

Example: Standard Operating Procedure (SOP) for Air-to-Ground (Air-Ground) Patient Handoff

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Purpose

This document provides guidance to facilitate planning for and execution of patient handoff between an air ambulance agency and a ground ambulance agency. This may occur when an air ambulance agency transfers the patient to a ground ambulance agency or when a ground ambulance agency transfers a patient to an air ambulance agency. This SOP is focused on fixed-wing transport and not rotor-wing. It does not address broader air and ground ambulance SOPs. Information is presented at a level of detail that will afford local planners and operators the flexibility to develop procedures that are suitable for their environment.

The following key assumptions are being made:

- All involved healthcare workers (air and ground) have received education and training and demonstrated the necessary competencies for management of patients with serious communicable diseases.
- Air and ground ambulance agencies have procedures for the management of patients with serious communicable diseases – this guidance is aimed at facilitating the patient handoff, not broader air or ground ambulance operations.
- Air and ground ambulance agencies are conducting tabletop and operational exercises that test and refine procedures for transfer of patients.
- This guidance complements other CDC guidance for management of patients with serious communicable diseases.

Planning for patient handoff

- Establish a communications plan detailing notification of responsible parties. For example, air ambulance agency, airport operations, ground ambulance agency, public health authority, emergency management agency, law enforcement, and hazardous material management & disposal.

- All parties should consider notifying their communications/public affairs official.
- Ensure all parties are aware of patient’s risk of exposure to Ebola and current clinical condition.
 - Communicate whether patient will be ambulatory, require a stretcher, or be placed in an isolation pod.
 - Ensure a mechanism to advise clinical care teams of changes in clinical condition that may warrant a change in PPE ensemble, ambulance vehicle configuration, equipment carried, or number of providers required to manage patient at point-of-transfer.
- Confirm appropriate PPE ensemble for all clinical care teams.
- Confirm and communicate location for transition of patient care at air field. This location will likely be pre-determined and selected with the goal of minimizing environmental exposure, preventing exposure of unprotected staff, protection from inclement weather, and shielding from bystanders and media.
- Determine need for additional security at air field, as well as local, county, and state public safety and law enforcement personnel both during transport and at fixed facilities.

Ground and air ambulance agency

- Engage partners, such as aviation authority, air or ground ambulance agency, airport operations, healthcare facilities, public health department, emergency management agency, security agency, immigration and customs agency, waste management facilities, etc., and ensure coordination of SOPs so that appropriate authorities are aware of patient movement.
- Ensure all responsible parties are aware of patient transfer SOPs as appropriate.
- Ensure a robust communications plan that addresses needs of aviation, airport operations, air and ground clinical care team, healthcare facilities, and other involved parties – this may include email, shared phone numbers, and shared radio frequencies.
- Ensure access to appropriate medical director or appropriate person providing medical oversight is available throughout transport.
- Ensure ability to assist the load or off-load of patient, whether ambulatory or non-ambulatory. Depending on aircraft and patient condition, this may require stair chair, wheeled stretcher, access to vertical lift, use of an isopod unit, etc.

Mobilizing for patient transport

Air ambulance agency

Before arrival

- Confirm that all agencies involved in patient transport have access to secure communications.

- Confirm that airport operations are prepared for aircraft arrival and patient transfer; confirm that adequate security measures are in place.
- Confirm ground ambulance agency is prepared for patient transfer.
- Confirm patient's condition and level of personnel required to accompany patient during air transport.
- Ensure procedures have been implemented to limit contamination of environmental surfaces during transfer of patient and identify parties responsible for decontamination of aircraft or any areas at the airport in the event that contamination occurs.
- Ensure adequate inventory of supplies and appropriately-sized PPE for personnel assigned to the mission and for patient.
 - PPE ensemble – correct size suits, back-up PPE for possible breach, charged batteries if using powered air-purifying respirator (PAPR), etc. Consider battery life if transport mission is prolonged.
 - Supplies for decontamination and disinfection – U.S. Environmental Protection Agency (EPA)-registered hospital disinfectant wipes effective against known or suspected pathogen, hand disinfectant, a “spill kit” (household bleach, absorbent towels and appropriate water-tight container to secure gross contamination), etc.
 - Supplies for waste collection, including biohazard bags and autoclave bags.
- Communicate with healthcare facility and ground ambulance agency to exchange up-to-date clinical status of patient and confirm patient transfer location and means of transfer (ambulatory, stair chair, stretcher, isolation pod, etc.).
- Communicate with ground ambulance agency regarding patient management steps that have been taken to facilitate event-free transport and reduced risk of exposure.
- Provide estimated time of arrival (ETA) for incident command, ground ambulance agency, and healthcare facility.

