emergency evacuation; surface water survival and rescue water skills. Fixed-wing services that are required by FARs to carry emergency equipment, such as inflatable rafts, should provide this training.

<u>Examples of evidence to exceed compliance:</u>
For underwater escape training, use full immersion/inversion dunker capable of inducing disorientation and accurately replicating the aircraft interior if traversing rivers or larger bodies of water on a regular basis. Rescue/recovery training—helicopter-at-sea simulation should be provided if traversing rivers or larger bodies of water on a regular basis.

2. Completion of all the following educational components must be documented for each of the surface transport personnel. These components must be included in initial education as well as reviewed on an annual basis with all regularly scheduled, part-time, or temporarily scheduled personnel or speciality care providers as appropriate for the mission statement and scope of care of the surface interfacility service. (S)

a. EMS communications (radios) and familiarisation with EMS system

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b. Extrication devices and rescue operations (ranging from familiarity to explicit training, depending on the service's mission statement)

c. General safety (It is strongly recommended to have the surface vehicle physically present when providing this training.) This training addresses:

- Evacuation procedures (exits and emergency release mechanisms)
- Fire suppression procedures (location and use of fire extinguishers)
- Patient loading and unloading procedures
- Refuelling procedure with patient(s) on board
- Use of road or marine hazard equipment
- Specific capabilities, limitations, and safety measures for each surface vehicle used, which includes specific training for backup or occasionally used surface vehicles

d. Hazardous materials recognition and response

e. Survival training/techniques/equipment that is pertinent to the environment/geographic coverage area of the medical transport service

3. Speciality personnel

a. Speciality personnel who are added to the regularly scheduled transport team (as for neonatal, paediatric, perinatal, or IABP transports) must follow the criteria listed below:

- Speciality care personnel must have appropriate licensure or certification requirements by appropriate agencies or governing bodies and have relevant speciality experience as described by programme policy
- Liaison roles with the host medical transport service ensure cohesive and safe operational relationships, and well-defined roles and policies
- Speciality care personnel must be accompanied by one regularly scheduled medical personnel
- Pre-transport safety briefings are performed prior to each transport
- Speciality care personnel are familiar with the programme's policies, safety, and survival techniques as they relate to the specific aircraft or surface vehicle

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b. Speciality personnel who contract with a transport service but are not accompanied by regularly scheduled team members must follow the criteria listed below. Training is documented and verified on an annual basis:

- Speciality care personnel must be educated in in-flight and surface treatment modalities, altitude physiology, general aircraft and ambulance safety, and emergency procedures as listed in Section 03.05.02

03.05.03 Community Outreach Safety Programme

1. The medical service must facilitate integration of all emergency services and transport modalities by supporting joint continuing education programmes and operational procedures. These integration efforts must include but are not limited to the following:

a. Staff from varied teams are trained in hazardous materials recognition.

b. Staff from varied teams are trained in disaster response and triage.

c. The medical transport service must be integrated with and communicate with other public safety agencies, including ground emergency service providers. This may include participation in regional quality improvement reviews, regional disaster planning, and mass casualty incident drills that include an integrated response to terrorist events.

d. There is a response plan to all types of disaster, including weapons of mass destruction, terrorist events, and natural disasters.

e. All personnel are familiar with the plan to respond to disasters.

f. Emergency Management classes are provided for scene and disaster response.

g. Interface of the medical team with response teams from other regional organisations.

2. A planned, and structured safety programme must be provided to public safety/law enforcement agencies and hospital personnel who interface with the medical service that includes: (RW)

a. Identifying, designating, and preparing an appropriate landing zone (LZ)

b. Personal safety in and around the helicopter for all ground personnel

c. Procedures for day/night operations, conducted by the medical team, specific to the aircraft

d. High and low reconnaissance

e. Two-way communications between helicopter and ground personnel to identify approach and departure obstacles and wind direction

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f. Approach and departure path selection

g. Procedures for the pilot to ensure safety during ground operations in an LZ with or without engines running

h. Crash recovery procedures specific to the aircraft make and model must minimally include: (RW)

- Location of fuel tanks
- Oxygen shut-offs in cockpit and cabin
- Emergency egress procedures
- Aircraft battery – stay away from it
- Emergency shut-down procedures

i. Education regarding "weather shopping" must be included (RW) (see References)

3. Records are kept of initial and recurrent safety training of pre-hospital, referring, and receiving ground support personnel. (RW)

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03.06.00 MEDICAL CONFIGURATION OF THE TRANSPORT VEHICLE

(See 03.00.00 for determining equipment needed specific to each Medical Mission Type)

03.06.01 Any in-service aircraft/ambulance must be configured in such a way that the medical transport personnel can provide patient care consistent with the mission statement and scope of care of the medical transport service. Patient care issues are considered when choosing the aircraft or surface transport vehicle.

1. Configuration of the transport vehicle interior must not compromise the ability to provide appropriate care or prevent providers from performing emergency procedures if necessary.

2. Medical transport personnel have access to the patient in order to begin and maintain basic and advanced life support treatment. If there is an unusual configuration, crew must be able to demonstrate optimal methods of airway and other interventions and management.

3. The transport vehicle configuration allows for stabilizing the patient's airway and childbirth procedures if that is part of the service's mission.

4. The service's mission and ability to transport two or more patients must not compromise the airway or stabilization or the ability to perform emergency procedures on any on-board patient.

a. The transport vehicle must have access for simultaneous airway management if there is a two-patient configuration.

b. For all transports, there are written guidelines describing types of patients that can be transported in a two-patient stretcher configuration if the transport vehicle configuration does not allow for full access to the second patient.

c. For all transports, strict policies will address weight limitations, patient condition based on anticipated needs, and patient position in the transport vehicle.

d. Policies will be written and adhered to for one or more patient transports if the interior configuration of the transport vehicle does not allow for uninhibited access to one or more patients while en route. Policies will address under what circumstances two critical patients may or may not be transported, including staffing and equipment.

e. A policy prohibits dual patient transport inside the same isolette unless the situation is conjoined twins or twins are transported with full complements of equipment for each and show no evidence of infection in one or different infections in both. In the event that one twin arrests, there must be mitigation, i.e., additional warming methods that can be applied to the non-arresting twin. (RW/FW/S)

5. Airway and alternate airways – There must be access and necessary space to ensure any onboard patient's airway is maintained and to provide adequate ventilatory support from the secured, seat-belted position of medical transport personnel.

a. In an ambulance, it is strongly encouraged that seating be designed in the ambulance so that patient care can be rendered from a seat-belted position. Use of shoulder harnesses on side-facing bench seats is discouraged based on peer-reviewed studies regarding front-end collisions. (See References) (S)

b. There is a policy addressing that patients who are on a ventilator are maintained on a ventilator throughout the transport.

c. Cuff pressure manometer (unless the cuff is filled with saline and not air) (RW/FW).

6. Delivering Oxygen – Oxygen is installed according to national and national aviation and ground ambulance regulations. Medical transport personnel can determine how oxygen is functioning by pressure gauges mounted in the patient care area.

a. Each gas outlet is clearly identified.

b. Oxygen flow can be stopped at or near the oxygen source from inside the aircraft or ambulance. The following indicators are accessible to medical transport personnel while en route:

- Quantity of oxygen remaining

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- Measurement of litre flow

c. A variety of oxygen delivery devices consistent with the service's scope of care must be available.

d. Adequate amounts of oxygen for anticipated litre flow and length of transport with an emergency reserve must be available for every mission.

e. For those flights meeting the definition of “long-range” (any patient leg in excess of 3 hours measured in time, not distance, because of winds, where there are no alternative capabilities for patient care needs or aviation operations), additional policies must be in place to address the following:

- Ability to obtain oxygen when away from the base
- Adequate/required fittings, connexons, tools, and appliances for servicing the oxygen
- Adequate crew training to meet AHJ or equivalent oxygen servicing regulations

f. An appropriately secured portable oxygen tank with a delivery device must be carried on the transport vehicle so that oxygen delivery is not disrupted when transferring the patient to a hospital or other receiving facility. A portable oxygen tank is never to be secured between patient’s legs or immediately adjacent to the patient while aircraft or ambulance is in motion.

g. There must be a backup source of oxygen of sufficient quantity to get safely to a facility for replacements in the event the main system fails. For air transports, this backup source can be the required portable tank as long as the portable tank is accessible in the patient care area during flights. For those flights meeting the definition of “long-range,” additional policies must be in place to address how additional portable oxygen can be obtained if planned surface transport times are exceeded.

h. There is appropriate storage of oxygen in the facility according to national health and safety guidelines (in the U.S. OSHA standards).

i. Oxygen flow metres and outlets must be padded, flush-mounted, or so located to prevent injury to medical transport personnel, patients, or passengers.

7. Maintaining IV Fluids

a. IV supplies and fluids are readily available.

b. Hangers/hooks are available that secure IV solutions in place or a mechanism to provide high-flow fluids if needed.

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c. All IV hooks are padded, flush-mounted, or so located to prevent head trauma to the medical transport personnel in the event of a hard landing in the aircraft or emergency stop/manoeuvre of the ambulance.

d. Glass IV containers are not used unless required by specific medications and are properly secured.

e. A minimum of three IV infusion pumps (may be in the same device if individually metred lines) are on the transport vehicle or immediately available for critical care transports and as appropriate to the scope of care.

8. Medications consistent with the service's scope of care are accessible.

a. The transport service has a method of assuring that all medications and intravenous fluids are appropriately calculated. Examples of effective methods include the use of drug calculation lists, internet-based programmes, and pre-programmed drug delivery systems such as those found in medication pumps**.** A customizable medication formulary within the IV pump is encouraged.

b. Medications are easily accessible.

c. Controlled substances are in a locked system and kept in a manner consistent with local and national regulations.

- Controlled substances are logged in and out in manner consistent with local and national regulations
- For services that transport medications between bases, a policy exists that assures safe and secure transport of medications between bases that is consistent with state and/or national laws
- If programme's transports involve team members lodging overnight with controlled substances, there is a policy to address securing/storage
- Policies include requirements for accounting for and disposing of unused controlled substances

d. Storage of medications allows for protection from extreme temperature changes if environment deems it necessary.

e. If there is a refrigerator on the vehicle for medications, a temperature monitoring and tracking policy is required, and the refrigerator is used and labelled "for med use only".

f. There is a method to check expiration dates of medications and supplies on a regular basis.

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9. Pressure Ulcers – Policies and procedures are written and followed to prevent pressure ulcers for transports longer than 2 hours and/or reduce the impact of pressure ulcers during transport.

a. Patient assessment and documentation of pressure ulcers is done prior to, during, and following each transport, according to programme policy.

b. Pressure-reducing devices and/or methods are used when needed.

10. Medical supplies and equipment must be consistent with the service's mission statement and scope of care. Additionally, the following equipment must be on the transport vehicle and available per Type of Care.

a. Cardiac monitoring capabilities: A cardiac monitor capable of performing defibrillation, external cardiac pacing, and 12-lead capture is secured and positioned so that the display is visible.

b. Extra batteries or power sources are available for cardiac monitor/defibrillator or external pacemaker.

c. A feedback mechanism and/or mechanical compression device for effective cardiopulmonary resuscitation is encouraged.

11. Defibrillator:

a. Defibrillator is secured and positioned for easy access.

b. Semiautomatic or automatic external defibrillator is required for some BLS Providers (where permitted as scope of care for EMT).

c. Paediatric paddles/pads are available if applicable to the scope of care of the medical transport service.

d. A defibrillator with appropriate-size pads and settings must be available for neonatal transports (if neonatal transports are conducted).

12. External pacemaker on-board or immediately available as a carry-on item.

13. Advanced airway and ventilatory support equipment:

a. Laryngoscope and tracheal intubation supplies, including laryngoscope blades, bag-valve mask, endotracheal cuff pressure manometer (for air transport if cuff is air-filled) and oxygen supplies, including PEEP valves; appropriate for ages and potential needs of patients transported.

b. A mechanical ventilator, with CPAP and BiPAP (Bi-Level) capabilities, and circuit appropriate to age and scope of care on-board for critical care transports as pertinent to the scope of care of the medical transport service.

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c. Equipment for alternative airways on-board transport vehicles at all times and protocol for management of missed airway attempts.

d. Two suction units, one of which is portable and both of which must be required to deliver adequate suction.

e. Pulse oximetry on-board for critical care missions or immediately available for ALS.

f. End-tidal CO2 continuous waveform monitoring (A strict clinical monitoring protocol that uses spot check CO2 capnography, and ventilator flow loop analysis if available, is an acceptable alternative for neonates).

g. If inhaled nitric oxide or other inhaled gases are used, policies address the following:

- Monitoring
- Cylinder safety
- Transportation regulations
- Occupational exposure
- Equipment issues
- Weight
- Mounting in the vehicle
- Delivery of the drug
- Emergency procedures (for example troubleshooting for battery failure, delivery fault, or system failure)

14. Automatic blood pressure device, sphygmomanometer, doppler, or arterial line monitoring capability on-board or immediately available

15. Haemorrhage control equipment

16. Devices for decompressing a pneumothorax and performing an emergency cricothyroidotomy available if applicable to scope of care of the medical transport service

17. Blood Products

- For services who administer blood, there must be a policy addressing:

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○ Determination of when the blood product was released from the Blood Bank. Blood must be maintained at a controlled temperature of 2-8 degrees C during transport and must be infused within 4 hours of removal from thermal control. The temperature of the cooling mechanism is monitored and recorded. The use of a warming diffusion during infusion is encouraged

○ How the blood will be verified to match the patient, including at least two healthcare providers in the process

○ Documentation of type of blood product, type, quantity, time it was started and stopped, Unit #, amount infused during the transport and whether or not a reaction occurred

○ Procedure to follow if a suspected or actual transfusion reaction occurs

○ Policy on disposition of unused blood

- If blood products are stored by the service, policy addresses:

○ Proper storage conditions are in accordance with policies of the issuing Blood Bank

○ Continuous monitoring and documentation of refrigerator temperature readings to ensure it is in range, including an audible alarm mechanism if temperature falls out of range

○ Daily checks and documentation of the monitoring equipment and automatically recorded temperature readings

○ Procedure to follow if temperature falls out of range

17. Foetal doppler heart rate monitoring required for high-risk OB transports

18. Incubator (within the scope of the programme)

a. Isolette must regulate temperature and oxygen while allowing visibility and easy access to the neonate.

b. There is a capability to mix oxygen with air within the range of 21% to 100%.

c. Corrected gestational age is an acceptable trigger for use of an isolette versus a portable infant transport unit. For example, a 24-week gestation at one month of age may still need consistent servo heat versus a warming pad.

d. Ventilator must be specific to age and size of the patient

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19. The transport vehicle design and configuration must not compromise patient stability in loading, unloading, or transport operations.

a. The transport vehicle must have an entry that allows loading and unloading without excessive manoeuvring (no more than 45 degrees about the lateral axis and 30 degrees about the longitudinal axis) of the patient and does not compromise functioning of monitoring systems, intravenous lines, and manual or mechanical ventilation.

b. There is a written policy on conducting CPR during transport.

c. A minimum of one stretcher must be provided that can be carried to the patient.

- Aircraft stretchers and the means of securing it in-flight must be consistent with national aviation regulations. Ambulance stretchers must comply with state and national laws

- Policy indicates the maximum gross weight allowed on the stretcher (inclusive of patient and equipment) as consistent with manufacturer's guidelines

- The stretcher must be large enough to carry the 95th percentile adult patient, full length in the supine position

- The stretcher must be sturdy and rigid enough that it can support cardiopulmonary resuscitation. If a backboard or equivalent device is required to achieve this, such device will be readily available

  - The head of the stretcher is capable of being elevated at least 30 degrees for patient care and comfort

  - If the ambulance stretcher is floor-supported by its own wheels, there is a mechanism to secure it in position under all conditions. These restraints permit quick attachment and detachment for patient transfer

  - The stretcher mattress must be sealed to prevent absorption of blood and other body fluids, easily cleanable. The stretcher must have adequate padding for comfort and prevention of potential skin breakdown

d. Securing the patient:

- Patients transported by air are restrained with a minimum of three cross straps. Cross straps are expected to restrain the patient at the chest, hips, and knees

- Patients that are loaded head forward must additionally be restrained with a shoulder harness restraint. (RW/FW) A footbag is encouraged for those patients loaded feet forward (RW)

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- Belt locations must be adjustable along the length of the stretcher to accommodate patients' specific medical situations, for example, pregnant patients or specific injury locations

- Patients under 20kg must be provided with an appropriately sized restraining device (for patient's height and weight), which is further secured by a locking device

    - All patients from 5-20kg must be secured in a five-point safety strap device that allows good access to the patient from all sides and permits the patient's head to be raised at least 30 degrees

    - For infants, up to 5kg, a baby pod, car bed or heated bed may be used

    - If a car seat is used, it must have a nationally approved safety sticker, such as applies to AHJ regulation

e. Securing Equipment

- Incubator:

    - There must be some type of restraining device within the incubator to protect the infant (under 5kg) in the event of air turbulence or poor road conditions

    - Incubator must be capable of being opened from its secured position in order to provide full access to the infant in the event of complicated airway problems or extrication from the incubator becomes necessary

- Medical equipment will at no time share a seat belt intended for patient being secured to the stretcher. (Head, side rails, or between/beneath/top of the patient's legs)

- Ancillary equipment (chargers, battery packs, etc.) must be secured to prevent becoming a projectile in the event of turbulence or a crash

- Velcro is not to be used as a primary or exclusive securing device for medical equipment or ancillary devices

- If straps or belts are used to secure equipment, they must be rated to keep the weight and configuration in place to a minimum of 5 g. Softpacs and equipment bags are not to be stored with belts that loop through the handles (as these handles can easily tear and dislodge

- Rated cargo nets are strongly preferred over individual straps or belts to secure equipment bags

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- The use of a power cot lift system, power loader, or lift gate system is strongly encouraged

20. Supplemental lighting system will be installed in the transport vehicle in which standard lighting is insufficient for patient care.

a. A self-contained lighting system powered by a battery pack or a portable light with a battery source must be available.

b. There must be adequate lighting for patient care; use of red lighting or low-intensity lighting in the patient-care area is acceptable if not able to isolate the patient-care area from effects on the cockpit or on a vehicle operator.

c. For those flights meeting the definition of “long-range,” additional policies must be in place to address how adequate cabin lighting will be provided during fuelling and or technical stops to ensure that proper patient assessment can be performed, and adequate patient care provided.

21. A minimum of four (4) electric power outlets is strongly encouraged with an inverter or appropriate power source of sufficient output to meet the requirements of the complete specialised equipment package without compromising the operation of any electrical transport vehicle equipment. Extra batteries are required for critical patient-care equipment.

a. The electrical load is reviewed to minimise use of additional power cords and power strips.

b. Fixed-wing aircraft are required to have two inverters in the aircraft, independent of each other (if conducting long-range transports).

22. Medical transport personnel must ensure that all medical equipment is in working order and all equipment/supplies are validated through documented checklists for both the primary and backup transport vehicles.

a. Equipment must be periodically tested and inspected per manufacturer recommendations or by a certified clinical engineer.

b. Equipment inspections and records of inspections are maintained according to the programme’s guidelines.

c. For long-range transports, adequate backup battery supply must be available to ensure all medical equipment remains functional during technical stops, should a power failure exist, etc.

23. The floor, sides, and ceiling in the patient cabin of the aircraft or ambulance must be a surface capable of being cleaned and disinfected in accordance with national health and safety regulations with the appropriate disinfectant. Non-fabric sides/ceilings are strongly encouraged. Floors are not carpeted.

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24. The interior of the aircraft must be climate controlled to avoid adverse effects on patients and personnel on board. (RW/FW/S)

a. Cabin temperatures must be measured and documented every 15 minutes during a patient transport until temperatures are maintained within the range of 10-35 degrees C for aircraft and range of 20-25 degrees C for ground vehicles. Thermometer is to be mounted inside the cabin.

b. The programme has written policies that address measures to be taken to avoid adverse effects of temperature extremes on patients and personnel on board.

c. In the event cabin temperatures are less than 10 degrees C or greater than 35 degrees C, the programme may require documentation be red-flagged for the QM process to evaluate what measures were taken to mitigate adverse effects on the patient and crew and what outcomes resulted.

d. For those flights meeting the definition of "long-range", additional policies must be in place to address how adequate cabin temperature will be maintained during fuelling and/or technical stops to ensure patient, crew, and passenger comfort.

25. It is strongly encouraged that crews have life preservers easily accessible on helicopter flights operated over water that is beyond autorotational distance from the shoreline—from take-off until no longer over water. (RW)

Examples of evidence to meet compliance:
Cabin temperatures, tracking, trending, and measures to mitigate adverse effects are expected to be documented as part of the QM process—not necessarily part of the patient's record.

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03.07.00 EXPOSURE CONTROL

03.07.01 Policies and procedures addressing patient transport issues involving communicable diseases, infectious processes, and health precautions for emergency personnel as well as for patients must be current with the local standard of practise or national standards (in the U.S., OSHA, and as published by the Centers for Disease Control (CDC), also World Health Organization (WHO).

