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Description of Implementation of Clinical Decision Support Alert in Response to a Case Report of a Preventable Adverse Drug Event

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Abstract and objective

While Clinical Decision Support Systems (CDSS) can be developed as a large group of rules- based advice occasionally, cases of preventable adverse drug events come to the attention from various pathways, both through clinical and policy activities. At Partners HealthCare Systems, there is a centralized knowledge management structure that allows for clinicians to present information to a Medical Knowledge Committee (MKC) in a structured way so that any information can be properly vetted. A case of a fatality due to the administration of 2 medications concurrently and the understanding that key decision support components were not available to the prescribing clinicians, drove us to implement this advice in both our acute care and ambulatory clinical systems.

Keywords:

decision support systems, clinical, medical informatics, medication errors, drug interactions

Introduction

Clinical Decision Support Systems (CDSS) can assist clinicians in the proper use of medications[1]. While the large majority on clinical situations can be addressed with CDSS there are potentially some situations that occur in clinical care that require addition of clinical knowledge to CDSS. We describe a case that came to a team member in his work as a reviewer for a newsletter and while attending a pharmacy board meeting. Utilizing this information, a team approach to vetting this case information into our current CDSS architecture to ensure that all clinicians who write medication orders will receive this intervention alert.

Methods

We became aware of a case of a patient who received azathioprine prescribed in ambulatory setting, was admitted to a hospital and ordered for 6-mercaptopurine (the metabolic product of azathioprine) and discharged on both medications. The patient developed myelosupression, sepsis and died. Utilizing this knowledge, the case was presented to the Medical Knowledge Committee. The MKC oversees the knowledge base for the drug-drug interaction alerting across all platforms at Partners Healthcare Systems, an integrated delivery network. An interruptive alert, but not one that is a hard stop was developed and rolled out to all applications utilizing drug-drug interaction alerting.

Results

The utilization of a case of a preventable adverse drug event to develop a single piece of clinical knowledge can be a way to increase the quality and safety of care provided in both the acute and ambulatory care settings. Clinical and informatics professionals can utilize case reports to supplement clinical knowledge at their local sites. A team approach is essential to ensure that the alert is implemented in a structured way.

1 Rochon PA, Field TS, Bates DW et al CMAJ 174(1):52-4