

## **Checklists and culture – How can moon walking and human factors improve burn care? Human factors and safety management**

Burns management – in common with most areas of health – is a team sport. Traditional methods of forming effective teams in health have relied almost entirely on simulation-based education of whole teams. This method has been shown to be highly effective in other settings such as military and transport (1), but less effective in acute health contexts. The reason for this may lie in substantial differences of the stability of teams, the tribal culture and the steep hierarchies that exist in health in contrast to other industries. Furthermore, the team dealing with burns may extend from pre-hospital care, through emergency management and surgery, intensive care and rehabilitation. The information and team skills at each transition of care are varied and multifaceted.

Another method of improving teamwork is the use of cognitive aids or prompts. The ideal cognitive aid would be immediately available to prompt users of the actions and priorities during an emergency. Not only could this be used to prompt those immediately on the scene to call for help and start initial treatment, but also to communicate relevant clinical details in advance to teams taking over care.

Checklists have of course been used in other industries, notably aviation and aerospace operations and have had some remarkable effects. In examples such as the Boeing 299, Apollo 13 and more recently the Hudson River crash, checklists and other cognitive aids sound like a panacea. However, the story is more complex: Checklists can also induce errors and lead to harm. Care needs to be taken with the content and design and these should be rigorously tested prior to release (2).

I will present evidence that showing that the design of cognitive aids and checklists can affect how effectively in teams are able to structure and coordinate their actions using an example of anaphylaxis management. Lessons from these studies will influence how we design and test checklists for use in burns care.

### **References**

1. Salas E, DiazGranados D, Klein C, Shawn-Burke C, Stagl KC, Goodwin GF. Does team training improve team performance? A meta-analysis. *Human Factors*. 2008;50:903-33.
2. Marshall SD. Use of cognitive aids during emergencies in anesthesia: A review of the literature. *Anaesthesia and Analgesia*. 2013;117(5):1162-71.