CONFERENCE ABSTRACT

Optimizing medication reconciliation at care transitions with an electronic clinical decision support tool

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Introduction: Medication reconciliation (MR) is a standardized process of comprehensive evaluation of a patient's medication regimen in an effort to avoid medication errors, such as, omissions or duplications at care transitions, especially at hospital discharge. The output is a complete list of discharge medications for the patient, for the next healthcare provider, and a detailed discharge report with an accurate and up to date medication list of stopped, new, modified and unchanged medications. It sounds simple and straightforward, but it turns out to be very difficult to implement. Discharge prescription is a complex and error prone process, because of the convergence of often conflicting medication information from various sources, frequent hand-outs between professionals and organizations and multiple changes in the treatment plan in a pressure environment. In order to make it easier, we have developed a clinical decision support (CDS) tool integrated in the electronic prescribing process at discharge. In order to assess its impact on patient safety and MR adoption, we measured the number of MR errors per patient at the discharge report using electronic medication reconciliation (eMR) versus manual MR, and we measured MR adoption before and after the eMR tool was available.

Methods: Electronic MR process description. At hospital discharge, the eMR tool performs the task of merging two medication lists in one single list: a pre-hospital list imported from our national electronic outpatient prescriptions record, and another one with inpatient active medication immediately before discharge. Merged medications from different lists are identified by different colours and sorted by ATC group. The prescriber then reconciles every medication in the merged list, picking, stopping or modifying them. When completed, the system offers the possibility of adding new prescriptions. All the actions taken are recorded by the computer, so that it automatically generates a text translation of the actions taken with every prescription. If the prescriber confirms that everything is all right, the computer automatically generates a report for the patient, the text must be copied-pasted at the discharge report for the next healthcare provider and prescriptions must be sent to the outpatient electronic medication prescriptions record.

Study design. Prospective comparative study of MR information documented at the discharge report of complex patients with multimorbidity, in which MR is mandatory, between an

intervention group of prescribers from wards where e-MR tool is available and a control group who performs manual MR.

Setting and subjects. All patients discharged from Geriatrics Wards and Internal Medicine Wards from March 1st to March 31st 2015. Exclusion criteria: exitus and hospital transfers.

Outcome measured

- Medication reconciliation errors/patient identified at the discharge report

- MR adoption in the areas where e-MR tool is available before and after its implementation

Results: MR errors reduction. One hundred discharge reports were reviewed during the study period (44 in the intervention group (IG) and 56 in the control group (CG). Medications were completely reconciled in 79.5% (CI 95% 65.5-88.8%) of the discharge reports in the IG and in 37.5% (CI95% 26.0%-50.6%) in the CG. Average number of MR discrepancies per patient discharged was 0.88 (IC95% 0.54-1.23) in the IG versus 1.78 (CI95% 1.22 -2.34) in the CG.

MR adoption. At the beginning (March-October 2015), we implemented e-CM tool gradually (one physician at a time) among Geriatrics team. Since november 2015, we offered the tool and trained all Internal Medicine teams. Since November 2015 until March 2016, during full implementation phase, e-MR has been performed in 985 out of 1.212 patients (81% adherence) discharged by Geriatrics/Internal Medicine teams where the tool is available.

Conclusion: Our computer-based solution for MR has a major positive impact on the quality of MR process by reducing medication error burden, but also on successful implementation and systematic MR process adherence. Now we plan to extend the use of the e-MR tool to all hospital discharges in order to obtain a significant impact on medication use safety.