1. Policies and procedures must be written and readily available to all personnel of the medical transport service.

2. There is an Exposure Control Plan (ECP) consistent with national standards (in the U.S., OSHA guidelines). The ECP includes at a minimum:

a. A reference for work restrictions for personnel exposed to or infected with an infectious disease (reference Table 2.2 in Guide to Infection Prevention in EMS).

b. A list of the risks associated with EMS system responders and medical teams as well as diseases prevalent in coverage areas specific to the programme such as pertinent national risks.

c. A bloodborne pathogen programme consistent with the OSHA Bloodborne Pathogen Standard (http://www.osha.gov/SLTC/bloodbornepathogens/bloodborne_quickref.html).

3. Additional medical and agency resources pertinent to exposure control must be identified and made available in policies to all medical transport personnel, for example, isolation precautions for specific diseases/conditions.

4. Education programmes will include the institution's/service's exposure control resources, programmes, policies, and CDC and OSHA recommendations (or equivalent national guidelines). In addition, initial and annual education regarding identification, management, and safety related to patients with potentially infectious pathogens is documented.

5. Exposure control policies and procedures will be reviewed on an annual basis.

6. Education programmes and policies regarding latex allergies may include:

a. Patients and employees at risk for latex sensitivities and symptoms manifested by an allergic reaction

b. Maintaining a latex-safe environment

c. Methods to minimise latex exposure to lessen risks of allergic reactions in medical personnel

7. Preventive measures – Medical transport teams transporting patients must practise preventive measures to lessen the likelihood of transmission of pathogens. Policies and procedures address:

a. Personnel health concerns and records of:

- Pre-employment and annual physical exams or medical screening for clinical team members to include:

  - History of acute or chronic illnesses

  - Illnesses requiring use of medications that may cause drowsiness, affect judgment or coordination

  - Immunisation history and requirements to protect both patients and staff appropriate to the scope of practice and regional exposures

  - Weight and lifting/strength/agility testing as appropriate to policies of the service

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- Determination of whether individual is fit for duty

- Provide annual tuberculosis testing (purified protein derivative) as consistent with current national guidelines. This includes medical personnel, pilots, and mechanics (the ECDC, CDC, or WHO may deem the localised region low risk and annual testing not necessary, but this applies only if the service does not operate or respond outside of the local region)

- International immunisation history of the transport team is documented if appropriate to the scope of care and per ECDC, CDC, or WHO recommendations

b. Management of communicable diseases and exposure control in the transport environment is outlined in policies:

- Use of gloves, eye, and mouth protection. Personal protective equipment is readily accessible in the transport vehicle or issued to the medical transport team

- Use of safety needles and blunt or other type system to lessen the risk of needle sticks to those who come in contact

- Sharps disposal container for contaminated needles and collection container for soiled disposable items on the transport vehicle. Policy will promote proper disposal of sharps as well as tracking and investigation of sharps that are not properly disposed

- Cleaning and disinfecting with appropriate disinfectant of the patient cabin/compartment area, equipment, and personnel's soiled uniforms

- Mechanism for identifying those at risk for exposure to an infectious disease

c. A plan for communication, as soon as possible (verbal, electronic), between the medical transport service personnel, EMS providers, and hospital when exposure is suspected/confirmed to include what follow-up is necessary:

- Follow-up is documented

d. A policy for special precautions when transporting patients with known infectious diseases:

- There is also a method to verify patient's immunisation history for international transport

- Blood specimens or other potentially infectious materials must be placed in a leak-proof, sealed container during transport

- Disposal of hazardous materials from the aircraft or ambulance meets federal AHJ Guidelines

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- N95 Particular Filter Masks must be fit tested for medical personnel who require respiratory protection (this includes pilots who may be susceptible to airborne infections)*

e. Proper cleaning or sterilisation of all appropriate instruments or equipment.

f. Hand hygiene is performed before and after touching a patient, before clean/aseptic procedures, after body fluids exposure risk, after touching patient's surroundings, before handling medications, and before and after removing gloves:

- Hand washing with an antimicrobial soap and water is indicated when hands are visibly soiled, contaminated with proteinaceous material, or exposed to body fluids. However, it is recognized that this may not be possible in the transport environment in which case an alcohol-based hand rub should be used. An alcohol-based hand rub is preferred for all other hand hygiene

g. Management maintains documentation related to any potentially infectious pathogens including confidential records of exposure incidents and post-exposure management. (Post-exposure management includes identification and testing of source patient, baseline, and follow-up testing of exposed employee, making counselling resources available, and offering Hepatitis B vaccination.) All transport team vaccination records are kept appropriately.

h. A policy addresses access to post-exposure prophylaxis (PEP) medications for HIV, meningococcal infections, etc. The PEP medications must be available in a timely manner for all team members.

i. Where there is likelihood of occupational exposure, the following are prohibited: eating, drinking, applying cosmetics, or handling contact lenses.

j. Food and drink will not be stored where blood or other potentially infectious materials are present. If the service performs transports with long in-flight times, there must be a policy to address the nutritional needs of patients and personnel.

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04.00.00 – COMMUNICATIONS

04.01.00 THE AVIATION CERTIFICATE HOLDER

The AHJ Certificate Holder or other AHJ has the responsibility and authority to make all flight release decisions. (RW/FW) Reference 14CFR Part 135.77 in the U.S.

04.01.01 The certificate holder must have procedures established for locating each flight for which an AHJ flight plan is not filed. (See References 14CFR Part 135.79—Flight locating requirements) (RW/FW)

04.02.00 COMMUNICATIONS EQUIPMENT

04.02.01 Communications equipment on the aircraft and ambulance – All communications equipment must be maintained in full operating condition and in good repair. Ambulance communications equipment must be capable of transmitting and receiving clear and understandable voice communications to and from the base station at a reasonable distance. Radios on aircraft and ambulances (as range permits) must be capable of transmitting and receiving the following:

1. Medical direction

2. Communications centre

3. Air traffic control (aircraft)

4. Emergency Services (EMS, law enforcement agencies, fire, etc.) (Surface, RW, and FW responding to EMS)

04.02.02 Pilot is able to control and override radio transmissions from the cockpit in the event of an emergency situation. (RW/FW)

04.02.03 Medical team must be able to communicate with each other during flight. Helmets with communications capabilities are required on RW.

04.02.04 If cellular phones are part of the onboard communications equipment, they are to be used in accordance with AHJ regulations. (See References) (RW/FW)

1. For aircraft, cellular phones must be shut off or placed in aeroplane mode whenever required by the AHJ and the notice according to other AHJ regulations must be posted in the aircraft. (RW/FW)

2. A policy prohibits cellular phone or other communications devices without an acceptable integrated hands-free system use while the vehicle is in motion or while refuelling except for vital communications or as compliant with state or national regulations. Texting is strictly prohibited. (RW/FW/S)

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3. Surface providers whose medical director(s) has established the requirement for transmission of biomedical telemetry may utilise the cellular telephone system for such communications.

4. A required policy on portable electronic devices that allows for their use only for safety-related activities, such as flight/transport planning, refuelling, transport vehicle inspections, or clinical use, while the vehicle is in motion.

04.03.00 COMMUNICATIONS SPECIALISTS

A Communication Specialist must be assigned to receive and coordinate all requests for the medical transport service.

04.03.01 Staffing

1. Staffing must be commensurate with the mission statement and scope of care of the medical transport services. A well-developed position description for the communication specialist is written.

2. Scheduling and individual work schedules demonstrate strategies to minimise duty time fatigue, length of shift, number of shifts per week, and day-to-night rotation.

   a. Call volume and other required duties are considerations in the number of communication specialists on duty at any one time. (Programmes must be able to demonstrate how they assign staffing levels: for example, number of communication specialists on duty per shift relevant to the number of vehicles and teams in service.)

   b. There are relief personnel with the appropriate training available for periodic breaks.

   c. Personnel must have at least 10 hours of rest with no work-related interruptions prior to any scheduled shift of 12 hours or more. The intent is to preclude back-to-back shifts with other employment, commercial or military flying, or significant fatigue-causing activity prior to a shift.

   d. On-site shifts are routinely scheduled for a period not to exceed 12 hours. Shifts in excess of 18 hours are not acceptable. In addition:

      • Personnel must have the right to call “time out” and be granted a reasonable rest period if a team member determines that he or she is unfit or unsafe to continue duty, no matter what the shift length. There must be no adverse personnel action or undue pressure to continue in this circumstance.

      • Management must monitor transport volumes and personnel’s use of the “time out” policy to ensure that personnel utilise the right to call “time out” appropriately.

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e. A risk assessment plan addresses fatigue and focuses on volume and other distractions in the communications centre. The risk assessment should be inclusive of the entire communication centre. Individual risk assessment tools are also encouraged. The written plan should include:

- When/how often a risk assessment is completed (beginning of the shift, mid-shift, following a major event, staffing level changes, etc.)
- Factors that can cause loss of situational awareness (staffing level changes (compared to para level), new trainees, employees returning from extended time off due to illness, vacation, etc.)
- Factors that can cause fatigue (staff working shifts opposite their routine, number of shifts in a row, overtime, high call volume, etc.)
- Plans or actions to mitigate risks

3. Communications personnel are provided with an opportunity to join wellness programmes offered by the medical transport service.

04.03.02 Training of the designated person must be commensurate with the scope of responsibility of the Communications Centre personnel.

1. Initial training, which must include:

a. Assistance with the hazardous materials response and recognition procedure using appropriate reference materials.

b. Computer literacy and software training.

c. Crew Resource Management (CRM) pertinent to communications.

d. Customer service/public relations/phone etiquette.

e. Familiarisation with equipment used in the field and inter-facility settings.

f. General safety rules and emergency procedures pertinent to medical transportation and transport following procedures.

g. Knowledge of EMS—roles and responsibilities of the various levels of training—BLS/ALS, EMT/Paramedic.

h. Knowledge of national aviation regulations and Federal Communications Commission or AHJ regulations or equivalent as pertinent to medical transport service. (RW/FW)

i. Medical terminology and obtaining patient information.

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j. Navigation techniques/terminology, and map skills, including an understanding of GPS navigation and approaches. (RW/FW)

k. Post Accident/Incident Plan (PAIP).

l. Quality management.

m. Sleep deprivation, sleep inertia, circadian rhythms, and recognizing signs of fatigue.

n. State and local regulations regarding EMS.

o. Stress recognition and management to include resources for Critical Incident Stress Debriefing or other type of post-critical incident counselling.

p. Types of radio frequency bands used in medical and ground EMS.

q. Understanding weather interpretation and how to retrieve current and forecasted weather to assist the pilot during a transport if other means are not in place within the organisation. (RW/FW)

r. Training in landing zone safety, requirements, procedures, and coordination consistent with the training provided by the programme to public safety and hospitals. (RW)

s. Knowledge of the local geography, facilities, and transport resources, as well as clues to spotting potential helicopter shopping and duplicate aircraft requests. (RW)

t. Coordinator for long-range flights training includes:

- Formulating estimates for transport and collaborating with assistance companies and insurers for payment arrangements (as pertinent to the scope of care).
- Knowledge of referral and receiving centres and intermediate transports for arrivals and departures.
- Knowledge of resources for customers, transport crews, and family members during the entire patient transport that promotes a timely and cost-effective outcome.

2. There is evidence of annual training and of training as policies and equipment changes occur and also includes:

a. ACRM or Crew Resource Management (CRM) pertinent to communications.

b. Post Accident/Incident Plan (PAIP).

c. Sleep deprivation, sleep inertia, circadian rhythms, and recognizing signs of fatigue.

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d. Stress recognition and management to include resources for Critical Incident Stress Debriefing or other type of post-critical incident counselling.

Examples of evidence to meet compliance:
If the AHJ Certificate Holder or other AHJ is not the employer of communications centre staff, there is evidence of interface with training and policies that meet the Certificate Holder's operational control specifications.

3. Certifications (such as EMT, EMD, or equivalent) are strongly encouraged, and if required by position description, must be current. IAMTCS (International Association of Medical Transport Communications Specialists) Certified Communicator Course or equivalent education (see criteria for equivalent education in References) is encouraged within 2 years of hire. Emergency Medical Dispatch (EMD) certification is encouraged within 2 years of hire if the service receives emergency requests for transport from the general public.

04.04.00 COMMUNICATIONS QM PROGRAMME

Communications is part of the programme's QM programme (and there are QM criteria specific to Communications), and communications personnel are involved in staff, safety, and QM meetings.

04.05.00 SHIFT BRIEFINGS

There are shift briefings conducted at the beginning of each shift to assure continuity between shifts that include communications personnel.

04.06.00 POST TRANSPORT DEBRIEF

A post-transport debrief is conducted after each transport that includes the communications specialist when communications issues are involved. (RW/FW/S)

04.07.00 FORMAL MEETINGS

Formal periodic meetings (separately held or part of the programme's staff meetings) are strongly encouraged for which minutes are kept on file. Minutes will include who is presiding, discussion, and who was present. There are defined methods, such as a communications book or electronic mechanisms, for disseminating minutes and information between meetings.

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04.08.00 COMMUNICATIONS POLICIES—must be in writing and include the following:

04.08.01 Transport requests are accepted from authorised personnel with sensitivity to cultural differences and without discrimination due to race, creed, sex, colour, age, religion, national origin, ancestry, or handicap. “Emergency calls” or other requests that involve a patient with a potentially life-threatening illness or injury who requires rapid transportation and intervention at a location within the defined service area are accepted without pre-screening for the ability to pay.

04.08.02 There is a written policy that at the time of a request, the pilot is not informed of the patient condition or age unless there are operational considerations (for example weight, extra equipment, etc.). (RW/FW)

04.08.03 There is a written policy designed to discourage “shopping” by first responders and other requesting agents that specifically addresses how the programme interfaces with other air medical services in the same coverage area to alert them of a weather turn-down. It is recognized that programmes in a common geographic area may experience different weather conditions and that programmes may have differing capabilities. Programmes (RW/FW that respond locally to small clinics—essentially scene flights) should:

1. Ask the requesting agent if another flight programme had turned down the request.

2. Notify the requesting agent that the programmes in their coverage area share weather information and turn-downs for safety reasons.

3. Notify other programmes within their coverage area of the turn-down as soon as possible.

4. Provide the on-duty pilot with contact information from other programmes for questions about the weather concerns and details (fog, precipitation, wind, etc.).

5. Inform the on-duty pilot immediately if notified of a weather turn-down by another programme.

6. Have written evidence of tracking the requests turned down for weather and of participation in regional notification systems as described in 1 through 5 above.

04.08.04 A readily accessible post-accident/incident plan must be part of the transport following protocol so that appropriate search-and-rescue efforts may be initiated in the event the aircraft or surface ambulance is overdue, radio communications cannot be established, nor location verified. There must be a written plan to initiate assistance in the event the ambulance is disabled.

1. Post-accident/incident plans are easily identified, readily available, and understood by all programme personnel and minimally include:

    a. List of personnel (with current phone numbers) to notify in order of priority (for communication specialist to activate) in the event of a programme incident/accident (for air or surface). This list must minimally include sponsoring organisation individuals where applicable, risk management/attorney family members of team members, family of patient, referring hospital, receiving hospital, security (as applicable), human resources (as

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applicable), media relations or pre-identified individual who will be responsible for communicating with the media, state health department, and other team members.

b. Notification plans include appropriate family members and support services to family members following a tragic event. There must be timely notification of next of kin. Next of kin is no longer strictly defined at the federal level, so the crew member determines this on a data sheet and reviews annually. Any alternate or additional emergency notifications should also be listed. It is strongly recommended that:

- Family assistance includes coordination of family needs immediately after the event e.g., transportation, lodging, financial support, memorial/burial service, condolences, initial grief support services/referrals, (usually through appointment of a family liaison)

- The programme provides a point of contact for family members to request information or services

- Continuity includes follow-through with the family, through a family-designated point of contact, after the event (e.g., submission of crew to national EMS memorial service, the continuation of grief counselling and support referrals, the inclusion of families in decision-making on anniversaries/memorials, and check-ins following release of NTSB reports, or equivalent, etc.)

c. Consecutive guidelines to follow in attempts to:

- Communicate with the aircraft or ambulance

- Initiate search and rescue or ground support

- Develop a backup plan for transporting the ambulance patient in the event of an incident or accident and/or the aircraft or ambulance is inoperable

- Identify an individual from the programme as the scene coordinator to coordinate activities at the crash site (RW/FW)

d. Preplanned time frame to activate the post-accident/incident for overdue aircraft or ambulance.

e. A method to insure accurate information dissemination.

f. Coordination of transport of injured team members to higher level of care if needed and/or back to local area.

g. Procedure to document all notifications, calls, and communications and to secure all documents and tape recordings related to the particular incident/accident.

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

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i. Resources available for CISD, Psychological First Aid (PFA), or other counselling alternatives.

j. Process to determine whether the programme and/or component of the programme (RW/FW/S) will remain in service. If it is determined that the programme or a component of the programme will go out of service, other regional transport services, primary customers, EMS, public service groups, and other applicable groups are advised.

2. A PAIP drill is conducted at least every six months that tests the entire post-accident/incident plan. The drill must include all aspects of the plan and all disciplines involved (pilots/drivers, medical personnel, communication personnel, mechanics, administration, etc.).

a. A minimum of one daytime and one night-time drill is completed each year.

b. During the accreditation period all modes of transport provided are tested.

c. Following each drill:

i. A thorough debrief occurs that identifies lessons learned from the drill

ii. There is a written after-action report/plan (AAR/P) that summarizes the drill including the major events and the people, locations, agencies, and vehicles involved. The AAR/P includes the lessons learned and any corrective actions taken or planned

iii. The results of the drill and the after-action report/plan are shared with the entire staff, including those not involved directly with the drill

iv. A method exists to document progress and loop closure on any corrective items identified in the after-action plan

d. An actual incident or accident may be used as a replacement for a drill provided it meets all of the items listed in c. above.

Example of meeting compliance:

	RW	FW	Surface
First year, first 6 months	Day drill		
First year, second 6 months		Night drill	
Second year, first 6 months			Night drill
Second year, second 6 months		Day drill	
Third year, first 6 months	Night drill		
Third year, second 6 months			Day drill

04.08.05 An annual test of emergency procedures in the communications centre that includes an evacuation drill and capability to re-establish communications in the event of a fire, intruder on-premises,

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catastrophic failure of the communications centre, helipad mishaps, forces of nature, etc. An actual evacuation can be used as a replacement for a drill provided the occurrence is thoroughly debriefed and after action lessons and corrective actions have follow-up and loop closure.

04.08.06 Programme is encouraged to participate in regional disaster preparedness drills.

Examples of evidence to meet compliance:
The PAIP plan and drills to test the plan include all modes of transport performed by the programme. Results of the drill are disseminated to the entire staff. A drill to test other emergency procedures as they apply to the facility is planned and documented.

04.09.00 FLIGHT/TRANSPORT FOLLOWING

04.09.01 Emergency service call centres (112, 999, 911, etc.) emergency service dispatch centres, or any other agency, hospital, or service, must contact the programme's communications centre directly to request transport.

1. A specific base must not be contacted directly for a patient/victim response.

2. Programmes must not self-dispatch (*see glossary*) unless the programme does not operate an emergency dispatch centre authorised by the responsible authority.

04.09.02 Satellite tracking systems are strongly recommended for all aircraft and required for aircraft that do not have a 406 MHz ELT. Initial coordination must be documented and continuous flight/transport following (or initiating and following surface transport) must be monitored and documented and must consist of the following:

04.09.03 Initial coordination to include communication and documentation of:

1. Time of call (Time request/inquiry received).

2. Name and phone number of requesting agency.

3. Age, diagnosis, or mechanism of injury.

4. Referring and receiving physician and facilities (for interfacility requests) as per policy of the medical transport service.

5. Verification of acceptance of patient and verification of bed availability by referring physician and facility.

6. Destination airport, refuelling stops (if necessary), location of transportation exchange, and hours of operation. (RW/FW)

7. For those flights meeting the definition of "long-range", flight planning must include the need for Auxiliary Power Unit (APU), Ground Power Unit (GPU), catering, oxygen servicing, etc. if any

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technical stops are required/anticipated including contingency planning for alternative stops as well as safety and security for landings abroad. (FW)

8. Weather checks prior to departure and during mission as needed.

9. Previous turn-downs of the mission (i.e., helicopter shopping) (RW/FW services that respond locally to small clinics—essentially scene flights).

10. Transportation coordination at sending and receiving areas. (RW/FW)

11. Time of Dispatch (Time medical personnel notified transport is a go, post-pilot/vehicle operators' OK).

12. Time Depart Base (Time of lift-off or departure from base or other site).

13. For interfacility transports, number, and names of persons on board, including the patient and any family members.

14. Amount of fuel on board.

15. Estimated time of arrival (ETA).

16. Pertinent LZ information. (RW)

17. Time Arrive Location (Time transport vehicle arrives at landing zone, helipad, airport, or referring area).

18. Time Depart Location (Time transport vehicle lifts off from landing zone, helipad, or airport or leaves referring area).

19. Time Arrive Destination (Time patient transferred to receiving clinical team; in unusual circumstances, this may not be at a healthcare facility).

