

Fact Sheet: India-UK programme to tackle antimicrobial resistance in the environment from antimicrobial manufacturing waste

Who we are and what we are doing?

We are a team of interdisciplinary researchers working across five collaborative projects hosted in eleven institutions within the UK and seventeen institutions in India cross sector. We are working to tackle environmental Antimicrobial Resistance (AMR) due to pharmaceutical waste

Why we are doing this?

Antimicrobial resistance is a global health threat but the impact of antimicrobial resistance in the environment due to environmental waste remains unclear. Our research will fill existing knowledge gaps, and support the development of policy proposals for management of antimicrobial manufacturing waste

Why we are focusing on India?

- India is one of the world's largest producers of antibiotics
- High concentrations of antibiotics residues have been detected in water bodies that surround antibiotic manufacturing sites in India
- India is one of the few countries with a National Action Plan for AMR that specifically includes activities to address pharmaceutical manufacturing waste management

Our initial focus is India, and our goal is to translate our findings globally

Funders

- Natural Environment Research Council (NERC), United Kingdom
- Department of Biotechnology (DBT), Government of India

Get to know our projects

Five projects are working collaboratively across different priority topics to tackle AMR from manufacturing waste

1. **AMRflows:** Understanding and mitigating the selection and transmission of environmental AMR. Working sites in India are Hyderabad and Chennai
2. **AMR-WATCH:** Investigating the link between antibiotics manufactured by different methods, contamination levels in manufacturing wastes and downstream locations. Working sites in India are Chennai and Puducherry
3. **AMSPARE:** Understanding the impact of antibiotic pollution on the environmental microbiology, designing effective measures for monitoring antibiotic levels, and removing them from the waste if present. Working site in India is Maharashtra
4. **ResPHARM:** Resolving the fate and studying the impact of pharmaceutical waste on the environment and local community of a pharmaceutical manufacturing hub. Working sites in India are Baddi and Kangra
5. **SELECTAR:** Quantifying active antimicrobials released from antimicrobial production waste, identifying the true chemical complexity of production waste, and determining the effect of the waste on the microbial ecosystem. Working sites in India are Dera Bassi, Chandigarh, Punjab, Bhiwadi and Rajasthan

