A flight emergency

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"*Would any doctors on board please make themselves known to the cabin staff?"* That question is enough to strike terror in any physician's heart.

If you've never experienced that scenario, read this. If you have, still read this: I'd be most interested to hear what you did. It did happen to me—once—many years ago while I was flying from Cedar Rapids, Iowa, to the West Coast—of which more later.

The *British Medical Journal* has offered advice on this problem twice in the past 15 years (1, 2). In 1995, it published an account of Dr. W. Angus Wallace, a professor of orthopaedics who assisted a 39-year-old woman who had fallen off a motorcycle on the way to the airport (1). Her injury was revealed to be a potentially lethal pneumothorax. Dr. Wallace and Dr. Tom Wang, a junior resident in medicine also on board, examined the patient's swollen arm at the request of the crew and agreed to splint the forearm for a possible fracture. An hour later, she developed left-sided chest pain. Examination showed a possible fracture between the second and fourth ribs. Chest percussion and auscultation were useless because of engine noise, but her trachea was significantly deviated to the right.

Dr. Wallace discussed treatment with the captain, but no advice could be obtained from the ground. He decided to proceed with surgery. A scalpel and a 14-gauge catheter were available in the aircraft medical kit. He created a chest drain with these items along with a coat hanger (made into a trocar for the catheter), a bottle of Evian water (with two holes punched in the cap for an underwater seal drain), oxygen tubing (to attach the catheter to the drain), and Sellotape (to seal the catheter to the drain). Xylocard (100 mg of lignocaine in 10 mL) was the local anesthetic, and the disinfectant for the introducer was a bottle of five-star brandy!

As soon as the drain was connected, the patient was operated upon in her seat. Air was released from the pleural cavity, and within 5 minutes she had almost fully recovered. She settled down to enjoy her meal and the in-flight entertainment (1).

More recently, Alison Tonks reviewed the duties of physicians during in-flight emergencies (2). Her article indicated that medical emergencies requiring physician involvement are not common in passenger aircraft; crews are able to handle around 90% of in-flight medical problems. British Airways reported that it called for help from professionals on board only 375 times during a year of worldwide flights. Cathay Pacific used defibrillators 10 times while transporting 15 million passengers in 2005.

Increasingly, cabin crews receive expert advice from physicians on the ground. MedAire—a company based at a dedicated trauma center in Phoenix, Arizona—is the leading provider of these services. The company's MedLink service is used by more than 70 airlines as a first point of contact for passengers' injuries and illnesses.

MedAire Medical Director Paulo Alves, a specialist in aviation medicine, stated that it is still useful to have a medical perspective on board: "Doctor volunteers can be our hands and eyes in any medical situation. Their professional skills and our experience make a very effective combination, allowing us to make better decisions about when and if to divert, for example." The diversion of an aircraft for an unscheduled landing is "a costly and logistical nightmare for everyone" (2).

What are the chances of being called upon? Mark Popplestone, head of medical services at Virgin Atlantic, stated: "I've worked for airlines for years, flown many thousands of miles, and have been asked to help once." Although recent figures estimate that the incidence of serious medical events is between 1 in 10,000 and 1 in 40,000 passengers, most experts agree that these numbers are rising, since older and sicker people are flying more and flying further. In addition, the use of larger aircraft (such as the Airbus 380) means more passengers on each flight, increasing the chance of a medical incident.

What should a physician do? Advice has been given from a number of sources, as reported by Tonks (2). The Code of Medical Ethics of the World Medical Association states: "A physician shall . . . give emergency care as a humanitarian duty unless . . . assured that others are willing and able to give such care." The General Medical Council of the United Kingdom states: "In an emergency, wherever it arises, you must offer assistance, taking account of your own safety, your competence, and the availability of other options for care."

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In terms of litigation, it can be complicated to determine which country's laws apply, although aircraft generally fall under the jurisdiction of the country where they were registered. The risk of litigation for physicians assisting with in-flight emergencies is small. Dr. Popplestone of Virgin Atlantic was aware of no cases worldwide, and most medical volunteers are protected by a combination of national "good Samaritan" legislation, the airline, and their medical defense organization. The US Aviation Medical Assistance Act of 1998 states: "An individual shall not be liable for damages in any action brought in a Federal or State court arising out of the acts or omissions of the individual in providing or attempting to provide assistance in the case of an in-flight medical emergency unless the individual, while rendering such assistance, is guilty of gross negligence or willful misconduct" (2).

Airline captains have been known to call upon "people with experience in restraint" in addition to physicians and paramedics. Tonks' article relates the story of an air rage incident successfully controlled by a psychiatric nurse, a prison officer, and a London taxi driver (2).

Many years ago, on the one occasion I was flying when a call came for a doctor on board, I was taken from the economy seats to first class, where a diabetic lady was drinking her way from the East to the West Coast, believing that alcohol would substitute for insulin. She was far too drunk to listen to reason, and the pilot and I agreed that diversion to Denver was the best treatment. I felt protected by my insurance with the Medical Defence Union of London.

I graduated in 1945 from Cambridge, and my dad felt the best gift he could give me was a lifetime worldwide insurance—at a cost of 50 English pounds! Several years after the drunken diabetic episode, I received a letter from the Medical Defence Union saying that in the future they would be happy to continue my worldwide coverage—*but* with the exception of the United States!

1. Wallace WA. Managing in flight emergencies: a personal account. *BMJ* 1995;311(7001):374–376.
2. Tonks A. Cabin fever. *BMJ* 2008;336(7644):584–586.