Improving Health Worldwide

Antimicrobial Resistance: A Multidisciplinary Approach

Background

At the Sixty-eighth World Health Assembly in May 2015, the World Health Assembly endorsed a Global Action Plan (GAP) to tackle antimicrobial resistance (AMR).

The GAP sets out five strategic objectives around which the course is based: 1) to improve awareness and understanding of antimicrobial resistance; 2) to strengthen knowledge through surveillance and research; 3) to reduce the incidence of infection; 4) to optimise the use of antimicrobial agents; and 5) develop the economic case for sustainable investment that takes account of the needs of all countries, and increase investment in new medicines, diagnostic tools, vaccines and other interventions.

The course

This LSHTM short course aims to equip delegates with knowledge and tools to address each of the GAP objectives.

This course addresses the need to understand multiple aspects of the intractable problem of antimicrobial resistance. It will enable attendees to develop inter-disciplinary, multi-sectorial One Health responses and interventions to reduce the global threat of AMR.

Attendance

The course will be full time for five days. The course will be limited to a maximum of 40 participants.

Course aims

This course equips delegates with the knowledge, conceptual frameworks and tools necessary to understand the complex global threat of Antimicrobial Resistance.

Objectives

Specifically, the course will:

- Provide grounding in multiple aspects of antimicrobial resistance as outlined in the WHO Global Action Plan.
- Guide participants through the interdisciplinary understanding of AMR from molecular biology to medical anthropology.
- Review and analyse a wide range of relevant topics - including definitions, genetics, epidemiology, public health impact, ethics, patient and health worker knowledge, chemical analysis, regulation and potential interventions.
- Outline key challenges in developing and implementing interventions.
- Equip participants to critically analyse and improve policies and strategies in the low and middle income countries where they work.
- Bring together a diversity of faculty and postgraduate students, interested in the subject to learn and discuss together.

Course content

- The history of antibiotics and emergence of antibiotic resistance
- Antibiotic targets and mechanisms of resistance
- Diagnostic laboratory identification of AMR
- Break points and standardisation
- AMR surveillance methods and burden of drug-resistant infections
- Pharmacokinetics, exposure and drug failure
- One health
- The use of genomics in AMR
- Antibiotic usage and agriculture
- AMR and the environment
- Infection control
- Antimicrobial stewardship
- The role of diagnostics in reducing antibiotic usage
- Role of water, sanitation and hygiene in AMR
- Role of vaccines in reducing AMR
- Novel alternatives to antimicrobials
- Developing new therapies
- Economics of AMR
- Social science aspects of antibiotic use
- Role and metrics of interventions

Who should attend?

The course is aimed at postgraduate students, postdoctoral and young scientists and clinicians who would benefit from an understanding of the public health importance of AMR and actions to tackle the problem.

Teaching methods

Teaching will be conducted online through the Moodle learning environment at and will include both synchronous and asynchronous lectures, group work, and opportunities for participatory learning. The course materials, including lecture notes and PowerPoint presentations, key references and other programme support materials, such as the bioinformatics work environment, will be provided electronically.

There is no formal assessment but at the conclusion of the course, a certificate of attendance will be provided.

Key information

Course organisers:
Prof Kat Holt
Prof Gwen Knight
Dr Ebenezer Foster-Nyarko

Fees for 2026:
£1,435

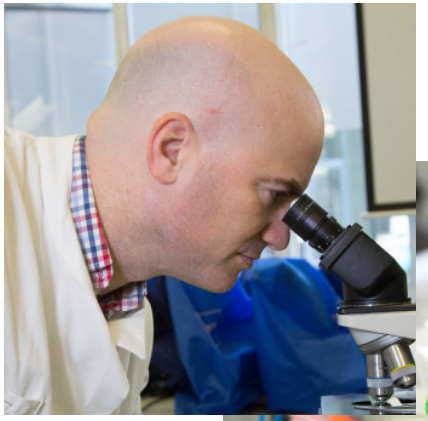
Reduced fees for applicants based in low-and middle-income countries are available.

Contact email:
shortcourses@lshtm.ac.uk

Find out more and apply:
lshtm.ac.uk/study/courses/short-courses/antimicrobial-resistance

The London School of Hygiene & Tropical Medicine is highly ranked in a number of university league tables. In 2017, it was named first in Europe for research impact in sciences (CWTS Leiden Ranking) as well as receiving a prestigious Queen's Anniversary Prize for Higher and Further Education. In 2016, it won the Times Higher Education 'University of the Year' award.

Our mission is to improve health and health equity in the UK and worldwide; working in partnership to achieve excellence in public and global health research, education and translation of knowledge into policy and practice.



Our short, post-experience and specifically designed short courses provide the opportunity for intensive study in specialised topics. These courses are ideal if you want to refresh your skills and keep in touch with the latest research and knowledge in public and global health.

Contact details

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