



ECDC PUBLIC HEALTH TRAINING

E-learning courses and training materials

2019

Introduction

Continuous professional development activities at ECDC aim to meet the institutional needs of the Coordinating Competent Bodies of Member States to sustain a competent workforce that is sufficiently skilled to effectively address cross-border health threats.

The legal basis for ECDC's activities in this area are the Centre's Founding Regulation (EC) No 851/2004 and Decision (EU) No 1082/2013 on Serious Cross-Border Threats to Health. The ECDC Public Health Training Strategy, endorsed by the ECDC Management Board in June 2015, presents continuous professional development as one of the two core training efforts of ECDC, the other being the ECDC Fellowship Programme (EPIET/EUPHEM).

ECDC e-learning courses and training materials

This document presents an overview of ECDC training and e-learning materials for continuous professional development. Materials are open to all and can be accessed through the ECDC Virtual Academy at <https://eva.ecdc.europa.eu/> and the ECDC website.

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What can I find in this course catalogue?

A general overview and a detailed outline of e-learning activities offered by ECDC in 2019:

- E-learning courses
- Training materials for trainers (adaptation and translation is encouraged).

Who can benefit from our free online activities and training materials?

ECDC's primary target audience are public health professionals in the EU/EEA Member States. As most of the e-learning courses and training materials are offered on EVA, ECDC's Virtual Academy. They are free and open for all.

How do I enrol in the activities and access the materials?

Please visit the ECDC Virtual Academy (EVA) at <https://eva.ecdc.europa.eu/>.

The basis/foundation of our activities and training material

- Offerings are based on training needs, provided by various stakeholders.
- ECDC develops and uses European wide competency-based frameworks in specific fields of communicable disease prevention, preparedness, detection, assessment and control of public health threats with a cross-border dimension.
- The CPD offerings aim to meet the institutional needs of the Coordinating Competent Bodies (CCB) of Member States (MS) to sustain a competent workforce that is sufficiently skilled to effectively address cross-border health threats.
- All activities are in English.

Feel free to contact us at courses@ecdc.europa.eu.

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Overview of ECDC continuous professional development e-learning activities and training materials

Availability	E-learning courses
On EVA	Introduction to outbreak investigations
	Introduction to rapid risk assessment
	Epidemic intelligence
	Writing and reviewing scientific abstracts: a field epidemiology focus
	Cross-border sharing of health data
	PRECEPT – a framework for assessing and grading evidence in public health
	Influenza vaccination campaigns targeting healthcare workers
Coming during 2019	Influenza bioanalytics
	Non-pharmaceutical countermeasures against pandemic influenza
	Simulation exercise training

Availability	Training materials
On EVA	Development, implementation and evaluation of prudent antibiotic use campaigns
	Legionnaires' disease: Risk Assessment, Outbreak Investigation and Control
	Epidemiological aspects of Vaccine-Preventable Diseases
	Point prevalence survey training of healthcare-associated infections and antimicrobial use in acute care hospitals
	Control of Multi-Drug Resistant Micro-organisms (MDRO) in Health Care Settings
Coming during 2019	Simulation exercises training materials
Subject-specific Wiki spaces	Resources in WIKI format

Detailed outline of ECDC e-learning activities in 2019

E-learning courses

Introduction to outbreak investigations	
Availability	Available on EVA (ECDC Virtual Academy)
Target audience and prerequisites	This course targets public health professionals with no prior knowledge in outbreak investigation. It may also be used as a refreshment module prior to advanced courses in outbreak investigation.
Objectives/intended learning outcomes	The objectives are to: <ul style="list-style-type: none"> be able to recognise the steps necessary to conduct an Outbreak Investigation. describe what is expected to be done in each of the 10 steps. discuss different application of steps for different situations.
Description	This course focuses on the basics of outbreak investigation; it introduces knowledge of concepts, basic principles, and the succession of actions. At the end of the course, the learner will have sufficient knowledge and basic skills to be involved in the outbreak investigation team. The course uses a basic teaching model: introduction, demonstration, exercise and reflection. Course design is modular, with text, graphics, media (video lectures) and quizzes embedded in each module. The total estimated duration is from 6 to 8 hours of active learning. The course is designed as an unmoderated, self-paced course, i.e. participants can set their own schedule. The different sections of the course are meant to be done sequentially, but the course does not need to be completed in one go.
Coordination	Public Health Training Section with Epidemic Intelligence and Response Section

