Mandating health care by creeps and jerks

In the 1970s a famous stoush occurred amongst evolutionary theorists. Stephen Jay Gould and Niles Eldridge, giants of the field, proposed that evolution occurs in bursts after long periods of relative stability, which they labelled punctuated equilibrium. A critic humorously called this theory ‘evolution by jerks’ [1], which Gould bested by responding that gradualism was ‘evolution by creeps’ [2]. Whether or not scholars are as witty and acerbic as they once were is a moot point. But it reminds us of a serious puzzle in health policy: should regulation of patient safety continue on its path of gradual improvement or drive rapid change?

Aviation is a case exemplar. It has taught other industries many lessons. Creating better teams through ‘crew resource management’ by institutionalizing team briefings before and after assignments, using checklists to confirm procedures have been done, practising graded assertiveness when problems arise, making efforts to be aware of one’s surroundings and identifying, monitoring and reporting adverse events all come to mind [3, 4]. In short, aviation’s knowledge is about how to run high reliability organizations [5], and it has created this through rapid step changes.

Much of what has been achieved in aviation is through mandating behaviours [6]. Flying is controlled and regulated, and not just for briefings, checklisting of procedures, standardized language and dealing with incidents. No one can report for duty let alone fly if they are ill, fatigued or under the influence of alcohol or drugs, which are randomly tested. Even over the counter medication or prescribed medication has to be declared and requires specific exoneration. Regulation has not translated to health care, despite it being a major—doubtless the major—factor in making aviation safe. Errors in aviation have fallen by some 40% over 30 years [7].

Can we achieve these sorts of gains in health care, or have we missed the boat? Most experts believe that an international rate of adverse events of 10% or more of admissions [8–13], and perhaps up to 30% [14], and a system that delivers half of recommended care to patient populations [15, 16] is not running optimally, or creating levels of safety that anyone can defend. We seem to have flattened, and notable achievements such as using checklists in operating theatres [17, 18] and reducing central line infections through teamwork [19, 20] are exceptions worth celebrating, but they have by no means been universally applied.

Some people worry about applying the aviation model further [21] while others think we have not gone far enough [22]. We argue that serious consideration needs to be given to precisely how far regulation needs to go to make things safer. In aviation, specific, detailed behaviours are regulated. This has never happened in health care, where most regulation is at the level of licensing practitioners and organizations, formulating accreditation and other standards, dealing with misconduct and issuing health policy. Moves in this direction would likely cause more than mere ruffled clinical feathers, but surely we do not need to achieve majority consensus ahead of major changes? In aviation, independent-minded rule-breakers (‘cowboy captains’), protecting their professional autonomy, were opposed to prescriptive approaches, but regulation intensified after each major air disaster, eventually making it difficult to do anything other than the right thing. Now it is obligatory to check everything before a flight, to allocate tasks explicitly across the team, verbalize what is going on at each step and tackle any conflict immediately.

Is health care so different from aviation that the regulatory mandates are unlikely to produce the desired behaviour changes? On multiple occasions during education sessions we have run a game, asking three groups of four participants in the same room to do a jigsaw puzzle in 5 min. In one condition participants are experienced aviators and the other, experienced clinicians. Each of the puzzles they have been given has two pieces substituted, one taken from each of the other two puzzles.

On being instructed to go, clinicians will immediately set to work, collaborating loosely with fellow group members. Spontaneously in the first few seconds participants, almost without thinking, will self-appoint to roles, negotiating or assigning responsibilities in real time – someone will emerge to look for the corners, someone else the edges and others will try to find pieces in the middle, matching up colours and shapes to assemble the picture. As the puzzle-making advances and group members realize there are pieces that don’t fit, they will approach the other groups, who will happily trade pieces to complete their task. The puzzles are sufficiently complex that they cannot be done in 5 min. Each group will go beyond the time limit [time is actually called at 10 min], and if they haven’t finished by then, they will continue beyond the time allocation, striving to solve the puzzle, even after being asked to stop.

In contrast, aviators on being instructed to go will invariably choose a timekeeper within their group as the task for them is clearly time limited. They too will spontaneously fill roles of corner- and edge-seekers, and picture assemblers,
in the same way as clinicians. The timekeeper might check progress of other groups, and feed this information back to his or her own group, the members of which act as being accountable to each other and the time-frame set. When the time comes to swap pieces, for aviators this plays out as a strategy rather than immediate and unquestioning inter-group cooperation. They will exchange pieces, but only after brief discussion about it. Once the 5 min are up, they will stop and wait for any further instructions—for them, the task is over, even though incomplete.

The discrepancies are stark, and reflect the regulatory regime under which each profession works, and their history, training, time orientation and task focus. Clinicians are trained to allocate resources to the particular patient, and strict time allocation and accountability to each other is subordinate to doing what they autonomously believe is necessary for good care. Military aircrew are culturally predisposed to allocate team roles explicitly, and are both task- and time-focused. They guard their equipment but not their autonomy as individuals, and make decisions in support of the accountability of the immediate team, hence the slight delay in giving up their superfluous pieces.

Health care is populated by professionals who have high levels of discretion and low levels of accountability, and they and their representative bodies jealously guard their autonomy. Many would be opposed to curtailing clinical rights. Critics will argue that chain-of-command authority structures are inappropriate in health care, and in any case clinical services are busy; they are inadequately staffed and that even just maintaining the status quo is hard enough. Sympathy for this response is mitigated by the scale of the patient safety problem and the difficulty we have had in making progress over decades. However, anyone promoting mandatory behaviours or procedures at the health-care coalface is likely to be seen by the clinical professions as a creep or jerk. Ironically, regulation ultimately makes things safer in both creeps and jerks: a key message from aviation is that intensifying regulatory requirements goes in jumps and starts as learning jerks: a key message from aviation is that intensifying regulatory requirements goes in jumps and starts as learning jerks: a key message from aviation is that intensifying regulatory requirements goes in jumps and starts as learning jerks: a key message from aviation is that intensifying regulatory requirements goes in jumps and starts as learning jerks: a key message from aviation is that intensifying regulatory requirements goes in jumps and starts as learning jerks: a key message from aviation is that intensifying regulatory requirements goes in jumps and starts as learning jerks: a key message from aviation is that intensifying regulatory requirements goes in jumps and starts as learning jerks: a key message from aviation is that intensifying regulatory requirements goes in jumps and starts as learning.


**Authors’ roles**

J.B. conceptualized and co-wrote the paper. R.C.-W. provided expertise in aviation and co-wrote the paper.

**References**


Editorial


Jeffrey Braithwaite
Robyn Clay-Williams
Centre for Clinical Governance Research, Australian Institute of Health Innovation, Faculty of Medicine, University of New South Wales, Level 1, AGSM Building, Sydney, NSW 2051, Australia

Tel: +612-9385-3586; Fax: +612-9385-8692; E-mail: r.clay-williams@unsw.edu.au