Emergency Medical Teams

Medical evacuation in emergencies

A guidance for medical teams and specialized care teams

World Health Organization

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(Emergency Medical Teams)

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Cover Photo: Individual isolation units in a C-130, Covid-19 response, Norway, 2020. ©Svein Are Osbakk, NOR-EMT.

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Foreword

In times of crisis, whether due to natural disasters, armed conflicts, or other health emergencies, the timely and well-coordinated evacuation of patients is a critical component of emergency response. Emergency Medical Teams (EMTs) play a vital role in medical rescue and evacuation ensuring that patients receive the appropriate level of care while being transported to facilities where they can receive definitive treatment.

Past emergencies have demonstrated the urgent need for standardized approaches to both pre-hospital support for medical evacuation (medevac) and medevac operations themselves. The absence of clear protocols, critical delays, miscommunication and inadequate care during transit can severely impact patient outcomes. Establishing standardized procedures ensures that medical evacuations are conducted safely, efficiently and in coordination with the broader health-care and emergency response system.

This guidance aims to establish a standardized approach to medevac, providing clear recommendations for planning, coordination and execution. It has been developed to support EMTs, health-care providers, emergency planners, and policy-makers in optimizing patient outcomes through safe and effective evacuation strategies. It serves as a valuable resource for all those involved in medevac efforts and contributes to the ongoing evolution of emergency medical response.

Drawing from international best practices, expert consensus and operational experience, this guidance outlines the key principles of medevac, including decision-making, multi-stakeholders' coordination, logistics and patient care during transport. By adhering to these standards, the emergency response mechanism can enhance its preparedness and response capabilities, ensuring that patients receive high-quality care even in the most challenging environments.

I would like to extend my gratitude to the dedicated professionals who contributed their expertise to this document. Their commitment to advancing emergency medical response will help save lives and improve patient care worldwide.

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Deputy Director-General, WHO
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Declarations of interest

All members of the Technical Working Group and all external experts completed and submitted a Declaration of Interest (DOI) to WHO, disclosing potential conflicts of interest that might affect, or might reasonably be perceived to affect their objectivity and independence in relation to the subject matter of the guidance. WHO reviewed each of those and had concluded that none could give rise to a potential or reasonably perceived conflict of interest related to the subjects covered by the guidance.

Abbreviations

casevac	casualty evacuation
CBRNe	chemical, biological, radiological, nuclear, explosive
CECIS	Common Emergency Communication and Information System
CMCoord	Civil-Military Coordination
COVID-19	Coronavirus disease
DG ECHO	Directorate-General for European Civil Protection and Humanitarian Aid Operations
ECLS	extracorporeal life support
ECMO	extracorporeal membrane oxygenation
EMS	Emergency Medical Services
EMT	Emergency Medical Teams
EMTCC	Emergency Medical Teams Coordination Cell
ERCC	Emergency Response Coordination Centre - European Commission (DG ECHO)
EWRS	early warning and response system
HID	highly infectious disease
ICU	intensive care unit
IPC	infection prevention and control
MEDEVAC	medical evacuation
NATO	North Atlantic Treaty Organization
NGO	nongovernmental organization
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
OSL	operations support and logistics
POC	point of care
PPE	personal protective equipment
POCUS	point of care ultrasound
SCT	Specialized Care Team
SOP	standard operating procedure
TORs	Terms of Reference
TWG	Technical Working Group
UCPM	Union Civil Protection Mechanism
UN	United Nations
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization
UCPM	Union Civil Protection Mechanism

Methodology

The EMT Secretariat applied a standardized process to develop the guidance on medevac in emergencies. Following the identification and definition of the scope of the document by the WHO steering group, a comprehensive literature review and an assessment of available guidance documents and guidelines from internationally recognized institutions and authorities were conducted, to provide a comprehensive overview of the available literature in the area of medical evacuation in emergencies. The review included academic literature and grey literature. The literature search included PubMed and Google Scholar databases using key search terms "medical evacuation", "aeromedical transport" AND "health emergencies", "disasters", or equivalent derivative terms. Documents relevant for full text review were selected through a title and abstract/summary review, followed by full text review. Reports were excluded if they were not in English, were not available as full text, and were not related to medical evacuation in the context of emergencies. Terms of Reference (TORs) for the Technical Working Group (TWG) were developed and a call for expressions of interest was sent to partner organizations, as well as to the entire EMT network globally. The EMT Secretariat assessed the nominations and applications and identified participants based on a fair representation of WHO regions, gender, academic background, expertise and experience, drawn from partner organizations and the EMT network. The EMT Secretariat led and coordinated the implementation of the TWG through an extensive global consultative process, including regular virtual consultations and two face-to-face TWG meetings hosted by WHO Country Office in Türkiye and WHO Regional Office for Europe. Multiple rounds of written submissions and technical contributions were consolidated into a draft and combined with evidence generated by the literature review and existing best practice guidelines. TWG members/internationally recognized subject matter experts provided case examples, drawing from operational experience, providing practical and operational insight. All case examples were reviewed by the EMT Secretariat, the technical working group, the extensive group of external reviewers made up of international subject matter experts from all WHO regions, as well as by all WHO EMT regional focal points. Inclusion of the case examples was based on majority consensus of TWG members. The decisions that provided the basis for the developed guidance relevant for the establishment of medevac teams, were based on thorough academic foundation through literature review, the highly collaborative development process across all regions, and the majority consensus of the subject matter experts. Following the development of a final draft of the TWG, and the routine WHO Quality Assurance, Norms and Standards procedures for development of WHO normative and standard setting products, an external expert review of the final document was undertaken. Feedback was incorporated and decisions on final content were made based on majority consensus of the TWG subject matter experts. Finally, this guidance document was reviewed by the EMT Strategic Advisory Group in March 2025 and consecutively published.

Introduction

1 Introduction

Sudden onset disasters, mass casualty events, infectious disease outbreaks, conflicts or other health-related emergencies can result in an increased or specialized medical demand. Already overstrained local health-care systems might be overwhelmed by the impact of an emergency and may face challenges in meeting the patients' health-care needs *(1)* . This may result in the need for surge capacity for safe and rapid patient transfer and medevac to appropriate or higher levels of care, nationally or even internationally. Medical rescue and evacuation capacities by air, land or sea, as well as standardized prehospital emergency medical services (EMS) and referral capacities are an integral part of emergency response, especially in settings requiring combined evacuation and retrieval of humanitarian and health-care workers from affected areas. Experiences from past health emergencies have demonstrated the need for standardizing medevac operations. The concept of specialized care teams (SCTs) as introduced in *Classification and minimum standards for emergency medical teams,* commonly referred to as the "Blue Book" *(2)*, recognizes the need for more modular and specialized surge support tailored to specific contexts. This document complements and expands the core standards, principles and guidance provided by the Blue Book and considerations for a response in armed conflict and other insecure environments captured in *A guidance document for medical teams responding to health emergencies in armed conflicts and other insecure environments*, commonly referred to as the "Red Book" *(3)*. In the context of this guidance, medevac refers to a well-coordinated and standardized process for the timely and efficient inter-facility transfer of initially stabilized patients using dedicated medical transport assets with medical personnel and adequate equipment for en-route patient care. In the prehospital environment, a primary transport involves the clinically coordinated transfer of undifferentiated patients with trained staff from the point of injury to the nearest medical facility with an appropriate level of care. Casualty evacuation (casevac) is a term that is generally used in the military and refers to the emergency evacuation of casualties with medical conditions directly from the point of injury, with the objective of the patient reaching the nearest medical care point as quickly as possible *(4)*. Casevac may be conducted by individuals on the scene, without medical staff and without medical equipment on board, prioritizing patient movement over the delay of waiting for a specialized or formally equipped patient transport *(5)*. This document aims to provide a comprehensive framework for the safe and context-adapted coordination, clinical care, operational support and logistics relevant to governments, national authorities, including ministries of health, civil protection and civil defence, national and international EMTs, nongovernmental organizations (NGOs), Emergency Medical Services (EMS) and other key stakeholders operating in the medevac space, or wishing to build this kind of capacity. It defines minimum standards and recommendations for the development and classification of respective SCTs providing medevac or pre-hospital medical services in support of medevac, as well as outlining relevant administrative requirements for these services. This is particularly relevant for contexts without pre-existing or functional prehospital or medevac systems, and can support country-level capacity building, regional and sub-regional planning, and the development of SCTs.

Specialized care teams medevac

2 Specialized care teams medevac

In recognition of the need for a more modular and context adapted approach, the use of SCTs to support critical health-care gaps has emerged. SCTs provide specialized clinical services, reflected by their team composition, skills and competencies, and deploy with the appropriate equipment and consumables that are required to provide their specialist services.

SCT medevac (hereafter referred to as medevac teams) are multidisciplinary teams that provide standardized medevac services that extend from basic to critical transport and patient management, as well as scenario/case specific transports, providing context-adapted services, as outlined in Table 1. All medevac teams must align their services to the local context, be self-sufficient and adhere to the core standards and guiding principles as defined by the EMT framework *(2)*.

Table 1. Overview of the defined medevac team capacities
(see 5.3 and 5.4 for team capabilities and service provision and Annex 1 for staffing considerations on team composition and competencies)

Medevac team	Key characteristics
Medevac (basic)	Transport and management of patients with stable vital signs, minor injuries, non-critical or non-life-threatening medical conditions, who require basic medical care. The objective is to maintain stability and prevent deterioration during transport.
Medevac (advanced)	Transport and management of patients requiring advanced medical care and monitoring. This includes advanced life support, advanced airway management, management of injuries/illness and clinical deterioration, medication administration, and more invasive procedures.
Medevac (critical)	Transport and management of critically ill patients with active/immediate life-threatening disease or injury, and a high probability for clinical deterioration/acute decompensation during transport *(6)*. Ability to adapt services to the context and individual patient needs, including context adapted equipment, consumables and team composition/competencies.
Scenario/case specific transports	Scenario/case specific transport and patient management. Specialized transport teams, providing context-adapted services in regard to team composition, skills, competencies, equipment and consumables to provide scenario-/case specific specialist care. • Highly infectious disease (HID) transport • Burns care transport • Chemical, biological, radiological, nuclear, explosive (CBRNe)/hazmat transport • Paediatric/neonatal critical care transport • Extracorporeal life support (ECLS) transport

How to use this guidance

3 How to use this guidance

This publication complements and expands on the guidance provided by the *Classification and minimum standards for emergency medical teams* (2) which set the core standards and guiding principles applicable to all medevac teams. Taking into consideration variations in pre-existing capacities and capabilities across different health systems, the technical standard chapters include minimum requirements applicable to all medevac teams and recommendations dependent on the context. Table 2 provides the definitions of minimum standards, recommendations and guidance notes in the context of this publication.

Table 2. Definitions of minimum technical standards, recommendations and guidance notes in the context of this publication

MINIMUM TECHNICAL STANDARDS	Promote a consistent approach and a basic level of standardization informed by available evidence, expertise and experience, obtained through a consultative process
RECOMMENDATIONS	Cover additional services and procedures that contribute to achieving optimal care and ideally should be strived for
GUIDANCE NOTES	Provide additional information to apply the minimum standards and recommendations

Medevac coordination in emergencies

4 Medevac coordination in emergencies

4.1 Introduction

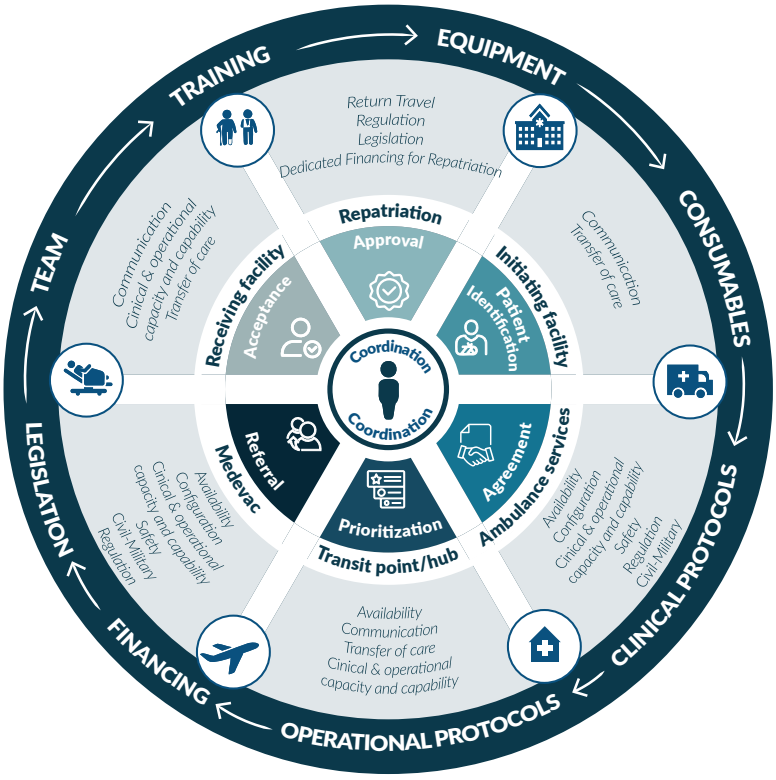
Given the complexities of today's emergency response environment, different contexts and types of emergencies, a well-established coordination mechanism is crucial to ensure a safe, rapid and effective emergency response. The objective of medevac coordination is to support safe, effective and efficient medical transports to an appropriate level of care. It is crucial to involve all relevant stakeholders. This includes the patient, their families and legal guardians, initiating and receiving facilities, medevac providers and the coordination entity. A well-established coordination mechanism facilitates the efficient use of available resources, ensures that administrative, logistic and clinical standards are met, and an overall agreement on medevac and additional considerations, such as repatriation, is being sought. Fig. 1 demonstrates a strategic approach to coordination, combining the 5 key stages of preparedness, activation, operations, transition and deactivation. In addition, after action reviews serve as a valuable tool for conducting performance assessments and lessons learnt exercises following an emergency. These reviews can be performed internally by teams or on a larger scale, involving all stakeholders that participated in the emergency response.

Fig. 1. EMT Life Cycle - the 5 key stages of coordination

Adapted from WHO EMT Coordination Handbook, unpublished data, (2024).

Organizations intending to offer medevac support are encouraged to collaborate with each other in the preparedness phase before any potential deployment. This collaboration will establish lines of communication, prevent duplication of effort and ensure a smoother integration into any either existing or acutely activated system during emergencies. Tabletop exercises, virtual scenarios or simulation training can be conducted during this phase to enhance readiness. This will support identifying potential limitations of each agency's coordination, clinical and operations support capacities, inform future preparedness activities and facilitate an accurate response to potential requests for assistance. When the need for patient referral or medevac capacities in an emergency is identified, relevant authorities of the affected area or country need to collate and provide sufficient information to inform the coordination mechanism. Teams need to be able to efficiently respond to any request for assistance and provide an accurate offer of capacities and services in form of expressions of interest (see Annex 6). When establishing a coordination mechanism to support emergency medevac operations, it is crucial to consider all aspects of the medevac operation, including activation, referral and confirmation of acceptance, end-to-end transfer and, in case of cross-border medevac, repatriation of patients and potentially accompanying adults, family members, or legal guardians. To demonstrate the complexity of medevac operations in emergencies, Fig. 2 displays central themes of a conceptual medevac cycle, such as coordination, clinical care, patient transfer, operational support and logistics (OSL) and water, sanitation and hygiene (WASH). It demonstrates the individual components of medical evacuation on a patient's pathway to appropriate care. The aim is to enable a safe, timely and effective transfer of the right patient to the right place at the right time.

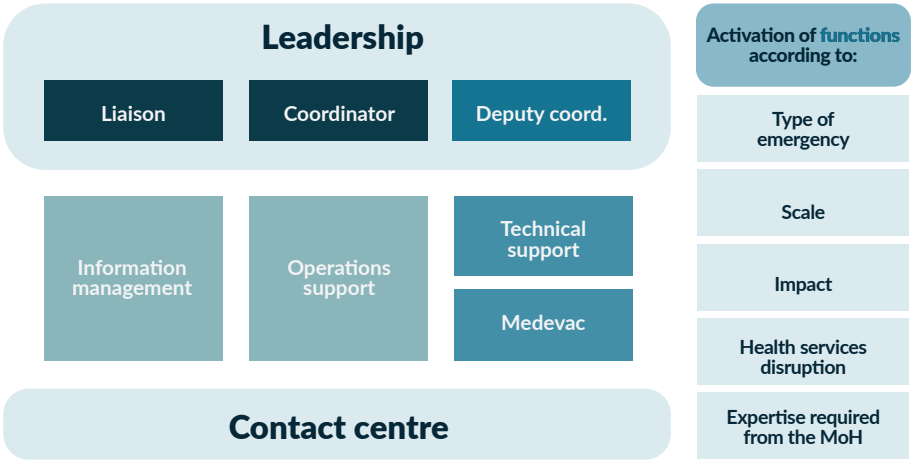
Fig. 2. Medevac cycle - general principles to guide medevac decision-making
All considerations on the external blue circle need to be applied to every single step of the medevac cycle



4.2 Activation of the response and coordination mechanism

Surge capacity refers to a health-care system's ability to alter its usual operations to manage a sudden, unexpected increase in patient volume that would otherwise severely challenge or exceed the current capacity of the health-care system. Once a country is affected by an emergency, it is crucial for them to rapidly activate and set up a well-organized surge coordination mechanism. A structured approach is best set up in the preparedness phase. This will facilitate the timely establishment of a quality and patient centred response and will streamline available resources to best match needs. One of the first objectives when activating the coordination mechanism, is to assess the immediate surge requirements, the type and status of the patient(s), the local system's and health-care facilities' capacity and capability to manage or transfer the patients, and whether local teams are available or need to be dispatched. This analysis will provide relevant authorities with the necessary information to determine whether they can sufficiently manage the surge requirements within their own system, or if there is a need to request additional assistance. If, in the context of these surge requirements, a country affected by an emergency identifies gaps in locally accessible specialized care, or an insufficient ability to cope with the increased number of patients, a country may decide to request international assistance, both in terms of support to health-care facilities and for medical evacuation. A number of steps are required to activate medevac operations, which may often be carried out simultaneously and rely on existing knowledge of emergency response frameworks and coordination mechanisms, such as Emergency Medical Teams Coordination Cells (EMTCCs). When setting up a coordination mechanism, it is crucial to identify all functions, including medevac coordination. Fig. 3 provides an example of the internal structure of a surge coordination mechanism, such as the EMTCC, which must be able to adapt its size and composition according to context and needs, both through the various phases of an emergency and across different emergencies.

Fig. 3. Internal structure of the coordination mechanism, such as an EMT CC



Adapted from WHO EMT Coordination Handbook, unpublished data, (2024).

4.2.1 Integration of the medevac coordination function

In order to address the specific objectives, operational needs and challenges of national and international medevac, it is essential to integrate medevac coordination as a dedicated function into the affected country's emergency response framework and coordination mechanism. Streamlined coordination mechanisms, adapted to operational needs and context, are essential to facilitate the delivery of life-saving services. Depending on context, the function of medevac coordination will be carried out by an experienced multidisciplinary team to efficiently address intersectoral coordination tasks. This may include seconded members from national and international medevac teams to facilitate communication and ideally is scalable depending on the level of activity and requesting country's capability and capacity. The role of medevac coordination requires a strong combination of key competencies. These include prior experience or training in emergency coordination of health services, clinical understanding and expertise in medevac operations, including pre-hospital management and aeromedical transports. These should be complemented with strong logistics expertise, ideally with medevac experience, knowledge and experience in communication, information management as well as civil-military coordination (see Table 3). In addition, and depending on the context, more specialized experience in areas, such as critical care, highly infectious diseases, burns, CBRNe, neonatal/newborn and paediatric critical care, or ECLS transport may be required.

Table 3. Combined key competencies and skills required in medevac coordination

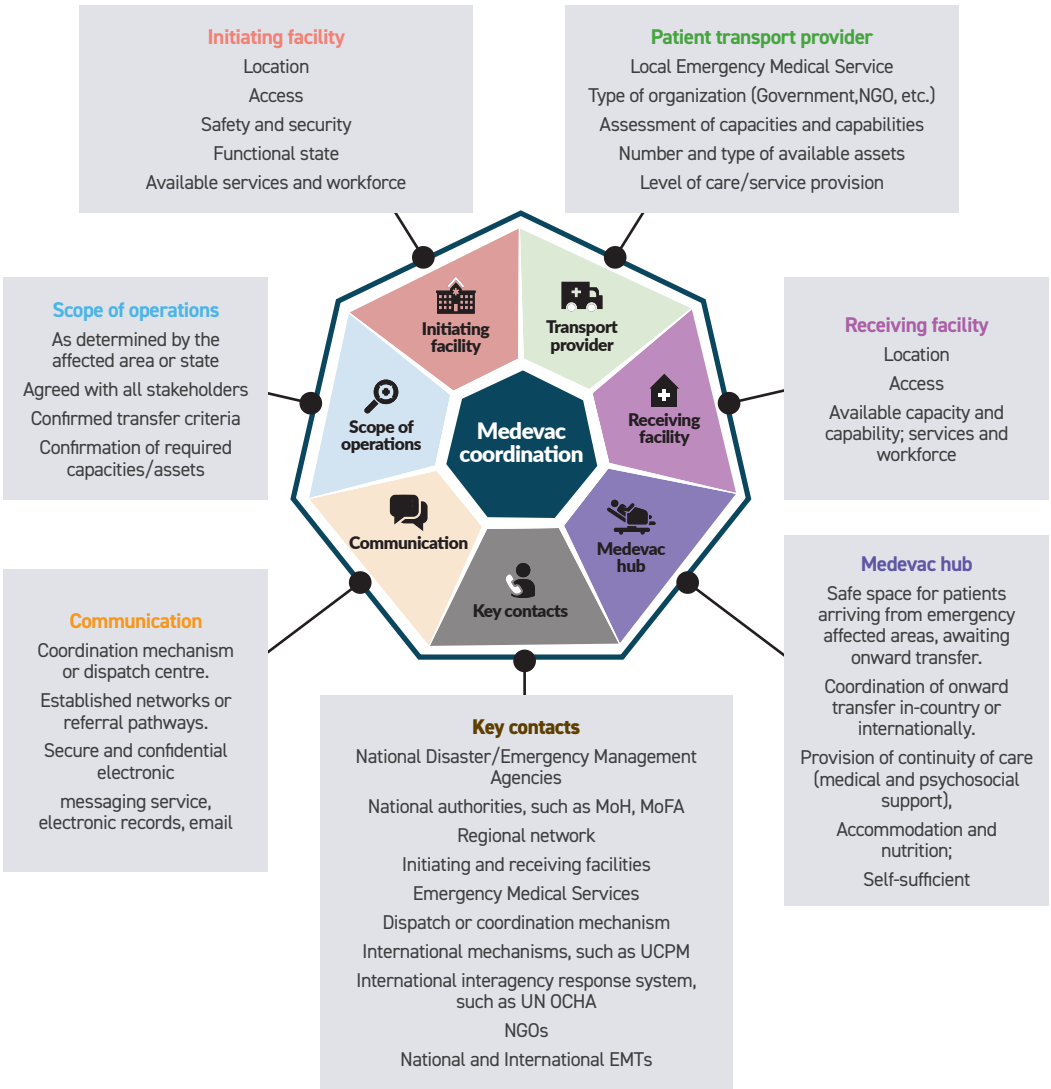
Key competencies in medevac coordination
• experience or training in emergency coordination of health services • clinical understanding and expertise in medevac operations, including pre-hospital management and aeromedical transports. • strong logistics expertise, ideally with medevac experience • knowledge and experience in communication • experience in information management • experience in and knowledge of civil-military coordination.

4.2.2 Mapping the system – coordination partners and key contacts

Medevac is carried out in close coordination and with approval of all relevant authorities, considering the existing legislation and regulatory frameworks. It is crucial to map the system and establish relations and partnerships with all relevant coordination partners and key stakeholders. Approval mechanisms should be determined from all relevant regulatory bodies. Existing response capacities and capabilities need to be evaluated at local, national and international levels for their ability to support medevac operations throughout the different phases of the

medevac cycle (see Fig. 4). Coordination and support functions may exist across national and international agencies both on the ground in a physical domain or virtually. They may exist in ministries of health and their health emergency operation centres (HEOC), national disaster/emergency management agencies, other national authorities, such as the Ministry of Foreign Affairs, the Ministry of the Interior, the Ministry of Defence, international mechanisms like the European Union Civil Protection Mechanism (UCPM), embassies, customs and border control, the international interagency response system, such as the United Nations (UN) Office for the Coordination of Humanitarian Affairs (OCHA), On-Site Operations Coordination Centre, NGOs, and national and international EMTs *(7)*.

Fig. 4. System mapping



4.2.3 Establishment of medevac transit points or hubs

Depending on the context and nature of the emergency, the establishment of medevac transit points or hubs to initially receive medically evacuated patients and coordinate their final transfer in-country or internationally, may be considered. This is especially beneficial in the context of long distance or cross-border operations, involving different stakeholders and organizations, as well as in prolonged emergencies. Depending on the complexity of the operation, a medevac operation can be delayed due to many factors, including legal regulations, weather conditions or technical issues. Hubs can provide a safe space for the patients arriving from the emergency affected area, and provide continuity of care, including medical, mental health and psychosocial support, accommodation and nutrition. Medevac operations also provide support to the local health-care system until patients can be transported to a safe and appropriate location/facility. Medevac hubs provide patient transfer capacity and are ideally set up and located near international airports or highways.

Medevac hub, Rzeszów, Poland, 2022. © WHO/Agata Grzybowska

Case example 1

Medevac hub establishment

The EU Medevac Hub was established by the European Commission's Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO) in conjunction with the Polish Ministry of Health, and plays a critical role in streamlining the transportation of patients requiring medical evacuation from Ukraine via the UCPM. Beyond providing essential care, transportation and medical support, hubs can enhance the overall efficiency and effectiveness of medevac operations in several key areas. Strategically located in Rzeszów, Poland, this hub leverages its proximity to the Ukrainian border and local airport facilities and provides rapid and seamless patient transfers. By serving as a logistical nexus, the hub delays and reduces the strain on individual Member States, allowing resources to be allocated more effectively by allowing medevac flights to both operate on a regular schedule and tailored to urgent needs. Hubs may also complement similar facilities within the emergency/conflict affected area or country, creating an integrated system of care that prioritizes patient safety and comfort at every stage of their journey. Patients are stabilized and prepared for transport through pre-established protocols. The hub serves as a vital checkpoint where medical professionals can assess, treat and adapt care plans to ensure the most appropriate onward referrals. This continuity of care reduces the risk of complications during transit and improves outcomes for those requiring specialized treatment. Additionally, a hub's centralized operations foster collaboration and coordination among all stakeholders, such as Member States, civil protection mechanism, international organizations, and national and international medical teams. It can streamline administrative processes, enhance resource sharing, and facilitate the deployment of medical assets and personnel. This cooperative approach maximizes the efficiency of the overall medevac framework, ensuring patients benefit from the collective expertise and capabilities of participating nations. Medical staff at the hub are provided by the Polish EMT and the evacuations are coordinated between the Ukrainian Ministry of Health's Medevac Coordination Unit, WHO and DG ECHO's Emergency Response Coordination Centre *(8).*

4.2.4 Request for assistance

Also see Annex 8: Example Expression of Interest Form

When an area or country decides to request assistance, a call requesting expressions of interest should be issued, clearly outlining surge requirements and the anticipated scope of operations. This should include information obtained during the initial assessment to facilitate the timely activation and approval of the appropriate surge support capacities, such as medevac teams. WHO can play a role in amplifying such a request for assistance by disseminating it to the EMT network and existing response mechanisms, and providing technical assistance as required. When issuing the request for assistance, essential information must be gathered and communicated to ensure a safe and efficient evacuation, including a status update for the affected area or country concerning:

- pre-existing existing standard operating procedures (SOPs);
- functional systems for the referral and transport of patients;
- available retrieval services (civilian or military);
- existing and functional hospital networks; and
- existing and functioning emergency medical services, including dispatch capability, and their respective key contacts.

For international medevacs beyond the border of the country originating the request, relevant cross-border regulations, such as landing permissions, health, immigration and customs regulations, should be considered.

