ECDC **CORPORATE**

Catalogue of courses on prevention and control of communicable diseases

2018 survey among ASPHER members

www.ecdc.europa.eu

ECDC CORPORATE

Catalogue of courses on prevention and control of communicable diseases

2018 survey among ASPHER members

This course catalogue was compiled by the European Centre for Disease Prevention and Control (ECDC), prepared by Doris Xiomara Monroy Parada (ECDC study visitor and Specialist in Preventive Medicine and Public Health of Albacete University Teaching Hospital Complex, Albacete, Spain), coordinated by Carmen Varela Santos (Head of Section Public Health Training, ECDC PHC) and Miguel Ángel Royo Bordonada (Head of the Studies Area - Escuela Nacional de Sanidad, Instituto de Salud Carlos III, Madrid, Spain), with technical and editorial advice from Jeanine Pommier (Senior Expert Pedagogy and Adult Learning, Public Health Training, ECDC PHC) and the support of Karl Ekdahl, (Head of Unit Public Health Capacity and Communication, ECDC PHC).

ACKNOWLEDGEMENTS

We would like to thank the following individuals (ASPHER members) for their contributions to the catalogue of prevention and control of communicable diseases courses, covering mostly the WHO European Region.

Robert Otok (The Association of Schools of Public Health in the European Region – ASPHER Director)
Louise Stjernberg (ASPHER Liaison for ECDC/The Swedish Red Cross University College)
Jeannette de Boer (National Focal Point Public Health Training of the Netherlands/Netherlands School for Public and Occupational Health

Bulgaria: Vanya Rangelova (Medical University Plovdiv-Faculty of Public Health), Gena Grancharova (Faculty of Public Health, Medical University of Pleven, Bulgaria)
Croatia: Patricija Jankovic (University of Zagreb, School of Medicine, Andrija Stampar School of Public Health)
Cyprus: Giagkos Lavranos (Department of Health Sciences, European University Cyprus)
Czech Republic: Alena Petrakova (Faculty of Medicine & Dentistry, Palacky University, Olomouc)
Finland: Pekka Nuorti (Health Sciences, Faculty of Social Sciences, University of Tampere, Finland (formerly School of Health Sciences)
France: Pascal Crépey (Ecole des Hautes Etudes en Santé Publique)
Germany: Christine Faerber (HAW Hamburg)
Ireland: Mary Codd (School of Public Health, Physiotherapy & Sports Science)
Israel: Ora Paltiel(Braun School of Public Health and Community Medicine)
Palestine[1]: Nuha El Sharif (Al Quds University School of Public Health), Mariam Al-Tell (An Najah National University)
Poland: Joanna Gotlib (Medical University in Warsaw), Ewelina Wierzejska (Poznan University of Medical Sciences)
Portugal: Tavares Margarida (Instituto de Saúde Pública da Universidade do Porto)
Romania: Silvia Gabriela Scintee (National School of Public Health Management and Professional Development Bucharest)
Slovak Republic: Zuzana Kristufkova (Faculty of Public Health, Slovak Medical University, Bratislava)
Slovenia: Sanela Pivač (Angela Boškin Faculty of Health Care)
Spain: Miguel Ángel Royo Bordonada (Spanish National School of Public Health), Vicent Calpe (Escola Valenciana d'Estudis de la Salut (Valencian School of Health Studies, EVES), Francisco Guillen Grima (Facultad de Ciencias de la Salud, Universidad Pública de Navarra)
Sweden: Marja Schuster (Swedish Red Cross University College)
Switzerland: Sandra Nocera (Swiss School of Public Health)
The Netherlands: Jeannette De Boer (Netherlands School for Public and Occupational Health), Christian Hoebe (Care and Public Health Research Institute (CAPHRI)
Turkey: Gul Ergor (Dokuz Eylul University Medical School Dept of Public Health)
United Kingdom: Andrew Lee (The University of Sheffield), Selena Gray (University of the West of England, Bristol), Nick Gent (Faculty of Public Health, London), Karl Blanchet (London School of Hygiene and Tropical Medicine).

Suggested citation: European Centre for Disease Prevention and Control. Catalogue of courses on the prevention and control of communicable diseases – 2018 survey among ASPHER members. Stockholm: ECDC; 2018.

Stockholm, December 2018

ISBN 978-92-9498-290-2
DOI 10.2900/712474
Catalogue number TQ-07-18-079-EN-N

© European Centre for Disease Prevention and Control, 2018

Reproduction is authorised, provided the source is acknowledged.

For any use or reproduction of photos or other material that is not under the EU copyright, permission must be sought directly from the copyright holders.

