Patient Safety Perils at 36,000 Feet

- by Rhonda Wyskiel

There are more than 50 in-flight medical emergencies a day on commercial airlines — or one for every 604 flights, according to a study published in 2013.

What are the odds that two emergencies would occur on the exact same flight, above the Atlantic Ocean and hours from the nearest airport?

My colleague Mark, a critical care physician with whom I'd worked as an ICU nurse, and I were travelling to the Middle East for a patient safety conference. We were comfortably tucked into our seats, as he snored next to me.

It must have been about 3 a.m. when I was awakened by an overhead announcement asking for a medical doctor. I nudged Mark, asking him to press his call light.

As the flight attendant approached, I told her that Mark was a doctor.

"And she's an ICU nurse, and we work together," he said, gesturing toward me.

We were led to a galley where a young woman was lying on the floor near a restroom. She was excessively sweaty, cold and clammy. We began to assess her just as we had done as a team in the ICU.

This was an uncontrolled, austere environment, very unlike the hospital units where we had everything we needed at our fingertips. After assessing her, we realized that she likely had a virus, and I requested a drug box from the flight attendant. After about three to four minutes, she returned with a box that looked like it hadn't been opened in a long time. Rather than containing supplies and drugs for emergency situations, such as epinephrine, it was more like the first aid kit kept in a home medicine cabinet. Yet none of the labels were in English.

We needed an anti-nausea medication to give to the "patient." Desperate to communicate with the flight attendant, who spoke rudimentary English, I feigned vomiting in hopes she would point out the medication that I needed. My miming efforts failed, but I managed to identify Pepto-Bismol-like pills by their color and the letters "bisma" on the foreign label.

Our relief that her problems did not appear serious was short-lived. As I kneeled next to her, a heavy weight fell on me. An elderly gentleman had collapsed while walking to the restroom. (At that point, I was sure that the entire plane was sick and thought to myself: *What did they serve for dinner?*)

Once Mark rolled this man onto his back, we realized that we had a much different situation. The man couldn't speak, but rather grunted and groaned. His eyes rolled in the back of his head. He looked a shade of green-gray that reminded us of ICU patients with heart attack or stroke symptoms. We could not feel a pulse in his wrist, and the pulse on his neck was faint.

I asked for another box with emergency medications in it, mimicking the action of injecting myself. But no new medical kit was ever brought out to us.

Fortunately, the man snapped back to consciousness after Mark gave him a few chest compressions.

As we began to assess this new patient, I called out the supplies that I needed to the flight staff, despite the language barriers. The attendant would disappear and then reappear with items. It took several minutes to bring out a blood pressure cuff — an electronic version that wraps around the wrist. After I fiddled with this contraption for a couple moments, the batteries died. A more traditional cuff was later brought out, but it was upside-down and backward, making it harder to read the gauge. It took several minutes to get an accurate reading. I asked for an

automated external defibrillator, or "shocker," only to be met with blank stares. Luckily we did not need one.

Attendants were able to locate an oxygen tank and mask. When the gas began to flow, the man started to come around.

After what seemed like hours but was really about 50 minutes, we safely returned both passengers to their seats, and Mark and I collapsed in ours. We reflected on the experience, sharing our mutual relief that we hadn't faced the crisis alone. We also agreed that we might not have been able to save the man's life if he had experienced complete cardiac and respiratory arrest, given the haphazard supplies and communication barriers.

Much of our nonclinical work has focused on designing safer systems for health care in hospitals. After this event, we talked about system changes that might have made this one go more smoothly.

- **Standardization of medications, supplies and equipment.** If I were to walk into most U.S. hospitals, I could find a crash cart with all of the supplies needed to resuscitate a patient, and these supplies would be arranged in similar ways. This should be true of any airline. There are standards for what must be carried in emergency medical kits on U.S. airlines, including catheters, needles, syringes, airways and emergency medications. However, a 2010 study found wide variation in the contents of emergency medical kits on 12 European airlines. None met international standards, and two were deemed insufficient to handle acute care situations. Mark and I should not have had to ask what supplies and medications were available but should have received the entire kit, stocked with everything we might reasonably need.
- **Managing language barriers.** Are there interpretation services — perhaps based on the ground — that an airline can tap to bridge any communication gaps? If not, perhaps the airline can request passengers to help fill this role.
- **Requesting medical assistance.** Asking: "Is there a medical doctor on board?" may not be the best question to ask passengers. If I were in cardiac arrest on a plane, I would prefer that a paramedic or ICU nurse try to resuscitate me than, say, a dermatologist. Physicians in many specialties, and many types of nurses, do not conduct advanced life support on a regular basis. A more appropriate question might be: "Is there a health care professional on board?" Anyone who responds can work as a team to decide who is best to attend to the patient based on their skill sets and scope of practice.
- **Early preparation of health care professionals.** Before every flight, attendants make sure that people sitting near an emergency exit know what to do in case of a crash or water landing. Yet those events are much rarer than medical emergencies. Would it help to pre-identify health care professionals and perhaps provide them with a pamphlet explaining what to expect should they be asked to assist a sick passenger? Some airlines contract with land-based medical services staffed by emergency department physicians to provide guidance during in-flight medical issues. If that were an option for Mark and me, we would have benefited from that knowledge. It would also be helpful to explain the legal protections provided to good Samaritans who help in these situations.

The event we experienced was one of thousands that happen every year. Hopefully our case is an outlier — the result of one poorly stocked aircraft, bad timing and an unfortunate set of circumstances. A recent *Washington Post* article painted a picture of more orderly responses to sick passengers on U.S. carriers.

It's almost cliché to talk about how health care is adapting tactics from the aviation industry to improve teamwork and reduce preventable harm. Here's a case where that learning might go in the other direction.