Safety Culture Assessments: Comparing Healthcare to Naval Aviation

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Key Papers

Differences in Safety Climate between Hospital Personnel and Naval Aviators

Gaba, Singer, Sinaiko, Bowen, Ciavarelli

*Human Factors; 2003, 45:173-185*

Comparing safety climate in naval aviation and hospitals: Implications for improving patient safety

Singer, Rosen, Zhao, Ciavarelli, Gaba

*Health Care Mgmt Rev; 2010, 35:134-146*
Safety Climate Measures: Healthcare vs. Naval Aviation

• Healthcare has been conducting surveys of safety climate (surrogate for safety “culture”)
• So has naval aviation
• Naval aviation is an acknowledged HRO with impressive operational performance despite high-tempo and high intrinsic hazard
• How does healthcare “measure up” in terms of safety climate?
Culture vs. Climate

• Culture is complex and enacted by individuals, groups, and organizations
  – Requires full mixed-methods investigation, largely anthropological/ethnographic techniques

• Climate is “surface feature” of culture accessible to query/survey of individuals
  – Much easier methodologically & $$, but of uncertain connection to culture and to performance
Uniformity of Safety Culture is Critical

• Assumption (not well-tested): unless safety culture is adopted & accepted with high uniformity high reliability performance will be unlikely

• Important research question: How large a minority of those lacking values/beliefs/adherence to norms does it take to degrade reliability?
Patient Safety Climate in Healthcare Organizations Survey (SU & [now] HSPH)

• 38 questions; 5-element Likert scale
• Administered to >20,000 healthcare personnel
• Stratified administration: 100% sr. managers; 100% physicians; 10% others (mostly nursing); we know which work unit respondent is from
• 23 (2003) or 16 (2010) questions match those in Ciavarelli’s CSAS instrument
  – CSAS administered to >15,000 naval aviation personnel
Analysis Focus on % Problematic Response (PPR)

• Looking for size of minority who do NOT have pro-safety values/beliefs/norms

• Problematic response = fraction who answer each question (or combinations thereof) in way that is antithetical to safety/safety climate

• What is the threshold for a “problem” in safety climate?
  – No one knows; Roberts & Ciavarelli guesstimated > 10% would be “an issue”
Patient Safety Climate in Healthcare Organizations Survey Item

- Q24
- Q4
- Q18
- Q11
- Q30
- Q12
- Q5
- Q16
- Q3
- Q31
- Q8
- Q33
- Q32
- Q40
- Q1
- Q2

- Naval aviation
- US hospitals
- VA hospitals

2010 Paper

Line of concern? (10%)
In 2007, on average US hospitals performed slightly better than VA hospitals, even after adjusting for employee demographic differences.

(Only) One US hospital performed better than the Navy benchmark.

What Does It Mean?

• Overall 3-fold greater (e.g. 300%) “problematic response” in healthcare vs. naval aviation; up to 12x for some questions

• Moderately worse in areas of high intrinsic hazard than overall

• Why worse in healthcare?
  – Different methods of administering the survey
  – Fundamental differences in industry “structure” & function
  – Safety managed actively & in detail in aviation, not in healthcare
Patients Are Not Airplanes, But

- Some differences are intrinsic to the work—we don’t design or build human beings; they differ from each other
- In some ways healthcare may be similar to military in wartime (risks vs. rewards)
- BUT... may differences are not intrinsic, they are due to tradeoffs on issues like:
  - Tradition
  - Professional autonomy
  - Controlling costs of care
  - Personal nature of healthcare
Healthcare Doesn’t Need to be Exactly Like Aviation to Make Progress

• Healthcare’s “pendulum” is far to one side.... We can get much better than we are even being in the middle

• We can intelligently ADAPT some processes & strategies from other industries
The End