4.2.5 Assessment of available medevac capacities and capabilities

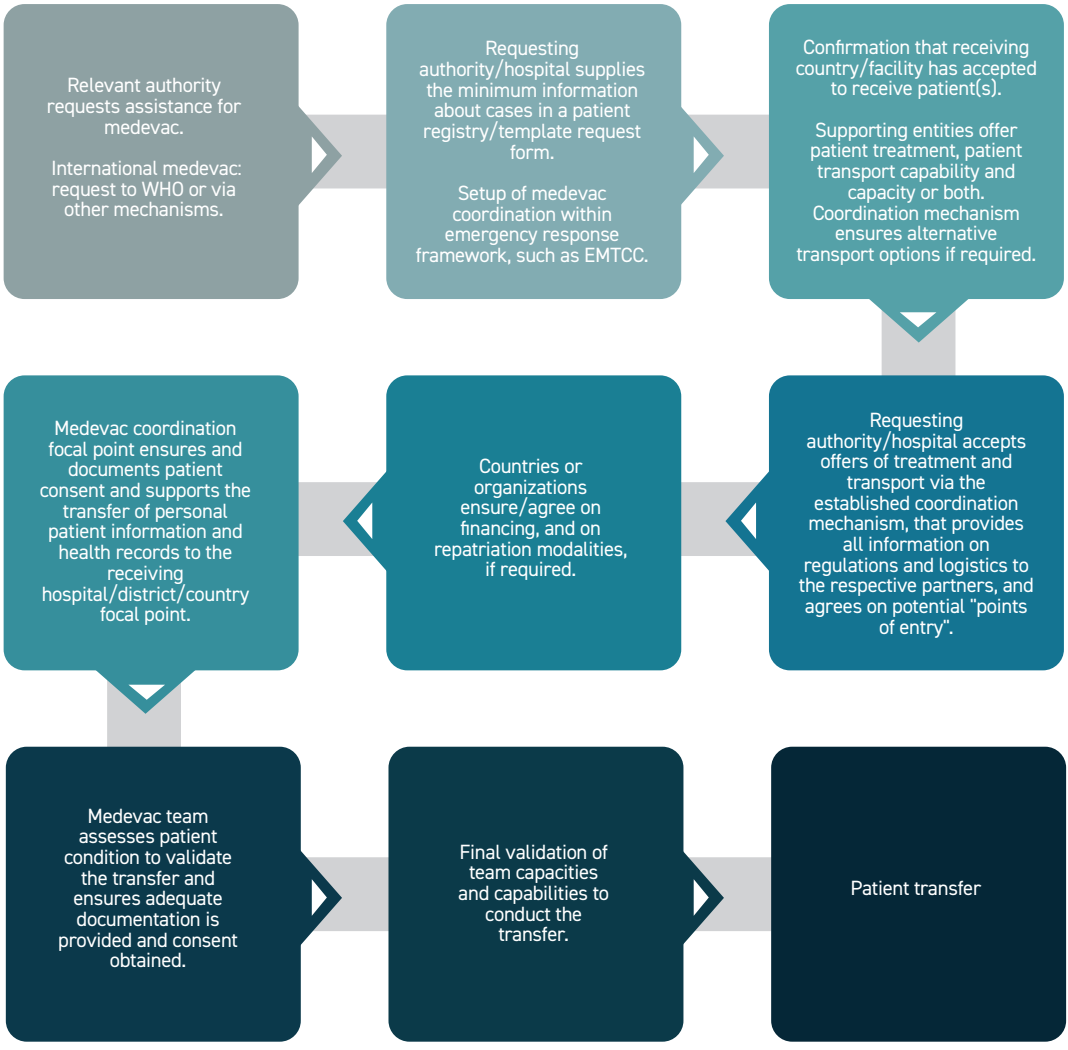
Also see Annex 8: Example Expression of Interest Form

To assess available medevac capacities, medevac teams need to provide relevant information when sending their expressions of interest, including patient care capacity and capability, time frame for mobilization, types, configurations and range of their available assets, ground support requirements and information regarding the teams' commitment to support repatriation. Teams need to be able to clearly demonstrate and prove the availability of safe and reliable transport assets, including authorization to operate, that may be owned by the teams themselves, provided through pre-existing agreements with third-party providers, civilian or military entities.

4.2.6 Medevac process flow

When setting up medevac operations, all stakeholders must be informed and agree on a common medevac process flow (see example Fig. 5), adapted to the emergency context and to the scope of operations. Considerations will vary, depending on whether operations remain within country borders or need to be supplemented with international assistance and transfer.

Fig. 5. Medevac process flow



4.2.7 Information management requirements

Please also see 4.9 Information management and documentation

Medevac teams maintain confidential records of clinical care, interventions, monitoring and possible complications, while also providing copies to the receiving facility and the patient. They regularly report to the relevant local health authority. If available, local information management systems should be used and adapted to the specific event. If no such system exists, it is crucial to establish a commonly agreed-upon framework and tool, such as the Minimum Data Set. From the outset of medevac operations, a well-structured medevac data and patient registry should be established and regularly updated in close coordination with local authorities.

This registry should aim to:

- accurately capture critical information required for the movement of patients;
- efficiently manage patient flow;
- facilitate the accurate identification of patients and potentially accompanying individuals and track their movement across borders;
- facilitate communication between the medevac coordination mechanism and national authorities;
- inform the larger coordination mechanism on potential additional requirements; and
- provide the option to extract activity reports.

4.2.8 Agreement on communication pathway and platform

Please also see 4.9 Information management and documentation

To support secure and efficient communication, stakeholders, providers and coordination partners must agree on a common approved communication platform or secure information exchange systems, as soon as coordination functions are activated. Clear and transparent communication among all relevant stakeholders, including national authorities, international agencies, initiating and receiving facilities, transport providers and coordination mechanism, is essential for a successful medevac response. Depending on context, pre-existing communication pathways may need to be adapted. Table 4 provides an example communication pathway for medevac.

Table 4. Example communication pathway

	Initiating facility	Medevac coordination (multidisciplinary)	Transport provider	Receiving facility
Referral	**Responsible clinician** ☐ Identifies patient and confirms eligibility for transfer. ☐ Obtains patient/legal guardian consent. ☐ Establishes communication with medevac coordination and transport provider. ☐ Completes clinical documentation, referral and consent forms, and provides copies to medevac coordination and transport provider. ☐ Provides copies of all medical reports and results to transport teams. ☐ Verifies medical insurance/medical cost coverage (if applicable*).	**Information manager** ☐ Registers referral in information management (IM) system. ☐ Sends medevac request and referral form to the supporting agency (if applicable) and receiving facility contact. **Clinical coordinator** ☐ Verifies clinical information/need and eligibility for referral. ☐ Contacts Responsible Medical Provider at initiating facility and confirms patient condition. ☐ Determines required level of care of patient. ☐ Determines if patient status may change or deteriorate during transfer. ☐ Confirms medical insurance/medical cost coverage (if applicable*). ☐ Confirms patient(s) need for isolation, including communicable diseases and multidrug resistant organisms (MDRO) and identifies required precautions, such as transmission-based precautions/ isolation, appropriate personal protective equipment (PPE) and decontamination measures. **Operations support and logistics** ☐ Alerts transport provider and confirms availability. ☐ Verifies relevant documentation for transfer.	**Transport Coordination** ☐ Confirms transfer request was received. ☐ Determines transport asset availability and configuration. ☐ Shares relevant logistical information with coordination cell, such as available team capability and capacity and additional requirements, such as ground transport.	**Responsible accepting clinician** ☐ Confirms referral request was received. ☐ Identifies and confirms treatment capacity and capability at receiving facility. ☐ Confirms availability to accept referral with coordination cell/ Ministry of Health. ☐ Identifies the responsible point of contact. ☐ Determines and communicates acceptable time frame for referral. ☐ Confirms treatment cost coverage (if applicable*).

Confirmation

Initiating facility

- [ ] Confirm if there are accompanying family members.
- [ ] Obtain confirmation of acceptance from receiving facility.
- [ ] Obtain medical insurance information (if applicable*).
- [ ] Provide copies of patient consent form to the patient, the transport team, the receiving facility and the coordination mechanism.

Medevac coordination (multidisciplinary)

Clinical Coordinator

- [ ] Confirms clinical criteria for medevac.
- [ ] Receives updates about patient condition from initiating facility's responsible medical officer.
- [ ] Communicates and updates patient condition to transport teams and receiving facility.

Operations support and logistics

- [ ] Activates transport provider.
- [ ] Activates the receiving facility.
- [ ] Sends medevac notification to relevant providers.
- [ ] Requests confirmation from receiving facility and transport provider.
- [ ] Confirms travel documents are in order or request alternate travel documents and clearance from relevant authorities for patients and any accompanying family members.
- [ ] Confirms transport option proposed by provider.
- [ ] Informs the receiving facility of transport schedule.
- [ ] Confirms ground ambulance in departing and receiving locations/countries.
- [ ] Confirms necessary access to transfer facility, such as airport with local authorities.

Transport provider

- [ ] Confirms information received.
- [ ] Verifies asset and team availability.
- [ ] Completes mission planning.
- [ ] Proposes best available option to coordination cell.
- [ ] Activates transport provider(s).
- [ ] Initiates clearance request.
- [ ] Updates coordination cell on transport details.
- [ ] Updates coordination cell on flight clearances status.
- [ ] Ensures all documentation received for patient.

Receiving facility

Responsible accepting clinician

- [ ] Confirms acceptance of patient(s) with coordination cell.
- [ ] Communicates information on expected patient(s) and estimated time of arrival internally.
- [ ] Ensures capacity to receive patient(s).

	Initiating facility	Medevac coordination (multidisciplinary)	Transport provider	Receiving facility
Transfer	☐ Confirms patient handover to transport provider.	**Operations support and logistics** ☐ Supports transport movement, communicates travel mode updates to clinical coordinator and receiving hospital. ☐ Communicates and updates all involved parties on patient condition and status.	☐ Confirms transport time(s), estimated time of arrival at pick up, estimated time of departure and estimated time of arrival at receiving facility. ☐ Regularly updates coordination cell on status and movement. ☐ Completes clinical transfer documentation.	**Responsible accepting clinician** ☐ Receives clinical and transport updates. ☐ Acknowledges transport times estimated time of departure and estimated time of arrival. ☐ Prepares for patient arrival.
Hand over	☐ Liaise with the receiving facility as required for the patient's clinical records or additional required information.	☐ Verifies patient arrival and handover with transport provider and receiving facility.	☐ Confirms transfer and handover. ☐ Confirms patient status and outcome of transfer. ☐ Confirms return to service +/- capacity for repatriation task	**Responsible accepting clinician** ☐ Confirms and documents transport arrival. ☐ Confirms and documents patient handover.
Close Case	☐ Facilitate communication with the patient's family and relevant contacts. ☐ Participate in case debrief (if needed).	☐ Informs initiating facility of completion of transfer. ☐ Sends case closure communication to the receiving facility. ☐ Provides closure confirmation to the Ministry of Health or relevant national authority. ☐ Updates medevac case registry/data system. ☐ Completes case review and case debrief (if indicated).	☐ Sends clinical transfer documentation to the receiving facility and to the coordination mechanism. ☐ Participates in case debrief (if needed).	☐ Consider discharge planning and repatriation early. ☐ Participates in case debrief (if needed).

*cost coverage in regard to medical treatment should be identified during this process.

Adapted from UN system-wide COVID-19 medevac process; https://www.un.org/sites/un2.un.org/files/2020/06/medevac_process_flowchart.pdf

Recommendations/core activities for activation of the medevac coordination mechanism

Also see Annex 3 example medevac coordination checklist.

- Identify where to embed the medevac coordination function within the coordination mechanism of an existing national emergency management response framework.
- Assess available capacities, existing gaps, the immediate surge requirements and determine a clear scope of operation for medevac surge support.
- Identify experienced staff to implement the medevac coordination function.
- Map the system and confirm coordination partners, key stakeholders and contacts, to evaluate existing response capacities and capabilities to support medevac operations at different levels (local, national and international), from initiating facilities to receiving facilities, throughout the different phases of the medevac cycle. Coordination functions may exist across national and international agencies both on the ground and virtually.
- Identify if there is a need for an international request for assistance.
- Use the existing system's SOPs for the referral and transport of patients within the affected area or country. Where these do not exist, establish SOPs in close coordination with relevant local authorities.
- If applicable, draft a request for assistance, asking teams to provide expressions of interest with detailed information on their available capacities and capabilities (see Annex 8).
- Agree on a clear and context adapted medevac process flow/algorithm.
- Establish what medevac capabilities can be deployed based on information available.
- Establish and regularly update a well-structured patient registry in close coordination with the local authorities at the very beginning of all medevac operations to manage patient flow and inform the development of future capacity.
- Establish a clear communication pathway and platform(s) to support efficient communication with stakeholders, providers and coordination partners.
- Establish surveillance systems and awareness throughout the entire medevac system in regard to communicable diseases and multidrug resistant organisms (MDRO). Consider potentially required levels and modes of isolation, transmission-based precautions and specific considerations, such as context-specific PPE and decontamination practices.

Guidance Notes

Coordination functions may exist across different national and international emergency management actors and agencies, both on the ground and virtually, including different ministries, such as the Ministry of Health, Ministry of Foreign Affairs and international mechanisms and agencies, such as the European UCPM.

NOTE: The EMT Secretariat (WHO) and the Emergency Response Coordination Centre (ERCC) of DG ECHO developed and signed joint SOPs for the activation of response capacities. These SOPs provide direct operational guidance to follow before, during and after a health-related emergency. They enable a timely, effective and coordinated action, when responding to emergencies outside of EU Member States/UCPM Participating States territory. Such coordinated actions may include cross cutting issues on health emergencies from all-hazards ensuring a seamless division of responsibilities and accountabilities among the collaborating organizations.

A total of 85 sick and severely injured patients are evacuated from Gaza to Abu Dhabi, United Arab Emirates (UAE), for specialized care in a complex joint evacuation, supported by WHO in partnership with the Government of the UAE and other partners, such as the emergency medical teams Cadus and International Medical Corps, MSF Belgium and the Palestine Red Crescent Society (PRCS), 2024; © WHO EMRO

4.3 Decision-making

Please also see additional clinical decision-making considerations 5.2

The purpose of medevac ranges from surge support in moving patients to appropriate levels of care, to transferring patients to decompress local health-care systems by enhancing their capacity to better manage acute emergency surge needs. Decision-making on whether to initiate a patient's medevac is greatly dependent on the local context, the patient's condition, functionality of pre-existing capacities, available resources, including the availability of appropriate en route medical care, risk assessments and the level of potential support requested by relevant authorities. Defining clear patient selection criteria for medical evacuation and establishing a consistent and transparent decision-making mechanism, in close collaboration with relevant authorities in the affected country or area, will inform and support medevac operations, including the required level of assistance. Decisions will often not only be based on medical conditions, priority and dependency, logistical and regulatory issues, such as cross-border restrictions. These decisions will also often encompass significant and challenging ethical considerations *(9)*, such as the allocation of scarce resources, survivability or fitness to travel. Transport risk assessment is dynamic and should include the patient's medical condition, priority and dependency, associated risks to the patient, such as the likelihood of deterioration during transfer, as well as the ability to mitigate including identification of an appropriate transfer team. In addition, it is critical to identify risks associated with safety and security, including staff health and well-being. Modes of transportation and assets may pose additional challenges associated with access to the patient and equipment, team familiarity with the environment, and complexity of the logistics. Decisions to perform medevac need to be made collaboratively by relevant authorities, the coordination mechanism, transport teams and the patient/legal guardian prior to any medevac operation. Decision-makers need to include considerations on potentially dynamic patient needs, operational context, available resources, continuity of care *(10)* and, in the case of international medevac, repatriation and potentially health insurance coverage. Transfer criteria should include the functional state of the existing health-care system, available surge capacity, potential requirements for decompression of local services and the appropriate use of higher-level care, with consideration of the individual patient's survivability.

MINIMUM TECHNICAL STANDARDS

- Use clear, ethical, transparent and established criteria to select patients for medevac, agreed upon by all relevant stakeholders.
- Agree on and use shared or consistent documentation to support continuity of care.

Case example 2

Considerations to medevac a patient with severe acute respiratory disease/ARDS

As the COVID-19 pandemic emerged globally, different mechanisms were established to medically evacuate patients with severe disease from humanitarian settings to appropriate levels of care. This case provides an example of medical decision-making regarding fitness to travel/survivability of a critically ill patient in the early stages of the pandemic (June 2020). The patient was diagnosed with severe disease due to suspected COVID-19 and had been hospitalized in a medical facility at the local remote duty station. Due to the local unavailability of polymerase chain reaction (PCR) testing for COVID-19, the test results were not able to be obtained from the capital in a timely fashion. Clinically, the patient presented with acute respiratory distress syndrome and required intensive care unit (ICU) level support that was not available in the country of the patient's duty station. As a result, a request was made to medevac the patient to an appropriate facility abroad. On receipt of the request, the coordination mechanism processed the case, including obtaining all the necessary clinical and administrative information. These included the latest medical reports, travel documents, personal patient identification documents and consent form. Simultaneously, arrangements for the medical evacuation of the patient were explored with available providers who were able to provide the level of care required throughout all stages of the transport of a critically unwell patient.

The medevac operation would involve multiple phases including ground transport to the initial aircraft from the local facility to the capital and transferring to another aircraft for onward travel to an appropriate level of care abroad. During each phase, the teams, equipment and transport assets would need to have critical care capabilities. The patient was assessed as hemodynamically unstable, requiring further medical stabilization prior to transport to ensure the safe transfer to an appropriate level of care. Further clinical information was requested by the flight physician including arterial blood gases, which were not possible to obtain in the patient's current location. In the context of deteriorating acute respiratory distress syndrome, a conference call between treating physicians, the medical flight personnel, and the coordination team was urgently scheduled to discuss suitability for transport. The aim was to determine the survivability of the critically unwell patient through a joint decision-making process. After reviewing the clinical information and the logistics of the proposed medevac operation it was agreed that the patient was not fit to fly and would not survive the transport. As a result, a decision was made to not move the patient. As expected, the patient passed away due to respiratory failure. This was a difficult case for the teams involved locally, the medical coordination unit and the medevac team. The decision to not transfer this patient highlights the clinical, logistical and ethical challenges that can arise, as well as the importance of a joint decision-making process to support a consensus-based outcome.

Case example 3

Decision-making on patient transport in low resource and hostile environments

This case reflects the multiple, oftentimes conflicting decision-making factors and required considerations for patient transport in resource poor and hostile environments. A medevac team travelled to a health-care facility in a hostile environment in order to evacuate a number of patients. Upon arrival at the initiating facility, one patient (T12 injury) could not be located. The hospital then requested the medevac team to take another patient instead: a severely unwell 14-year-old in hepatic failure secondary to Wilson's disease. Transporting this patient posed operational challenges. Due to security and movement restrictions in the region, pre-approval was required in order for any individual to move from one area to another, which was not in place for this individual. However, the experience of accompanying UN colleagues was that passage could almost certainly be negotiated for a female minor patient, who is unlikely to be perceived as a threat. This operational challenge had to be weighed against the substantial clinical risk to the patient of remaining at the initiating facility. Due to severe resource limitation in the area, if the patient remained in the initiating facility, she was unlikely to survive the night. Subsequently, the decision was made to medically evacuate the patient to another area in the country. She was transported alongside a family of four (mother, arm fracture, burns and shrapnel injuries; 3-year-old male with burns and facial injury; a 14-year-old male with open skull fracture; a 15-year-old female with lower leg in an external fixator and foreign body eye injuries causing blindness. The journey was delayed significantly by an ongoing firefight adjacent to the checkpoint; however, the patient (14-year-old in hepatic failure) was able to pass the checkpoint without issue. Clinically, the patient was exhibiting altered mental status, jaundice and hypotension en route, which was supported through fluids. Further deterioration was not observed during the transport, in spite of the long journey time, and all patients were delivered safely to the receiving health-care facility. Unfortunately for this patient, a positive long-term prognosis required international evacuation. It was ultimately not possible for the agencies involved to negotiate this, and despite an increased standard of care at the receiving facility, the patient died the following week.

Case example 4

Patient transport in low resource and hostile environments

The medevac team was dispatched to meet another ambulance at the regional border in order to continue transporting a patient, with an anticipated remaining transport time of approximately 2.5 hours. The dispatch information received was that the patient was a 27-year-old male with explosive chest trauma and broken ribs, requiring O2 support and analgesia. Upon a rendezvous with the other ambulance, the patient was found to be significantly hypotensive and tachycardic with a high fever. While the patient likely would not have been considered fit for transport from an initiating facility in such a condition, the nature of the handover point left few options. Interventions performed included fluid administration, antibiotics, noradrenaline, steroids, and high flow O2. Diverting to an alternate facility was considered but ultimately discounted, as none of the closer facilities were particularly well-resourced, and while unstable, the patient's condition was manageable by the medevac team. The transport was successful, and the patient arrived at the receiving facility with improved vital signs, compared to when initially handed over. The following week, the now stabilized patient was transported to the capital via medical evacuation train for further care. Long-term follow-up for this patient is unavailable.

4.3.2 Prioritization and dependency

The decision to medically evacuate must consider both clinical and operational factors, including operational context and constraints, resource availability and management, and the scope, extent and duration of the operation.

Prioritization and dependency refer to two systems that facilitate the categorization of patient needs. They provide medical and coordination personnel with the means of assessing the urgency of a patient's clinical condition, including medical support needs and survivability *(11)*. Systems for prioritizing patient transfer and rating patient's clinical dependency are commonly used by civilian and military medical evacuation teams globally to inform decision-making at a clinical as well as a coordination level. It is important that medevac and coordination personnel have clarity and are consistent with the application of the terms "prioritization" and "dependency". Priority refers to the individual's clinical condition and the urgency for immediate treatment. Table 5 provides an overview of the different levels of prioritization based on clinical urgency. The key clinical decision regarding survivability during transfer needs to be determined before requesting medevac. Medevac is resource-intensive, and its main objective is the clinical benefit of the patient. Patients with a reduced probability of survival and high resource needs may be assigned a lower initial priority for medevac than patients for whom there is greater likelihood of survival but lesser clinical urgency.

Table 5. Priority based on clinical urgency

Priority based on clinical urgency
Priority 1 patients require immediate transfer for life, limb or organ function saving treatment or to prevent secondary complications resulting in serious permanent impairments. Evacuation to a higher level of care is required as soon as possible, and in less than 12 hours.
Priority 2 patients require transfer to an appropriate level of care, such as specialist care that may not be locally available. While their current condition is not immediately life threatening, they require transfer to prevent unnecessary suffering, and secondary complications, such as pain or disability within 24 hours.
Priority 3 patients require routine transfer for ongoing specialist care to enhance clinical outcomes. Transfer to a higher level of care as available but recommended within 72 hours where delay to definitive care may reduce clinical benefit.

Dependency refers to the level of care patients require during transfer as outlined in Table 6 and recognizes the need to move patients who have been stabilized but whose condition may remain unstable, possibly requiring additional en route support. The consideration of patient dependency informs the team composition and competencies, as well as required asset configurations, equipment and consumables.

Table 6. Dependency

Dependency	
High dependency	Patients require intensive support during transfer to continuously monitor and provide critical care to appropriately manage their clinical condition. Medevac is to be performed by a medevac team (critical) (see Table 1) and depending on context, may require a scenario/case-specific transport.
Medium dependency	Patients require regular monitoring as there is potential for deterioration throughout the transfer. Medevac is to be performed at minimum by a medevac team (advanced), and depending on context may require a scenario/case-specific transport.
Low dependency	Patients are not expected to deteriorate during transfer but require attention and nursing care. Medevac can be performed by a medevac team (basic), and depending on context may require a scenario/case-specific transport.

RECOMMENDATIONS

- Utilize a system of prioritization and dependency as agreed by all involved stakeholders.
- Develop and ensure use of systems and checklists for complex processes, such as transfer and handover of care, in close coordination with relevant authorities.

Emergency medical team providing medevac services in Ukraine, 2023; © CADUS

4.4 Repatriation

Repatriation is a core component of the medevac cycle and must be carefully planned in advance, especially for international operations involving multiple patients' transfer. A clear transition plan or mechanism, including continuity of care should be in place and agreed by all relevant stakeholders.

RECOMMENDATIONS

- Obtain patient's informed consent for repatriation.
- Set up a central coordination point to streamline potential repatriation processes.
- Establish and implement protocols and procedures for repatriation and continuity of care.
- Relevant authorities in the patient's country of origin, the destination country offering clinical care, and transport teams, if necessary, must discuss and agree on repatriation mechanisms, including return travel, associated costs, transfer of care and reintegration into existing health services in line with available legal frameworks.
- Clearly outline the costs associated with returning home and determine how they will be covered, either by the referring facility, receiving facility, insurance or by the patient privately.
- Ensure that transport teams involved in repatriation obtain all necessary approvals before transferring patients internationally.
- Assess the patient's fitness to travel, considering options such as commercial public transport with additional context adapted legal administrative requirements or dedicated medical transport.
- Arrange return travel to the patient's home or to an appropriate facility for both the patient and potential accompanying family members or legal guardians.
- Document the patient's treatment and support the patient's reintegration into the local health-care services, considering ongoing needs such as rehabilitation, specialist follow-up or appropriate end-of-life care, ensuring a clear handover of treatment records to the entity responsible for follow-up care.
- Establish clear SOPs on dead body management, including repatriation of a dead body and actions to be taken in the event of a patient's death during transfer or treatment abroad.
- Clearly define the ownership and responsibility for dead body management, including the repatriation of remains and pronouncement of death, adhering to relevant legal and jurisdictional requirements.

4.5 Approval for transfer

The selection of patients for medevac is done by the initiating health-care facility in close coordination with the medevac coordination mechanism and relevant authorities (also see 5.3 Decision-making; and 6.2, additional clinical decision-making considerations). The approving relevant authorities must be prepared to provide adequate documentation such as official permission letters for patients and potentially accompanying family members or legal guardians, whose usual travel documentation, such as passports, birth certificates and medical records may be missing, lost or destroyed during the emergency. It is crucial to develop and agree on a clear "approval of transfer" process and documentation to support the efficient and timely transfer of patients. The patients' approval status should be included and highlighted in the patient registry.

RECOMMENDATIONS

- Develop a clear "approval of transfer" process and documentation in agreement with local authorities to support the efficient transfer of patients.
- Medevac teams comply with transfer criteria and support the use of "approval of transfer" documentation to accompany patients during transfer.
- Incorporate and highlight the patient's approval status in the medevac registry.

4.6 Agreement and informed consent

Agreement among all relevant stakeholders, such as the initiating and receiving facilities, the patient and potential caretakers, the authorities requesting assistance, and the medevac providers during each phase of the patient journey is required to activate and facilitate medevac operations. A systematic approach to collect agreement and consent from all relevant stakeholders before medevac is crucial. Comprehensive checklists addressing critical requirements to be agreed on by all relevant stakeholders can facilitate and expedite this process. Informed consent from the patient or legal guardian that, in addition to clinical treatment, covers all relevant details, including the destination of the receiving treatment facility, timing of transfer and costs that might be incurred is paramount. Consent should not delay sequential coordination tasks. While ideally, formal patient consent is received from the requesting facility prior to transfer, confirmation of verbal consent is essential prior to requesting transport. The medevac team needs to clearly document consent, ideally using dedicated consent forms.

MINIMUM TECHNICAL STANDARDS

- Ensure necessary approvals and informed consent are obtained before the transfer of any patient, including repatriation.
- Obtain and document informed consent in the patient's own language, shared language or with the assistance of an interpreter.

RECOMMENDATIONS

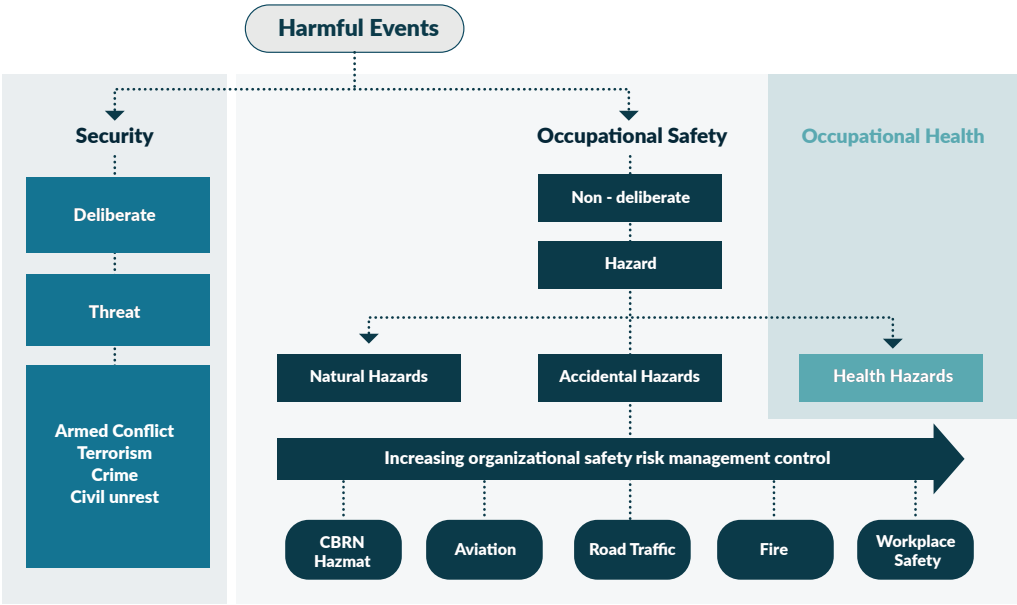
- Include a dedicated space in the clinical documentation to confirm informed consent for transport/medevac has been obtained.

4.7 Safety and security

Please also see Annex 3 example medevac coordination checklist, Annex 6 example transfer of care/patient handover checklist, and also see Blue Book 6.2.8 Safety and security.

The safety and security of staff, patients, potentially accompanying guardians and transport assets is of the highest priority during all phases of any medevac operation. Safety refers to undesirable events that are non-deliberate, such as exposure to workplace hazards, accidents and acts of nature in the workplace. Security refers to undesirable events or malicious acts intentionally caused by human action *(12)*. Fig. 6 provides an overview of the distinction between safety and security events.

Fig. 6. Adapted from UN Security Management System Categorization of safety and security events
Also see Red Book 2.2 Specific security threats (3).



Duty of care refers to the organization's legal duty and ethical responsibility towards their staff and their patients to prevent harm. To appropriately plan and execute medevac operations, teams need to consider a range of factors and prepare for various aspects of safety and security. Depending on the emergency context, this includes the operational environment and its overall safety and security. Challenges include varying transport assets with different infrastructure

and limitations, resource and space restrictions, potential physiological impact during air medevac, expected duration of the transport and potentially known medical hazards, such as infectious disease outbreaks, a high endemic prevalence of communicable diseases and multidrug-resistant organisms (MDRO) *(13)*, or transports in the context of CBRNe events. Teams need to consider and confirm the functionality of the available infrastructure, including communications systems, roads, bridges, railroads, piers, airports and airfields, fuelling points, and customs and immigration regulations. Teams should verify the operational state of police, fire and emergency services in the area, as well as air traffic control, harbour and train masters. These elements need to be re-assessed frequently in regard to safety and security in close coordination with the medevac coordination mechanism and all relevant local, national and international authorities. Another crucial component of safety and security preparedness is team welfare.

