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Antibiotic Resistance Research at the College of Health and Life Sciences

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Dr. Walid Alali, Associate Professor at CHLS, discusses the implications antibiotic-resistant bacteria has on public health and the increasing importance of research in this area.



Antibiotics are medicines used to treat and prevent bacterial infections in humans, animals and plants.

Unfortunately, the effectiveness of many antibiotics used today is halted because of the emergence of bacterial resistance. Infections caused by antibiotic-resistant bacteria can lead to serious health problems, such as extended hospitalization, treatment failure and even death.

In the United States alone, more than 2 million people become infected with antibiotic resistant bacteria and at least 23,000 people die each year from these infections. The World Health Organization (WHO) classifies antibiotic resistance as a top priority for global public health action. Furthermore, the United Nations (UN) General Assembly recently convened a [meeting](#) on antibiotic resistance to revive and strengthen the commitment of Member Nations toward a multi-disciplinary, multi-sectorial approach to mitigate antibiotic resistance. Mitigation of antibiotic resistance requires a comprehensive understanding of the emergence, development and spread of resistant bacteria among human populations, animal agriculture, and food production systems.

Some of the risk factors of antibiotic resistance are the use and misuse of antibiotics, poor infection control practices, inadequate sanitary conditions, importation of live animals, human-animal interaction, and environmental and food contamination. One of the first steps towards mitigating antibiotic resistance is to improve our understanding of how resistant bacteria spreads.

Globally, extensive research has been published on antibiotic resistant bacteria, especially in developed countries. However, limited research has been conducted locally. At the HBKU- College of Health and Life Sciences, my research interest is to better understand how antibiotic resistant bacteria transmit to hospital facilities in Qatar, in relation to food systems and animal health. My current research projects are centered on antibiotic resistant enteric E. coli in food handlers and food products in hospital settings. This research is expected to reveal valuable information on the role of food handlers and retail food in the transmission of antibiotic resistance bacteria. Moreover, data collected will assist in helping us find solutions to this issue. These data will support a unified national surveillance system for antibiotic resistant bacteria in Qatar.

The College of Health and Life Sciences has established research collaboration ties with public health stakeholders including academia (Qatar University and Weill Cornell Medicine-Qatar) as well as research and government organizations (Ministry of Public Health, Hamad Medical Corporation, Primary Health Care Corporation, Ministry of Municipality and Environment, and Sidra Medical and Research Center). Public health needs close collaboration with these institutions for better research and communication.

Dr. Walid Alali
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