

Emergency Medical Kit for Commercial Airlines: An Update

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In 1998, the Air Transport Medicine (ATM) Committee of the Aerospace Medical Association (AsMA) made its first recommendations concerning medical kits for commercial airlines. These were updated in 2002 and the ATM has continued to monitor medical kit usage, as well as pharmaceutical developments, and a further revision is now needed. This has taken into account ongoing work of the International Civil Aviation Organization and recommendations of the International Air Transport Association in the field of passenger and crew health. Based on the above, the Committee proposes the following update to its 2002 recommendations.

In 1998, the Air Transport Medicine (ATM) Committee proposed its first recommendations for the contents of an Emergency Medical Kit for Commercial Airlines (3). These were updated in 2002 (4). The Committee has continued to monitor the evolution of this much discussed topic, as well as pharmaceutical developments.

Since the last update, the International Civil Aviation Organization (ICAO) and the International Air Transport Association (IATA) have increased their activities in the field of passenger and crew health. In April 2007, ICAO convened the second meeting of its Medical Provisions Study Group (MPSG), which comprises representatives of several countries and some international organizations such as the Aerospace Medical Association (AsMA). Part of the mandate of the MPSG was to review the guidance material on first aid and emergency medical kits. The MPSG achieved a consensus concerning a revision to the ICAO guidance that is currently undergoing review, but is in a mature stage.

In light of the above, the AsMA ATM Committee proposes an update to its 2002 recommendations concerning the contents of the emergency medical kit (Table I).

The committee has maintained the philosophy that commercial aircraft are air taxis with many operational limitations, and airlines can only be expected to provide basic first aid, with a limited number of additional medications for use in the event that a physician happens to be on board. The acceptable emergency medical kit should be relatively small with a limited number of drugs that can deal with the most common serious emergencies and/or severe pain until definitive treatment becomes available after landing.

The substantial changes from 2002 are as follows:

- As dextrose is not available in some countries, the term “or equivalent” has been added.
- For the same reason, “oxytocin” has been replaced by “Medication for postpartum bleeding.” The committee paid particular attention to this medication since it somewhat challenges the basic philosophy stated above (that aircraft are not emergency rooms). Although oxytocin has continued to be used extremely infrequently, the Committee decided to retain it for the same reason as was stated in the 2002 recommendations; i.e., a relatively simple treatment that will save a life in a specific situation that can be reasonably predicted—it is almost impossible to eliminate the possibility of an onboard delivery in spite of the best passenger clearance efforts.
- An “oral” option has been added to the injectable version of a “major analgesic.” The practical experience of some major carriers has shown that a major analgesic by mouth can meet the needs of most, if not all, onboard emergencies. Furthermore, even if a health care professional is not onboard, oral medication can be administered by the crew if recommended by ground medical support.
- A “moderate” analgesic for oral use has been removed. If carried, this medication belongs in a more accessible kit such as a first aid kit, for countries that allow it, or a separate kit containing over-the-counter medications for dispensing on request from a passenger.
- The committee felt that a specific minimum quantity of intravenous fluid should be available. However, such fluid is intended only to keep open a vein in order to deliver other medications. It is not intended for use in treating medical conditions requiring intravenous fluid replacement therapy, as such conditions would demand volumes that commercial aircraft could not reasonably carry.
- Having consulted with ground support providers, the committee believes an oral beta blocker would be of value for treating patients with chest pain (a frequent occurrence) without signs of cardiac failure when a timely landing is not possible. It could also be used in a known hypertensive traveler who has a rapid increase in blood pressure. An oral beta blocker has therefore been included in the current recommendations.
- Lidocaine has been removed from the list, and emergency room specialists and ground support consultants are in support of

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TABLE I. EMERGENCY MEDICAL KIT.

Medications	Equipment
Epinephrine 1:1000	Stethoscope
Antihistaminic, inj.*	Sphygmomanometer (electronic preferred)
Dextrose 50%, inj. 50 ml (or equivalent)	Airways, oropharyngeal (appropriate range of sizes)
Nitroglycerin tablets or spray	Syringes (appropriate range of sizes)
Major analgesic, inj. or oral	Needles (appropriate range of sizes)
Sedative anticonvulsant, inj.	IV Catheters (appropriate range of sizes)
Antiemetic, inj.	Antiseptic wipes
Bronchial dilator inhaler	Gloves (disposable)
Atropine, inj.	Sharps disposal box
Adrenocortical steroid, inj.	Urinary catheter
Diuretic, inj.	System for delivering intravenous fluid
Medication for postpartum bleeding	Venous tourniquet
Sodium chloride 0.9% (minimum 250 ml)	Sponge gauze
Acetyl Salicylic Acid for oral use	Tape adhesive
Oral beta blocker	Surgical mask
List of medications—generic name, plus trade name if indicated on the item	Flashlight and batteries (operator may decide to have one per aircraft in an easily accessible location)
	Thermometer (non-mercury)
	Emergency tracheal catheter (or large gauge intravenous cannula)
	Umbilical cord clamp
	Basic Life Support cards
	Bag-valve mask
	List of equipment
	Advanced Life Support cards
If a cardiac monitor (with or without defibrillator) is available, add to the above list:	
Epinephrine 1:10000 (can be a dilution of epinephrine 1:1000)	

* Injectable.

this recommendation (Personal Communication, 2007). Current knowledge indicates that lidocaine has never been used on board an aircraft and is less likely to be used in the future, based on current emergency response protocols.

- Blood glucose test strips have been removed from the list since they are not readily available. They could theoretically be replaced by electronic glucometers. However, this would significantly increase cost and add logistical difficulties (calibration, batteries) for an instrument that the committee felt does not have a high priority for inclusion. Indeed, in the experience of one of the authors (15 years as an airline medical director) and as published (1,2) insulin reactions are rare on board aircraft and can be safely treated by oral sugar or injectable dextrose 50% (or equivalent) if suspected.
- Since disposable, non-mercury, thermometers are now both readily available and inexpensive, and can be very useful in managing a case of suspected communicable disease, it is now appropriate to recommend the addition of this item. It falls in line with other existing recommendations regarding the management of suspected communicable diseases.

Although the ATM committee would have preferred to base its recommendations on industry-wide data, this

is not yet available. The committee encourages the collection and analysis of such data.

Finally, the caveat mentioned in both 1998 and 2002 still applies: these recommendations do not supersede national or international law, and it is understood that it may be impractical for some airlines to include certain items that are recommended.

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