MEDICATION EVENTS IN IMMUNOCOMPROMISED PEDIATRIC PATIENTS

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Background
The aim of the study was to evaluate the medication events concerning chemotherapy and immunosuppressive medication reported from the Pediatric Oncology and Hematopoietic Stem Cell Transplantation (HEM-ONC) and Solid Organ Transplantation (PEDTX) units in tertiary children´s hospital.

Materials and methods
This study was conducted at Department of Children and Adolescents, HUS Helsinki University Hospital, which is a 130 bed tertiary hospital in Finland serving a population of 1.6 million. All pediatric solid organ transplantations and pediatric allogenic hematopoietic stem cell transplantions in Finland are performed at our institution. Voluntary web-based events reporting system HaiPro has been in use since 2009. Since then, more than 2000 medication events have been reported by health care professionals of the Department of Children and Adolescents.

Results
Between June 2009 and December 2014, 409 medication events were identified; 278 in HEM-ONC and 131 in PEDTX. Inpatient days of these were 4751 and 1612 days in 2017 respectively. In HEM-ONC 69% (193/278) and PEDTX 86% (113/131) of the reported medication events reached the patient. No fatal events were reported.

We analysed the types of medication errors (Fig 1). There were many different drugs related to the errors. Data was very scattered. Drugs most often involved with errors are shown in Table 1.

Conclusions
The main finding of our study was, that the cilinically significant medication events were rare; only one event caused significant risk for the patient. The HEM-ONC and PEDTX wards have constantly developed and improved their medication safety culture based on the reported events. Both wards have an active attitude and have had emphasis on improvements of patient safety culture, which is currently at a good level. However, there are still efforts to be made to further promote the safe use of drugs, and medication safety culture at our hospital, f.ex. to increase the proportion of reported near-misses out of all reported events.

Emphasis to improve Active attitude

Table 1. Drugs most often involved with errors

Drug / No. of errors in PEDTX (N= 131)		Drug / No. of errors in HEM-ONC (N=278)	
Cyclosporine, n (%)	18 (14)	Methotrexate, n (%)	15 (5)
Furosemide (with albumin 4) , n (%)	9 (7)	Calcium levofolinate, n (%)	14 (5)
Azathioprine, n (%)	6 (5)	Mercaptopurin, n (%)	13 (5)
Methylprednisolone (5) + Prednisolone (1), n (%)	6 (5)	Vincristine, n (%)	13 (5)
Sirolimus (1) + tacrolimus (4), n (%)	5 (4)	Morphine, n (%)	11 (4)

Figure 1 Medication errors included to the study, N=409