

Abstract citation ID: ckaf161.1826**Antibiotic pressure in our children may be higher than expected: results from a small-scale WBE study****Irene Amoruso****M Fonzo¹, I Amoruso¹, C Bertoncetto¹, T Baldovin¹**¹Hygiene and Public Health Unit, DCTVSP, University of Padova, Padua, Italy
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Antibiotic use and its selective pressure on bacterial populations are key factors in the emergence and spread of antimicrobial resistance (AMR). While AMR in clinical settings is well-documented, its extent in the general population, particularly among young children, remains underexplored. Wastewater-based epidemiology (WBE) offers a valuable tool to address this gap by capturing community-level data. Most WBE studies focus on large urban areas or hospital effluents, but small-scale investigations targeting well-defined populations, such as preschools, can also provide meaningful insights into AMR dynamics. This study aimed to evaluate AMR pressure in children aged 3-5 years by analysing wastewater from two preschools and comparing it to samples from five healthcare facilities, considered high antibiotic pressure environments. We focused on the detection of *Escherichia coli* and the class 1 integron-integrase gene (*intI1*), a molecular marker often associated with AMR potential in environmental and clinical settings. Monthly sampling was conducted from February to April 2025. Samples from septic tanks were homogenized, serially diluted, and plated on selective TBX agar to enumerate *E. coli*. Five colonies per sample were isolated, biochemically confirmed, and tested for beta-lactam and carbapenem resistance using ESBL and CRE agar. DNA was extracted from a pooled mixture of the five colonies per sample, and the presence of *intI1* was assessed through qPCR. The *intI1* gene was detected in 2 of 6 preschool samples (33%) and in 5 of 15 healthcare facility samples (33%). These preliminary findings suggest a possibly underestimated level of antibiotic pressure in the paediatric community. Given that *intI1* may persist even in the absence of ongoing selective pressure, our results call for a careful re-evaluation of antimicrobial use in children and underline the importance of WBE in complementing conventional AMR surveillance strategies.

Key messages:

- The unexpected frequency of *intI1* in preschool environments raises questions about the extent of potential AMR dissemination in communities and the factors contributing to it.
- Small-scale WBE can provide nuanced insights into AMR dynamics across different community settings.