

# “Is there a doctor on board?": In-flight medical emergencies

DR LIGAYA SOLERA

Every year, 44,000 medical emergencies occur worldwide in commercial airline flights. Physician passengers provide medical assistance in nearly half of these cases. Doctors therefore need to be familiar with the emergencies that may occur during a flight and the best ways to manage them.

In a 2013 study<sup>(1)</sup> published in the *New England Journal of Medicine (NEJM)*, researchers reviewed the records of all in-flight medical emergency calls to a physician-directed medical communications center from 2008 to 2010. They found that:

- One medical emergency occurred per 604 flights (or 16 emergencies per 1 million passengers).
- Medical assistance was provided by physicians in 48.1 percent of emergencies, nurses in 20.1 percent and EMS providers in 4.4 percent
- 0.3 percent of all patients with in-flight medical emergencies died

The most common medical problems encountered on board were:

- Syncope or presyncope (37.4 percent)
- Respiratory symptoms (12.1)
- Nausea or vomiting (9.5)
- Cardiac symptoms, excluding cardiac arrest (7.7)



- Seizures (5.8)
- Abdominal pain (4.1)

Pregnant passengers going into labor and other obstetrical/gynecological problems were rare, accounting for only 0.5 percent of medical emergencies. Cardiac arrest occurred even less frequently (0.3 percent) but resulted in death in 4 out of 5 cases.

## Liability, limited resources

Since in-flight medical emergencies don't always have favorable outcomes, one concern for doctors is the issue of liability. According to the Aerospace Medical Association (ASMA), there is no international law that covers such situations.<sup>(2)</sup> When emergencies occur in US-registered aircraft, physician passengers who offer assistance are protected from liability by the Good Samaritan provision of the 1998 Aviation Medical Assistance Act, unless there is evidence of gross negligence or willful misconduct.<sup>(1)</sup>

Other challenges noted by the authors of

the *NEJM* study include physicians' limited training and experience handling emergencies in an aircraft setting, as well as limited space and equipment on board.

### Medical supplies and support in Philippine aircraft

In the Philippines, all aircraft are required by Civil Aviation Regulations<sup>(3)</sup> to carry first aid kits. Additionally, passenger airplanes with 30 seats or more are also supposed to carry an emergency medical kit (EMK). The specific medical supplies contained in these kits are prescribed in Civil Aviation Authority of the Philippines (CAAP) Advisory Circular 07-003<sup>(4)</sup> and include:

*First aid kits:* Thermometers, antiseptic swabs, disposable gloves, dressing supplies and a mouth-to-mouth resuscitation mask with one-way valve. Medications: mild to moderate analgesic, antiemetic, nasal spray decongestant, antacid, antihistamine, ophthalmic ointment.

*EMKs:* Stethoscope, sphygmomanometer, oropharyngeal airways, emergency tracheal catheter, bag-valve mask, syringes, needles, intravenous catheters, IV fluid delivery system, antiseptic wipes, gloves, surgical mask, sterile scissors, scalpel, hemostatic forceps, hemostatic bandages, sterile suturing equipment, gauze, adhesive tape, urinary catheter, umbilical cord clamp. Medications: epinephrine 1:1000, antihistamine, dextrose 50 percent, coronary vasodilators, major analgesic, sedative anticonvulsant, antiemetic, bronchial dilator, atropine, adrenocortical steroid, diuretic, medication for postpartum bleeding, sodium chloride 0.9 per-

cent, aspirin, oral beta blocker.

It should be noted, however, that CAAP advisory circulars are only intended to provide guidance. The contents of medical kits may therefore vary among airlines.

For long-haul international flights, Philippine Airlines (PAL) also has a support agreement<sup>(5)</sup> with MedAire, a medical advice and assistance provider based in Arizona that is similar to the medical communications center in the *NEJM* study. Arrangements for domestic PAL flights and for other local airlines are not known.

### Recommendations for traveling physicians

The *NEJM* study authors and experts from ASMA recommend the following approach to in-flight medical emergencies:

- Before the flight, remember that you may be asked to provide medical assistance on board.
- In an emergency, decide if you are in a proper condition to respond.
- Identify yourself and your level of medical training to the flight crew.
- Request that at least one crew member remain available to answer your questions and help with procedures.
- Assess the patient. Ask for an interpreter if necessary. Ask cabin crew to get the EMK. Administer any needed treatment.
- Inquire if the airline has a contract with a medical ground support company. If yes, initiate consultation as early as possible.
- Document your findings and treatment. Keep a copy.

"Do not attempt to practice beyond your lev-

el of expertise,” ASMA advises, “but remember that whatever your level of expertise is, it is better than any non-health professional and your help may be very valuable.”



**References:** 1. *N Engl J Med* 2013 30;368:2075-83. doi: 10.1056/NEJMoa1212052. Available at: <http://www.nejm.org/doi/full/10.1056/NEJMoa1212052>. Accessed 5 August 2015. 2. ASMA resources page. Aerospace Medical Association web-

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# Understanding informed consent

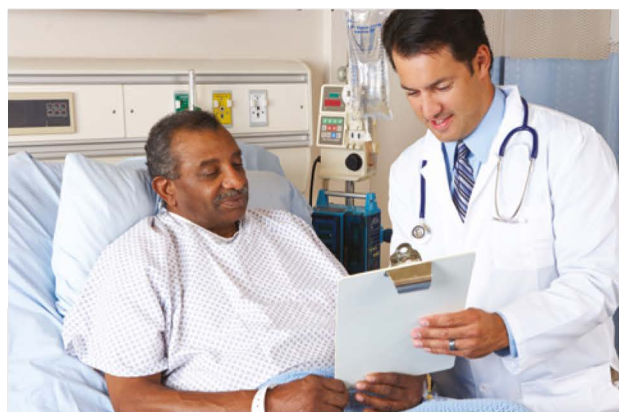
DR EUGENE WONG

Informed consent is defined as approval or permission given by the patient based on knowledge of the procedure or treatment to be performed. The information includes the risks and benefits, as well as alternatives to the proposed treatment.

Patients’ beliefs, culture, occupation or other factors have a bearing on the information they need in order to reach a decision. Touching a person without consent constitutes battery, and putting a person in fear of being touched without consent is an assault.

There are two types of consent: informed consent and implied consent. Consent is implied in the case of gathering information by history-taking and performing necessary examinations. Subsequent treatment plans, however, need to be discussed with the patient, in which case informed consent must be taken.

Informed consent is the expressed consent, either oral or written, given by the patient to un-



dergo a specific procedure or treatment. On the other hand, implied consent is inferred from circumstances. It is rarely documented and is relied upon for care or treatment that is routine and does not involve significant risks to the patient. The doctor performing the procedure or administering the treatment in question is responsible for engaging the patient in the consent process.

Competence requires patients’ ability to understand the consequences of their decision and the need of freedom from coercion. It requires the ability to understand the proposed