

“SECONDS SAVE LIVES” - QUICK RESUSCITATION TEAM (QRT): A SPECIALIZED NURSING SERVICE

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ABSTRACT

Patient safety is the first priority for healthcare. Indraprastha Apollo Hospital is dealing with an increasing number of people who have complex problems and multiple comorbidities. Average no. of cardiac arrest in our hospital is 100/month out of which 48% of all deaths attributed to patients who were admitted to a non-intensive care unit and were not expected to die at the time of admission. 70% of patients show evidence of respiratory deterioration within eight hours of arrest. Staffs' were Failure to rescue" (inability to recognize early warning signs of deterioration in a patient's condition, or acting too late to prevent a cardiac arrest) the patients. Henceforth Quick Response Team (QRT) has created with 5 Nurses, available- 24X7 to deliver critical care expertise in response to grave clinical deterioration of a patient located outside the ICU. The project goal is to achieve 100% patient safety with the objectives of decrease the number of cardiopulmonary-arrests that occur in the wards and hospital mortality and increase patient and consultant- satisfaction. Effective QRT's team implementation led to following outcomes-turnaround time to manage cardiac arrest was reduced from 120 minutes to 90 minutes, increased patient and consultant satisfaction, reduction in emergency ICU's admissions and medication errors. This project certified for green belt in six sigma and evaluating team suggested for advancement to black belt and generalized in all hospitals of Apollo group. It proved to be a good strategy for improving patient safety. It won Hospital Management Asia (HMA) award, AIQA (Apollo Innovation and Quality award and best Six sigma best project award in 2015 among all Apollo group of hospitals. It has been continuously making a difference in our patient's lives.

Key words: Cardiac arrest, Deterioration, Safety, Satisfaction, Six sigma, Turnaround time.

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INTRODUCTION

Since the publication of "To Err Is Human" by the Institute of Medicine in 2000, [1] patient safety has become a national focus for health care, and noteworthy efforts have been directed at reducing the number of deaths resulting from preventable errors. Many patients experience serious adverse events while in the hospital, including cardiac arrest and unexpected admission to the intensive care unit (ICU), and research indicates that such events occur after failure to rescue [2,3].

Several studies have established that up to 84% of patients show signs of clinical deterioration 6 to 8 hours preceding cardiac arrest [3-7].

One study shows 66% of patients show abnormal signs and symptoms within six hours of arrest; the physician is notified in 25% of cases. One article identified several warning signs present within six hours of arrest: MAP <70 >130 mm Hg, Heart rate <45 >125/minute, respiratory rate <10, >30 per minute, chest pain, altered mental status [8].

Clinicians often fail to appreciate or report antecedent signs of deterioration or to intervene if signs of deterioration are indeed recognized [3,4,9]. The inability of clinicians to recognize a decline in a patient's condition and prevent unintended injury or death constitutes failure



to rescue, which has been incorporated as a measure of medical and nursing care [4,6,11].

Reasons for failure to rescue include limitation of monitoring technology to specialty units; failure to report or respond to abnormal findings on assessment; variation in individual judgment, training, and experience; low sensitivity and fidelity of periodic assessments in general care areas; and inability of frontline staff to initiate early interventions independently [8,12].

Indraprastha Apollo Hospital is a quaternary care hospital with a complex set up covering various super specialties with 700 beds. It is dealing with an increasing number of people who have complex and acute problems and multiple comorbidities. Average no. of cardiac arrest in our hospital is 100/ month out of which 48% of all deaths attributed to patients who were admitted to a non-intensive care unit and were not expected to die at the time of admission.

More than 4 decades of clinical experience with the use of resuscitation techniques for in-hospital cardiopulmonary arrests, patient outcomes have remained dismal. There was a recognized need for early identification and intervention with those hospitalized patients who were at risk for significant physical deterioration. The proposed solution to improve patient safety is to establish quick response teams (QRTs) as recommended by the Institute for Healthcare Improvement and supported by the National Registry of Cardiopulmonary Resuscitation

Before code blue team arrived, the staff nurses were "Failure to rescue" the patients. "Failure to rescue" is the lack of staffs' ability to recognize early signs and symptoms of deterioration in a patient's condition, or acting too late to prevent a cardiac arrest.

