



Guidance Document

Produced by: Aerospace Medical Association Air Transport Medicine Committee

Chair: Elizabeth Wilkinson

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Introduction

In December 2018, the FAA, through the Federal Air Surgeon, Dr. Michael Berry, requested the Aerospace Medical Association (AsMA) to review the current contents of the two medical kits in use for operational passenger aircraft.

AsMA's Air Transport Medicine Committee (ATMC) was subsequently tasked to review the current recommendations for medical kit contents and make recommendations.

Dr. Elizabeth Wilkinson, ATMC Chairperson, designated a Special Sub-committee constituted by a group of 10 members, led by Dr. Paulo Alves to draw a draft the present draft document.

The group took as a starting point a similar document produced by the ATMC in May 2016. On that occasion, the ATMC invited representatives from the American Medical Association, the American College of Emergency Physicians as well as the American Osteopathic Association, to contribute with their review and additional recommendations.

It has also been coordinated with and agreed to by the Chief, ICAO Aviation Medicine Section, the International Air Transport Association (IATA) medical advisor and the International Academy of Aerospace Medicine (IAASM).

The group also took into consideration similar work carried out by EASA, and suggestions coming from doctors working for MedAire, a ground-support medical advisory services provider.

Finally, Dr. Wilkinson and Dr. Alves collected suggestions from the American Academy of Pediatrics.

The proposal below represents the content suggested by the ATMC in May 2016 with new recommendations and comments coming from the recent discussions within the Special Task Force.

Items changed or added from the current FAA list or the ATMC May 2016 proposal are followed by a brief explanation on the rationale.

This draft proposal is to be submitted for final approval by the ATMC during its forthcoming meeting in May 6th, 2019, in time to meet the expected deadline of May 20th, 2019, by the FAA.

First Aid Kit (FAK)

The contents of an aircraft first-aid kit would typically include:

List of kit contents

- Antiseptic swabs (10/packs)
- Bandage adhesive strips
- Bandage, gauze 7.5 cm x 4.5 cm
- Bandage Triangular 100cm folded and safety pins
- Dressing, Burn 10 cm x 10 cm
- Dressing, compress, sterile 7.5 cm x 12 cm approximately
- Dressing, gauze, sterile 10.4 cm x 10.4 cm approximately
- Adhesive tape, 2.5 cm standard roll
- Skin closure strips
- Hand cleanser or cleaning towelettes
- Pad with shield or tape for eye
- Scissors, 10 cm (if permitted by applicable regulations)
- Adhesive tape, surgical 1.2 cm x 4.6 m
- Tweezers, splinter
- Disposable gloves (several pairs)
- Thermometer (non-mercury)
- Resuscitation mask with one-way valve
- First-aid manual (an operator may decide to have one manual per aircraft in an easily accessible location)
- Incident record form

Note: The ATM Committee working group recommends the exclusion of ammonia inhalants for the lack of evidence of its benefits in the medical literature.

Emergency Medical Kit (EMK)

The equipment contents of an aircraft emergency medical kit would typically include:

- Sphygmomanometer
 - Electronic preferred. *Background noise due to aircraft engines prevents an accurate reading of BP measurements through the conventional method using stethoscopes. Oscillometric (electronic) devices are easy to use, becoming common use for patients and care providers in the home BP monitoring setting being and accurate enough, being extensively validated.*
- Stethoscope
- ~~Airways, oropharyngeal (appropriate range of sizes).~~
- Supraglottic airway. *They serve the same function as the oropharyngeal airways, but in addition can be used to ventilate a patient, when necessary*
- Syringes (appropriate range of sizes)
- Needles (appropriate range of sizes)
- Intravenous catheters (appropriate range of sizes)
- System for delivering intravenous fluids
- Antiseptic wipes
- Venous tourniquet
- Sharp disposal box
- Gloves (disposable)
- Urinary catheter with sterile lubricating gel
- Sponge gauze
- Tape adhesive
- Surgical mask
- Emergency tracheal catheter (or large gauge intravenous cannula)
- Umbilical cord clamp
- Thermometer (non-mercury)
- Torch (flashlight) and batteries (operator may choose to have one per aircraft in an easily accessible location)
- Bag-valve mask
- Basic life support cards

The drug contents of an aircraft medical kit would typically include:

- Epinephrine 1:1000
 - *When available and cost effective, auto-injectors are easier to use and can be used by cabin crew under order from ground medical advisor if there are no health professional on board. The AAP endorsed this suggestion as well as suggested its availability in pediatric dosage*
- Epinephrine 1:10,000
- Antihistamine injectable and oral

