

ORIGINAL ARTICLE

Impact of TeamSTEPPS in Intensive Care Units (ICU-STEPPS)

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ABSTRACT

Objective: Positive safety culture is an essential part of successful transformative change of medical care fields. The Agency for Healthcare Quality (AHRQ) has developed TeamSTEPPS to enhance patient safety and communication. The aim of this article was to identify strengths and challenges in implementing and sustaining a good TeamSTEPPS program. Then, AHRQ survey was applied to assess its effectiveness. Setting: The ICUs of Alexandria Main University Hospital (AMUH).

Methods: AHRQ hospital survey was applied before and after implementation process of TeamSTEPPS among 45 ICU residents across all ICUs.

Results: Results showed marked development after implementation of TeamSTEPPS in 3 parameters: feedback and communications about errors, handoffs and transitions and frequency of events reported. Good development in communication openness and no punitive response to error.

Conclusions: Using TeamSTEPPS in ICUs of AMUH was a successful tool for improving whole safety culture, developing it with continuous monitoring.

Key Words: Quality, Safety, Critical care, TeamSTEPPS

1. INTRODUCTION

A positive safety culture is an essential part of successful transformative change of medical care fields. The Institute of Medicine (IOM) described the safety as more related to health care system not personnel. The transference from blaming culture to learning and continuous evaluation would create more safe health care culture.^[1] In growing countries (like Egypt), continuous evaluation of safety culture is underestimated.

Safety culture had many definitions.^[2,3] It was defined as “complex and enduring trait reflecting fundamental values, norms, assumptions, and expectations”.^[4] Safety culture

was defined by ACSNI (The Advisory Committee on the Safety of Nuclear Installations) as “a product of individual and group values, attitudes, perceptions, competencies, and patterns of behaviour that determine the commitment to, and proficiency of, an organization’s health and safety.”^[5]

The Agency for Healthcare Quality (AHRQ) has developed a program known as “TeamSTEPPS” to enhance patient safety and communication.^[6] It was developed by DoD (the Department of Defense’s) Patient Safety Program with AHRQ.^[7] TeamSTEPPS is an evidence-based teamwork system used in improving the dynamics between healthcare professionals and assisting in improving the environment and clinical out-

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comes. It consists of multi-variants group of materials and training curriculum to integrate with teamwork principles into multiple kinds of settings.

Critical care is recognized as a susceptible area to potential errors resulting in adverse outcomes. Patient's care in Intensive Care Units (ICU) is associated with the problem of how to assess the safety culture. There is a growing literature providing new insights into the skills which should be required for effective ICU team performance and the relationship between teamwork and outcomes in ICU.^[8,9] The aim of TeamSTEPPS is to change the culture of the health care

facility using a common language about communications and teamwork faults. Also, conducting levelling hierarchy and providing specific skills. The patient is also considered as an important team member.^[10]

Hospital Survey on Patient Safety Culture (developed by AHRQ) is one of the most applicable tools to assess safety culture before and after application of TeamSTEPPS. The idea of this survey is to assess hospital staff opinions about patient safety, events reporting and medical errors. Using forty-two items measuring twelve dimensions about safety culture (see Table 1).^[6]

Table 1. The measured 12 parameters of AHRQ Survey

| | |
|---|---|
| • Communication openness. | • Organizational learning/continuous improvement. |
| • Feedback and communication about error. | • Overall perceptions of patient safety. |
| • Frequency of events reported. | • Staffing. |
| • Handoffs and transitions. | • Supervisor/manager expectations and actions promoting safety. |
| • Management support for patient safety. | • Teamwork across units. |
| • No punitive response to error. | • Teamwork within units. |

In this article, we reviewed the implementation process of TeamSTEPPS in the ICUs of Alexandria Main University Hospital (AMUH) to improve safety culture for the first time at Alexandria University in Egypt. The aim of this article was to identify the challenges in implementing a good TeamSTEPPS program. Then, AHRQ survey was applied to assess its effectiveness.