[1] This designation shall not be construed as recognition of a State of Palestine and is without prejudice to the individual positions of the Member States on this issue.

Contents

Tables

Abbreviations

ASPHER	Association of Schools of Public Health in the European Region
EPHO	Essential Public Health Operations
IHR	International Health Regulations
ECTS	European Credit Transfer and Accumulation System
APHEA	Agency for Public Health Education Accreditation
MSc	Master's of Science degree

1 Background

The European Centre for Disease Prevention and Control (ECDC) and the Association of Schools of Public Health in the European Region (ASPHER) have agreed to collaborate in the training of public health professionals in competencies for prevention and control of communicable diseases.

The collaboration between ECDC and ASPHER facilitates the connections between academia and the public health institutes, translating the collaboration at EU level to national level in particular in the area of serious cross border threats to health. The collection of the training offer and competences by European Schools of Public Health is essential and therefore complements the ECDC training offer.

The aim of the present catalogue is to map the strengths of the schools and academic departments of public health members of ASPHER regarding their resources and competencies in the area of communicable disease prevention and control, and their current offer of training activities in that area of knowledge.

This catalogue has been drafted by the ECDC in accordance with article 6(1) of Regulation (EC) No 851/2004 of the European Parliament and of the Council of 21 April 20014 establishing a European centre for disease prevention and control. ECDC issued the catalogue on its own initiative according to article 7(1) of Regulation (EC) No 851/2004 and in collaboration with ASPHER in accordance with the Collaboration agreement signed on 21 March 2016.

The content of the catalogue is a collection of information provided directly by the schools and academic departments of Public Health members of ASPHER and is not intended to reflect ECDC views on the quality of the courses listed. ECDC accepts no responsibility or liability whatsoever (including but not limited to any direct or consequential loss or damage that may occur) arising out of or in connection with the information shared in this catalogue. In addition, content may be linked to external sites over which ECDC has no control and for which it assumes no responsibility.

ECDC and its collaboration to continuous professional development

ECDC is the official European Union (EU) agency with a mission to identify, assess and communicate current and emerging threats to human health posed by infectious diseases.

Article 9.6 of the ECDC founding Regulation (851/2004) states, 'The Centre shall, as appropriate, support and coordinate training programmes in order to assist Member States and the Commission to have sufficient numbers of trained specialists, in particular in epidemiological surveillance and field investigations, and to have a capability to define health measures to control disease outbreaks. This is in agreement with Decision 1082/2013/EU on serious cross-border threats to health, which calls for consultations aimed at 'supporting the implementation of core capacity requirements for surveillance and response'. ECDC is committed to continue strengthening its training networks in order to find synergies between the various training providers in the field across Europe and facilitate the broad incorporation of the defined EU core competencies for disease prevention and control into the formal activities of training partners across Europe, including schools of public health and universities.

ASPHER

ASPHER is the key independent European organisation dedicated to strengthening the role of public health by improving education and training of public health professionals for both practice and research. It promotes activities which foster exchange of information and best practices amongst its members in an effort to achieve high standards of public health education and training across Europe.

2 Methodology

The technical scope of this collaborative project includes the analysis of training activities and competency domains developed by these courses among the ASPHER European Schools of Public Health for the following areas: public health emergency preparedness and response, public health surveillance, communication, risk assessment, outbreak investigation, laboratory support for investigation of health threats, research methodology applied to public health and training methods and leadership.

Study population

Training programmes in communicable disease prevention and control in schools and academic departments of public health (ASPHER members)

Inclusion criteria were defined as:

- programme at a public health school or academic department member of ASPHER; and
- postgraduate, bachelor and/or master's programme in communicable disease prevention and control.

Data collection

An online semi-structured questionnaire using the EU survey tool[2]. It was designed using a similar model to that used in 'Education and Training Initiatives for Crisis Management in the European Union: A Web-based Analysis of Available Programs' (2014)[3]. The questionnaire was piloted in five public health schools for feedback and to make any necessary amendments.

Once the questionnaire was revised and updated after the pilot phase, it was sent to all member schools of ASPHER, which defines itself as 'the key independent European organisation dedicated to strengthening the role of public health by improving the education and training of public health professionals'.

Dimensions

The objective was to compile a catalogue of the participating schools and each postgraduate, bachelor and/or master's programme in the area of prevention and control of communicable diseases. All the explored dimensions are presented in the Table 1 below. Among those, the technical dimensions for the classification of courses were competencies related to:

- the functions of prevention and control of communicable diseases (also under Essential Public Health Operations – EPHO – 1 and 2)
- specific communicable diseases; and
- transversal areas.

[2] EUSurvey: http://ec.europa.eu/eusurvey/home/welcome.