20. Time Depart Destination (Time left patient destination. This will be recorded for transports not ending at base).

21. Time Arrive Base (Time arrive base after call completed).

22. Time Aborted (Time authorised transport is aborted/cancelled after dispatch).

04.09.04 Concluding documentation for all modes of transport may include calculation of:

1. Call Received (by Communications Centre).

2. Dispatch (time interval between call received and confirmed to depart).

3. Enroute (time interval between confirmation to depart and actual departure).

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4. At referring (time interval between departure and arriving at scene or referring facility).

5. At patient (time interval between arriving at scene or referring facility and initial patient contact).

6. Bedside time (time interval between initial patient contact and completing packaging ready to move with the patient to the ambulance or aircraft).

7. Leave referring (time interval between departing scene or hospital bedside with the patient and driving or lifting off).

8. At receiving (time between driving or lifting off from scene or referring facility to arriving at receiving facility).

9. Transfer of care (time between arriving at receiving facility and completing turnover of care).

10. Available (time between turnover of care and return to aircraft or ambulance and back in service).

04.09.05 Additional criteria for fixed wing: operations must be conducted using VFR flight plans minimally and IFR whenever feasible.

1. Procedures ensure that pilots use Air Traffic Control (ATC) radar and/or communications services whenever operating under VFR and within the service area of an ATC facility or a communications service.

2. In addition to IFR flight plans, there are procedures to notify the communications centre of the specific aircraft departure time, estimated time of arrival, and arrival at the scheduled destination.

3. For a fixed-wing service that flies only pre-scheduled flights, an answering service may serve as the receiving point for requests for service.

a. Answering service personnel must be trained to obtain specific information when receiving a request to schedule fixed-wing patient transportation.

b. The items must include but not be limited to:

- Name and telephone number of caller.
- Patient type/condition.
- Date and time call received.
- Anticipated or scheduled date/time of departure.
- Location of patient and destination.

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c. Specific methods must be used by the answering service for contacting the medical service coordinator (or designee) to relay request information, i.e., pager numbers, telephone, and/or cellular numbers.

d. Guidelines for timely notification (less than 30 minutes) must be established. Alternate procedures for notification must be in place in case the coordinator is not available to receive the request/information.

e. An on-call roster of the medical team must be provided to the answering service. The roster includes a priority phone list of personnel to notify in the event of an emergency.

4. FW logistics and planning includes:

a. Ground ambulance arrangements, configuration, tracking and trending for events, mitigation practises, etc.

b. Power source for equipment

c. Under-triaged, over-triaged, unexpected lack of resources at referring and/or accepting

d. Tracking/following clinical team during ground movement

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04.10.00 COMMUNICATIONS DURING A TRANSPORT

04.10.01 The medical transport service must provide direct communication capabilities for parties involved in the transport, i.e., medical personnel, and ground ambulance providers, to ensure rapid dissemination of information, coordination of efforts and problem-solving. In each case, direct contact between the parties must be established whenever possible as follows (this also applies to Surface):

1. Direct or relayed communications to communications centre (while in motion) specifying locations and ETA's, and deviations, if necessary.

a. A sterile cockpit is maintained below predetermined altitudes so that the pilot is able to transmit and receive vital information and minimise distractions during any critical phase of flight. No external communications are permitted by the medical team and no patient information is transmitted at this time unless radios for medical report are isolated. (RW/FW)

b. There is a policy/procedure for diversions from original destinations (airports, hospital landing sites, alternative scene LZs) (RW/FW)

2. There is a written policy that addresses direct or relayed communications to the communications centre to specify all take-off and arrival times.

3. There are policies that outline plans for communications between crew members who may be separated while transporting the patient by surface or by hotel stays.

4. Time between each communication.

a. Time between each communication must not exceed 15 minutes while in flight unless a system of continuous automatic position tracking is utilised. (RW)

b. There is a policy to address continuous automatic position tracking, if utilised, to ensure there are also verbal communications at predetermined times. (RW/FW)

c. If an IFR or VFR flight plan has not been filed, time between communications must not exceed 15 minutes if a means to communicate, directly or indirectly, is not available. (RW/FW)

d. Time between communications must not exceed 45 minutes while on the ground (RW/S) unless ground ambulance continuous tracking software is used.

e. Alternate agencies are used to relay communications when direct contact is not possible.

5. There is a written policy that while the aircraft is on a mission, a dedicated communicator assigned to flight following will be present in the communications centre at all times. (RW)

04.11.00 THE COMMUNICATIONS CENTRE

04.11.01 Equipment and capabilities

1. At least one dedicated phone line for the medical transport service.

2. A system for recording all incoming and outgoing telephone and radio transmissions with time recording and immediate playback capabilities. Recordings must be kept for a minimum of 90 days, but it is strongly encouraged to keep recordings for a minimum of two years.

3. Capability to immediately notify the medical transport team and online medical direction (through radio, pager, telephone, etc.).

4. A status display with information about pre-scheduled flights/patient transports, the medical transport team on duty, weather, and maintenance status.

5. Current local aircraft service area maps and navigation charts must be readily available for aviation operations. Mapping software could supplement current charts. Road maps or GPS software must be available for ground transport services.

6. Seating and workstations are ergonomically appropriate for each communications specialist on duty.

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7. Backup emergency power source for communications equipment, or a policy delineating method for maintaining communications during power outages and in disaster situations.

04.11.02 Policies and plans

1. Policies are dated and signed by the appropriate manager(s).

2. Communication Centre policies are reviewed on a biennial basis as verified by dated manager's signature on a cover sheet or on respective policies.

3. A method to keep noise and other distractions (traffic) from the communications area while the communications specialist is involved with a medical transport mission.

4. An evacuation plan that provides for continuous communications with transport personnel in the event there is a need to evacuate the communications centre.

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05.00.00 – ROTORWING STANDARDS

PREFACE – The standards below are as appropriate to the country of residence and the specific aviation regulator of that country as referenced by the term "Authority Having Jurisdiction" (AHJ). However, European Aviation Safety Agency (EASA) regulations are considered the minimal regulations that all other national regulations are measured against. CAMTS Global Accreditation Standards, as a measure of quality, are part of a voluntary process and frequently exceed the AHJ's aviation regulations.

05.01.00 OPERATIONS

05.01.01 Certificate holder must meet all Authority Having Jurisdiction (AHJ) regulations specific to the operations of the medical service in the country of residence, as applicable. This includes an AHJ regulator's Certificate (public service medical transport agencies are included in this requirement) and Ambulance Operations Specifications specific to EMS operations. The transport service demonstrates compliance with the legal requirements and regulations of all local, state, and federal agencies under whose authority it operates.

05.01.02 All "patient transport flights" * must be conducted under AHJ regulations for weather minimums, flight crew duty time limitations, and weight and balance requirements.

*Patient transport flight is defined as any flight segment conducted by rotor or fixed-wing equipment that is necessary for transporting patients and the medical teams required to care for such patients. Flight segments included in this definition are: flights for refuelling and repositioning for specific patient transport (including organ donor transports); picking up and returning medical teams to an assigned base; the actual flight segment involving patient movement; and any time medical teams are on board.

05.01.03 There is an established written policy to ensure that the pilot is notified of all carry-on baggage and/or equipment for weight and balance considerations (so that carry-on baggage/equipment is weight and placement acceptable).

05.01.04 There is a written policy and outline of passenger safety briefings in accordance with AHJ or national equivalent.

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05.02.00 AIRCRAFT

Reference Section 03.06.00 Medical Configuration of the Transport Vehicle.

05.03.00 WEATHER

05.03.01 Visual weather minimums must be specified for day and night local, and day and night cross country.

05.03.02 The “local flying area” must be well defined by geographic or manmade features and limited to those areas as defined by the certificate holder and as consistent with AHJ regulations as applicable in the respective country if the same level of safety is verifiably achieved.

05.03.03 Cross-country flights are those outside of the local flying area.

05.03.04 There is a system for obtaining pertinent weather information. The pilot in command (PIC) is responsible for obtaining weather information according to policy that must address at a minimum:

1. Routine weather checks

2. Weather checks during marginal conditions

3. Weather trending

05.03.05 Communication between pilots, medical personnel, and communication specialists at shift change regarding the most current and forecasted weather is part of a formal briefing.

05.03.06 VFR “response” weather minimums must meet or exceed “National Regulations” as applicable to the certificate holder or operator.

1. Minimums are never to be considered as mandatory launch criteria. All factors are to be considered by the pilot who has final authority over a “go, no-go” decision. However, any team member who is uncomfortable with launching on or continuing flight into conditions perceived as hazardous has the absolute right to request the pilot return to safer conditions immediately or as soon as possible under IMC conditions.

2. Policies include provisions for patient care and transport alternatives in the event that the aircraft must use alternate landing facilities due to deteriorating weather.

05.03.07 Higher weather minimums are strongly encouraged for new and relief pilots.

05.03.08 When transitioning to an off-airport site after an instrument approach, the following must apply:

1. Local VFR weather minimums must be followed if within a defined local area and if the route and off-airport site are familiar.

2. Cross-country VFR weather minimums must be followed if not in defined local area or if the pilot is not familiar with route and off-airport site.

3. For Point-In-Space (PINS) helicopter instrument approaches comply with FAR 135.613 or AHJ procedures.

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05.04.00 PILOTS

05.04.01 There must be a minimum of four flight-ready pilots permanently assigned per single-pilot aircraft that is available 24 hours a day. Temporary staffing by fewer pilots is permitted for no more than 6 months while finding and training a replacement pilot provided such staffing meets crew rest requirements of the AHJ. No fewer than six permanently assigned pilots are required for two-pilot operations at a service that is available 24 hours a day. It is encouraged to have eight pilots or four 2-pilot crews for two-pilot operations at a service that is available 24 hours a day. This will be pro-rated for services that fly less than 24 hours per day.

1. Scheduling practises reflect consideration for minimizing duty-time fatigue, length of shift, number of shifts per week, and day-to-night rotation. The implementation and maintaining of an operator-specific fatigue risk management system (FRMS), based on scientific analysis, is strongly encouraged.

2. Physical well-being is promoted by the employer wellness programmes to include but not be limited to balanced diet, weight control, and no smoking.

3. Operations facilities must include a quiet area for flight planning, training, record-keeping, and rest.

Examples of Evidence to Exceed Compliance:
Two-pilot crews at night or both day and night shifts

05.04.02 The pilot determines that the aircraft is in airworthy condition (and that appropriate pre-flight, take-off, and landing procedures are followed.)

1. Prior to the first flight or shift of duty, the pilot:

    a. Verifies that maintenance is not due on the aircraft

    b. Performs a pre-flight inspection according to the manufacturer's checklist

2. Operational practises also include:

    a. A walk-around inspection of the aircraft prior to each take-off

    b. Establishing contact (when possible) between the pilot and ground units securing an unprepared landing site before the landing occurs

    c. Coordinating arrangements for the pickup or delivery of a patient at private or hospital helipads at least 15 minutes prior to landing

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05.04.03 Pilot in command (PIC) qualifications:

1. The pilot must possess at least a commercial rotorcraft rating. An instrument helicopter rating is required for pilots completing flights under instrument flight rules (IFR) and is encouraged for all others.

2. If not exceeded by applicable national AHJ regulations, the pilot in command must possess 2000 total flight hours (or total flight hours of at least 1500 hours and recent experience that exceeds the operator's pre-hire qualifications such as current air medical and/or search and rescue experience or ATP rated) prior to an assignment with a medical service with the following stipulations:

a. A minimum of 1200 helicopter flight hours

b. At least 1000 of those hours must be as PIC in rotorcraft (may include up to 500 hours of tiltrotor)

c. 100 hours unaided (if pilot is not assigned to an NVG base/aircraft)

d. 50 hours unaided as long as the pilot has 100 hours aided (if assigned to an NVG base/aircraft)

e. A minimum of 500 hours of turbine time—1000 hours of turbine time strongly encouraged

As an alternative to the flight hours in 05.04.03 2. a programme may develop and submit a Pilot in Command (PIC) Experience Evaluation Tool. The tool should evaluate a pilot's education, training, and experience to determine if that pilot has the necessary background and experience to be a safe and effective PIC, taking into consideration the programme's operation needs, scope of service, service area, airframe type, operational environment, etc. To be considered as an alternative to meeting the Standard, the programme must submit a CAMTS Global Class Two Report of Change along with the Evaluation Tool. Once accepted, the effectiveness of the tool must be evaluated as part of the programme's quality management process. The tool will be specific to the programme; however, an example that can be used as a starting point can be found in the tables at the end of this section.

3. ATP certificate and instrument currency are strongly encouraged.

<u>Examples of Evidence to Exceed Compliance:</u>
All pilots are ATP-rated.

05.04.04 Pilot training requirements

1. The certificate holder will maintain a nationally approved training programme, as applicable, in accordance with AHJ regulations. The training programme must contain a procedure for evaluating previous experience and training to determine what specific training a new flight crew

member will require to satisfactorily meet all required training and checking standards. The certificate holder will also have a process in place to properly track experience levels of new PICs that must comply with the higher weather minimums as required under AHJ regulations.

2. Initial training must, at a minimum, consist of the following and be verified by written criteria, outlines, or curriculum. Use of AHJ regulations-approved training devices and simulators (aircraft appropriate) is strongly encouraged along with mission-specific, scenario-based training.

a. Terrain and weather considerations specific to the programme's geographic area.

b. Orientation to the health care system.

c. Orientation to exposure control, medical systems installed on the aircraft and patient loading and unloading procedures, and altitude physiology to include signs and symptoms of hypoxia.

d. Orientation to the EMS and public service agencies unique to the specific coverage area.

e. Inadvertent Instrument Meteorological Conditions (IIMC) recovery procedures conducted solely by reference to instruments or IFR currency. Spatial Disorientation training as part of the IIMC or IFR training.

f. IFR currency encouraged.

g. Controlled Flight into Terrain (CFIT) prevention training for day or night operations that includes Authority Having Jurisdiction regulations for acceptable vertical and lateral deviation limits from the proposed en route course and altitude based on terrain and obstructions.

h. 50% of the recommended training hours must be conducted at night or in night conditions in a flight training device (FTD) or FFS. Full flight simulation is strongly encouraged.

i. Minimum requirements for specific training in aircraft type:

- Factory school or equivalent (ground and flight). Training must include normal, abnormal, and emergency procedures as specified by the OEM
- 5 hours as pilot in command or at the controls prior to EMS missions if transitioning from a single; from a twin to a single (only outside of EASA countries); or from a twin to a twin
- 10 hours as pilot in command or at the controls prior to EMS missions if transitioning from a single to a twin-engine aircraft

j. Minimum requirements for area orientation:

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- 5 hours area orientation of which 2 hours must be at night as pilot in command or at the controls prior to EMS missions

- Training hours in aircraft type and area orientation may be combined depending on the experience and background of the pilot

k. Aeromedical Crew Resource Management (ACRM), consistent with AHJ (Interactive courses strongly encouraged). Specific content of ACRM training and organisation of topics must reflect an organisation's unique culture and specific needs, such that curriculum topics may include, but not be limited to:

- Aeronautical Decision Making
  - Information processing
  - Stress and performance
  - Task Complexity
- Communications Processes and Decision Behaviour
  - Briefings
  - Inquiry/advocacy/assertion
  - Crew self-critique re: decisions and actions
  - Conflict resolution
  - Communications and decision making
- Team Building and Maintenance
  - Leadership/followership/concern for tasks
  - Interpersonal relationships/group climate
- Workload Management and Situation Awareness
  - Preparation/planning/vigilance
  - Workload distribution/distraction avoidance
  - Individual factors/stress reduction

3. Annual recurrent training minimally includes the following and is verified by written criteria, outlines, or curriculum. Use of AHJ regulations' approved training devices and scenario-based

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simulators is strongly encouraged along with mission-specific scenario-based training for recurrent training cycles.

a. Authority Having Jurisdiction regulations training requirements

b. Inadvertent Instrument Meteorological Conditions (IIMC) recovery procedures conducted solely by reference to instruments every six months at a minimum or IFR currency if operating IFR. It is strongly recommended that quarterly IIMC training be implemented. Training should include scenario-based segments of the recognition and recovery of spatial disorientation

c. CFIT prevention training for day or night operations that includes AHJ regulations guidelines or pertinent national guidelines for acceptable vertical and lateral deviation limits from the proposed en route course and altitude based on terrain and obstructions

d. Annual recurrent training must also include:

- Local routine operating procedures
- Area terrain hazards
- Review of landing sites at referring and receiving hospitals or any operational changes
- Scene operations procedures

e. Aeromedical Crew Resource Management (ACRM), consistent with AHJ regulations. Specific content of ACRM training and organisation of topics must reflect an organisation's unique culture and specific needs, such that curriculum topics may include, but not be limited to:

- Aeronautical Decision Making
- Information processing
- Stress and performance
- Task complexity
- Communications Processes and Decision Behaviour
- Briefings
- Inquiry/advocacy/assertion
- Crew self-critique re: decisions and actions

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- Conflict resolution
- Communications and decision making
- Team building and maintenance
- Leadership/followership/concern for tasks
- Interpersonal relationships/group climate
- Workload management and situation awareness
- Preparation/planning/vigilance
- Workload distribution/distraction avoidance
- Individual factors/stress reduction

f. Annual review of exposure control, medical systems and installations on the aircraft, patient loading and unloading procedures, and altitude physiology to include signs and symptoms of hypoxia.

4. The certificate holder must have a policy or procedure to address proficiency. This is in reference to pilots who are on duty but have not flown recently due to weather or call volume.

Examples of evidence to exceed compliance:
All pilots undergo initial and annual scenario-based simulator training.

05.04.05 A planned and structured orientation must be provided to the relief pilot with criteria to be based on the mission statement. The relief pilot must have the same qualifications and limitations as a new pilot.

1. The orientation must, at a minimum, contain:

a. Role responsibilities

b. Area, weather, terrain, aircraft, and programme-specific orientation

2. Currency must be determined prior to the beginning of operations, and there is a risk assessment tool to identify the risks at a specific base such as area and terrain, weather, and programme-specific idiosyncrasies.

05.05.00 MAINTENANCE

05.05.01 Training – There must be a mechanic primarily assigned to each specific aircraft who must be trained and qualified in accordance with the operator's maintenance programme and procedures, prior to performing any maintenance functions.

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1. The mechanic primarily assigned to a specific aircraft must be factory schooled or receive other equivalent training within 24 months.

2. All mechanics must receive formal training on human factors, fatigue management, and maintenance error reduction. (See References)

3. A policy is written that grants the mechanic permission without fear of reprisal to decline to perform any maintenance critical to flight safety that he has not been appropriately trained for until an appropriately trained mechanic is available to directly supervise or assist.

4. There must be an annual review of exposure control, medical systems and installations on the aircraft, patient loading and unloading procedures for all mechanics.

5. Training related to the interior modification of the aircraft:

a. Must prepare the mechanic for inspection of the installation as well as the removal and reinstallation of special medical equipment

b. Includes supplemental training on service and maintenance of medical oxygen systems and a policy as to who maintains responsibility for refilling the medical oxygen systems

05.05.02 Staffing – A single mechanic on duty or on call 24 hours a day must be relieved from duty for a period of at least 24 hours during any seven consecutive days, or the equivalent thereof, within any one calendar month. In addition:

1. It is strongly encouraged that mechanics must not be permitted to work more than 14 continuous hours. This includes any duty-related travel time.

2. Following extended maintenance such as 12-14 continuous hours, the mechanic is scheduled for ten hours of uninterrupted rest.

3. 1.5 mechanic full-time equivalents are encouraged for one 24-hour aircraft. For more than one aircraft, staffing must be appropriate to the hours the aircraft are in service, the availability of backup or on-call mechanics, and the number of bases necessitating travel time or an agreement and/or contract be in place for an operator to provide maintenance services in the absence of the operator's maintenance staff.

4. Back-up personnel must be provided to the mechanic during periods of extensive scheduled or unscheduled maintenance or inspection. Complexity of the aircraft and an increased number of flight hours may be considerations for increased mechanic staffing.

05.05.03 Maintenance Facilities

1. The maintenance operation is certificated by the AHJ regulator or meets standards included in 05.05.04 through 05.05.07.

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2. There must be a written policy and procedure to notify flight and medical personnel when the aircraft is out of service or undergoing maintenance and is not available for flight.

3. A hangar or similar-type facility must be available during inclement weather and for the mechanic to perform heavy maintenance. (Heavy maintenance is generally described as removal and installation of any component that requires a lift device or inspections that require five or more hours.)

4. Specific workshop area criteria. Workshop area must be within reasonable proximity to the helipad. A workshop area is defined as an area where a desk, shelves, workbench, and storage are available.

a. Workshop area must be climate-controlled, heated, and cooled, to avoid adverse effects of temperature extremes.

b. Appropriate ventilation will be installed to clear the facility of hazardous fumes (such as those from fuels, solvents, oils, adhesives, and cleaners) common to the aviation environment.

c. Workshop area must be well-lit with the appropriate number of electrical outlets.

d. Floodlights must be available on the helipad—fixed and/or portable. Luminescence level will be equal to the modern office environment.

e. Hand cleaners, disinfectants, and eye wash bottles are to be available.

f. Tools are locked in a secured area when not in use.

g. There is a written policy to address the control of foreign object debris (FOD).

h. There is a tracking system for the mechanic to account for tools and parts after performing maintenance.

h. All consumables must be labelled and have current expiration dates listed on the can, bottle, tube, etc.

i. The use of appropriate maintenance ladder stands/fall protection to provide access to the components on the aircraft without risk to the mechanic or damage to the aircraft is strongly encouraged.