2. METHODOLOGY

Alexandria Main University Hospital (AMUH) is the only tertiary referral center serving a geographical area covering 4 governorates (Alexandria, Marsa Matrouh, El-Beheira, Kafr Elsheikh) in Egypt, with an estimated population of about 15 million people. Over period of 9 months in all ICUs of AMUH, implementation process of TeamSTEPPS in the ICUs was performed. The process of TeamSTEPPS was delivered over 3 phases. The first was assessing the Need then, Planning, Training, and Implementation and at last, Sustainment. Training was performed via weekly meeting. AHRQ hospital survey was applied before and after the period of 9 months among 45 ICU residents across all ICUs. Then, the results were compared. Any 10% increase from baseline records in response was considered as a marked development. Good development was considered as any 5% or more increase from baseline records. Any increase less than 5% was considered as no development area.

3. RESULTS AND DISCUSSION

Results showed marked development after implementation of TeamSTEPPS in 3 parameters: feedback and communica-

tions about error, frequency of events reported and handoffs and transitions. Good development in communication openness and no punitive response to error (see Figure 1).

Marked development was showed in the area of feedback and communication about errors. All the ICU staff are informed about errors that happen, are given feedback about changes implemented, and discuss how to prevent errors. We improved this area by increasing our scientific meetings, mortality and morbidity (M&M) meetings. We started wide open conversations about opinion of each ICU resident to ensure that every member has the knowledge about all the new interventions and feedback about every potential mistakes.

Also, the area of frequency of events reported showed a marked development. Majority of the reported events and mistakes were corrected before affecting the patient. Some mistakes could harm the patient and some without any potential harm at all. Improvement of frequency may be due to creating of a clear pathway for notification of any mistakes. Fear of punishment or being ashamed lead ICU residents to ignore reporting of mistakes. We solved this area by defining a clear safe pathway for reporting. For example, filling Google[®] Document with unknown identity to report any mistake even if it was very small.

So, the area of non punitive response to errors has been associated with improvement. It was made via specification of a phone number which is reachable to inform about any mistake anonymously through 24 hours of its happening without any sort of punishment.

