**Data visualisation story for maximum impact - global trends and patterns on antimicrobial resistance in children**

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**Background and Aims:** Children are being left behind in the antimicrobial resistance (AMR) crisis. They are very heavy consumers of antibiotics, but lack of accessible AMR surveillance data limits efforts to address the problem. We aim to determine global AMR trends, and develop a visualisation dashboard for childhood AMR.

**Methods:** Using the large ATLAS dataset (2004-2021, 101,661 paediatric samples) during the 2023 Vivli AMR Surveillance Open Data Re-use Challenge, we analysed WHO priority pathogen resistance trends based on WHO AWaRe antibiotic classifications (Access, Watch, Reserve). We used generalised linear modelling to predict 10-year prevalence trajectories.

**Results:** Resistance in Staphylococcus aureus and Streptococcus pneumoniae has plateaued over the last decade, but this is not true for any other pathogen. Globally Enterococcus spp resistance to Watch antibiotics has increased significantly in every region, although Reserve antibiotics are largely preserved except for Serratia spp. For Gram negative bacteria, the situation is more dire, with resistance to Access antibiotics >25% globally in all pathogens except Pseudomonas spp. Over the last decade, these bacteria significantly increased resistance to Watch antibiotics, especially in resource-limited areas. The greatest increases were in Klebsiella spp (150% increase) and Acinetobacter spp (100%). Most alarmingly, resistance to Reserve antibiotics was high and increasing in Enterobacter (10%), Klebsiella (12%) and Serratia (21%) spp with an estimated 10-year trajectory of 70%, 50% and 85% respectively.

**Conclusions and Significance/Impact:** These data are concerning, and dissemination is imperative. We have therefore developed the first web-based dashboard specifically for childhood AMR. This visibility is critical to inform local guideline revisions, policy and new antibiotic access efforts.

**Lay Title:** Creating Impactful Data Visualizations: Understanding the Worldwide Challenge of Antibiotic Resistance in Children

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**Lay Summary:** We're tackling the problem of antibiotic resistance in children by creating easy-to-understand visual data. Our goal is to show global trends in antibiotic use and resistance in kids. By looking at this data, we can predict what might happen in the future. We focus on three categories of antibiotics: Access, Watch, and Reserve. Our aim is to help doctors and policymakers act early to protect children's health.

(100 words max.)