

# ANALYSIS OF THE MEDICATION INCIDENT REPORTS AT THE UNIVERSITY CHILDREN'S HOSPITAL

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## Background

- Children are the most vulnerable patient group who are subjected to medication incidents in hospitals.
- Therefore there is an increasing recognition of the need to collect and analyse the data on the patient safety incidents, to facilitate learning and to develop solutions worldwide.
- Currently there is no the National Reporting System in the country that would collect reports about patient safety incidents (PSI).
- Such system was introduced in the Children's Hospital in 2013. "Reporting" has very negative meaning in the society in general because of the country political past.

## Objectives

- To analyse trends in reporting of PSI focusing on medication incidents reports (MIR).

## Material and methods

- A retrospective analysis from January 1 to December 31, 2016.
- The study was based on two sources of the data: the reports on the PSI obtained from the hospital intranet and the patients' medical records, if more detailed information was required.
- The reports on the incidents are collected by the patient safety specialist from the hospital intranet system and are analysed by the patient safety team once per month.
- These reports are also forwarded to other specialists, for instance, a clinical pharmacist.
- The MIR contains following information: reporting person name and email (or anonymous), description of what and when happened, the location in which the incident occurred, was this incident a never event, the degree of harm to the patient (from no harm to death), the staff group the reporter belong to, the patient age and the medical record number, suggestions how to avoid such event.
- Harm levels were analysed according to the National Patient Safety Agency definition[1]. Causal mechanisms associated with near miss reports, were based on Joint Commission patient safety event taxonomy[2].

## Results

- A total of 18380 patients were treated in the hospital during the study period. Only 0.4% of patients were involved in the reports on the medication incidents in 2016. (Table 1)

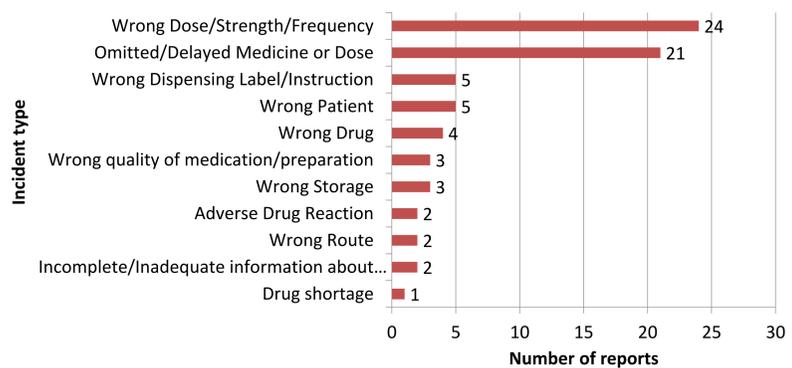
Table 1. Number of patient safety reports in 2013-2016

Year	2013	2014	2015	2016
	n (%)	n (%)	n (%)	n (%)
Total No of all reports	77	153	194	317
Medication incidents reports	N/A	26 (17.0)	30 (15.5)	72 (22.7)

Table 2. Medications and medication groups reported in 2016

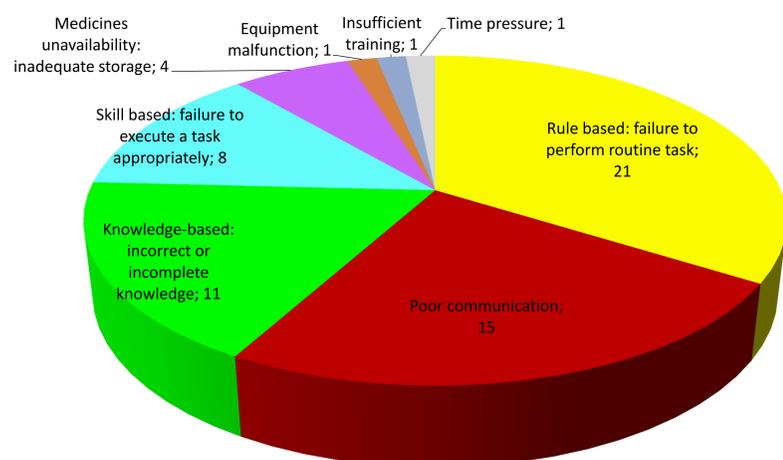
Medication groups	Wrong dose/strength/frequency	Omitted/delayed medicine or dose
Total number of reports	24 (%)	21 (%)
IV fluids	8 (33.3)	0
Antibiotics	6 (25.0)	9 (42.9)
Pain medications	5 (20.8)	4 (19.0)
Antipyretics	2 (8.3)	0
Insulin	0	2 (9.5)
Psychotropic medications	2 (8.3)	1 (4.8)
Other	1 (4.3)	5 (23.8)

Figure 1. Types of medication errors reported in 2016



- There were 4/72 (5.6%) cases reported without potential for harm and 6/72 (8.3%) cases, all preventable, when patients were harmed.
- Half of the patients (3 out of 6) had low harm and another half had moderate harm. For instance, an intravenous calcium gluconate injection caused local necrosis in a neonate's forearm.
- The rest, 62 (86.1%) reports were classified as near miss. In 22/62 (35.5%) cases patients were not harmed due to capture before reaching the patient and in 40 (64.5%) cases patients were not harmed due to robustness of the patient or timely intervention. An example:
- A diclofenac sodium intravenous injection was prescribed 75 mg 3 times per day to 13 years old patient. The maximum adult daily dose is 150 mg [8, 9]. A clinical pharmacist contacted a physician before the patient received the second and third dose and the dose was changed.

Figure 2. Causal mechanisms associated with near miss reports, based on Joint Commission patient safety event taxonomy



## Causal mechanisms' examples:

- Rule based: failure to perform routine task:
  - \* A patient in a bed B received an inhalation prescribed to a patient in a bed A.
  - \* Intravenous medicines prepared in a syringe for administration were stored in nonsterile place (a patient cabinet)
- Poor communication:
  - \* Parents gave their own medicines to the child. A doctor was not informed.

## Conclusion

- Our study show a similar tendency described in the Archer et.al. study[3] that MIR reporting is still low and little has changed in the attitudes and behaviours towards MIR.
- Focusing error reduction efforts on improving the communication, as well as applying a better performance of routine tasks would likely yield the best results in reducing the reports on the medication incidents since these errors combined accounted for the biggest part of the reported errors.

## Literature

- [1] <http://www.nrls.npsa.nhs.uk/EasySiteWeb/getresource.axd?AssetID=61392>
- [2] Chang A, et al. The JCAHO patient safety event taxonomy: a standardized terminology and classification schema for near misses and adverse events. *Int J Qual Health Care.* 2005 Apr;17(2):95-105.
- [3] Archer G, Colhoun A. Incident reporting behaviours following the Francis report-A cross-sectional survey. *J Eval Clin Pract.* 2017 Nov 17.