- *It is also recommended to add pediatric formulation*
- Anti-psychotic drug (e.g., haloperidol)
 - *Chemical restraining after physical restraint is sometimes necessary for disruptive passengers on board, particularly when a diversion is operationally impossible in order to off-load the affected individual*
- Dextrose, 50% injectable, 50 ml (single dose ampule or equivalent)
- Nitroglycerin tablets or spray
- Mild to moderate analgesic/anti-thermic
 - *This should include pediatric formulation*
- Major analgesic inj. or oral
 - *The Special Task Force discussed that the ideal class of substance would be opioids. However, the members realize the possible logistical challenges and sensitivities in the US nowadays. Certain anti-inflammatory drugs have potent analgesic effect and are suggested as an alternative*
- Anticonvulsant inj. and oral
 - *Seizures are a common occurrence in-flight and a frequent reason for diversion when recurrent. Ideal drug would be a benzodiazepine (midazolam, diazepam). In long-haul flights it may be necessary to add an oral substance for long-term prevention of subsequent seizures, hence the need for oral medication besides the injectable aimed to address the acute episode. The group discussed the possible logistical problems around these controlled substances. An alternative of levatiracetam injectable and oral was suggested*
- Antiemetic inj. and oral
 - *Vomiting is one of the most common medical events in-flight, particularly in long-haul flights. The addition of an anti-emetic is critical for symptomatic treatment of those passengers. Ondansetron is the preferred medication, particularly in its oral-dissolving form*
- Bronchial dilator inhaler with spacer
 - *A spacer is critical equipment in case of emergency use of inhaled bronchodilators. It was one of the items suggested by the American Academy of Pediatrics (AAP). AAP Suggested the spacer should be able to be connected to a pediatric mask.*
- Atropine inj.
- Adrenocortical steroid inj. or similar oral absorption equivalent
- Diuretic inj.
- Sodium Chloride 0.9% (1000 ml recommended)
- Acetyl salicylic acid (aspirin) for oral use
- Oral beta blocker
 - *No evidence was found to support the use of this group of drugs*
- Anti-diarrheal
 - *Diarrhea, although much less frequent than nausea, not infrequently requires symptomatic treatment to avoid complications. Loperamide is the most frequently utilized drug for that matter*

- Opioid antagonist
 - *Although not frequent, cases of respiratory depression secondary to opioid overdose has been occurring in-flight in the US. Naloxone is the medication of choice to revert opioid-induced respiratory depression. It was a suggested item by the American Medical Association in the joint meeting during AsMA 2016. Modern ways of administration include nasal spray and atomizers which can used to apply the regular substance intra-nasally as well*

Note: Where possible, legally and economically, and where technically available and effective, alternative methods of administration (i.e.: nasal spray, sub-lingual spray, oral-dissolving, etc) may replace injections in order to facilitate treatment by any assisting volunteer, including personnel who are not trained to use this method e.g. cabin crew, under direction from ground based medical services or airline’s standing orders as necessary. Example: Sedative anticonvulsant injectable or intra-nasal

Universal Precaution Kit (UPK)

The FAA requirements today do not include a Universal Precaution Kit as recommended by ICAO.

This kit is suggested at least for international flights to minimize the risk of contamination of the aircraft in cases of exposure to bodily fluids.

The universal precaution kit contents that follow are recommended by the Aerospace Medical Association.

The contents of an aircraft universal precaution kit would typically include:

- Dry powder that can convert small liquid spill into a granulated gel
- Germicidal disinfectant for surface cleaning
- Skin wipes
- Face/eye mask (separate or combined)
- Gloves (disposable)
- Impermeable full length long sleeved gown that fastens at the back
- Large absorbent towel
- Pick-up scoop with scraper
- Bio-hazard disposal waste bag
- Instructions

Additional Comments:

The AAP recommended the inclusion of pediatric pads for the AEDs. However, we recommend this should be left to the discretion of the airline because:

- Pediatric cardiac arrests are rare in-flight;
- Pediatric cardiac arrests complicated (or caused) by ventricular fibrillation are even rarer;

- In the eventuality of a pediatric cardiac arrest affecting a child, it is possible to use adult pads, even in infants;
- Not all AEDs have pediatric pads and some which do have the pads supplied as combo with batteries that are not TSO approved.

Ground-based medical support systems are widely used by airlines and are available to virtually all US-based airlines. Allowance should be made in the regulation to allow oral medication, auto-injectors and nasal sprays to be administered by flight attendants under the authority and responsibility of a remote medical advisory provider.

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