

## **Flies (Diptera: Muscidae) and the spread of antimicrobial resistant bacteria**

### **Abstract**

It is now common knowledge that antimicrobial resistant bacteria can be transmitted via direct contact in health care facilities and the community setting.

However, recent studies highlight the importance of alternative transmission routes, such as zoonotic spread or potential dissemination through environmental sources (water, food items).

In this context, vector-borne transmission of antimicrobial resistance has rarely been investigated.

The spread of antimicrobial resistance through flies could be a challenge both in industrialized (e.g. livestock, production, global warming) and low-middle income countries (e.g. insufficient sanitary systems, immediate contact between humans and livestock).

However, there is up to date very little evidence for a public health-relevant dimension of antimicrobial resistance and flies.

Our objectives are therefore (i) to conceptualise the role of flies in the transmission of antimicrobial resistant bacteria, (ii) to identify gaps of knowledge for future research agendas and (iii) to suggest feasible strategies of intervention in both high and low/middle income countries.

Typically for a One Health approach, our topic is in the interface of the environment, animal and human health.

Our interdisciplinary working group engages sectors and actors from various disciplines (i.e. veterinary medicine, medical microbiology, entomology and infectious disease, representatives from low and middle income countries).

### **Affiliations**

Coordinator

PD Dr. med. Frieder Schaumburg, Institute of Medical Microbiology, University Hospital Münster, Germany

Partners

Dr. Abraham S. Alabi, Centre de Recherches Médicales de Lambaréné, Albert Schweitzer Hospital, Lambaréné, Gabon

Prof. Dr. Ross Fitzgerald, Roslin Institute, Royal School of Veterinary Studies, University of Edinburgh, UK

Prof. Dr. med. Martin P. Grobusch, Academic Medical Center, University of Amsterdam, the Netherlands

Prof. Dr. Stefan Kühne, Federal Research Centre for Cultivated Plants, Institute for Strategies and Technology Assessment, Germany

Prof. Dr. Luca Guardabassi, Department of Veterinary Disease Biology, Faculty of Health and Medical Sciences, University of Copenhagen, Denmark