## Ethics statement/confirmation of patient's permission

Ethics approval was not required, and we acquired the patient's permission for publication.

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## Why do airline cockpits differ from operating theatres? Re: Lead article: What has an Airbus A380 Captain got to do with OMFS? Lessons from aviation to improve patient safety

*Sir,*

We read with fascination the parallels drawn between airline pilots and surgeons by Davidson and Brennan.[1] Aircraft pilots once flew "by the seat of their pants" but now follow safety checklists, briefings, and debriefings. Similarly, senior surgeons no longer "cut" arbitrarily; they follow evidence-based guidelines, and participate in audits.

Why is it that a difference exists in hierarchy inside cockpits and operating theatres? There are some noteworthy differences that exist between commercial flying and surgery. Most surgeons learn their skills "on the job" in contrast to airline pilots who for decades have had the benefit of mastering essential skills – with the opportunity to survive mistakes! – on simulators. In contrast, haptic feedback training is not universally adopted. Instrument-guided landing is the *de facto* standard adopted by modern airports, whereas navigation-guided surgery is still exotic. Even in flying situations where advanced instrument-guided navigation, night vision and terrain-following radar are absent, cockpit systems have for decades provided effective audible warnings in critical situations such as proximity to the ground or when approaching stall speeds.

In contrast, manual vigilance is required on the part of the operating surgeon to avoid cutting a vessel or damaging a nerve. Critical equipment such as the use of nerve stimulators require manual use and interpretation and are not automatic. There is no "autopilot" while operating, irrespective of the surgeon's fatigue. Complications put the onus of legal responsibility on the operating surgeon, not the assistant.

Davidson and Brennan rightfully highlight gaps in communication. Junior trainees do fail to speak out for the reasons they correctly listed. However, unlike in commercial aviation (with Crew Resource Management protocols) verbal reminders and warnings provided by junior trainees can sometimes feel insulting to senior surgeons because of the manner in which they are communicated. If operating consultants are guilty of creating barriers to useful criticism, it could also be, perhaps, that communication in both directions is brusque, or of a manner that could be perceived as disrespectful.

In a recent incident at a Kolkata hospital in India, the media covered an assault on a resident by the irate family members of a patient. Though the manner in which the frustration manifested was unfortunate, I have personally witnessed the curt and unhelpful behavior of a resident on duty (while facilitating an admission to accident and emergency) with little humane empathy evident in dealing with a visibly unwell patient who was accompanied by a worried relative.

While in complete agreement with Davidson and Brennan on the need for better team-working skills, checklists, briefings and debriefings, we need to remember not just to talk, but to re-examine *how* we speak to each other in outpatient departments, operating rooms, and wards. Tomorrow's surgeons will be able to create an open and non-threatening atmosphere in their theatres and wards if, in their formative residency years, they are able to cultivate the art of soft skills and excellent communication. Formal training in good verbal and non-verbal communication skills and etiquettes is possibly the missing human factor that is required to improve operative safety for our patients.

## Conflict of interest

We have no conflicts of interest.

## Ethics statement/confirmation of patients' permission

Not required.

## Reference

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## Re: why do airline cockpits differ from operating theatres? Re: lead article: what has an Airbus A380 Captain got to do with OMFS? Lessons from aviation to improve patient safety

*Sir,*

We thank Uppal and Shikha for their complimentary letter about our recent article on applying important safety lessons learned from aviation to our specialty,[1] and for allowing us to respond. Anything that helps to raise awareness about human factors (HF) for colleagues has to be good for both patient safety as well as improving team work.

Their excellent letter is a reminder of the 40-year journey made by one of us (MD) through crew resource management (CRM) in aviation to the current evidence based training (EBT) adopted by most major airlines. There was a good deal of resistance to the concept of CRM, particularly as the airline captain was seen as the master of the ship, and their authority by others had not been challenged historically. Some airline pilots thought that CRM was all about being "nice" to colleagues. It took a long time (several decades), for the CRM culture to bed in and as might be expected, not everyone understood its value or benefit. In the late 1990s, when CRM was expanded to include not just the pilots on the flight deck, but the cabin crew too, MD witnessed at first hand (as a CRM trainer) both resistance to the concept and the desire to become a valuable part of the bigger team. With any change in culture, it is often about individuals grasping the concepts at the beginning rather than a "one size fits all" approach. CRM was led and championed by the more informed and able airline captains and also helped by the some enlightened and safety-focused crew. As the letter by Uppal and Shikha confirms, there are a number of areas in surgery that could benefit from automation although it is unlikely to ever become as automated as modern jet airlines! However, in aviation even after all the processes of automation and technical enhancements have been introduced (which, for example, help pilots to avoid terrain and other aircraft flying close nearby), it is still the lack of HF skills and procedures that make up most airline accident reports. As we mentioned in our article,[1] about 70% of air accidents are a result of human error. Hierarchy has been flattened on the flight deck such that first officers can speak up and challenge any decision or action of the captain, without fear of retribution. Many tragic accidents could have been prevented if this had been adopted sooner. Similarly, we think that our junior doctors and other team members should be actively empowered to speak up if they have any patient safety or other concerns, and this cannot come soon enough.[2] OMFS and other specialties across medicine and surgery are on a HF journey and as with aviation it will take many years to become accepted practice by all. Many HF principles are simply applying common sense at work, but sadly this often gets left at the hospital door. A recent large study found that one in 20 patients suffer some form of harm during their hospital admission, with the operating theatre being one of the most dangerous places in the hospital.[3] Don't we owe it to our patients and other team members to do everything we can to adopt, practice, and champion basic HF principles to help minimise medical error and these frightening statistics?

## Conflict of interest

We have no conflicts of interest.

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Not applicable.


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