MediScreen: Implementation of a tool for detecting patients at risk of adverse drug events via the electronic medical record

A.-V. Luyet1, V. Jordan-von Gunten1, P Turini2, J. Beney3
1Division of Pharmacy, Institut Central des Hôpitaux (ICH) 2Medical coordinator for quality of care and patient safety, Hôpital du Valais (HVS), Sion, Switzerland

INTRODUCTION AND OBJECTIVES

- Medication errors, including prescription errors, are a major source of patient harm. Pharmacists at the Valais Hospital (HVS), are not able to validate all prescriptions daily (2,100 medical orders per day).
- A project called “MediScreen” was launched to detect situations at risk of drug related problems (SRDRP), in order to fill this gap.
- 25 queries of high criticality were developed based on a literature review and consensus with physicians from different medical disciplines1. The queries were then programmed with the software PharmaClass® that is interfaced with the electronic medical record (EMR) of our hospital.
- Objectives:
  - To evaluate the impact of this screening on drug therapy
  - To estimate the time required for pharmacists to analyze and manage SRDRP

METHODS

- 6 months prospective interventional study (1 Feb. 2018-31 July 2018) on all hospitalized adult patients (approx. 900 beds)
- Intervention: real-time detection of SRDRP by PharmaClass®, followed by analysis by the clinical pharmacist who calls the prescriber to suggest treatment modifications if necessary.
- Measured indicators:
  - Number of SRDRP detected
  - Number of pharmacist interventions (PI)
  - Number of accepted PI (and acceptance rate), refused or not applicable2
  - Required resources quantified in pharmacist time per day

RESULTS

- False positive (technical problem being resolved): n=483
- Resolved before pharmacist intervention n=50 (5%)
- Prescriber call/suggestion (PI) n=128 (13%)
- Accepted PI n=104 (87%)
- Refused PI n=16 (13%)

DISCUSSION, CONCLUSION

- Treatment adaptation and prevention of the occurrence of adverse drug events in 104 situations that would not have been identified without MediScreen.
- Reassignment of time spent on clinical activities due to this novel activity is needed.
- Two types of queries:
  - Identification and prescription validation of a specific drug at risk
    \[ \Rightarrow \text{Sensitivity} \] is a more appropriate endpoint than specificity
  - Identification of a particular drug related problem
    \[ \Rightarrow \text{Specificity} \] needs to be improved to reduce the rate of non-clinically relevant SRDRP
- High acceptance rate of PI (87%) explained by focus on queries of high criticality and the pharmacist’s verification of the clinical relevance of SRDRP
- Perspective: alerts for less critical situations will be developed in order to optimize the treatment of patients seen during interdisciplinary visits.

REFERENCES

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2] Definitions: Manuel descriptif de documentation des activités en pharmacie clinique, GSASA (Swiss association of Public Health Administration and hospital pharmacists) 2014