MINIMUM TECHNICAL STANDARDS

- Identify a safety and security lead/focal point for all medevac operations

Safety

also see 4.7.1 Team health and welfare

- Establish and implement safety SOPs and protocols for the safety of the patient, team and transport assets throughout the entire period of operations.
- Adhere to strict legal and moral duty of care principles in regard to staff, patient, and if indicated, accompanying legal guardian.
- Establish a clear critical incident management system to appropriately address serious adverse events during operations.
- Conduct regular team training on safety rules and protocol, including specific considerations for various transportation assets.
- Provide pre-transport safety briefings for all staff.
- Conduct a thorough safety assessment prior to deployment, including potential loading, transfer and unloading sites for all transportation modes (ground, air and sea) that will be used. Conduct frequent reassessments of these elements throughout the mission.
- Ensure all assets have operational safety features and systems such as fire extinguisher, survival kits, PPE and hazard avoidance equipment.
- Implement systems to ensure safe patient care and reporting on quality of care, including clear patient safety and quality indicators (also see 6.5 Quality indicators).

Security

- Conduct a thorough assessment of the general security situation prior to deployment and conduct frequent re-assessments throughout the mission.
- Appoint a designated security focal point and conduct a pre-deployment security briefing for all staff.
- Establish a clear critical incident management system to appropriately address serious security events during operations.

RECOMMENDATIONS

- Provide context adapted pre-deployment/just-in-time training to all staff.

4.7.1 Team health and welfare

Also see Blue Book (2) Annex 4: Core standards checklist

A robust human resources management system must be in place for medical teams to operate effectively and ensure proper duty of care for their members *(2)*. Medevac staff frequently operate in high stress, challenging environments, making it essential to prioritize their safety, health and well-being. This requires meticulous planning, strict adherence to safety protocols, comprehensive occupational health and safety measures, effective workforce management and access to mental health and psychosocial support.

MINIMUM TECHNICAL STANDARDS

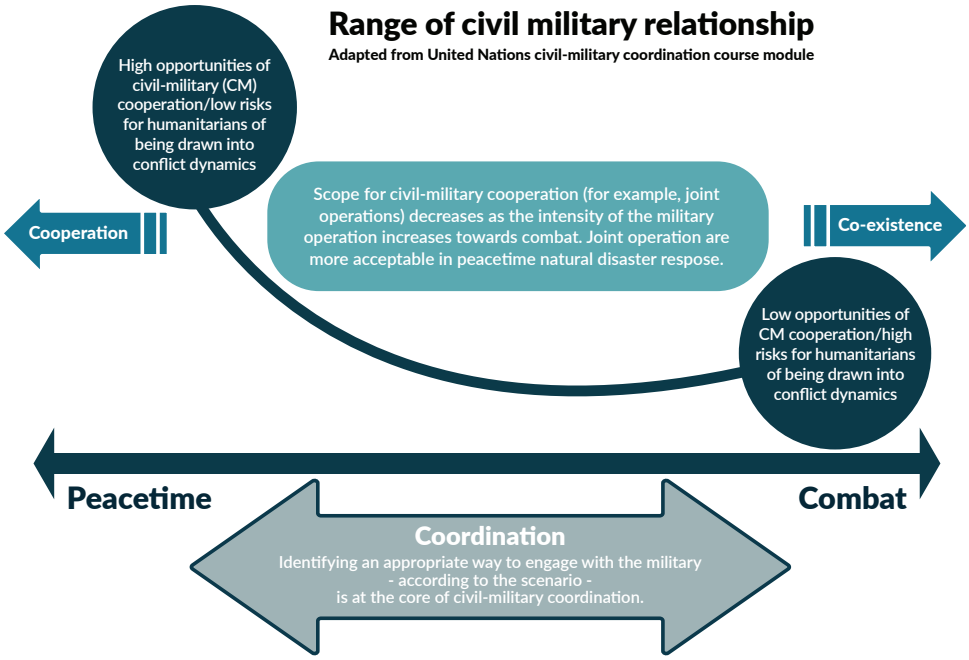
- Establish clear policies and procedures on matters such as staff recruitment, health screening, health, indemnity and malpractice insurance for deployment and clearly explain them to all staff in the recruitment phase.
- Ensure that the team and individual team members are covered by an adequate medical indemnity insurance that includes working in emergency response settings for national and international teams *(2)*.
- Provide periodic occupational health visits for all staff.
- Establish clear operational policies to ensure safety measures, such as hearing and eye protection for all staff, if indicated, protective clothing and dress code pertinent to the mission profile, including turn-out gear, context specific safe operations, such as boots or sturdy footwear, flame retardant clothing, appropriate outerwear pertinent to survival in the operational environments, flight helmets (if indicated), or high visibility reflective vests.
- Ensure appropriate periods of rest, the implementation of a shift system and fatigue risk management as an integral part when planning the composition of each medevac team.
- Strictly adhere to regulations on maximum working hours and mandatory rest periods for all staff, including drivers and pilots.
- Strengthen awareness of all staff to recognize and appropriately respond to stress or mental health challenges.
- Provide opportunities for recognizing and acting on mental health conditions by providing access to appropriate psychological supports or interventions at all phases of deployment.
- Train all staff on standard and, depending on context, transmission-based precautions and IPC practices.
- Ensure staff access to all relevant pre-deployment medical prophylaxis and vaccinations and provide pre- and post-exposure prophylaxis if available and indicated for all staff.
- If responding in the context of an infectious disease outbreak, ensure regular follow up with all staff post deployment, regularly inquiring about potential infectious disease symptoms, and establish well understood follow-up systems for surveillance and contact tracing among staff *(14)*.
- Ensure patient and staff access to appropriate food, water and sanitation facilities during transport.

4.8 Civil military coordination

Humanitarian civil-military coordination (CMCoord) is the essential dialogue and interaction between civilians, military and other armed actors in armed conflicts and humanitarian emergencies, that is crucial to protect and promote humanitarian principles, avoid competition, minimize inconsistencies and, when appropriate, pursue common goals *(15)*. The three key elements of CMCoord are information sharing, task division and planning. According to UN OCHA, civil-military coordination ranges from co-existence through to cooperation where they may be the only viable option for the assistance of the population affected by the evolving emergency. Coordination is a shared responsibility facilitated by liaison and common training. In a response with a strong presence of humanitarian and UN agencies, OCHA remains the custodian of the CMCoord function and designates access and/or CMCoord officers in all country and regional offices where OCHA operates, to liaise with relevant partners and military actors and facilitate humanitarian access and activities, ensuring a principled humanitarian action. Additionally, several UN agencies and international NGOs have expanded on humanitarian-military interaction and are active in all relevant platforms where important decision-making processes, including medevac, are discussed and made. In nationally led responses, there may be a need to identify persons with the profile and decision-making authority to carry out the liaison role and ensure dialogue between appropriate civilian and military stakeholders. The coordination structure and extent vary from one context to another, and similarly the functions and liaison arrangements differ between conflict, sudden onset disasters and public health emergency settings. Each is guided by a set of global guidelines, such as the Oslo and Military and Civil Defence Assets guidelines *(16, 15)*, which support the implementation of activities and details operational tools and protocols relating to the nature of response, guiding, among other topics, the use of foreign military assets in such situations. In addition to UN mechanisms, others may be activated depending on the location, type and nature of the emergency response in regions around the world, including regional military alliances and multinational task forces such as NATO, UCPM or other regional alliances. Implementing strong and efficient civil-military coordination prior to humanitarian emergencies is crucial for ensuring access and facilitating movement of staff and assets in emergency settings. In the medevac context, military assets and associated support services are likely to assist in direct patient transfer as well as the coordination of international teams with embedded military support. Areas for joint planning and its structure depend on the context, as well as the level of direct interaction between civil entities and the military, considering potential risks and gains for the health response. Interactions may include security management, medevac/casevac and transport, logistical support, sharing of resources. When joint planning is deemed necessary and appropriate, the CMCoord liaison officer must identify the information required to inform the planning process – ideally well in advance – and establish pre-conditions and mechanisms, and in some cases, the humanitarian notification, to exchange information and ensure planning. If or when appropriate, the CMCoord officer will serve as the interface between the military and the EMTs to identify and establish clear procedures for medevac. As recommended by WHO for national preparedness *(17)*, many elements of planning and information-sharing should be pre-established in coordinated efforts to ensure readiness for response. Teams need to consider a number of factors when engaging in civil-military activities in a health

emergency response. These range from ensuring the acceptance by the affected population to preserve access to care and security, strictly adhering to the humanitarian principles of humanity, neutrality, impartiality and operational independence, ensuring the best use of resources from different teams and backgrounds. Moreover, teams involved in medical evacuations must have clarity whether their roles in coordination respond to the medical component of the response (acting as EMT, under EMT coordination mechanisms) or if they are participating in the activity as part of an operational military force in the area. These definitions will direct the strategies to ensure acceptance, mitigate risks and prevent misunderstandings in the division of roles and responsibilities. Fig. 7 provides an overview of possible CMCoord activities, according to OCHA's classification.

Fig. 7. Distribution of possible CMCoord activities, according to OCHA's classification



Adapted from United Nations civil-military coordination course module, "About UN Civil-Military Coordination", https://www.dialoguing.org/about/about-un-cmcoord

RECOMMENDATIONS

- Ensure that engagement with military assets, as well as the designated structure and personnel for this task, is coordinated with the responsible CMCoord officer in the affected country or via alternative legitimate mechanism or authority within the health response, for example, the EMTCC.

Guidance Notes

- To allow coordination to take place, a channel of communication should always be maintained with the military to make the most of opportunities for cooperation, if possible and appropriate, and, when simple coexistence is the only option available, to advocate for humanitarian principles.
- CMCoord at the national level will be guided by the humanitarian principles to ensure that distinction and division of roles between civilian and military assets maximizes the health emergency response and support to the affected population.
- Carefully consider the perception/potential reaction of affected populations when engaging in civil-military coordination, to inform where the relationship should be on the continuum of collaboration through to coexistence. Consider the impact of military or security objects, personnel and assets on the access of populations to the health response, ensuring the response is centred on the needs of the population.
- The use of Foreign Military Assets in an international response requires coordination between the government providing the assets, the receiving nation and the coordination mechanism, and should only be considered if there are no comparable civilian alternatives to meet critical humanitarian needs.
- As part of the health response planning, the use of military and civil defence assets should be planned to operate within ethical and legal frameworks, to be of limited duration, and include a clear exit strategy to avoid creating dependency on military support.

UN mission to Kamal Adwan hospital, Gaza. Emergency medical team CADUS supports a patient transfer from Kamal Adwan hospital in Gaza to a field hospital in the south, Gaza, 2024. © WHO EMRO

4.9 Information management and documentation

Please also see 4.2.7 Information management requirements and 8.3 Medical documentation and nformation exchange – security and privacy

Effective information management is essential for ensuring consistency, fostering a common language among medevac stakeholders and improving data quality. A continuous, real-time data flow across the different stages of operations – request, evacuation, treatment, rehabilitation, repatriation – enhances patient care quality, boosts operational speed and system responsiveness, and strengthens preparedness efforts through data analysis, research and policy-making. Maintaining the confidentiality of patient health information is essential at all stages of medevac operations, while ensuring that critical stakeholders and care providers have timely access to accurate information for efficient care provision and safe patient transfer. If a standardized information management system is not already in place, all stakeholders must agree on and implement one from the outset of medevac operations in close coordination with the local authorities. The information management system needs to be simple, readily accessible and comply with relevant local, and where necessary, international regulations on privacy and security. Ideally, system design allows for retrospective addition of data from the onset of the event, even before the medevac coordination mechanism is fully established.

MINIMUM TECHNICAL STANDARDS

- Be familiar and comply with all relevant information privacy and security laws and regulations, especially in cross-border transports between different health-care systems.
- Use existing and agreed upon documentation standards.
- Use standardized documentation forms and templates to ensure consistency and completeness.
- Employ secure information exchange systems.
- Regularly report to the relevant local health authority, using local information management systems that are adapted to the context, if available, or if unavailable, use a commonly agreed information management system, such as the Minimum Data Set.
- Use electronic health records (EHRs) whenever possible to facilitate timely and accurate documentation.
- If in place, teams must report to the established medevac data registry.
- Use checklists and algorithms to ensure that key clinical information is recorded.
- Obtain and document patient/legal guardian consent.
- Develop protocols for obtaining accurate medical information and documenting care for unconscious patients.

RECOMMENDATIONS

- Consider the early involvement of a medevac team member with expertise in IT/information management.

Guidance Notes

- Considerations in determining or developing a system for the transfer of patients should include key information about the scope of operations, initiating facility, transport providers, receiving facility communications and key contacts.
- Teams should consider the use of electronic medical records and the development of patient tracker platforms to ensure the information is not only safely kept but also retrievable for matters such as medico-legal inquiries and data analysis.
- Ensure that information is understood by patients, families, carers and providers.
- Depending on context, consider translating all information into the local language used by the patient, local health services, transport providers and the receiving facility.
- Consider the use of a common clinical language, such as ICD11 for clinical documentation.

4.10 Transfer of care

See Annex 5. Example patient referral form and Annex 6. Example for transfer of care/patient handover documentation checklist

Accurate and timely communication of patient information is crucial to ensure that the right patient is transferred to the right place at the right time and receives the appropriate care throughout and beyond the transfer. Clear interdisciplinary communication is essential for efficient, effective and safe patient care and handover. In the complex context of an emergency, patient handovers and transfers of care between different care providers and teams can be prone to errors. Utilizing structured and standardized communication tools with a shared terminology can enhance coordinated care, improve reliability, and prevent the sharing of incorrect or incomplete information *(18)*.

MINIMUM TECHNICAL STANDARDS

- Use standardized communication processes and documentation to ensure safe clinical handover practices.
- Provide copies of all relevant medical records and patient consent to transfer teams, receiving facilities and patients/family members or legal guardians.

4.11 Financial considerations

Setting up an efficient medevac system requires significant financial resources. Countries should develop their medevac system during the disaster preparedness and planning phase, ensuring adequate funding or external support to cover all stages of the medevac cycle, from activation and initial transport to repatriation. Existing capacities should be aligned with anticipated additional needs. Funding resources may include private or organizational insurances, relevant local emergency management agencies, regional and subregional partner organizations, or the international community through donors, UN agencies or other governments.

Clinical care technical standards for medevac teams

5 Clinical care technical standards for medevac teams

5.1 Introduction

Medevac teams are multidisciplinary and provide standardized medevac capacities and services defined by different team types. The competencies and staffing ratios vary depending on the context. Teams may expand their services to more specialized scenarios such as highly infectious disease, burns care, CBRN or neonatal/paediatric transports. The objective of defining clinical care technical standards is to ensure safe and high-quality care for patients while defining the services offered based on context and team type. Clinical requirements such as staff, transport asset type and configuration, equipment and consumables depend heavily on the context and required level of patient care. In certain contexts, team capabilities can be enhanced through dedicated medical direction, which involves remote, real-time advice from an experienced health-care provider to support clinical decision-making. In medevac operations, it is also critical to broaden the focus to include operations involving non-stretcher patients, where transportation may require a seated position throughout the medevac. Recent experiences highlight the need to consider evacuations not only for individual cases but also for groups of individuals with minimal, but still present care needs. These groups encompass vulnerable populations, such as children, elderly people, individuals with psychiatric conditions, and those with psychomotor disabilities. Such scenarios may arise during evacuations from health-care facilities housing these patients. In these cases, the ratio of health-care providers to patients may be reduced, and the use of stretchers may be optional. Adopting this broader perspective in evacuation operations is essential for ensuring an inclusive and effective approach in emergency situations.

5.2 Clinical decision-making

Please also see additional decision-making considerations in the coordination chapter 4.3

The decision to medically evacuate must follow a systematic approach, considering all aspects of the medical transfer, including pre-transfer stabilization, management during transfer, and ensuring continuity of care for the patient. The decision should be carefully evaluated, requiring an experienced medical professional or team to assess both the patient and broader context. Given that several hours or even days may pass between the decision to transfer and the actual medevac, it is critical that treatment is not delayed while waiting for the transfer. The decision to transfer should be reassessed at least daily and immediately revisited after notification that the medevac team is available. The final reassessment is necessary to determine if the patient can still be transferred or if the transfer is still necessary, thus efficiently managing available resources. Generally, the patient should be stabilized within the capacity of the initiating facility before transfer. Teams must be prepared to manage any potential patient deterioration throughout all stages of the medevac. For scenario-specific needs or when additional advice is needed on immediate patient management, advice should be provided by an on-call or remote medical resource, with direction sought from the transport team or the receiving facility. Table 7 provides an example clinical decision-making checklist.

MINIMUM TECHNICAL STANDARDS

- Regularly reassess the patient's condition and the decision to transfer to efficiently manage resources and determine whether the patient still requires transfer and is capable of being transferred.
- Evaluate if the patient's condition and current treatment plan are compatible with the subsequent stages of transport.
- In the case of air transport, conduct a structured pre-transport assessment for air travel compatibility.

Guidance Notes

- Patients with a history of, or acute neurological or psychiatric conditions, require special consideration before transfer. This includes any condition that may be suddenly incapacitating, is acutely progressive, or involves dangerous or disruptive behaviour. These patients must be observed before transfer, depending on their condition to ensure their suitability *(11)*.
- Transfer teams should be trained and have the proper supplies and medications to manage patients that become dangerous or display disruptive behaviour during transport.

Table 7. Clinical decision-making checklist (to be confirmed by initiating, transferring and receiving parties)

Category	Question	Yes	No	N/A	Required action prior medevac*
Type of condition	Trauma	☐	☐	☐	
	Medical/non-trauma	☐	☐	☐	
	Ob-gyn	☐	☐	☐	
	Neonatal (< 28 days)	☐	☐	☐	
	Infant (< 1 year)	☐	☐	☐	
	Paediatric (> 1 year)	☐	☐	☐	
	Critical illness	☐	☐	☐	
	Communicable disease/HID/MDRO	☐	☐	☐	
	Burns incident	☐	☐	☐	
	CBRNe/hazmat agent exposure	☐	☐	☐	
	ECLS required	☐	☐	☐	
Clinical decision-making	Is the patient likely to benefit from care that is not available in the current location/facility	☐	☐	☐	
	Is the benefit of medevac greater than the risk of transport/transfer? *Considerations also should include security, environmental factors, clinical deterioration and time required to reach the receiving facility.*	☐	☐	☐	
	Level of required care: Basic	☐	☐	☐	
	Level of required care: Advanced	☐	☐	☐	
	Level of required care: Critical	☐	☐	☐	
	Additional scenario specific care requirements?	☐	☐	☐	
	HID transport	☐	☐	☐	
	Burns incident transport	☐	☐	☐	
	CBRNe/hazmat transport	☐	☐	☐	
	Neonatal critical care transport	☐	☐	☐	
	Paediatric critical care transport	☐	☐	☐	
	ECLS transport	☐	☐	☐	
	Other capacities required?	☐	☐	☐	
	Patient cleared for the proposed travel by medical officer/authority?	☐	☐	☐	
	Is the patient medically stable/stabilized, but still requires transfer?	☐	☐	☐	
	Is the patient currently medicated/sedated?	☐	☐	☐	

Category	Question	Yes	No	N/A	Required action prior medevac*
Clinical decision-making	Is the patient's condition likely to deteriorate during transfer?	☐	☐	☐	
	In what way?	☐	☐	☐	
	Are all en route management and mitigation measures in place in case of patient deterioration?	☐	☐	☐	
	Have all required arrangements been made to provide all anticipated/required en route interventions?	☐	☐	☐	
	Has the patient been diagnosed with a psychiatric disorder?				
	Is the patient currently stable?	☐	☐	☐	
	Is the patient pregnant?				
	Which pregnancy week?	☐	☐	☐	
	High-risk pregnancy?				
	Risk of miscarriage or preterm delivery?	☐	☐	☐	
Interfacility and transfer team communication *Please also see Annex 9: Checklists for patient transfer*	Has the receiving facility been identified?	☐	☐	☐	
	Has the responsible medical officer's contact information at the initiating and receiving facility been confirmed?	☐	☐	☐	
	Has the responsible medical officer at the receiving facility been contacted?	☐	☐	☐	
	Has the patient's diagnosis, medical condition been discussed with the receiving facility?	☐	☐	☐	
	Does the receiving facility have a complete understanding of the patient's condition and all diagnostic and clinical information has been shared?	☐	☐	☐	
	Has that receiving facility agreed to accept the patient?	☐	☐	☐	
	Has the transfer team been identified and patient specific capacities have been confirmed?	☐	☐	☐	
	Has the transfer team confirmed capability to provide and maintain the required (patient specific) level of clinical management throughout the entire transport?	☐	☐	☐	
	Initiating, transferring and receiving parties have complete understanding of the patient's condition and all diagnostic and clinical information has been shared?	☐	☐	☐	
	The patient/legal guardian has been counselled and informed about options, and the patient's/legal guardian's acceptance/ agreement to transfer is confirmed and documented?	☐	☐	☐	
	Decision to medically evacuate and accept has been agreed by the responsible and competent medical officers in both the referring and receiving health care facilities?	☐	☐	☐	

**If additional action needs to be taken, re-briefing after completion of task is necessary*

Case example 5

Challenges in the context of a high incidence of endemic communicable diseases including MDRO in international medevac in emergencies

This case example reflects experiences from the response to a large-scale conflict, during which a mechanism for medical evacuation was established. More than 3000 patients, either critically ill or injured, were transported to hospitals across 22 countries in the region, which was coordinated by a centralized coordination mechanism. Medical evacuation flights were provided by either the receiving country or third country capacity from an established medevac hub in a neutral location to other final destinations across the region. The suspected and later confirmed high incidence of communicable diseases including multidrug-resistant organisms (MDRO) motivated a strategy for surveillance, screening of involved personnel, PPE and IPC precautions during transport and further treatment and rehabilitation. Lessons learnt include the value of early awareness and protective measures in all aspects of the medevac to prevent transmission of pathogens and MDRO. At some receiving facilities the patients were treated in separate units, enabling measures such as single room isolation, cohorting and dedicated specific staff for the main part of treatment and care. Pooling patients in dedicated treatment units has additional advantages, including the ability for multidisciplinary teams to provide context-tailored treatment and long-term follow-up of complicated injuries, individualized antimicrobial therapy, the availability of specialized antimicrobial drugs, advanced microbiological screening and appropriate laboratory capacities to detect and monitor all relevant MDRO.

5.3 Team capabilities and service provision

Please also see Annex 1: Staffing considerations

Required team capabilities vary depending on the emergency context, the specific scenario, the type and capacity of the transport asset, and the duration of the transport/medevac operations. Table 8 outlines the definitions of the different medevac team capacities (basic, advanced and critical), and Table 9 presents an overview of their respective service provisions. Depending on context and request, more scenario and case specific capacities may be required to provide additional services, appropriately trained staff and context specific equipment and consumables. These may include capabilities for highly infectious disease, CBRNe, burns care, paediatric and newborn critical care, or ECLS transports (6.4). Staffing considerations should also include non-clinical roles, such as OSL personnel, biomedical engineering and others (see Annex 1). Depending on context, teams may need to implement resting periods for staff as part of fatigue risk management. It is essential for teams to establish clear rest protocols and SOPs, along with a defined duty period and rotation plan, especially for prolonged evacuation periods or transports in extreme climate conditions. This may require increased staffing to accommodate shift work. Such protocols are particularly relevant for the long-term use of PPE during infectious disease or CBRN transports. Medevac teams are multidisciplinary, and each team member must be adequately trained based on their role. Depending on the role, team members should have extensive clinical, operations support, or coordination experience aligned with

the services defined for each medevac team type. Additionally, they must be trained to operate within the specific asset or vehicle used for the medevac mission, including adherence to all required safety procedures. Teams should include a medical specialist with context specific experience or specialization and experience in transport/retrieval medicine to provide medical oversight and clinical direction. This specialist should be available either in person for direct patient care or remotely for advice and clinical support. Teams must comply with applicable licensing and registration laws. All team members must hold current professional licenses and be registered to perform their defined services in their home country, as recognized by their profession *(2)*. Additionally, medevac providers must receive approval to work within their scope of practice by all countries where they provide care, including country of origin, the destination country, and any transit countries. If a medevac provider's scope of practice is not authorized in any of the countries, they must work under the supervision of a recognized clinical care provider. The level of supervision, whether in person or remote, must be acceptable to all countries involved in the medevac process. Basic medevac teams may not always include a physician, depending on context and scope of clinical care provided. However, they must have access to medical control or supervision. Staffing for advanced and critical medevac transport teams varies significantly throughout the world, with some teams requiring physicians, while others are staffed with specialty-trained critical care nurses. For teams preparing and planning international medevac deployments, staffing models for advanced and critical medevac may need to include a physician to comply with specific countries' licensure and scope of practice requirements (see Annex 1).

Table 8. Definitions of the different medevac team capacities

	Medevac (basic)	Medevac (advanced) *All services provided by medevac (basic) also apply to medevac (advanced)*	Medevac (critical) *All services provided by medevac (basic and advanced) also apply to medevac (critical)*
Definition	Transport and management of patients with stable vital signs, minor injuries, non-critical or non-life-threatening conditions, who require basic medical care. The primary objective is to maintain patient stability and prevent deterioration during transport.	Transport and management of patients requiring advanced medical care and monitoring. This includes advanced life support, advanced airway management, injury management and responding to clinical deterioration, medication administration, and more invasive procedures.	Transport and management of critically ill patients with active or immediate life-threatening disease or injury who have a high probability of clinical deterioration or acute decompensation during transport *(6)*. Ability to adapt services to the specific context and patient needs, including the use of context adapted equipment, consumables and tailored team composition and competencies. Ensuring the continuation of appropriate and safe critical care en route.
	Low risk of clinical changes	*Moderate risk of clinical changes*	*Moderate to high risk of clinical changes/deterioration*

Table 9. Service provision overview per medevac team
(see Annex 1 for staffing considerations)

Medevac (basic)	Medevac (advanced) *All services provided by medevac (basic) also apply to medevac (advanced)*	Medevac (critical) *All services provided by medevac (basic and advanced) also apply to medevac (critical)*
	Planning for and management of any deterioration in the condition that initiated the transport and to conditions induced by the transport *(19)*.	
MINIMUM STANDARDS		
• Basic life support • Basic monitoring, including SpO2, heart rate (HR), RR, non-invasive blood pressure (NIBP), temperature, evaluation of mental status. • Cardiopulmonary resuscitation, use of an automated external defibrillator. • Basic airway management, including the assessment of the airway and ability to clear and prevent airway obstruction, the use of adjunctive airway breathing aids, such as oropharyngeal airway, nasopharyngeal airway, suction devices and bag valve mask. • Oxygen provision • Pulse oximetry • Fluid management, orally	• Continuous patient monitoring, including SpO2, HR, RR, NIBP, temperature, electrocardiogram (ECG). • Management of hemodynamic parameters, including vasopressor/inotropes provision. • Advanced airway management, including the assessment and protection of a compromised airway through techniques such as patient positioning, suctioning, use of adjunctive airway aids, bag valve mask ventilation, supraglottic and surgical (cricothyroidotomy) airway provision *(23)*. • Capnography • Tension pneumo-/haemothorax management/chest decompression, chest tube insertion, maintenance of previously placed chest tubes for transport. • Fluid management/IV/intraosseous access/ongoing management of existing central access.	• Management of critical care conditions, such as multi-organ failure, severe respiratory failure, circulatory instability. • Provision of invasive monitoring, such as invasive (intra-arterial) blood pressure (IBP) monitoring. • Advanced and complex airway management, including rapid sequence induction, endotracheal intubation, non-invasive respiratory support and invasive mechanical ventilation. • Ability to manage patient in prone positioning • Simultaneous provision of multiple vasoactive medication drips • Continuous iv analgo-sedation

Medevac (basic)	Medevac (advanced) *All services provided by medevac (basic) also apply to medevac (advanced)*	Medevac (critical) *All services provided by medevac (basic and advanced) also apply to medevac (critical)*
• Basic pain management, including non-opioid analgesia per os. • Point of care (POC) testing (glucose) • Thermal protection/hypothermia prevention. • Spinal immobilization • First aid/basic trauma management, including bandaging and splinting. • PFA (psychological first aid) • Urinary catheter monitoring if placed before transfer.	• Fluid input and output monitoring • Maintenance of initiated medical and pharmacological interventions, including IV administration of antibiotics, if indicated. • IV medications including IV pain medication. • Pain management, including opioids in accordance with local regulations. • POC testing, including haemoglobin • Management of urinary catheters and gastric tubes. • Safe handling of blood products en route* • Tourniquet - management and release/ conversion to other bleeding control techniques. • Identification of patients with increased risk of severe systemic complications by tourniquet removal.	• clinical monitoring of sedation depth • POC testing, including arterial blood gas analysis.
Additional considerations for transport of pregnant/maternal/ newborn patients • Ensure the availability of paediatric and newborn sized equipment. • Essential maternal and newborn care, including immediate care at birth, such as delayed cord clamping, thorough drying, assessment of breathing, skin-to-skin contact, early initiation and support of breastfeeding, resuscitation at birth, thermal care, infection prevention and recognition and response to danger signs *(20, 21, 22)*.	**Additional considerations for transport of pregnant/maternal/ newborn patients** • Assisted vaginal delivery • Manual placenta removal. • Postpartum haemorrhage management with uterine massage, IV uterotonic drugs, such as oxytocin and antifibrinolytic medication, such as tranexamic acid, in line with local regulations.	**Additional considerations for pregnant patients** • Tocolytic medication provision

RECOMMENDATIONS

Medevac (basic)	Medevac (advanced) *All services provided by medevac (basic) also apply to medevac (advanced)*	Medevac (critical) *All services provided by medevac (basic and advanced) also apply to medevac (critical)*
• Fluid management by continuing pre-established IVs that were started at the initiating facility. • Basic pain management, includingw non-opioid intramuscular, intranasal or aerosol analgesics according to local regulations *(24)*. • Trained in tourniquet management and release/ conversion to other bleeding control techniques *(25)*. • Identification of patients with increased risk of severe systemic complications by tourniquet removal. **Additional considerations for the transport of pregnant/maternal/ newborn patients** • For higher risk obstetric/ maternal transfers, an advanced team should be requested.	• Advanced airway management, including rapid sequence induction, endotracheal intubation, non-invasive respiratory support and invasive mechanical ventilation. • Continuous IV analgo-sedation • Clinical monitoring of sedation depth • Point of care ultrasound • Expanded POC testing, including arterial blood gas analysis, especially for longer transports or in the transport of mechanically ventilated patients. • Evaluation and treatment for prolonged tourniquet use or crush injury. **Additional considerations for the transport of the pregnant/ maternal patients** • Tocolytic medication provision	• Point of care ultrasound

* Considerations for en route blood transfusion: medevac (advanced and critical) must be able to safely handle blood products for transfusion purposes en route. Depending on context and regulations, teams may carry their own blood products in accordance with national and international regulations, including alternatives such as French Lyophilised Plasma (FLyP), that will remain in the transport vehicle, or agree to continue transfusions that were already initiated in the originating facility.

