

# **Onboard Medical Events in Commercial Air Transportation**

By Paulo M. Alves, MD, MSc

A MedAire-Sponsored White Paper



# Onboard Medical Events in Commercial Air Transportation

By Paulo M. Alves, MD, MSc

Medical events on board commercial airlines are relatively rare given the enormous passenger traffic figures around the planet. However, they are expected to rise *at least* in parallel to traffic growth.

The most important determining factor is never entirely under an airline's control. But it has everything to do with passenger health.

## Three Types of Passengers

Based on MedAire's 25 years of medical advisory service via its MedLink air-to-ground link between pilots and hospital-based doctors, the company believes there are three types of passengers who experience medical issues in the air. They are people with:

- *Unknown conditions.* The unexpected medical issue happens *in the wrong place, at the wrong time.*
- *Predisposed conditions.* Underlying medical issues are triggered due to some travel-related factor(s) (e.g., cabin pressurization or prolonged immobilization).
- *Known conditions.* This category is for those who have medical issues and wish to fly because they:
  - Fell ill at their destination and are desperate to return home.
  - Desire more appropriate treatment—perhaps in another country, state or territory with better facilities.
  - Seek less expensive medical care due to the increase in popularity of 'medical tourism.'

## In-flight Events are Expected to Grow

Longer flights, larger capacity aircraft and easier access to air travel invite people to travel more than ever before. On the other hand, advances in medical technology are increasing life expectancy by controlling many conditions which could reappear at any given time. These two factors will likely lead to an increase in passengers flying with underlying health problems flying in the near future.

## When Medical Events Go Wrong in Flight

While most in-flight cases are not serious in nature, a significant number of in-flight events result in death or a medically-recommended diversion.

Other cases, even while not requiring immediate treatment, may be a public health issue. For example, communicable diseases are of international concern and should be identified before the flight. This is not always possible because most infectious diseases have a symptom-free incubation period and may not manifest prior to the flight.

To minimize the potential spread of disease, litigation, risk to safety and unwanted costs and disruption, these issues must then be identified, when possible, and managed *during the flight*.

## The Best Solution to Manage In-flight Medical Events?

Today, airlines approach in-flight medical events in different ways. In fact, many still rely on the occasional presence of a medically qualified person among the passengers to help, which is a solution that has obvious limitations. For example, such a resource is not present on every flight.

A May 23, 2011 article in the New York Times highlighted some of the aspects that come into play when a doctor is summoned for duty on a commercial flight. Interestingly, more than 100 comments were captured when the article appeared online, generating a heated debate. Concerns raised ran the gamut from appropriate medical qualifications to trip disruption to compensation. This unveils the controversy and discomfort around the topic among medical professionals, who are first-and-foremost paying passengers.

From a safety and crew resource management (CRM) perspective, a medical event occurs when the captain must make a safety-related decision affecting one or all passengers.

Diversion decisions require a sound understanding of the actual medical situation and the operational alternatives to mitigate risk. As with every other safety issue, a medical event should be approached in a consistent, structured way. Event data should be captured and documented to support risk management, provide evidence-based feedback to crew training and for medical kit usage reporting.

### In-flight Medical Issues are Safety Issues

Due to industry interest and awareness of in-flight medical events (see Fig. 1), the topic was addressed at the 2004 International Civil Aviation Organization (ICAO) General Assembly.

ICAO reported that:

*“the protection of the health of passengers and crew on international flights is an integral element of safe air travel and that conditions should be in place to ensure its preservation in a timely and cost-effective manner”*

and the organization recommended that:

*“Contracting States ensure that appropriate measure are taken to protect passengers’ health during air travel.”*

The final document incorporates recommendations issued by European Civil Aviation Conference in the same year recommended that:

*“all airlines have a facility by which medical advice from the ground is available to crew at all times during flight.”*

This is the telemedicine model.



Fig. 1 Medical events are increasingly discussed in mainstream local, national and international media outlets.

## Telemedicine

Through telemedicine, the provision of remote medical support became a best practice within the airline industry to manage and document in-flight events.

Advanced advice can be provided directly from centers of medical excellence, guaranteeing quality of care independent of the presence of a medical volunteer on board.

As a single point of contact, ground-based medical support services can collect data from in-flight medical events in a systematic way, allowing for consistent case documentation and subsequent reporting, benchmarking and trend analysis.

With enhanced air-to-ground communication capabilities—including the availability of broadband Internet connection and the development of aviation-oriented medical devices—this system is only expected to improve the quality of care in forthcoming years and consequently protect the airline from litigation at the same time that unnecessary costs are prevented.

## About the Author

Paulo Alves, MD, MSc is MedAire's Vice President of Aviation and Maritime Health. He is a member of the International Academy of Aviation and Space Medicine (IAASM), Fellow of the Aerospace Medical Association (AsMA) and Vice President of the Airlines Medical Directors Association (AMDA). He was formerly the medical director for VARIG Brazilian Airlines and a member of the International Air Transport Association (IATA) Medical Advisory Group.

## About MedAire

Founded 25 years ago, MedAire, an International SOS company, specializes in remotely managing medical events—whether in flight or on the ground, prior to departure. The company oversees remote medical care programs for airlines, business jets, yachts and commercial shipping vessels.

Last year MedAire's MedLink Global Response Center managed more than 19,000 in-flight calls for medical events from more than 60 commercial airlines, and assisted with 12,000 medical fit-to-fly assessments of passengers who presented ill at the gate or on board, prior to departure. MedAire also assisted 5,000 cases of airline crewmembers experiencing medical problems while in layover.

MedAire is an active participant in aerospace medical events and aviation safety forums, always presenting studies aimed to help the industry to better understand the magnitude of the problem and developing ways to address it.