

Promoting patient safety and quality of care :
the EU contribution to national actions

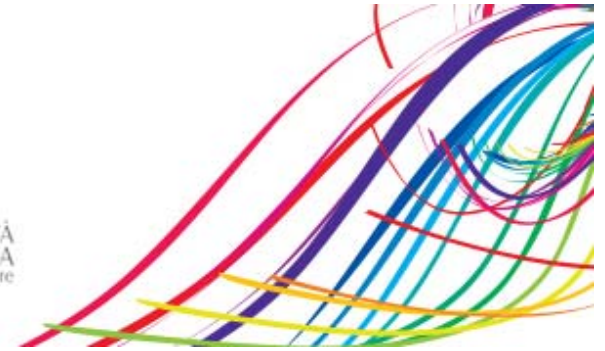
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Presidenza Italiana
del Consiglio
dell'Unione Europea



UNIVERSITÀ
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COMBATTING ANTIMICROBIAL RESISTANCE IN PAEDIATRICS The ARPEC Project



Dr. Rebecca Lundin

On behalf of the ARPEC project team

1. Overview – Antimicrobial Resistance and Prescribing in European Children (ARPEC)

- Objective: Improve quality of antibiotic prescribing among children in Europe
 - Network of neonatal/paediatric treatment centres
 - Neonatal and paediatric surveillance methods
 - Educational program on neonatal and paediatric antibiotic prescription



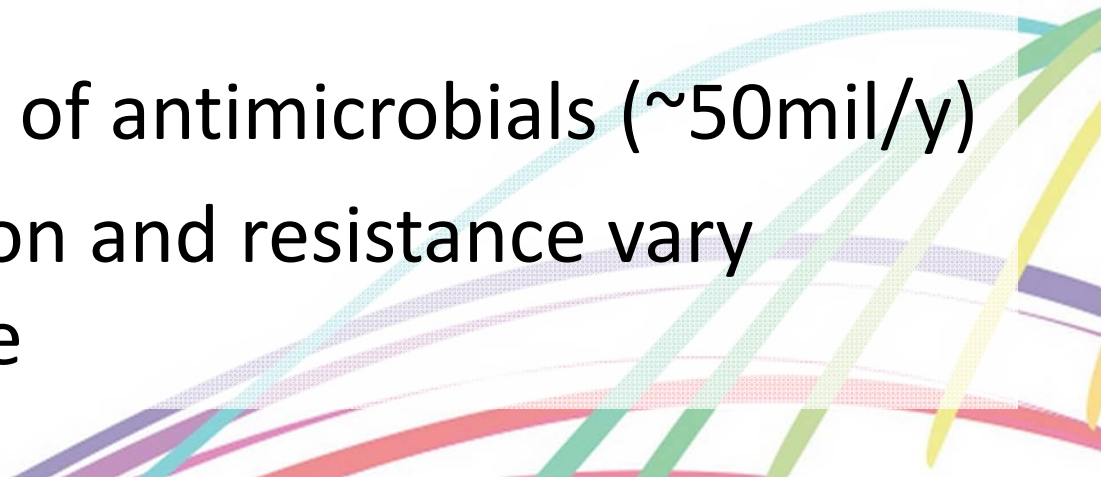
2. Context/Public health problem

Why focus on antimicrobial resistance?

- Increased duration/cost of treatment
- Worse patient outcomes

Why focus on paediatrics?

- High rates of infection, non-specific presentation
- High consumption of antimicrobials (~50mil/y)
- Patterns of infection and resistance vary significantly by age



2. Context/Public health problem

What can we do?

