

Enhanced hospital-wide communication and interaction by team training to improve patient safety

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ABSTRACT

Communication errors are the most important cause of adverse events in healthcare. The current study aimed to improve hospital-wide employee teamwork and reduce adverse medical events for patients arising from miscommunication. In our hospital, when patient safety incidents and accidents occur, staff from various occupations submit incident reports to the Department of Patient Safety via an electronic reporting system; over 11,000 cases are reported each year. We surveyed the incident reports submitted in our institution from 2016 to 2018. All incidents related to miscommunication were identified, and relevant information was collected from the original electronic incident reports. Incident severity classification is commonly divided into near-miss or adverse events. We extracted only the required incident information items for this study, and processed information concerning individuals (e.g., reporters and target patients) anonymously. This study was approved by the Institutional Review Board of the study hospital. The authors declare no conflicts of interest associated with this study. Team training for all employees reduced adverse events for patients. The coefficient of determination (R squared value) was -0.32 . This suggests our approach may be slightly but significantly effective for developing the fundamental strengths of the medical team. Quality improvement is continuous, and seamless efforts to improve the effectiveness of medical teams at our hospital will continue.

Keywords: patient safety, team training

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INTRODUCTION

Communication errors are the most important cause of adverse events in healthcare.¹ The Agency for Healthcare Research and Quality (AHRQ) sponsored the development of patient safety culture assessment tools for hospitals in 2004. The AHRQ Surveys on Patient Safety Culture program is designed to evaluate health care organizations, assessing multiple aspects of the patient safety culture in healthcare settings.²⁻⁴ Our hospital took the AHRQ survey to evaluate our safety culture in 2014. The results demonstrated that the hospital lacked a safety culture. To promote a safety culture, we introduced teamwork and communication improvement train-

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ing.⁵ Improving teamwork and communication in healthcare is correlated with increased patient safety and fewer adverse events. Not only patient safety experts but also healthcare providers and patients recognize that communication, mutual support and teamwork skills are essential for quality improvement in healthcare and patient safety. When they are organized effectively, teams can improve patient outcomes, efficiency, and patient satisfaction. Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS®) is an evidence-based program designed to optimize performance among teams of health care professionals,⁶ so they can respond quickly and effectively to any situations that arise. The TeamSTEPPS® initiative was developed by the United States Department of Defense Patient Safety Program in collaboration with the AHRQ. The team training curriculum was released by AHRQ to the public in 2006, and the National Implementation Program was launched in 2007. The curriculum has been used by many health care organizations as an effective way to improve patient safety culture. Teams that communicate effectively and have mutual support reduce the potential for error, resulting in enhanced patient safety and improved clinical performance. However, the ability to undertake teamwork effectively is not innate, and must be learned. Improving a hospital or care system's culture is a challenge. TeamSTEPPS® is one of the few interventions that have proved effective. The TeamSTEPPS® toolkit underwent extensive field testing in the military health system and with several civilian organizations. The concepts underlying TeamSTEPPS® are derived from high-reliability organizations such as military operations, aviation, community emergency response systems, and nuclear power industries. All of these industries focus on mitigating risk, accident avoidance and accident recovery, which are crucial and applicable to health care. Quality improvement is continuous, and seamless effort to maximize patient safety is involved in communication.⁷

The current study investigated whether the implementation of team training in patient safety could help to reduce adverse events for patient safety in our hospital.

MATERIALS AND METHODS

Our hospital is a 1,000-bed academic hospital with a clinical patient safety and quality management department that oversees patient safety affairs and is responsible for the incident reporting system. Patient safety incident reporting is mandatory for all staff in our hospital, including contracted workers when they face an incident. We surveyed the incident reports submitted from 2015 to 2018 fiscal years, selected from all incidents reported by all hospital workers, and collected information from the corresponding original electronic incident reports. The collected data included the incident date, the ward/department in which the incident occurred, the healthcare profession, years of experience, and affiliated department of the reporter and person involved in the incident, information regarding the patient, and incident details. Incidents were classified as near-miss or adverse events. A near miss is an unexpected event that has the potential to cause harm to a patient or interrupt normal operations, but did not actually harm a patient or cause any interruption to normal operations. A near miss is often an error prevented by other circumstances. Adverse event is any unintentional event causing unfavorable clinical signs or symptoms, including complications, any new illness or disease or the deterioration of existing disease or illness, or any clinically significant deterioration in any laboratory assessments or clinical tests.

The electronic incident reporting system used by the study hospital was Incident Report System version 1.0 (Safe Master Inc., Fukuoka, Japan). We extracted only necessary incident information items for this study, and processed information concerning individuals (e.g., the reporter and target patient) anonymously. Regression analysis was performed specifically to identify the effects of

training on adverse event occurrence. Statistical analyses were conducted using SPSS statistical package version 25.0 (IBM Corp.) and Microsoft Excel Version 15.26 (Microsoft Inc.).

RESULTS

Team training for all employees began from 2014 in our hospital, and was held 9 to 10 times per year. Between 100 and 200 employees attended each course, including non-healthcare providers, office workers, and others. The total number of potential target attendees was approximately 2,800, although this number varied due to changes in employment and retirement. By the end of 2018, the accumulative attendee rate reached 96.6% (Fig 1). The total number of attendees, including retired employees, was 3,226. The sample of attendees who took part in team training by occupation was as follows: medical doctors, 1,207 (37.4%); nurses, 1,211 (37.5%); other healthcare providers, 428 (13.3%); and others, 380 (11.8%).

