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

• Paulo Alves is a full-time MedAire employee

• MedAire is a medical solution provider for commercial airlines and business aviation
  – Ground-based medical advice, training and medical equipment

• Airline bias

• Frequent air traveler

• Opinions expressed are personal, not necessarily reflecting MedAire / International SOS positions
A fine balance

Maximum security against international spread

Minimum interference with traffic/trade
The determined traveler
Flight Attendants
Anatomy of an IFME

Event Point → Decision Point → Diversion
A CRM Perspective

- Technical assessment
- Operational factors
- Personal values
- Airline culture

Decision
Ground-Based Medical Support (GBMS)

- Onboard plan of care
- Optimize medical volunteers
- Continuation or diversion recommendations
- Consistent data capture
Historical Background

- Mayo Clinic
- Royal Flying Doctors
- Airline medical departments
- MedAire – 1986
  - Need for a structured approach to in-flight medical events
Current scenario

- Ground-based medical support (GBMS): 30+ years
- 58%-68% of top 50 airlines in the world(*) utilize GBMS
- GBMS is a recommended practice by ICAO - IATA
- Four types of GBMS:

<table>
<thead>
<tr>
<th>Fully dedicated solutions</th>
<th>Public services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partially dedicated solutions</td>
<td>In-house medical departments</td>
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</table>

(*) Excluding Chinese carriers and depending whether pax carried or RPKs is considered
MANAGING AN ON-BOARD CASE

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

Air traffic controller

Destination aerodrome tower

Aircraft gen. declaration – Health Part

AIRPORT OPERATOR

OTHER AGENCY

AIRLINE OPERATING AGENCY

PHA
MANAGING AN ON-BOARD CASE

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GROUND SUPPORT

PHA

AIRPORT OPERATOR

OTHER AGENCY

AIRLINE OPERATING AGENCY

Air traffic controller

Destination aerodrome tower

CAPSCA-Ulaanbaatar April 2012
Interactions during pandemics
How could GBMS help?

• Helping airlines (crewmembers/gate agents) in identifying cases to be reported to health authorities
• Orienting crewmembers in handling suspect cases to minimize exposure/transmission risks
• Providing statistics to be matched with actual notification figures received by system (ATC / local health authorities)
• Educating crewmembers and traveling public
Experience with pandemics

- **SARS – 2003**
- **H1N1 – 2009**
  - Deep involvement coordinating with airlines aspects of crew and pax health
  - Worked closely with the CDC
- **GBMS have at least three touch points during pandemics**
  - In-flight cases
  - Pre-flight pax fit-to-fly assessment
  - Crew support cases
Opportunities for Intervention

Origin

Passenger fit-to-fly assessments

Destination
Pre-flight Fit-to-Fly Assessments

- 2009-2012
- 55,805 cases
- 2,790 (5.0%) for Communicable/Infectious Diseases (CIDs)
Percentage of CID

<table>
<thead>
<tr>
<th>Year</th>
<th>All other</th>
<th>Mental</th>
<th>Medical equip.</th>
<th>ENT (ear, nose and throat)</th>
<th>Communicable</th>
<th>Ob/Gyn</th>
<th>Respiratory</th>
<th>Cardiovascular</th>
<th>Gastrointestinal</th>
<th>Neurological</th>
<th>Ortho/Trauma</th>
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<td>2009</td>
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<td>6.2%</td>
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<td>2010</td>
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<td>4.1%</td>
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<tr>
<td>2011</td>
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<td>4.8%</td>
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</table>
CID vs Non-CID Distribution
Disposition of Pre-flight Screenings for Infectious / Communicable Diseases (2013 – Mid August)
CIDs In-Flight Events

- 2009-2012
- 3,163 events categorized as infectious
Nature of flight

- **International**: 86%
  - Long: 55%
  - Medium: 34%
  - Ultra-long: 5%
  - Short: 6%

- **Domestic**: 14%
• 10 (0.4%) flights diverted
  – 7 international / 3 domestic
CID/Non-CID Ratio
In-flight cases

- 2012
- 2011
- 2010
- 2009
Timing for Advice

GBMS contacted at different points per airline

Event Point

Decision Point

Early advice allows for better case handling
Disposition of Infectious / Communicable Disease in-flight cases (2013 – Mid-Aug)

- EMS not recommended: 71.1%
- Patient expired: 0.2%
- Missed follow-up: 5.0%
- EMS recommended but declined: 4.5%
- Patient transported to hospital: 5.3%
- Patient evaluated and released: 13.9%
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
  - Public health concern?

Yes

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

No

- Recommend treatment as required
- Document case
Conclusions

• GBMS play a significant role in the management of Communicable Diseases
• GBMS data provides good monitoring of disease activity during epidemics
• Enhancing the system
  – Standardization
  – Technological advances
Thank you!!
A Security / Impact Curve