Because cardiac events are often not sudden and early signs of deterioration in a patient's condition are not always recognized, Quick response Team (QRT) have been introduced to intervene in the care of declining patients by bringing clinical expertise and timely interventions to the bedside [3,8,12].

Chan and colleagues [14] reported that implementation of an RRT in adult populations was associated with a 33.8% reduction in rates of cardiopulmonary arrests.

Some of the studies described effective QRT outcomes as 50% reduction in non-ICU arrests [15]. Reduced post-operative emergency ICU transfers (58%) and deaths (37%) [16]. Reduction in arrest prior to ICU transfer (4% versus 30%) [17].

Implementation

Creation of QRT: Team formed with designated group of Nurses (5) who can be assembled quickly to deliver critical care expertise in response to grave clinical deterioration of a patient located outside a critical care unit, available 24X7 after 1 week of intensive training by

emergency Head of Department and Advanced Cardiac Life Support instructor

Goal: To treat early warning signs so that the patient's outcome may be improved and a cardiac arrest prevented. It has been shown that 2/3 of patients show evidence of identifiable signs of deterioration within 6-8 hours of arrest.

Implementation process

- **Designated ACLS (Advanced Cardiac Life Support) instructor in Nursing:** Entire hospital staff nurses (1300) went through ACLS training to manage emergency situations.
- **Designated bed manager:** Senior nursing supervisor assigned for bed management.
- **Early warning score tool:** A tool is introduced to recognize the patient deterioration at the earliest.

Outcomes:

QRT led to following outcomes:

- **Turn Around time (TAT) for codes management:** The code management decreased from a mean of 120 minutes to a mean of 90 minutes.
- **TAT for staff response to other patients:** It has reduced from 30 minutes to 10 minutes because assigned staff was available to take care of other patients.
- **Patient satisfaction:** The assigned staffs were relieved on time for providing timely services to other patients. This has scored our Voice of Customer 100%.
- **Decreased emergency ICU admissions:** Emergency ICU admissions from ward to ICU were reduced to 40%
- **25% reduction in the occurrence of cardiac arrest outside the ICU:** The percentage of non-ICU arrests declined to 25%.
- **Decreased medication error:** Assigned staffs were relieved on time for providing timely services to other patients, directed to reduced medication error.
- **Skill and efficiency in handling patient deterioration :** Staffs competency has improved due to mock drill and ongoing training.
- **Declined Average Length of Stay (ALOS):** It has reduced drastically from 5 to 4.56.
- **Reduction of code blue:** QRT staffs were available 24x 7 in the wards to assess clinical deterioration of patient proactively. Hence forth it has reduced code blue significantly.
- **Increased consultant satisfaction:** It has improved consultant satisfaction as QRT staffs identified signs of clinical deterioration in patient early and managed them on time.
- **Designated ACLS (Advanced Cardiac Life Support) instructor in Nursing:** Entire hospital staff nurses (1300) went through ACLS training to manage emergency situations.



- **Less call bell complaints:** Cardiac events (cardiac arrest- code blue, deterioration in patient condition - code orange) management taken over by QRT staff and the

assigned staffs are relieved to perform other patient's assignments. Hence it led to less patients call bell complaints.

Figure 1.



Figure 2.



Figure 3.



Figure 4.



Figure 5.