5. Storage of equipment, parts, and tools is orderly and clear of fire hazards and in compliance with national health and safety standards i.e., OSHA and Environmental Protection Agency (EPA) regulations.

6. There is a system to periodically track timed parts and expiration dates on shelf items.

a. All parts are properly tagged and environmentally protected:

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- Parts are wrapped or boxed in a manner that prevents damage or contamination
- Open ends of fabricated and bulk lines and hoses are capped or covered
- Serviceable parts are kept in a separate area from unserviceable parts

b. Parts received are inspected to ensure an approved vendor provided them and that the required certification documentation is provided.

c. Maintenance operation/provider has a Suspected Unapproved Parts System (SUPS) to verify all parts are properly documented, by appropriate means (such as an 8130 form). All parts must be traceable and overhauled or repaired by properly certificated organisations.

7. There is a method to track all deferred maintenance items and coordinate all requirements to support closure.

8. There is a method to track tool calibration status.

a. Tools requiring calibration have documentation or tags on the tools that list the last calibration date and the next due date.

b. If employee-owned tools are permitted on the premises, there is a system to ensure that these tools are currently calibrated.

05.05.04 The certificate holder will have a system in place to track service bulletins and all scheduled inspections as required by its Authority Having Jurisdiction regulations approved maintenance programme. This system will include all Airworthiness Directives (AD) and applicable Instructions for Continued Airworthiness (ICA) or the national equivalent.

05.05.05 If the certificate holder has been issued AHJ regulations specific to maintenance item, then there must be a method to track all deferred maintenance items and coordinate all requirements to support closure, as well as trends tracked to determine repetitive failures.

05.05.06 The certificate holder has a policy and/or programme in place to track and trend maintenance issues such as part failures, items deferred under a MEL, and engine trend data. The programme should contain a process to collect, analyse, and use data collected. Suspected issues should be addressed when determined and appropriate.

05.05.07 Maintenance Distractions – A policy must be written and implemented to reduce the likelihood of interruptions and distractions to the mechanic, such as:

1. The mechanic's phone must have voice mail or messaging.

2. Aircraft tours, public relations events, janitorial services, etc., must be postponed or cancelled if involving the aircraft while maintenance is being performed.

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3. Mechanic's work site (hangar-helipad) must not be used as a gathering place/social area by the flight team while maintenance is being performed.

4. All calls and inquiries regarding the aircraft status will be screened.

05.06.00 FUEL QUALITY AND FUEL SYSTEMS

05.06.01 A policy must require that the pilot or designee stay with the aircraft when refuelling to verify fuel type and quantity received during on-site and off-site refuelling.

05.06.02 On-site refuelling

1. If a certificate holder maintains and operates its own fuel farm, then there must be a written policy that clearly identifies who has responsibility for quality control checks on the fuel system:

    a. Daily, monthly, quarterly, and annual checks are required.

    b. Documentation is consistent with national aviation guidelines or national standards.

    c. If using a vendor's fuel farm, verify QA fuel quality compliance.

2. There is a procedure to ensure the fuel is free of contaminants before dispensing into the aircraft.

3. Procedures clearly demonstrate safe practises and fire prevention considerations at the on-site refuelling facility.

    a. At least one B&C fire extinguisher is located no less than75 feet from the fuel dispensing station.

    b. There is a minimum of one remote fuel shut-off device.

4. There is a policy regarding on-site handling and disposal of waste fuel, oil, and any other hazardous materials.

5. Fuelling equipment shall be located 7.5m) from hangars and fixed fire protection equipment. (Refer to AHJ regulations.)

6. Fuelling equipment shall not hinder or obstruct access to exits or firefighting equipment. (Refer to AHJ regulations.)

7. Any above-ground storage tanks must be 15m from the edge of the final approach and take-off area (FATO). (Refer to AHJ regulations.)

8. The fuel system is approved by AHJ regulations.

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9. If fuel is purchased routinely from a specific Fixed Base Operator (FBO), it is strongly encouraged to request and receive a quarterly fuel quality report from the FBO.

05.07.00 HELIPORTS (see references)

05.07.01 If the programme is the owner of the helipad or for helipads where the programme's helicopter(s) is based, the helipad should (other hospitals should be encouraged to follow the same standards):

1. Be marked as a guide with:

    a. A painted H or similar landing designation

    b. A cross to designate a hospital heliport if appropriate

    c. Maximum size capacity information for all heliports

    d. Maximum weight restriction information for all elevated heliports

2. Be identified by a correctly coloured heliport beacon or strobe. A beacon may not be necessary when the location of the hospital can be readily apparent by the light(s) on a prominent building or landmark near the heliport.

3. Have appropriately coloured TLOF (Touchdown and Lift Off area) or FATO (Final Approach and Take Off area) perimeter lighting set at the appropriate spacing for night operations which do not extend greater than 5cm above the TLOF or FATO horizontal plane, using AHJ guidelines.

4. Have a device to identify wind direction and velocity (i.e., windsock) of the appropriate size and design located in an unobstructed area near the heliport environment which does not constitute a potential strike hazard for helicopters. For night operations the indicator shall be illuminated either externally or internally. A red obstruction light should be incorporated on the wind indicator as dictated by AHJ obstruction standards.

5. Have at least one clear Final Approach and Take Off area (FATO) appropriately sized for the largest design helicopter that will potentially land at the site using AHJ criteria as a guide.

    a. The Touchdown and Lift-off area (TLOF) size (length, width, or diameter) must be:

        • Ground-Based: Equal to the rotor diameter (RD) of the largest design helicopter that will utilise the heliport but not less than 12m and must provide adequate room for patient, staff, and equipment ground movement. The TLOF shall have a non-skid surface that consists of a material that meets AHJ compliance standards

        • Elevated/Rooftop Based: If the FATO outside the TLOF is non-load bearing, increase the minimum width, length, or diameter of the TLOF to the overall length of the largest design helicopter. All elevated TLOFs shall have an appropriately constructed safety net consisting of non-flammable materials as per AHJ criteria

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b. Surface of the TLOF and FATO must be clear of all objects, including parked helicopters.

c. A parking area must be provided if more than one helicopter at a time is to be accommodated at one heliport unless there are provisions made for two separate FATO and TLOF areas of the appropriate size to accommodate two aircraft as indicated in the AHJ criteria.

6. Have at least two unobstructed approach and departure paths that conform to AHJ criteria, oriented to be separated at least 90-135 degrees apart and oriented to take full advantage of the local and prevailing wind conditions.

7. Have adequate fire-retardant chemicals of the correct quantity and type for the largest design helicopter and be readily available and located within the specified distance and location per AHJ criteria. At least one portable fire extinguisher of the correct category and rating shall be provided for each take-off and landing area, parking area, aircraft tug and fuel storage and dispensing areas. All foam fire suppression system pull stations shall be correctly located and marked in a manner to distinguish them from fire alarm pull stations.

8. Heliport is designed so that fuel spills are directed away from access/egress points

9. Heliport has two access points oriented at least 90 degrees apart from one another and with unrestricted access for fire-fighting personnel

10. Smoking is not permitted within 15m of the TLOF edge

11. Heliport signage must include:

a. “No Smoking” signs

b. Heliport warning signs, posted at access/egress points to the helipad

c. High Noise environment signs

d. Eye protection required signs

12. Have a documented and integrated emergency response plan which is practised at least on an annual basis.

13. Have documented, ongoing safety and training programmes for those personnel responsible for loading and unloading patients or working around the helicopter on the helipad which follows the guidance found in AHJ criteria.

a. Annual training includes:

- The emergency response plan

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- Foreign Object Debris (FOD) Identification and elimination procedures
- Operations of the heliport
- Safety procedures around the helicopter
- Communication systems
- Procedures for reporting inoperable equipment
- Operation of the fire protection system and equipment

14. Have evidence of adequate security – a minimum of one person to prevent bystanders from approaching the helicopter as it lands or lifts off, or perimeter security such as non-hazardous fencing, ornamental vegetation, rooftop, etc. A means must exist to monitor the primary helipad if accessible to the public, i.e., through direct visual monitoring or closed-circuit TV (a video recording system is strongly encouraged).

15. There must be a policy to address more than one running aircraft at any one time and a policy to address permission to land or take off from the heliport.

a. Communications policies will include:

- Procedures that coordinate arrivals and departures with referring and receiving hospital heliports—specific contact arrangements are pre-arranged for each frequently used location
- Procedures that coordinate arrivals and departures from hospital heliports with other air medical services in the region
- Staging if more than one aircraft is expected
- Air-to-air communications
- Hosting common frequencies
- Procedures that require communications specialists to ask if more than one aircraft is incoming to the same hospital heliport or scene
- Written agreements with local, regional, or state agencies that incoming aircraft will announce in the blind on a common frequency when operating into hospitals and scenes where no common communication frequency has been pre-established at 10 minutes from ETA, any inbound aircraft must communicate on a commonly agreed-upon frequency

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b. Crew Coordination:

- Strict enforcement of sterile cockpit

- One medical crewmember taking active part in watching for obstructions during the critical stages of flight

- Before departing from a scene or a sending institution, the medical crew and the pilot must discuss any alternative hospitals that they might need to divert to if the patient's condition changes or weather deteriorates along the intended route. The pilot and medical crew are encouraged to pre-program any radios or navigation equipment for this alternative destination to minimise the workload required to effect this change, should the need arise as coordinated with the communications centre.

c. It is strongly encouraged that the programme develops designated landing sites for scene coordination with ground agencies where possible.

16. There is limited distance from the heliport to the hospital (positioned at the closest, safe location) in order to minimise any negative effects on the patient.

a. The stretcher transition area between the heliport and the hospital should be as smooth as allowable with as level a surface as possible while still adhering to AHJ criteria and have minimal spacing for structural seams.

b. Patient monitoring must continue without interruption between the helipad and the hospital.

c. The medical crew is continuously supplied and equipped so that emergent patient interventions can be performed as needed between helipad and hospital.

17. Hearing protection is provided for and used by all personnel who assist with patient rapid loading/unloading.

18. Evidence of a system to communicate changes (construction, additions, obstructions, etc.) to the heliport for users of the primary TLOF must be available and may include a pilot's memo book or a database in the communications centre. A system to record acknowledgement must be in place.

a. There is a system of photos used to familiarise pilots with helipad locations and conditions as a baseline for noting changes in conditions as well as providing a training aid for new pilots.

b. There needs to be approved by the appropriate AHJ regulations for programmes that own or operate their own helipad.

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05.07.02 For Rooftop Helipads

1. The egress points shall be remotely located from each other, not less than 10m apart.

2. The rooftop landing pad surface shall be constructed of approved non-combustible, nonporous materials.

3. Two means of egress from the rooftop landing pad to the building's egress system shall be provided.

4. The egress points shall be located at least 90 degrees from each other as measured from the centre of the landing pad (TLOF).

5. An evacuation plan is in place for helipads where the helicopter is based, and personnel involved in securing, loading, and off-loading are tested through annual drills.

05.07.03 Temporary scene landing sites (see References) must be:

1. Secured

2. Illuminated at the perimeter with handheld floodlights, emergency vehicles or other lighting source that does not constitute a hazard to define the designated landing area at night

3. Free of overhead and/or ground obstructions

4. Free of debris

5. Appropriate to the size of the helicopter

6. As level as possible

7. Landing zone education for the community reflects above standards for temporary scene landing sites

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RW Pilot Experience Worksheet (RWPEW)

Applicant Name: _____ **Base:** _____ **Date:** _____

HAA Experience		
None	0	
1 - 3 years	6	
3 - 5 years	8	
5 - 7 years	10	
7 - 9 years	12	
10+ years	15	

Total Time Powered Aircraft Hours		
2000 - 3000	0	
3001 - 4000	1	
4001 - 5000	2	
5001 - 6000	3	
6001 - 7000	4	
7001+	5	

Helicopter hours flown last 12 months		
0 - 25	0	
26 - 100	1	
101 - 200	2	
201 - 300	3	
301 - 400	4	
400 +	5	

Total-Time Helicopter Hours		
1500 - 2000	0	
2001 - 2500	1	
2501 - 3000	2	
3001 - 4000	3	
4001 -5000	4	
5000+	5	

Civilian Employers Last 10 Years		
6+	0	
5	1	
4	2	
3	3	
2	4	
0 - 1	5	

Total- Helicopter Turbine Hours		
500 - 750	0	
751 - 1000	1	
1001 - 1500	2	
1501 - 2000	3	
2001 - 2500	4	
2500 +	5	

Certificates/Ratings (select highest)		
Helicopter Commercial+ Instrument	0	
Fixed-Wing Commercial+Instrument or ATP	1	
+ Fixed-Wing CFI	2	
Helicopter CFI	3	
Helicopter CFII	4	
Helicopter ATP	5	

Helicopter NVG Hours		
0 - 20	0	
21 -100	1	
101 - 200	2	
201 - 300	3	
301 - 400	4	
400+	5	

Experience: SELECT All that apply		
> 500 hours single pilot	3	
> 200 hours in similar assigned aircraft	3	
Previously SPIFR qualified	3	
Has a degree, AS, or higher	3	
Previous Mountain Experience	3	
Military Instructor Pilot	3	

Helicopter Night Non-NVG Hours		
0 - 100	0	
101 -200	1	
201 - 300	2	
301 - 400	3	
401 - 500	4	
500+	5	

To be considered for a Pilot in Command position the candidate must have a score of at least 25

Total Score 0

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RW Pilot in Command Evaluation Tool

Date	Total Flight Time:		
Crewmember:	Flight Time Make/Model:	Aircraft Make/Model:	

	Pilot Qualifications and Flight Experience	Value	Score		Comments
1	**Total R/W Flight Time > than 1000 Hours**	5			
2	**Total R/W + Tilt Rotor Flight Time > than 1000 Hours**	4			
3	**Actual Instrument Flight Time > 100 hours**	3			
4	Pilot in Command (PIC) flight time (if aircraft to be flown is Single PIC) > than 1000	5			
5	Pilot in Command (PIC) flight time (if aircraft to be flown is two pilot) > than 500	3			
6	Simulated Instrument Flight Time	3			
7	Dual Given as CFI > than 500 hours	3			
8	Dual Given as CFII (if operations involve IFR flying) > than 250 hours	5			
9	Dual Given as MEI (if the aircraft to be flown is a ME) > than 250 hours	3			
10	Flight time in make/model to be operated >500 hours	5			
11	Holds valid Airline Transport Pilot Certificate for category/class to be flown	5			
12	A minimum of 150 hours of prior experience in the type of mission to be comp.	5			
	Flight Training and Education	Value	Score		Comments
13	US Military Pilot Training	5			
14	All pilot training completed IAW 14CFR Part 142	4			
15	College degree in an aviation or science-based curriculum	3			
16	At least one initial and one recurrent course completed in make/model flown in a full motion simulator.	4			
	History	Value			Comments
	No accidents or incidents in the last 7 years	3			
	No pilot deviations, certificate suspensions or revocations	2			
TOTAL OF SECTIONS 1,2, & 3					

Consultation Results:

To be considered for a Pilot in Command position the candidate must have a score of at least 20.

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06.00.00 – FIXED WING STANDARDS

PREFACE – The standards below are as appropriate to the country of residence and the specific aviation regulator of that country as referenced by the term "Authority Having Jurisdiction" (AHJ). However, European Aviation Safety Agency (EASA) is considered the minimal regulations that all other national regulations are measured against. CAMTS Global Accreditation Standards, as a measure of quality, are part of a voluntary process and frequently exceed the AHJ's aviation regulations.

06.01.00 OPERATIONS

06.01.01 Certificate holder must meet all Authority Having Jurisdiction (AHJ) regulations specific to the operations of the medical service in the country of residence, as applicable. This includes an AHJ regulator's Certificate (public service medical transport agencies are included in this requirement) and Ambulance Operations Specifications specific to EMS operations. The transport service demonstrates compliance with the legal requirements and regulations of the AHJ.

06.01.02 All "patient transport flights" * must be conducted under AHJ regulations for weather minimums, flight crew duty time limitations, and weight and balance requirements.

*Patient transport flight is defined as any flight segment conducted by rotor or fixed-wing equipment that is necessary for transporting patients and the medical teams required to care for such patients. Flight segments included in this definition are flights for refuelling and repositioning for specific patient transport (including organ donor transports); picking up and returning medical teams to an assigned base; the actual flight segment involving patient movement; and any time medical teams are on board.

06.01.03 Long Range Flight is defined as a flight requiring a planned tech stop on any patient leg, or in excess of 3 hours measured in time, not distance, because of winds, where there are no alternative capabilities for patient care needs or aviation operations.

International – involving two or more countries: occurring between countries

06.01.04 There is an established written policy to ensure that the pilot is notified of all carry-on baggage and/or equipment for weight and balance considerations (so that carry-on baggage/equipment is weight and placement acceptable).

06.01.05 There is a written policy and outline of passenger safety briefings in accordance with AHJ regulations and/or requirements.

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06.02.00 AIRCRAFT

06.02.01 The aircraft should be a twin-engine or turbine single-engine aircraft appropriate to the mission statement and scope of care of the medical service and listed on the air carrier's Operations Specifications.

06.02.02 Pressurised aircraft with air conditioning are strongly preferred for medical transports. If a sea-level cabin cannot be maintained, a physician familiar with altitude physiology must be consulted or written policies address altitude limits for specific disease processes of the patient to be transported.

06.02.03 Evidence of adequate security at the base of operations – A means must exist to monitor the aircraft (i.e., through direct visual monitoring or closed-circuit TV) or the aircraft must be in a secured location with locked perimeter fencing or hangar available or be located at an airport certificated to operate under AHJ regulations.

06.02.04 Reference Section 03.06.00 Medical Configuration of the Transport Vehicle.

06.03.00 WEATHER AND OPERATING ALTITUDES

06.03.01 VFR or IFR flight plans are filed, or communications centre does flight following with every take-off through post landing.

1. There is a system for obtaining pertinent weather information.

    a. The pilot in command (PIC) is responsible for obtaining weather information according to policy, which must address at a minimum:

        - Routine weather checks
        - Weather checks during marginal conditions
        - Weather trending

2. Communication between pilots, medical personnel, and communication specialists regarding the most current and forecasted weather is part of a formal briefing.

3. Weather Minimums – If flying under VFR weather minimums must meet the applicable national standard or exceed the following:

    a. Visibility requirements

        - If the ceiling is less than 1000 feet (304 metres), visibility must be at least 2 miles

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b. Operating VFR requires that the programme provide flight following according to the criteria listed in 03.10.00

4. Minimum operating altitudes:

a. Day – 1500 feet (457 metres) above the surface or less than 2000 feet (608 metres) horizontally from any obstacle.

b. Night – an altitude less than 1500 feet (457 metres) AGL above the highest obstacle of 5 miles from the course intended to be flown.

06.04.00 PILOTS

06.04.01 Staffing: The pilot must be readily available within a defined call-up time to ensure expeditious and timely response. There must be a written policy describing the availability of pilots.

1. Scheduling practises reflect consideration for minimizing duty-time fatigue, length of shift, number of shifts per week, and day-to-night rotation. The implementation and maintaining of an operator-specific fatigue risk management system (FRMS) based on scientific analysis are strongly encouraged.

a. The certificate holder has a written policy regarding pilots on call with the use of remote paging devices, cell phones, or other electronic communication device. The policy indicates how the use of these devices impacts duty-time limitations.

Examples of evidence to exceed compliance:
Two-pilot operations are required even when the aircraft is legally flown with a single pilot.

2. Physical well-being is promoted by the employer wellness programmes to include but not limited to balanced diet, weight control, and no smoking.

3. Certificate holder's operations facilities must include a quiet area for flight planning, training, record-keeping, and rest.

06.04.02 Pilot determines that the aircraft is in airworthy condition.

1. Prior to the first flight of shift of duty, the pilot:

a. Verifies that maintenance is not due on the aircraft

b. Performs a pre-flight inspection according to the operator's checklist, as approved by the applicable AHJ.

2. A walk-around inspection of the aircraft is performed prior to each take-off.

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06.04.03 The pilot-in-command (PIC) qualifications.

1. Must possess aeroplane flight hours, as outlined in the tables below, prior to assignment with a medical service. If the aircraft is to be operated using a single Pilot in Command, with no Second in Command the following applies:

Cat/Class of Aircraft	Total Flight Exp. (hrs.)	Multi-Engine Exp. (hrs.)	PIC Exp. (hrs.)	Type (hrs.)
Single Engine Turbo-prop	2500	N/A	1000	50
Multi-engine Piston	2500	500	1000	50
Multi-engine Turbo-prop	2500	500	1000	100

2. Must possess aeroplane flight hours as outlined in the table below if the aircraft is to be operated with two fully trained and qualified pilots:

Cat/Class of Aircraft	PIC Total Flight Exp. (hrs.)	Multi-Engine Exp. (hrs.)	PIC Exp. (hrs.)	SIC Total Exp (hrs.)
Single Engine Turbo-prop	2000	N/A	1000	500
Multi-engine Piston	2000	500	1000	500
Multi-engine Turbo-prop	2000	500	1000	750
Multi-engine Turbo-jet	3000	500	1500	750

As an alternative to the flight hours in 06.04.03 1. and 2., a programme may develop and submit a Pilot in Command (PIC) Experience Evaluation Tool. The tool should evaluate a pilot's education, training, and experience to determine if that pilot has the necessary background and experience to be a safe and effective PIC, taking into consideration the programme's operation needs, scope of service, service area, airframe type, operational environment, etc. To be considered as an alternative to meeting the Standard, the programme must submit a CAMTS Global Class Two Report of Change along with the Evaluation Tool. Once accepted, the effectiveness of the tool must be evaluated as part of the programme's quality management process. The tool will be specific to the programme; however, an example that can be used as a starting point can be found in the tables at the end of this section.