Introduction to rapid risk assessment	
Availability	Available soon on EVA (ECDC Virtual Academy)
Target audience and prerequisites	Public health professionals with no prior knowledge in rapid risk assessment methodology.
Objectives/intended learning outcomes	The objectives are to: <ul style="list-style-type: none"> recognise components (steps) in rapid risk assessment production describe what is expected to be done in each step contribute to a team effort for rapid risk assessment production
Description	<p>The course focuses on planning, conducting and generating rapid risk assessments and introduces basic concepts, principles and the succession of actions. At the end of the course, the learner will have sufficient knowledge and basic skills to be involved in a team producing rapid risk assessments.</p> <p>The course uses a basic teaching model: introduction, demonstration, exercise and reflection. Course design is modular, with text, graphics, media (video lectures) and quizzes embedded in each module. Two case studies are introduced to exemplify the various steps.</p> <p>This course consists of the following modules:</p> <ul style="list-style-type: none"> Overview Definitions and ECDC context From signal to RRA Step 0 – Preparation Step 1 – Collecting event information Step 2 – Literature search Step 3 – Extract relevant evidence Step 4 – Appraise evidence Step 5 – Estimate risk Follow-up <p>The course is designed as an unmoderated, self-paced course, i.e. participants can set their own schedule. The different sections of the course are meant to be done sequentially, but the course does not need to be completed in one go.</p>
Coordination	Public Health Training Section with Epidemic Intelligence and Response Section.

Epidemic intelligence	
Availability	Available on the ECDC web portal http://external.ecdc.europa.eu/EI_Tutorial/course.htm
Target audience and prerequisites	Professionals with public health background who have an interest in becoming familiar with the tools, standards and practices adopted at technical level for early detection of health threats at EU and international level.
Objectives/intended learning outcomes	The objectives are to: <ul style="list-style-type: none"> understand the process of early detection of health threats at ECDC identify epidemic intelligence tools and platforms share best practices on epidemic intelligence among the experts in prevention and control of communicable diseases.
Description	The course is designed as an unmoderated, self-paced course, i.e. participants can set their own schedule. The different sections of the course are meant to be done sequentially, but the course does not need to be completed in one go.

Writing and reviewing scientific abstracts: a field epidemiology focus	
Availability	Offered yearly and on an ad hoc basis on EVA (ECDC Virtual Academy)
Target audience and prerequisites	Epidemiologists working at the national or subnational level in an EU/EEA country.
Objectives/intended learning outcomes	The objective is to strengthen skills in writing, reviewing and editing scientific abstracts, with a focus on field epidemiology topics.
Description	This course is based on online lectures, exercises and participation in forum discussions. The course is moderated and partially self-paced. The only elements that have a fixed time frame are the deadlines for the peer-review assignments (writing and reviewing an abstract).
Coordination	Public Health Training Section

Cross-border sharing of health data	
Availability	Available on EVA (ECDC Virtual Academy)
Target audience and prerequisites	Epidemiologists working at the national or subnational level in an EU/EEA country.
Objectives/intended learning outcomes	<p>The objectives are to:</p> <ul style="list-style-type: none"> • understand the basic concepts of Regulation (EU) No 2016/679 and its impact on management and analysis of health data in the context of communicable disease surveillance • understand the relationship between EU legislation and national legislation applicable for public health data • have an overview of the challenges in data sharing during essential public health operations such as outbreak investigations and public health surveillance • understand the concept of 'open access' and how it is applied to scientific publications and research data • identify a question related to data sharing in public health and consult a legal expert for advice
Description	<p>This course will focus on the legal context of data sharing in communicable disease prevention and control, particularly on issues relating to the exchange of health data in joint databases and between different legal systems. The course will provide the participants with essential knowledge in overcoming these challenges. The course uses a basic teaching model: introduction, demonstration, exercise and reflection. The course will be modular with textual, graphical, media and quizzes implemented in each module based on particular learning objectives.</p> <p>The course is designed as an unmoderated, self-paced course, i.e. participants can set their own schedule. The different sections of the course are meant to be done sequentially, but the course does not need to be completed in one go.</p>
Coordination	Public Health Training Section with Legal Services Section