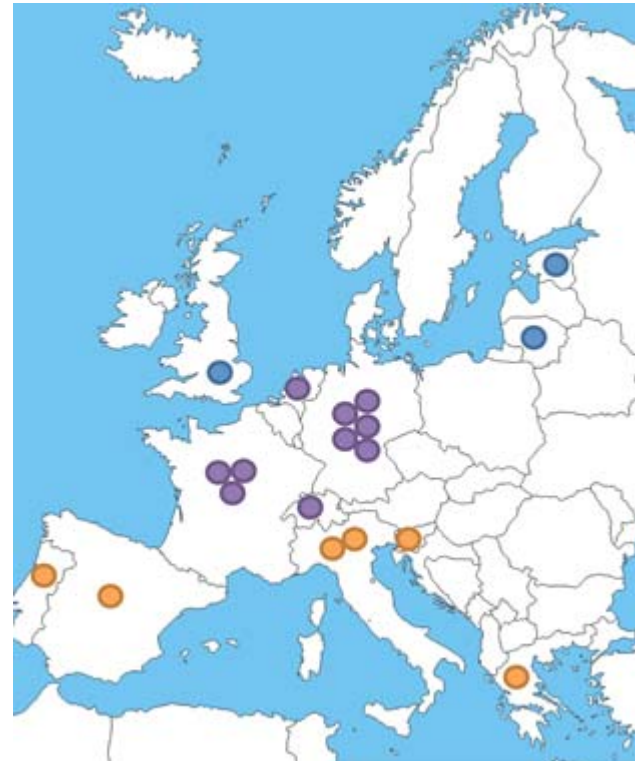
- More prudent antibiotic prescribing
- Age-specific (hospital-acquired) infection and resistance surveillance data
- Improved paediatric treatment guidelines and education



