

Nursing Strategies in Recognizing and Responding to Early Signs of Clinical Deterioration among Thoracic Surgical Patients by using Modified Early Warning Score (MEWS)

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Introduction

Department of Cardiothoracic Surgery (CTSD) of Queen Mary Hospital performed more than four hundred thoracic surgeries in 2016. By introducing the MEWS enhancement program, MEWS tool had been applied to every patient undergoing thoracic surgery. CTSD nurses were emphasized with comprehensive MEWS documentation. Being followed with regular internal audit, the quality of MEWS chart was reviewed. Nurses are therefore empowered with rapid response for deteriorating patients who triggered the MEWS reporting algorithm.

Objective

To evaluate the feasibility and effectiveness of the MEWS enhancement program to reduce the rate of CTSD Intensive Care Unit (ICU) admission, mortality and hospitalization.

Methodology

This is a retrospective study. From August 2016 to December 2016, 109 thoracic surgical patients were randomly selected for reviewing MEWS documentation. The effectiveness of the MEWS tool on patient outcomes by comparing CTSD ICU admission rate, mortality rate and hospitalization were investigated.

Result

109 patients were reviewed for the quality of MEWS documentation. Subjects (n=61, 56%) were male and (n=48, 44%) were female. The compliance in documenting MEWS by nurses was 82%. After thoracic surgery, persistent air-leak (n=20, 18.3%) was the leading complication followed by respiratory distress (n=13, 12%), hypotension (n=6, 5.5%), and cardiac arrhythmia (n=3, 2.7%). Those complications were the leading causes of deterioration among thoracic surgical patients. The subtle changes in patients' vital signs started 6-8 hours before the obvious deterioration. A small change in MEWS can be a significant indication for patient's condition change. When MEWS scored 4 or above, rapid response team will be triggered. Within the study period, 6 cases had triggered the MEWS reporting algorithm. Rapid response by using MEWS tool to provide appropriate nursing interventions can decrease the rate of unplanned CTSD ICU admission (n=3, p-value<0.05). While the length of hospitalization was similar, no mortality was recorded in post thoracic surgery.

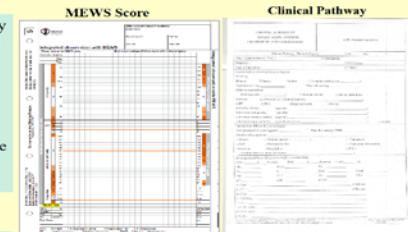
Conclusion

MEWS tool can significantly help nurses to early detect patients who are at risk, life-saving strategies would be different if prompt management for deteriorating patient.

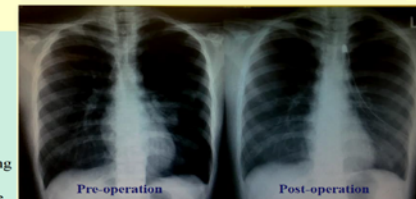
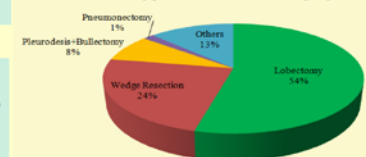


Outcomes of the MEWS Enhancement Program

	Pre-intervention	Post-intervention	p-value
ICU Admission	8	3	0.02
Length of Stay	7.8224	7.6023	0.82
Mortality	0	0	NA



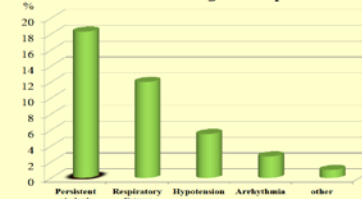
Types of Thoracic Surgery



Internal Audit for the Quality of MEWS Documentation

Number of patients	109
Male: Female (%)	56:44
Mean age (years)	38±16
Compliance of MEWS documentation	82%
Number of case trigger MEWS reporting algorithm.	6

Post-Thoracic Surgical Complications



Introduction

Setting	CTSD General Ward
Methodology	Retrospective study
Intervention	<p>Apply MEWS Enhancement Program for nursing staff</p> <ul style="list-style-type: none"> ➤ MEWS Education program ➤ Internal Audit to review the quality of MEWS documentation
Study period	1 st August to 31 st December 2016