PRECEPT – a framework for assessing and grading evidence in public health	
Availability	Available on EVA (ECDC Virtual Academy)
Target audience and prerequisites	Public health professionals from all career levels with limited or no experience in evidence-based methods, in particular professionals involved in the conduct of evidence appraisals and development of public health guidance. The course can be useful for any professional or student in a health-related line of work. Basic knowledge of different study designs and possible sources of bias is helpful.
Objectives/intended learning outcomes	<p>The objectives are as follows:</p> <ul style="list-style-type: none"> • Understand, name and explain the different steps and domains of PRECEPT • Identify and frame relevant questions in the different domains • Understand the concept of study validity and apply quality appraisal for different study designs in different domains • Apply the GRADE approach to different domains to determine the strength of a body of evidence.
Description	<p>PRECEPT (Framework for Rating Evidence in Public Health) was initiated by ECDC to help translating the concepts and principles of evidence-based medicine into the area of public health, in particular infectious disease epidemiology, prevention and control. PRECEPT presents a methodology for assessing and grading the strength of the evidence in such decision-relevant domains as burden of disease, risk factors, diagnostics and interventions. The course is designed as an unmoderated, self-paced course, i.e. participants can set their own schedule. In total, the course takes approximately 2–3 hours to complete. The different sections of the course are meant to be done sequentially, but the course does not need to be completed in one go. A knowledge assessment tool is available in a mini-simulation format.</p>
Coordination	Public Health Training Section with Scientific Advice Coordination Section

Influenza vaccination campaigns targeting healthcare workers	
Availability	Available on EVA (ECDC Virtual Academy)
Target audience and prerequisites	Public health professionals who organise vaccination campaigns for healthcare workers
Objectives/intended learning outcomes	The objective is to identify the elements necessary to create informative and effective seasonal influenza vaccination campaigns.
Description	<p>This online course has been developed in response to the fact that although seasonal influenza vaccination of healthcare workers (HCWs) is recommended in Europe, vaccination uptake remains low in most countries. During the course, information about influenza disease, protection against influenza, tools to assess vaccine uptake and barriers to vaccination as well as stimulating examples of successful campaigns in direction of HCWs will be presented.</p> <p>The course is designed as an unmoderated, self-paced course, i.e. participants can set their own schedule. The different sections of the course are meant to be done sequentially, but the course does not need to be completed in one go.</p>
Coordination	Public Health Training Section with Influenza and Other Respiratory Infections Programme

Influenza bioanalytics	
Availability	Available on EVA (ECDC Virtual Academy)
Target audience and prerequisites	Public health professionals, laboratory scientists, epidemiologists working on influenza surveillance. There are no prerequisites in terms of academic qualifications.
Objectives/intended learning outcomes	<p>This course aims to enhance knowledge of the basic bioinformatics tools available for the analysis of sequencing data and the interpretation, comparison and analysis of influenza sequence data, with a focus on haemagglutinin and neuraminidase genes.</p> <p>The objectives are to:</p> <ul style="list-style-type: none"> • Understand Sanger and next generation sequencing data analysis pipelines for HA and NA gene sequences • Retrieve sequences from public databases (GISAID and GenBank) • Understand HA and NA gene sequence alignments, mutations and SNP analysis for resistance (BioEdit) • Use phylogeny software: basic concepts and instructions for phylogenetic analysis (MEGA) • Visualise and annotate phylogenetic trees.
Description	<p>The course is designed as an unmoderated, self-paced course, i.e. participants can set their own schedule. The different sections of the course are meant to be done sequentially, but the course does not need to be completed in one go.</p> <p>The course has the following modules and takes approximately 2–3 hours to complete:</p> <p>Module 1: Sanger sequencing data analysis: from raw to finished sequences</p> <p>Module 2: NGS data analysis: from raw to finished sequences</p> <p>Module 3: Public databases and retrieval of references</p> <p>Module 4: Alignments and amino acid substitution analysis of HA and NA sequences</p> <p>Module 5: Phylogeny software: basics concepts and instructions for phylogenetic analysis</p> <p>Module 6: Visualisation and annotation of phylogenetic trees</p>
Coordination	Public Health Training Section with Influenza and Other Respiratory Infections Programme.