3. ATP rating is required within five years of hire.

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4. In aircraft that require two pilots, both pilots must be type-rated for that make and model, and both pilots must hold first-class medical certificates if the certificate holder operates internationally. Both pilots must have training in Crew Resource Management (CRM) or Multi-pilot Crew Coordination (MCC).

5. When operating with two pilots, there should be a policy to avoid a "green on green" situation, where a lower experienced PIC is paired with a lower experienced SIC. The two pilots together must have a minimum combined flight experience of 250 hours in make and model.

Examples of evidence to exceed compliance:
All PICs and SICs are ATP- rated, or both pilots hold a PIC Type Rating for the aircraft being operated.

06.04.04 Pilot training requirements

1. The certificate holder will maintain a nationally approved training programme, as applicable, in accordance with the AHJ. The training programme must contain a procedure for evaluating previous experience and training to determine what specific training a new flight crewmember will require to satisfactorily meet all required training and checking standards. The certificate holder will also have a process in place to properly track experience levels of new PICs that must comply with the higher weather minimums as required by AHJ.

2. Initial training must, at a minimum, consist of the following and be verified by written criteria, outlines, or curriculum. Use of AHJ- approved training devices and simulators along with mission-specific, scenario-based training must be encouraged at initial and recurrent training cycles. Full motion simulator training strongly encouraged for all aircraft.

Examples of evidence to exceed compliance:
All pilots undergo initial and annual scenario-based simulator training.

a. Terrain and weather considerations specific to the programme's geographic area

b. Orientation to the health care provider

c. Orientation to exposure control, medical systems installed on the aircraft and patient loading and unloading procedures and altitude physiology

d. Aeromedical Crew Resource Management (ACRM), consistent with national aviation regulations. Specific content of ACRM training and organisation of topics must reflect an organisation's unique culture and specific needs, such that curriculum topics may include, but not be limited to specific needs, such that curriculum topics may include, but not be limited to:

- Aeronautical Decision Making
  - Information processing

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- Stress and performance
- Task complexity

- Communications Processes and Decision Behaviour
  - Briefings
  - Inquiry/advocacy/assertion
  - Crew self-critique re: decisions and actions
  - Conflict resolution
  - Communications and decision making
- Team Building and Maintenance
  - Leadership/followership/concern for tasks
  - Interpersonal relationships/group climate
- Workload Management and Situation Awareness
  - Preparation/planning/vigilance
  - Workload distribution/distraction avoidance
  - Individual factors/stress reduction

e. Training in exposure control, medical systems, and installations on the aircraft, patient loading and unloading procedures

f. Minimum requirements for specific training in aircraft type:

- 25 hours in specific make and model of aircraft before flying as PIC on patient missions or completion of an established training programme for the specific make and model aircraft and the successful completion of the check ride

3. Annual recurrent training to minimally include the following and verified by written criteria, outlines, or curriculum:

a. Instrument proficiency check as required by AHJ aviation regulations for operations that conduct IFR flights

b. Annual review of exposure control, medical systems installed on the aircraft, and patient loading and unloading procedures.

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c. Aeromedical Crew Resource Management (ACRM) consistent with Authority Having Jurisdiction regulation. Specific content of ACRM training and organisation of topics must reflect an organisation's unique culture and specific needs, such that curriculum topics may include, but not be limited to:

- Aeronautical Decision Making
  - Information processing
  - Stress and performance
  - Task Complexity
- Communications Processes and Decision Behaviour
  - Briefings
  - Inquiry/advocacy/assertion
  - Crew self-critique re: decisions and actions
  - Conflict resolution
  - Communications and decision making
- Team Building and Maintenance
  - Leadership/followership/concern for tasks
  - Interpersonal relationships/group climate
- Workload Management and Situation Awareness
  - Preparation/planning/vigilance
  - Workload distribution/distraction avoidance
  - Individual factors/stress reduction

4. The certificate holder must have a policy or procedure to address proficiency. This is in reference to pilots who are on duty but have not flown recently due to weather or call volume.

06.04.05 A planned and structured orientation must be provided to the relief pilot with criteria to be based on the mission statement. The relief pilot must have the same qualifications and limitations as a new pilot.

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1. The orientation must, at a minimum, contain:

    a. Role responsibilities

    b. Area, weather, terrain, aircraft, and programme-specific orientation

2. Currency must be determined prior to the beginning of operations, and there is a risk assessment tool to identify the risks at a specific base such as area and terrain, weather, and programme-specific idiosyncrasies.

06.05.00 MAINTENANCE

06.05.01 The mechanic primarily assigned to a specific aircraft must possess a minimum of two years of aeroplane experience as a certified airframe and power plant mechanic prior to assignment with a medical service, or, in the case of a repair station, the Maintenance Repair Organization (MRO) will hold an AHJ-issued certificate, or the national equivalent, and hold the ratings and/or limitations within its Operations Specifications for the make/model for which it is performing scheduled maintenance upon.

1. The primary mechanic performing scheduled maintenance to a specific aircraft must be factory schooled or equivalent in an approved programme on the type-specific airframe, the power plant, and all related systems within 18 months of employment by the operator.

2. All mechanics must receive formal training on human factors and maintenance error reduction. (See References)

3. If not working for a maintenance organisation certificated AHJ or national equivalent, there is a written policy that grants the mechanic permission, without fear of reprisal, to decline from performing any maintenance critical to flight safety that he has not been appropriately trained for until an appropriately trained mechanic is available to directly supervise.

4. There is an annual review of exposure control, medical systems, and installations on the aircraft, patient loading, and unloading procedures for all mechanics.

5. There will be at least one technician or MRO available for each service with formal training on the aircraft electrical system and formal training on avionics.

6. Training related to the interior modifications of the aircraft:

    a. Training must prepare the mechanic for inspection of the installation as well as the removal and reinstallation of special medical equipment.

    b. There is supplemental training on service and maintenance of medical oxygen systems and a policy as to who maintains responsibility for refilling the medical oxygen system.

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06.05.02 A single mechanic on duty or on call 24 hours a day must be relieved from duty for a period of at least 24 hours during any seven consecutive days, or the equivalent thereof, within any one calendar month. In addition:

1. It is strongly encouraged that mechanics must not be permitted to work more than 14 continuous hours.

2. Following extended maintenance, such as 12-14 continuous hours, it is strongly recommended that a mechanic must be scheduled for 10 hours of uninterrupted rest.

3. For more than one aircraft, maintenance staffing must be appropriate to the hours the aircraft are in service, the complexity of the aircraft, and the number of bases necessitating travel time. Backup personnel must be provided to the mechanic during periods of extensive scheduled or unscheduled maintenance or inspection, or an agreement and/or contract should be in place for a vendor to provide maintenance services in the absence of the operator's maintenance staff.

06.05.03 Maintenance facilities:

1. The maintenance operation is certificated under AHJ OR meets standards 06.05.04 through 06.05.07.

2. There must be a mechanism/procedure for alerting flight and medical personnel when the aircraft is not airworthy.

3. The maintenance facilities are large enough to accommodate the aircraft, adequately lighted, and properly equipped for required maintenance.

4. Specific workshop area criteria:

a. Workshop area must be in close proximity to the hangar. A workshop area is defined as an area where a desk, shelves, workbench, storage, and telephone are available.

b. Workshop area must be climate controlled (heated and cooled) to avoid adverse effects of temperature extremes.

c. There is appropriate ventilation to clear the facility of hazardous fumes (such as fuels, solvents, oils, adhesives, and cleaners) common to the aviation environment.

d. Work area must be well-lit with the appropriate number of electrical outlets.

e. Floodlights must be available in the hangar or on the tarmac, fixed and/or portable. Luminescence level will be equal to the modern office environment.

f. Hand cleaners, disinfectants, and eye wash bottles must be available.

g. Tools are locked in a secured area when not in use.

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- There is a policy to address the control of foreign object debris (FOD)
- There is a tracking system for the mechanic to account for all of the tools and parts, after performing maintenance

5. Storage of equipment, parts, and tools is orderly and clear of fire hazards and in compliance with national regulations.

6. There is a system to periodically track timed parts and expiration dates on shelf items.

a. All parts are properly tagged and environmentally protected.

- Parts are wrapped or boxed in a manner that prevents damage or contamination
- Open ends of fabricated and bulk lines and hoses are capped or covered
- Serviceable parts are kept in a separate area from unserviceable parts
- All consumables must be labelled and have current expiration dates listed on the can, bottle, tube, etc.

b. Parts received are inspected to ensure an approved vendor provided them and that the required certification documentation is provided.

c. Maintenance operation/provider has a Suspected Unapproved Parts System (SUPS) to verify all parts are properly documented, by appropriate means such as an 8130 form. All parts must be traceable and overhauled or repaired by properly certificated organisations.

7. There is a method to track tool calibration status.

a. Tools requiring calibration have documentation or tags on the tools that list the last calibration date and the next due date.

b. If employee-owned tools are permitted on the premises, there is a system to ensure that these tools are currently calibrated.

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06.05.04 The certificate holder will have a system in place to track all scheduled inspections as required by its Authority Having Jurisdiction regulations approved maintenance programme. This system will include all Airworthiness Directives (AD) and applicable Instructions for Continued Airworthiness (ICA) or the AHJ equivalent.

06.05.05 If the certificate holder has been issued AHJ regulations specific to maintenance item, then there must be a method to track all deferred maintenance items and coordinate all requirements to support closure, as well as trends tracked to determine repetitive failures.

06.05.06 The certificate holder has a policy and/or programme in place to track and trend maintenance issues such as part failures, items deferred under a MEL, and engine trend data. The programme should

contain a process to collect, analyse, and use data collected. Suspected issues should be addressed when determined and appropriate.

06.05.07 Policy must be written and implemented to reduce the likelihood of interruptions and distractions to the mechanic, such as:

1. The mechanic's phone must have voice mail or messaging.

2. Aircraft tours, public relations events, janitorial services, etc., must be postponed if they involve the aircraft while maintenance is being performed.

3. Mechanic's work site (hangar) must not be used as a gathering place/social area by the flight team while maintenance is being performed.

4. All calls and inquiries regarding the aircraft status will be screened.

06.06.00 FUEL QUALITY AND FUEL SYSTEM

06.06.01 A policy requires that the pilot or designee stay with the aircraft when refuelling to verify fuel type and quantity dispensed when refuelling at any location.

06.06.02 On-site refuelling

1. If a certificate holder maintains and operates its own fuel farm, then there must be a written policy that clearly identifies who has responsibility for quality control checks on the fuel system.

   a. Daily, monthly, quarterly, and annual checks are required.

   b. Documentation is consistent with national aviation guidelines.

   c. If using a vendor's fuel farm, verify QA fuel quality compliance.

2. There is a procedure to ensure the fuel is free of contaminants before dispensing into the aircraft.

3. Procedures clearly demonstrate safe practises and fire prevention considerations at the on-site refuelling facility.

   a. At least one B&C fire extinguisher is located no less than 75 feet from the fuel dispensing station.

   b. There is a minimum of one remote fuel shut-off device.

4. There is a policy regarding on-site handling and disposal of waste fuel, oil, and any other hazardous materials.

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5. Fuelling equipment shall be located 7.5m from hangars and fixed fire protection equipment according to AHJ.

6. Fuelling equipment shall not hinder or obstruct access to exits or firefighting equipment (AHJ regulations).

7. Any above-ground storage tanks must be 15m from the edge of the FATO (applicable AHJ regulations).

8. The fuel system is approved by the AHJ regulations.

06.06.03. If fuel is purchased routinely from a specific FBO, it is strongly encouraged to request and receive a quarterly fuel quality report from the FBO.

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FW Pilot Experience Worksheet (FWPEW)

Applicant Name: **Base:** **Date:**

FW Air Ambulance Experience		
None	0	
1 - 3 years	4	
3 - 5 years	6	
5 - 7 years	8	
7 - 9 years	10	
10+ years	12	

Fixed Wing hours flown last 12 months		
0 - 25	0	
26 - 100	1	
101 - 200	2	
201 - 300	3	
301 - 400	4	
400 +	5	

Civilian Employers Last 10 Years		
6+	0	
5	1	
4	2	
3	3	
2	4	
0 - 1	5	

Certificates/Ratings (select highest)		
Fixed Wing Commercial+ Instrument	0	
Fixed Wing CFI	1	
Fixed Wing CFII	2	
Type Rating in any Aircraft	3	
Fixed Wing ATP	4	

Additional Experience: SELECT All that apply		
Previous Initial at Part 142 Sim School	3	
Previous Recurrent at Part 142 Sim Facility	3	
> 200 hours in similar assigned aircraft	3	
Has a degree, AS or higher	3	
Previous International Experience	3	
Military Pilot	3	

Total Score	0

To be considered for a Pilot in Command position the candidate must have a score of at least 25

Total-Time Fixed Wing Hours		
1500 - 2000	0	
2001 - 2500	1	
2501 - 3000	2	
3001 - 4000	3	
4001 -5000	4	
5000+	5	

For Single Pilot Assignment - Total Time SP Hours in IFR operation (An operation as a corporate 91, 135, or 121 with IFR capable operations. Not VFR only SP operations.)		
0 - 100	0	
101 - 200	1	
201 - 300	2	
301 - 400	3	
400 - 500	4	
500 +	5	

For Crew Pilot Assignments - Total Time in two Pilot Crew Environment		
0 - 100	0	
101 - 200	1	
201 - 300	2	
301 - 400	3	
400 - 500	4	
500 +	5	

Total- Fixed Wing Turbine Hours		
0 - 250	0	
251 - 500	1	
501 - 750	2	
751 - 1000	3	
1001 - 1250	4	
1250 +	5	

FW Previous Part 135/121 Experience		
None	0	
1 - 2 years	1	
3 - 4 years	2	
5 - 6 years	3	
7 - 8 years	4	
9 - 10 years	5	

Fixed Wing Night Hours		
0 - 100	0	
101 -200	1	
201 - 300	2	
301 - 400	3	
401 - 500	4	
500+	5	

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FW Pilot in Command Evaluation Tool

Date:	Total Flight Time:				
Crewmember:	Flight Time Make/Model:	Aircraft Make/Model:			
Pilot Qualifications and Flight Experience		Value	Score		Comments
1	**Total Flight Time > than 1500 Hours**	5			
2	**Actual Instrument Flight Time > 150 hours**	3			
3	Pilot in Command (PIC) flight time (if aircraft to be flown is Single PIC) > than 1200	5			
4	Pilot in Command (PIC) flight time (if aircraft to be flown is two pilot) > than 250	3			
5	Simulated Instrument Flight Time	3			
6	Dual Given as CFI > than 500 hours	3			
7	Dual Given as CFII (if operations involve IFR flying) > than 250 hours	5			
8	Dual Given as MEI (if the aircraft to be flown is a ME) > than 250 hours	3			
9	Flight time in make/model to be operated >150 hours	5			
10	Holds valid Airline Transport Pilot Certificate for category/class to be flown	5			
11	A minimum of 150 hours of prior experience in the type of mission to be comp.	5			
Flight Training and Education		Value	Score		Comments
12	US Military Pilot Training	5			
13	All pilot training completed IAW 14CFR Part 142	4			
14	College degree in an aviation or science-based curriculum	3			
15	At least one initial and one recurrent course completed in make/model flown in a full motion simulator.	4			
History		Value			Comments
	No accidents or incidents in the last 7 years	3			
	No pilot deviations, certificate suspensions or revocations	2			
TOTAL OF SECTIONS 1,2, & 3					
Consultation Results:					

To be considered for a Pilot in Command position the candidate must have a score of at least 20.

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07.00.00 – SURFACE STANDARDS

PREFACE – The term “ambulance” in this section refers only to ground ambulance being used for patient care and transport. The term “surface vehicle” refers to all vehicles that are not helicopters or aeroplanes such as ground ambulance, boat, snowmobile, all-terrain vehicle (ATV), etc. The standards apply to all such vehicles as appropriate to the type of service and limitations of the actual vehicle. Highly specialised vehicles may not meet all the standards, and the CAMTS Global Board will take that into consideration as part of any accreditation decisions. All other standards still apply.

The standards below are as appropriate to the country of residence and the specific regulator of that country as referenced by the term “Authority Having Jurisdiction” (AHJ). CAMTS Global Accreditation Standards, as a measure of quality, are part of a voluntary process and frequently exceed the AHJ’s regulations.

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07.01.00 OPERATIONS

07.01.01 The surface vehicle will be licenced in accordance with the applicable authority having jurisdiction (AHJ) laws.

07.01.02 There is a written policy that addresses speed limitations and all aspects of traffic law compliance that pertain to ambulance operations.

07.01.03 There is a written policy that describes the appropriate use of operating with lights and sirens. The policy includes who can initiate use and under what circumstances, such as only when time is critical to the patient’s outcome. The ambulance must come to a complete stop at intersections as appropriate (where the traffic light is red or there is a stop sign) including when operating with lights and sirens. Transports using red lights and sirens are tracked and trended in the QM process (see Quality sections of 02.01.07).

07.01.04 There is a written policy that addresses a procedure to follow when the ambulance comes upon an accident scene. Policy must be consistent with state regulations.

07.01.05 There is a written policy that outlines a procedure to follow when the surface vehicle is involved in an accident with damage and/or injuries.

07.01.06 There is a written policy outlining the procedure for a mandatory drug test of the surface vehicle operator after any accident.

07.01.07 There is a written policy outlining the procedure to follow when the surface vehicle breaks down.

07.01.08 There is a written policy dealing with safety aspects of operating a vehicle:

1. Vehicle operator duty and rest time.

2. Inclement weather and responsibility for aborting the transport if there is a safety concern.

3. Driving and operator records (speeding and other traffic violations) are reviewed by management minimally on an annual basis.

07.01.09 The transport service will know the capabilities and resources of receiving facilities and will transport patients to appropriate facilities within the service region based on direct referral, approved EMS plan, or services available when no direction is given.

1. State licence for each surface vehicle is accessible as appropriate to state, local, or national guidelines.

2. If mutual aid relationships are developed the following apply:

a. The service has written agreements specifying the circumstances under which mutual aid would be used.

b. A mutual aid agreement addresses reciprocity, liability, cost-sharing/billing issues, hours of operation, phone number, and access procedure.

3. Contracts with municipalities indicate realistic response times.

4. The medical transport service must be integrated with and communicate with other public safety agencies. This may include participation in regional quality improvement reviews, regional disaster planning, and mass casualty incident drills.

5. The transport service demonstrates compliance with the legal requirements and regulations of all local, state and federal agencies under whose authority it operates.

6. The transport service demonstrates environmental integration with the local community with "drive-friendly" procedures.

07.01.10 A ground service that does not accept or advertise requests for ground transport but is strictly available to transport flight crews when the aircraft is out of service is not considered a dedicated ground service and is not required to be included in the accreditation application. However, the following must be present to ensure a safe and appropriate flight line and air-to-ground transfer.

a. There is a checklist to verify onboard equipment is in working order and oxygen is sufficient for the length of the transport.

b. Stretcher can be secured in a locked position to prevent movement during transport.

c. Seatbelts are required for operator and attendants.

d. Operator uses lights and sirens only when requested by the clinical crew.

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e. Operator uses a hands-free communication system. Texting is prohibited while the ambulance is in motion.

f. Ground ambulance EMS licence by State or AHJ is provided.

g. EVOC or equivalent training is required initially and at least every two years for vehicle operators.

Examples of evidence to meet compliance;
Licences to operate each ambulance are available and current.

07.02.00 SURFACE VEHICLE

07.02.01 Ground ambulances must meet national or local licensure requirements that were in place at the time the vehicle was built.

07.02.02 The surface vehicle must have adequate interior lighting equipment to ensure complete observation of the patient and monitoring equipment used on the patient.

07.02.03 The surface vehicle must have the capability of shielding the cab from light in the passenger compartment during nighttime use.

07.02.04 Inside of the surface vehicle must be capable of maintaining temperature ranges to prevent adverse effects on the patient and crew. The temperature must be between 20C-25C. There is a procedure to monitor inside cabin temperatures.

07.02.05 The ambulance must have a fuel capacity to provide no less than a 280km range.

07.02.06 The ambulance must have ground clearance of at least 15 cm at gross ambulance mass.

07.02.07 The ambulance must be able to fully perform at ambient temperatures minus 30C – 50C degrees.

07.02.08 The ambulance must be marked clearly to show the name of the service in letters not less than 7.5cm high and to allow identification of the service from the sides and rear of the ambulance.

