



Service Priorities and Programmes Electronic Presentations

Convention ID: 706

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The Novel Coloured “Modified Early Warning Score” (MEWS) System For Detecting Patient Deterioration

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Keywords:

Modified Early Warning Score

Patient Deterioration

Patient Observation

Vital signs observation

Physiological assessment

Planned Care

Introduction

Serious adverse events can be prevented by recognizing and responding to early signs of clinical deterioration. The modified early warning score (MEWS) is a validated physiological scoring system to identify patients at risk of catastrophic deterioration in clinical area. However, the compliance and the response rate of MEWS have shown decreasing to below 65% due to heavy calculations during busy ward situation. Therefore, the coloured MEWS system is proposed to replace the conventional MEWS score by different colour zones for each physiological parameter. It serves as a simple, direct and visualized grading system to alert different health workers (doctors, nurse and health care assistants) for early detection thus triggering responses to patient deterioration. The novel system aims to improve the feasibility and compliance of the patient assessment by reducing heavy numerical calculations of conventional MEWS score.

Objectives

The purpose of this study is to evaluate the effectiveness and utility of the novel coloured MEWS system for early recognition and triggering responses in deteriorating patients.

Methodology

A retrospective study was conducted in 9 medical wards in Medicine & Geriatric department of Princess Margaret Hospital in Hong Kong. 90 consecutive emergency cases were reviewed by 9 trained investigators with a standardized audit checklist. The triggering physiological parameters of MEWS, their corresponding responses/ interventions and clinical outcomes were recorded in first 3 days of acute stage upon admission.

Result

Although there is no scoring in the novel coloured MEWS system, nurses still demonstrated a satisfactory response rate (87.4%) on the triggering events with 69.4% of them requiring doctor assessment in person. Over 87.8% triggering events resulted in improved or stabilized conditions while the rest 13% of critical conditions was related to patients' poor comorbidity. This report revealed that the novel coloured MEWS system is feasible in alerting all and especially the incompetent and inexperienced health workers for early detection and triggering responses in patient deterioration. Also, this direct coloured grading system is more superior to the conventional MEWS system in facilitating frontline staff on physiological observation and clinical handover, and aligning their interpretation, triggering responses and actions on the altered parameters.