<p>Experts opinion and technical assessment allows the selection of drug related problems to be targeted by a CDSS in pediatrics</p>

**Selection of clinical rules for the screening of high-risk situations in paediatric medicine**

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### Objectives

- Develop a selecting method for clinical rules (CR) dedicated to prevent critical drug related problems (DRP) via our clinical decision support system (CDSS)
- Draw up a list of CR adapted to the pediatric department

### Conclusion

- Selection criteria for CR took into account
  - Experts opinion regarding DRP potential clinical impact and relevance
  - The feasibility to implement CR in PharmaCheck
- 24 Clinical rules were selected, 8 concerned all pediatric specialties and should be implemented in priority for better efficiency

**PharmaCheck**

is a CDSS for the screening of high-risk situations with CR involving drug prescriptions, lab values, vital signs and medical problems

**Identification of clinical rules potentially relevant for pediatrics**

with a literature review: 56 CR potentially relevant for children were selected and presented to 14 senior physicians (experts) in 8 pediatric specialties

- Inclusion of pediatric medical specialties according to the 2 computerized physician order entries used in Geneva University Hospital
  - Group A: general pediatrics, oncology, pneumology, gastroenterology/hepatology, surgery, cardiology
  - Group B: intensive care, neonatology

### CR concerning more than 1 pediatric specialty (assessed by ≥ 5 experts)

- CR concerning only 1 pediatric specialty (assessed by ≥ 5 experts)

**Clinical rule scoring**

**Clinical rules selection criteria**

**Medication with abnormal lab value**

- Parenteral potassium chloride with hypokalemia
- Vancomycin dose not adjusted to renal function
- Aminoglycosides prescription with supratherapeutic blood levels
- Furosemide prescription with hypokalemia, hyponatremia or hypovolemia
- Heparin prescription with thrombopenia
- Low molecular weight heparin prescription with severe or terminal renal impairment

**Inappropriate administration mode**

- Methotrexate inappropriate frequency of administration
- Vancomycin inappropriate length of administration
- Peripheral venous infusion of potassium chloride at a concentration greater than 40 mmol/l
- Insulin prescription with hypoglycemia
- Low molecular weight heparin prescription with severe or terminal renal impairment

**Medication contraindicated or to use with caution**

- Dose confusion between non-liposomal and liposomal amphotericin-B
- Prescription of a nephrotic medication function for ≥ 3 days
- Paracetamol dose greater than maximum authorized daily-dose/unique dose

**Drug-drug interaction**

- Prescription of CYP3A4 substrate with a strong inducer or inhibitor
- Co-prescription of ≥ 3 analgesic or sedative drugs
- Co-prescription of ≥ 2 NSAIDs
- Co-prescription of a macrolide with ciclosporin or tacrolimus
- Co-prescription of methotrexate and trimethoprim
- Co-prescription of immunomodulatory therapy (over/under dosed (dosed level) with a strong CYP3A4 inducer or inhibitor
- Co-prescription of parenteral calcium with digoxine
- Co-prescription of aminoglycoside with another ototoxic medication
- Co-prescription of ≥ 2 nephrototoxic medications
- Co-prescription of ≥ 2 drugs inducing QT prolongation

**Medication omission**

- Opioid prescription for more ≥ 48h without laxative medication

### Poster 4CPS

24 clinical rules were selected after assessment of their criticality, their relevance and their technical feasibility