OPINION

Safety in the endoscopy suite: lessons from the aviation industry

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Human error is inevitable. Although society's sense of justice is satisfied by counselling, retraining, suspending or dismissing defective perpetrators and compensating victims, healthcare professionals have been slow to adopt alternative strategies to address iatrogenic morbidity and mortality. In recent years, the concept that human factor techniques validated in the aviation industry may be relevant to medicine has gained some momentum^{1 2 3}. In this issue of the journal, Dr Gordon reminds us that 75% of aviation accidents have human error as a co-factor with poor interpersonal communication, decision making and leadership as major themes. She explains why standard operating procedures, crew resource management, incentivised no-fault reporting and the confidential human factors incident reporting programme have become an integral part of pilot training and how the concepts could be applied to the National Health Service.

Implementation of the WHO surgical safety checklist⁴ is one area in which we have tried to be proactive in the introduction of an aviation concept. This was adapted for England and Wales in 2009 by the National Patient Safety Agency and the general use was mandated by February 2010⁵. Two years down the line, we have seen little evidence of its adoption within the field of endoscopy and Vats *et al* have provided an insight into some of the practical challenges⁶. A common theme was that the 'core' checklist contained irrelevancies and deficiencies for most subspecialties and that uptake was improved when local adaptations were supported⁷. There are three sections to the list; (1) SIGN IN: before induction of anaesthesia, (2) TIME OUT: before the start of a surgical intervention and (3) SIGN OUT: before any member of the team leaves the room. Most sedated endoscopies in the UK are performed without the assistance of an

anaesthetist and it is logical to combine sections (1) and (2) since the team responsible for the endoscopic procedure is also responsible for the sedation and its haemodynamic and respiratory consequences.

In some domains, the WHO checklist appears to be a meta-checklist of accountability; a single tick confirms that another operator has completed a series of checks. There are therefore latent errors in the process that could be overcome by a challenge/response-type interaction. A checklist does not just reduce the chances that something important is forgotten. It retrieves information from long-term memory before it may be urgently required and transforms a distractible human into a focused operator. In Gloucester, we have developed a process of cognitive synchronisation combining an adaptation of sections (1) and (2) of the WHO checklist. At the beginning of the procedure, the nurse assisting the endoscopist announces the patient's identification, the procedure the patient has consented for, drugs, allergies and comorbidities. The endoscopist then declares the clinical indications, anticipated accessories and clotting results if relevant. The nurse monitoring the patient then says the pulse, BP, oxygen saturation, supplemental oxygen and 'finger-prick' glucose level (if diabetic). The endoscopist then gives the sedating drugs saying the dose of each aloud. The process takes less than 2 minutes, breaks autocratic barriers, focuses team members on individual responsibility, confirms the monitoring equipment is working and cannot proceed until the previous step is complete.

There would seem to be an opportunity for the BSG/JAG to develop and endorse a subspecialty adaptation of the WHO checklist for endoscopy and make it a standard operating procedure. As a consequence, endoscopists and endoscopy nursing staff could work in different units within the

UK and confidently know what to expect, and what was expected of them. Hunter and Finney provide compelling support for this concept in a scenario very reminiscent of endoscopy teams providing out-of-hours emergency services across multiple sites⁸.

There will, of course, always be barriers to cooperation and teamwork. According to the Oxford Ground Training Syllabus for the airline transport pilots licence, there are five types of attitude that are major factors in the ability to cope in emergency scenarios. (1) Anti-authority: 'don't tell me what to do'. (2) Macho: 'I'll show them'. (3) Invulnerable: 'that can't happen to me'. (4) Impulsive: 'we must do something quick'. (5) Resigned: 'there's nothing more I can do'. They suggest that these personalities underlie most human errors in complex environments.

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