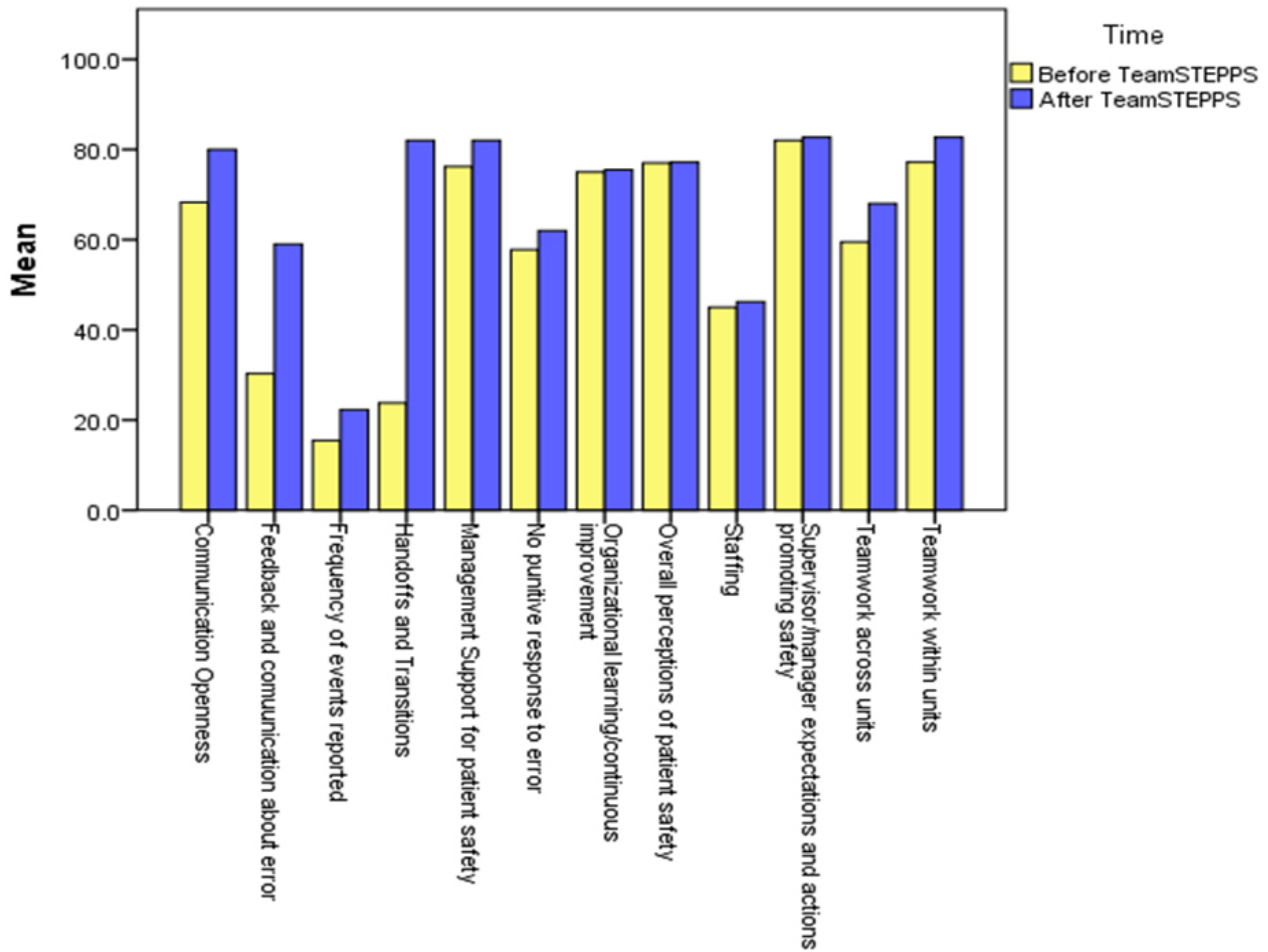


Figure 1. The measured AHRQ hospital survey on patient safety parameters

The third area of marked improvement was handoffs and transitions of important patient care information’s which was transferred between ICU and other department and during shift changes. We used “I PASS THE BATTON” model which was a suitable solution for solving most problems of hand off in shifts or during patient referral from another unit to ICU and vice versa.

One of areas that developed using TeamSTEPPS project was communications openness which is defined as “Staff freely speak up if they see something that may negatively affect a patient and feel free to question those with more authority”. That may be due to non-punitive culture developed in ICU, and all staff co-operation in order to do no harm for patient even after any mistakes.

Some areas were already well-developed in ICUs of AMUH. TeamSTEPPS didn’t add any value to some areas. Teamwork across units which was reached through documentation of events happened and daily checklist which lead to easy transportation of information through different units. Teamwork within units was defined as “staff support each other, treat

with respect, and work together as a team”. It must be a corner stone in every successful safety culture as a sign of co-operation and respectfulness that lead to harmony within the units.

Management support for patient safety was defined as “hospital management provides a work climate that promotes patient safety and shows that patient safety is a top priority”. It means that the hospital considers safety at first and this parameter cannot be sacrificed due to any other cause. Organizational learning/continuous improvement was defined as “mistakes have led to positive changes and changes are evaluated for effectiveness”. This area of strength in opinion of majority of ICU residents denote that any mistake which can be harmful to the patient not passed without learning and trial to improve the whole safety system and this condition is continuous cycle “event by event”. Supervisor/manager expectations and actions was defined as “supervisor consider staff suggestions for actions improving patient safety, praise staff for following patient safety procedures, and do not overlook patient safety problems”.

4. CONCLUSIONS

Using TeamSTEPPS in ICUs of AMUH was a successful tool for improving whole safety culture, developing it with continuous monitoring. TeamSTEPPS was applicable on only some areas. It is highly recommended finding another

safety tools and projects to put quality of medical care and safety culture in mind, especially in very critical areas as ICU.

CONFLICTS OF INTEREST DISCLOSURE

The authors declare they have no conflicts of interest.

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