07.02.09 Lights and sirens: *If not regulated by the AHJ with greater minimum values.*

1. The ambulance must be equipped with a siren capable of emitting sound that is audible under normal conditions from a distance of not less than 150m.

2. The ambulance must have at least one light capable of displaying blue or red light (depending on the country's regulation) with a 360-degree capacity or strobe lights that are visible under normal atmospheric conditions from a distance of 150m from the front of the ambulance.

07.02.10 The ambulance is equipped with road hazard equipment to be used in the event of a breakdown.

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1. Road hazard equipment must minimally include:

    a. Flashlight

    b. Road marking device—cones, flares, or triangles for example

    c. Tools, wrench, screwdriver, hammer

    d. Leather, heavy-duty gloves

    e. Reflective vests

    f. Equipment for dealing with snow as appropriate to the environment

07.02.11 Rescue equipment is on the surface vehicle according to AHJ requirement.

07.02.12 There is a means of communication other than a cell phone between:

1. The surface vehicle operator position and patient compartment.

2. The surface vehicle and medical control.

3. The surface vehicle and public safety agencies.

07.02.13 Radio frequencies are consistent with the state EMS radio communications plans.

07.02.14 There is a public address amplifier with two exterior-mounted speakers on the ambulance:

1. There is a power output of at least 45 watts.

2. The amplifier is independent of the mobile radio unit.

07.02.15 A policy prohibits mobile phone or other communications devices <u>without an acceptable integrated hands-free system</u> to be used while the ambulance is in motion or while refuelling except for vital communications or as compliant with AHJ regulations. Texting is strictly prohibited.

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07.03.00 WEATHER

07.03.01 There must be a written policy addressing weather/environmental conditions that prohibit transport, in such cases as zero/zero visibility, high winds, weather advisories, and highway patrol road closures.

07.04.00 VEHICLE OPERATOR

07.04.01 All persons who drive the ambulance must be at a minimum certified as an Emergency Medical Technician (EMT) or have equivalent training.

07.04.02 Surface vehicle operator must have a minimum of 2 years experience as a licenced driver,

07.04.03 Ambulance operators are required to complete a defensive driving training programme that is developed by the provider or outside agency. The training must include an emergency response driving course that consists of at least 4 hours of reviewed ambulance driving under emergency conditions.

07.04.04 Operators of boats or other surface vehicles must demonstrate completion of initial training.

07.04.05 The emergency response driving course must be repeated for each surface vehicle operator at least every 2 years or more frequently if involved in an "at fault" accident.

07.04.06 Surface vehicle co-pilot responsibilities and duties:

1. Surface Vehicle co-pilot will have assigned duties to support the vehicle operator

    a. In navigation – setting/verifying GPS input

    b. Lights and sirens response

    c. Monitoring vehicle operator fatigue/impairment – the vehicle co-pilot is expected to stay alert on all legs of the transport

    d. Mobile phone and computer use not essential to transports are prohibited

07.04.07 Staffing

The service must have written operational policies to address each of the areas listed below:

07.04.08 Scheduling and individual work schedules demonstrate strategies to minimise duty-time fatigue, length of shift, number of shifts per week and day-to-night rotation. (See References for circadian rhythm, Fatigue Risk Management System (FRMS), and other fatigue studies.)

1. The following criteria must be met for shifts scheduled more than 12 hours. Shifts of 12 hours or less are strongly encouraged.

    a. Vehicle operators are not required to routinely perform any duties beyond those associated with the transport service.

    b. Vehicle operators are provided with access to and permission for uninterrupted rest after daily medical personnel duties are met.

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c. The physical base of operations includes an appropriate place for uninterrupted rest.

d. Vehicle operators must have the right to call “time out” and be granted a reasonable rest period if the team member (or fellow team member) determines that he or she is unfit or unsafe to continue duty, no matter what the shift length. There must be no adverse personnel action or undue pressure to continue in this circumstance.

e. Management must monitor transport volumes and personnel’s use of a “time out” policy.

f. A fatigue-risk management system is utilised.

07.05.00 VEHICLE MAINTENANCE

07.05.01 Each vehicle must be maintained in full operating condition and in good repair, and documentation of maintenance must be kept on file. In addition, there must be a regular documented preventive maintenance programme in accordance with the requirements of the manufacturer and other regulatory agencies.

1. There are documented daily checks of the vehicle for damages and equipment failure.

2. Major fluid and tire pressure checks are completed twice a week at a minimum for surface vehicle.

07.05.02 There must be no evidence of damage penetrating the body of the surface vehicle ambulance or holes that may allow exhaust gases to enter the patient compartment.

07.05.03 The interior of the surface vehicle, including all storage areas, must be kept clean in compliance with OSHA (or equivalent) standards, that is free of dirt, grease, and other biohazardous or noxious matter.

07.05.04 The surface vehicle must be cleaned after each patient transport as appropriate. All interior surfaces in the vehicle and medical equipment surfaces that came in contact with the patient must be immediately cleaned and disinfected or disposed of in a secure biohazard container.

07.05.05 The mechanic must have experience as a certified mechanic in a shop environment or the maintenance must be done at a certified shop specific for the make and model of the surface vehicle.

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SECOND EDITION MEDICAL ESCORT STANDARDS

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ME 01.00.00 - MEDICAL ESCORT MANAGEMENT & STAFFING

ME 01.01.00 MISSION STATEMENT AND SCOPE OF CARE

ME 01.01.01 There is a Mission Statement written in the present tense that describes the purpose of the service, mode(s) of transport provided, and its constituents. The Mission Statement directs employees toward the values the service was founded upon.

ME 01.01.02 There is a written scope of care that describes the types of patients accepted. The scope of care is commensurate with the qualifications and level of initial and ongoing education required for medical personnel.

The Scope of Care should address, as applicable to the programme, patient populations served, age groups and their definition**,** modes of service provided (such as commercial airline, charter, ground ambulance, ferry, etc.) response time, number of patients transported simultaneously and any exceptions to types of requests that are accepted.

Examples of evidence to meet compliance:
The Mission Statement describes what you do. The scope of care describes what type of services you perform, what patients you transport and what type of medical teams you provide, etc. Both are clear, concise, and understood by all. The vision and mission are strategic statements developed by and unique to each organisation. Values statements are separate but key underpinnings of these statements.

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ME 01.02.00 FINANCIAL COMMITMENT

ME 01.02.01 There must be evidence of financial commitment to the programme by the administrative structure and through financial resources that support excellence in patient care and safety.

ME 01.02.02 Insurance - The transport service must have and maintain insurance against loss or damage of the kinds customarily insured against and in such types and amounts as are customarily carried under similar circumstances by similar businesses. The insurers must be financially sound and reputable, and they must be qualified to do business in the state(s) or country in which the transport service is located. The types of insurance must include but are not limited to the following:

1. Medical malpractice and/or Error and Omissions (Organisations who have medical directors and staff who are not providing direct patient care may have coverage under Errors and Omissions rather than medical malpractice.)

2. Worker's compensation – follow State or equivalent government guidelines

3. Travel and repatriation insurance whether paid for by employer or employee

ME 01.03.00 MARKETING AND EDUCATION FOR THE PUBLIC

ME 01.03.01 Transport requests for a medical escort are accepted from authorized personnel with sensitivity to cultural differences and without discrimination due to race, creed, sex, colour, age, religion, national origin, ancestry, or disability.

ME 01.03.02 There is printed and/or website information that is accurate and consistent with the programme's practices and capabilities that includes:

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

2. Capabilities of medical transport personnel including current scope of care listing types of patients that are accepted based on personnel training, configuration, and equipment capabilities

3. Specific availability on mode of transport (commercial airlines, train, ground ambulance, cruise ship, etc.)

4. Coverage area for the transport service

5. Preparation and stabilization of the patient

6. Patients considered appropriate for transport by the medical transport service - an appropriate transport enhances patient outcome, safety, and cost-effectiveness over other modes of transport

Examples of evidence to meet compliance:
Marketing materials are up to date, consistent with mission and scope, and do not exaggerate the scope of care or personnel capabilities.

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ME 01.04.00 ETHICAL BUSINESS PRACTICES

ME 01.04.01 The transport service develops and demonstrates use of a written code of ethical conduct in all areas of business that demonstrates ethical practices in business, marketing, and professional conduct.

1. The code of conduct guides the service when confronted with potential compliance or ethical issues.

2. The code of conduct outlines the service's standards for ethical behaviour as well as contact information and reporting protocols if a standard has been violated.

3. The code of conduct outlines ethical billing practices.

4. Upon request, for elective and/or non-emergent transports, the programme provides a patient, patient family member, or third-party payor with a timely written, honest best estimate of the total cost of the patient transport.

5. There is a policy that governs taking photos and use of photos regarding privacy.

ME 01.04.02 The Board of Directors, administrative and management staff completes an annual conflict of interest statement or form, disclosing any actual or potential conflicts.

Examples of Evidence to Meet Compliance:
Policies may address such issues as proper/improper behaviour toward other programmes' marketing materials, honesty in reporting data, personal cell phone use, use of social media sites, how ethical issues are addressed, conflicts of interest, phone etiquette, acceptable and unacceptable behaviours on the worksite/on transport, acceptance of gifts from patients/vendors, etc.

ME 01.05.00 COMPLIANCE

There is a corporate compliance officer or designated person responsible for ensuring that the service is in compliance with external laws and regulations, payer requirements, and internal policies and procedures.

ME 01.05.01 Compliance issues may include but are not limited to and must be included in formal education to the staff:

1. General Data Protection Regulations (GDPR)* or other national regulations.

2. Balanced Budget Act of 1997*
* (See References)

ME 01.05.02 The compliance programme includes:

1. Written policies and procedures

2. Designation of a compliance officer or assignment of responsibility to a specific individual or individuals

3. Conducting effective training and education for staff with documented initial and ongoing competency

4. Developing effective lines of communication

5. Enforcing standards through well-published disciplinary guidelines

6. Auditing and monitoring

7. Responding to detected offences and developing corrective action

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Examples of Evidence to Meet Compliance:
Staff is knowledgeable about current compliance issues.

ME 01.06.00 MANAGEMENT/POLICIES

ME 01.06.01 There is a well-defined line of authority.

1. There is a clear reporting mechanism to upper-level management. An organisational chart defines how the medical transport service fits into the governing/sponsoring institution, agency, or corporation.

2. A policy should be in place that documents the employer's disciplinary process and protects employees from capricious actions.

3. Management demonstrates strategic planning that aligns with the mission, vision, and values of the service.

4. Management sets written guidelines for press-related issues and marketing activities.

ME 01.06.02 Written policies and procedures indicate what therapies can be performed without online medical direction.

ME 01.06.03 The programme adheres to state/provincial, national, and/or local rules and regulations including licensure requirements.

ME 01.06.04 Policies address:

1. Preparation for transport based on an available patient report, anticipated needs, patient position/location in the vehicle, and distance of transport (including international transports) to appropriately assess staffing, equipment, and supplies needs.

2. Preparation of medical team according to destinations/stops for climate and food consumption safety as appropriate.

3. Preparation of accompanying passengers including baggage and required travel documents

4. Response to requests to attend to other passenger's medical issues, and as applicable, when there is no flight attendant to watch the medical escort's patient

5. Use of AED for patient or another passenger if requested to assist during transport

6. Transport and storage of controlled substances

7. Prevention of DVT (deep venous thrombosis) on extended fixed-wing transports

8. Obtaining additional medications and/or supplies in the event of cancelled transports/delays

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9. Discharge instructions for patients

10. Facilitation of patient to proper healthcare disposition – home, hospital, rehabilitation, etc.

11. Criteria for patients that can be safely transported by medical escort

12. Contingency plans if patient's condition deteriorates

ME 01.06.05 There is a readily accessible resource for translation of foreign medications.

ME 01.06.06 Policies should include a plan of action if upon patient pick-up, the patient is inappropriate for medical escort or equipment/supplies are inadequate.

ME 01.06.07 A policy manual is available to all personnel.

1. Policies are dated and signed by the appropriate manager(s).

2. Operational policies are reviewed on a biennial basis as verified by dated manager's signature on a cover sheet or on respective policies.

3. A policy addresses pre-employment (whether or not it is required) drug screening.

4. A policy addresses pre-employment background checks that include, at a minimum, criminal background, license verification, previous employer, and any government sanctions (such as Office of Inspector General, Office of Foreign Assets Control, and Systems for Award Management Process.

5. A policy addresses procedure for employee terminations that ensures protection of programme information, physical and electronic data, property, and security. This may include securing the individual's badge/keys/other access devices, inactivating e-mail accounts/computer sign-on/remote access/codes, remaining with employee until employee leaves premises, inspecting items employee takes with them, prompt notification of relevant departments/vendors/contractors, procural of programme property the employee may have off-site, etc.

<u>Examples of Evidence to Exceed Compliance:</u>
Management is educated to Just Culture and applies Just Culture principles throughout the organisation.

ME 01.07.00 STAFFING

The service should have operational policies to address each area listed below.

ME 01.07.01 On-call policies demonstrate strategies to minimize duty-time fatigue, length of shift, number of shifts in a row, and day-to-night rotation. (See References for circadian rhythm, Fatigue Risk Management System (FRMS), and other fatigue studies.)

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ME 01.07.02 Policies address minimum rest/duty time requirements that are international or involve overnight stays.

ME 01.07.03 Duty and rest time for international trips and trips exceeding duty time is monitored by management.

ME 01.07.04 Policies address duty status affected by commercial airline restrictions and transports before/after medical escort's other employment.

ME 01.07.05 Staffing must be commensurate with the patient care needs or potential patient care needs during the entire transport.

ME 01.07.06 Policies for long-range transports address rest during transport after patient is at the destination and acceptance of another mission. Medical personnel must have 10 hours free from all company-assigned duties before accepting another mission or the provider must be swapped out.

Examples of Evidence to Meet Compliance:
Management monitors fatigue in terms of staffing patterns, patient outcomes, and incidents or accidents.

ME 01.08.00 PHYSICAL WELL-BEING

ME 01.08.01 Physical and psychological/emotional well-being is promoted through:

1. Safe travel practises – travel plans are pre-arranged, and attendants have alternative options for hotels, ground transport, etc. in the event plans fail and have resources to contact

2. Pre-employment and annual professional health assessment.

3. Resources to promote psychological and emotional well-being such as suicide prevention training, trained peer support team, and employee assistance programmes (strongly encouraged).

4. A policy addresses the potential for medical care of the crew with illness/injury outside of the U.S.

5. Evidence of an injury prevention programme and ergonomic strategies to reduce employee injuries

6. Protective clothing and dress code pertinent to travel and destination

7. Exposure control - dress codes address jewellery, hair, and other personal items of medical personnel that may interfere with patient care

8. Written policies addressing:

    a. Duty status during pregnancy

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b. Duty status during acute illnesses such as sinusitis or otitis

c. Duty status while taking medications that may cause drowsiness

Examples of Evidence to Meet Compliance:
Personnel are knowledgeable about policies regarding physical well-being and their programme's dress code.

ME 01.09.00 MEETINGS/RECORDS

ME 01.09.01 There are formal, periodic staff meetings for which minutes are kept on file and accessible for reference.

1. All meeting minutes (Staff, Safety, QM, etc.) are kept on file and include the following:

    a. Date and time of the meeting

    b. Base identification (if multiple bases)

    c. Meeting type (Staff, Safety, QM, etc.)

    d. List of those in attendance by both name and title or function (i.e., Director, RN, EMT-P, RRT)

    e. Name of the person presiding

    f. Discussions (versus agenda/topic headings)

    g. Assignments and responsibilities for open issues

    h. Progress reports on open issues

    i. Clear identification that an issue has been resolved (loop closure)

2. There are defined methods, such as a staff notebook or electric mechanism, for disseminating information to all staff members between meetings.

Examples of Evidence to Meet Compliance:
Meeting minutes indicate attendance and representation by all disciplines. Action items, timelines, and area of responsibility are well documented and demonstrate a flow of information that indicates tracking, trending, and loop closure.

ME 01.09.02 Management ensures that patient care records and policies and procedures are stored according to hospital or agency policies and GDPR or privacy regulations and are indicative of the individual medical escort service's sensitivity to patient confidentiality.

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1. A record of patient care is completed, and a copy remains at the receiving facility or with a family member for appropriate continuity of care. If a copy of the patient's record is retained by the medical escort – there is a policy that defines proper storage of the records and a defined time frame to return a copy to the transport service corporate office.

a. A policy outlines minimum requirements for items to be documented in the patient care records that include:

- Vital signs requirements and frequency
- Reason for the medical escort services
- History including list of patient's allergies, medications, and dietary needs
- Treatments, medications, and patient's response to treatments and medications
- Transport facilities (to and from) and to whom report was given at the receiving facility as applicable
- Time zone(s) to be used in documentation
- Consent that informs patient of risks, benefits, and limitations
- Copy of Do Not Resuscitate (DNR), Limitation of Therapy Agreement (LOTA) orders or equivalent, as applicable

b. A stored permanent electronic patient care record is strongly encouraged

Examples of Evidence to Meet Compliance:

Patient records are signed and initialled by the crew member who performed the treatment or procedure. Records are stored in a secure area that is inaccessible to the public with accessibility limited according to applicable guidelines.

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ME 02.00.00 MEDICAL ESCORT QUALITY MANAGEMENT

Includes Quality, Utilisation, and Safety Management

ME 02.01.00 QUALITY MANAGEMENT

Management monitors and evaluates the quality and appropriateness of the medical escort service through an active Quality Management (QM) programme, including the following:

ME 02.01.01 A QM flow chart diagram or comparable tool is developed demonstrating organisational structure in the QM plan and linkage to the Safety Management System.

ME 02.01.02 The QM plan should emphasize that the quality of services offered is considered on a continuum, with constant attention to developing new strategies for improving. Maintaining the status quo or achieving arbitrary goals are not considered the end measures.

ME 02.01.03 The QM programme should be integrated and include activities related to patient care (including customer satisfaction, and employee satisfaction), communications, and all aspects of transport operations and equipment maintenance pertinent to the service's mission statement.

ME 02.01.04 There is an ongoing Quality Management (QM) programme designed to objectively, systematically, and continuously monitor, assess and improve the quality and appropriateness of patient care and safety of the medical escort service.

ME 02.01.05 Promotes the effectiveness of the QM programme through active participation by management and staff in the programme and by sponsoring active communication pathways bi-directionally between staff and management.

ME 02.01.06 The QM Programme is linked with risk management so that concerns identified through the risk management programme can be followed up through the continuous quality improvement programme:

1. There is a written policy that outlines a process to identify, document, and analyse sentinel events, adverse medical events, or potentially adverse events (near misses) with specific goals to improve patient safety and/or quality of patient care.

2. There is follow-up on the results of actions /goals for specific events until loop closure is achieved.

3. The process encourages personnel to report adverse events even if it is a sole source event (only the Individual involved would know about it) without fear of punitive actions for unintentional acts.

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ME 02.01.07 The medical transport service has established patient care guidelines/standing orders that must be reviewed annually (for content accuracy) by management, QM Committee members, and the Medical Director(s).

ME 02.01.08 The Medical Director(s) is responsible for ensuring timely review of patient care

ME 02.01.09 There is an established QM programme in place that includes:

1. Responsibility/assignment of accountability

2. Scope of care

3. Important aspects of care, including clinical outcomes

4. Operational processes such as financial outcomes and customer needs

5. Quality indicators

6. Thresholds for evaluation appropriate to the individual service

7. Methodology - the QM process or QM tools utilised and how individual indicator scores are measured/calculated

8. Evaluation of the improvement process

ME 02.01.10 For both QM and utilisation review programmes, there should be evidence of actions taken in problem areas and evaluation of the effectiveness of that action.

Examples of evidence to meet compliance:
Development of quality metrics that will allow the programme to improve its processes should be developed with indicators focusing on every aspect of the programme (i.e., coordination, clinical, mode of transport, safety, etc.) A flow chart outlining the process flow when outliers and how the loop is closed to ensure that each outlier was addressed. Subsequent action to trends in activity should be noted with constant evaluation of the performance improvement process (i.e., Deming Cycle; Plan Do, Study/Check, Act). The QM plan is current and describes the process with evidence of loop closure in subsequent reports.

ME 02.01.11 There will be regularly scheduled QM meetings providing a forum for all disciplines involved in the medical escort service to present their needs and areas for improvement to each other. Minutes will be taken and distributed to management and staff not participating in the meetings.

ME 02.01.12 The monitoring and evaluation process has the following characteristics:

1. Driven by important aspects of care and operational practises identified by the medical transport service's QM plan

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2. Indicators and thresholds or other criteria are identified to objectively monitor the important aspects of care.

3. Evidence of QM studies and evaluation in compliance with written QM plan

4. Evidence of action plans developed when problems are identified through QM and communication of these plans to the appropriate personnel

5. Evidence of reporting QM activities through established QM organisational structure

6. Evidence of ongoing re-evaluation of action plans until problem resolution occurs

7. Evidence of annual goals established prospectively for the QM programme which provide direction for the work groups, and which are quantitative. The emphasis must be on loop closure and resolution of problems within a finite time period.

