

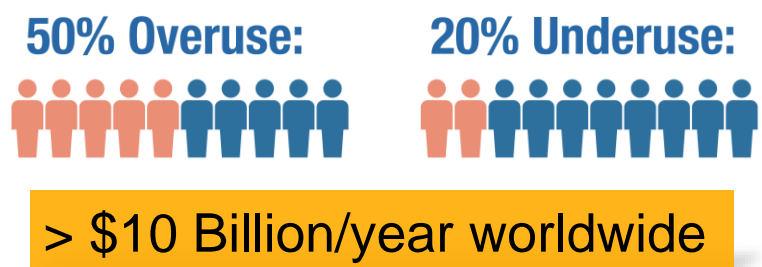
TRAIL, IP-10, CRP, AND IMMUNOXPert™ LEVELS IN CHILDREN WITH ACUTE RESPIRATORY TRACT INFECTIONS – AN INTERIM ANALYSIS FROM THE AUTOPILOT-DX-STUDY

C. Papan¹, M. Porwoll¹, U. Hakim¹, A. Argentiero², E. Farinelli², I. Testa², M.B. Pasticci², D. Mezzetti², K. Perruccio², L. Etshtein³, N. Mastboim³, A. Cohen³, E. Simon³, O. Boico³, L. Shani³, T. Gottlieb³, R. Navon³, K. Oved³, E. Eden³, A. Simon⁴, J.G. Liese⁵, M. Knuf⁶, S. Schneider⁷, S. Esposito², T. Tenenbaum¹

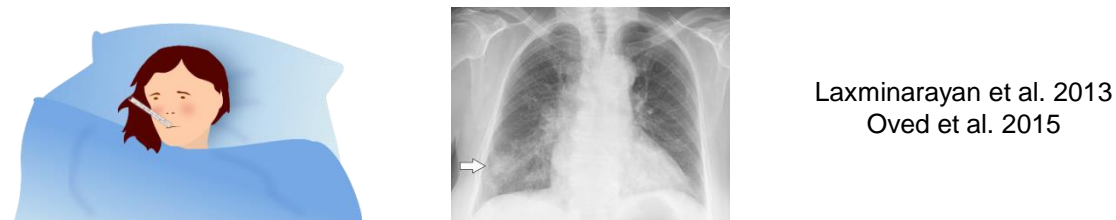
¹University Children's Hospital Mannheim- Heidelberg University, Pediatric Infectious Diseases, Mannheim, Germany, ²Pediatric Clinic- Department of Surgical and Biomedical Sciences, Università degli Studi di Perugia, Perugia, Italy, ³MeMed diagnostics, Haifa, Israel, ⁴Pediatric Oncology and Haematology, Saarland University Hospital, Saar- Homburg, Germany, ⁵Department of Pediatrics, University of Würzburg, Würzburg, Germany, ⁶Children's Hospital, Dr. Horst Schmidt Klinik, Wiesbaden, Germany, ⁷Institute for Clinical Chemistry, University of Heidelberg Medical Faculty Mannheim, Mannheim, Germany.

