

The Challenges of Medical Events in Flight

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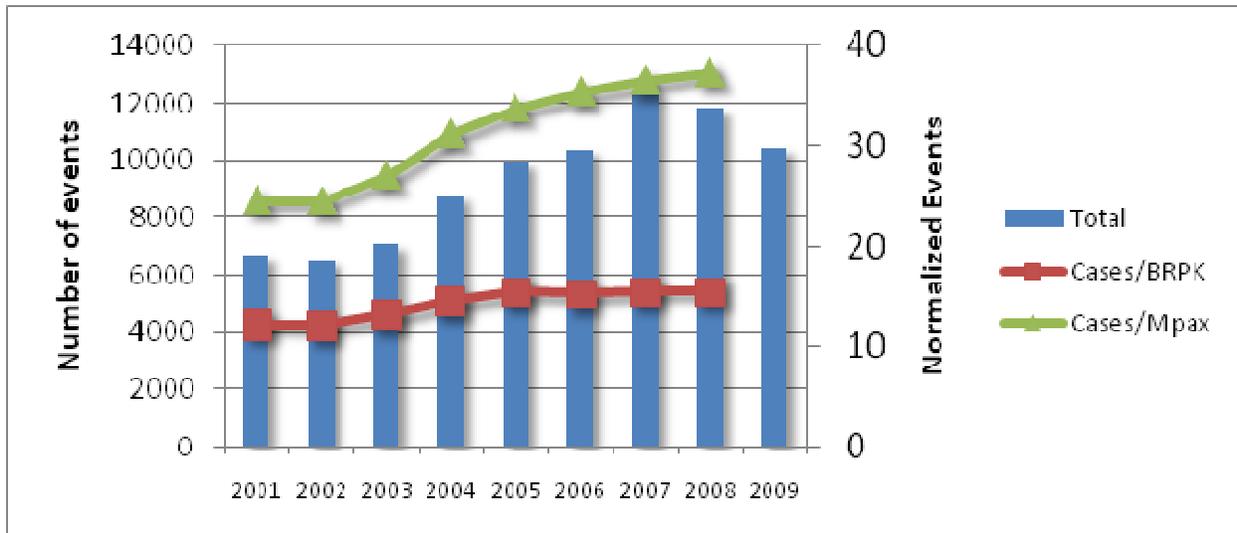
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In-flight medical events (IFMEs) represent a challenge for airlines. The problem starts in the definition of a medical event. Different airlines utilize different criteria to categorize medical events and no internationally accepted standard exists. This means that airlines handle medical events differently.

Data from a telemedicine provider has shown that, thanks to increasing access to air transport associated with longer life expectancy figures, the actual number of IFMEs is gradually increasing over the years (view Chart 1.).

Chart 1.



Annual In-flight Cases from a Sample of Domestic and International Airlines

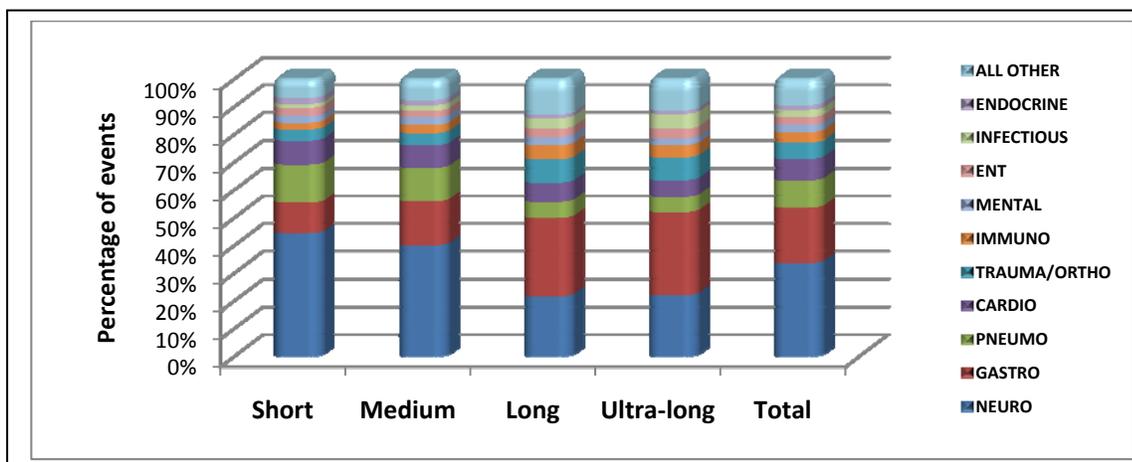
Data provided by MedAire MedLink Global Response Center

Regardless of any formal definition, the reality is that the number of IFMEs is expected to increase at least in parallel to air traffic growth.

Medical events demand attention from air carriers as a matter of business, safety and service to the passenger. Taking care of passengers is something unique to the transportation industry and, in particular, to air transportation. Once a flight is airborne, there is no possible access to any established health care system. Therefore, the airline faces a dilemma in reaching a good balance between the immediate risk and cost of a diversion, versus the implied risk—or even liability—when deciding to continue a flight with an ill or injured passenger. Duty of care to a passenger is expected even when the event is not a result of an airline’s fault.

IFMEs are not predicated on the length of flight and can occur in exclusively short-haul operators as well as in predominantly long-haul carriers, although the prevalence of specific categories of illness may vary (view Chart 2 below).

Chart 2.



