

# paediatric-dosages.ch: from a dosage booklet to a “clinical decision support system”

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## Introduction

Adverse drug events caused by medication errors are about three times as frequent in hospitalised children as they are in adult patients [1]. In many cases, pharmacotherapy in children requires additional know-how because of a lack of data about the use of drugs in this patient population. In Switzerland, about 50% of the drugs are prescribed off label or are unlicensed in paediatrics [2, 3]. The fact that wrong doses are amongst the most frequent medication errors in children [1, 4, 5] shows that finding the right dose is an especially demanding task for health-care professionals.

## Aims

1. To create an internationally accessible website providing healthcare professionals with data about paediatric dosages of the University Children's Hospital Zurich in a user-friendly way.
2. To provide data about paediatric dosages in a highly structured manner in order to enable integration into the electronic prescribing process as “clinical decision support”.
3. To accompany the implementation of the automatic calculation of individual dosages in the electronic prescribing process by conducting a scientific study.

## Methods, results and discussion

In 2008 the pharmaceutical service of the Children's Hospital Zurich began to develop a highly structured database, enabling creation of the website [www.kinderdosierung.ch](http://www.kinderdosierung.ch) (German) which is available free of charge to any healthcare professional. In 2013 the database was translated to French and is now available to French speaking healthcare professionals under [www.posologies-pediatriques.ch](http://www.posologies-pediatriques.ch).

Today the website contains about 3'000 datasets providing information on around 330 different active substances. In

addition to dosage information the database also contains general information about drugs – always focusing on safe drug use in children. However, all this information does not eliminate the problem of wrong dosages potentially being applied to patients. Therefore, the website also offers the possibility to automatically calculate required dosages for any child according to patient specific attributes such as age, weight and / or body surface area, making calculation of the individual dose easier and therefore safer. This year's project will be the integration of the dosage database and calculator into the electronic prescribing tool of the Children's Hospital Zurich.

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## References

- 1 Kaushal R, Bates DW, Landrigan C, et al. Medication errors and adverse drug events in pediatric inpatients. *JAMA*. 2001;285(16):2114–20.
- 2 Lampert ML, Stohler NA, Fahrenstich H et al. Use of off-label and unlicensed drugs in the intensive care units of a paediatric university hospital in Switzerland. *GSASA News*. 2004;18(2):36–8.
- 3 Di Paolo ER, Stoetter H, Cotting J et al. Unlicensed and off-label use in a Swiss paediatric university hospital. *Swiss Med Wkly*. 2006;136(13-14):218–22.
- 4 Miller MR, Robinson KA, Lubomski LH et al. Medication errors in paediatric care: a systematic review of epidemiology and an evaluation of evidence supporting reduction strategy recommendations. *Qual Saf Health Care*. 2007;16(2):116–26.
- 5 Conroy S, Sweis D, Planner C et al. Interventions to reduce dosing errors in children: a systematic review of the literature. *Drug Saf*. 2007;30(12):1111–25.