Medication check at the interface from the Intensive Care Unit to wards

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Background

At the University Hospital Basel we have two different clinical information systems for the intensive care units or intermediate care (PDMS Metavision®, iMDsoft) and wards (Meona®, Mesalvo). There is no interface for transferring the medication whenever patients are transferred, which leads to new prescriptions for the entire drug therapy. Nursing suspected an increased risk from this manual interface, so hospital pharmacy was involved to consider process optimization.

The critical incident report system (CIRS) showed a higher rate of medication errors at surgical wards, and a study should show whether the manual process is a causative factor.

In a pilot study pharmacists compared medications from the intensive care unit and the ward with the medication upon entry whenever it was documented to avoid medication errors, identify reasons, and to optimize medication and patient safety.

Methods

Patients transferred from the intensive care (ICU) or intermediate care unit (IMC) to the surgical wards were identified on the basis of a newly programmed IT query (Cristal Report), which we received daily by email. It included a direct link to the complete patient information from the ICU or IMC and the ward.

Clinical pharmacists performed a medication reconciliation for all patients that were reported, on the basis of the documented admission and transfer information.

Additionally, a check for interactions, correct dosage and frequency, and for drug optimization possibilities was performed.

Interventions were documented in the clinical information system history for physicians and nurses, and with the GSASA intervention documentation tool at the pharmacy. The drug related problems were categorized by severity in critical, potential severe, or therapy optimizations. Additionally, we asked all pharmacists about their satisfaction with the project.
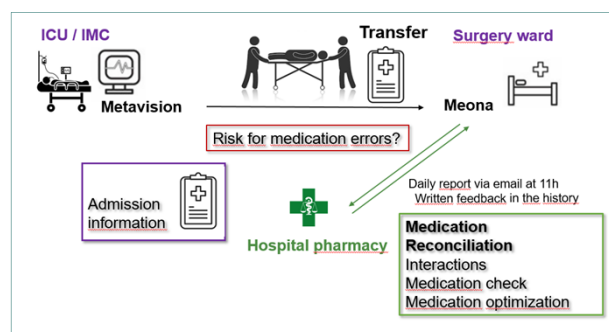

Fig. 1: Project overview

Results

We included 306 patients into the study from January to May 2022 and made 130 interventions. Information on the drugs administered in the ICU/IMC was missing in 17% of all patients. It was only available as a printout and could thus not be used by the pharmacists. In these cases, the comparison was only made with the medication upon entry. 13 interventions have missing data with an unclear outcome.

The three most common causes for an intervention were errors in the medication process (e.g. treatment not received, incorrect drug application), wrong dosage, and therapy optimizations according to the guidelines. The overall acceptance rate was low with 32%. It took on average 5 minutes per patient. There were 29 transition errors, 11 (40%) were adapted during the hospital stay.
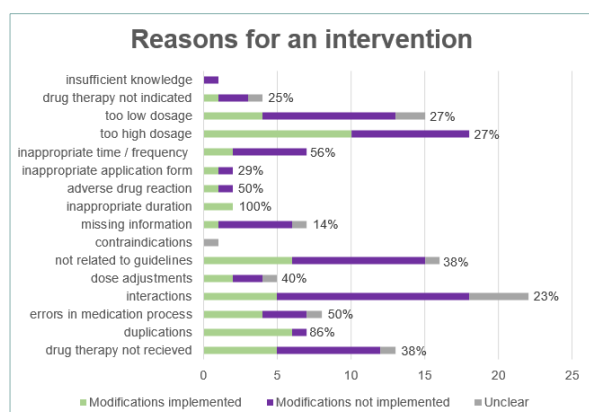

Fig. 2: Reason for an intervention with the acceptance rate [%] for all drug related problems [N=130]
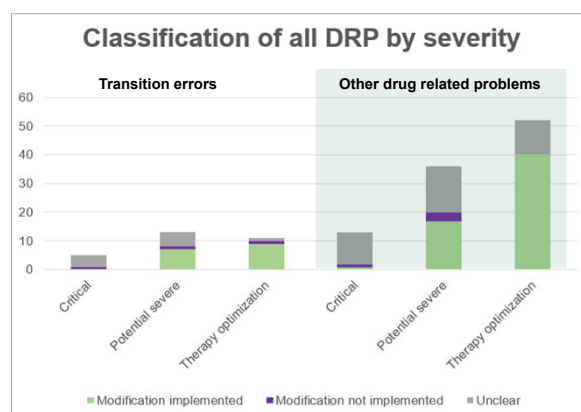

Fig. 3: Classification of all drug delated problems (DRP) by severity, devided in transition errors and other drug related problems

Discussion

A clinical pharmacist check on medication therapy can avoid medication errors and optimize treatment. But a new activity from the pharmacy must be well communicated to show a positive benefit.

The manual process at the interface between the ICU/IMC and wards is not the only reason for medication errors. The possibilities for optimizing the process will be discussed further with the physician and nursing staff.

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Literature:
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