

Service Priorities and Programmes

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Using Clinical Information System to enhance medication safety in Intensive Care Unit

Chan PKO(1), Lam CL(1), Leung PWR(1), Lam KW(1), Lam KM(2), Chung KYE(2) (1)Intensive Care Unit, Queen Elizabeth Hospital, (2)Pharmacy, Queen Elizabeth Hospital

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Introduction

Clinical Information System (CIS) is a computer-based information management system. It has been installed and implemented in our ICU since May, 2009 for documentation and storage of clinical data of patients aiming to improve quality of patient care. Studies have shown that computerized physician order entries can reduce medication errors. Nonetheless, with CIS in place, using the hospital paper-based medication administration record (MAR) at the same time increased the risks of medication errors due to transcription. Moreover, the frequent inconsistency of order entries between CIS and paper-based MAR increased the workload and frustration of nurses in ICU.

Objectives

To streamline the process of medication prescription, ordering and administration using CIS in ICU to enhance medication safety

Methodology

Paper-based MAR was ceased to be used in ICU since September, 2011. A new system of medication prescription, ordering and administration with CIS was developed. Doctors would prescribe medications on the "Prescription" page of CIS and then copy the medication orders from the "Prescription" page to the "Notes" page of CIS with the copy and paste function of the computer. The medication orders would then be printed out by nurses from CIS and sent to pharmacy. Nurses would check the dispensed medications against the "Medication Administration Record" page of CIS and signed on it after medication administration.

Result

1) With medication order entries made in CIS, risk of medication errors from illegible, incomplete or misread orders and abbreviations was eliminated. 2) Copying the medication orders with the copy and paste function of computer from "Prescription" page to "Notes" page in CIS eliminated the risk of transcription errors. 3) With standardization of prescription orders in CIS, the risk of prescription errors was

reduced. With templates of prescription orders in CIS with preset parameters, orders with out-of-range dose would not be allowed. 4) The risk of medication errors at administration was reduced as frequency of administration was set by CIS and scheduling of medications was standardized. 5) The details of medication administration such as date, time and electronic signature of the staff administrating the medication was clearly recorded and easily retrievable in CIS. The way forward would be electronic transmission of prescription orders from ICU to Pharmacy to further increase efficiency of medication ordering.