3. Key activities - methodology

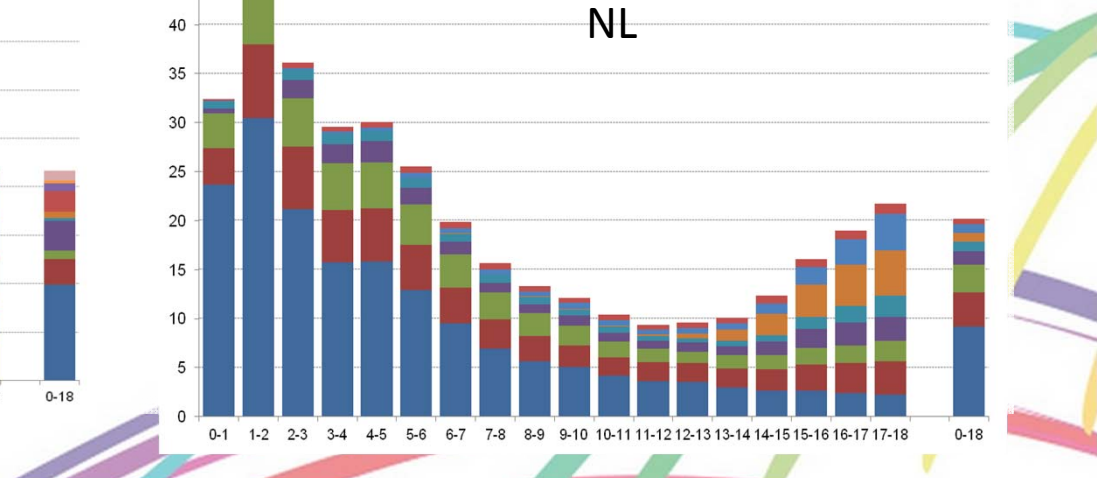
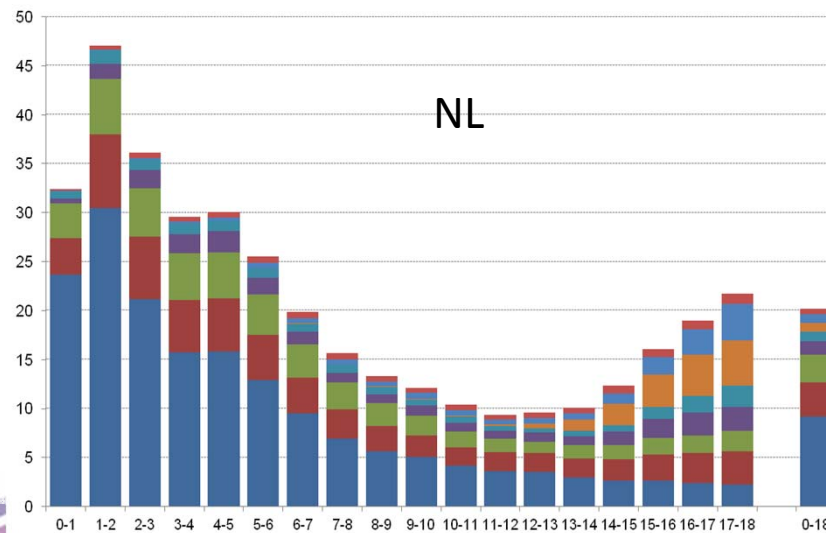
