Course for the management of patients with highly infectious diseases: content of knowledge and skills modules.

1. Knowledge modules

Lectures 1-4: Disease-specific information (minimum total teaching time: 3 hours)

Four lectures of a minimum of 45 minutes each, on the Highly Infectious Diseases (HID) recognised by EUNID: VHFs (45 mins); VHFs (45mins); smallpox and plague (45 mins); MDR-TB (45 mins); SARS, avian and pandemic influenza (45 mins).

The presentations should have a common, structured format, covering the following aspects of each disease: global epidemiology; modes of transmission and relevant evidence; clinical presentation; differential diagnosis, investigation, and management, including treatment and pre-and -post exposure prophylaxis, and review of sources of technical advice.

Lecture 5: Public Health and HID (minimum total teaching time: 90 minutes)

Two lectures of a minimum of 45 minutes each, which aim to educate trainees about why and how HID may threaten public health, to familiarise trainees with relevant aspects of public health systems in the EU and Member States, and to ensure that trainees know why, how, when, and to whom to report confirmed or suspect cases of each HID.

The structured presentations should include: an overview of emerging and re-emerging health threats, based on recent examples; an overview of the public health response at local, national and international levels to an emerging health threat, based on one, or two, recent examples; a description of the epidemiological characteristics that may distinguish a naturally occurring outbreak from a deliberate release event; an overview of notification, reporting and rapid response systems within the EU, including an introduction to the concept of syndromic surveillance, and a review of reporting mechanisms and responses appropriate to each specific HID

Lecture 6: Hospital infection control (minimum teaching time: 45 minutes)

Surveys of clinicians who have completed specialist training in infectious diseases have shown show that infection control is an area where training is often perceived as inadequate, and responders to such surveys have indicated that they would value didactic, formalised teaching (ref lancet, ref cid). This aim of this lecture is to update trainees in the principles of infection control, and to provide them with the

The structured presentation should cover: handwashing techniques; sharps safety; overviews of standard, contact, respiratory and airborne isolation precautions, and cough etiquette, including criteria for their use; a description of country-specific patient isolation techniques, and the advantages and disadvantages of each; discussion of the precautions appropriate to the management of a severely ill patient with a disease of unknown but possibly highly infectious aetiology in a non-High Isolation Unit (HIU) setting.

Lectures 7-9: Disinfection, decontamination and waste management (minimum total teaching time: 2 hours)

This group of 3 lectures aims to introduce the trainees to the theory of disinfection, decontamination and waste management.

The presentations should be structured to cover the following: an overview of the principles of disinfection and decontamination, including categories of disinfectant and methods of decontamination; disinfection and decontamination in management of Highly Infectious Disease and HIU, including disease-specific recommendations; an overview of management of clinical waste; discussion of waste management issues in the context of HIU; sources of expert assistance.

Lecture 10: Personal protective equipment (PPE) (minimum teaching time: 45 minutes)

The lecture aims to ensure that trainees have the knowledge and evidence base necessary to select, use and safely dispose of PPE

The presentation should be structured to include: an overview of respiratory protection, including EU norms, and review of HID-specific protection (20 mins), and an overview of skin/mucosal protection, including EU norms and review of HID-specific respiratory protection (20 mins).

Lectures 11-12 Biosafety issues (minimum teaching time: 75 minutes)

These 2 lectures aim to familiarize trainees with biosafety issues related to laboratory diagnosis, specimen and patient transport and management of patients post mortem.

The presentations should be structured to include: definitions of biosafety, biohazard, biosecurity; principles of hazard groupings and biosafety levels; overview of current UNECE and other relevant guidance; description of a triple container for transporting a biohazard sample and demonstration of the types available; discussion of examples (from bedside to laboratory; from HIU to reference laboratory; transport international); biosafety and initial investigation of a severely ill patient with an unknown, but possibly highly infectious disease; biosafety and patient transport ; overview of management of HID post mortem

2. Skill modules

Skill station I: use of respiratory protection (minimum training time: 60 minutes)

Create a skill station environment where the trainees in small groups of 4-5 persons with the assistance of an experienced trainer will review the features and pros and cons of available respiratory protection for HCW. They will then serially test and practice with the equipment. The skill station should include active participation in fit testing and fit checking.

Skill station II: use of personal protective equipment (PPE) (minimum training time: 60 minutes)

Create a skill station environment where the trainees in small groups of 4-5 persons with the assistance of an experienced trainer will overview the features and pros and cons of available skin/mucosa protection (suits/gowns, goggles, gloves, hoods etc) for HCW. They should also be given the opportunity to test and practice with this equipment, especially donning and removing it in a proper sequence, and to reinforce the skills during the 4 clinical scenario sessions

Optional skills station : country-specific skills (minimum training time: 60 minutes)

The course coordinator may choose to devote an hour of training in the form of a skill station to this equipment, eg patient isolator (UK), specialised patient transport (Italy), in order for the participants from the relevant MS to become familiar with the use and procedures involved.

On site lecture demonstration: HIU (minimum training time: 60 minutes)

The aim of this lecture, which should be incorporated into an on-site visit to a HIU, is to familiarise trainees with the design, layout, and maintenance requirements of a HIU, and to demonstrate the features used to ensure biosecure care of patients with HID. The tour should include review of the maintenance schedule, and examination and interpretation of the results of routine maintenance tests.

Integrated clinical scenario exercises (minimum training time: 60 minutes)

The scenarios should be offered to the trainees in groups of 4-5 persons, and they should be asked to work out the specifics for responding to the particular patient as a team. The course provides for four such sessions of which the last may be used as part of the end-course assessment. During the three 'practice' scenarios, the trainer may have to intervene and correct or make suggestions; during the assessment scenario trainer input would be limited to the scenario script and to responding to requests for information about the patient's clinical condition.

The proposed scenarios for development for the course are:

Scenario 1: patient with airborne disease
Scenario 2: smallpox
Scenario 3: SARS
Scenario 4: human avian influenza
Scenario 5: severely ill patient with infection of unknown infective aetiology
Scenario 6: ambulatory patient exposed to unknown agent, suspect deliberate release