Aeromedical Evacuation of patient with Highly Infectious Disease
Exposure to possible risk of contracting a Highly Infectious Disease
Here’s What Survivalists Are Buying to Prepare for the Ebola Outbreak

What Every Prepper Needs to Know About Ebola

EBOLA
EBOLA PANDEMIC SURVIVAL GUIDE
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The Aeromedical Italian Isolation Team

A rapid response team who can deploy to any area of the world to transport and provide medical care with isolators to a limited number of patients exposed to, or infected with, highly infectious, potentially lethal pathogens.
This is the historical picture of the delivery of the first systems ATI and STI by Elwyn Roberts in 2005
ATI/STI systems

Transport isolators have been designed specifically to provide a microbiologically secure environment for a patient requiring transportation.

**ATI:** Aircraft Transit Isolator

**STI:** Stretcher Transit Isolator

For air transportation and in-flight care

For transportation by ambulance or other means

Weight: 200 pounds
Isolation Principles

1. PVC envelope
2. Negative pressure
3. HEPA (High Efficiency Particulate Air) filters
4. Personal Protection Equipment

Multi-layer protection
BIO MEDEVAC
DEDICATED FLIGHT
Evacuation of close contact, high risk contact, low risk suspect case

- Flight with aero-medical crew
- PPE
- Patient in isolated area of the aircraft with bathroom
- Patient with mask
- Disinfection and decontamination procedures of the aircraft
ABOUT THE ISOLATOR?

An Air Transit Isolator (ATI) is a self-contained isolation facility designed to transport safely a patient during air evacuation, protecting healthcare personnel, air crew and the aircraft from exposure to the infectious agents.
Air Evacuation under High-Level Biosafety Containment: The Aeromedical Isolation Team

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Military contingency operations in tropical environments and potential use of biological weapons by adversaries may place troops at risk for potentially lethal contagious infections (e.g., viral hemorrhagic fevers, plague, and zoonotic poxvirus infections). Diagnosis and treatment of such infections would be expedited by evacuating a limited number of patients to a facility with containment laboratories. To safely evacuate such patients by military aircraft and minimize the risk for transmission to air crews, caregivers, and civilians, the U.S. Army Medical Research Institute of Infectious Diseases maintains an aeromedical isolation team. This rapid response team, which has worldwide airlift capability designed to evacuate and manage patients under high-level containment, also offers a portable containment laboratory, limited environmental decontamination, and specialized consultative expertise.
Two teams, each comprised of:

- 1 Team leader, (Flight surgeon, Medical Corps)
- 2 Physicians (Medical Corps)
  (2 specialist: 1 in infectious diseases and 1 in anesthesia)
- 6 Health care specialists (Nurse Corps)
  + 1 Laboratory Technician (Mission dependent)
Specialized Hospital Team and Air Force Team working together
• **PPE**: Different Biosafety Levels
The IsoArk 36-2,4,6 Isolation System is an ideal solution to rapidly isolate patient or an item temporarily, which is thought to be contaminated by infectious particles or disease to an isolated area for safe treatment. This system provides maximum protection and operational safety for both contaminated patient or item and the operational team.
According to Air Safety Certification, the isolator must undergo stringent safety testing in extreme conditions:

**Flight Certification**

- Rapid decompression Test
- Vibration Test
- Electromagnetic Test
- Environmental Test

**Hercules C130-J – C27 – B.KC 767**
Introduction into the isolator

Team protected with PPE
In flight patient care
Transferring the isolated patient
Aeromedical Isolation Unit Deployments
Nov 25 2014 – EVD Patient from Sierra Leone

- **Patient**
  - Physician, aged 50, EVD positive
  - Clinically stable (fever 38.5°C)

- **Team composition (16)**
  - Team leader, 2 flight surgeons, 1 infectious disease specialist, 2 intensive care specialists, 10 flight nurses

- **Mission outline**
  - Aircraft: K767
  - Departed Rome on Nov 24 16.00 local
  - Direct flight on ocean route for the available diplomatic clearance issues (6 hrs)
  - Departure Free Town on Nov 25 12.00 (time on the ground 2 hrs)
  - Arrive Rome on Nov 25 06.00 local
May 2007: patient with Congo-Crimea hemorrhagic fever (after returning from Nepal) - from Turin to Rome;
In light of this, we added to its equipment also a portable negative pressure room, called Isoark, able to allow us to manage the patient for a long period.
The recent outbreak of EVD in West Africa has highlighted some questions related to the AE of patients with HIDs. The lessons learned from a ten year experience of ItAF AIT and, in particular, from the last two transports of patients infected with HF, can be summarized:

- AE of patients with HIDs in an effective and safe manner requires a strong background in preparedness, including logistics, procedures and skills;
- the added value of long-lasting preparedness for the management of a patient with high risk infectious disease;
- ATI is effective for in-flight patient management;
- AE capability with ATI can be achieved on short, medium, and long range distance, with different kind of aircraft;
- requirement of a long-lasting collaboration between military and civilian authorities, as it demonstrated in “Italian system country”.
• Flying with an infectious patient means having the clearance of the countries we are flying over, because in case of emergency we could be forced to land; for this reason the flight must be carefully planned.

• The transfer could be long.... How long is it possible, to manage the patient and the isolators in an acceptable way on the C130J aircraft? If the distance is very long, there may be an intermediate stop due to a technical or meteorological problem and so the aspects of distance and length of flight are crucial points.
A group of people sharing a common goal can achieve what is impossible

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