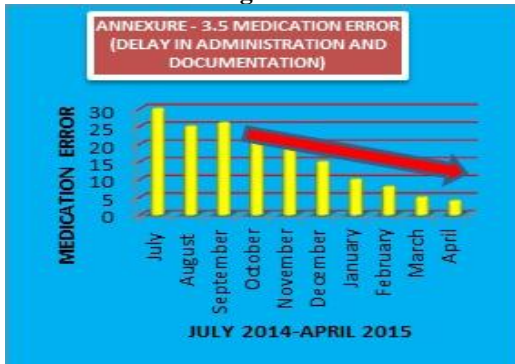


Figure 6.

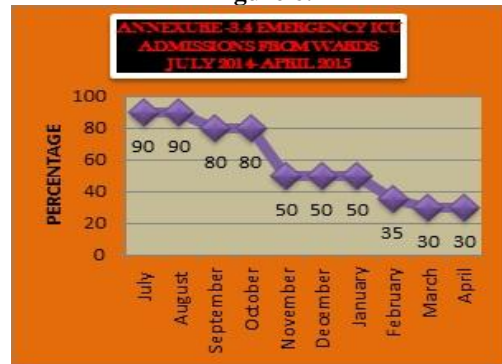


Figure 7.

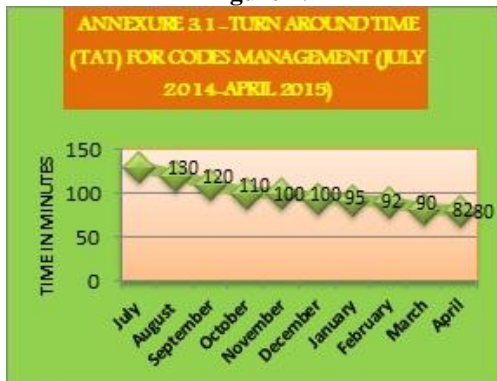


Figure 8.

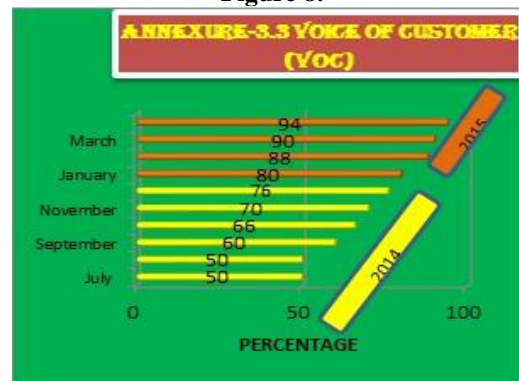


Figure 9.

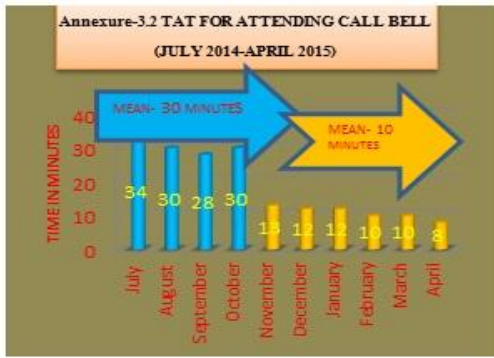
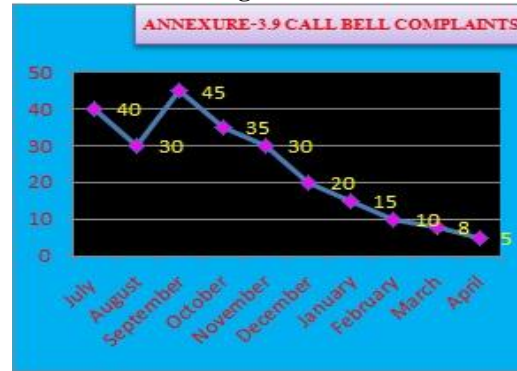


Figure 10.



CONCLUSION

The implementation of quick response team was effective in reducing cardiopulmonary arrests and turns around time for management of code blue. It has increased

patient and consultant satisfaction significantly. This project showed that proper utilization of the QRT remains optimal and continuous monitoring and feedback is mandatory to reach up to bench marks.

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