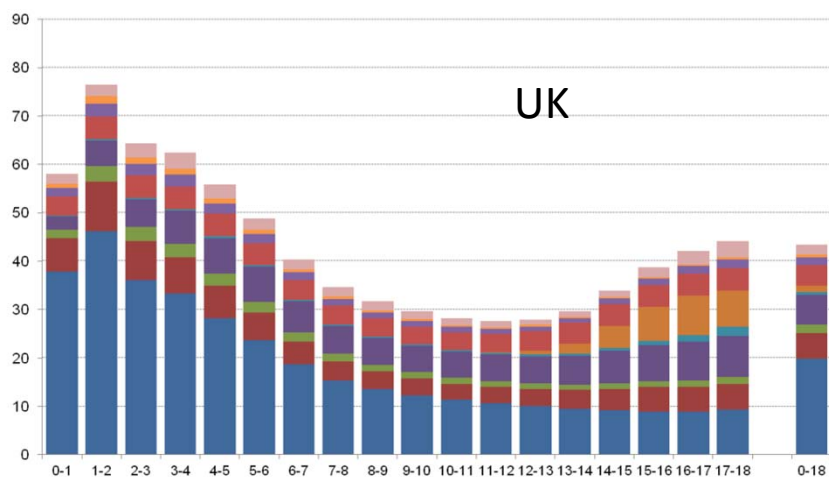
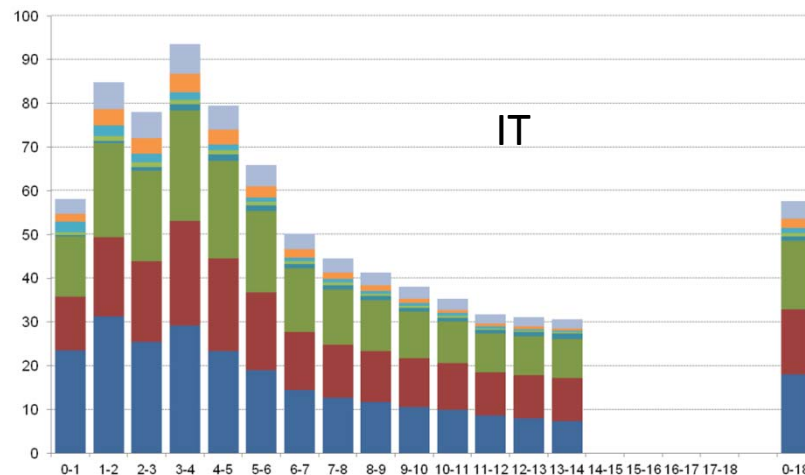
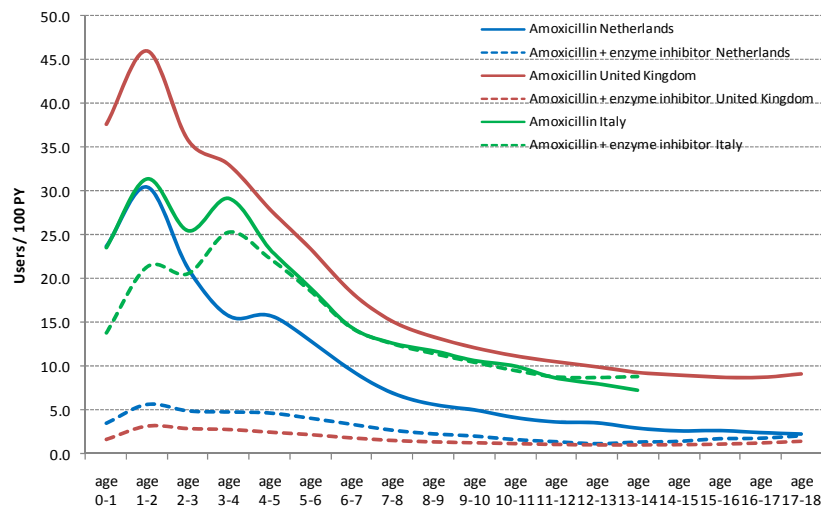