Upon arrival

- On arrival at air field, communicate directly with ground ambulance agency to confirm mode of patient transfer and establish patient's condition. Ideally, air ambulance agency personnel can physically interface with ground ambulance agency personnel on the tarmac.
- Patient will be transported in impervious suit if ambulatory, in impervious suit and sheets (as tolerated) if stretcher bound or in isolation pod, as indicated.
- All transferred patient belongings are considered contaminated and are typically bagged, labeled, and transferred with patient.
- Any patient care documents should be free of contamination. When in doubt, consider them contaminated and package as appropriate for transport with patient. It may be desirable to store and transmit patient care records electronically if feasible.

- Transfer patient care as arranged (and exercised).
- **For air ambulance agencies that have off-loaded a patient:**
 - Proceed with mission recovery, decontamination, and disinfection of aircraft and equipment, doffing of PPE, and management of waste per SOP.
 - Secure the mission, debrief providers, and initiate post-mission surveillance as indicated. Maintain media discipline.
- **For air ambulance agencies that have on-loaded a patient:**
 - Proceed with mission and prepare for subsequent air-to-ground off-load.

Ground ambulance agency

Before arrival

- Confirm that all agencies involved in patient transport have access to secure communications.
- Communicate with incident command and coordinate with agency providing security as required for the mission.
- Communicate with air ambulance agency regarding patient condition and level of personnel required to accompany patient during transfer.
- Confirm all parties are ready for patient transport.
- Confirm location of patient transfer and communicate with airport operations regarding arrival of ground ambulance agency and ETA of aircraft. Ground ambulance agency, and any accompanying security, should arrive at airport in time to be escorted to secure tarmac area in advance of aircraft arrival and be prepared for patient transfer on aircraft arrival.
- Ensure procedures have been implemented to limit contamination of ambulance environmental surfaces (isolation of driver compartment, draping, etc.) during transfer of patient and identify parties responsible for decontamination of ambulance in the event that contamination occurs.
- Ensure adequate inventory of supplies and appropriately-sized PPE for personnel assigned to the mission.
 - Barrier drapes and tape for transport vehicle, as indicated.
 - PPE ensemble – correct size suits, back-up PPE for possible breach, charged batteries if using PAPR. Consider battery life if transport mission is prolonged.
 - Supplies for decontamination and disinfection – EPA-registered hospital disinfectant wipes effective against known or suspected pathogen, hand disinfectant, a “spill kit” (household bleach, absorbent towels and appropriate water-tight container to secure gross contamination), etc.
 - Supplies for waste collection, including biohazard bags and autoclave bags.
- Conduct mission briefing for ground transport team to review:
 - Mission description and team primary contacts
 - Transport provider health check

- Patient history and condition
- Infection control posture – ambulance configuration and personnel PPE
- Team member (medic, driver, supervisor/safety officer, EMS physician, etc.) roles and responsibilities, including supervision of donning and doffing procedures, etc.
- Relevant clinical care guidelines, including appropriateness of interventions or invasive procedures
- Transportation of patient samples and medication if applicable
- Transfer of paper or electronic ambulance patient care records in a way that avoids contaminating the receiving facility
- Decontamination and disinfection procedure
- Waste collection and mission recovery
- Post-mission surveillance
- Special considerations – transfer of patient across state borders, deterioration of patient condition in transit, vehicle malfunction and other contingencies, etc.
- Media discipline
- Communicate with healthcare facility and air ambulance agency to exchange up-to-date clinical status of patient and confirm patient transfer location and means of transfer (ambulatory, stair chair, stretcher, isolation pod, etc.).
- Depart for airport and communicate ETA.
- Communicate with incident command the arrival of transporting ambulance agency at airport.
- Prepare for arrival of aircraft and transfer of patient. Ensure minimum number of providers necessary to manage the patient will be in PPE ensemble.

Upon arrival

- Upon aircraft arrival, transporting agencies should communicate latest clinical update and clinical interventions.
- Patient will be transported in impervious suit if ambulatory, in impervious suit and sheets (as tolerated) if stretcher bound or in isolation pod, as indicated. Ideally, patient transfer between ground and air ambulance agency will occur on the tarmac.
- All transferred patient belongings are considered contaminated and are typically bagged, labeled, and transported with patient in patient compartment.
- Any patient care documents provided by sending facility should be free of contamination. When in doubt, consider them contaminated and package as appropriate for transport by ambulance personnel. It may be desirable to store and transmit patient care records electronically if feasible.
- Transfer patient care as arranged (and exercised).
- **For ground ambulance agencies that transported a patient to the aircraft:**
 - Proceed with mission recovery, decontamination and disinfection of ambulance and equipment, doffing of PPE, and management of waste per SOP.

- Secure the mission, debrief providers, and initiate post-mission surveillance as indicated. Maintain media discipline.
- **For ground ambulance agencies that received a patient from the aircraft:**
 - Report patient condition and ETA to receiving facility to facilitate their readiness to receive patient from transport agency immediately upon arrival, thus avoiding PPE-induced fatigue/dehydration for patient, ambulance crew and/or receiving staff.
 - Transfer patient to receiving facility in accordance with existing SOPs.