



In the Literature

Highlights from Commonwealth Fund-Supported Studies in Professional Journals

Counterheroism, Common Knowledge, and Ergonomics: Concepts from Aviation That Could Improve Patient Safety

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Synopsis

Certain aviation safety measures have been shown to improve safety in health care and save lives. This study identified and classified aviation safety measures not currently used in health care, including the “sterile cockpit rule,” which reduces unnecessary distractions during critical activities, and the “first-name-only rule,” which promotes a culture where colleagues feel more comfortable questioning one another.

The Issue

Modern commercial aviation is extremely safe, with only one life lost per 10 million flights. Patients in hospitals do not fare as well: for every 100 to 300 hospital admissions, there is one death caused inadvertently by a health care professional or medical procedure. Aviation’s safety record is not the result of good luck or chance, but is rather the outcome of numerous safety measures in place to protect passengers and crew alike. Many safety concepts adapted from aviation have been successfully implemented in health care at low cost. For example, the World Health Organization Surgical Safety Checklist reduced deaths and surgical complications by more than one-third in some settings. This Commonwealth Fund-supported study, published in *Milbank Quarterly*, identifies 15 safety practices that are routinely used in aviation but mostly not in health care, and examines their applicability to health care, potential resistance from physicians, and cost benefits.

“The process of adopting safety concepts from aviation could in itself alter the culture of health care teams if the interventions dissuaded heroic actions, increased common knowledge or encouraged safety by design.”

Key Findings

- During safety-critical phases of a flight—whether taxiing on the ground or flying at low altitude—pilots and crew must refrain from all nonessential activities, like reading newspapers or engaging in casual conversation. This requirement is known as the “sterile cockpit rule,” and its violation has been

implicated in many aviation disasters. In health care, such a rule would identify critical junctures—during operations or transitions, for instance—and prohibit distracting activities. Some hospitals, for example, require nurses who are administering medications to wear brightly colored vests, as a signal that they should not be interrupted.

- Up until the 1970s, junior pilots addressed their seniors as “captain,” “sir,” or “ma`am.” But in modern cockpits, a first-name-only rule is employed. Using first names can help flatten the social hierarchy and foster a culture where colleagues feel more comfortable questioning each other, regardless of rank. The same could also be true in health care, if the practice empowered any member of the care team to question a senior member about perceived hazards.
- In the United States, NASA operates a safety reporting system that offers the incentives of anonymity and immunity to pilots who report an unsafe situation within 10 days. Known as “incentivized no-fault reporting,” the practice is already used by some health care systems, like the Veterans Administration. Wider use of the rule within health care reporting, the authors say, could help change the current prevailing culture, in which filing an adverse incident report can be regarded as an act of disloyalty or used as a pretext to punish staff members.
- The authors identified three main types of aviation safety measures: 1) those intended to downplay the role of heroic individuals and instead emphasize the importance of teams and organizations; 2) those that seek to increase and apply group knowledge of safety information and values; and 3) those that promote safety by design.

Addressing the Problem

Many aviation-based safety measures could usefully be adopted and disseminated more widely throughout health care. However, some may meet resistance from physicians. For instance, enforcing a standardized process may be perceived by doctors as a restriction on their ability to innovate. And measures that expand the circle of people who share professional knowledge may be viewed as undermining to a physician`s status. But over time, this expected resistance is likely to give way to a larger cultural shift, the authors say. In the article, the authors also present an economic framework for examining cost-effectiveness, taking into account compliance and administration costs as well as behavioral changes.

The Bottom Line

Many aviation safety initiatives not regularly used in health care could have a positive impact on patient safety and outcomes.

Citation

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This summary was prepared by Elaine Zablocki and Deborah Lorber.