Air Ambulance
Transportation of Contagious Pathogens

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Overview
What are we going to talk about?

• General Principles
• Logistical & Operational considerations
• Guidelines & Risk Assessment
• Portable Medical Isolation Units
• Aeromedical Biological Containment Systems
• Ground Transport
• Closure: Executing the mission
What are we *really* going to talk about today?
Principles
People movement

• Why even transport a patient with a HCP?
  • Significant improvements in outcome with better medical care
    • Vast difference in case fatality rates
    • 1967 Marburg outbreak – 21%
  • Organisations have a Duty-of-Care towards their staff

• Understand pathogenesis & clinical progression

• Local, Regional & International movement

• Multi-Disciplinary support, collaboration & co-operation
Figure 4. Medical evacuations and repatriations due to infection by or exposure to Ebola virus, as of 24 June 2015.
General considerations

Context: 2014 West Africa Ebola Outbreak

Things have improved somewhat

- Many Aircraft operators and Air Ambulance providers initially decided not to fly to countries with ongoing outbreaks of Ebola.
- Numerous countries refused entry of passengers from Ebola affected countries.
- Commercial airline transportation options out of Ebola affected countries were extremely limited.

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NEWS

Ebola: SA issues travel ban

21 August 2014 16:21

Cabinet has issued a travel ban for non-South Africans from countries that have cases of Ebola, says Health Minister Aaron Motsoaledi.
Reality

- Since the Ebola outbreak, it is now more complicated to move people with non-Ebola illnesses across international borders for treatment.
- Anyone who appears ill or is febrile may be placed in isolation and quarantined with Ebola patients.
- Several non-Ebola cases (Malaria, Gastroenteritis, Appendicitis) have been refused entry or denied receiving care in European & African countries.
Operational & Logistic Considerations

• Authorisation of Health & Aviation Authorities is required
• Acceptance by authorities and adequate receiving facility can be difficult (or impossible) to achieve.
• Availability of isolation equipment/appropriate infection control and trained medical team is required – a limited resource.
  • Part 138 (SA-CAA) operator with capability
• Landing approvals from the country concerned and over flight clearances from any country enroute can be challenging to secure.
Operational & Logistic Considerations

- Countries with Ebola cases involving their own citizens are generally more likely to favourably consider such requests.
- Willingness to accept patients of other nationalities is limited.
- Requirements from Authorities may not necessarily reflect scientific/medical fact – there are other issues to consider.

*Preparedness 101: Zombie Apocalypse*

Categories: General

May 16th, 2011 11:48 am ET - Ali S. Khan

There are all kinds of emergencies out there that we can prepare for. Take a zombie apocalypse for example. That’s right, I said z-o-m-b-i-e a-p-o-c-a-l-y-p-s-e. You may laugh now, but when it happens you’ll be happy you read this, and hey, maybe you’ll even learn a thing or two about how to prepare for a real emergency.
Guidelines & Risk Assessment
CDC & ECDC

ECDC TECHNICAL REPORT

Assessing and planning medical evacuation flights to Europe for patients with Ebola virus disease and people exposed to Ebola virus
21 October 2014


Interim U.S. Guidance for Monitoring and Movement of Persons with Potential Ebola Virus Exposure

Updated: December 24, 2014
Guidelines & Risk Assessment

Key Points - CDC

- Exposure Category
  - High Risk
  - Some Risk
  - Low (but not zero) Risk
  - No Identifiable Risk

- Clinical Criteria
  - Symptomatic vs Asymptomatic

- Public Health Actions & Movement Recommendations
  - Consideration of all of the above to formulate appropriate solution
  - Some examples...
Charter flight – Healthy persons
Charter Flight – Exposed persons
Portable Medical Isolation Units

- Origins - Air Transport Isolator, RAF
- SARS 2003
- 2015 – numerous PMIU’s available
- Need bigger than a PMIU? ABCS / TIS – but more about that later...

http://www.raf.mod.uk/PMRAFNS/organisation/airtransportisolator.cfm

WORLDWIDE REACH. HUMAN TOUCH.
Portable Medical Isolation Units
IsoArk N 36-4: Portable negative pressure isolation chamber


WORLDWIDE REACH. HUMAN TOUCH.
Portable Medical Isolation Units
What can be done? What can’t be done?

• When to consider using the isolation unit?
  – Risk Assessment & Evaluation

• Particle Filter:
  – 0.3µm
  – ≥ 99.9995%

• Ventilated, unstable patients, secretions and fluids, or predicted deterioration

• Claustrophobic, uncooperative patients

• Patient counselling essential

• If you open the unit...
Portable Medical Isolation Units
There’s a lot more to it than just the PMIU
Decontamination & Cleaning
Aeromedical Biological Containment System

Aeromedical Biological Containment System

http://en.wikipedia.org/wiki/Aeromedical_Biological_Containment_System
http://www.theatlantic.com/technology/archive/2014/08/this-jet-was-transformed-into-an-ebola-quarantine-unit/375584/

WORLDWIDE REACH. HUMAN TOUCH.
Ground transportation

(Image: Brady EMS)

WORLDWIDE REACH. HUMAN TOUCH.
Executing the mission

Things to think about

• Risk Assessment
• Guidelines
• Logistic & Operational considerations
• Available equipment/resources
• Available Staff – skillset, experience & willingness
• High-level command & control with comprehensive oversight
• Well planned & tightly controlled communications
  • Internal & External
Absolute Clarity & Transparency
What you can/will or can’t/won’t do
Thank you

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