5.4 Scenario/case specific transports

Depending on context, scenario-specific transport services may be required. These scenario and case specific transport teams need to demonstrate the ability to adapt and expand their services based on the scenario, adjusting team composition, skills and competencies, equipment and consumables to provide dedicated and specialized care.

5.4.1 Additional considerations for HID transport

Also see Annex 1.2 Staffing considerations for highly infectious disease (HID) transports and guidance provided in 8. Water, sanitation and hygiene, and IPC technical standards

The medevac of patients with HID, particularly over long distances and prolonged transport times, presents additional complexities for transport teams *(26)*. HIDs are defined as being transmissible from person-to-person, potentially causing life-threatening illness, and posing a serious hazard to community and health-care settings, requiring specific control measures *(27)*. To minimize the risk of transmission to patients, medical personnel and transport crews, the application of transmission-based precautions is critical and must be tailored to the specific infectious pathogen *(28)*. This can be achieved through context-adapted IPC measures, including patient separation or isolation during transport. Isolation may involve setting up adequate physical barriers or utilizing single-patient or multi-patient isolation units where available and indicated *(14)*. A closed isolation approach involves the use of individual patient isolation units (PIUs), which create a safe barrier between the patient and the surrounding environment, ensuring enhanced protection for both the patient and the transport team. In an open isolation approach, both the medical staff and the patient are placed within a larger mobile isolation unit, requiring the staff to wear full, context-adapted PPE while inside the isolation area *(29)*. Isolation during medevac is a complex process that involves numerous requirements across the pre-transfer, in-transfer, and post-transfer phases. It demands trained multidisciplinary expertise, specialized equipment and strict adherence to IPC protocols *(30)*. The HID transport provides clinical care plus additional context adapted services *(31)* as outlined in Table 10. The level of care and the services provided by the HID transport are determined by various factors, including the patient's condition and dependency, disease-specific considerations, transport distances and the overall operational context. In some cases, a medevac (basic) transport option may be sufficient, particularly during the early stages of the disease or for short distance transfers. However, the context must be critically assessed, recognizing the potential for clinical deterioration during transport, which may require at least medevac (advanced) services. The decision to proceed with a HID transport should include an evaluation of the required level of care during transport, as this will directly inform the transport request. Key factors that enhance the safety and effectiveness of HID medevac operations include the ability to rotate personnel, maintain patient observation from a safe distance or the use of individual isolation units. These measures help to mitigate risks, improve patient monitoring, and expand the operational range of medevac teams.

Table 10. Scenario/case specific HID transport

Scenario/case specific HID transport	Key characteristics
	Medevac team (level of care to be determined by patient condition) capacities plus additional context/outbreak adapted services.

MINIMUM TECHNICAL STANDARDS

- Ensure staff access to all relevant medical prophylaxis and vaccinations and provide pre- and post-exposure prophylaxis if available and indicated for all staff (see 5.7.1 Team health and welfare) *(14)*.
- Train the entire team on standard and transmission-based precautions regularly.
- Ensure all team members involved in HID transports receive context/pathogen specific "just in time" training.
- Prevent cross-contamination, implement and strictly adhere to standard precautions, and context/pathogen adapted transmission-based precautions, such as the safe use of context appropriate PPE, including safe donning and doffing *(32, 28)*.
- Develop and strictly adhere to context specific SOPs on IPC, cleaning, disinfection and decontamination practices.
- Carry sufficient amounts of IPC supplies, including context specific PPE to support the expected duration of the mission, plus additional time in the event of vehicle maintenance delays or other diversions.
- Provide safe and context adapted isolation measures, if indicated.
- Provide appropriate PPE and instruction on the safe use of PPE to potential guardians accompanying a sick child.
- Depending on context, ensure monitoring of air quality during the transfer.
- Advise personnel to notify their supervisor in case of unprotected exposure to the infected patient for proper post-exposure care.
- Advise personnel to monitor for and immediately report any signs or symptoms of acute illness to their supervisor in case of unprotected exposure to an infected patient.
- Ensure context adapted WASH measures, including environmental cleaning and context specific disposal of biohazard waste, are strictly adhered to and thoroughly conducted (see Chapter 8) *(14)*.

RECOMMENDATIONS

- Provide POC testing for the respective infectious disease prior to boarding, if required, available, and has not been completed in the initiating facility.

Guidance Notes

- In case of air medevac of a patient with an infectious respiratory disease, cabin airflow characteristics may reduce exposure of occupants to airborne infectious particles. Whenever possible, an aircraft used to medically evacuate patients should have separate air-handling systems for the cockpit and cabin, with cockpit air at positive pressure relative to the cabin *(33)*.
- In a transport vehicle with uncontrolled interior air flow, such as an ambulance, a rotor-wing and small, non-pressurized fixed-wing aircraft, all personnel need to wear appropriate PPE at all times during transport of patients with severe respiratory disease, or teams may opt to use individual isolation units.
- Depending on context and availability, consider the use of individual isolation units for patient transport. While providing an additional safety layer of protection in the transport of highly infectious disease patients, it is critical to understand the limitations of those individual patient isolation units. They can be costly and require specialized equipment and training to operate. Clear SOPs on patient management, cleaning, disinfection and disposal need to be in place, and all staff involved in the transport of highly infectious patients in individual patient isolation units must be trained. Some patients may not tolerate this option due to spatial confinement.
- Ensure sufficient amounts of appropriate PPE are available during the transport for all staff, in case of an unplanned malfunction of the isolation unit, the patient does not tolerate the space limitation, or other reasons, such as unforeseen medical interventions.
- Consider the use of digital tools/forms to obtain patient consent.

European Commission's HID medevac flight capacity developed under its rescUE emergency reserve. Norway, 2020. © NOR-EMT

5.4.2 Additional considerations for burns care transport

Also see Annex 1.3 Staffing considerations for burns care transports

Burn patients in critical condition, already undergoing intensive supportive treatment, or those at risk of developing critical illness during transfer, may require dedicated burns care transport. The level of en route care required should be assessed prior to initiating the transfer, ideally by a specialized burns assessment team (BAT) *(34)*. Burn patients should ideally be transported within 48 to 96 hours post incident, following the resuscitation of any potential initial burn shock, and before developing severe secondary complications *(35)*. Depending on the local capacity for initial management and the ability to provide adequate care, burn patients might also have a high incidence of other trauma-related injuries that need to be considered when planning and performing the medevac. The choice of medevac asset may depend on the distance or travel time to the designated health-care facility, the number of patients and the severity of the patient's conditions. The burns transport provides, at a minimum, the same services as the medevac (advanced), with the addition of context-adapted case management, as outlined in Table 11. However, given the complexity and high risk of clinical deterioration, especially after the initial phase and associated with an increasing risk of multi-organ failure and sepsis, the need for critical care interventions and medevac (critical) capacities may be considered.

Table 11. Scenario/case specific burns care transport

	Key characteristics
Scenario/case specific burns care transport	At a minimum medevac (advanced) capacity plus context adapted case management. Given the high risk of clinical deterioration, the need for medevac (critical) capacities must be anticipated *(36)*.

MINIMUM TECHNICAL STANDARDS

- Ensure transport as soon as possible post burns incident, before the potential development of secondary complications (< 48 to 96 hours), either with the team's own transport assets or through pre-existing arrangements *(35)*.
- Plan for and provide appropriate sedation/pain management.
- Consider and manage potential clinical deterioration during transport.
- Provide adequate fluid management *(34, 37)*.
- Prevent hypothermia.
- Ensure context adapted fixation of tubes and IV lines.
- Consider the availability of context adapted antimicrobial treatment during transport.
- Monitor peripheral circulation and identify compromised circulation or respiratory deterioration.
- Recognize and manage inhalation injuries.

RECOMMENDATIONS

- Provide antidotes if indicated, such as for hydroxocobalamin in patients with cyanide poisoning due to inhalation injury, or others for conditions such as cutaneous chemical burn injuries (see 6.4.3).
- Perform emergency escharotomies in case of circulatory or respiratory deterioration.

Medical evacuation of burns survivors in Yerevan, Armenia. At the request of the Armenian Ministry of Health, WHO coordinated the deployment of EMTs to Armenia. Belgium B-FAST EMT evacuated three severely injured patients from Armenia to a specialized burns centre in Belgium via air medevac. The WHO EMT initiative coordinated the evacuation. Armenia, 2023; ©WHO/Spartak Avetisyan

5.4.3 Additional considerations for CBRNe/hazmat transport

Also see Blue Book chapter 5.1.27 and Annex 1.4 Staffing considerations for CBRNe/hazmat transports

CBRNe refers to an incident involving a deliberate release of chemical, biological, radiological, and nuclear elements, potentially in combination with explosives, while hazmat refers to an incident involving an accidental release of these materials. The primary response to a CBRNe or hazmat incident is complex and highly dependent on the context and type of suspected agent. In the case of biological incidents, patient movements require the same approach as outlined in the chapter on scenario-specific HID transports (6.4.1). For chemical, radiological, nuclear and hazmat events, the initial response focuses on urgent protective actions, including immediate decontamination, antidote administration and treatment, such as iodine thyroid blocking, if available and indicated *(38, 39)*. Responders must be particularly focused on personal safety and security following CBRNe/hazmat events to avoid contamination and ensure their own protection. Once patients have been removed from the scene and decontaminated, if required, their ongoing medical needs are mostly supportive. Toxidrome identification and antidote provision should be provided as early as possible to ensure effectiveness *(40)*. While the initial assessment, decontamination and management may have already been completed upon the arrival of a specialized CBRNe/hazmat medevac team, teams should be prepared to manage the ongoing needs of their patients depending on specific context and the complexity of the incident *(41)*. The likely delay from incident to arrival of a specialized CBRNe medevac team may significantly reduce the effectiveness of some clinical management actions, such as antidote provision. Due to an extended medevac deployment time frame in the case of international deployments, the initial environmental and patient-borne threats will likely already have been neutralized by local health-care systems. Where local systems are not equipped to respond to these incidents there may be a risk of secondary contamination of first responders and health-care staff, requiring strict adherence to context-adapted precautions. The level of care and the services provided by the CBRNe/hazmat transport is determined by the patient's condition, dependency and the overall context as outlined in Table 12. The decision to perform a CBRNe/hazmat transport should include the decision on the required level of care during transport, which will inform the transport request.

Table 12. Scenario/case specific CBRNe/hazmat transport

Scenario/case specific CBRNe/ hazmat transport	Key characteristics
	Medevac team (level of care to be determined by patient condition) capacities plus additional context adapted CBRNe/hazmat service.

MINIMUM TECHNICAL STANDARDS

- Confirm with the initiating treating medical provider that the patient is safe for transfer, and is fully decontaminated, if indicated and with no ongoing contaminant risk, as part of initial referral.
- Plan for appropriate contingencies required for a safe transfer in case decontamination has not already been completed, such as the use of adequate testing kits and provision of decontamination capabilities.
- Verify that the operational environment is safe.
- Provide isolation capacities, if indicated (see 6.4.1).
- Ensure sufficient amounts of safety equipment and protective devices, including appropriate and context adapted PPE for the specific CBRNe agent *(42)*.
- Use appropriate monitoring equipment if needed.
- Provide context adapted urgent protective actions *(43)*.
- Provide antidotes and medications if indicated and available.
- Recognize and manage toxidromes *(44)*.
- Re-assess patients frequently.
- Ensure access to subject matter experts regarding the agent of concern, clinical presentation and its management. Where this capability is not embedded in the team it should be made available remotely.
- Establish contacts with relevant national environmental or regulatory agencies for advice and verification of agent(s), residual risk, ongoing precautions and advice on safe, unsafe and excluded areas of operation.
- Fully decontaminate aircraft or ground ambulance cabin after medevac.
- Ensure sufficient amounts of decontamination agents, such as bleach solutions and specialized decontamination foams, cleaning tools and waste containment materials for transport assets.
- Follow context adapted waste management protocols.

RECOMMENDATIONS

- The coordination mechanism must include context-adapted specialized experience, knowledge of hazmat, and CBRNe clinical and non-clinical factors to be able to confirm that a patient is safe to transport, while minimizing risk to the medevac team.

Guidance Notes

- Ongoing threats caused by biological agents need to be managed the same way as patients with HID.
- Consider the challenges of verification of the nature of the agents and the residual environmental risks.
- Patients that were cleared for medevac (screened for toxins/agents), do not require specific ongoing detection, identification and monitoring en route as long as the same clinical precautions are taken as with infectious patients.
- Testing equipment for specific agents may not be publicly available or, depending on local regulations, not allowed to be imported. Consider assistance from official authorities, such as law enforcement or military in detection, identification and monitoring (DIM).
- When moving patients internationally, consideration must be made to local legislation and regulation which apply to moving patients of this nature.

5.4.4 Additional considerations for paediatric and neonatal critical care transport

Also see Blue Book chapter 5.1.27 and Annex 1.4 Staffing considerations for CBRNe/hazmat transports

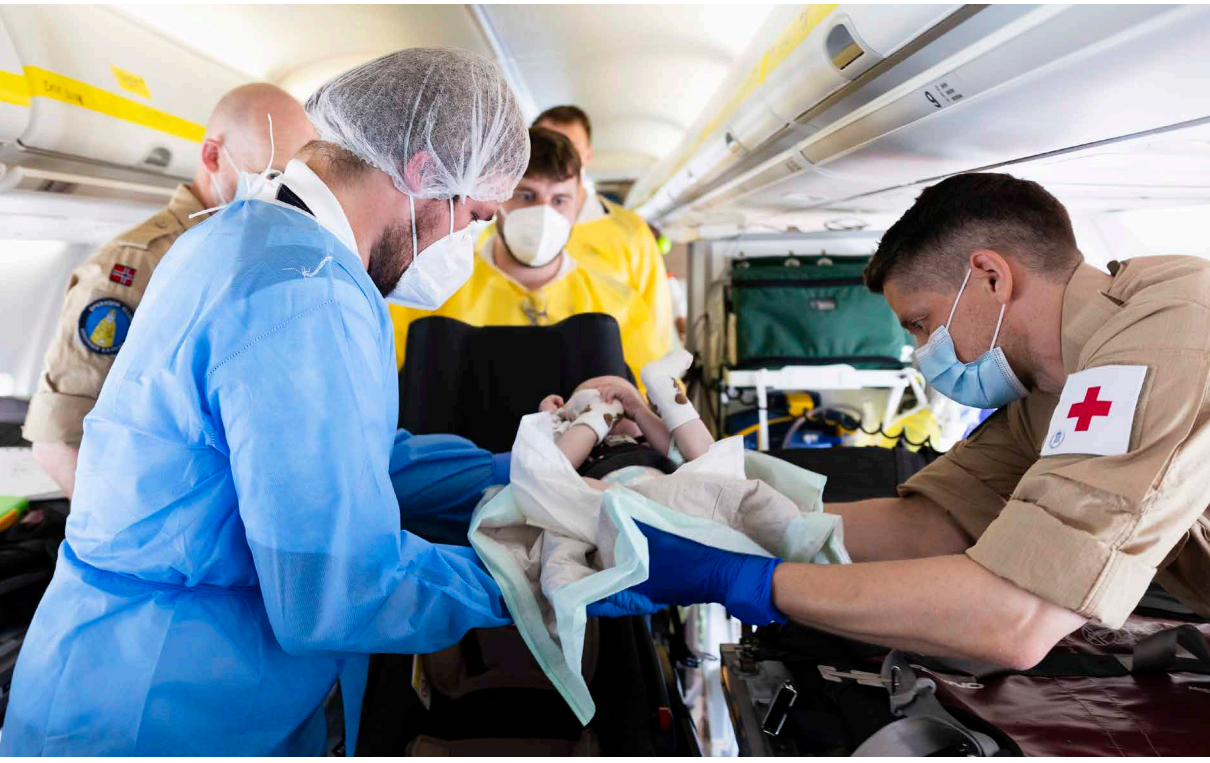
Transporting paediatric and neonatal patients requires specialized skills, equipment and care adaptations to ensure their safety and stability during medevac operations. Children may form a significant portion of the affected population in emergencies, therefore it is critical that all medevac teams be prepared to manage paediatric patients, including having access to appropriately sized equipment. Critically ill children and neonates often require specialized care beyond what a medevac team (advanced) or (critical) can provide. Neonatal transport is a critical aspect of perinatal care, requiring a dedicated team and specialized equipment to ensure maximum safety and efficiency *(45)*. The appropriate level of care for critically ill young children and neonates needs to be identified early and, when possible, managed by specialized teams, as outlined in Table 13. Neonatal critical care transport, in the context of this guidance, is defined as the transport for both preterm and term infants who require critical care or any infant weighing under 5 kg. Paediatric critical care 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 intensive care unit (PICU) *(46)*. A paediatric/neonatal critical care transport team must have the capability to provide mechanical thermoregulation and/or respiratory support during transport. Successful paediatric and neonatal transport greatly depends on the mode of transport, skilled transport personnel, adequate equipment, appropriate drugs and effective communication among all parties involved *(47)*. For the critically ill neonate, it is essential to minimize transfer delays, reduce stress, prevent hypothermia and limit prolonged exposure to transport ventilators and non-humidified air, as these factors can significantly impact outcomes.

Table 13. Scenario/case specific paediatric/neonatal critical care transport

Scenario/case specific paediatric/ neonatal critical care transport	**Key characteristics**
	Medevac (critical) capacities plus additional context adapted newborn and paediatric capacities.

MINIMUM TECHNICAL STANDARDS

- Provide a preterm/neonatal incubator with thermoregulation control.
- Ensure advanced continuous monitoring, including O2 Saturation, HR, NIBP, temperature, ECG.
- Provide airway management, including non-invasive respiratory support and mechanical ventilation via size- and age-appropriate multimodality ventilator (with blender for adjustable oxygen delivery).
- Provide continuous infusion of IV fluids and medications through peripheral or central venous and arterial lines, including inotropic support, maintenance of sedation, and specialist medications.
- Deliver infusions with devices appropriate for the rates and volumes required for neonatal and paediatric patients.
- Transport paediatric major trauma patients via the use of size-appropriate immobilization and transport equipment.
- Provide care for preterm and low-birth weight infants *(48)*.



A specialized Norwegian medical team oversees the medical evacuation of children from Rzeszow, Poland to Nuremberg, Germany, 2024. © WHO/Uka Borregaard

5.4.5 Additional considerations for ECLS transports

See Annex 1.6 Staffing considerations for ECLS transports

ECLS transport may be required for patients in critical condition who need ongoing cardiopulmonary life support during medevac operations. This includes veno-venous extracorporeal membrane oxygenation (ECMO) or veno-arterial ECMO.

While the utilization of ECLS has increased over the last decade, many medical centres globally have limited, or no access to this advanced treatment modality or the required resources to manage cases of this complexity *(49)*. While this intervention in certain cases can potentially be lifesaving, it is highly resource demanding. A specialized ECLS interfacility transport as outlined in Table 14 ensures safe and efficient mobile ECLS services, such as mobile ECMO requiring a multidisciplinary team of medical professionals *(50)*.

Table 14. Scenario/case specific ECLS transport

Scenario/case specific ECLS transport	Key characteristics
	Medevac team (critical) capacities plus additional context adapted ECLS competencies/capacities.

MINIMUM TECHNICAL STANDARDS

- Safely transport and manage patients requiring ECLS, such as ECMO.
- Ensure continuous advanced monitoring.
- Provide temperature control and hypothermia prevention.
- Ensure close monitoring of the cannulation site and extracorporeal circuit and devices.
- Prevent and manage potential complications, such as bleeding, clot formation in the circuit, infection, dislodgement of cannulas, circuit fails or ruptures.

RECOMMENDATIONS

- Provide cannulation at the referring facility and subsequently transport the patient to the receiving ECLS/ECMO centre *(51)*.

5.5 Quality indicator

Monitoring patient safety and quality indicators are important means by which to evaluate the structure, process and performance of health services, as well as their outcome. This allows for a standardized review, to measure performance against a recognized standard of care, and ultimately to improve performance *(52)*. Depending on context, different quality indicators can be used for performance evaluation of medevac *(53)*. These may include considerations on transport, staff and patient safety and security, information on medevac activity, dispatch procedures, use of standardized communication tools, average times needed across all medevac phases, including the time from decision to transfer to initiation of movement, overall number of transported patients, their priority and dependency, matching of patient to the appropriate type of team, availability of specialized equipment, and patient outcome during, upon and after arrival at destination. Good practice recommends the institution or medevac team have both a reactive and proactive clinical governance framework and process, including a critical incident/adverse event reporting system. This facilitates capturing the lessons learnt and taking risk mitigation, avoidance and recurrence measures. This knowledge needs to be shared and disseminated both within the team, the institution and ideally the broader community of practice. (see Annex 3; Table A3.1. Example medevac coordination checklist).

MINIMUM TECHNICAL STANDARDS

- Define and document specific, measurable, achievable, relevant, and time-bound key performance indicators to measure performance against defined objectives, and inform the after-action review.
- Monitor patient safety and quality indicators regularly.
- Establish a reactive and proactive clinical governance framework and process including a critical incident reporting/management system to appropriately address serious adverse events during operations.

Operations support and logistics technical standards

6 Operations support and logistics technical standards

Medevac operations require strict adherence to OSL and WASH technical standards to ensure safe and efficient patient transport. Recommendations in this document complement the minimum standards and recommendations outlined in the "Blue Book" *(2)* and must be adapted to the specific operational context, available infrastructure, transport assets and the scope of the operation, including the number of patients to be evacuated.

Key considerations

Transport logistics and asset constraints:

- weight and space limitations of the transport asset (air, ground, or sea);
- number of patients requiring evacuation and their medical needs; and
- availability of required medical supplies for the entire transport duration, including contingencies for unexpected delays or clinical deterioration.

Operational planning and collaboration:

- coordination with commercial providers or civil-military entities, where applicable;
- clear understanding of self-sufficiency for medevac teams, ensuring that non-collaborated elements are independently managed; and
- remote support from experts in communications, logistics and supply chain management when operations involve external entities.

Timing and mission nature:

- optimal scheduling of transfers (day versus night operations)
- identifying transit points or hubs to support teams, supplies and patient care.

Facility and transit hub considerations:

- adequate ventilation and structural setup for patient care and treatment areas;
- dedicated rest areas for medevac staff to ensure fatigue management and operational efficiency;
- by integrating these considerations, medevac teams can maintain safe, effective and self-sufficient operations, even in challenging environments or during prolonged transport missions.

Case example 6

Operational and logistic challenges in excessively long road transports

This example showcases the various operational and logistic challenges involved in excessively long transports, as necessitated by a lack of air medevac capability. The team was requested to conduct the evacuation of a foreign national by their embassy. As the request was received at night, the only verified information of the clinical condition of the patient received from the initiating facility was that the patient was ventilated following head trauma secondary to an explosion. The embassy requested that the patient be transported into a neighbouring country, requiring a transport time of approximately 16 hours by road. This presented several challenges. Firstly, while the fraction of inspired oxygen (FiO2) was unknown, it was highly likely that this patient would require more oxygen than could be safely transported in a single ambulance. Team size was another issue. The medevac team had only one doctor and two paramedics available. For two of them to work clinically while the third drives, would mean that there was no possibility of taking turns or resting over the entire 16-hour period.

The last, but certainly not least factor of concern was the potential for clinical decompensation over a transport of such duration, a factor compounded by the lack of clinical information about the patient at the time of decision-making. A plan was put in place to address these concerns. A partner organization was able to provide a second ambulance, which served as a support vehicle, in addition to a driver and another nurse. Four of the team of five would subsequently have to work at the same time, with a fifth able to rest in the support vehicle. This also provided a space for the additional oxygen to be transported safely. Finally, it was communicated clearly with the embassy that transport was dependent on clinical assessment by the medevac team in the morning, which would happen as early as the hospital would allow. Upon making their assessment, the team declined to transport. The presence of hypertension and bradycardia, reported to have persisted from the previous evening unaddressed, in combination with fixed and dilated pupils were assessed as the potential patient benefit being outweighed significantly by the risk of transport. Although significant political pressure existed from the embassy to do so, the decision was made that transport was both unethical and dangerous. Efforts were then made by the embassy to facilitate air transport, something only achievable in exceptional cases. However, the necessary permissions to do so could not be obtained, and the patient died the following morning.

6.1 Power and fuel

A reliable source of power and fuel is crucial for the smooth operation of any medevac operation. Medevac teams need to demonstrate self-sufficiency and ensure access to an independent power supply for transport asset and equipment, such as battery-operated equipment, backup batteries, uninterruptible power supply units and generators to sustain all medical and logistical activities that are required to safely provide their predefined services.

MINIMUM TECHNICAL STANDARDS

- Ensure the resupply of essential clinical and non-clinical resources such as fuel and power, especially for aero-medevac operations.
- Be aware of the power requirements for any essential clinical equipment, including the presence and number of safe, voltage appropriate and compatible outlets.
- Ensure an independent power supply with backup power sources.
- Ensure the mandatory inclusion of universal adapters and converters to guarantee compatibility with local power sources.

6.2 Warehouse management

Strategic warehouse management for medevac operations is critical to ensure the balance between resource availability and operational demand. The objective of effective warehouse management is to ensure essential medical supplies are always available and medevac does not deplete resources from forward areas. This includes advanced logistics planning, the categorization of supplies based on urgency and application, the prioritization of critical or life-saving equipment and medications and to ensure they can be accessed without delay.

MINIMUM TECHNICAL STANDARDS

- Ensure essential medical supplies are always available and medevac does not deplete resources from forward areas.
- Consider storing an adequate amount of high use or critical items at intermediate transit points or medevac hubs in case of multi-stage transfers.
- Ensure appropriate storage and maintenance of all medical supplies and equipment.
- Adhere to local regulations on the import, storage, and use of medical supplies and equipment.

RECOMMENDATIONS

- Maintain a robust inventory system and establish reliable supplier relationships.
- Develop contingency plans for emergencies that could disrupt the supply chain.
- Include alternative sourcing strategies and emergency procurement procedures.

6.3 Pharmacy supply chain and medical stock management

Teams need to ensure a self-sufficient and interoperable pharmacy supply chain capable of providing an adequate stock of essential medical supplies and consumables. This includes, but is not limited to, oxygen in various delivery modes and methods, and controlled substances in compliance with local and international regulations, in line with the teams' defined clinical care capacity. Teams need to comply with local and international laws regarding the transport and use and lockable storage of controlled substances.

MINIMUM TECHNICAL STANDARDS

- Ensure pharmacy compliance with national, as well as international regulations, in case of cross-border operations.
- Comply with international quality and safety standards and securely manage and declare controlled drugs.
- Comply with local and international laws regarding the transport, use and lockable storage of controlled substances.
- Ensure an adequate and available stock of essential medical supplies for the entire duration of the transport, including contingencies for unexpected delays.
- Ensure sufficient amounts of oxygen in various supply solutions, such as compressed oxygen cylinders, concentrators, or liquid oxygen and controlled substances, in compliance with local and international regulations.
- Ensure the use of transportation assets that are compatible with oxygen supply systems.
- Ensure the availability of adequate connectors and adaptors for different types of oxygen tanks.
- Ensure temperature control of all pharmaceuticals within temperature limitations and maintain a cold chain for temperature-sensitive medications and consumables, if indicated.
- Ensure a sufficient stock of all consumables required for the level of provided care, including appropriate PPE and environmental cleaning supplies.
- Ensure adequate biotechnical expertise in the team to ensure regular maintenance and functionality of medical equipment.
- Select reliable and durable equipment.
- Only use equipment that is approved for use on each type of transport asset in accordance with relevant regulations for the purposes of transport by road, water or air.
- Plan for and ensure equipment and consumable compatibility and interoperability, particularly for critical clinical consumables, such as connections for airways, oxygen, intravenous lines, drains or monitoring.
- Discuss and confirm equipment and consumable compatibility with all involved parties. This can be facilitated by pre-deployment communication and mutual discussion of pre-deployment checklists.
- Ensure the secure fixation of all equipment and consumables in the transport asset in line with relevant regulations.

RECOMMENDATIONS

- Consider operational tolerances including vibration, moisture and humidity, pressure changes, acceleration and deceleration forces in line with manufacturer's guidance.
- Use sturdy encasements that are shock and water resistant and can be easily cleaned and disinfected for reuse.
- Consider ventilators with an integrated turbine system to minimize oxygen consumption during transport, if applicable.

Guidance Notes

- Consider equipment with low maintenance requirements, ease of troubleshooting faults or the ability to be manually reset to support continuous function.
- Consider the multiple variations of equipment globally, especially when patients are handed over to other teams, during the different phases of medevac.
- Ensure availability of adequate oxygen adaptors and connectors to ensure connectivity/ compatibility of an oxygen source with ventilators.
- Sufficiently plan for oxygen requirements during long-distance transports;
- Include backup solutions, such as oxygen concentrators with refill capabilities (for example, for oxygen cylinders), especially in situations where resupply is not available or impractical.
- Calculate and carry the total amount of required oxygen demand for the entire duration of the transport, including contingency for delays or increased usage due to critical care interventions.

6.4 Communications

see Blue Book 6.2.2

Medevac teams must be able to safely and efficiently communicate with all stakeholders involved in the medevac operation, including the initiating and receiving health facilities, as well as the coordination mechanism. This requires the availability of a robust and reliable communication system, including the appropriate equipment to ensure clear communication and the secure transfer of data and information required for efficient and safe medevac operations.

MINIMUM TECHNICAL STANDARDS

- Comply with local regulations in regard to communication frequencies and equipment.
- Demonstrate self-sufficiency with independent and robust communication systems.
- Ensure availability of independent communication systems, such as satellite phones and radios.
- Plan for one level of redundancy in communication systems.

