MD2B3-30 Infection: Prevention and Outbreaks

25/26

Department
Warwick Medical School
Level
Undergraduate Level 2
Module leader
Roberto Vivancos
Credit value
30
Module duration
7 weeks
Assessment
40% coursework, 60% exam
Study location
University of Warwick main campus, Coventry

Description

Introductory description

This module aims to facilitate a broad base understanding of infection, disease outbreak and prevention by integrating knowledge and approaches from immunology, drug resistance and patient safety, occupational health and understanding of risk. These integrated perspectives will be consolidated and advanced through case-based learning.

Module web page

Module aims

To facilitate an in-depth understanding of infection as it pertains to prevention and outbreaks. Students will experience integrated perspectives about infection, prevention and outbreaks from the course themes which are consolidated and advanced through case-based learning.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

This module will follow the integrated food module and the assessment for that block. The topics covered in this module are generally more extensive meaning that the block is more directed in its nature than some others. Again, the module will build from taught content with lecture theatre-based presentations and interactive presentations as well as case-based learning sessions, all supported by TEL and online content.

In the medical sciences, students will cover in some depth the areas of immunology in response to pathogens. Students will learn about organisation and development of the immune system, its activation upon stimulation, microbiology and the defence mechanisms against different pathogens. A key highlight will be discussions surrounding resistance to drugs and antibiotics including the causes, and possible next steps. Different contexts for the use of technology in these fields will also be discussed.

In the health sciences, patient safety, occupational health and wellbeing and risk assessment at work will form the large topic area of prevention. Different expectations and different workplaces (for example an office vs the military) will bring out the complexities in understanding how and why people might expose themselves to pathogens for a humanitarian goal. The concept of, and methodologies surrounding, epidemiological investigation will serve to link public health, patient safety and the biomedical and health sciences.

The cases in this module will explore contemporary examples of viruses and bacteria. Students will consider that problem solving in this area might be industry based, environment driven and population focussed. There will also be discussion of the possible complex nature of research involving infection, prevention and outbreaks.

Learning outcomes

By the end of the module, students should be able to:

- 1. To develop a broad understanding of the key concepts, principles and theories, which will support a multidisciplinary approach to understanding of infectious diseases
- 2. To interrelate the underlying mechanisms of the immune response to pathogens to inform an understanding of the transmission and transduction of infectious disease and the role of technology for managing infectious disease outbreaks
- 3. To appreciate the ethical, legal, economic and social implications of infectious disease
- 4. To investigate the relationships between the immune system, socioeconomic factors and patient/population vulnerability
- 5. To explore public health, patient safety and harm prevention strategies in the field of infectious disease
- 6. Explore in-depth epidemiology and biomedical aspects of a communicable disease
- 7. To develop and use strategic planning and reasoning skills to engage with others to individually or collectively put forward structured ideas that can have a positive influence on local and global challenges in health

Indicative reading list

1. Carr et al. (2007) An introduction to public health and epidemiology. 2nd edition. Open University Press.

2. Fleming and Parker. (2016) Introduction to public health. 3rd edition. Churchill Livingstone Australia. 3. Playfair and Chain. (2012) Immunology at a glance. 10th edition. Wiley-Blackwell.
3. Gillespie and Bamford. (2012) Medical Microbiology and infection at a glance. 4th edition. WileyBlackwell.
4. Nairn and Helbert. (2007) Immunology for medical students. 2nd edition. London: Mosby.

View reading list on Talis Aspire

Interdisciplinary

Students will learn about infections, covering aspects of biomedical science, immunology, behavioural science and public health, to understand how infectious diseases can be prevented and controlled. Management of outbreaks requires the combined efforts of multidisciplinary teams targeting control efforts tailored to each specific infection and their mode of transmission.

International

Infections know no boundaries, with outbreaks able to spread through small closed-nit communities, as national epidemics or global pandemics. Students are encouraged to consider control of infections in different settings, health systems and the combined international efforts to lessen the impact of international epidemics, and the response to pandemics.

Subject specific skills

Knowledge and understanding of the infectious diseases locally and globally and the ability to investigate such health problems from the integrated perspectives of Health Sciences and Medical Science
Ability to recognise factors that influence and determine risk of infectious diseases and outbreaks
Ability to explore strategies that can prevent or reduce harm to general public in the field of infectious diseases

Transferable skills

critical thinking, Self-directed learning, evidence-based approach to problem solving, time management, integration of information, group learning

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Study

Study time

Type	Required
Lectures	38 sessions of 1 hour (13%)
Seminars	25 sessions of 1 hour (8%)
Online learning (scheduled sessions)	20 sessions of 1 hour (7%)
Private study	87 hours (29%)
Assessment	130 hours (43%)
Total	300 hours

Private study description

Students would be expected to engage in 87 hours of self-directed learning outside other learning and teaching activities outlined above.

Costs

No further costs have been identified for this module.

Assessment

You do not need to pass all assessment components to pass the module.

Assessment group D1

	Weighting	Study time	Eligible for self-certification
Synoptic coursework: exploration of a cross-module case study with accompanying concept map	40%	60 hours	No
Students will explore a patient or population case that brings in elements from all of the shared-assessment modules in this year, this will be accompanied by a concept map and narrative that will be used to explain the relationship between factors and topics covered in the case exploration			
Infection Multiple Choice Question/Short Answer Question examination	60%	70 hours	No
Total of 100 marks. 25 MCQ single best answer questions at 1 mark each, 75 marks from SAQs.			

Feedback on assessment

The coursework will be marked using standardised rubrics, which will provide feedback to the students (including individualised feedback) in line with WMS assessment criteria (including submission to Plagiarism software). Further verbal feedback will be available to students on request. Every student who fails an element will be offered an appointment for face to face

feedback.

Past exam papers for MD2B3

Availability

Courses

This module is Core for:

- UMDA-B990 Undergraduate Health and Medical Sciences
  - Year 2 of B990 Health and Medical Sciences
  - Year 2 of B990 Health and Medical Sciences
  - Year 2 of B990 Health and Medical Sciences