ME 02.01.13 Quarterly review should include (at a minimum, but may exceed) criteria based upon the important aspects of care/service. The following examples are encouraged:

1. Reason for medical escort transport

2. Mechanism of injury or illness

3. Patient's outcome (morbidity and mortality) at the time of arrival at destination and patient's change in condition during transport

4. Safety practices

    a. Safety issues should be identified to the Safety Committee with detailed reporting and analysis of vehicle/patient safety aircraft incidents, travel and cultural incidents that could potentially affect crew safety and resolution of issues with findings and action plans reported back to the QM committee.

    b. QM personnel may collect data and refer to the Safety Committee for action and resolution.

5. QM personnel may collect data and refer to the Safety Committee for action and resolution.

6. Operational criteria to include at a minimum the following quantity indicators:

    a. Number of completed transports.

    b. Number of aborted and cancelled transports due to patient condition and use of alternative modes of transport.

7. Transport delays that required updating arrangements for meeting ambulance, family, etc.

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8. Change in patient's condition that required additional interventions

9. Serious Reportable Events or Never events (see references)

10. Ground responses with use of lights and sirens

11. Patients transported with known communicable disease at the time of the request or discovered after the transport.

Examples of Evidence to Meet Compliance:
The QM plan is current and describes the process with evidence of loop closure in subsequent reports. QM does not consist only of medical record reviews.

Examples of Evidence to Meet Compliance:
Outcomes from QM should drive systems/process/procedures changes, education, and training needs. Systems improvement tools are educational. The process is not directed toward an individual nor is it punitive.

Tracking and trending response times and times at the referring/receiving hospital/pickup-drop-off locations are evaluated in terms of benchmarks set by the programme in order to evaluate the effectiveness of policies/procedures, training, and/or equipment needs. If transports are delayed, reasons for delays are tracked as are transport requests that are conducted by an alternate means of transport (within the same programme).

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ME 02.02.00 UTILISATION MANAGEMENT (UM)

Management ensures an appropriate utilisation management process through trending and tracking requests. Utilisation review may be prospective, concurrent, or retrospective.

ME 02.02.01 Management ensures an appropriate utilisation management process based on:

1. Medical benefits to the patient

    a. Timeliness of the transport as it relates to the patient's clinical status

    b. Patient care needs consistent with the capabilities and limitations of commercial airline transport, other vehicle(s) of transport, and the medical escort's skills

2. Safety of the transport environment

3. A structured, periodic review of transports (to determine transport appropriateness or that the mode of transport enhances medical outcome, safety, or cost-effectiveness over other modes of transport) performed at least semi-annually and recorded in a written report. This report indicates criteria have been tracked and trended and feedback was provided when there are inappropriate requests from referral and contracting agencies.

4. The following criteria trigger a review of the record to determine medical appropriateness based on patients:

a. Who have needs not reported by the requesting agency

b. Who are served by an inappropriate transport arrangements vehicle in consideration of time, distance, speed considerations, etc.

c. Who are served by an inappropriate team, i.e., Basic Care Provider used but patient required Advanced Care

ME 02.02.02 Management ensures that steps are taken to reduce those transports that are considered to be non-appropriate.

Examples of Evidence to Meet Compliance:
UM reports indicate trending and loop closure of patient outcomes. Requesting agents are contacted if there are trends that indicate over-triage or under-triage. Continuous review of UM with applicable trending and loop closure of patient outcomes in the form of follow-up with receiving facility, documented phone calls to patient/family, etc. may provide adequate information about patient outcome. Outliers should be presented to a QM Committee or during regularly scheduled staff meetings to discuss specifics of transport.

ME 02.03.00 SAFETY MANAGEMENT

(includes Safety Management Systems and Safety and Environment)

ME 02.03.01 Safety Management System - Management is responsible for a Safety Management System (SMS) but both management and staff are responsible for ensuring safe operations. The Safety Management System is proactive in identifying risks and eliminating injuries to personnel and patients and damage to equipment. A Safety Management System includes four components of Safety Policy, Safety Risk Management, Safety Assurance, and Safety Promotion. Several elements of these components include:

1. A statement of policy commitment from the accountable executive

2. Risk identification process and risk management plan that includes a non-punitive system for employees to report hazards and safety concerns

3. A system to track, trend, and mitigate errors or hazards

4. A system to track and document incident root cause analysis

5. A Safety Manual

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6. A system to audit and review organisational policy and procedures, ongoing safety training for all personnel (including managers), a system of proactive and reactive procedures to ensure compliance, etc.

7. A process for dissemination of safety issues to all personnel for loop closure

8. There is evidence of management's decisive response to non-compliance in adverse safety or risk situations.

a. Senior management should establish a process to identify risk escalation to ensure that safety and risk issues are addressed by the appropriate level of management up to and including the senior level.

b. Operational Risk Assessment tools should include but not be limited to issues such as transport acceptance, public relations events, training, maintenance, and re-positioning trips. For transports, the tool should include:

- Assessing fatigue
- Clinical acuity of patient
- Potential risks related to travelling companion (for example, recently discharged from hospital also or requires assistance)
- Foreign language considerations (does medical escort speak local language)
- Vehicle sophistication (for example large international airline carrier versus small third-world regional aircraft)
- Experience of medical escort
- Safety of local hotel and ground transportation
- Infrastructure of pick-up, drop-off, and connecting areas (for example, very limited communication network or road system in underdeveloped country/area)
- Number of flight connections
- Stretcher transports
- U.S. State Department and CDC travel advisories/warnings
- National v. international transport
- Other temporary situations in areas travelled to that may increase risk (for example, extreme weather forecasted, recent/impending political or natural disaster, etc.)

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9. Policies address crew safety and include but are not limited to the following examples:

a. Cultural intelligence

b. Checking with medical assist companies, CDC, and State Departments regarding high-risk countries.

Examples of evidence to exceed compliance:
Crews should never eat the same food; Never leave the hotel alone – have a buddy system; Do not go out late at night; behave and dress so as to blend in with locals; and no high-risk activities, for example, bungee jumping.

10. The programme has a process to measure its safety culture by addressing:

a. Accountability – employees are held accountable for their actions

b. Authority – those who are responsible have the authority to assess and make changes and adjustments as necessary

- Standards, policies, and administrative control are evident
- Written procedures are clear and followed by all
- Training is organised, thorough and consistent according to written guidelines
- Managers represent a positive role model promoting an atmosphere of trust and respect

c. Professionalism – as evidenced by personal pride and contributions to the programme's positive safety culture

d. Organisational Dynamics

- Teamwork is evident between management and staff and among the different disciplines regardless of employer status as evidenced by open bi-directional and inter-disciplinary communications that are not representative of a "silo" mentality.
- Organisation represents a practice of encouraging criticism and safety observations, and there is evidence of acting upon identified issues in a positive way.
- Organisation values are clear to all employees and embedded in everyday practice.

11. A Safety Management System includes all disciplines and processes of the organisation. A Safety Committee is organised to solicit input from each discipline and should meet at least quarterly with written reports sent to management and kept on file as dictated by policy

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a. Written variances relating to safety issues will be addressed in Safety Committee meetings. Safety issues should be identified by the Safety Committee with detailed reporting and analysis of vehicle/patient safety aircraft incidents, travel, and cultural incidents that could potentially affect crew safety, and resolution of issues with findings.

b. The committee will promote interaction between medical transport personnel and communications personnel addressing safety practice, concerns, issues, and questions.

c. There is evidence of action plans, evaluation, and loop closure.

12. The Safety Committee is linked to QM and risk management

13. Aviation, ambulance, or other vehicle-related events that occur during a medical escort trip are identified and tracked to minimize risks. (See Glossary in Appendix for definition of event)

a. Medical transport services are required to report aviation and ambulance accidents to CAMTS Global and must report to the appropriate government agencies. There is a written policy that addresses reporting incidents or accidents and assigns certain individual(s) with the responsibility to report.

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ME 02.04.00 SAFETY AND ENVIRONMENT

ME 02.04.01 Patient and personnel security

1. A policy addresses the security of the physical environment including local hotels, ground transportation, and use of ground ambulance lights and sirens as applicable.

2. Personnel security - Medical escorts are required to carry photo IDs (driver's license and/or passport) with first and last name while on duty.

3. Patient security - Patients and accompanying family/companion(s) must be properly identified and listed by name (in compliance with GDPR regulations) in the communications centre by the transport coordinator.

Examples of Evidence to Meet Compliance:
Policy requires wearing or carrying IDs while on duty

ME 02.05.00 SAFETY EDUCATION

ME 02.05.01 Education Specific to Safety of the Transport Environment - Completion of all the following educational components should be documented for the medical escort. These components should be included in initial education as well as reviewed on an annual basis with all regularly scheduled, part-time, or temporarily scheduled medical personnel as appropriate for the mission statement and scope of practice of the service.

1. Communications strategies and backup plans

2. Specific capabilities, limitations, and safety measures for specific airlines and for ambulances

3. Survival training/techniques/equipment that is pertinent to the environment/geographic coverage area of the medical transport service but must include at a minimum:

   a. Safety and survival equipment requirements

4. General aircraft safety to be included on an annual basis.

   a. Aircraft evacuation procedures (exits and emergency release mechanisms) to include electrical and oxygen shutdown

   b. In-flight emergency and emergency landing procedures, i.e., position, oxygen, securing equipment according to specific airline regulations

   c. Safety around the aircraft including AHJ regulations pertinent to medical escort duties

5. General ground ambulance safety including:

   a. Loading/unloading

   b. Seat belt use and no side-facing shoulder straps

   c. Securing loose items/equipment

   d. Minimizing lights and sirens use

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ME 03.00.00 MEDICAL ESCORT PATIENT CARE

ME 03.01.00 MISSION TYPES AND PROFESSIONAL LICENSURE

Staffing should be commensurate with the mission statement and scope of care of the medical transport service and potential needs of the patient during the entire transport. A well-developed position description for each discipline is written.

ME 03.01.01 Basic Care - A basic care medical escort mission is defined as the transport of a patient whose condition warrants an attendant commensurate with the scope of practice of an Emergency Medical Technician or national equivalent.

1. The EMT provider must be nationally registered (NREMT), licensed, certified, or permitted according to the appropriate state regulations or by Authority Having Jurisdiction (AHJ) and has current relicensing, recertification, or re-permitting status and must have a minimum of 2 years of experience in the pre-hospital setting.

2. Patient is stable and requires minimal supervision or care.

ME 03.01.02 Advanced Care – An advanced care medical escort mission is defined as the transport of a patient whose condition warrants an attendant commensurate with the scope of practice of an RN, paramedic, or respiratory therapist (RT) who meets the following criteria:

1. The nurse must have current and appropriate state licensure (in the nation of residence) and a minimum of two years of experience as a nurse in a hospital or pre-hospital setting.

2. The paramedic must be licensed, certified, or permitted according to the appropriate state of residence regulations or by Authority Having Jurisdiction (AHJ) and have current relicensing, recertification, or re-permitting status and a minimum of two years of ALS experience.

3. The RT must have current and appropriate licensure (in the country of residence) and a minimum of 2 years of experience.

4. Patient is stable enough to travel and needs may include but not be limited to:

   a. Use of oxygen

   b. Mobilization devices

   c. Emptying drainage bags

   d. Dressing changes

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e. Medication administration and/or supervision

f. Dietary supervision

g. Potential for cardiac or diabetic complications such as angina or hypo/hyperglycemia

h. Potential for respiratory complications such as hypoxia, suctioning, and humidity needs

ME 03.02.00 MEDICAL DIRECTION

The medical director(s) of the programme is a physician who is responsible for supervising and evaluating the quality of medical care provided by the medical personnel. The medical director ensures, by working with the clinical supervisor and by being familiar with the scope of practice of the transport team members and the regulations in which the transport team practises, competency, and currency of all medical personnel working with the service.

ME 03.02.01 The medical director(s) should be licensed and authorized to practice in the location in which the medical transport service is based

ME 03.02.02 The medical director(s) should have experience in air and/or ground transport services and have educational experience in those areas of medicine that are commensurate with the mission statement and scope of care of the medical transport service (i.e., adult, paediatric, neonatal transport, etc.) or utilise speciality physicians as consultants when appropriate. The medical director should have education as a medical director (see Education Matrix) as appropriate to the mission statement and scope of care and be familiar with the general concepts of appropriate utilisation of transport services. In addition, the medical director should be current and demonstrate competency or provide documentation of equivalent educational experiences directed by the mission statement and scope of care. Certifications are required as pertinent to the programme's scope of care. If a physician is board-certified in an area appropriate to the mission and scope of care of the service, certifications #1 and #12 are optional.

<u>Supporting Criteria</u>

1. Advanced Cardiac Life Support (ACLS) according to the current standards of the American Heart Association or approved equivalent

2. Altitude physiology/stressors of flight

3. Quality Management and appropriate utilisation of medical escort services

4. Continuing education in transport medicine

5. Emergency Medical Services

6. Ground ambulance rules /regulations

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7. Hazardous materials recognition and response

8. Human Factors – Crew Resource Management, Psychological First Aid (See References)

9. Exposure control

10. “Just Culture” or equivalent education is strongly encouraged

11. Patient care capabilities and limitations (i.e., assessment and invasive procedures during transport)

12. Paediatric Advanced Life Support (PALS) according to the current standards of the American Heart Association (AHA) or Advanced Paediatric Life Support (APLS) according to the current standards of the American College of Emergency Physicians (ACEP) or national equivalent (if paediatrics is part of the scope of care)

13. Stress recognition and management

14. Sleep deprivation, sleep inertia, circadian rhythms, and recognizing signs of fatigue

15. The medical director should demonstrate continuing education in transport medicine

ME 03.02.03 The medical director(s) is actively involved in the quality management (QM) programme for the service.

ME 03.02.04 The medical director(s) is actively involved in administrative decisions affecting medical care for the service.

ME 03.02.05 The medical director sets and reviews medical guidelines at least biennially (for current accepted medical practice), and medical guidelines are in a written format and include an updated attestation signed and dated by the medical director.

ME 03.02.06 The medical director(s) is actively involved in the hiring process, training, and continuing education of all medical personnel for the service which includes involvement in skills labs, medical protocols, or guideline changes or additions.

ME 03.02.07 The medical director receives safety and risk management training on an annual basis (strongly encouraged).

<u>Examples of Evidence to Meet Compliance:</u>
There is evidence of the medical director’s involvement with the programme through meeting attendance records, education records, chart reviews, etc.

<u>Examples of Evidence to Exceed Compliance:</u>
Medical Director(s) attends TEM and Just Culture training and achieves advanced transport management certifications such as Certified Medical Transport Executive.

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ME 03.02.08 The medical director(s) ensures that the plans for transport are appropriate and safe for the patient's specific disease process/needs.

ME 03.02.09 The medical director must maintain open communications with referring and accepting agents and be accessible for concerns expressed regarding controversial issues and patient management.

ME 03.02.10 Medical Control

1. If the medical director is unavailable, there are other physicians (who are trained and identified by the service) with the appropriate knowledge base to ensure proper medical care and medical control during transport for all patient types served by the medical escort service.

Examples of Evidence to Exceed Compliance:
The medical director is involved in EMS on a regional and/or national basis. The medical director participates in peer-reviewed published research regarding medical transport.

ME 03.03.00 CLINICAL CARE SUPERVISOR

Responsibility for supervision of patient care provided by the various clinical care providers (i.e., RN, RT, EMT, paramedic, etc.) must be defined by the service. All patient care personnel must be supervised by someone knowledgeable and legally enabled to perform clinical supervision. The clinical care supervisor and medical director(s) must work collaboratively to coordinate the patient care delivery given by the various professionals and to review the overall system for delivery of patient care.

ME 03.03.01 The clinical care supervisor should demonstrate currency in the following or equivalent educational experiences as appropriate to the mission statement and scope of care.

1. Advanced Cardiac Life Support (ACLS) according to the current standards of the American Heart Association or equivalent

2. Altitude physiology/stressors of flight if involved in fixed-wing operations

3. Hazardous materials recognition and response

4. Human Factors – Crew Resource Management, Psychological First Aid (See References)

5. Exposure control

6. "Just Culture" or equivalent education strongly encouraged

7. Paediatric Advanced Life Support (PALS) according to the current standards of the American Heart Association (AHA) or Advanced Paediatric Life Support (APLS) according to the current standards of the American College of Emergency Physicians (ACEP) or national equivalent (if paediatrics is part of the scope of care)

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8. Patient care capabilities and limitations during transport (i.e., assessment)

9. Quality Management and appropriate utilisation of medical escort services

10. Stress recognition and management/Resilience (See References)

11. Sleep deprivation, sleep inertia, circadian rhythms, and recognizing signs of fatigue

12. Safety and risk management training (strongly encouraged)

ME 03.03.02 The clinical care supervisor is actively involved in the QM process.

ME 03.03.03 Knowledge of national and international regulations as appropriate to scope of practice.

Examples of Evidence to Exceed Compliance:
The clinical supervisor attends TEM and Just Culture training and achieves advanced certifications such as CEN, CCRN, CFRN, RNC, CTRN, and/or CMTE.

ME 03.04.00 PROGRAMME MANAGER

The programme manager may have overall responsibility for a programme or a specific base with or without additional clinical responsibilities. (Follow criteria above if clinical responsibilities are part of the position description.)

ME 03.04.01 The programme manager must demonstrate currency in the following or equivalent educational experiences as appropriate to the mission statement and scope of care. Didactic education initially and on an annual basis should include but not be limited to:

1. Human Factors – Crew Resource Management, Psychological First Aid (See References)

2. "Just Culture" or equivalent education strongly encouraged

3. Knowledge of national and international regulations as appropriate to scope of care

4. Quality Management of the programme and its implication to best practices

5. Safety and risk management training on an annual basis (strongly encouraged)

6. Sleep deprivation, sleep inertia, circadian rhythms, and recognizing signs of fatigue

7. Stress recognition and management, Resilience (See References)

Examples of Evidence to Exceed Compliance:
The programme manager attends Just Culture training and achieves advanced certifications such as Certified Medical Transport Executive (CMTE).

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ME 03.05.00 ORIENTATION AND CONTINUING EDUCATION

A planned and structured programme should be required for all regularly scheduled advanced care and basic care providers. Competency and currency in these competencies must be ensured and documented through relevant continuing education programmes/certification programmes or their equivalent listed in this section. The orientation, training, and continuing education must be directed and guided by the transport programme's scope of care and patient population, mission statement, and medical direction and must be conducted at the programme's base of operations.

ME 03.05.01 Basic Care Medical Escort

1. Initial Training Programme - Each Basic Care Medical Escort must successfully complete a comprehensive training programme or show proof of recent experience/training in the categories listed below prior to assuming independent responsibility.

a. Didactic Component - Should be specific and appropriate for the mission statement and scope of care of the medical escort service.

- Altitude physiology/stressors of flight
- Aviation – aircraft orientation/safety & in-flight procedures/general aircraft safety including depressurization procedures
- Cell phone and established communications procedures
- Compliance issues and regulations
- Hazardous materials rules of the airlines
- Human Factors – CRM, Psychological First Aid (See References)
- Exposure control
- "Just Culture" or equivalent education is strongly encouraged
- Quality management
- Stress recognition and management/ Resilience (See References)
- Survival training
- Sleep deprivation, sleep inertia, circadian rhythms, and recognizing signs of fatigue

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b. Clinical Component - Clinical experiences should include, but not be limited to, the following (experiences should be specific and appropriate for the position description, mission statement, and scope of practice of the medical escort service):

- Emergency care
- Pre-hospital care

2. Continuing education/staff development - Continuing education must be provided and documented for basic care medical escorts.

a. Didactic continuing education must include:

- Altitude physiology/stressors of flight
- Aviation and ground vehicle - safety issues
- Emergency care courses - basic level
- Hazardous materials recognition and response
- Human Factors – CRM, Psychological First Aid (See References)
- Exposure control
- Stress recognition and management/Resilience (See References)
- Survival training
- Sleep deprivation, sleep inertia, circadian rhythms, and recognizing signs of fatigue

b. Clinical continuing education should be developed and documented on an annual basis and must include:

- Emergency/hospital care
- Pre-hospital experience

c. Clinical competency must be maintained by currency in the following or equivalent training as appropriate for the position description, mission statement, and scope of care of the medical escort service. (See addendum B – the Education Matrix.)

- Basic Life Support (BLS) - documented evidence of current BLS certification according to the AHA.
- Education specific to the transport environment

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3. Completion of all the following educational components should be documented for each of the medical escort personnel. These components should be included in initial education as well as reviewed on an annual basis with all medical escort personnel.

a. Air medical patient transport considerations (assessment/ treatment/preparation/ handling/ equipment)

b. Ground operations

- Patient loading and unloading procedures if patient has special mobility needs or is on a stretcher
- Contact procedures if patient is not met by pre-planned agent
- Familiarization with ambulance and its equipment if met by an ambulance (to be reviewed with ambulance personnel prior to transport)

ME 03.05.02 Advanced Care Medical Escort

1. Initial training programme requirements for all advanced care medical escorts. Each advanced care medical escort must successfully complete a comprehensive training programme or show proof of recent experience/training in the categories listed below prior to assuming independent responsibility.

a. Didactic Component - Should be specific and appropriate for the mission statement and scope of care of the medical escort service. Measurable objectives need to be developed and documented for each experience.