Non-pharmaceutical countermeasures against pandemic influenza	
Availability	Available soon on Q2 2019 on EVA (ECDC Virtual Academy)
Target audience and prerequisites	Laboratory and public health scientists
Objectives/intended learning outcomes	<p>This course aims to provide the latest scientific information on the use of non-pharmaceutical countermeasures, summarising the lessons learned from the 2009 influenza pandemic.</p> <p>The objectives are to:</p> <ul style="list-style-type: none"> • understand the process of responding to seasonal and pandemic influenza in communities through the knowledge of the availability and effective use of non-pharmaceutical countermeasures • identify how and when non-pharmaceutical countermeasures may be applied to the specific community settings to help slow the spread and reduce the impact of a pandemic virus.
Description	<p>Information about the influenza virus, non-pharmaceutical countermeasures used for protection against influenza and triggers for the implementation of such interventions, as well as aspects of pandemic planning will be presented.</p> <p>The course is designed as an unmoderated, self-paced course, i.e. participants can set their own schedule. The different sections of the course are meant to be done sequentially, but the course does not need to be completed in one go.</p>
Coordination	Public Health Training Section with Influenza and Other Respiratory Infections Programme.

Training materials available on EVA (ECDC Virtual Academy)

Training materials on development, implementation and evaluation of prudent antibiotic use campaigns	
What you will find	You will find course material that you may use to offer a training course for your target audience. Your target audience could include health communicators with an interest in antimicrobial resistance and prudent use of antibiotics.
Objectives/intended learning outcomes	The aim of this course is to provide planners and implementers of prudent antibiotic use campaigns with the basic knowledge and skills required to plan, conduct and evaluate such campaigns. Learning objectives of the course material are to: <ul style="list-style-type: none"> • understand and explain the rationale, key elements and steps required to develop behaviour change communication campaigns on prudent antibiotic use • understand and apply basic social marketing concepts in the development implementation and evaluation of behaviour change communication campaigns on prudent antibiotic use • design and implement behaviour change communication campaigns on prudent antibiotic use • identify and select appropriate indicators, methods and tools for evaluation of behaviour change communication campaigns on prudent antibiotic use • design and implement an evaluation work plan for behaviour change communication campaigns on prudent antibiotic use.
Description	These materials can be used as a basis to hold further training courses at the national level and to strengthen participants' knowledge and skills on prudent antibiotic use campaigns.

Training materials on Legionnaires' disease: risk assessment, outbreak investigation and control	
What you will find	You will find materials that you may use to offer a training course for your target audience. Your target audience could be multidisciplinary, consisting of mid-career and/or senior experts in the area of public health, particularly those dealing with Legionnaires' disease.
Objectives/intended learning outcomes	The goal of this training is to strengthen the participants' knowledge and skills in order to improve the collaboration and communication among the different disciplines (microbiology, environmental health and epidemiology) involved in a Legionnaires' disease outbreak investigation and control.
Description	The course incorporates different teaching methods: short presentations, group work, risk assessments using photographic material. It proposes to organise field visits to understand potential sources of outbreaks (e.g. cooling towers, spa pools and water systems). Contents include clinical, epidemiological and environmental aspects of Legionnaires' disease, water systems and control measures, diagnostics, principles of outbreak investigation in different settings (community, travel-related and nosocomial outbreaks), risk assessment and communication.

