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Development of a New Modified Early Warning System in a Subacute Hospital Providing Specialized Care

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Introduction

Early detection and management of deteriorating patients is important in prevention of cardiopulmonary arrest and reduce potentially preventable deaths and morbidities.

Although an observation form with MEWS (Modified Early Warning Signs) had been in place for years, Grantham Hospital (GH) was yet to develop a robust trigger system to help identify deteriorating patients for prompt medical attention.

Objectives

To develop and implement a MEWS system with suitable triggers for early detection and management of deteriorating patients.

Methodology

1. A working group comprising doctor and nurses was formed to develop a new MEWS system in Dec 2015. 2. With reference to available resources, new MEWS system with color-coded triggers was proposed. 3. The relevant physiological parameters for monitoring were identified. As the patient types varied in different specialties, there had been discrepancies on defining the trigger levels in particular on systolic BP and SpO2. Departments subsequently reached consensus on the triggers and a new observation chart with MEWS was developed. Moreover, an action guide for each trigger zone was consolidated. 4. The new system was then deliberated in clinical department meetings, nursing meetings, Hospital Quality & Safety Committee, and Hospital Management Committee. Endorsement for pilot was sought. 5. A pilot study was conducted in three general wards in March 2016 and an evaluation was done in June 2016.

Result

Fifty-three evaluation forms were sent out with 83% response rate (32 doctors and nurses, 12 PCAs). Results/ Agreement on: 1. Effectiveness for detecting deterioration (Dr/nurse: 84.0%, PCA 66.7%) 2. Effective tool to guide junior nurses to make appropriate action (Dr/nurse: 75.0%) 3. Appropriateness of the trigger points (Dr/nurse: 87.5%) 4. Appropriateness of response guide (Dr/nurse: 90.65%) 5. Clarity of the form (Dr/nurse: 81.0%, PCA 66.7%) 6. Comments were received on the design of the form. Subsequent to the evaluation exercise, the following action was taken:

1. The MEWS form was refined mainly on making more space for charting of BP, HR &

SpO2. 2. A new Guideline on Detection of Deteriorating Patients was developed. 3. After a series of training & staff engagement activities, the new MEWS system was successfully rolled out to all general wards.