Ground-based Medical Support (GBMS) for Airlines.
An additional link in the system.
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Disclosure

• Paulo Alves is a full-time MedAire/International SOS employee
• MedAire is a medical solution provider for commercial airlines and business aviation
  – Ground-based medical advice, training and medical equipment
• International SOS is a global health and security assistance company
• Opinions expressed are personal, not necessarily reflecting MedAire / International SOS positions
The captain is in charge...

- Technical assessment
- Operational factors
- Personal values
- Airline culture
The doctor passenger
University of Illinois survey 2014

- Flies 3-5 times / year (45%)
- Never faced the situation (57.7%) or only once before (21.1%)
- Doesn’t handle emergencies often (62.3%)
- Would like to have professional help, but is not familiar with GBMS (12%)
- Is not familiar with the medical kit (81.2%)
The advent of remote medical advice
Ground-Based Medical Support (GBMS)

- Common practice in remote environments both civilian and military
- Multiple providers in the civil aviation and maritime sectors
  - State initiatives:
    - CIRM (Centro Internazionale Radio Medico) and the European countries
    - France and SAMU
  - Private initiatives
    - Mayo Clinic
    - MedAire
    - UPMC
    - International SOS
  - Airline medical departments
Percent of coverage / per Pax traffic

- Top 200:
  - Percent of coverage: 29%
  - Cumulative share: 95%

- Top 100:
  - Percent of coverage: 37%
  - Cumulative share: 83%

- Top 60:
  - Percent of coverage: 49%
  - Cumulative share: 71%

- Top 50:
  - Percent of coverage: 61%
  - Cumulative share: 65%

Source: MedAire
Pax percent of coverage per region
Top 200 airlines

Source: MedAire
Touching points in aviation

Origin

Event Point

Decision Point

Diversion

Destination
A communicable disease is suspected when a traveler (passenger or a crewmember) has a fever (temperature 38°C/100°F or greater) associated with one or more of the following signs or symptoms:

- Appearing obviously unwell
- Persistent coughing
- Impaired breathing
- Persistent diarrhea
- Persistent vomiting
- Skin rash
- Bruising or bleeding without previous injury
- Confusion of recent onset
Percentage of Communicable / Infectious Diseases (CIDs) in pre-flight assessments

- **2009**: 6.2%
- **2010**: 4.1%
- **2011**: 4.8%
- **2012**: 4.8%
- **2013**: 4.6%
- **2014**: 3.67%

Categories:
- All other
- Mental
- Medical equip.
- ENT (ear, nose and throat)
- Infectious
- Ob/Gyn
- Respiratory
- Cardiovascular
- Neurological
- Ortho/Trauma
- Gastrointestinal
Dispositions and No-go rate per diagnostic category (2014)

No Recc
Not Clear
Clear
No-Go Rate

Gastrointestinal: 48%
Respiratory: 45%
Neurological: 43%
Ear, Nose and Throat: 40%
Infectious/Communicable: 38%
Cardiovascular: 32%
Endocrine/Metabolic: 32%
Mental: 30%
General: 29%
Allergy/Immunology: 25%
Dental: 24%
Obstetrical/Gynecological: 23%
Ophthalmological: 20%
Urological/Renal: 15%
Musculo-skeletal: 14%
Dermatological: 12%

0% 10% 20% 30% 40% 50% 60%
0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000
The “index” Ebola case in Nigeria
Would you allow that person to fly?

- The Ebola virus entered Lagos on 20 July via an infected Liberian air traveler, who died 5 days later.

- **At the departure airport, he was visibly very ill, lying on the floor of the waiting room while awaiting the flight.**

- At the hospital, he told staff that he had malaria and denied any contact with an Ebola patient.

- As was learned later, his sister was a confirmed case who had died from the disease in Liberia.
In-flight cases

- Origin
- Event
- Contact GMBS
- Decision
- Diversion
- Destination

Onboard plan of care • Optimize medical volunteers
• Continuation or diversion recommendations • Consistent data capture
Nature of flight

- International: 86%
- Domestic: 14%

- Long: 55%
- Medium: 34%
- Short: 6%
- Ultra-long: 5%
Diagnostic impression

- Acute febrile illness
- Malaria
- Varicella (chicken pox)
- Meningitis - Viral
- TB
- All other
Time into flight

Graph showing the number of cases for different hours of flight for short-haul, medium-haul, and long-haul flights.
Disposition of Infectious / Communicable Disease in-flight cases

- Patient transported to hospital: 5.3%
- Patient evaluated and released: 13.9%
- EMS recommended but declined: 4.5%
- Missed follow-up: 5.0%
- Patient expired: 0.2%

EMS not recommended: 71.1%
In-flight case

Fever (38°C/100°F or greater) plus one or more of the following signs or symptoms:
- Appearing obviously unwell
- Persistent coughing
- Impaired breathing
- Persistent diarrhoea
- Persistent vomiting
- Skin rash
- Bruising or bleeding without previous injury
- Confusion of recent onset

Case evaluation
- Confirm suspected communicable disease
- Epidemiological assessment:
  - Epidemics?
  - Case definition/Exposure
  - Hx
  - Public health concern?

Contact airline operation agency
Recommend ATC notification
Recommend treatment as required
Document case

Yes

No

Recommend treatment as required
Document case
MANAGING AN ON-BOARD CASE

A/C ID
Dep.
Dest.
ETA
POB
No. cases
Nature of risk

Air traffic controller

Aircraft gen. declaration –
Health Part

AIRLINE 
OPERATING 
AGENCY

AIRPORT 
OPERATOR

GROUND 
SUPPORT

OTHER 
AGENCY

Destination aerodrome tower

CAPSCA-Ulaanbaatar April 2012
Conclusions

- GBMS play a significant role in the management of Communicable / Infectious Diseases
- Extension to exit screening
  - Pax Fit-to-fly assessment
- Trigger for entry screening
  - In-flight handling / EMS activation
- Enhancing the system
  - Standardization
  - Collaboration
  - Technological advances
Merci! / Thank you!