Outcomes

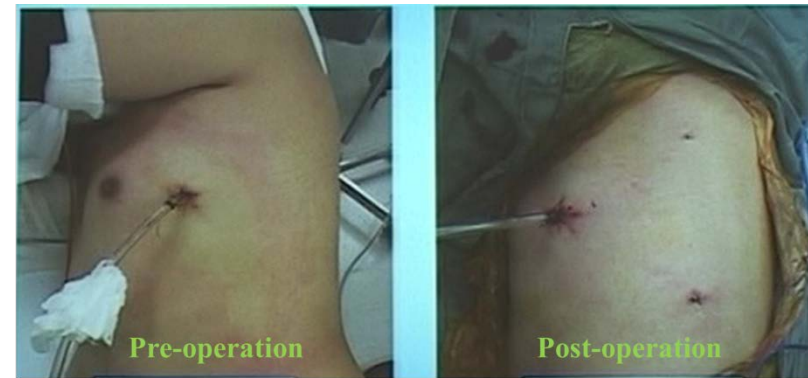
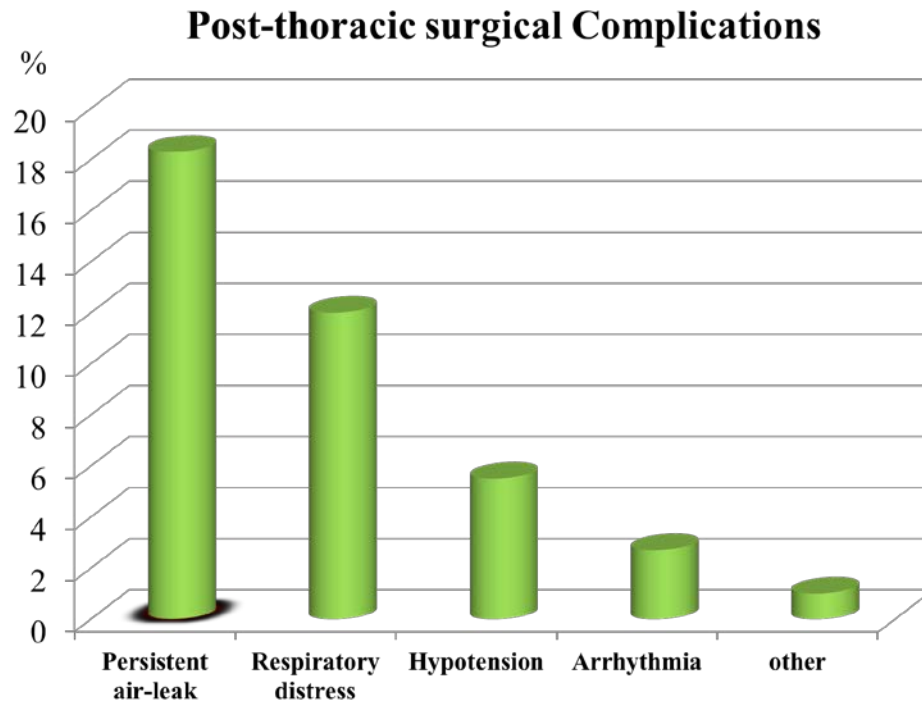
- CTSD ICU admission rate;
- Length of hospital stay;
- Mortality rate;

Res	0	9-14
2	8	
*MEWS Total		
SpO ₂		%
Oxygen		
BW		Kg

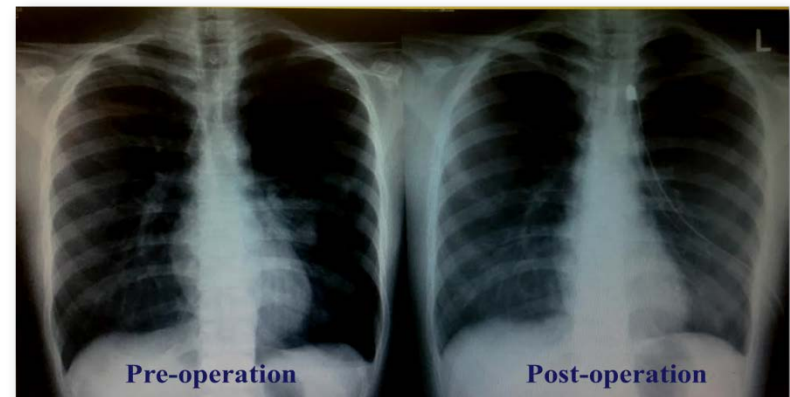
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Target Population

Post-thoracic surgical patients (n= 109 cases)



Video-assisted Thoracoscopic Surgery



MEWS Enhancement Program

	Pre-intervention	Post-intervention	P-value
Compliance of MEWS documentation	62%	82%	0.04
ICU admission (cases)	8 / 109	3 / 109	0.02
Length of Stay (days)	7.82±4	7.60±3	0.82
Mortality	0	0	NA
Number of case triggered MEWS reporting algorithm	NA	6 cases	NA

Thank you very much

Hospital Authority Convention 2017

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