The number of adverse events related to communication between the employees at our hospital slightly but significantly decreased as the number of training events increased (Fig 2). The coefficient of determination was -0.32 . The accumulative attendee rate for team training in this hospital increased and the number of adverse events related to communication between employees decreased. The coefficient of determination was -0.34 .

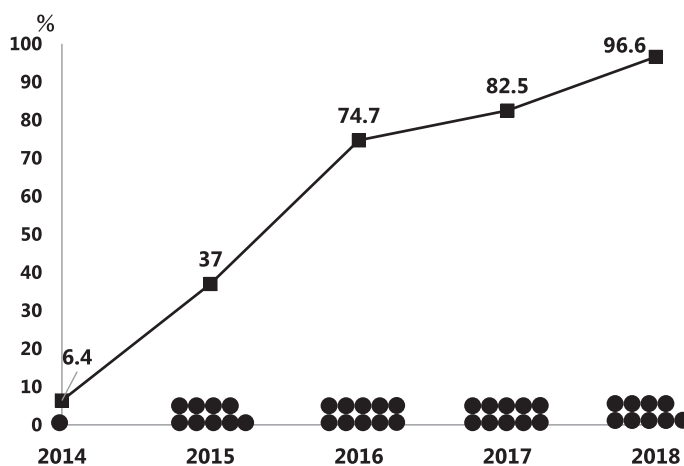


Fig. 1 The number of team trainings held and the accumulative attendee rate for team training in this hospital

By the end of 2018, the team training took place 39 times and the accumulative attendee rate reached 96.6%.

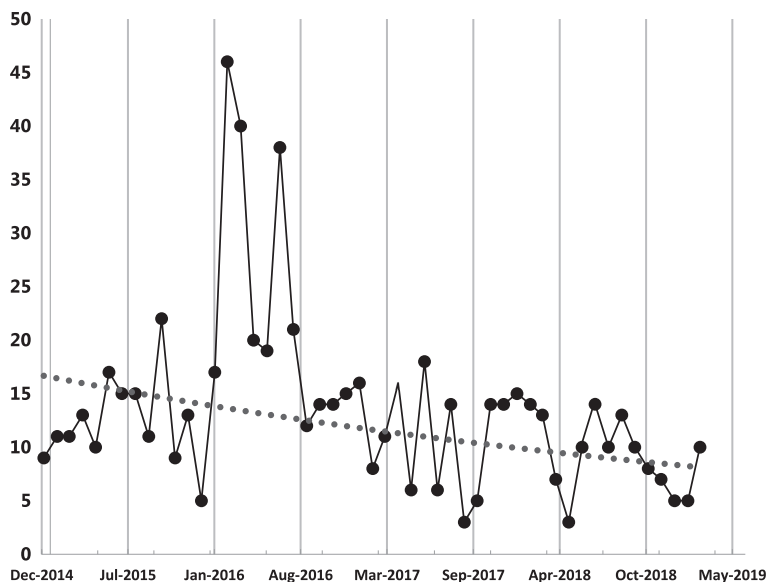


Fig. 2 The number of adverse events related to communication between employees

The number of adverse events related to communication between the employees at our hospital. The coefficient of determination was -0.32 .

DISCUSSION

This result suggests that our approach was slightly but significantly effective for developing the fundamental strengths of the medical team. This approach has several limitations, and does not reflect actual hospital-wide events in our hospital. However, the current results provide a useful information source for identifying potential risks and factors that are representative of patient safety issues.^{8,9} In the current study, events for which potential consequences are difficult to measure in patient prognosis and which have been caused by external events or inappropriate or defective internal processes, systems and/or systemic improvement activity also indicated the risk of an incident occurring. Because near-miss incidents may have a small impact but reflect single events that carry substantial risk, the potential for adverse events is indicated by near-miss accumulation. The results revealed a positive correlation between the number of incident reports and an improved safety culture of the organization.¹⁰ Our institution is considered to be a leading hospital in Japan in terms of the huge number of incident reports.⁷ Huge number of incident reports reflects the organization transparency. Having an overall measure to assess reductions or increases in the number of near misses or adverse events is useful for evaluating the effectiveness of incident reporting systems. Especially, beginning of 2016, the number of adverse events related to communication were very harmful effects. A department had internal troubles that influenced the events to increase.

Hospital-wide near-miss event reporting is also important as a predictor of adverse events. As a limitation of this study, the design did not enable assessment of the effectiveness of incident reporting and improvement actions for safety culture. However, team training is helpful for promoting patient safety and quality improvement in healthcare. Obviously, team training is not only a contributing factor. Educations of patient safety, infection control, medicine, clinical equipment, clinical devices, and others are useful for cultivating safety culture. Between 2014 and

2018, the accumulative attendee rate for team training increased at the same rate, but between 2015 and 2016, the accumulative attendee rate for it increased two-fold. Even if team training was provided, there has no immediate effect to improve the safety culture. Seamless efforts for patient safety quality improvement at our hospital will continue.

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DISCLOSURE STATEMENT

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