In contexts with no pre-existing or currently not functioning dispatch systems, the concept of "dispatch in a box" may provide the opportunity for dispatch support within the coordination mechanism, providing all required equipment and tools available to efficiently coordinate referrals. This may include additional personnel, such as a communications operator and a dedicated medical professional to support clinical decision-making.

Dispatch in a box, Portugal, 2024. © National Institute of Medical Emergency (INEM)

6.5 Transportation asset and fleet

Also see Annex 13: Considerations on converting/repurposing vehicles for patient transport

Teams need to be able to demonstrate the availability of safe transport assets and provide clear information on type, configuration and range, including return travel of assets. When assets are not owned by the teams themselves, the teams need to provide proof of pre-existing agreements with commercial asset providers or civil military entities. Teams must always demonstrate full self-sufficiency for all elements not provided by potential collaborators. The choice of transport modality is based on multiple factors, including availability, accessibility, patient acuity and medical condition, need for time sensitive, definitive care, and logistical considerations, including distance and environmental factors, such as weather. The maximum patient number and weight restrictions of each transport vehicle or asset need to be assessed and clearly documented in the planning phase. Depending on context, the demand for medical transportation during emergencies may increase significantly, and, if available at all, the number of pre-existing ambulances may not be sufficient to meet surge needs. While using existing dedicated medevac assets may be the most straightforward option for medevac teams, the use of repurposed private vehicles for the transport of patients may be an efficient solution for emergency medical services in areas with limited resources (see Annex 13). Converting a vehicle for the transport of patients requires resources and expertise and involves a number of context-adapted modifications. These modifications include the installation of context specific medical equipment, and changes to the interior of the vehicle to ensure a safe environment for patients and accompanying staff. Depending on the type of emergency, this may include the addition of protective barriers, stretchers or seats and modifications to the exterior of the vehicle with emergency lighting and other visual indicators that meet all requirements for identification as patient transport. Medevac teams need to receive an orientation to the converted vehicles with special emphasis on loading, unloading and securing patients for transport. Teams must secure local authorities' approval prior to conversion.

MINIMUM TECHNICAL STANDARDS

- Demonstrate availability of safe transport assets, either by confirming the type and configuration of vehicles owned by the team itself or by providing proof of pre-existing agreements with commercial asset providers or civil military entities.
- Demonstrate full self-sufficiency for all elements that are not provided by potential collaborators.
- Confirm assets are in good working condition, registered and marked for use in the area of operation.
- Ensure asset compliance with national and international regulations in all areas of operation, especially for cross-border/international medevacs.
- Ensure appropriate, context adapted asset configuration to meet the operational and clinical needs of the emergency context, including spacing, restraints and safe access to patients through all stages of the transport.
- Ensure that all assets are appropriately insured according to local regulations, including collision and liability coverage.
- Provide patient and provider seating and stretchers.
- Consider vehicle size, capacity, accessibility, adaptability, reliability, ventilation, temperature control and available communication technology.
- Factor in asset range and suitability for the area of operations.
- Assess the maximum return distance without resupply as well as the geographical terrain and environmental conditions.
- Establish and ensure the availability of adequate technical mechanical and engineering support relevant to the type of asset throughout all stages of medevac in combination with a comprehensive maintenance and operational support framework, to support the optimal function, timely activation and return to service of assets.
- Safely fixate and store equipment and consumables inside the asset in line with relevant regulations, clearly labelled and easily accessible during transfer.
- Ensure all team members receive an orientation to the converted vehicles, if opting to use a repurposed asset/vehicle, with a special emphasis on loading, unloading and securing patients for transport.
- All team members involved in the operation or conducting the vehicles/assets must secure all necessary valid permits and licenses as per local regulations.

RECOMMENDATIONS

- Anticipate and communicate the availability of integrated loading and unloading systems, when additional ground support is required and requested.

Guidance Notes

- Depending on context, teams providing long distance ground/road transports should consider employing a lead vehicle. This lead vehicle can carry additional medical consumables, such as oxygen, and provide room for additional staff to ensure adequate rest periods (also see case example 6).
- In the context of air transport, plan for possible diversion landing sites and for intercepting airframes containing a relief crew and equipment that can be tail swapped as needed.
- Ensure approval and licensing by relevant authorities before converting a private vehicle for patient transport.
- Plan the vehicle layout and placement of patients depending on context, including measures to minimize cross-contamination in a HID transport.
- Depending on context, considerations may include airflow, ventilation rate and spatial arrangements to ensure either adequate distance between caretakers and patients or multiple patients during transport, open or closed isolation if indicated.
- Ensure regular maintenance of the vehicle's ventilation/air filtration system.
- Stretchers used in aviation must meet strict standards, including the ability to be securely mounted to the aircraft's floor or body. The stretchers and mountings should be designed and tested to withstand significant impact forces, typically up to 20 G *(54)*.
- Depending on context, teams need to consider vehicle engine specifics related to emission as required by local authorities, and compliance of the vehicle to importation regulations in the area of deployment, if indicated.

Transfer of patients from ambulances to aircraft for international medevac. Poland; 2022. ©Humanosh

The choice of transport asset is dependent on the type of incident, pre-existing local capacities, individual patient requirements, facility resources and geographic location. It is critical to ensure that available capacities are appropriately utilized to benefit the greatest number of patients. Table 15 provides an overview of considerations that may guide the decision-making process on which transport asset to use.

Table 15. Transport asset dependent considerations

Type of asset	Indication	Range Deployment radius, geographic zone in which the transport asset can operate	Benefits	Potential challenges	Special considerations
Rotor wing aircraft (helicopter)	Time critical transport/patient requires minimal transport time. Ground-based units are unavailable, or anticipated transport time exceeds patient requirements.	Travel ranges depend on a variety of factors, such as helicopter type, size, weight, elevation, air temperature, and fuel capacity. May range from 320 km to over 1000 km.	Versatile Ability to access rural or remote locations. More flexible in terms of landing area than fixed wing. Increased speed and manoeuvrability.	Safety and security Dependent on weather conditions. Some services are only operational during daytime and within visual flight rules conditions. Resource intensive, increased cost in comparison to ground transport Can require secondary ground transport to and from the landing site with loading and unloading. Space and weight limitations Limited availability	Health-care providers need to be trained in aviation medicine. Need to anticipate physiologic changes due to flight and altitude. Some services might operate in darkness with available night vision goggles. Some services are less weather dependent due to the ability to fly in Instrument Flight Rules and/or have de-icing capacity. In time sensitive transports, anticipate requirements for critical intervention during transport and ability to access specific areas of the patient depending on size and configuration of the rotor wing asset. Are the patient and required equipment suitable for the asset size and weight limitations? Is there an available ground-based transport/ appropriate alternative to helicopter transportation? Available landing area of at least 30 metres by 30 metres, flat and free of debris *(55)*.

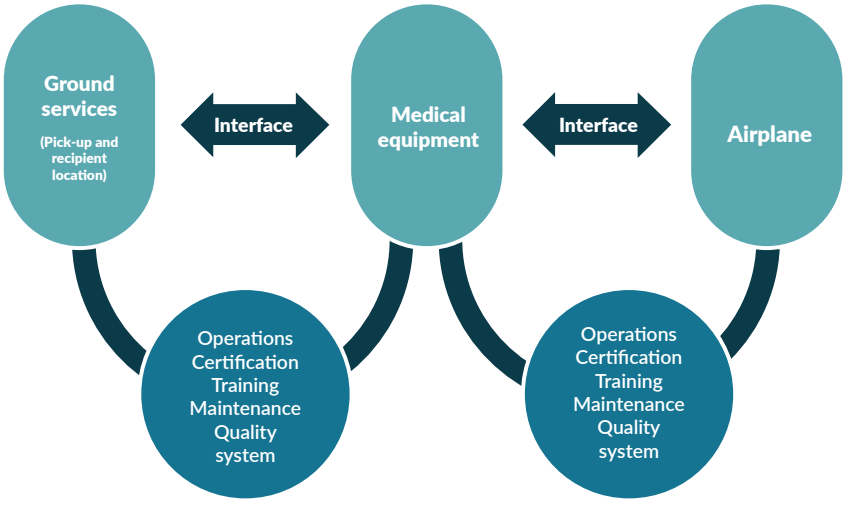
Type of asset	Indication	Range	Benefits	Potential challenges	Special considerations
Fixed wing aircraft (airplane)	Long distances	Depending on type of plane	Greater speed and range Less weather dependent than helicopters	Requires a runway or an airport to land. Limited availability Resource intensive, increased cost in comparison to ground transport. Requires secondary ground transport to and from the landing site. Depending on the type of aircraft, space and weight limitations.	Health-care providers need to be trained in aviation medicine. Anticipate physiologic changes due to flight and altitude. Are the patient and required equipment suitable for the asset's size and weight limitations?
Ground transport ambulance	Short distance transport		Least logistical complexity Wide availability Does not require secondary transfers to and from the ambulance. Less dependent on weather conditions.	May be challenged by road access, traffic, route security and checkpoint delays.	Converted, repurposed private vehicles increase transport availability. When opting for a ground transport ambulance, and the transport is anticipated to last longer than 4 hours (>400 kms), consider refuelling options, and ensure that appropriate staffing and sufficient supplies are available.
Boat	Alternative mode of transport when air or ground transport is unavailable or not possible (for example, between island-based facilities).	Depends on type of boat	Primary transportation modality/option in remote island locations or rural river communities.	Can be low speed/ long transport time Suitable for emergency incidents/patient transport occurring near a shore. Size of boat/ship can determine if a secondary marine vessel is required for access to shore/ beach. Dependent on weather and water conditions. Additional patient loading and unloading challenges.	Might be both for medevac and further treatment (hospital ships).

Type of asset	Indication	Range	Benefits	Potential challenges	Special considerations
Train	When air or ambulance-based ground transport are not an option, or when transfer of a large number of stable patients is required.	Medium to long range	Speed and efficiency Can transport larger numbers of patients, where functional rail networks efficiently connect origin and destination *(56)*.	No flexibility regarding route	Adaptations/specific arrangements needed to repurpose the train carriages for medical patient transport.
Ambulance Bus	Same as train	Same as train but might also be relevant in shorter distances with large numbers of patients.	Same as train	More flexible regarding transport route than by train	

Medical evacuation between different medical systems, especially across borders, can be challenging in regard to protocols, regulations, equipment and ambulance service requirements. To ensure safe medevac operations, medical equipment needs to be compliant and compatible across different platforms and systems. Medevac providers need to accurately plan, procure, certify and operate medical equipment that is compliant across different platforms and resilient under changing environmental and climate conditions. Teams need to ensure a robust quality management system, including regular training on equipment maintenance and how to operate in changing environments.

Fig. 8 provides an overview of the interface between medical equipment, ground services and airplanes and the required components contributing to safe aerial operations.

Fig. 8. Considerations for safe aerial operations - medical equipment interface components



Case example 7

Maritime medical evacuation training during a simulation exercise

Planning, preparation and training for medical evacuation using context-specific transport assets significantly enhance an EMT's readiness for deployment. Team Klemat, Palau's Emergency Medical Team, incorporates marine medevac training and simulation exercises as a key component of their preparedness, given that most patient transfers in Palau are conducted by boat. This training is conducted in collaboration with the Palau Marine Law Enforcement to ensure seamless integration of marine assets during emergencies. In a recent simulation scenario, Team Klemat responded to a simulated trauma case on a remote island requiring transfer via boat to an awaiting ambulance for onward patient transport to the hospital. The medevac team worked closely with Marine Law Enforcement to utilize available marine resources for patient transport. During the exercise, the team demonstrated effective coordination with Marine Law Enforcement, efficient preparation of trauma supplies for maritime conditions, and skilled management of patient care during the water journey. Upon arrival at the main island harbour, the team executed a smooth handover of the patient to ambulance staff for transport to the hospital. Following the simulation exercise, Team Klemat conducted a debriefing to evaluate logistics, interagency communication, and clinical performance in a maritime environment. This exercise highlighted the critical importance of preparedness, adaptability and collaboration in delivering emergency care across Palau's islands.

Handover of patients that were medically evacuated by train to Lviv train station, Ukraine, to provide continued medevac by ambulance to Rivne, Ukraine, 2023. ©CADUS

Case example 8

Team flexibility for medical evacuation during a national COVID-19 deployment in Fiji

The Fiji Emergency Medical Assistance Team (FEMAT) was extensively deployed throughout the country as part of the COVID-19 response. During one deployment, FEMAT was requested to assist in a maritime medevac for a critically injured paediatric patient who presented to a remote island health facility with multiple orthopaedic injuries and acute abdominal trauma. The patient required emergency surgery that could not be performed at the health facility. FEMAT deployed a team on their medical boat that included a paediatric surgeon, a paediatrician, an anaesthetist, four nurses (two operating theatre nurses, one emergency nurse, and one paediatric ICU nurse), an operating theatre attendant, and a logistics coordinator from the military. The team transported the patient from the health facility to their medical boat, which was fully equipped and staffed for emergency surgery. The patient underwent surgery on the boat and was stabilized postoperatively. Plans were initially made to transfer the patient to the main island hospital for further management of the traumatic injuries by boat. However, an unexpected helicopter arrival on the remote island necessitated a change in the medevac plan. The air asset was determined to be the faster option for transporting the critically ill child. The patient was subsequently transferred to the paediatric ICU via helicopter. This case exemplifies the importance of rapid clinical assessment, efficient logistics, and adaptive strategies in emergency medical management. Flexibility in decision-making allowed FEMAT to optimize resource use, utilizing the helicopter to ensure faster transport and improved patient outcomes.

Samoa Emergency Medical Team sea medevac training; 2022 © WHO Western Pacific Regional Office

6.6 Site assessment, selection and planning

It is crucial to conduct a thorough and comprehensive assessment of potential medevac operations sites in the very beginning of medevac operations, as well as to conduct continuous re-evaluations throughout as required. While criteria for site selection depend on the context and type of emergency, factors like accessibility, safety, visibility and proximity to medical facilities need to always be assessed. The responsibility for the site selection might vary depending on the context, however this task typically falls within the purview of the operations support and logistics staff, which needs to ensure that the selected sites meet all logistical and operational requirements to support effective and safe medevac activities.

MINIMUM TECHNICAL STANDARDS

- Conduct a thorough and comprehensive assessment of potential medevac operations sites (primary and alternate) and potential landing/transfer sites.

6.7 Mobilization and demobilization

A crucial part of preparedness and readiness includes the teams' ability to rapidly mobilize their capabilities and resources, including pre-packed supplies and easily deployable structures. Comprehensive mobilization plans should outline all necessary steps, from initial alerts to deployment, ensuring a coordinated and timely response. These plans must address logistics, staffing, and equipment readiness, as well as communication protocols with stakeholders. When collaborating with commercial, government or civil-military medevac entities, formal agreements or contracts should be established to ensure the rapid access to and resupply of all components necessary to meet the team's predefined medevac capacity and capability. This includes specifying the required assets, as well as the necessary ground support for the efficient operation of these assets.

MINIMUM TECHNICAL STANDARDS

- Ensure robust mobilization plans are in place, clearly detailing processes for alert, deployment and resource allocation, including personnel, equipment and transportation.
- Pre-pack supplies and prepare quick-to-deploy structures to facilitate rapid response.
- Ensure that contracts or formal agreements are in place when cooperating with commercial, government or civil-military medevac entities.
- Ensure and adhere to structured and efficient demobilization plans to ensure that teams can effectively disengage after operations.
- Maintain readiness of transport assets to ensure they are adequately prepared for subsequent medevac missions.

Water, sanitation and hygiene (WASH), and infection prevention and control (IPC) technical standards

7 Water, sanitation and hygiene (WASH), and infection prevention and control (IPC) technical standards

WASH and IPC are crucial components in any health-care activity. Given the additional complexities during emergency medevac operations, teams need to be appropriately trained and prepared to ensure a high quality and safe clinical environment for patients and personnel. Teams need to provide mandatory training on WASH and IPC practices to all staff. The WASH and IPC technical standards in this document complement the standards defined in the WHO publication *Classification and minimum standards for emergency medical teams*, commonly referred to as the "Blue Book" *(2)*.

7.1 Water supply

Water is essential for safe patient care, maintaining personal hygiene, cleaning medical equipment and preventing the spread of infection. It is important to ensure the provision of clean water, either by stocking safe bottled water or by testing and treating local water sources. The team should calculate the daily requirements for patient care, personal hygiene, and cleaning of equipment considering sufficient amounts of water for consumption per patient, accompanying individual(s), and team members.

MINIMUM TECHNICAL STANDARDS

- Ensure a reliable supply of safe and clean water for medical use, personal hygiene for patients, accompanying family members or legal guardians and staff, medical equipment cleaning, and IPC.
- Ensure water meets local and international standards for potability, either through bottled water or by treating and testing local water sources.
- Regularly test water quality, especially if sourced locally.
- Calculate and provide sufficient daily amounts of water for consumption by staff, patients and potentially accompanying caretakers *(10)*.
- Use sanitized and sealed containers for water storage to prevent contamination.
- Keep a reserve supply of water for emergencies.

7.2 Hygiene

Proper hygiene practices are essential for preventing the spread of infection during any health operation, including hand-hygiene, use of appropriate PPE, and adherence to protocols for cleaning, disinfection, and decontamination of medical equipment and surfaces. Additional considerations need to be made in the context of HID outbreaks and CBRNe events *(14)*.

MINIMUM TECHNICAL STANDARDS

- Regularly train all team members in hygiene practices, such as mandatory hand hygiene practices, and the correct and safe use of context adapted PPE.
- Establish and implement clear and context and scenario adapted hygiene protocols, including strict adherence to hand hygiene, correct and safe use of context adapted PPE *(57)*.
- Set up and maintain hand-hygiene stations.
- Provide hygiene kits containing hand sanitizers, and context adapted PPE, such as masks and gloves.

RECOMMENDATIONS

- Use clear signage to regularly remind staff of hygiene and decontamination protocols, including context specific and transmission-based instructions for HID outbreaks and CBRNe events.

7.3 IPC

Teams need to have clear SOPs on IPC and provide regular IPC training to all staff. They need to strictly adhere to IPC standard precautions as well as context adapted transmission-based precautions in infectious disease or CBRNe/hazmat transports.

MINIMUM TECHNICAL STANDARDS

- Regularly train all team members in IPC, including standard- and transmission-based precautions, and the correct and safe use and disposal of context adapted PPE.
- Provide context appropriate PPE and plan for sufficient supply, resupply and contingency to support the expected duration of the transport plus additional time in the event of unexpected delays.
- Conduct regular inspections and ensure continuous monitoring and surveillance to identify potential IPC issues to ensure IPC and WASH compliance.
- Regularly inspect the quality of PPE for any signs of cuts, tears, or punctures before and after use.
- Adhere to mandatory reporting of any IPC-related incidents and track key performance indicators.
- Have clear SOPs on IPC procedures, including the isolation of suspected or confirmed cases of a communicable disease or victims of a CBRNe/hazmat incident, if indicated.

Screening and isolation

- Screen patients for infectious diseases before boarding, if indicated.
- Maintain records of all screening results and performed isolations.
- Ensure availability of safety barriers, isolation structures or units in the transport asset, if indicated.
- Inform and confirm isolation status of patients with the receiving facility prior to the transport.

Ventilation and air filtration

- Ensure adequate ventilation and air filtration systems in the transport asset, and their regular maintenance, especially in the context of some HID transports (droplet or airborne transmission) *(28)*.

Space considerations

- Carefully plan the layout and the patient's placement within the transport vehicle to minimize the risk of cross-contamination in an infectious disease transport.
- Consider airflow, ventilation rate and spatial arrangements to ensure adequate distance between caretakers and patients during transports, especially in HID transports.
- Separate patients with suspected or confirmed infectious diseases from other patients whenever possible.

RECOMMENDATIONS

- Consider and prepare for the exposure risk to and transmission of endemic infectious diseases identified at a population level, for example high prevalence multidrug-resistant organisms (MDRO) and blood-borne viruses.

Screening and isolation

- Screen/be capable of detecting known/suspected agents in CBRNe/hazmat and HID incidents.

Ventilation and air filtration

- Monitor air quality during the transport.

Guidance Notes

- To prevent the spread of infection, it may be necessary to screen patients for infectious diseases and isolate those who are confirmed, found or suspected to be infected. This may involve conducting medical exams, taking samples for laboratory testing and providing isolation facilities at the destination. Some aircraft may have built-in isolation chambers or containment units.

7.4 Environmental cleaning

Teams need to strictly adhere to context-specific environmental cleaning protocols. After completing a medevac operation, it is critical to thoroughly clean, disinfect and decontaminate the transport asset, all equipment used during the mission, and any exposed surfaces or materials. This includes disinfecting surfaces, safely disposing of used PPE and cleaning medical equipment according to established guidelines. The decontamination process should be well-documented, and any issues that arise should be reported and addressed promptly.

MINIMUM TECHNICAL STANDARDS

- Develop comprehensive and context adapted environmental cleaning and management protocols, ensuring a strict regular cleaning and disinfection schedule for the surfaces of medevac vehicles, medical equipment and re-usable PPE.
- Use context-appropriate disinfectant, ensuring the correct contact time on surfaces, and adapting cleaning products, concentrations, contact times and schedules to the specific environment.
- Clean and disinfect reusable equipment according to the manufacturer's instructions. Account for the additional time needed for decontamination between transfers, especially when transporting in the context of HID and CBRN events *(14)*.
- Consider and adhere to pathogen specific requirements in the context of a HID or CBRN transport.
- In the case of infectious disease outbreaks, ensure thorough cleaning and disinfection of all patient-care areas, including stretchers, railings, medical equipment control panels, and adjacent flooring, walls, and work surfaces, using a disinfectant approved by both the transport asset and equipment manufacturers.
- Keep disinfection kits readily available for use.
- Thoroughly clean, disinfect and decontaminate the transport asset and any used equipment after each transport.
- Document the environmental cleaning process and maintain logs to track cleaning, disinfection and decontamination activities.
- Report and promptly address any environmental cleaning issues.
- Ensure the resupply and use of appropriate concentrations of disinfectant solutions.
- Clearly define ownership and responsibility for disinfection, resupply and disposal.

7.5 Waste management

Teams must strictly follow clear waste management protocols to protect the health and safety of their staff members, their patients and the affected local population, and to prevent the spread of potential infections. This may require the segregation and disposal of biohazard materials, such as medical waste or sharps, and materials potentially contaminated with chemical or radiological/nuclear agents *(58)*, in accordance with local regulations and guidelines. It may also be necessary to coordinate with external waste management providers to ensure that the waste is transported and disposed of safely and efficiently.

MINIMUM TECHNICAL STANDARDS

- Train all staff that handles health-care waste on proper waste management procedures, including IPC and appropriate use of PPE.
- Segregate waste based on the type of contamination (chemical, biological, radiological or nuclear) and apply appropriate containment, such as puncture-resistant sharps containers or radiation-resistant materials, to mitigate cross-contamination risks.
- Implement waste containment and segregation, and ensure that disposal arrangements are in place, both en route and at the final destination.
- Dispose of hazardous materials, including biohazards, such as medical waste or sharps, and other contaminants, such as chemical agents, radiological materials, in accordance with local regulations and guidelines. Ensure all waste is classified, handled and disposed of according to the specific hazards present.
- Ensure all waste is appropriately labelled, including specific CBRN hazard indicators, and disposed of according to international and local hazardous medical waste protocols, with consideration for additional decontamination or neutralization when required.
- Coordinate with external waste management providers to ensure safe and efficient waste transport and disposal, especially when the medevac operation involves crossing regional or international borders.

Guidance Notes

- Infectious and hazardous waste generated during medevac, including materials saturated with blood or body fluids, must be safely collected in clearly marked, leak-proof, biohazard containers or bags that are appropriate to the context and the hazards, and in line with local regulatory requirements.

7.6 Sanitation

Providing adequate sanitation facilities, including toilets, hand-washing stations, and waste disposal systems, is essential for maintaining personal hygiene and preventing the spread of infection. To minimize the risk of contamination, excreta-related waste containment and segregation must be rigorously implemented, with disposal arrangements planned for both en route and at the final destination. Contaminants, including pathogens or hazardous materials, must be managed using appropriate barriers, such as sealed waste containers, biohazard protocols, regular cleaning, and context-specific decontamination procedures to prevent exposure and environmental contamination.

MINIMUM TECHNICAL STANDARDS

- Provide access to adequate sanitation facilities like toilets and hand-washing stations for patients and staff.
- Use portable sanitation units for remote operations where indicated.
- Develop sanitation plans for different types of medevac operations.
- Partner with local agencies for sanitation solutions.

Guidance Notes

- Adequately plan for "sanitary breaks" if there are no available sanitation facilities on the asset.

7.7 Dead body management

Teams need to have clear SOPs and be fully prepared to manage all aspects of dead body management.

MINIMUM TECHNICAL STANDARDS

- Clearly define responsibilities and establish SOPs together with the coordination mechanism on dead body management, including certifying death, reporting to relevant authorities in both initiating and receiving countries, repatriation of remains, and procedures for handling patient deaths during transfer or treatment abroad, ensuring compliance with local and international laws and regulations.
- Establish a process for returning personal property transported with the deceased when possible.
- Maintain detailed records for accountability and traceability.
- Use standardized body bags for deceased individuals.

Guidance Notes

- Be aware of cultural norms and practices related to death.

Regulations

8 Regulations

Teams need to identify and comply with any local or international regulation relevant to the medevac operations in requesting, receiving and transiting countries.

8.1 Human movement across borders – customs and immigration procedures

MINIMUM TECHNICAL STANDARDS

- Ensure that all necessary visas and documentation for each team member, patients and accompanying individuals (who may not have documentation) have been obtained by the coordination mechanism and comply with applicable immigration procedures.
- Adhere to customs regulations and declare all medical equipment, supplies, and medications, including controlled substances *(59)*.
- Maintain all necessary documentation to protect against legal liability in connection with customs and immigration procedures.

RECOMMENDATIONS

- Pre-notify customs and immigration authorities to minimize delays at border crossings.

Guidance Notes

- In the event of a public health emergency, international agreements such as the International Health Regulations (2005), also known as IHR (2005), may provide exemptions or streamlined customs procedures for medevac teams *(60)*.

8.2 Considerations for air medevac – air traffic control and airspace restriction

Medevac operations, whether within a localized emergency zone, region, or internationally must strictly adhere to relevant regulations. However, these regulations vary significantly between countries requiring careful navigation of legal and operational frameworks. Of particular relevance, air traffic control and airspace restrictions play a crucial role in ensuring efficient and compliant medevac missions.

MINIMUM TECHNICAL STANDARDS

- Comply with national and international air traffic control regulations.
- Follow designated flight paths.
- Coordinate with relevant air traffic control authorities.
- Depending on context and flight duration, secure refuelling stop permits and clearances.
- Confirm knowledge of relevant authority responsible for air traffic services in the concerned airspace, as designated by the International Civil Aviation Organization.
- In air medevac, particularly during cross-border movements, ensure possession of the appropriate documentation required to obtain landing permits in both the country of origin and the destination, including aircraft certificate of registration, aircraft certificate of airworthiness, insurance certificate with worldwide or area specific coverage, and pilot licenses.

RECOMMENDATIONS

- Communicate proactively with air traffic control authorities to ensure timely and safe passage of medical evacuation flights.
- Use flight tracking and management software to minimize flight disruptions.
- Develop contingency plans for unexpected airspace restrictions or closures, including alternative routes and emergency landing sites.

Guidance Notes

- Coordinate with relevant authorities to adapt quickly to changes in airspace accessibility.
- Be aware of potential airspace restrictions or closures due to security or emergency situations.
- Prepare for unpredictable weather conditions that may impact flight operations.

8.3 Medical documentation and information exchange – security and privacy

Medevac operations must include appropriate medical documentation that safeguards protected health information, informs clinical decision-making, and complies with pertinent regulations and laws. When available to relevant parties, secure electronic health records facilitate timely and accurate documentation of care.

MINIMUM TECHNICAL STANDARDS

- Ensure medical documentation is complete, accurate, timely, and accessible to authorized medical personnel.
- Comply with relevant regulations and local data protection laws.
- Train all medevac staff on documentation requirements.

RECOMMENDATIONS

- Use electronic health records (EHRs) whenever possible to facilitate timely and accurate documentation.
- Use standardized documentation forms and templates to ensure consistency and completeness.
- Use checklists and algorithms to ensure that key clinical information is recorded.
- Obtain declarations and safe audit records to prove patient/legal guardian consent.
- Develop protocols for obtaining accurate medical information and documenting care for unconscious patients.
- Maintain security and privacy of medical records during transport, especially when transmitting electronic records across borders or between different health-care systems.
- Establish both a reactive and proactive clinical governance framework and process including a critical incident reporting system (see 6.5).

Guidance Notes

- Be aware and comply with local requirements for medical documentation.

8.4 Transport of hazardous waste materials

In medevac operations, it's crucial to follow international rules *(61)* when moving hazardous waste across borders. Teams must properly declare all medical items and follow customs laws to avoid legal prosecution, and implement effective hazardous waste management practices to minimize risks to human health and the environment.

MINIMUM TECHNICAL STANDARDS

- Ensure compliance with international regulations on transboundary movement of hazardous waste.
- Be properly trained in hazardous waste management regulations and protocols.

RECOMMENDATIONS

- The coordination mechanism should identify the relevant regulations and communicate requirements on how to comply with them.

Guidance Notes

- The receiving facility should have available systems for efficient and safe waste management.