Background and Study Design

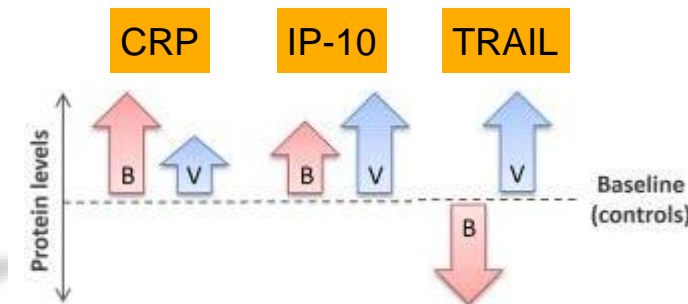
1. The burden: antibiotic misuse



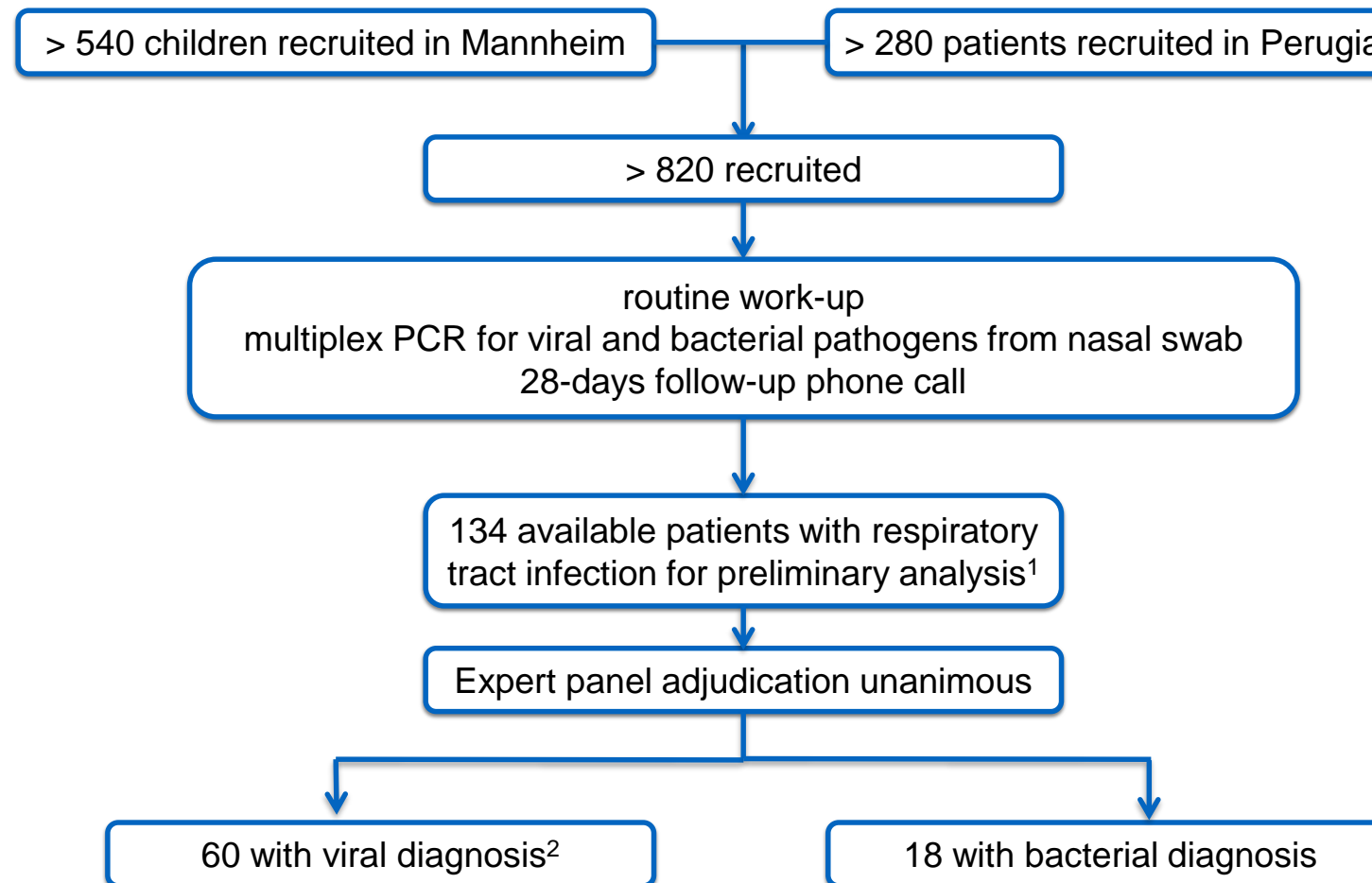
2. The dilemma: to distinguish between bacterial and viral etiology



3. The tool



4. The AutoPilot-Dx study (NCT03052088)



Study aim:

To validate the diagnostic accuracy of the ImmunoXpert™ and to assess its clinical utility

Inclusion criteria:

- Children > 90 days of age
- Documented peak temperature ≥ 38°C (100.4°F) (AND)
- Symptom duration ≤ 7 days (AND)
- Clinical suspicion of RTI (OR) fever without a clear source after clinical examination

