pediatric-dosages.ch: from a dosage booklet to a “clinical decision support system“
eHealth Summit

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Conflict of interest

I. Ownership or other investments - none

II. Member of managing body - none

III. Member of scientific advisory body - none

IV. Employment
Kinderspital Zürich – Eleonore Foundation (since 2007)

V. Consultancy / Advice – none

VI. Research funding
Cooperation between e-mediat AG/Documed AG and the Children’s Hospital Zurich
(since Nov 2012)
(both concerning the project “pediatric-dosages.ch”)

GSASA national research funding (2014) (concerning the project “Prescribing errors in children:
What is the impact of a computerized physician order entry with a sophisticated clinical decision
support system?”)

VII. Intellectual property rights - none

VIII. Other membership or affiliations
President of the GSASA (since 2014, Vice-President 2012/13)
Member of the pediatric working group GSASA (since 2008, until 2013 head of the group)
Delegate of pharmaSuisse (since 2012)
Member of pharmaSuisse, GSASA, SAPP and SGP (associated member)

IX. Interests of close family members – none

X. Other - none

GSASA: Swiss Association of Public Health Administration and Hospital Pharmacists (www.gsasa.ch)
[according to: Implementing act to the policy on declaration of interests guidance document on declarations of interests, European Food Safety Authority, 2009]
Our „daily business“ concerning drug therapy in children...

– High proportion of off-label und unlicensed use
– Lack of data
  – Pharmacokinetics & pharmacodynamics
  – Effects and adverse drug reactions
– Missing drug formulations
  ⇝ Increased rate of medication errors
  ⇝ Increased vulnerability of adverse drug reactions
– Drug shortages –
  pediatric patients are even more affected than adult patients
– High administrative efforts concerning requests to cover the costs by health care
  insurances with off-label und unlicensed drug use (KVV Art. 71 a/b)
  ⇝ Additional data
  ⇝ Additional know-how
  ⇝ Additional clinical support
Pediatric dosage booklets and online “databases”

- Why are these references not sufficient?
  - Dosages as “full text”
  - Aim: reduction of prescribing errors
    ⇒ process integrated as a „clinical decision support”
    ⇒ dosage calculation according to age, weight and/or body surface area

- Development of a database with pediatric dosages began in 2008
  - full text information ⇒ ⇒ ⇒ highly structured database
From a full-text version to a highly structured database

- Definition of pediatric ages
- Lack of dosages in specific age groups
- Handling with maximum single or daily doses in children
- Dealing with pediatric dosages which exceed adult dosages

[Dosierungs bü chlein , Kispi ZH, 2006]

⇒ The effort concerning data structuring is underestimated.
⇒ “Paper” tolerates much more errors and missing data then a structured database.
From a highly structured database to a website with an integrated calculator

- Programming of the website
  - User-friendly design
  - Search functions

- Direct deep link between www.pediatric-dosages.ch and www.compendium.ch

- Programming of the “calculator”
  - Dosage calculations
  - Plausibility check for children’s data
  ⇒ “clinical decision support”

- Legal aspects
- Financial aspects
www.pediatric-dosages.ch
www.kinderdosierungen.ch
www.posologies-pediatric.ch

– Pediatric dosages, 330 different active substances, about 3’000 datasets
– Search functions: drug name, generic name and ATC
– Selection of the indication
– “General remarks” (not completed)
  – “cave” (warnings), pharmacokinetics, renal failure, adverse drug reactions etc.
  – Remarks concerning the application of a drug (with focus on children)
– References
– „Direct deep link“ between www.compendium.ch and www.pediatric-dosages.ch
– French version since November 2013 (www.posologies-pediatriques.ch)
– Free access for health-care professionals
…to a “clinical decision support system”

– Integration of our database into the electronic prescribing process
– AllKids project
  (Ostschweizer Kinderspital St. Gallen, Universitäts-Kinderspital beider Basel, Universitätskinderspital Zürich)
– PHOENIX Kindermedikation (G3-Technology by CompuGroup Medical)
– Tests in progress – successful integration of the “calculator”/database
– Ongoing optimisation of the prescribing tool
– Time schedule depending on requirements regarding the “parenteral drug prescribing process”

– Monitoring by an observational study focussing on medication prescribing errors
  Prescribing errors in children: What is the impact of a computerized physician order entry with a sophisticated clinical decision support system?
Some technical aspects…
Planned developments in 2014/2015

– Technical modifications due to the second language ✔
– Programming of a “generic tool” ✔ and integration of generic products ✅
– Optimising of the search “process” for generic names ✔
– Simplifying login for non-Swiss health-care professionals ✅
– Programming of a mobile application ✅
– Conformity assessment of the calculator (medical device) ❌❓
– Integration of our database/calculator into the electronic prescribing process, and ✅
– Monitoring of the integration by an observational study focusing on medication errors in children ✅
– Integration of a “resuscitation button”, a direct link to dosages required for reanimation ✅
– Completion of the evidence levels ✅
– Revision of the indication (“extended” ICD-10 codes) and new search function ✅
– Upgrading of the plausibility check for premature infants ✅
– Translation into English (www.pediatric-dosages.ch) ✅
Clinical decision support

PHOENIX Kindermedikation
(G3-Technology by CompuGroup Medical)
(development stage)
Who benefits from the project “pediatric-dosages.ch”?

UNIVERSITÄTS-KINDERSPITAL ZÜRICH

Documed

e-mediat

UKBB

Universitäts-Kinderspital beider Basel

GSASA

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