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Annexes

9 Annexes

Annex 1.
Staffing considerations

The objective of the following staffing considerations is to provide a nonexhaustive overview of staffing needs per team type, based on experience, existing literature, multiple consultation rounds with experts within WHO, the EMT network, partners, and members of the TWG. Given the limited global consistency of educational frameworks, training content and sometimes significant variation in scope of practice, training and required skills for some professions, the tables below provide an overview of the required competencies and functions of the team members. It is imperative that all teams comply with relevant licensing and registration regulations, and that every team member holds a valid professional license and is duly registered to carry out their designated duties in their home country *(2)*, as recognized by the profession. All team members and medevac providers need to receive approval to practice within their professional scope from every country in which they provide care, including the country of origin, destination, and any countries they transit. Critical care and advanced care transport staffing varies significantly throughout the world with some teams requiring physicians and others staffed with speciality trained critical care nurses. For teams preparing and planning international medevac deployments, staffing models for critical care and advanced medevac may require the presence of a physician on the medevac team to comply with specific countries' licensure and scope of practice requirements. If a medevac provider's scope of practice is not authorized in any of the countries, they will be providing care in, they are required to work under the supervision of a recognized clinical care provider. The level of supervision (direct/in person versus remote supervision/online medical control) needs to be determined by the host country(s)' approval and staffing matrix of medevac team (basic medevac team may not be staffed with a physician but team will have access to medical control supervision). All staffing considerations in Tables A1.1 to A1.7 need to be contextualized based on the operational environment, transport duration and patient care needs. These tables provide essential competency-based guidance on team functions per shift, ensuring appropriate coverage for prolonged transport missions. Staffing numbers below are minimum requirements for teams seeking WHO global classification status. These requirements ensure operational self-sufficiency, patient safety and continuity of care during medevac missions. All team members, including those having a facilitating role (not travelling on the asset), must receive appropriate role-specific training and demonstrate the ability to apply their skills in varying operational contexts. When preparing to respond or deploy, teams are strongly encouraged to conduct "Just in Time Trainings" to refresh knowledge, align team strategies and address context-specific challenges. The training should be tailored to the various profiles. Post-mission debriefing should be used to analyse experiences and identify lessons learnt to improve training and future deployments.

Ratio considerations in tables A1.2 to A1.7 need to be contextualized and adapted to the type and size of the transport asset.

Table A.1.1 Nonexhaustive functions/roles to be considered across all team types

Function	Competencies
Team lead	• Medical professional in a non-clinical role. • Expertise in complex emergency medevac operations; experienced in transport medicine • Context/scenario specific experience • Oversees overall operation. • Coordinates with the ministry of health/EMTCC/EOC. • If the designated medical team lead on the transport asset takes on an additional role as an advanced or critical care provider, the medical team lead role is backfilled by the team lead to provide objective clinical and logistical advice (remote medical coordination).
OSL Focal Point	• Context specific expertise, responsible for managing specific requirements depending on context, such as infectious disease outbreaks, CBRNe/hazmat events and others. • Ensures appropriate supplies and equipment are available for the clinical services provided. • Responsible for overseeing the delivery and distribution of context specific supplies and equipment. • Coordinates with the storage/warehouse staff to ensure timely delivery of supplies. • Coordinates with suppliers for timely delivery of essential supplies. • Maintains records of supplies and equipment and provides regular reports on the status of supplies and equipment. • Ensures that all deliveries are properly secured and transported according to local guidelines and regulations. • Responsible for reliable functioning of all equipment and electricity systems. • Ensures maintenance and repair of equipment as needed.
WASH Focal Point	• IPC trained • Ensures provision of clean water and adequate sanitation facilities for patients and staff. • Responsible for the set up and maintenance of WASH related equipment and components of the transport vehicle, such as the potable water distribution, set up of appropriate hand hygiene stations and excreta management systems. • Responsible for all environmental cleaning tasks, such as cleaning, disinfection and decontamination of transport vehicles, waste management and the management of excreta and vomit buckets. • Responsible for the use of context appropriate disinfectant solutions.
IPC Focal Point	• IPC trained and experienced in context-specific IPC management. • Responsible for all IPC procedures during patient transport and handover. • Implements standard and context adapted transmission-based precautions, if indicated. • Provides training and education for all staff on standard and context specific transmission-based precautions. • Monitors and assesses adherence to IPC measures.

Function	Competencies
Safety/security focal point*	• Responsible for developing and implementing safety, security and occupational health SOPs for all phases of the medevac operation, to safeguard and protect staff, patients, potentially accompanying family members, transport assets and equipment. • Responsible/overseeing all safety and security aspects during transport, including the adherence to context adapted hygiene and IPC procedures, safe handling of equipment and regulatory compliance. • Works with OSL/pharmacy staff to ensure adequate handling and storage of pharmaceuticals and medical equipment. • Liaise with the respective stakeholders regarding the specific situation, risks and mitigation actions to be taken by the medevac team and others on the ground (for example, civil unrest, looting, violence, weather, among others). • Has the responsibility to determine the "no go" parameters for the operation (the decision to delay or not perform an evacuation).
Pharmacy	• Pharmacy management. • Responsible for pharmacy stock and supply, adequate handling and storage of pharmaceuticals.
Data manager	• Experienced in demographic information collection and data management.
Fleet management	• Responsible for transport asset dispatch. • Coordinates with security counterparts for daily fleet planning. • Assesses the operating environment, taking into consideration road conditions, security, journey times, seasonal weather changes and hazards. • Oversees transport vehicle/asset maintenance, daily checks, fuel management, insurance and fleet performance monitoring in coordination with drivers *(62)*. • Ensures all drivers/transport asset conductors are appropriately licensed and trained. • Responsible for fleet safety and security management, including accident management and incident reporting. • Ensures all vehicle/transport assets meet all safety standards, including for subcontracted assets/ transport services. • Coordinates and communicates the arrival of vehicles with the data manager. • Collaborates with the WASH focal point to ensure appropriate transport vehicle/asset cleaning and decontamination.

**This is a role, not necessarily a separate position. Can be simultaneously covered by someone in another position, depending on team composition, context and complexity of the medevac.*

Table A.1.2 Staffing considerations for medevac teams (basic, advanced and critical)

Medevac (basic) Team configuration/competencies	**Medevac (advanced)** Team configuration/competencies *All services provided by medevac (basic) also apply to medevac (advanced)*	**Medevac (basic)** Team configuration/competencies *All services provided by medevac (advanced) also apply to medevac (critical)*
1 Team lead Medical professional with scenario specific experience or specialization in emergency medicine, critical and prehospital care and transport medicine. Additional training in aviation medicine if using an aviation asset for patient transport. Provides medical oversight and clinical direction in person or remotely.	**1 Team lead** Physician with scenario specific experience or specialization in critical care and transport medicine to provide medical oversight and clinical direction. Additional training in aviation medicine if using an aviation asset for patient transport. Provides medical oversight and clinical direction in person or remotely. If in person, and depending on context, the team lead can take on the role of one of the advanced care providers. (see Team lead in Table A.1.1)	**1 Team lead** Specialist physician with scenario specific experience or specialization in critical care and transport medicine to provide medical oversight and clinical direction. Additional training in aviation medicine if using an aviation asset for patient transport. Provides medical oversight and clinical direction in person or remotely. If in person, the medical team lead can take on the role as the specialized critical care provider. (see Team lead in Table A.1.1)
2 basic care providers with combined competencies Formal training and experience in basic life support, emergency and prehospital care as per national regulation. Experience in emergency care, including • basic life support • basic trauma management • patient assessment, including responsiveness, breathing, circulation. • airway assessment and basic airway management. • cardiopulmonary resuscitation including the safe use of an automated external defibrillator. • safe patient positioning and ensuring patient comfort. • situational assessment and management of dangers.	**2 Advanced care providers** with combined competencies Physician, critical care nurse, critical care paramedic, respiratory therapist or equivalent with physician medical direction, with background in critical care, anaesthesia or emergency medicine with training and at least 3 years' experience in • emergency and critical care. • advanced and complex airway management, including non-invasive respiratory support and invasive mechanical ventilation. • chest decompression, chest tube insertion and maintenance of previously placed chest tubes for transport. • context adapted clinical training and experience in the transport of specific populations, such as high-risk obstetric or neonatal patients.	**2 Advanced care providers** **1 Specialized critical care physician** Physician with background in critical care, anaesthesiology or emergency medicine At least 3 years' experience in critical and emergency care, with at least 1 year experience in critical care transport and management of acutely and critically ill or injured patients in the prehospital or inter-facility transport environment. Experience in critical care management, stabilization and treatment of critically ill patients, including: • complex airway management, including non-invasive respiratory support and invasive mechanical ventilation, including ventilation in prone position. • management of patient deterioration, managing adverse reactions and complications. • context adapted clinical training and experience in the transport of specific populations, such as high-risk obstetric or neonatal patients.

• essential obstetric and newborn care. • ability to provide ongoing care to larger numbers of patients and assess them for deterioration, or patient needs such as analgesia.		**1 Trained critical care provider** • Critical care nurse, critical care paramedic or equivalent with a background in anaesthesiology, critical care, emergency medicine, trained and experienced in critical care and transport medicine. • At least 3 years' experience in critical and emergency nursing care, respiratory therapy, management of acutely and critically ill or injured patients in the prehospital or inter-facility transport environment. • Experience in the stabilization and treatment of critically ill patients. Additional training in aviation medicine in air medevac
Additional training in aviation medicine in air medevac	**Additional training in aviation medicine in air medevac**	**Additional training in aviation medicine in air medevac**
Ratio*: 1 basic provider: 4 low dependency patients *Depending on context and transport assets, such as buses or trains with many stable patients.	**Ratio** Depends on patient dependency and transfer time. 1 advanced provider for up to 2 medium dependency patients.	**Ratio** 1 Specialized critical care physician and 1 trained critical care provider: no more than 2 critically ill/high dependency patients. Depending on patient status and dependency may require 1 specialized care physician and 1 trained critical care provider for 1 critically ill patient.

Table A1.3. HID transport staffing considerations

Scenario/case specific HID transport staffing considerations

Team configuration/competencies/functions

Medical team lead

- Specialist physician with scenario specific experience or specialization in critical care and transport medicine to provide medical oversight and clinical direction. May be in person or remotely accessible for advice and clinical support. If in person, the medical team lead can take on the role as the specialized HID care provider.

1 Specialized HID care provider

- Physician with background in critical care, anaesthesiology, emergency medicine or infectious diseases.
- At least 3 years' experience in critical and emergency care, management of critical infectious disease patients, including management of deterioration, adverse reactions and complications, stabilization and treatment of critically ill patients, oxygen provision, non-invasive respiratory support and mechanical ventilation.
- IPC trained and experienced in safe patient isolation management.

1 Trained HID care provider

- Specialized nurse or equivalent with a background in anaesthesiology, critical or emergency care.
- At least 3 years' experience in emergency and critical care, and infectious disease management of the adult and paediatric population, including oxygen provision.
- Experience in the stabilization and treatment of critically ill patients.
- IPC trained and experienced in safe patient isolation management.

Past experiences suggest the additional inclusion of:

1 Safety/IPC officer per team

- Nurse, paramedic or equivalent, trained/with a background in IPC and experienced in context-specific IPC management.
- Responsible/overseeing the implementation of all safety, security and occupational health aspects throughout all phases of the medevac operation, to safeguard and protect staff, patients, potentially accompanying family members, assets and equipment.
- Responsible for the team member's adherence to context adapted hygiene- and IPC procedures, safe handling of equipment and consumables throughout all phases of the medevac operation, and regulatory compliance.
- Implements standard and context adapted transmission-based precautions, if indicated.
- Provides training and education for all staff on standard and context specific transmission-based precautions, and on safe handling of context adapted equipment and consumables, such as PPE.
- Monitors and assesses adherence to IPC measures.

Ratio:

1 Safety/IPC officer per team

Depends on patient dependency, see suggested ratios in medevac (basic, advanced and critical)

1 HID/IPC trained basic provider and 1 trained HID care provider: 8 low dependency patients.

1 Specialized HID care provider and 1 trained HID care provider: 4 medium dependency patients.

1 Specialized HID care provider and 1 trained HID care provider: 2 high dependency/critically ill patients.

Table A1.4. Burns care transport staffing considerations

Scenario/case specific burns care transport staffing considerations

Team configuration/competencies/functions

Medical team lead

- Specialist physician with scenario specific experience or specialization in critical care and transport medicine to provide medical oversight and clinical direction *(36)*. In person or remotely for advice and clinical support. If in person, the medical team lead can take on the role as the specialized burn provider.

1 Specialized burn care provider

- Physician, ideally with background in critical care, anaesthesia or emergency medicine with training and experience in burns and general trauma care.

1 Trained burns care provider

- Nurse or equivalent with at least 2 years' experience in anaesthesia, emergency or critical care, trained in burns and general trauma care.

Ratio:

Depends on patient dependency

1 Specialized burn care provider and 1 trained burns care provider: 4 medium dependency patients.

1 Specialized burn care provider and 1 trained burns care provider: 2 high dependency/2 critically ill patients.

Table A1.5. CBRNe/hazmat transport staffing considerations

Scenario/case specific CBRNe/hazmat transport staffing considerations

Team configuration/competencies/functions

Medical team lead

- Specialist physician with subject matter expertise in CBRNe medicine and scenario specific experience or specialization in critical care to provide medical oversight and clinical direction.
- Technical advice on the use of PPE and measurement equipment.
- In person or remotely for advice and clinical support. (If in person, the medical team lead can take on the role as the specialized CBRNe/hazmat care provider).

1 Specialized CBRNe/hazmat care physician

- Specialist physician with a background in CBRNe medicine, anaesthesiology, critical care or emergency medicine.
- Experience in the management of acute CBRNe/hazmat events, including situational risk assessment, decontamination *(43)*, provision of antidotes, management of toxidromes, provision of isolation capacities, continuous and dynamic risk assessment, safety and security team management in regard to PPE *(63)*, decontamination, measurement equipment and pharmacological prophylaxis.
- Experienced in the recognition and management of blast injuries.
- Experienced in monitoring for blast associated complications.

1 Trained CBRNe/hazmat care provider

- Specialized nurse, paramedic or equivalent with a background in CBRNe medicine, anaesthesiology, critical care or emergency medicine.
- At least 3 years' experience in emergency and critical care, specialized training in the management of acute CBRNe/hazmat events and management and medical care of the adult and paediatric population.
- Experience in the stabilization and treatment of critically ill patients.
- IPC trained and experienced in safe patient isolation management.

Past experiences suggest, depending on context and the potential exposure risk, the inclusion of an on-board safety or IPC officer may be considered.

Ratio:

Depends on patient dependency; see ratios in medevac (basic, advanced and critical).

1 basic provider (CBRNe trained) and 1 trained CBRNe/hazmat care provider per 8 low dependency patients.

1 Specialized CBRNe/hazmat care provider and 1 trained CBRNe/hazmat care provider per 4 medium dependency patients.

1 Specialized CBRNe/hazmat care provider and 1 trained CBRNe/hazmat care provider per 2 high dependency/ critically ill patients.

Table A1.6. Paediatric and neonatal critical care transport staffing considerations

Scenario/case specific neonatal critical care transport

Team configuration/competencies/functions

Neonatal transport refers to preterm and term infants who require critical care or any infant under 5 kg.

Medical team lead

- Specialist physician with subject matter expertise in neonatal and paediatric critical care and a background in neonatology, paediatrics, anaesthesiology.
- Experience in neonatal and paediatric critical care, neonatal and paediatric advanced life support, preterm neonatal incubator transports including mechanical ventilation. Additional training in aviation medicine in air medevac. Provides medical oversight and clinical direction in person or remotely. (If in person, the medical team lead can take on the role as the specialized neonatal critical care provider).

1 Specialized neonatal critical care provider

- Physician with background in neonatology, paediatrics, anaesthesiology.
- Minimum experience of 3 years in neonatal and paediatric emergency and critical care, neonatal and paediatric advanced life support, preterm neonatal incubator transports including mechanical ventilation *(64)*.
- Trained and experienced in pre-hospital management and medical transport.

1 Neonatal critical care provider

- Nurse or equivalent with minimum experience of 3 years in neonatal and paediatric emergency and critical care, neonatal and paediatric advanced life support, preterm neonatal incubator transports including mechanical ventilation *(64)*.
- Background in paediatrics, neonatology, respiratory therapy, anaesthesiology.
- Trained and experienced in pre-hospital management and medical transport.

Ratio:

1 Specialized neonatal critical care provider and neonatal critical care provider per 2 patients.

Depending on patient criticality/ status and dependency, consider 1 specialized neonatal critical care provider and 1 neonatal critical care provider for 1 critically ill patient.

Scenario/case paediatric critical care transport

Team configuration/competencies/functions

Paediatric critical care transport refers to children > 1 years of age, and more than 5kg.

Medical team lead

- Specialist physician with subject matter expertise in neonatal and paediatric critical care and a background in neonatology, paediatrics and anaesthesiology.
- Experience in neonatal and paediatric critical care, neonatal and paediatric advanced life support, preterm neonatal incubator transports, including mechanical ventilation. Additional training in aviation medicine in air medevac. Provides medical oversight and clinical direction in person or remotely. (If in person, the medical team lead can take on the role as the specialized paediatric critical care provider).

1 Specialized paediatric critical care provider

- Physician with background in neonatology, paediatrics and anaesthesiology.
- Minimum experience of 3 years in neonatal and paediatric emergency and critical care, neonatal and paediatric advanced life support, paediatric critical care transports including mechanical ventilation.
- Trained and experienced in pre-hospital management and medical transport *(64)*.

1 Paediatric critical care provider

- Nurse or equivalent with minimum experience of 3 years in neonatal and paediatric emergency and critical care, neonatal and paediatric advanced life support, paediatric critical care transports including mechanical ventilation *(64)*.

Ratio:

1 Specialized paediatric critical care provider and 1 paediatric critical care provider per 2 patients.

Depending on patient criticality/ status and dependency may require 1 specialized paediatric care provider and 1 paediatric critical care provider for 1 critically ill patient.

Table A1.7. ECLS transport staffing considerations

Scenario/case specific ECLS transport Team configuration/competencies/functions
1 Medical team lead • Specialist physician with subject matter expertise ECLS management, critical care and transport medicine to provide medical oversight and clinical direction. • Additional training in air medical operations is required in case of air medevac. • Provides medical oversight and clinical direction in person or remotely.
1 Specialized ECLS/ECMO physician • Physician with specialist background in anaesthesiology, critical care, cardiac surgery, cardiology, or internal medicine *(65).* • Experienced in the management of acutely and critically ill or injured patients in prehospital or interfacility transports. • Expertise in extracorporeal circulation and advanced life support techniques, including respiratory therapy, mechanical ventilation, prone positioning, invasive monitoring, cannula placement/insertion and connection.
1 Trained ECLS/ECMO provider • Critical care nurse, critical care paramedic or equivalent with a background in critical care, anaesthesiology, emergency medicine, trained and experienced in ECLS techniques. • At least 3 years' experience in critical and emergency care, respiratory therapy. • Experienced in critical care interfacility transports. • Experienced in advanced patient monitoring, ECMO establishment, pipe fixation and maintenance, membrane replacement, monitoring of the cannulation site, the extracorporeal circuit and devices, and identification of potential complications. • Experienced in cannula connection.
1 Trained ECLS/ECMO perfusionist experienced in; • ECLS/ECMO circuit management • cannula connection • ECLS/ECMO device maintenance and set-up, managing technical problems, implementing safety checks, and optimizing best practice.
Ratio: 1 Specialized ECLS/ECMO provider 1 Trained ECLS/ECMO provider and 1 Trained ECLS/ECMO perfusionist per patient.

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65 Peperstraete, H., Steenhout, A., De Somer, F. et al. Adult essential extracorporeal membrane oxygenation (ECMO) skills for use in an e-learning program for ICU physicians, nurses and perfusionists: a consensus by a modified Delphi questionnaire.BMC Med Educ 22, 786 (2022). https://doi.org/10.1186/s12909-022-03764-2

Annex 2.
Training

Medevac teams must ensure all staff can safely and effectively adapt their practice to the specific clinical, OSL/WASH and IPC requirements of medical evacuation operations. Context specific pre-deployment training, such as "Just in Time Trainings" should be conducted to support the smooth operations and address the unique challenges of each mission. Insights and lessons learnt from deployments should be reviewed to enhance future training and operations and ideally shared with the EMT community and relevant stakeholders. Simulation exercises, including tabletop drills, functional exercises, and full-scale field simulations, are valuable tools to test, validate, and strengthen preparedness and response plans *(66)*.

Annex 2.1 Training considerations for air medevac teams/flight crews

A standard training curriculum for air medevac teams should address both clinical and operational aspects specific to aeromedical transportation. Training must build on core competencies aligned with clinical roles and transport assets, emphasizing principles that enable safe and effective adaptation to the flight environment. Key operational topics include flight physiology, safety protocols, communications, and strategies for delivering optimal patient care in the air *(67)*. Table A2.1 outlines suggested content for air medevac specific training.

Table A2.1. Considerations on specific air medevac training content

Considerations on specific air medevac training content	Details
Safety	Safety and emergency procedures associated with air transport, including firefighting and emergency egress systems.
Flight physiology	Pressure, volume, and temperature relationship of gases. Composition, pressure, and temperature of the atmosphere. Effects of vibration, noise and acceleration.
Emergency medical services and prehospital systems	Local, regional, and national disaster plans. Identification, assessment, triage, and routing of patients. Communication and the local incident command structure.
Search, rescue, survival	Principles of air and ground search and rescue. Context adapted abandonment, survival, and rescue equipment and techniques. Use of compass, map reading and other context relevant navigation tools. (GPS, offline maps etc.)
Hazardous material (hazmat)	Knowledge of common hazmat placards. Knowledge and use of information sources on hazardous materials. Containment and medical management after exposure to hazardous material.
Equipment	Safe use of aviation and aircraft related equipment, such as master switch and fuel shut off valve, emergency locator transmitter, rotor brake (where applicable), oxygen shut off valve. Safe use of medical equipment.
Communication	Use of standard or in-flight radio protocols. Ability to communicate with external support e.g. airports, dispatch base, flight support agencies or receiving hospitals.
Policies and procedures	Infection prevention and control procedures. Operational policies and procedures.

References

66 World Health Organization. ('2017)'. WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response. World Health Organization. https://iris.who.int/handle/10665/254741. License: CC BY-NC-SA 3.0 IGO

67 Martin T. Aeromedical transportation. A clinical guide. Hampshire; Crc Press; 2. Edition (2006); ISBN-13:' 978-0754641483

Annex 3.
Example medevac coordination checklist

Table A3.1 provides an example checklist to support structured information collection for the medevac coordination mechanism.

Table A3.1. Example medevac coordination checklist

Tasks/topics	Requirements/details	Yes	No	N/A
System mapping	Did the coordination mechanism identify all local functional health-care facilities?	☐	☐	☐
	Is the local/national medevac capacity and capability assessed and confirmed?	☐	☐	☐
	Are there existing SOPs/systems for the referral and transport of patients within the affected area/country?	☐	☐	☐
	If there are no pre-existing medevac SOPs, have they been established and agreed upon by the national authorities?	☐	☐	☐
	Is the contact information of all key stakeholders available?	☐	☐	☐
	Is international assistance needed for coordinating in-country transfers?	☐	☐	☐
	Is international assistance needed for cross-border transfers?	☐	☐	☐
	Is context dependent, appropriate or specialized care available?	☐	☐	☐
Documentation	Is informed consent obtained and signed by the patient/legal guardian?	☐	☐	☐
	Have contact details, identification (ID) and availability of relevant travel documents of the patient been confirmed?	☐	☐	☐
	Is an accompanying adult/legal guardian required?	☐	☐	☐
	Have contact details, identification and availability of relevant travel documents of the accompanying adult/legal guardian been confirmed?	☐	☐	☐
	If transporting unaccompanied minors, have all legal documentation and permissions been obtained/protocols been followed for cross-border transport without a guardian?	☐	☐	☐
	Has the safety and security assessment been completed?	☐	☐	☐
Prioritization	Urgency - P1/P2/P3 assessed and confirmed?	☐	☐	☐
	Dependency – high/moderate/low assessed and confirmed?	☐	☐	☐
	Fitness for transfer/survivability confirmed?	☐	☐	☐
	Has the potential for deterioration been assessed?	☐	☐	☐
	Contingency plan in place?	☐	☐	☐
Referral	Has the referral request been received from the initiating facility?	☐	☐	☐
	Was the referral request accepted by the receiving facility?	☐	☐	☐
	Was the complete demographic and relevant clinical patient information provided?	☐	☐	☐
	Was the secure transfer of patient information confirmed?	☐	☐	☐
Approval/ Regulations	Has the clinical coordinator confirmed the transfer requirement?	☐	☐	☐
	Were local authorities' transfer approval received and documented?	☐	☐	☐
	Has immigration approval/VISA for destination been obtained from relevant authorities?	☐	☐	☐
	Are customs and immigration regulations confirmed and met?	☐	☐	☐
	Were regulatory requirements considered and agreed with relevant authorities?	☐	☐	☐
	Please specify: public/private/insurance?			
	Security access/checkpoints (if relevant) – airport, seaports and hubs contacts known?	☐	☐	☐
	Are the regulations on the management of en-route death confirmed?	☐	☐	☐

Tasks/topics	Requirements/details	Yes	No	N/A
	Transport asset information			
General	Does the type of asset and asset configuration match the patient need and number?	☐	☐	☐
Ground transport	Ground transport	☐	☐	☐
	Ambulance	☐	☐	☐
	Bus, please specify number of patients that can be transported	☐	☐	☐
	Rail transport, please specify number of patients that can be transported	☐	☐	☐
Air medevac	Air medevac	☐	☐	☐
	Helicopter (rotor wing)	☐	☐	☐
	Airplane (fixed wing), please specify number of patients that can be transported	☐	☐	☐
	Ground support/transportation from/to the facility required?	☐	☐	☐
Boat	Boat, please specify number of patients that can be transported	☐	☐	☐
Asset provider	Team	☐	☐	☐
	Local EMS	☐	☐	☐
	Civil-Military operation	☐	☐	☐
	Private company, details	☐	☐	☐
Civmil operation and coordination (if relevant)	Are adequate control and coordination arrangements in place?	☐	☐	☐
	Will the military element be armed or have an armed security element?	☐	☐	☐
	Are there any concerns regarding neutrality and/or impartiality to be addressed?	☐	☐	☐
	Cost coverage confirmed?	☐	☐	☐
Transport team	Transport team capability matches patient(s) need/dependency	☐	☐	☐
	Contact details of the transport team available	☐	☐	☐
	Medevac team (basic)	☐	☐	☐
	Medevac team (advanced)	☐	☐	☐
	Medevac team (critical)	☐	☐	☐
	Scenario/case specific transport	☐	☐	☐
	HID transport • Surveillance for infectious diseases such as endemic diseases and MDROs • Appropriate PPE/relevant IPC procedures.	☐	☐	☐
	Burns care transport	☐	☐	☐
	CBRNe/hazmat transport • Decontamination status and safety for transport confirmed	☐	☐	☐
	Paediatric/neonatal critical care transport	☐	☐	☐
	ECLS transport	☐	☐	☐

Tasks/topics	Requirements/details	Yes	No	N/A
Initiating Facility	Estimated time of departure, location and clinical status of patient confirmed	☐	☐	☐
	Estimated time of arrival communicated	☐	☐	☐
	Responsible medical professional contact information is confirmed	☐	☐	☐
	Communication plan in place for updates	☐	☐	☐
	Patient documentation complete and copies available	☐	☐	☐
Receiving Facility	Time of arrival and clinical status of patient confirmed	☐	☐	☐
	Responsible medical professional contact information is confirmed	☐	☐	☐
	Communication plan in place for updates	☐	☐	☐
	Patient documentation complete and copies available	☐	☐	☐
Hub	Estimated time of departure, location and clinical status of patient confirmed	☐	☐	☐
	Estimated time of arrival communicated	☐	☐	☐
	Responsible medical professional contact information is confirmed	☐	☐	☐
	Communication plan in place for updates	☐	☐	☐
	Patient documentation complete and copies available	☐	☐	☐
Repatriation	Repatriation plan is in place and has been discussed and agreed by all actors	☐	☐	☐
	Return travel arrangements home or facility – regular public transport or dedicated medical transport for patients and any accompanying family members.	☐	☐	☐
	Team confirms SOPs on repatriation and continuity of care are in place.	☐	☐	☐
	Rehabilitation and continuing care are in place	☐	☐	☐
	Repatriation cost coverage confirmed?	☐	☐	☐
Adverse events/ critical incidents	Transport-related	☐	☐	☐
	Transport vehicle and associated equipment	☐	☐	☐
	Non-transport related	☐	☐	☐
	Communication	☐	☐	☐
	Medical equipment (malfunction/availability)	☐	☐	☐
	Patient/clinical management	☐	☐	☐
	Clinical performance	☐	☐	☐
	Patient factors causing death	☐	☐	☐
	Weather	☐	☐	☐
	Unclassified	☐	☐	☐
Other		☐	☐	☐

Annex 4.
Pre-deployment checklist for teams

Table A4.1 lists sample questions the organization or team may ask before activating medevac operations to optimize efficiency and ensure proper planning and resource allocation.

Table A4.1. Example pre-deployment checklist for teams

Category	Questions during pre-deployment briefing	Action prior to medevac	
General context	What is the overall situation/operation context? (context, security, climate, accessibility etc.)	Any changes from the initial briefing?	☐
	Are there relevant endemic infectious diseases, concurrent infectious disease outbreaks?		☐
	Is there an increased incidence of MDRO in the affected population?		☐
Coordination	What coordination mechanisms are in place (national and local levels)?		☐
	Has an EMTCC been established?	Note location and contact information. Include primary and alternate telephone numbers, email addresses, etc.	☐
	What is the current and expected response capacity and gaps?	Ensure planned deployment meets needs and avoids duplication.	☐
	What other partners are on the ground?		☐
Safe patient transport	How is patient referral, transfer and transport organized locally?		☐
	Is there a functional referral system?		☐
	Is patient transport available? Ambulance? Other?	Transport crew is cleared to cross borders, if indicated	☐
Team welfare, occupational health, and safety	Are there any context-specific concerns regarding team welfare, occupational health and safety?	Ensure the team has a designated staff health focal point and brief accordingly.	☐
Security		Ensure the team has a designated security focal point and conduct a pre-deployment security briefing.	☐
Training and capacity building	Is there a need for training sessions before deployment?	Schedule necessary training for team members	☐
OSL	Are there any issues related to importing medical supplies or equipment?		☐
	Is oxygen available locally?		☐
	Are there OSL gaps identified, e.g. availability of vehicles for hire, physical access to response areas?		☐

Annex 5.
Example patient referral form

Table A5.1 presents an example referral form to inform coordination and ensure accurate interdisciplinary communication for safe and effective patient care and handover.