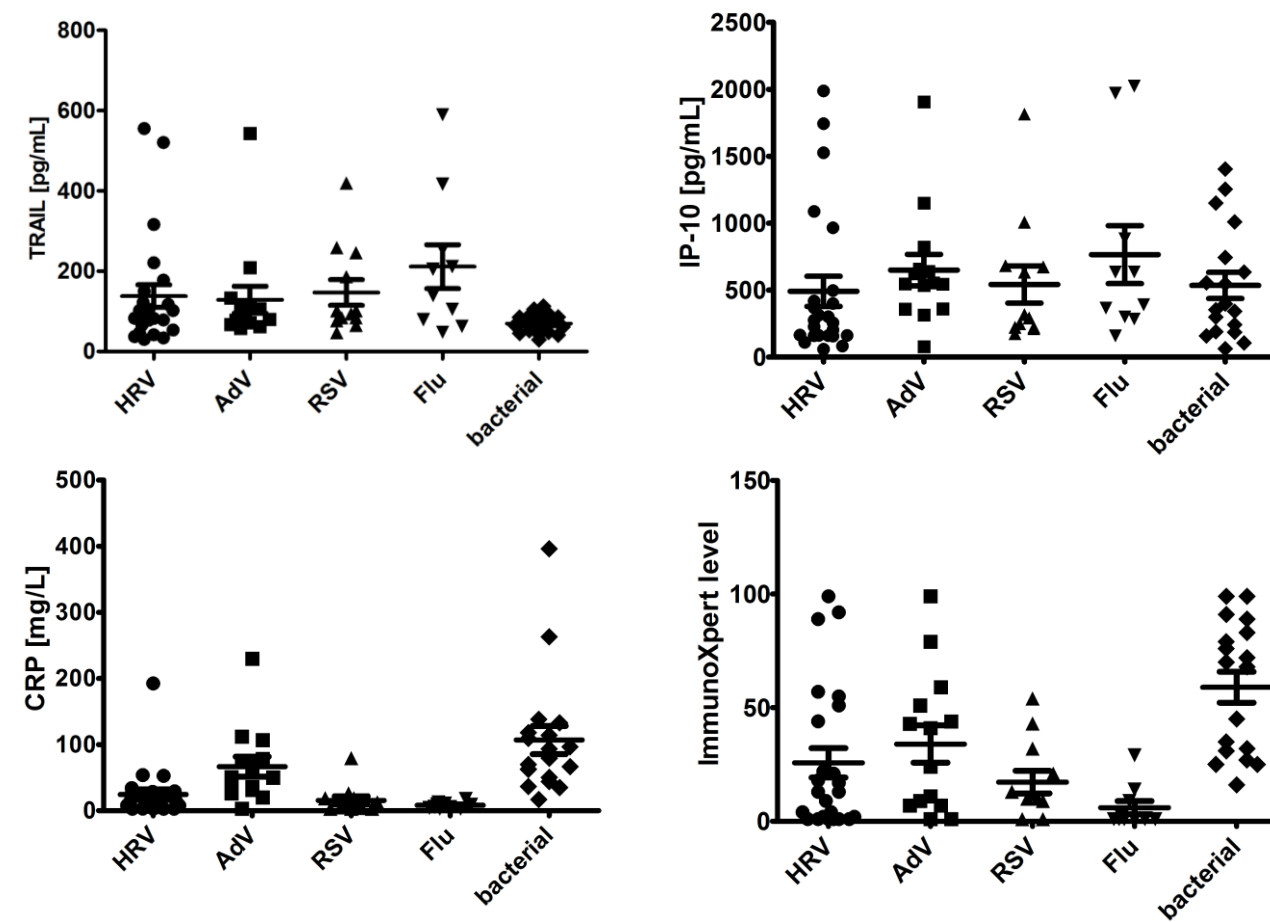
Exclusion criteria:

- Another episode of febrile infection within the past 2 weeks
- Antibiotic treatment of over 48 hours
- Primary or secondary immunodeficiency
- Severe illness that affects life expectancy and quality of life

¹ only children with suspected respiratory tract infection

² only children with viral mono-infection

Results and Discussion



- Children with viral infection had significantly higher TRAIL (150.1±137.5 vs. 67.5±23.4 pg/mL) and lower ImmunoXpert™ levels (23.3±27.4 vs. 58.5±28.2) compared to children with a bacterial infection
- TRAIL & IP-10 levels exhibited no significant differences between the viral subgroups
- CRP levels were higher in ADV infections compared to RSV, FLU and RV infections (66.6±54.4 vs. 15.6±20.6, 8.2±4.4, 25.5±37.4 mg/L, respectively).

→Detection of viral infections correlated significantly with elevated TRAIL levels.
→Despite increased CRP levels in ADV infections, ImmunoXpert™ scores were indicative of a viral infection.
→These virus-specific proteomic fingerprints appear useful for reducing antibiotic misuse in children with respiratory tract infection.