- 2010-2013 data collection
- 19 centres, 12 countries
- Children 0-18 years
- Community Prescribing: Database review
- Hospital Prescribing: PPS of 5921 and 17693 children in 2011/12
- Blood stream infection and resistance: 1848 isolates
- Guidelines from 84 centres



4. Results – Prescribing

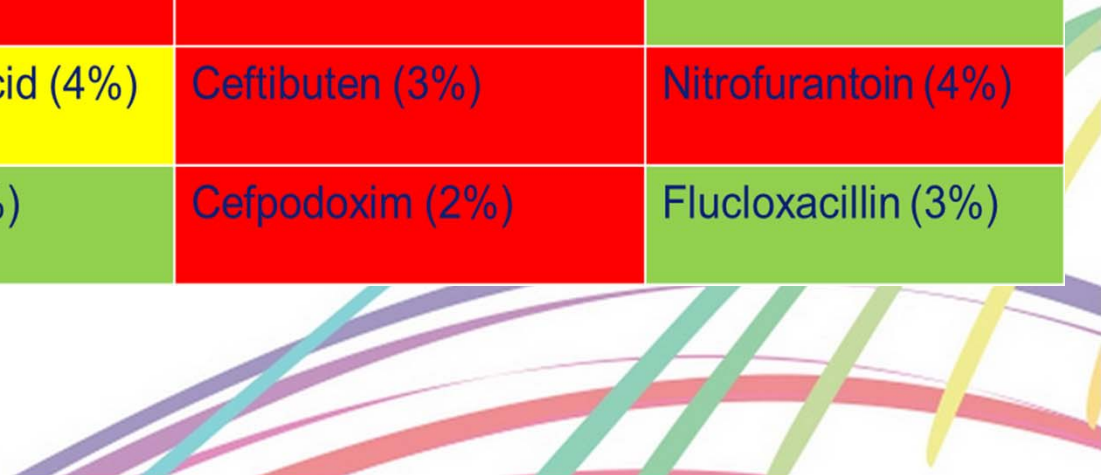
- Variation by age and country



4. Results – Prescribing

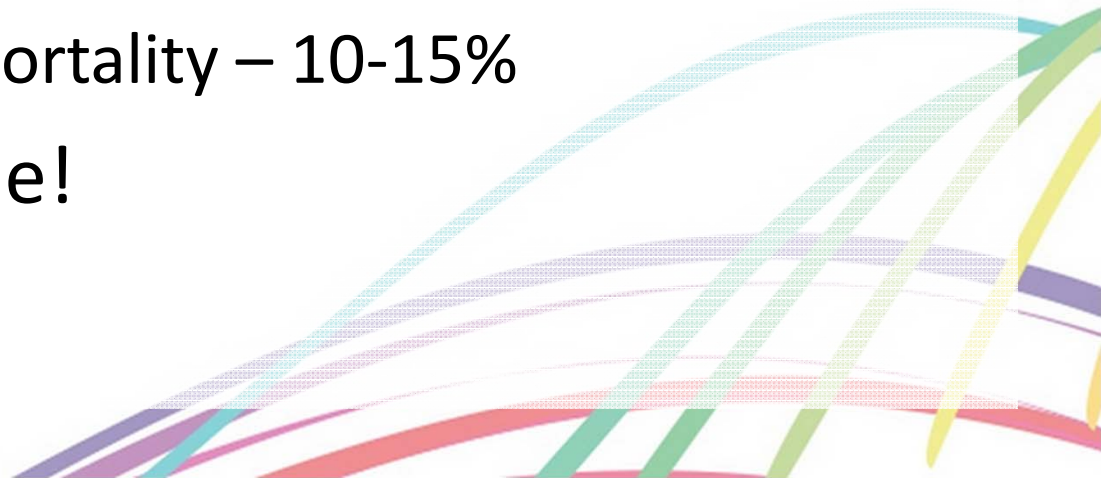
- Too many broad spectrum antibiotics

UK	Italy	NL
Amoxicillin (44%)	Amoxicillin (25%)	Amoxicillin (45%)
Penicillin V (13%)	Amox/clav acid (23%)	Amox/clav acid (13%)
Erythromycin (10%)	Azithromycin (10%)	Azithromycin (8%)
Flucloxacillin (9%)	Cefaclor (9%)	Clarithromycin (7%)
Trimethoprim (5%)	Cefixime (7%)	Pheneticillin (6%)
Amox/clav acid (4%)	Ceftibuten (3%)	Nitrofurantoin (4%)
Cefalexin(3%)	Cefpodoxim (2%)	Flucloxacillin (3%)



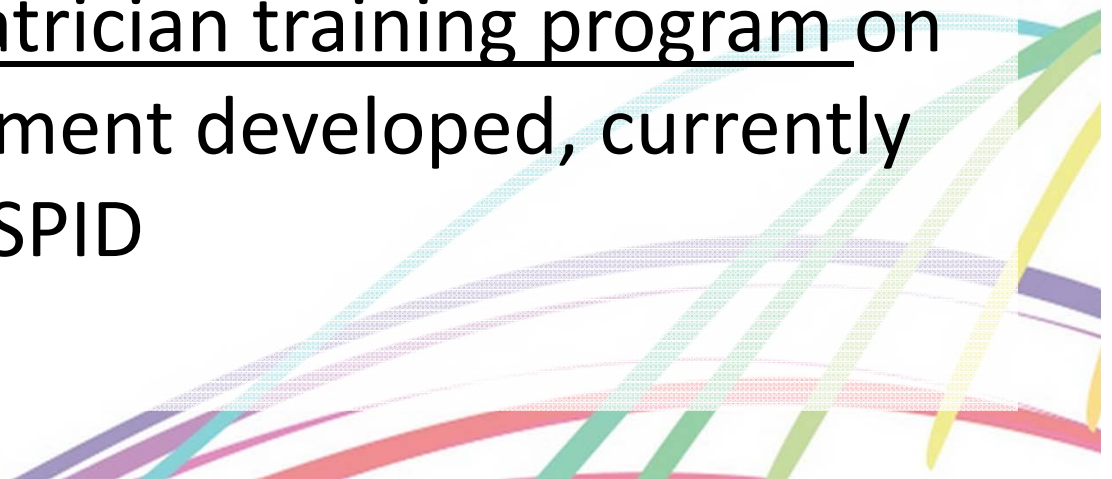
4. Results – Blood stream infections

- 37% of HAI in children vs. 13% HAI in adults
- Variation in resistance patterns by age, even among children
- High MDR Gram Negative BSI prevalence
 - High associated mortality – 15% (vs. 10% overall)
- High NICU/PICU BSI prevalence
 - High associated mortality – 10-15%
- Largely preventable!



