



WHY THIS MEETING?

Fungal infections caused by opportunistic fungi such as *Aspergillus fumigatus* kill more than 1 million people annually worldwide (equivalent to deaths caused by tuberculosis or malaria). The number will likely increase considerably because medical treatment becomes less effective as the fungus develops resistance to the commonly used antifungal compounds containing azoles. The resistance against azoles is dispersed globally at a disturbing speed. Fungal infections that are resistant to antifungal treatment are an emerging public health problem, requiring immediate action. The global community has a strong focus on antimicrobial resistance (AMR), but almost solely on antibacterial resistance.

Azoles are efficient fungicides, commonly used both to treat and prevent fungal infections (mycoses) in humans and animals, to manage fungal diseases in food production and horticulture, and to protect materials against mould growth. Azole-based antifungal treatment has made it possible to cure *Aspergillus fumigatus* infections. However, several international studies have shown that the widespread use of azoles in agriculture, horticulture and forestry have caused a selection pressure driving the fungal population to develop resistance to azoles, threatening effectivity of the whole azole class. Furthermore, residues of azoles in nature are regarded as environmental toxins and are suggested to have general endocrine disrupting properties. The case fatality rates in patients with culture-positive azole-resistant invasive aspergillosis (IA) varies between 50% and 100%. Reports of clinical and environmental azole resistant *A. fumigatus* strains world-wide indicate that azole resistance is increasing. Surveillance studies have shown that in areas where *Aspergillus* is endemic, the environmental route of resistance selection contributes to > 90 % of resistance mechanisms in azole-resistant *Aspergillus* diseases.

The scope of the meeting is to get an overview of the current situation and discuss how we can prevent the rapid spread of azole resistance globally.

- Where are the hot spots or resistance development?
- What are our priorities?
- What is the situation in Norway?
- The impact of climate changes
- Biodiversity
- One Health
- Sustainability

The ResAzoleNet project focuses on a neglected part of the One Health AMR resistance perspective, and addresses both mechanisms of AMR and strategies to prevent AMR. The project consortium includes research groups in Norway, Denmark and the Netherlands.