- Airway management
- Altitude physiology/stressors of flight
- Anatomy, physiology, and assessment for adult, paediatric and neonatal patients as applicable
- Aviation - aircraft safety & in-flight procedures/general aircraft safety including depressurization procedures
- Cardiac emergencies
- Cell phone and established communications procedures
- Compliance Issues and regulations
- Disaster and triage

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- Environmental emergencies
- General travel advice
- Ground ambulance/other vehicle safety
- Hazardous materials rules of the airlines
- Human Factors – CRM, Psychological First Aid (See References)
- Exposure control
- International travel considerations
- “Just Culture” or equivalent education is strongly encouraged
- Medical equipment
- Mechanical ventilation and respiratory physiology for adult, paediatric and neonatal patients
- Metabolic/endocrine emergencies
- Oxygen approved by the airlines and in line with the manufacturer’s instructions
- Post-traumatic injury complications (adult and paediatric)
- Paediatric medical emergencies as applicable
- Pharmacology
- Pre-hospital experience
- Quality Management didactic education that supports medical transport service mission statement and scope of care (i.e., adult, paediatric, neonatal)
- Respiratory emergencies
- Stress recognition and management/Resilience (See References)
- Survival training (in accordance with medical escort’s programme policies)
- Sleep deprivation, sleep inertia, circadian rhythms, and recognizing signs of fatigue
- Thermal, chemical, and electric burns

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- Toxicology

b. Clinical Component - Clinical experiences should include, but not be limited to the following. Experiences should be specific and appropriate for the mission statement and scope of care of the medical service. Measurable objectives need to be developed and documented for each experience.

- Adult ALS stabilization
- Emergency care
- Paediatric ALS stabilization

2. Continuing education/staff development must be provided annually and documented for all advanced care medical escorts.

a. Didactic continuing education must include:

- Altitude physiology/stressors of flight
- Aviation and ground vehicle - safety issues
- Emergency care courses
- Hazardous materials rules of the airlines
- Human Factors – CRM, Psychological First Aid (See References)
- Exposure control
- Stress recognition and management/Resilience (See References)
- Survival training (in accordance with medical escort's programme policies)
- Sleep deprivation, sleep inertia, circadian rhythms, and recognizing signs of fatigue

b. Clinical and laboratory continuing education should be developed and documented on an annual basis and must include:

- Skills maintenance programme documented to comply with number of skills required in a set period of time according to policy of the medical escort service
- Appropriate clinical experience pertinent to the medical escort scope of care

c. Policies ensure that clinical competency is maintained by currency in the following or equivalent training as appropriate. See addendum B – the Education Matrix.

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- Advanced Cardiac Life Support (ACLS) – documented evidence of current ACLS according to the AHA

- Basic Life Support (BLS) - documented evidence of current BLS certification according to the American Heart Association (AHA)

- Paediatric Advanced Life Support (PALS) according to the AHA - or Advanced Paediatric Life Support (APLS) according to ACEP, or equivalent education (if paediatrics is part of the scope of care)

- Neonatal Resuscitation Programme (NRP) if scope of care includes care of infants 28 days old or less.

- Nursing certifications (such as CEN, CCRN, CFRN, RNC) are encouraged and must be current if required by position description

- EMT/paramedic certifications (EMT, paramedic, FP-C, CCP-C) must be current if required by position description

- RT certifications (RRT) must be current if required by position description

3. Education Specific to the Transport Environment

a. Completion of all the following educational components should be documented for each of the medical escorts. These components should be included in initial education as well as reviewed on an annual basis with all medical escorts.

- Air medical patient transport considerations (assessment/treatment/ preparation/handling/equipment)

- Ground operations

  - Patient loading and unloading procedures if patient has special mobility needs or is on a stretcher

  - Contact procedures if patient is not met by pre-planned agent

  - Familiarization with ambulance and its equipment if met by an ambulance (to be reviewed with ambulance personnel prior to transport)

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ME 03.06.00 ACCOMMODATIONS ON THE VEHICLE

ME 03.06.01 Patient accommodations on the aircraft should not compromise the ability to receive appropriate care if necessary.

1. Policies that address patient placement in the vehicle allow for safe egress.

2. For all transports, there are written guidelines describing types of patients that can be transported in a litter configuration if the aircraft is able to accommodate.

ME 03.06.02 Policy will address procuring a privacy curtain or temporary barrier for the stretcher patient.

1. Policy will address patient use of bedpans, urinals, or diapers, and disposal of body waste and fluids are included according to the regulations of the specific airline.

ME 03.06.03 Delivering oxygen

1. Oxygen flow can be stopped at or near the oxygen source.

2. The following indicators are accessible to medical escort personnel while en route:

    a. Quantity of oxygen remaining

    b. Measurement of litre flow

3. A variety of oxygen delivery devices consistent with the patient's needs must be available.

    a. Equipment requiring batteries such as an oxygen concentrator must include additional batteries sufficient for the duration of the transport.

4. Knowledge and use of airline oxygen as backup in the event the patient's system fails.

ME 03.06.04 Maintaining IV Fluids

1. IV supplies and fluids are available if needed.

2. Hangers/hooks are available that secure IV solutions in place or a mechanism to provide high-flow fluids if needed.

3. IV infusion pumps are available as appropriate.

ME 03.06.05 Accessible medications consistent with the service's scope of care.

1. Controlled substances provided by the medical escort programme are in a secured system or kept in a manner consistent with policy and with local, state, federal, and international regulations. It is recognized that the patient may bring with them and self-administer their own medications and/or narcotics.

    a. If transports involve team members lodging overnight with controlled substances, a policy to address securing/storage of controlled substances is required.

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2. Storage of medications allows for protection from extreme temperature changes if environment deems it necessary.

3. There is a method to check expiration dates of medications on a regular basis.

4. Policy addresses DEA Issues – International law states it is illegal to bring controlled substances onto foreign soil

ME 03.06.06 Pressure Ulcers – Policies and procedures are written and followed to prevent pressure ulcers for transports longer than 2 hours and/or reduce the impact of pressure ulcers during transport.

1. Patient assessment and documentation of pressure ulcers is done prior to, during, and following each transport, according to programme policy

2. Pressure-reducing devices and/or methods are used when needed.

ME 03.06.07 Circulatory issues must be addressed if patient is subjected to long transport times in confined spaces.

ME 03.06.08 Medical supplies and equipment must be consistent with the service's mission statement and scope of care.

1. A portable mechanical suction unit if needed is anticipated

2. Glucometer is available

3. Pulse oximetry capabilities

4. Automatic blood pressure device or sphygmomanometer

5. Portable oxygen concentrator approved by the AHJ, DOT, or international regulator

6. The vehicle will be assessed in advance to the extent possible for the potential problems comprising the patient's stability in loading/unloading and addressed accordingly

a. If a stretcher is needed and can be provided:

- Aircraft stretcher and the means of securing it in-flight must be consistent with FARs.

- The stretcher should be large enough to carry the 95th percentile adult American patient, per current specifications, full length in the supine position.

- The stretcher should be sturdy and rigid enough that it can support cardiopulmonary resuscitation.

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- The stretcher will be assessed in advance to ensure the head of the stretcher is capable of being elevated if required by patient needs.

- The stretcher mattress must be sealed to prevent absorption of blood and other body fluids, easily cleanable, and designed to reduce pressure ulcers.

b. Supplemental lighting is available if needed. A self-contained lighting system powered by a pack or a portable light with a battery source must be available.

c. Adapters and/or regulators must be accessible to and compatible with a power source.

d. Semi-automatic or automatic external defibrillator may be supplied by the airline, cruise ship, train, or ground transport provider. Personnel need to know how to use specific make and model of this equipment and how to check functionality of equipment and its batteries or verify that airline or ground personnel are proficient.

e. The medical escort service must verify prior to departure of escort personnel, that there is an AED available on board each vehicle during the course of the escort transport; if not, one must be taken by escort personnel.

7. All equipment and supplies must be secured according to FARs or AHJ (and also if transporting on a ground ambulance, marine, train, or other mode of transport) including containers for medical equipment along with padlocks, straps, or other mechanism for securing it.

ME 03.06.09 Operational Issues

1. Medical escorts must ensure that all medical equipment is in working order and all equipment/supplies are validated through documented checklists.

a. Equipment must be periodically tested and inspected by a certified clinical engineer.

b. Equipment inspections will be required according to the programme's guidelines.

c. Adequate backup battery supply must be available to ensure all medical equipment remains functional throughout the transport.

2. Occupant restraint devices - Medical escort must be in seatbelts for all take-offs and landings according to AHJ and international regulations.

3. A policy describing pre-boarding for ambulatory or wheelchair patients, or patient loading and unloading procedures for stretcher patients.

4. A policy addressing carry-on baggage of patient that must be checked for hazardous materials before boarding the vehicle if not already performed by airport security.

5. Policy will address operational issues per vehicles utilised – commercial aircraft, private plane, boat, train, passenger van, etc. for example, AED availability, back-up oxygen (cannot be private

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plane's emergency oxygen), boarding if patient is non-ambulatory, baggage handling, optimal seating and procural, optimal room location on cruise ship and procural, arrival times of patient and escort specific to vehicle, and minimum communication required specific to vehicle.

6. Policy addressing the provision of contingency plans in the event of maintenance problems, adverse weather, cancelled flights, airline denying boarding due to patient condition, problems with ground transportation, delays extending duty time beyond 24 hours, unplanned overnight stays in high-risk areas/countries, delays requiring overnight stay with patient along the transport route and other adverse occurrences. The policy will list resources available to personnel should these situations arise.

7. A policy sets criteria and guidelines for aborting a mission prior to and during transport.

8. There is a written policy on conducting CPR during transport.

9. A policy that addresses Do Not Resuscitate (DNR), Allow Natural Death (AND), Physician's Orders For Life-Sustaining Treatment (POLST).

10. A policy addresses transfer and security of patient's personal property.

ME 03.07.00 EXPOSURE CONTROL

Policies and procedures addressing patient transport issues involving communicable diseases, infectious processes, and health precautions for emergency personnel as well as for patients must be current with the local standard of practice or national standards (or in the U.S. - OSHA and as published by the Centers for Disease Control and Prevention).

ME 03.07.01 Policies and procedures must be written and readily available to all personnel of the medical transport service.

ME 03.07.02 There is an Exposure Control Plan consistent with national (in the U.S., OSHA) guidelines. The ECP includes:

1. A reference for work restrictions for personnel exposed to or infected with an infectious disease (reference Table 2.2 in Guide to Infection Prevention in EMS)

2. A list of the risks associated with diseases prevalent in coverage areas specific to the programme such as pertinent international risks.

3. A bloodborne pathogen programme consistent with the OSHA Bloodborne Pathogen Standard (http://www.osha.gov/SLTC/blodbornepathogens/bloodborne_quickref.html)

ME 03.07.03 Education programmes will include the programme's exposure control resources, programmes, policies, and CDC and OSHA recommendations (or equivalent national guidelines). In addition, initial and annual education regarding identification, management, and safety related to patients with potentially infectious pathogens is documented.

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ME 03.07.04 Education programmes and policies regarding latex allergies may include:

1. Patients and employees at risk for latex sensitivities and symptoms manifested by an allergic reaction

2. Maintaining a latex-safe environment

3. Methods to minimize latex exposure to lessen risks of allergic reactions in clinical personnel

ME 03.07.05 Preventive measures - All personnel must practice preventive measures lessening the likelihood of transmission of pathogens. Policies and procedures address:

1. Personnel health concerns and records of:

a. Pre-employment and annual physical exams or medical screening to include:

- History of acute or chronic illnesses

- Illnesses requiring use of medications that may cause drowsiness, affect judgment or coordination

- Provide annual tuberculosis testing (purified protein derivative), especially if conducting international transports and other testing, screenings, and vaccinations as consistent with current national (CDC in the U.S.) guidelines. The CDC may deem the localized region low risk and annual testing not necessary, but this applies only if the service does not operate or respond outside of the local region.

- Immunization history appropriate to the scope of practice transport team members encouraged to have tetanus immunization (Measles, mumps, and rubella (MMR) immunizations are encouraged for those born after 1957.) "Hepatitis B vaccine must be offered and if the employee has not previously had the vaccination or does not have adequate titers and declines, the programme must have a signed declination form per OSHA or equivalent standard. The flu vaccine is required unless contraindicated by policy.

- Immunization history is documented and monitored for currency and appropriateness

2. Management of communicable diseases and exposure control in the transport environment is outlined in policies.

a. Use of gloves, and eye and mouth protection. Personal protective equipment is readily accessible in the ambulance or issued to the medical transport team

b. Use of safety needles and blunt or other type system to lessen the risk of needlesticks to those who may come into contact with them

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c. Sharps disposal container for contaminated needles and collection container for soiled disposable items on the vehicle and proper disposal of same

d. Cleaning and disinfecting with appropriate disinfectant of the equipment and personnel's soiled clothes

e. Proper cleaning or sterilization of all appropriate instruments or equipment

f. Hand hygiene i.e., performed before and after touching a patient, before clean/aseptic procedures, after body fluids exposure risk, after touching patient's surroundings, before handling medications, and before and after removing gloves

- Hand washing with an antimicrobial soap and water is indicated when hands are visibly soiled, contaminated with proteinaceous material, or exposed to body fluids. However, it is recognized that this may not be possible in the transport environment in which case an alcohol-based hand rub should be used. An alcohol-based hand rub is preferred for all other hand hygiene.

g. Management maintains documentation related to bloodborne and airborne pathogens including confidential records of exposure incidents and post-exposure follow-up, hepatitis B vaccination status, and initial and ongoing training for all employees.

- Post-exposure follow-up includes identification and testing of source patient, baseline and follow-up testing of exposed employee, making counselling resources available, and offering Hepatitis B vaccination.

h. A policy addresses access to post-exposure prophylaxis (PEP) medications for HIV, meningococcal infections, etc. The PEP medications should be available in a timely manner for all team members.

i. Where there is likelihood of occupational exposure, the following are prohibited: eating, drinking, applying cosmetics, or handling contact lenses.

j. Food and drink will not be stored where blood or other potentially infectious materials are present. If the service performs transports with long transport times, there should be a policy to address the nutritional needs of patients and personnel.

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ME 04.00.00 – MEDICAL ESCORT COMMUNICATIONS

ME 04.01.00 COMMUNICATIONS AND TRIP PLANNING

Medical escorts plan and follow a specific trip as follows:

ME 04.01.01 If cellular phones are part of the onboard communications equipment, they are to be used in accordance with airline regulations.

ME 04.01.02 A Coordinator must be assigned to receive and coordinate all requests for the medical escort service.

ME 04.02.00 TRAINING OF THE DESIGNATED COORDINATOR

ME 04.02.01 Should be commensurate with the scope of responsibility of the service.

1. Medical terminology

2. Knowledge of EMS – roles, and responsibilities of the various levels of training - BLS/ALS, EMT/ Paramedic

3. Knowledge of appropriate contacts and procedures – foreign language resources, base and destination resources, local handler, abort procedure, common logistical problems, and troubleshooting/response plans, etc.

4. Relevant ambulance and aviation regulations as appropriate to scope of service

5. General safety rules and emergency procedures pertinent to medical transportation and flight/transport following procedures

6. How to retrieve current and forecasted weather to assist the medical escort during a transport

7. Awareness of potentially hazardous materials (drugs, patient belongings, etc.)

8. Sleep deprivation, sleep inertia, circadian rhythms, and recognizing signs of fatigue

9. Stress recognition and management to include resources for Critical Incident Stress Debriefing or other type of post-critical incident counselling

10. Customer service/public relations/phone etiquette

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11. Quality management

12. Crew Resource Management (CRM) pertinent to communications

13. Computer literacy and software training

14. Post-Accident/Incident Plan (PAIP)

ME 04.02.03 There is evidence of recurrent training and training as policies and equipment changes occur. This also includes:

1. Crew Resource Management (CRM) pertinent to communications

2. Post-Accident/Incident Plan (PAIP)

3. Sleep deprivation, sleep inertia, circadian rhythms, and recognizing signs of fatigue

4. Stress recognition and management to include resources for Critical Incident Stress Debriefing or other type of post-critical incident counselling

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ME 04.03.00 POLICIES

ME 04.03.01 A readily accessible post-incident/accident plan so that appropriate search efforts may be initiated in the event communications cannot be established with medical escort or location determined within a pre-planned time frame.

1. Written post-incident/accident plans are easily identified, readily available, and understood by all personnel and minimally include:

   a. List of personnel (with current phone numbers) to notify in order of priority (for coordinator to activate) in the event of an incident/accident. This list should include:

      - Risk management/attorney
      - Family members of team members
      - Family of patient
      - Referring hospital and receiving hospital
      - Human resources (as applicable)
      - Media relations or pre-identified individual who will be responsible for communicating with the media, state health department, and other team members.

b. A method to insure accurate information dissemination

c. Notification plans include appropriate family members and support services to family members following a tragic event. There must be timely notification of next of kin. Next of kin is no longer strictly defined at the federal level, so the crew member determines this on a data sheet and reviews annually. It is strongly recommended that:

- Family assistance includes coordination of family needs immediately after the event e.g., transportation, lodging, memorial/burial service, condolences, initial grief support services/referrals, (usually through appointment of a family liaison).

- Continuity includes follow-through with the family after the event (e.g., the continuation of grief counselling and support referrals, the inclusion of families in decision-making on anniversaries/memorials, and check-ins following release of NTSB reports, or equivalent, etc.)

d. Consecutive guidelines to follow in attempts to:

- Communicate with the medical escort(s)

- Initiate ground support as appropriate

- Have a backup plan for transporting the patient

e. Preplanned time frame to activate the post-accident/incident for overdue communication point

f. Coordination of transport of injured team member(s) to higher level of care if needed and/or back to local area

g. Procedure to document all notifications, calls, and communications and to secure all documents related to the particular incident/accident

h. Procedure to deal with releasing information to the press

i. Resources available for CISD (critical incident stress debriefing) or other counselling alternatives

j. Process to determine whether the programme will remain in service

2. An annual drill is conducted to exercise the post-accident/incident plan. The programme must include all aspects of the plan and include all disciplines involved.

   a. Following each drill:

      i. A thorough debrief occurs that identifies lessons learned from the drill

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ii. There is a written after-action report/plan (AAR/P) that summarizes the drill including the major events and the people, locations, agencies, and vehicles involved. The AAR/P includes the lessons learned and any corrective actions taken or planned.

iii. The results of the drill and the after-action report/plan are shared with the entire staff, including those not involved directly with the drill

iv. A method exists to document progress and loop closure on any corrective items identified in the after-action plan.

b. An actual incident or accident may be used as a replacement for a drill provided it meets all the items listed above.

3. A test of all emergency procedures that may include fire drill, intruder on-premises, catastrophic failure of the communications centre, forces of nature, etc. will each be conducted on an annual basis (as applicable to medical escort services with a dedicated communications centre or base)

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ME 04.04.00 COORDINATION AND MISSION TRACKING

ME 04.04.01 Initial coordination must be documented, and a transport coordinator should be contacted prior to each take-off and after each landing, referring/receiving area, or other designated checkpoints.

1. These items to include but not be limited to:

a. Name and telephone number of caller

b. Patient type/condition

c. Date and time call received

d. Anticipated or scheduled date/time of departure

e. Location of patient and destination

f. Name of medical escort(s) assigned to transport

g. Confirmation of bed assignment and accepting physician if admitted to healthcare facility

h. Copy of medical records from sending healthcare facility

i. Additional information as appropriate to the request such as:

- Special diet requests
- Local handler
- Confirmed airline tickets and airline/company representative phone numbers
- Ground transportation name and contact information for flights or other vehicle that requires ground support
- Hotel arrangements
- Time zone differences
- Medical assistance company third party administrator (TPA) report/paperwork, airline fit to fly form, MEDIF (medical information form) for airlines
- Expected transport time, number of fuel stops
- Number of seats available for medical team; space/seats available for luggage/medical equipment
- Carry-on restrictions; airline/company's policy for handling of body fluids/infectious waste
- Travel documents required
- State Department and CDC advisories particular to area(s) being travelled
- Number of family/companion(s) accompanying
- Availability, number of outlets, and power limitations of inverter
- Airline/company stretcher limitations (length/width, linens available, mattress, isolette types permitted)
- Number of oxygen cylinders that can be accommodated, adapter/regulator type, flow capabilities
- Lighting available

2. Specific methods must be used by the coordinator for contacting the medical escort personnel to relay request information, i.e., pager numbers, telephone, and/or cellular numbers.

3. An on-call roster of the medical team must be provided to the answering service/coordinator that includes a priority phone list of personnel to notify in the event of an emergency.

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4. Management requires a post-transport debrief be conducted after each transport.

ME 04.04.02 Mission Tracking – Communications during a mission should also be documented accordingly:

1. Direct or relayed communications to coordinator specifying all take-off, departure, and/or arrival times.

ME 04.04.03 The Coordination Point must contain the following:

1. At least one dedicated phone line for the medical escort service

2. Capability to notify on-call personnel and online medical direction (through radio, pager, telephone, etc.)

3. A status board or electronic display with information about pre-scheduled medical escort transports, personnel on-call, etc.

4. Communications policy and procedures manual

5. If medical escort service is unable to do the transport and is not part of a CAMTS Global-accredited medical transport service that can transport the patient, there is a policy referral to CAMTS Global-accredited programmes.

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