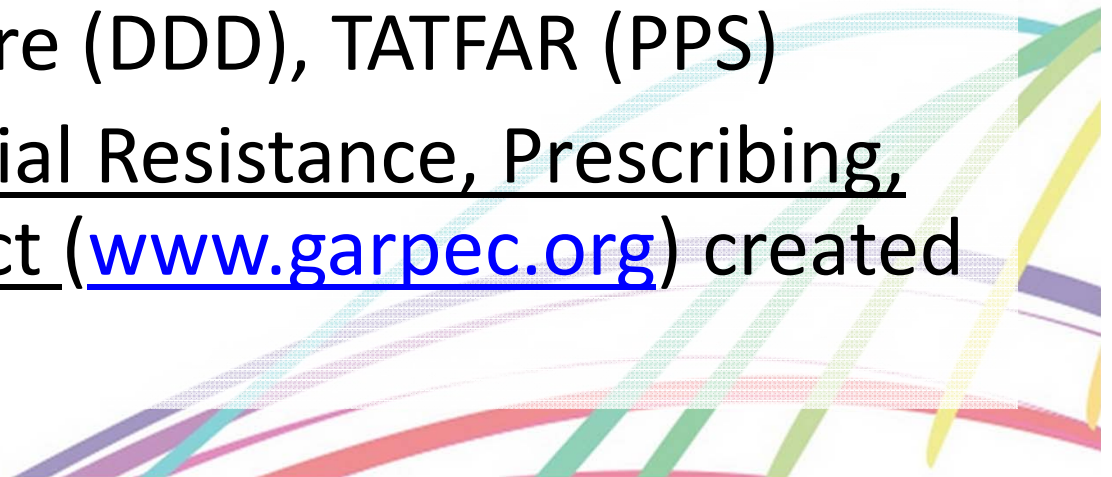
5. Sustainability and transferability

- Specific data-driven quality indicators developed (ex. 70% amoxicillin) for publication and dissemination
- Web-based data collection tools suitable for paediatric antibiotic use and resistance surveillance worldwide developed
- Web-based paediatrician training program on antibiotic management developed, currently administered by ESPID



5. Sustainability and transferability

- Antimicrobial stewardship begun in many participating centres
- PENTA paediatric HIV research network reconstituted into PENTA-ID, now level 1 clinical trials network for antimicrobials
- Collaborations with FP7 Global Research in Paediatrics project (QIs), WHO DDD collaborating centre (DDD), TATFAR (PPS)
- Global Antimicrobial Resistance, Prescribing, and Efficacy Project (www.garpec.org) created



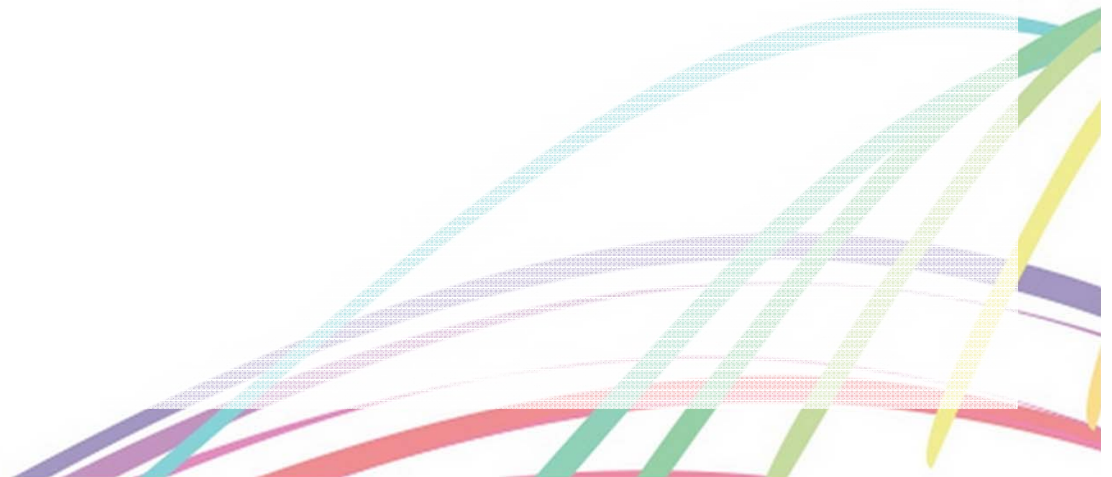
5. Sustainability and transferability

- Reporting from children's hospitals to ECDC surveillance programs should be increased
- ECDC should consider adapting existing tools for neonatal/paediatric surveillance
- Quality indicators for optimal community and hospital prescribing should be created and published for clinicians and policymakers
- All tertiary neonatal/paediatric centres should develop and implement stewardship programs
- DG-SANCO should consider quality improvement program to address unacceptably high NICU/PICU HAI in Europe



6. Project/ Programme ID Card

- 19 Partners
- 12 Countries
- €1.17 million budget, 59.49% EC funding
- 2010-2013
- <http://arpecproject.eu/>



7. Contact

Mike Sharland, Project lead

Mike.Sharland@stgeorges.nhs.uk

Rebecca Lundin

Rebecca.Lundin@pentafoundation.org