Table A5.1. Example patient referral form

PATIENT REFERRAL FORM

Date: Time:

Patient Information	
Full Name:	Phone: + country - area - phone number
Patient ID number:	Language:
Date of birth: dd/mm/yyyy	Gender:
Address of discharge destination (if known):	
Patient identification confirmed and ID/travel documents available? Yes ☐ No ☐	
Accompanied by escort: Yes ☐ No ☐	
Accompanying adult/next of kin full name:	
Contact details:	
In case of air transport: weight of everyone on the transport	
Weight of patient:	
Weight of accompanying family member/legal guardian:	
Weight of all staff on the transport:	
Tasking information	
Referral to: Name of facility or service	
Contact: Full name	Phone: : + country - area - phone number
Location: : Address/Site/District	Email: example@who.int
Referring from: Name of facility or service	
Contact: Full name	Phone: + country - area - phone number
Location: Address/Site/District	Email: example@who.int
Transport provider: Name of facility or service	
Transport provider capability: ☐ **Medevac team (basic)** ☐ **(advanced)** ☐ **(critical)**	
Scenario specific transport ☐ **HID** ☐ **Burns** ☐ **CBRNe/hazmat** ☐ **neonatal critical care** ☐ **paediatric critical care** ☐ **ECLS** ☐ **Other capacities/not classified** Details if applicable	

Contact: Full name	Phone: + country - area - phone number
Location: Address/Site/District	Email: example@who.int
Referral date:	Acceptance date:
Anticipated date and time of transfer activation:	
Anticipated date and time of arrival at receiving facility:	

Priority ☐ 1 ☐ 2 ☐ 3 **Dependency** ☐ 1 ☐ 2 ☐ 3

Transfer type: ☐ Primary ☐ Interfacility transfer ☐ Repatriation

Clinical information	
Type of injury/incident/illness:	
Date of injury/onset of symptoms/illness:	
Primary Diagnoses (ICD)	1.
	2.
	3.
Past medical history:	
Allergies	
Patient weight:	
Treatments initiated: (including medication/oxygen/procedures/lines/drains/fluids) *	
	☐ Ongoing
	☐ Ongoing
	☐ Ongoing
	☐ Ongoing

**Please attach copy of medication chart at discharge or list of current medications (including dose and time of last dose and ensure at least 72 hours supply of regular medications)*

Patient observations at time of referral and update prior to transport:

Date	Time	Temp	HR	BP	Cap refill	RR	SpO2	FiO2	GCS AVPU	BGL	Other weight

Laboratory (required laboratory parameters to be adapted as per context):
☐ WBC ____ ☐ Leucopoenia ____ ☐ Haemoglobin _____ ☐ Electrolytes _____ ☐ Creatinine_____
☐ Other:

Patient ventilated: Yes ☐ No ☐ Non-invasive ventilation ☐ Mechanical ventilation ☐
☐ FiO2: _____ ☐Tidal Volume_____ ml PEEP ____cm H2O RR: ____ breaths/min
Other ventilation settings:

Copies of diagnostic results/referral letters
☐ Referral letter ☐ ECG ☐ Imaging files ☐ Other Specify_____

Additional information/specifics:
☐ Nausea/vomiting/diarrhoea ☐ Obstetric ☐ Paediatric/neonatal ☐ MDRO ☐ Mental health
☐ Bariatric ☐ Burns ☐ DNR ☐ Vulnerable group (disability/elderly /SGBV) ☐ Other

Precautions: ☐ Infectious disease/MDRO ☐ Spinal precautions ☐ Behavioural ☐ Altitude

Reason for referral:
Such as higher level of care required/specialist care required Limited hospital capacity

Transportation needs:

Follow-up requirements:
surgical review, removal of cast, or removal of external fixator

Functional Status

Mobility ☐ Bed bound ☐ Wheelchair ☐ Crutches ☐ Walking frame ☐ Requires assistance ☐ Independent

Self-care ☐ Carer dependent ☐ Requires assistance with activities of daily living/hygiene/meals ☐ Independent

Cognitive impairment Yes ☐ No ☐ Define key features if dementia related or intellectual impairment

Nutritional requirements:

Assistive devices(s) provided or required:

Compiled by: **Signature:**

Position:

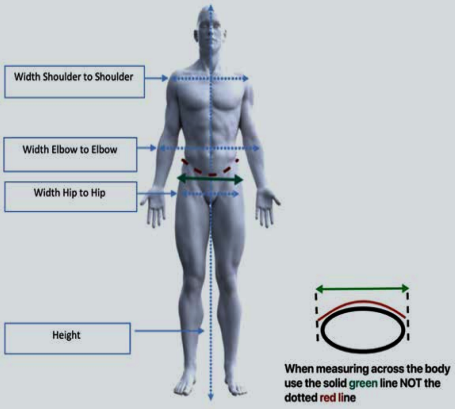
Patient fit-for-transfer: Yes ☐ No ☐ Details if applicable

Patient care funding: ☐ Insurance Details if applicable

Patient/legal guardian consent: ☐ Signature if possible

NOTE: This form must accompany the patient's medical file and a copy of the form should be retained by the referring team.

Additional considerations - Highly Infectious Disease



Diagnosis ☐ **Confirmed** ☐ **Suspect case**

Details:

☐ Close contact

Vaccination details:

☐ Use of Patient Isolation unit

Patient measurements
(for individual isolation unit):

Hip to hip (cm): _____ Elbow to elbow (cm): _____ Shoulder to shoulder (cm): _____

Date of Symptom Onset: ____ / ____ / 20____

☐ Fever of ⩾ 38°C ☐ Chills ☐ Muscle pain ☐ Cough ☐ Dyspnoea ☐ Headache ☐ Other: _____

RT-PCR ☐ Positive ☐ Negative ☐ Pending ☐ Not done
Date: ____ / ____ / 20 ____

Rapid Diagnostic Test (RDT) ☐ Positive ☐ Negative ☐ Pending ☐ Not done
Date: ____ / ____ / 20 ____

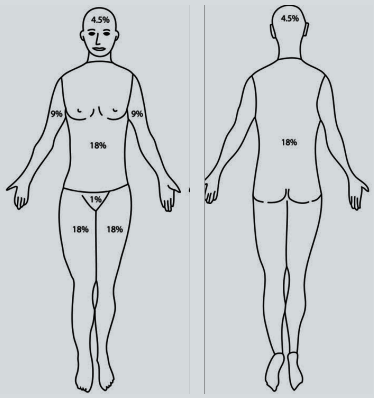
Lab:

☐ WBC ____ ☐ Hb ____ ☐ Electrolytes ____ ☐ Creatinine ____ ☐ Arterial blood gas ____ ☐ Glucose ____ ☐ CRP ____ ☐ Clotting parameters ____ ↑

↑ MDRO specifics:

Other:

Additional considerations - Burns



Estimated Total Body Surface Area (TBSA)

☐ < 5% ☐ < 0% ☐ > 20%

☐ Airway compromise?

☐ Suspected inhalation trauma?

Time and date of burn:

Type of burns

☐ Radiation burn ☐ Chemical burn ☐ Electrical burn

☐ Full thickness ☐ Deep dermal ☐ Mid dermal

☐ Superficial dermal ☐ Circumferential

Dressing:

Analgesia:

Estimated fluid requirement _____ Total fluid since burn _____

Laboratory:

☐ WBC ____ ☐ Haemoglobin ____ ☐ Electrolytes ____ ☐ Creatinine ____ ☐ Arterial blood gas ____

☐ Glucose ____ ☐ CRP ____

Other:

☐ Urine Output monitoring

Additional considerations - Hazmat & Chemical Biological Nuclear Radiological

Agent(s) _____ ☐ Confirmed ☐ Clinical toxidrome ☐ Close contact

Decontamination status:

Ongoing antidote requirements?

Total antidote dose given and at what time:

Time of last antidote:

In radiation injury, total amount of radiation received:

Supportive care requirements:

NOTE: This form must accompany the patient's medical file, and a copy of the form should be retained by the referring team.

Bibliography

World Health Organization; Emergency Care Toolkit (ECT) https://www.who.int/teams/integrated-health-services/clinical-services-and-systems/emergency-and-critical-care/emergency-care-toolkit

Annex 6.
Example transfer of care/patient handover documentation checklist

Table A6.1 presents an example checklist for patient handover documentation to ensure accurate interdisciplinary communication and safe, efficient patient care and handover.

Table A6.1. Example transfer of care/patient handover documentation checklist

Information Item	Details	Notes	Completed
Patient name			☐
Date of birth			☐
Patient ID			☐
Travel documents			☐
Initiating facility/responsible medical officer			☐
Transfer team/responsible medical officer			☐
Receiving facility/responsible medical officer			☐
Transfer confirmed			☐
Acute medical history			☐
Working diagnosis			☐
Priority status	☐ P1 ☐ P2 ☐ P3		☐
Dependency status	☐ High dependency ☐ Medium dependency ☐ Low dependency		☐
Past medical history			☐
Medications			☐
Allergies			☐
Code status		i.e. DNR	☐
Reason for transfer			☐
Vital signs during transfer			☐
Interventions during transfer			☐
Copies of relevant medical records obtained?			☐
Copy of patient/legal guardian consent obtained?			☐
Recommendations			☐
Patient belongings and valuables are safely handed over and documented.			☐
Patient's regular medication handed over			☐
Additional information			☐
Accompanying family member/legal guardian			☐
Travel documents for accompanying family member/legal guardian			☐

Bibliography

World Health Organization (2024); Acute Transfer Checklist; https://cdn.who.int/media/docs/default-source/integrated-health-services-(ihs)/csy/ect/acute-transfer-checklist.pdf?sfvrsn=1f6ef235_1

Annex 7.
Example medevac Minimum Data Set form

Insert logo of Ministry of Health

MEDEVAC-MDS Daily Reporting Form

Team information

a	**Organization name:**	
b	**Team name:**	
c	Medevac (basic) / Medevac (advanced) / Medevac (critical) / Scenario/case specific transport / Details	
d	**Contact Person(s) name(s):**	
e	**Phone No.:**	
f	**Email:**	
g	**Estimated date of departure** (dd/mm/yyyy):	

h	**Date of activity** (dd/mm/yyyy):	
i	**Time of reporting** (dd/mm/yyyy/hh:mm(24h)):	
	Base Location †	
j	**State etc.** (admin1)	
k	**City etc.** (admin2)	
l	**Village etc.** (admin3)	
m	**Facility name:**	
n	**Geo-tag** _____ (Lat) _____ (Long)	

† Submit one form per one activity day and location. For Admin 1 = e.g. State, Province, Governorate; Admin 2 = e.g. County, District, City, Municipality; Admin 3 = e.g. Sub-district, Village, Payam.

Daily Summary

Number of Medevacs/bed count

o	MEDEVAC	Total number of medevacs	
p	MEDEVAC	Number of patients awaiting medevac	
q	MEDEVAC		
r	MEDEVAC		
s	Bed	Total bed/ patient capacity	
t	Bed	Empty inpatient bed (Non-ICU) e.g. Medevac hub	
u	Bed	Empty Intensive Care Unit Bed (ICU) e.g. Medevac hub	

Context

MDS statistics ‡

34	RELATION	Directly related to event	
35	RELATION	Indirectly related to event	
36	RELATION	Not related to event	
37	PROTECTION	Vulnerable child *	
38	PROTECTION	Vulnerable adult *	
39	PROTECTION	Sexual Gender Based Violence (SGBV) *	
40	PROTECTION	Violence (non-SGBV) *	

‡ Consider a 24 hour period from midnight or other agreed cut off time for reporting. Report MDS data of final assessment of patients for that day.

Demographic

MDS statistics

No		Age Categories	<1	1-4	5-17	18-64	65-	Total
1	Sex & Age	Male						
2	Sex & Age	Female non-preg.						
3	Sex & Age	Female pregnant						
4		Additional						

Health Events

Procedure and Outcome

MDS statistics

No		Health Events	<5	>=5	Total
5	TRAUMA	Major head/spine injury			
6	TRAUMA	Major torso injury			
7	TRAUMA	Major extremity injury			
8	TRAUMA	Moderate injury			
9	TRAUMA	Minor injury			
10	EMER	Surgical emergency (Non-trauma)			
11	EMER	Medical emergency (Non-infectious)			
12	OTHERS	Infectious disease			
13	OTHERS	Acute mental health episode			
14	OTHERS	Obstetric complications			
15	OTHERS	Severe Acute Malnutrition (SAM) *			
16	OTHERS	CBRNe/hazmat			
17	OTHERS	Additional			
		Procedure	**<5**	**>=5**	**Total**
18	PROCEDURE	Airway			
19	PROCEDURE	Breathing			
20	PROCEDURE	Circulation			
21	PROCEDURE	Medication			
22	PROCEDURE	Fluids			
23	PROCEDURE	Obstetrics others (abortion etc.)			
		Outcome	**<5**	**>=5**	**Total**
24	OUTCOME	Prone position during transport			
25	OUTCOME	Sitting posture during transport			
26	OUTCOME	Lying down/stretcher during transport			
27	OUTCOME	Stable			
28	OUTCOME	Deterioration during transport			
29	OUTCOME	Shock			
30	OUTCOME	Death			
31	OUTCOME	Adverse Event			
32	OUTCOME	Requiring long term rehabilitation*			
33	OUTCOME	Additional			

Needs and Risks

Free text reporting to EMTCC / MOH on the following issues.

51	Immediate report	Unexpected death *	☐
52	Immediate report	Notifiable disease *	☐
53	Immediate report	Protection issues #	☐
54	Immediate report	Critical incident to EMT and/or community	☐
55	Immediate report	Any other issue requiring immediate reporting	☐
56	Community Risks	WASH	☐
57	Community Risks	Community/suspected infectious disease	☐
58	Community Risks	Environmental risk/exposure	☐
59	Community Risks	Shelter/Non food items	☐
60	Community Risks	Food insecurity	☐
61	Operational constraints	Logistics/operations support	☐
62	Operational constraints	Supply	☐
63	Operational constraints	Human resources	☐
64	Operational constraints	Finance	☐
65	Operational constraints	Others	☐

Detailed comment for (No.)

Detailed comment for (No.)

Detailed comment for (No.)

Detailed comment for (No.)

* Line list (including detailed information) should be submitted with this MDS form to relevant authorities. § Additions are used for context specific reporting items indicated by the relevant authorities. # Protection issues to be reported confidentially to appropriate authority or protection cluster in locally agreed manner.

Annex 8.
Example expression of interest form

WHO EMERGENCY MEDICAL TEAMS - EXPRESSION OF INTEREST – FORM
MEDEVAC SPECIALIZED CARE TEAMS

EMT	*Country, Event, Year*	World Health Organization

EMT Name:		**#ID EMT Global Classification:**	###
CLASSIFICATION STATUS:	☐ No account ☐ Expression of Interest submitted ☐ In mentorship ☐ Classified		
EMT Type:	☐ Type 1 Mobile ☐ Type 1 Fixed ☐ Type 2 ☐ Type 3 ☐ Medevac team (basic) ☐ Medevac team (advanced) ☐ Medevac team (critical) ☐ Scenario specific HID transport ☐ Scenario specific burns care transport ☐ Scenario specific CBRNe/hazmat transport ☐ Scenario specific neonatal critical care transport ☐ Scenario specific paediatric critical care transport ☐ Scenario specific ECLS transport ☐ Other capacities/not classified	**Date and Time of offer:**	*dd/mm/yyyy HH:MM*

☐ We agree to comply with EMT guiding principles and standards, available at https://iris.who.int/handle/10665/341857

Internal Office Use Only				
Team Status:	☐ Approved	☐ Pending	Reason:	
	☐ Tasked	☐ Declined	Reason:	
Check:	☐ WHO Classified	☐ Airport	☐ Field Visit	☐ Other:
Allocated Site:	*Location*	*GPS Coordinates*	Allocation Date:	*dd/mm/yyyy*
Other Comments:	*(e.g. reason for changing type vs the self-declaration from the team)*			

EMT INFORMATION						
ORGANIZATION						
ORGANIZATION TYPE:	☐ NGO NATIONAL	☐ NGO INT	☐ GOVERNMENTAL	☐ MILITARY	☐ OTHER:	
COUNTRY:				NUMBER OF EMTs: ## (TOTAL EMT DEPLOYED)		
TIME (HOURS/DAYS) FOR MOBILIZATION/ESTIMATED DATE OF ARRIVAL:				TIME (HOURS/DAYS) TO START OF SERVICES PROVISION:		
ESTIMATED LENGTH OF OPERATIONAL AVAILABILITY: ### days						

ORGANIZATION PRIMARY CONTACT (HQ)	
NAME	POSITION:
ADDRESS	
EMAIL:	PHONE: + country - area - phone number Local Phone: Satellite Phone:

EMT TEAM LEADER	
NAME:	POSITION:
EMAIL	EMAIL EMT:
LOCAL PHONE:	SATELLITE PHONE:

EMT	EMT CAPACITY/CAPABILITY	NAME EMT/ID WHO CLASSIFICATION
HUMAN RESOURCES STAFFING DETAILS	Team Leads: (enter number) Medical Team Lead: Physician: (add specialty/critical care, anaesthesia or emergency medicine): (enter number) Nurses: (enter specialty if applicable, number) Healthcare provider with a background as paramedic, first responder or equivalent: (enter number) Specialist capacity: (enter type and number) Operations support and logistics: (enter type and number) WASH: (enter type and number)	
TEAM CAPACITY	What number and type of patients can be transported? Does your team have capacity for large scale transports of low dependency patients? What clinical services are offered?	

EMT	EMT CAPACITY/CAPABILITY	NAME EMT/ID WHO CLASSIFICATION
HUMAN RESOURCES STAFFING DETAILS	**Please check any available capability** ☐ Team complies with standards of medevac team (basic) ☐ Team complies with standards of medevac team (advanced) ☐ Team complies with standards of medevac team (critical) ☐ Scenario specific HID transport capacity, please specify: _____ ☐ Scenario specific burns care transport capacity, please specify: _____ ☐ Scenario specific CBRNe/hazmat transport capacity, please specify: _____ ☐ Scenario specific neonatal critical care transport capacity, please specify: _____ ☐ Scenario specific paediatric critical care transport capacity, please specify: _____ ☐ Scenario specific ECLS transport capacity, please specify: _____ ☐ Other capacities/not classified, please specify: _____	
TEAM CAPACITY	Is your team willing to deploy into insecure environments? ☐ YES ☐ NO Does your organization have previous experience in insecure environments? ☐ YES ☐ NO Please specify:	
COORDINATION	Does your organization commit to support repatriation? ☐ YES ☐ NO Which mechanisms are in place? Please provide further details	

	OPERATIONS SUPPORT AND LOGISTICS
TRANSPORT ASSET INFORMATION	Types of assets to be used in the area of operations? Please specify: _____ Range of assets, including return journey? Please specify: _____ Are commercial arrangements in place with asset providers/civil military arrangements? ☐ YES ☐ NO Please specify: _____ In case commercial or civ-mil arrangements are in place, can the team provide evidence of self-sufficiency? ☐ YES ☐ NO Provide further details, please _____
TEAM CAPACITY	Is ground support required? ☐ YES ☐ NO Provide further details, please _____ **Logistic support** Any logistical limitations or support required? ☐ YES ☐ NO Please add more detail on logistics, e.g. transport should include total volume and weight of XX. _____ Do you offer in country transports? ☐ YES ☐ NO Do you offer cross-border transports? ☐ YES ☐ NO to where: _____

PREVIOUS DEPLOYMENT EXPERIENCE (ONLY LAST FIVE)

Please list the past 5 years of deployment experience: year, country, event, EMT type, and duration in days.

YEAR	COUNTRY	EVENT	EMT(s) TYPE	DURATION (DAYS)

EXISTING OR PREVIOUS WORKING RELATIONSHIP IN COUNTRY ☐ **YES** ☐ **NO**

ORGANIZATION	LOCATION	RELATIONSHIP

DOCUMENTS CHECKLIST ☐ Professional practice licence ☐ CV or resume (if applicable) ☐ Copy of passports ☐ Visa documents (if applicable) ☐ Packing list ☐ Others required by the authorities	Name: Email: Signature:

End of expression of interest form

Annex 9.
Example checklists for patient transfers

The clinical documentation should summarize the patient's clinical status before, during and after transport, including relevant medical conditions, environmental factors and therapy given. A process to identify and investigate specific problems, such as delays in transportation must be in place. Clear information should be provided to the transport team before departure. Upon arrival at the receiving facility, a formal handover must take place between the transport team and the receiving medical and nursing staff who will assume responsibility for the patient's care. This handover includes both verbal and written details of the patient's history, vital signs, therapy and significant clinical events during transport along with X-rays, scans and other investigation results. Teams should perform a pre-departure time out to confirm information with all team members. Table A9.1 outlines key information to be exchanged at each stage of patient transport.

Table A9.1. Example checklists for patient transfers

Transfer preparation	
Name, gender, date of birth	☐
Accompanying adult family member or Next of Kin	☐
Working diagnoses in common terms (ICD codes)	☐
Date of injury/onset of illness	☐
Priority and dependency categories	☐
Patient fit for transfer	☐
Patient and/or relatives/legal guardian informed consent was obtained/signed	☐
Patient and/or relatives informed of referral and destination	☐
Insurances confirmed	☐
Special considerations (paediatrics, obstetric, burns)?	☐
Special context adapted precautions (HID, MDRO, spinal, bariatric)?	☐
Both initiating and receiving facility confirmed transfer	☐
Referral date	☐
Initiating facility detail/name and contact number of referring physician known and confirmed	☐
Acceptance date	☐
Receiving facility detail/name and contact number of accepting physician/facility focal point known and confirmed	☐
Transport provider detail (focal point names and contact information)	☐
Anticipated activation time of confirmed, estimated time of arrival communicated?	☐
Copies of patient documentation, medical records, diagnostics (laboratory/imaging) and case prepared for hand over.	☐

Pre-departure transport checks	
Coordination/dispatch centre informed of departure and anticipated route	☐
Introductions of all staff completed	☐
Appropriate medical equipment checked and confirmed	☐
Appropriate and sufficient consumables, such as medications, oxygen, PPE checked and confirmed	☐
Appropriate and competent transport staffing confirmed	☐
Exact location of receiving facility known and confirmed	☐
Adequate power/fuel supply according to distance to destination plus contingency	☐
Communication equipment, such as mobile or satellite phone checked and charged?	☐
Money or cards for emergencies?	☐
Return arrangements checked and confirmed?	☐
Patient valuables secured?	☐
Transfer documentation	☐
Pre-departure patient/medical checks	
Patient's identification and adequate documentation (travel documents) checked and confirmed	☐
Confirm patient's informed consent	☐
Patient stable, fully investigated?	☐
Patient still stable after transfer to mobile equipment?	☐
Problems encountered (patient care, documentation, and process)	☐
Working diagnoses in common terms (ICD codes) confirmed?	☐
Isolation status (infectious disease, MDRO) checked and confirmed?	☐
Adequate sedation available, if applicable	☐
Spare sedatives/vasopressors/inotropes/fluids available as required	☐
Drugs, pumps, lines rationalized and secured for patient packaging	☐
Patient valuables and belonging secured and documented?	☐
Pre-existing medical conditions, allergies and medication checked and confirmed?	☐
Drugs and medical interventions received in the last 24 hours checked and confirmed?	☐
Blood products required, initiated in the facility?	☐
IV access in place checked and confirmed?	☐
NPO status checked and confirmed?	☐
Urinary catheter checked and confirmed?	☐
Indwelling lines, tubes, secure and accessible?	☐
Temperature checked?	☐
Required laboratory findings checked and confirmed?	☐
Required monitoring (ECG, BP, SpO2, ETCO2, etc.) checked and confirmed?	☐
Spinal precautions in place (if required)	☐
Pressure points protected (if required)	☐

Airway/breathing	
Airway safe and secure checked and confirmed?	☐
ETT/tracheostomy checked and confirmed	☐
Auscultation: Bilateral breath sounds checked and confirmed	☐
NGT in position checked and confirmed	☐
Ventilation status (invasive, non-invasive) checked and confirmed, if applicable	☐
Arterial blood gas checked	☐
Capnography available	☐
Chest drains checked, secured	☐
Post transfer	
Patient handover/transfer of care completed and documented	☐
Patient belongings off-loaded and documented	☐
Transfer equipment re-loaded (after handover)	☐
Transfer and receiving facility team informs coordination cell about date, time and place of handover	☐

Annex 10.
Example equipment and consumables list

Operational support and logistic needs depend on the emergency context and available resources. Once the required level of care is determined, it is essential to ensure equipment and consumables are compatible with transport conditions, approved for use on each type of asset and suitable for the involved authorities. Consumables should be calculated based on the number of patients and maximum transport duration, with contingency for self-sufficiency. Timely resupply is crucial, and dedicated resupply chains or alternatives for specialized items will ensure readiness. Table A10.1. and Table A10.2. provide examples and considerations on sample equipment and consumables for medevac teams. The nonexhaustive considerations for equipment and consumables are applicable for all medevac teams (basic, advanced and critical).

Medevac teams (critical) are characterized by their ability to adapt services to the context and patient needs, particularly regarding team composition and competencies. Teams need to anticipate additional equipment and consumables tailored to scenario-specific needs, such as highly infectious diseases, paediatric, newborn, burns care, CBRN or ECLS transports.

The WHO Trauma and Emergency Surgery Kit (TESK) 2019 *(68)*, WHO Major Trauma Backpack 2021 *(69)* and other WHO standard emergency health kits *(70)* offer modules that can supplement these considerations. Teams must also comply with national and international regulations, including International Air Transport Association dangerous goods regulations *(71)*.

Table A10.1 Sample equipment and consumable list for medevac team (basic)

Consider additional paediatric and infant sized equipment and consumables, and paediatric dose adaptations.

Type of equipment/consumables	Notes/examples/considerations
General	
Patient litter or stretcher with restraints	Stretchers must be able to be securely and effectively mounted to the floor or body of the transport asset. In the context of an air medevac/used in an aviation environment, the stretcher and mountings should be designed and tested to ensure they can withstand a significant impact force – commonly a 20 G crash.
Padded/bedsore prevention mattress	
Patient linen	1 set/patient
Disposable emesis bags, bedpan, urinal	
Towels	
Thermal absorbent blanket	
Flashlight and extra batteries/per team member	
Length/weight-based paediatric tape or appropriate reference material	
Bandage scissors	

Type of equipment/consumables	Notes/examples/considerations
General	
Patient care charts for systematic transfer documentation	
Triage tags	
Noise reduction safety earmuffs for patients if indicated	
Loading/unloading equipment	
Safety equipment	
High visibility vest (reflective)/per team member	
Traffic signalling devices (reflective material)	
Fire extinguisher	
Hazardous material reference guide	
Hearing protection	Depending on context
IPC	
Context adapted PPE, including gloves, gown, goggles, masks (medical, respirator)	
Sterile gloves in different sizes	
Hand sanitizer/alcohol-based hand rub at every point of care	
Context adapted environmental cleaning supplies for surfaces and equipment	
Waste containers, including sharp containers and biohazard waste bags	
Ventilation and airway	
Portable oxygen	Technologies such as portable oxygen concentrators, liquid oxygen systems, or oxygen generators minimize dependency on cylinder refills and improve self-sufficiency. Consider required quantity for entire duration of the transport, including contingencies
Oxygen supply equipment, including tubing and variable flow regulator	
Oxygen administration equipment with adequate tubing	
Masks, non-rebreathing and valveless, adult and paediatric sizes	
Bag-valve mask with self-inflating bag, adult and paediatric sizes	
Oropharyngeal airway, adult and paediatric sizes	
Nasopharyngeal airway, adult and paediatric sizes	
Nasal cannulas, adult and paediatric sizes	
Portable suction device, with tubes and different suction tips/ catheters	
Aerosol delivery device	
Pulse oximeter, adult and paediatric probes	

Type of equipment/consumables	Notes/examples/considerations
Patient monitoring	
Automated external defibrillator, adult and paediatric capabilities, adult and paediatric sized pads, cables	
Monitoring devices for SpO2, HR, NIBP	
Sphygmomanometer in adult and paediatric size	
Stethoscope	
Thermometer	
POC testing/glucometer	
Dressing, bandages, splints	
Bandages, different sizes	
Sterile dressing pads, different sizes	
Occlusive sterile dressings or equivalent	
Compress gauze, different sizes	
Adhesive tape	
Sterile saline solution	
Sterile burns sheet	
Trauma	
Arterial tourniquet	
Cervical collars (adjustable sizes)	
Equipment to support full spinal precautions/immobilization *(72)*	Optional: pelvic binder
Maternal/newborn care	
Sterile delivery kits	Soap, plastic draw sheet, sterile umbilical cord scissors with blunt end blades, single use sterile umbilical cord clamp, cotton towel, sterile surgical gloves, instruction sheet
Warming blanket	
Medicines	
Pain medication	non-controlled substances
Anaphylaxis management	IM epinephrine (Epi-pen)
Oral glucose	
Inhaled bronchodilator	salbutamol via inhaler
Anti-seizure medication	per rectum (PR) benzodiazepine. NOTE: depending on local regulations, and scope of practice of medevac team (basic); controlled substance
PO antiemetic medication	
Fluids	clean water (orally) oral rehydration solution

Table A10.2. Sample equipment and consumable list for medevac team (advanced) and (critical)
Equipment and consumables listed in table A10.1 for medevac team (basic) also apply to medevac team (advanced) and (critical). Consider additional paediatric and infant sized equipment and consumables, and paediatric dose adaptations.

