Effective Implementation of “Surprise and Startle” Scenarios in Surgical Training

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To the Editor

We are pleased that Ali and Rahim agree with our suggestion to introduce “surprise and startle” scenarios in surgical training; furthermore, they (rightly) point to the need to improve surgeons’ response to a crisis. The communication errors so lethal in the Korean Air disasters of the 1990s have been reported in assessments of other tragedies, such as the Tenerife airport disaster of 1977. In that incident, a series of misunderstandings and miscommunications culminated in two Boeing 747 passenger aircraft colliding on the runway with 583 fatalities.

The Final Report concerning the Air France Flight 447 crash made several recommendations to improve air crew response to unusual and unexpected situations. Many of these are relevant and would be applicable to surgical teams in similarly challenging situations. First is the recommendation to reinforce crew resource management (CRM) training, to enable acquisition and maintenance of behavioral automatic responses in situations with a highly charged emotional factor. Routine CRM is not yet a part of most surgical training programs, and we advocate that it should be. Second, a new decision-making model was recommended, based on the junior team member’s speaking first, before the final decision is made by the Captain. This would optimize decision making

and it would also reinforce the junior member’s responsibility as part of the team. The operating surgeon has a variety of team members at hand with whom to employ this model.

The use of surgical-crisis checklists has already been explored in high-fidelity simulation [1]. In truly time-critical situations, training in the use of clear and standardized memory prompts may aid reactions to surprising and startling events. The series of actions following an aircraft engine fire exemplify this. A co-pilot acknowledges a general problem (“*Engine fire*”). The pilot at the controls will ask “*Identify the problem,*” while mentally identifying it himself and then receiving confirmation from the co-pilot (“*Engine fire number 1*”). Nothing is done until the pilot states “*Agreed*” and calls for an appropriate emergency drill. They complete this drill, with one pilot touching the appropriate switch and waiting for the other to say “*Confirm*” before actioning. The process continues, soliciting the word “*Confirm*” prior to performing any action, introducing a culture of shared responsibility while allowing for rapid and synergistic progress between team members. This example shows how the team moves rapidly from diagnosis to action. A decision made, even if incorrect, leads to further response, which can be modified; this is considered better than “no decision,” which does not afford an opportunity to reassess and respond.

Both crisis checklists and emergency memory prompts should form part of surgical CRM; however, investment in training will be required to ensure that both features are effectively implemented.

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