Medical Categories for In-flight Illness by Flight Length

Data provided by MedAire MedLink Global Response Center

As with any non-normal event, safety implications exist when a crew is potentially distracted from their routine safety duties. Regarding a medical situation on board as a potential safety hazard can contribute to a positive outcome for all passengers and crew.

The crew must be prepared to carry on routine safety practices during the course of an event. A crew who has had proper training in crew resource management (CRM), including effective prioritization and delegation, has the best chance of maintaining situation awareness and decreasing opportunity for error. The crew must effectively reallocate resources during a medical event to ensure their actions account for all aspects of the event and the welfare of the other passengers.

Reallocation of resources is a concept that can be prescribed in a set of protocols but the crew must have the flexibility and skill to modify their approach based on the unique factors of the situation at hand.

Another angle to approach this problem is to look into in-flight deaths (IFDs). It is estimated that IFDs due to medical causes occur more often than accident-related deaths for the whole commercial aviation industry. The scarce reported figures vary but it is estimated that one IFD occurs for every 7.6 million passengers traveling. IFDs always carry the risk of litigation and bad publicity for the airline.

A medical diversion is another aspect of the problem determining unexpected costs for the airline and disruption to passengers. Diversions are often necessary to save a life. But in many occasions they were actually unnecessary. Many times the ill passenger immediately recovers and is released to fly again shortly after landing, not receiving any special treatment.

From a CRM perspective, it is clear that even the best trained pilot in charge of a decision to divert facing a medical event has no sufficient medical background to make the best judgment. He/she will frequently rely upon the occasional presence of a medical person flying as a passenger. This is certainly not a consistent solution.

Many airlines rely on the kindness of strangers by paging for a medical volunteer to assist when a medical situation occurs on board. While a qualified medical volunteer may be helpful, there are a number of considerations which make relying solely on him or her a risk for the carrier.

A medical professional doesn't board a flight expecting to work—he is a passenger first. In addition, he may not have the skills necessary to address the situation presented to him. A background in medicine does not translate to the proper training needed to deal with medical situations in flight. A medical volunteer's recommendations could be influenced by his personal bias, such as concern for medical liability. A FAA review study suggested the chances for diversion were "paradoxically" greater if a medical volunteer was on board. This is actually logic given the fact that facing the responsibility of assuming the

care of a previously unknown patient presenting with an unfamiliar situation, a medical person would understandably prefer to work on the safe side and favor a diversion.

Furthermore, medical passengers are not always present, but estimated to be in around 50-60% of commercial flights.

Another challenge for airlines when soliciting for assistance from medical volunteers is the question of how to compensate an individual after an event. Some carriers offer a complimentary upgrade on the spot, while others compensate monetarily or with flight vouchers. There are many questions as to how to establish fees, who should pay, and how or whether to compensate them at all. It is important to note that the Good Samaritan regulations that may cover those assisting during a medical situation could be negated if any form of compensation is offered. Someone who is compensated is not generally regarded as a volunteer.

As with any other safety concern, having a standard consistent procedure is paramount to establish best practices.

Preparing the aircraft and crew to cope with medical situations is a 3-pronged approach including training the crew, providing medical onboard equipment and offering a medical advisory service via a telemedicine provider:

1. **Crew Training**—While it is essential to managing in-flight medical emergencies, crew training varies greatly from program to program. The preferred model is one that includes in-depth initial crew training followed by regular recurrent training sessions. This format ensures that crew remain confident, current and ready to use their skills. Crews should be trained to identify and deal with common situations, but more importantly handle rare but life-threatening events when time is of essence.

Additionally, programs should include training on the use of all emergency equipment, and an action plan that defines specific roles and responsibilities for each crew member. A simple plan for task coordination provides the structure necessary to ensure a competent response.

2. **Medical Equipment**—Another important component to effective medical response is the availability of aviation emergency medical kits, oxygen and the automated external defibrillator (AED). Crew should be familiar with the equipment, feel comfortable using it, and be aware of the importance of equipment maintenance. Medical kit contents should be reviewed regularly to ensure current dates and proper working order, while AEDs should be checked for battery life and supplies. Oxygen tanks, masks, tubing and connectors should also be assessed to ensure correct connections, adequate tank capacity and functionality.
3. **Remote Medical Advisory**—Since crews cannot be trained to deal with all possibilities that might occur in-flight, and doctors are not available at 100% of the flights, a third component is needed. Ground-based tele-consultation is a relatively new enhancement into this process. Such a model should provide immediate guidance and advice to crew *during* the actual medical crisis. Emergency medicine trained doctors familiar with the aviation environment can better evaluate the situation utilizing crew members as “eyes and hands”. Ground support systems can even leverage the presence of an occasional medical volunteer, but retaining the responsibility of providing the best recommendation to the pilot. A well established system should have a database of hospital facilities around airports worldwide to ensure the diversion point is well-suited to handle the medical situation concerned.

Experience has shown that those systems—which are endorsed by ICAO and adopted by many airlines—can help in significantly reducing unnecessary diversions, as measured by the subsequent rate of hospitalizations, when compared to cases where the pilot decided for an emergency landing on his/her own or relying upon an on-board medical volunteer.

In summary, IFMEs are a reality today and expected to increase in the forthcoming future. IFMEs can be seen within the realms of an expanded flight safety perspective as a real CRM issue. A comprehensive approach to the problem requires a three pronged strategy.

About the Authors

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About MedAire

MedAire, a company of the International SOS group, has 25 years of experience in providing remote medical advisory services to aviation and maritime clients around the world.