Type of equipment/consumables	Notes
General	
Power supply	
Thermoregulation equipment	
External warming device	
Chest tube insertion kit, complete with Heimlich valve	
Cardioversion/defibrillator device, complete with pads	
Point of care ultrasound	
POC testing for glucose, haemoglobin/haematocrit, electrolytes, blood gases	
Portable blood analysis system: Lactate Blood gases Chemistries and electrolytes Cardiac markers	Consider costs and short shelf life of cartridges.
Foley catheter set	
Kelly clamp	
Naso-gastric tubes, adult and paediatric sizes	
Secure lock up system for controlled substances	
Incubator in neonatal transports	
IPC	
Modes of isolation if indicated	
Ventilation and airway	
Airway adjuncts and peri/supraglottic alternate airway devices in adult and paediatric sizes.	
Equipment to manage difficult airways	Video laryngoscopy, bougie
Non-invasive ventilation mask and circuit in adult and paediatric sizes	
Portable multi-mode transport ventilator adaptable to patient size, complete with tubing and accessories	Considerations: Ability to tailored treatment of severe respiratory failure, including I:E ratio, rise time and both volume and pressure-controlled ventilation modes.
Ventilator circuits for all patient populations	Prone position
Tracheal intubation kit; complete with rescue devices	
surgical cricothyroidotomy set	
Endotracheal tubes, in adult, paediatric and neonatal sizes	
Lubrication jelly	

Type of equipment/consumables	Notes
Ventilation and airway	
Stylets/bougies in adult and paediatric sizes	
Endotracheal cuff pressure manometer	
Laryngoscope, different blades in adult and paediatric sizes.	If available, video laryngoscope recommended; spare batteries and bulb
Magill forceps, adult and paediatric size	
endotracheal tube securing device	
Humidification/artificial nose	
PEEP valve	
ETCO2 detection device/capnography	
Small volume nebulizers	
Bulb syringe	
Pneumothorax needle decompression, chest tube thoracostomy sets, (different age-appropriate sizes).	Thoracostomy set if within scope of medevac team
Patient monitoring equipment	
Portable battery powered defibrillator with adult and paediatric paddles, conductive pads & conductive gel.	Defibrillator with percutaneous pacing mode.
Portable battery powered multi-parameter monitor, including ECG (12 lead capabilities), NIBP, SpO2	
Monitor with additional capacity, such as invasive arterial pressure, EtCO2, neuromuscular blockade, if indicated.	
Temperature monitoring	
Pulse oximetry/oxygen saturation monitor including paediatric probes	neonatal/paediatric transport team requires dual SpO2 capability for pre and post ductal continuous saturation monitoring.
Continuous capnography	
Transcutaneous pacer	
Spare ECG Electrodes	
Trauma equipment	
Sterile burn sheets	
Equipment to support spinal immobilization	
Tourniquet	
Pelvic binder	
Maternal/newborn care	
Medication to prevent and treat postpartum haemorrhage	Uterotonic drugs, such as oxytocin. Antifibrinolytic medication, such as tranexamic acid, in line with local regulations.
Tocolytic medication	
Magnesium sulphate	eclampsia, seizure/convulsion

Type of equipment/consumables	Notes
Circulation, IV access, fluids & supplies	
Antiseptic solution/skin disinfectant, such as alcoholic preps	
Tourniquet	
IV catheters, different sizes	
Intraosseous needles, adult and paediatric sizes	
Syringes, different sizes	
IV placement equipment for peripheral and intraosseous access	
IV giving sets in adult and paediatric sizes	
sterile iv catheter dressing kits	
IV pressure bags	
IV fluid, such as saline solution	
Portable and battery powered IV pump, capable of regulating 3 IV drips with appropriate IV pump tubing and extension tubing.	
Medicines *Teams need to ensure temperature control of all consumables/pharmaceuticals within temperature limitations/need of cold chain*	
Infusion solution	Ringers lactate, NaCl
Thromboembolism prophylaxis, if indicated	
Nebulized medications (Alpha and Beta2-adrenergic agonist)	
Catecholamines	epinephrine (adrenaline), norepinephrine (noradrenaline), dopamine, isoprenaline
Anaesthetics	fentanyl, ketamine, propofol, etomidate, according to local regulations
Analgesic/antipyretic medication	opioid and non-opioid (NSAIDS, paracetamol)
Anaphylaxis medication	i.m. adrenaline/epiPen
Antiarrhythmic agents	Adenosine, Amiodarone
Antibiotics and other medications as indicated	
Anticonvulsant medication	IV/IM benzodiazepine; Diazepam, Midazolam, Levetiracetam, NOTE: depending on local regulations. controlled substances
Antiemetic	Ondansetron
Antifibrinolytic agents	Bleeding control
Tranexamic acid (TXA)	
Antihistamine	Dexchlorpheniramine
Antihypertensive medication	
Anxiolytics/sedatives	according to local regulations
Atropine	
Beta-blockers	
Blood products	French lyophilised plasma (FLyP)

Type of equipment/consumables	Notes
Medicines *Teams need to ensure temperature control of all consumables/pharmaceuticals within temperature limitations/need of cold chain*	
Calcium channel blockers	
Calcium chloride	
Diuretic	Furosemide
Electrolyte solution	Potassium, Magnesium, Calcium
Insulin	
IV Glucose/dextrose solution (and sterile diluent)	50%, and 25% for paediatric patients
Local anaesthesia	
Magnesium sulphate	
Muscle relaxants	Suxamethonium, rocuronium bromide; according to local regulations
Nitro-glycerine	
Opioid antagonist	Naloxone
Sodium bicarbonate	
Sodium chloride	
Steroids	Hydrocortisone, decadron, solumedrol
Sympathomimetic agent/bronchodilator	Albuterol, ipratropium bromide
Tranexamic acid	
Vitamin K	

References

68 World Health Organization; (2019); Trauma and Emergency Surgery Kit (TESK) 2019; https://www.who.int/emergencies/emergency-health-kits/trauma-emergency-surgery-kit-who-tesk-2019

69 World Health Organization; (2021); Major Trauma Backpack; https://www.who.int/emergencies/emergency-health-kits/major-trauma-backpack

70 World Health Organization; Emergency health kits; https://www.who.int/emergencies/emergency-health-kits

71 The International Air Transport Association (2024); Dangerous Goods Manuals; https://www.iata.org/en/publications/manuals-standards-regulations/dangerous-goods/

72 National Institute for Health and Care Excellence (NICE) guideline; 17 February 2016; Spinal injury: assessment and initial management; https://www.nice.org.uk/guidance/ng41/chapter/recommendations#immediate-destination-after-injury

Annex 11.
UN medevac mechanism

The UN headquarters provide oversight and support for the efficient and effective delivery of UN standard health care in field missions to ensure the health and well-being of the personnel in the field. The Division of Healthcare Management and Occupational Safety and Health and the Medical Support Section at the UN Department Operational Support coordinates the system-wide implementation of UN medical standards and health policies and addresses clinical health care issues in all duty stations. It is responsible for a number of important administrative functions, such as the coordination, advice and assistance of medical evacuation and repatriation of UN personnel and their recognized dependents. They conduct medical assessments of potential regional medical evacuations centres and periodically monitor and evaluate existing regional medical evacuation centres to ensure that the required health-care standards are maintained *(73)*. The principles of UN medical support include the provision of timely access to an appropriate standard of health care, the provision of continuous medical care from the point of injury to the final recovery of the patient supported by a responsive combination of land and air evacuation capabilities involving well trained and equipped medical evacuation teams and a well-functioning communication network linkage for rapid and expert medical response. The authority to approve a UN medevac lies with the heads of departments or offices away from Headquarters. The decision to evacuate should be taken upon the recommendation of the UN medical officer for the provision of medical services to the department or office concerned. At duty stations without a UN medical officer or UN dispensary physician, the decision is to be taken upon the recommendation of a locally appointed UN examining physician. For medevacs expected to exceed 45 days or for any extension of medevac beyond 45 days, authorization must be obtained from the UN medical director *(74)*. Fig. A11.1 provides an overview of the current WHO staff health and wellbeing department processes regarding medevac.

Annex 11.1 WHO medevac checklist/decision-making

(based on current WHO Staff health and wellbeing department processes)

1. Field level; involves patient/next of kin/country office administration and UN physician

- Patient seeks care from nearest local facility as soon as possible (UN clinic or UN approved facility or well-established hospital preferably with a medical school).
- UN physician obtains a comprehensive medical report with indication of the patient's fitness to fly.
- Country office administration/human resources provides travel documents to the UN physician.
- Summary documentation required for a complete file as per Table A11.1.

Table A11.1. WHO medevac checklist

Required from the patient		Required from accompanying family member/legal guardian	
National passport (must be present at MEDEVAC)	☐	same	☐
UNLP/UN Certificate/UN family certificate	☐	same	☐
International vaccination book (yellow fever certificate)	☐	same	☐
Medical report (strict confidentiality must be always maintained)	☐		☐

For WHO, there is an intermediate step between the UN physician, WHO headquarters and the regional staff physicians. Regional staff physicians do the work of WHO headquarters if the patient is an international staff member, will be medevaced within the same WHO region and does not require air ambulance transfer. For all other cases, the regional staff physician transmits the medevac request from the UN physician to WHO headquarters for further advice and management.

- UN physician further reviews the file above for completeness and makes a formal request to the HQ medevac team/agency medical services (using a medevac request form) via dedicated email and telephone.

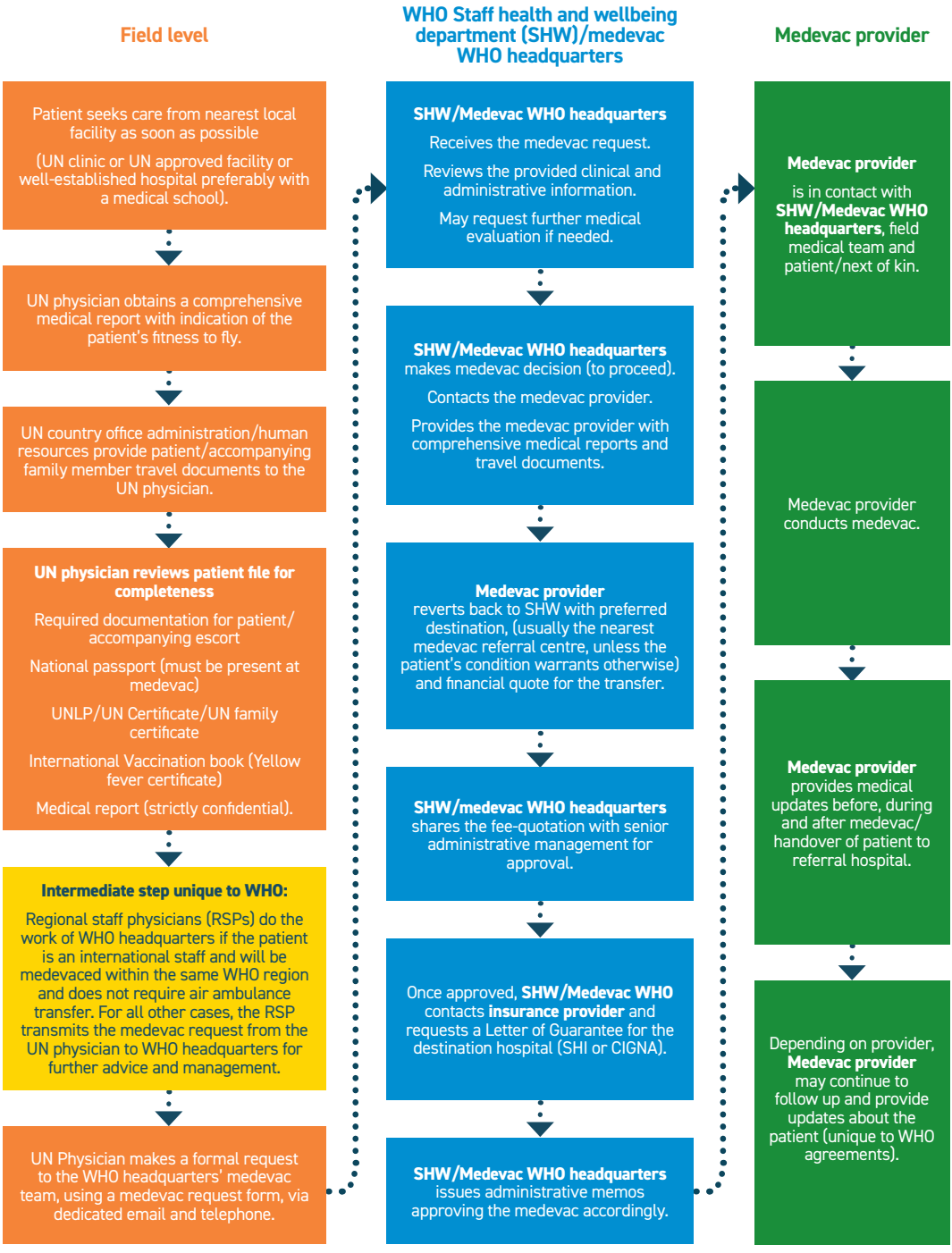
2. Medevac WHO headquarters:

- Receives the medevac request and reviews clinical and administrative information provided.
- May request further medical evaluation if needed.
- Makes medevac decision (to proceed) then contacts the medevac provider and sends them the patient's comprehensive medical reports and travel documents.
- International medevac provider reverts with preferred destination, (usually the nearest medevac referral centre unless the patient's condition warrants otherwise), and a financial quote for the transfer.
- MEDEVAC HQ shares the fee-quotation with senior administrative management for approval.
- Once approved, Medevac HQ contacts the insurance provider and requests a Letter of Guarantee for the destination hospital (Staff Health Insurance or CIGNA online claiming tools).
- MEDEVAC HQ issues administrative memos approving the medevac.

3. Medevac provider:

- In contact with medevac HQ, field medical team and patient/next of kin.
- Conducts the medevac.
- Provide medical updates before, during and after medevac/handover of patient to referral hospital.
- Depending on the provider and existing agreements with WHO, the provider may continue to follow up and provide updates about the patient.

Fig. A11.1. Current WHO Staff health and wellbeing department medevac processes



Example of the establishment of the UN medevac mechanism during the COVID-19 pandemic

In May 2020, a joint UN MEDEVAC Task Force under the UN Department of Operational Support in New York established a UN COVID19 medevac mechanism, comprised of the Food and Agriculture Organization of the United Nations, the International Organization for Migration, the United Nations Development Programme, the United Nations Population Fund, the United Nations High Commissioner for Refugees, the United Nations Children's Fund, the United Nations Office for Project Services, the World Bank, the World Food Programme, WHO, the UN Medical Directors Network and other offices and departments of the United Nations Secretariat. The UN Covid-19 medevac mechanism coordinated all UN Covid-19 medevacs of contracted personnel and their eligible dependents *(75, 76)*. The UN Covid-19 Medical Evacuations Operations Centre (UN medevac cell) established a single point of contact for all eligible entities that have personnel and dependents in need of COVID-19 related medevacs anywhere in the world. The UN medevac cell built upon the existing capacities of WHO, the World Food Programme and the UN Department of Operational Support and provided global 24/7 coverage for all UN entities with a full range of medical and air asset coordination services, with full visibility over all relevant medical and airframe assets that exist across the UN system. The UN medevac cell was composed of the Medical Coordination Unit, based at WHO headquarters in Geneva, and the Strategic Air Operations Centre, based at the Strategic Air Operations Centre/ UN Department of Operational Support in Brindisi. The UN medevac cell was the primary interface for Covid-19 coordinators requesting Covid-19 medevac support, and could provide the necessary clinical, aviation and other logistical support required to authorize and implement a MEDEVAC.

References

73 United Nations (2024); Department of Operational Support/Office of Support Operations/Division of Healthcare Management and Occupational Safety and Health, United Nations Headquarters, New York; Medical Support Manual for United Nations Field Missions (4th Edition); https://resourcehub01.blob.core.windows.net/$web/Policy%20and%20Guidance/corepeacekeepingguidance/Medical/Medical%20Support%20Manual%20for%20United%20Nations%20Field%20Missions%20(2024)%20-%20English.pdf

74 United Nations Secretariat (2000); Administrative Instruction; Medical evacuation; ST/AI/2000/10; https://docs.un.org/en/ST/AI/2000/10

75 Revised UN Model of Care (MOC); (2022); Checklist for UN Duty Stations in response to COVID-19 pandemic; https://www.un.org/sites/un2.un.org/files/2020/04/un_model_of_care_checklist_and_matrix.pdf

76 United Nations Department of operational support; (2021); THE OPERATIONAL FRAMEWORK FOR COVID-19 MEDICAL EVACUATIONS (MEDEVAC) AND RELATED SERVICES; https://www.un.org/sites/un2.un.org/files/2021/03/covid-19_medical_evacuation_framework.pdf

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UN HR Services, Medical services around the globe; https://hr.un.org/page/medical-services-around-globe
UN COVID-19 MEDEVAC: Index of documents (15 May 2021); https://www.un.org/en/coronavirus/covid-19-coordinators

Annex 12.
EU-coordinated mechanism for medevac

An EU-coordinated mechanism for medevac was initially established in response to requests for assistance concerning the emergency evacuation of international patients affected by highly infectious diseases, such as Ebola Virus Disease and COVID-19. The mechanism has since been further adapted to meet the demands for medevac arising in the context of conflict scenarios. DG ECHO, in collaboration with the Directorate General for Health and Food Safety, supports and facilitates the overall coordination of medical evacuation operations. The medical request and the evacuation phases are legally grounded in Decision No. 1313/2013/EU on a European Union Civil Protection Mechanism (UCPM). Within DG ECHO, the ERCC is the main responsible entity for medevac operations. It coordinates with national authorities, international organizations and other stakeholders, providing assistance to countries both within and outside the EU on a 24/7 basis. The ERCC acts as the primary entry point for medevac requests via the UCPM, using the Common Emergency Communication and Information System (CECIS) to relay these requests to all EU Member States and UCPM Participating States. The ERCC oversees the consolidation and coordination of medevac offers, supports the deployment of EU Civil Protection Teams (EUCPT) to assist national authorities, and may appoint liaison officers. Additionally, the ERCC co-finances transport costs for medevac assets provided by offering states and organizes extra transport and assistance through rescEU capacities as needed. Medical evacuation capabilities, including both transport solutions and patient treatment, are implemented and offered by EU Member States or Participating States of the Union Civil Protection Mechanism (UCPM), which bear the responsibility for their implementation. EU-coordinated medevac operations are structured through SOPs, which outline the roles and responsibilities of the European Commission (EC), national authorities, international organizations, and other relevant parties, in close collaboration with WHO.

The EU coordinate medevac mechanism encompasses different phases:

Phase I – Medevac request

To initiate EU-coordinated medevac operations, the Union Civil Protection Mechanism (UCPM) must first be activated. This occurs when a country or designated international organization requests assistance in response to a disaster or emergency that exceeds their national response capacities. A new medevac request can be initiated by any country and, in exceptional circumstances, by organizations such as the WHO on behalf of non-EU countries. It is important to note that the response to medevac requests under the UCPM is entirely voluntary and subject to the discretion of EU Member States and UCPM Participating States. The requesting country, authority, or organization is responsible for preparing a formal medevac request by contacting the ERCC. This process involves using a designated template that includes essential patient details such as the requesting country's acronym, patient number, initials, age, gender, diagnosis (ICD-10), and any pre-agreement with a receiving country.

The requesting country must ensure that patients provide informed consent before the medevac procedure begins.

To enhance coordination and secure data exchange, two key platforms are authorize:

1. Early Warning and Response System (EWRS) – managed by the Directorate-General for Health and Food Safety, the EWRS Medevac Module enables the secure exchange of sensitive medical and personal data between the requesting and receiving countries. This module operates under Regulation 2022/2371/EU, ensuring compliance with the General Data Protection Regulation and EU data protection standards. The EWRS platform allows European Commission services, national authorities, the transporting country, international organizations like WHO, and potential medevac hubs to manage and monitor sensitive patient data securely.

2. Common Emergency Communication and Information System (CECIS) – managed by ECHO/ERCC, CECIS serves as the primary coordination platform for medevac requests, enabling EU Member States and UCPM Participating States the ability to view non-sensitive operational details, including the number of patients requiring evacuation and available reception capacities.

Once the formal request is submitted, ERCC transmits notifications via CECIS, making the request visible to EU Member States and UCPM Participating States. The Directorate-General for Health and Food Safety, through EWRS, facilitates the secure exchange of detailed patient information between requesting and receiving medical authorities. After the required information is gathered and assessed, the countries submit formal offers of medevac within CECIS. This structured approach ensures a coordinated, secure, and effective medevac process while safeguarding patient confidentiality and adhering to EU data protection regulations.

Phase II - Operational Execution of Medevac

EU Member States and UCPM Participating States submit their offers of medical treatment and/or transportation in CECIS. Once offers are received, ERCC Duty Officers notify the requesting country, which then seeks the patient's acceptance through informed consent for the proposed arrangements.

The requesting country is responsible for:

- Obtaining informed consent in accordance with national and international humanitarian law (IHL).
- Ensuring the secure transfer of relevant clinical patient data to the receiving country's authority through encrypted data-sharing tools that comply with the General Data Protection Regulation.
- Issuing all necessary travel documents for patients and any accompanying persons.
- Maintaining accountability for patients and their companions until they are handed over to the receiving country's medevac team.

Transport and handover process

After final verification and approval by both the requesting and destination countries, transportation is organized. EU Member States and UCPM Participating States coordinate and execute the medevac operation through the ERCC, ensuring the safe transfer of patients from departure points to medical facilities.

Through the UCPM, DG ECHO provides financial support for transport costs incurred by the offering country, which may include:

- Ambulance transfers to airports or train stations.
- Air ambulance services
- Ground transportation to the receiving hospital in the destination country.

Upon arrival, the receiving country assumes full responsibility for patient care and treatment costs. The ERCC maintains oversight of the medevac operation and ensures that all actions align with EU civil protection and humanitarian response frameworks. This structured, scalable approach guarantees effective coordination, safe patient transfer, and efficient resource mobilization while upholding EU data protection and humanitarian standards.

Phase 3 – repatriation

Phase 3 involves the repatriation of the medevac patient following the completion of their treatment. In most cases, patients can return independently, with only a few requiring repatriation assistance. Unlike evacuation, repatriation generally lacks urgency, allowing more time for organization. It is important to note that this process can be initiated by either the requesting or the destination country and fall outside of the scope of the UCPM. While the ERCC coordinates the first two phases of the medevac system via the UCPM, the third phase related to repatriation is coordinated between the hosting country and the requesting country and/or the patient's country of origin, if different. In some instances, other EU financial instruments outside of the UCPM have been utilized to support this phase of the operation. In the case of the Ukraine medevac operation, the EU has established a specific repatriation mechanism for patients, working in collaboration with the Ukrainian Ministry of Health and WHO. For repatriated patients, health authorities in the country where treatment was provided can securely send treatment outcome documents, such as hospital discharge reports and other medical records, to the patient's home country authorities.

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3. The EU General Data Protection Regulation: Data Protection Regulation for EU institutions, bodies, offices, and agencies (EUDPR), Regulation 2018/1725; https://eur-lex.europa.eu/eli/reg/2016/679/oj/eng
4. The European Union and WHO project (https://www.who.int/europe/news-room/13-07-2023-european-union-and-who-join-forces-to-further-strengthen-medical-evacuation-operations-in-ukraine) provides technical and resource support to the Ukrainian Ministry of Health, the Medevac Coordination Unit and the Emergency Medical Services, and capacity building of specialist service on burns care, war trauma surgical care, and critical care patient transfers and rehabilitation inside Ukraine; https://sway.cloud.microsoft/CrapAD0ZadOmpYSi?ref=Link

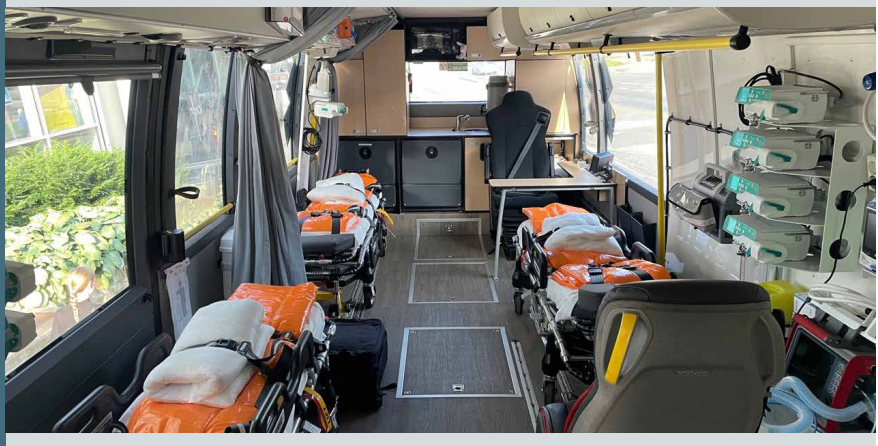
Annex 13.

Considerations on converting/repurposing vehicles for patient transport

see 7.5. Transportation asset and fleet

During emergencies, the demand for medical transportation may exceed available resources. In areas with limited or no formal transport options, the use of repurposed vehicles can be an efficient solution. Converting a vehicle for patient transport requires context-specific modifications, resources, and expertise, and must be approved by relevant authorities. Table A13.1 provides a number of nonexhaustive considerations on how to convert a vehicle for patient transport.

Table A13.1. Nonexhaustive considerations on how to convert a vehicle for patient transport

Considerations	Notes
Legal regulations **Approval** **Licensing**	• The conversion of a vehicle/asset for the transport of patients can only be carried out after obtaining approval by relevant authorities. • All team members involved in the operation/conducting the vehicles/assets must hold the necessary valid permits and licenses as per local regulations.
Selection of vehicle/asset	Consider vehicle/asset type, size, capacity, adaptability, and reliability for context-specific modifications • Assess local availability of the type of transport asset. • Consider space requirements to safely accommodate patients (seated or on a stretcher), staff, potential accompanying legal guardians, medical equipment, and supplies. • Consider vehicles originally intended for passenger transport, which may have factory-fitted brackets for securing equipment or stretchers. • Ensure accessibility for all patients, especially those with, mobility impairments or incapacitation (walking and non-walking). • Ensure options for loading and unloading of stretchers from the asset. • Ensure good working condition and inspection by a mechanic.  A bus repurposed for the transport of patients. Norway, 2020. ©Norwegian Directorate of Health

Considerations	Notes
Modifications	**Space optimization** • Consider removing or rearranging existing seats, to create space for medical equipment and patient transport. • Arrange the interior layout to maximize space for medical equipment, supplies, and patient care, while allowing safe movement of accompanying personnel. • Adapt the interior considering context-specific precautions, such as protective barriers and easy-to-clean stretchers or seats. • Consider retractable shelves, collapsible storage units, and modular setups that can be adjusted based on operational needs and available space. **Equipment** • Install context-appropriate medical transport equipment and consider modifying the vehicle's electrical systems to ensure reliable power supply for the medical equipment during transport. • Safely secure medical equipment and stretchers to the vehicle frame using existing anchor points or by welding additional strong anchor points for heavy equipment. • Secure stretchers to factory-fitted brackets of the original seat rows with standard tension belts or heavy-duty straps designed for heavy loads  An individual isolation unit is safely fixated to the frame of an airplane for HID transport. Norway, 2020. ©Norwegian Directorate of Health

Considerations	Notes
Modifications	**Temperature control and ventilation** • Ensure effective temperature control for patients, staff, medical equipment and temperature-sensitive supplies. • Depending on context, consider modifying the vehicle's heating, ventilation and air condition systems. **Modifications to the vehicle's exterior** • Ensure approval by relevant authorities before repurposing vehicles for patient transport. • Ensure identification as patient transport, including emergency lighting, sirens, flashing lights, in accordance with local regulations and national authorities' approval as relevant. • Add reflective decals, markings and clear signage, including a universally understood symbol or word to make the vehicle easily recognizable as a patient transport.

Visual indicators are added to a repurposed patient transport vehicle, Ukraine 2024; ©Cadus

Considerations	Notes
Modifications	**Barrier installation** • Depending on context, such as an infectious disease transport, establish a spatial separation between the patient and the driver compartment, while maintaining visibility *(14)*. • Install clear, durable, impermeable, and easily cleanable barriers, made of materials such as thick plastic or acrylic, and ensure they are sealed or liquid-tight to reduce transmission risks. • Securely extend the barriers from the vehicle's roof to the floor, ensuring no gaps. • Continuously assess the barrier's integrity, as frequent cleaning and disinfection may compromise the material's effectiveness and safety. • Use barriers in combination with appropriate PPE, physical distance, and routine surface disinfection. • Consider draping techniques, such as plastic sheeting or impermeable cloth, to protect surfaces from infectious material. • Be aware of the drapes' limitations and potential risks, ensuring their integrity and that they do not obstruct access to medical equipment and supplies.
Equipment	• Securely fix all equipment to the vehicle frame. • Test all equipment, including power connections, for full functionality before each transport. • Attach stretchers or convertible seats to brackets using heavy-duty straps designed for heavy loads.
WASH/IPC	• Install hand hygiene stations. • Strictly adhere to context specific IPC protocols. • Ensure the vehicle is easy to clean and disinfect. • Use non-porous interior surfaces and materials that can withstand rigorous cleaning according to IPC requirements. • Equip the vehicle with sufficient, context-appropriate IPC supplies, including appropriate hygiene, surface cleaning and disinfection supplies, waste bags, body bags and adequate PPE for the expected transport duration, plus contingencies for delays or patient-related events.
Communication and technology	• Install communication equipment
Mechanical maintenance	• Conduct regular mechanical maintenance to ensure the vehicle's reliability, including upkeep of additional components and structural modifications.
Staff training	• Develop and implement clear SOPs and protocols for patient transport, including emergency response and coordination with other services. • Train medical personnel on the appropriate use of the vehicle's medical equipment and safe transport protocols. • Train non-medical personnel, such as drivers, on the vehicle's functions, safety features, and emergency protocols to support the medical team. • Provide context-specific, adapted instructions. • Ensure all team members receive orientation to the converted vehicles with emphasis on loading, unloading, and securing patients for transport.

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