

Organizational culture, critical success factors, and the reduction of hospital errors

Gregory N. Stock^{a,*}, Kathleen L. McFadden^a, Charles R. Gowen III^b

^a*Department of Operations Management and Information Systems, College of Business, Northern Illinois University, DeKalb, IL 60115, USA*

^b*Department of Management, College of Business, Northern Illinois University, DeKalb, IL 60115, USA*

Accepted 12 July 2006

Available online 26 September 2006

Abstract

The problem of errors in patient care is a critical issue facing hospitals today. An Institute of Medicine [*To err is human, building a safer health system*. Washington DC: National Academy Press.] study estimates that medical errors are linked to more than 98,000 deaths annually, and that 58% of these error-related deaths are preventable. This paper investigates how organizational culture and specific management techniques (termed critical success factors (CSFs) in this paper) may lead to the reduction of medical errors in US hospitals. We draw on several different streams of literature, including medical safety, total quality management (TQM), and organizational culture, to develop a conceptual framework for the reduction of hospital errors. The results of a survey of more than 500 hospitals suggest that some characteristics of organizational culture are more likely to be associated with error reduction than other characteristics. In addition, the implementation of a set of CSFs is associated with error reduction as well. We conclude with implications and suggestions for future research. © 2006 Elsevier B.V. All rights reserved.

Keywords: Medical errors; Hospitals; Organizational culture

1. Introduction

US hospitals are becoming more accountable for reducing medical errors and improving patient safety. Two reports by the Institute of Medicine (IOM) published in 2000 and 2001 recommended that patient safety become a national priority (Institute of Medicine, 2000, 2001). The reports highlight the extent of the problem of errors in health care, explore the costs of these errors, and recommend improvements in health care delivery.

The first report suggests that medical errors account for more than 98,000 deaths per year in US hospitals. The same study indicates that 58% of these error-related deaths may be preventable. These reports acknowledge that the necessary system improvements will require a “concerted effort” on the part of many individuals, from patients to policy-makers. In addition, in 2001, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO, 2001) introduced new patient safety standards that included a requirement that all unanticipated outcomes be disclosed.

Prior research indicates that medical errors also negatively impact organizational performance. For instance, Tucker (2004) found that human errors or

*Corresponding author. Tel.: +1 815 753 9329;
fax: +1 815 753 7460.

E-mail address: gstock@niu.edu (G.N. Stock).

operational failures had significant financial implications to hospitals. Her study estimated that a 204-bed hospital with 75% occupancy could lose from \$51,000 to \$27 million to such failures. These estimates are based on an extensive study of nurse-related operational failures in hospitals. In this study, these total cost estimates are based on an observed rate of one failure every 74 min, seven patients per nurse, 24 h per day, and 365 days per year. The lower bound of this total cost range used the observed minimum cost of \$0.33 per error, and the upper bound of this total cost range used the observed median cost of \$177 per error. In addition, beyond the additional costs, errors contribute to customer dissatisfaction and overall reductions in quality of care (Tucker, 2004).

As a result of not only the IOM reports but also internal and external pressures, hospitals across the country are developing error reduction systems to assist in reducing medical errors and adverse events. Hospitals are at various stages in the development and implementation of their programs and could benefit from a road map, or list of critical factors, needed for controlling and reducing medical errors. McFadden et al. (2004) developed a framework for reducing hospital errors and improving patient safety. The framework was based on the relevant medical literature, as well as a previously published aviation safety framework (McFadden and Towell, 1999). The authors used a case-study approach, interviewing directors of quality, performance improvement, and risk managers at four hospitals in Illinois, and identifying seven factors that are critical to the success of reducing hospital errors.

A set of management techniques such as the aforementioned CSFs must be implemented within a specific organizational setting. One characteristic of an organization that is likely to affect the success of any management approach is its organizational culture (Schein, 1985). Moreover, organizational culture has been found to have a significant effect on the implementation of technology (McDermott and Stock, 1999; Lewis and Boyer, 2002) and total quality management (TQM) practices (Beer, 2003; Detert et al., 2000; Buch and Rivers, 2001). As we noted above, the problem of hospital errors has grown to one of critical importance and will likely require extensive changes in how hospitals are managed. Therefore, we expect that organizational culture plays a critical role in the success or failure of the reduction of medical errors in hospitals.

This study collects data from a nationwide sample of professionals who work directly in the area of error reduction at hospitals throughout the US. One objective of the proposed study is to investigate the relationship between a hospital's organizational culture and specific outcomes related to hospital errors. In addition, the proposed study will examine whether implementation of the previously identified CSFs does in fact lead to the reduction of medical errors. Finally, we will consider whether organizational culture indirectly affects error reduction through a link to CSF implementation.

2. Conceptual background

The Institute of Medicine's publication *To Err is Human* (2000) defines an *error* as "the failure of a planned action to be completed as intended (i.e., error of execution) or the use of a wrong plan to achieve an aim (i.e., error of planning)." However, not all errors result in injury. *To Err is Human* (2000) defines an *adverse event* as "an injury resulting from a medical intervention, but not due to the underlying condition of the patient." Although all adverse events are caused by medical management, not all are attributable to errors. A *medical error* is defined in this paper as an error occurring in the context of the health care system. Medical errors can be classified into several categories. The primary categories found in the literature are medication errors (Coile, 2001; Phillips, 1998; Bates et al., 1995, 1997, 1998; Lazarou et al., 1998; Leape et al., 1995, 1991; Fiesta, 1998), surgical errors (Kovner and Gergen, 1998; Leape et al., 1991; Coile, 2001), therapeutic errors, diagnostic errors, and anesthesia errors (Coile, 2001; Cooper et al., 1984).

2.1. Theoretical perspectives on medical errors

There is a large and diverse body of literature examining the subject of errors and adverse events in medicine, along with the more general topic of quality management in health care. One of the fundamental elements of TQM and process improvement is the use of root-cause analysis to determine the source of a problem in an operational process. Any effective approach to dealing with medical errors would similarly need to determine the root cause of medical errors (Busse and Johnson, 1999). To that end, we first consider theoretical explanations for why medical errors

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