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Introduction

Adverse drug events caused by medication errors are about three times as frequent in hospitalized 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 unlicensed in pediatrics [2, 3]. The fact that wrong doses are amongst the most frequent medication errors in children [1] shows that finding the right dose is an especially demanding task for health-care professionals.

Aim

- To provide data about pediatric dosages in a highly structured manner in order to enable integration into the electronic prescribing process as "clinical decision support".
- To create a website providing healthcare professionals with data about pediatric dosages in a user-friendly way.

Methods and results

In 2008 the pharmaceutical service of the University Children's Hospital Zurich began to develop a highly structured database which allowed us to create the website www.kinderdosierungen.ch (German) in 2012. The database was then translated and has been made available in French as well www.posologies-pediatriques.ch in November 2013. Today it contains up-to-date drug information combined with the profound experience of the Children's Hospital Zurich about around 330 different active substances. The website is available to any healthcare professional in Europe, free of charge. Within one year 37 institutions and more than 9'000 single users have registered.

Conclusion

With the project „pediatric-dosages.ch“ including free access to the website www.pediatric-dosages.ch for health-care professionals the Children's Hospital Zurich brakes new ground and contributes substantially to the improvement of medication safety in children.

The team of the division of pharmacy of the Children's Hospital Zurich wins together with Infoserv Aeschbacher with its project "pediatric-dosages.ch: Children's Hospital Zurich makes its know-how accessible to health care professionals" the Swiss Quality Award 2013 in the category patient safety.

Search functions

At the moment three different search functions are active: search for drug name, for generic name and for ATC code.

Login

[swiss-rx-login.ch](http://www.swiss-rx-login.ch)
für Schlüssel zu pharmazeutischen Informationen

Use of the website is free of charge.

Single users

Access for Swiss health-care professionals is granted through the [swiss-rx-login.ch](http://www.swiss-rx-login.ch).

At the moment "non-Swiss" health-care professionals have to go through a more complicated login process - for more information please consult "Login for foreign health-care professionals and students" on our website.

Institutions

For larger organizations institutional access is provided. After signing a user agreement with the Children's Hospital Zurich every member of the institution is granted access to the website without further login process.

Dosage calculations

The website offers the possibility to automatically calculate required dosages for any child according to age, weight and / or body surface area of the patient. Even dosage calculations for preterm children, based on the actual gestational age, are possible.

„direct deep link“ to www.compendium.ch

A „direct deep link“ between the databases www.compendium.ch (Swiss summary of product characteristics) and www.kinderdosierungen.ch allows Swiss health-care professionals optimal utilization of both databases by combining them with one click.

Evidence level

In the course of the actual revision of the database the evidence levels (A to D) for given information are being added.

General recommendations

Included in the database are details about the application of drugs. For example, flavour of oral preparations, shelf live after opening a bottle, possibility to crush tablets or information about included application aids are enlisted where available.

Plausibility check for children's data

A plausibility check for patient data is included in the calculation tool. To prevent dosage errors caused by simple typing errors patient data is compared to Swiss percentile curves upon entry.

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Planned developments in 2014

- Integration of generic products
- Simplifying login for non-Swiss health-care professionals
- Programming of a mobile application
- Revision of the indications (new search function)
- Integration of our database into the electronic prescribing process (monitored by an observational study focussing on medication errors in children)
- Integration of a "resuscitation button", a direct link to dosages required for reanimation
- Upgrading of the plausibility check for premature infants
- Translation into English (www.pediatric-dosages.ch)

References

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