GRiP – Global Research in Paediatrics

Pediatric Pharmacoepidemiology Platform

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On behalf of the GRiP Network of Excellence
Objectives WP 2

• To **develop an integrated electronic infrastructure** for pediatric (pharmaco)epidemiological research

• This infrastructure will exploit and link existing healthcare databases around the world to assess the **occurrence of diseases** in children, plus the **use and effects** of drugs (including vaccines) on a large scale.

• Methodologies for harmonization, data exchange across national boundaries (including ethical and governance issues), data mining and comparative safety and effectiveness studies will be developed and tested.

The research leading to these results has received funding from the European Union Seventh Framework Programme (FP7/2007-2013) under grant agreement n° 261060
What is the current status regarding evidence on effects of drugs in pediatrics?

- Many complaints about lack of data in pediatrics
- Many studies showing the off-label use of drugs in children
- Several pediatric regulations/initiatives to boost trials in children in the beginning of 2000 (FDA/EMA/WHO)
- Postmarketing data need to be utilized, as many children are exposed very day and this information should be utilized.
- No single database has enough power to study serious safety issues in children. E.g. EU-ADR:
  - 4.8 million children/adolescents across 7 databases in 4 countries, 25 Million PY
  - Total 2,170 drugs prescribed / dispensed
  - Anaphylactic shock (3/100,000): only for 8 drugs power to demonstrate RR>4
  - UGIB (10/100,000) only for 39 drugs power to demonstrate RR> 4
TO BUILD a SUSTAINABLE & TESTED GLOBAL PLATFORM TO IMPROVE INFORMATION ON THE USE & EFFECTS OF DRUGS IN CHILDREN
Key Products WP 2

1) A technical operational research infrastructure for collaborative data sharing / analysis accessible around the world

2) A catalogue of databases with contact and meta-data on pediatric patients that can be approached for collaborative pharmacoepidemiological studies

3) Description of ethical and governance issues related to secondary use of health care data across the world

4) Description of paediatric spontaneous reports in WHO-VIGIBASE, EUDRAVIGILANCE, AERS and VAERS

5) Catalogue of disease codes for different pediatric events to be extracted in SRS and EHR databases

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Key Products WP 2

6) Reference set of positive and negative controls for signal detection to be used (vaccines/drugs)

7) Tested methods for Signal detection in pediatrics (SRS/EHR) and a comparison between databases and methods, together with EMA, PROTECT & OMOP

8) Templates and global proof of concept studies on drug/vaccine use, disease incidence, drug safety and effectiveness

9) Pediatric pharmacoepidemiology courses (e-learning)

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Some outputs.. so far
Platform for data-sharing (Octopus)

- Functional platform in ARITMO, SAFEGUARD, GRIP
- Shared aggregated data within firewalls
- Remote access to work together and analyse and rotate coordinator ship

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## Description of available spontaneous reports
*(EUDRAVIGILANCE being analysed)*

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Catalogue of databases to identify pediatric data globally

Databases are contacted and requested to fill out an online survey

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Results of the survey

N. of responders= 46 (35% of 130 DB contacted)
only 20 from EU

Do you agree to be involved in the GRiP project?

- yes (29) 63%
- no (5) 11%
- no answer (2) 4%
- not completed or not displayed (10) 22%

FDA will make SENTINEL available as well for studies

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Invitation to ENCePP sites

• Participate in GRiP

• What to do?
  1) Complete the survey if you have access to population-based data on drug/vaccine use / outcomes comprising children
  2) Participate in proof of concept studies

• What do you get?
  1) Get access to the OCTOPUS platform to initiate & perform studies
  2) Publish together & boost the field of pediatrics
  3) Find your partners for collaborative studies in pediatrics around the world

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First proof of concept study proposal for collaboration

- Use & quality of prescribing of antibiotics in children globally
- ARPEC project (Mike Sharland): large differences in annual prevalence of use

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How to participate?

• Indicate your interest

• Requirements:
  – Access to prescription database & population database
  – Creation of two standardized input files locally
    • population: identifier, start follow-up, end follow-up, date of birth, sex
    • Prescriptions: identifier, date, ATC code, duration
  – Run JAVA or SAS script locally and share output table on RRE (in excel)
  – Get token for RRE access
  – Analyse/discuss /publish together with your colleagues

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What is being shared on RRE?

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Summary

• GRiP will provide a platform to work together
• ENCePP sites not yet well represented, whereas large USA sites will participate
• Opportunity to start working together (proof of concept) on a very relevant topic

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**Participants— WP 2**

### Major contributors
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- **CVBFTEDDY** (A. Ceci)
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- **WHO** (Krisanta Weereasuriya)
- **FDA**
- **P-95**

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