Train-the-trainer materials on epidemiological aspects of vaccine-preventable diseases (VPD)	
What you will find	You will find training material that you may use to offer a training course for your target audience. Your target audience could include senior epidemiologists working in surveillance and outbreak investigation of VPD. The expectation is that the course materials will improve the capacity of the participants to become trainers in vaccinology.
Objectives/intended learning outcomes	The objectives of this course material are to: <ul style="list-style-type: none"> • become familiar with interactive and adult learning methods, e.g. case studies • be able to lecture on surveillance, outbreak investigation and applied epidemiological research of VPD • be able to facilitate case studies in these areas • be able to define the target audience and to adjust material/contents • mobilise resources (human, budget, etc.) to organise training in this area.
Description	Training materials from a three-day course organised as a train-the-trainers activity aiming at preparing senior professionals to organise, manage and conduct a course covering the epidemiological aspects of vaccination. Epidemiological methods for VPDs are divided into three themes: surveillance, outbreak investigation and applied epidemiological research. Lectures, case studies and group exercises are available.

Train-the-trainer materials for point prevalence survey training of healthcare-associated infections and antimicrobial use in acute care hospitals	
What you will find	You will find training materials that you may use to offer a training course for your target audience. Your target audience could include national coordinators of point prevalence surveys (PPS).
Objectives/intended learning outcomes	<p>The objectives of this training material are to:</p> <ul style="list-style-type: none"> • appreciate aims, objectives and methodology of EU PPS • recognise healthcare-associated infections (HAI) using standard EU PPS case definitions • understand measures the validity and reliability of PPS data on HAI • enter and export data EU PPS data in HELICS-Win • describe the best approach, organisation and training techniques to deliver training on the ECDC protocol for PPS for a short course aimed at hospital staff • describe and discuss the principles of, and approaches to, training with adult learners and the importance of learning styles • critically evaluate the training approaches for working with groups, including questioning strategies to ensure engagement and understanding • identify and utilise approaches to evaluation of training.
Description	<p>Training materials from a daylong course with 10 lectures, 8 short case studies and ice-breaking exercises are available. This set of training materials includes participants' and facilitators' versions for case studies. Contents include:</p> <ul style="list-style-type: none"> • the methodology of the EU PPS • the systems required for data collection at the local and national level • the training materials for those involved in the local collection of data • approaches to learning and teaching: andragogy • the principles of, and approaches, to delivering effective training with small and large groups • planning for success: environment and facilitation.

Training materials on 'Control of multidrug-resistant microorganisms in healthcare settings'	
	<p>The target audience includes healthcare professionals with responsibility for prevention and control of healthcare-associated infection. Typically, they are mid-career professionals involved in programmes to prevent HAI at the hospital level:</p> <ul style="list-style-type: none"> • infection control practitioners • specialist hospital physicians • hospital epidemiologists • clinical microbiologists • public health microbiologists
Objectives/intended learning outcomes	<p>The goal of this training is to strengthen the participants' knowledge and skills required for the control of MDRO (multidrug-resistant microorganisms) through the consolidation and review of microbiological and epidemiological perspectives in this field, covering: laboratory investigations, antibiotic stewardship, infection control, surveillance, application of interventions to control MDROs in healthcare settings, and transparent reporting of outbreaks and interventions.</p>
	<p>The aim of the course is to offer a flexible and dynamic programme to strengthen the capacity in the Member States for control of HAI caused by MDRO in acute healthcare settings and to promote the broadest possible implementation of appropriate methods.</p>

Subject-specific wiki spaces	
What you will find	FEM Wiki is an open information-sharing platform for public health experts, hosted and funded by ECDC. Available at https://wiki.ecdc.europa.eu/
Objectives/intended learning outcomes	The aim of the FEM Wiki is to create a library of training materials for training programmes for all disciplines in disease prevention and control.
Description	The content of FEM Wiki is provided by users of the platform and does not necessarily represent the opinion of ECDC. The philosophy of sharing and building knowledge (in particular training materials) led to the idea and creation of a collaborative information space for the epidemiological training community – the FEM Wiki. In recent years, articles on other key disciplines for disease prevention and control such as public health microbiology, informatics and public health law have been added.