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How does patient safety culture in the operating room and post-anesthesia care unit compare to the rest of the hospital?

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Abstract

BACKGROUND: A strong patient safety culture in the operating room (OR) and post-anesthesia care unit (PACU) is essential to promote safe care.

METHODS: The Patient Safety Climate in Healthcare Organizations (PSCHO) survey was administered to employees at 30 Veterans Affairs (VA) hospitals. The survey consisted of 42 close-ended items representing 12 different dimensions of safety. We measured percent problematic response (PPR); higher PPR values reflect weaker safety culture. The "OR/PACU" and the "Other Work Areas" groups' item-specific, dimension-specific, and overall problematic responses were compared.

RESULTS: The overall and dimension-specific PPRs were similar between the OR/PACU and the Other Work Areas group (overall: 20.2% and 18.1%, respectively; $P = .41$). When the 2 groups were compared on an item-by-item level, the OR/PACU staff reported more frequent witnessing of unsafe patient care (PPR 55.1% vs 43.2%; $P = .01$), and perceived less understanding by senior leadership of clinical care (PPR 28.3% vs 17.1%; $P = .01$) and less hospital interest in quality of care (PPR 20.4% vs 12.5%; $P = .03$).

CONCLUSIONS: Specific areas of safety culture in the OR/PACU were found that should be targeted for improvement.

After the publication of the first report of the Institute of Medicine, *To Err Is Human*, it became evident that patient safety needs to be a priority in healthcare improvement efforts.[1] A strong patient safety culture is a necessary component to promote patient safety and improve quality of patient care.[2] The UK Health and Safety Commission defined safety culture in 1993 as the "product of the individual and group values, attitudes, competencies and patterns of behavior that determine the commitment to, and the style and proficiency of, an organization's health and safety program."[3] In 1998, Lucien Leape, a pediatric surgeon and pioneer in the patient safety movement, described the prevailing safety culture as that of "anger, blame, frustration and distrust regarding health care errors."[4] In an effort to

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identify and move away from a punitive culture to one that relies on systematic analysis of medical errors,[5,6] several attempts at measurement of patient safety culture were undertaken in the last few years.[7–10] Some of the methodologies suggested to measure patient safety culture have been validated in terms of relationship to rate of medical errors, but Flin et al noted that most of the surveys used lacked standard psychometric criteria.[11] As a proxy to patient safety culture, patient safety climate is usually measured. This is defined as a "snapshot" of the surface features of safety culture at a specific point.[12]

Despite the fact the operating room (OR) and post-anesthesia care unit (PACU) are high hazard units with a high potential for patient harm, few studies have attempted to measure safety climate in these units. A recent European study evaluated safety climate in a pediatric cardiac surgery unit, and concluded that most workers had difficulties raising any patient safety concerns or expressing patient care disagreement with other team members.[2]

In summary, a strong safety culture is particularly important to promote safe care in the OR and the PACU.[2,4,11] We sought to measure and compare patient safety climate in these 2 units with the rest of the hospital; we hypothesized that patient safety climate would be stronger (more positive) in the OR and PACU.

Methods

To test our hypothesis, a post hoc analysis from a previously administered survey on patient safety climate was performed.

Survey

The Patient Safety Climate in Healthcare Organizations (PSCHO) survey was administered to employees at 30 Veterans Affairs (VA) hospitals from December 2005 to May 2006. The PSCHO survey, designed by the Patient Safety Culture Institute at the VA Palo Alto Health Care System and Stanford University,[8] has been previously validated and shown to have favorable psychometric properties.[13] The PSCHO survey contained a total of 42 close-ended items. Each safety climate item used a 5-point, neutral midpoint Likert scale with response categories ranging from "strongly disagree" to "strongly agree." Following psychometric analysis, we grouped these 42 items into 12 dimensions of safety: senior leadership, fear of blame, psychological safety, resources for safety, facility characteristics, unit leadership, unit norms, unit recognition, learning, fear of shame, problem responsiveness, and outcomes.

Survey sample

Using the patient safety indicator (PSI) tool developed by the Agency for Health Quality and Research (AHRQ),[14] 117 acute care VA hospitals were classified into 4 different hospital quality performance levels. To minimize selection bias, hospitals were then randomly chosen from within each similar-performance group, for a final sample of 30 VA hospitals. We obtained institutional review board approval from all participating hospitals. In each site, we sampled 100% of hospital-based physicians, 100% of senior managers (department head and above), and 10% of all other employees. To allow a closer analysis of units where patient care is intense and patient safety hazards are potentially more harmful, 100% of high hazard units (OR, PACU, intensive care units, emergency department, and chemotherapy units) employees were surveyed at 10 randomly selected hospitals. The decision of 100% sampling of only 10 hospitals was taken to minimize respondent burden.

Administration of survey

Surveys were printed and delivered and responses were collected by US mail through an independent survey company. Participation was voluntary and all responses were anonymous. Up to 3 attempts were made to elicit participants' responses.

Weighing of data

All analysis conducted in this study used combined weights that adjust the responses for sampling and nonresponse bias. A sampling weight and a nonresponse weight were calculated for each work group within each hospital. For the sampling weight, the numerator consisted of the total number of workers in a work group, and the denominator consisted of the number of workers in our original sample. For the nonresponse weight, the numerator consisted of the total number of workers who received the survey, and the denominator consisted of the number of responses received. The combined weight was calculated by multiplying the sampling weight and the nonresponse weight.

Psychometric analysis

A detailed psychometric analysis of the PSCHO survey was conducted and is described elsewhere.[7] That original analysis did not support the characteristics of one of the 12 dimensions of safety discussed above (fear of shame), and this dimension was subsequently dropped from further analysis.

Data analysis

Responses were categorized based on their origin from the OR/PACU area or "Other Work Areas" within the hospital. This latter group included the wards, the intensive care units, the laboratories, the pharmacies, the ambulatory care units, and the emergency departments, as well as nonclinical hospital areas. We measured problematic response