



Rapid Response System Evaluation and Development of Standardized Treatment Guidelines

Ibironke Macaulay MBA MSN AG-ACNP-BC FNP-BC
 School of Nursing, Rutgers, The State University of New Jersey
 Doctor of Nursing Program Project



Introduction/Purpose

- Introduction:** The implementation of rapid response system in tertiary hospitals is a strategic quality improvement initiative as hospitalized require greater attention
- Purpose of project:** Rapid response system is a widely accepted healthcare practice aimed at rescuing hospitalized deteriorating patients outside of the intensive care units. This DNP project analyzed rapid response event data for trends and patterns with patients and process to identify areas of quality in the program and areas that need improvement for the development of treatment guidelines

Background

- Rise in annual IHCA**
 - From 6 to 7 per 1000 admissions between 2003-2007, to 9 to 10 per 1000 admissions between 2008-2017, (95% prediction interval) (Holmberg et al., 2019)
- Early Intervention**
 - 80% of patients who died from cardiopulmonary arrest demonstrated signs of clinical deterioration 6 to 8 hours before the event (Hillman et al., 2001; Winters et al., 2013)
- Clinical Statement**
 - Will a 12 months retrospective program evaluation of a rapid response system at a tertiary medical center provide information that can be used to improve outcomes of deteriorating patients, enhance RRS effectiveness and guide the development of treatment guidelines?

Objectives

- Aim**
 - To evaluate the rapid response system at a tertiary medical center for evidence to improve outcomes of deteriorating patients.
- Objectives**
 - Identify patient factors that increase their risk of clinical deterioration
 - Identify system factors that may impact the risk of clinical deterioration
 - Determine if repeated RRT calls on a patient are associated with end-of-life concerns.
 - Synthesize the findings into recommendations for improvement of the RRS as well as to create a protocol for event management

Results/Discussion

	Repeat		Single	
	n	%	n	%
Patients	145	21.4	530	78.5
DNR initiation	22	15.1	60	11.3
ICU transfer	16	11.0	55	10.3
Death	42	28.9	62	11.6
IHCA	5	3.4	7	1.3
Average LOS	13.5	-	8.2	-
Discharges	103	71.0	464	88.2

Rapid Response Events in 2018

Category	RRT events	%	Patients	%
Total	934	100	675	100
Single	587	62.9	530	78.5
Repeat	347	37.1	145	21.4

Mortality of Rapid Response Patients in 2018

Category	All Patients	%	70 and older		Younger than 70	
			Patient	%	Patient	%
Total	104	15.4	81	77.8	23	22.1
Single RRT	62	59.6	47	75.8	15	24.1
Repeat RRT	42	40.3	34	80.9	8	19.1

RRT Patients' Age Profile

	Aged 70 & older	Younger than 70	Total
Patients	383	292	675
Mean age	82.5	54	70.5
Median age	84	56	73
SD	7	12	16.9

- The 4 most common calling criteria were, acute chest pain, acute respiratory distress, altered mental status, and hypotension
- Elderly patient are at increased risk for clinical deterioration
- Patients with cardiopulmonary problem are at increased risk for clinical deterioration
- Patients with repeat calls experienced the most mortality, IHCA, ICU transfer, DNR order initiation and extended LOS
- There is a statistically significant relationship between increasing number of events and mortality

Methods

- Methodology:** Retrospective chart review of rapid response events involving adult patients admitted to a tertiary Hospital in Northern New Jersey from January 1, 2018, to December 31, 2018.
- Setting:** Tertiary Hospital in Northern New Jersey
- Inclusion/Exclusion criteria:** Patients 18 and older admitted through the emergency department for at least 12 hours
- Data:** Patient admission demographic and and clinical records
- Data analysis:** Included descriptive statistics and and inferential statistics.

Implications

- Implication for Practice:**
 - Propose department approved guideline for the top four criteria to include specific interventions on management of patients older than 70.
 - Familiarity with physiological signs at the end-of-life to know when life sustaining effort will not make a difference.
 - Avoid repeat clinical deterioration on the same patient.
- Implication for Policy**
 - Institute 6 hours follow up care policy by the response team
 - Integrate RRS with palliative care for end-of-life care management.
- Implication for Quality and Safety**
 - Essential to safety is to identify underlying causes of events and practices that are most effective in mitigating risks .
- Implication for Education**
 - Training and competency for the team on facilitating discussion on end-of-life care, including initiating discussion on management of reversible conditions
 - Training to recognize where aggressive intervention will not be appropriate due to severity of illness and poor prognosis

References

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Contact: Ibironke Macaulay AG-ACNP-BC FNP-BC ronke@sn.rutgers.edu; akwefa@gmail.com