[3] Ingrassia PL, Foletti M, Djalali A, Scarone P, Ragazzoni L, Corte FD et al. Education and training initiatives for crisis management in the European Union: a web-based analysis of available programs. Prehosp Disaster Med. 2014 Apr;29(2):115-26.

The competency domains originate from the following technical documents:

- Core competencies for public health epidemiologists working in the area of communicable disease surveillance and response, in the European Union[4].
- European action plan for strengthening public health capacities and services[5].
- From potential to action public health core competences for essential public health operations[6].
- Core competencies for inter professional collaborative practice: Report of an expert panel[7].

Table 1: Explored dimensions for every course

Dimensions
ASPHER member information
Name of public health school
Country
Technical domains covered in the course
Communicable disease prevention and control functions (also under EPHO 1 and 2)
Specific communicable diseases
Transversal
Other core disciplines in relation to communicable disease prevention and control
Course characteristics
Granted certificate
Delivery mode
Education and training method
Duration
Does training include research project?
Language
Accreditation
Entity that accredits course/programme
Academic credit system
Number of ECTS credits
Prerequisites
Target audience
Number of participants
Funding or fellowship for participants
Course fee excluding travel cost
Website and contact information
Course website
Email

Presentation of results

The result of the collection of the training activities is presented in a separate table for each of the training programmes. The results presented here reflect the training offers of the responding schools and are based on the data provided by the schools.

[4] European Centre for Disease Prevention and Control. Core competencies for public health epidemiologists working in the area of communicable disease surveillance and response, in the European Union. Stockholm: ECDC; 2008. Available from: http://ecdc.europa.eu/sites/portal/files/media/en/publications/Publications/training-core-competencies-EU-public-health-epidemiologists.pdf.

[5] World Health Organization. European Action Plan for Strengthening Public Health Capacities and Services. Copenhagen: WHO Regional Office for Europe 2012. Available from: http://euro.who.int/en/health-topics/health-systems/public-health-services/publications/2012/european-action-plan-for-strengthening-public-health-capacities-and-services.

[6] Foldspang A, The Association of Schools of Public Health in the European Region. From Potential to Action. Public Health Core Competences for Essential Public Health Operations – A Manual. Volume 3: Tables of competences by EPHOs. Available from: http://www.aspher.org/download/138/booklet-competencesephos-volume-3.pdf.

[7] Interprofessional Education Collaborative Expert Panel. Core competencies for interprofessional collaborative practice: Report of an expert panel. Washington, D.C.: Interprofessional Education Collaborative. 2011. Available from: http://members.aamc.org/eweb/upload/Core%20Competencies%20for%20Interprofessional%20Collaborative%20Practice_Revised.pdf.

3 Results

The results are presented in two parts. The first part is a brief overview of the answers received from the survey and the second is a more detailed table for every course. The courses were classified taking into account the main topic, however they can cover several topics. The courses are presented in the following sections:

- public health emergency preparedness and response
- risk assessment
- surveillance and epidemiology of communicable diseases
  - doctoral study programme
  - master's
  - diploma course
  - brief courses
- outbreak investigation
- laboratory support for investigation of health threats

General features

This catalogue includes a collection of the current offer of training activities in the area of communicable disease prevention and control.

Twenty-eight of the 31 participating public health schools from 22 countries have training activities in the area of communicable disease prevention and control. This review identified a total of 49 training initiatives in the area of prevention and control of communicable diseases.

Thirteen percent of the identified training initiatives were offered in schools located in Spain, 11% in the Netherlands and 9% in Bulgaria, the Czech Republic, Portugal and United Kingdom. The remaining 4% were distributed among 13 ASPHER member states, while no training was available in 3 public health schools of different countries.

Among the communicable disease prevention and control functions (EPHO 1 and 2), the domains most commonly covered were: Public Health Emergency Preparedness and Response (77%), Surveillance (72%) and Risk Assessment and Outbreak Investigation (64%). Regarding the transversal area, the domains most commonly covered were multidisciplinary Collaboration and Communication (in 78% of the courses). Regarding the Specific Communicable Diseases, the domains most commonly covered were vaccines, preventable diseases and emerging and vector-borne infections, with 80% and 71% of the courses including each of these topics respectively.

On-site education was the most common delivery method for the training courses (95%). Both blended learning and distance electronic learning (e-learning) were also frequent (41% and 15% respectively).

Programmes usually employed their host country language (Bulgarian, Swedish, etc.) as the official language of the initiative. However, English was the most common language used (53%), followed by Spanish (15%), Bulgarian (10%), Dutch (10%) and Czech (10%).

In 33% of the courses, applicants were required to have specific technical education or training, while 20% required having previous field experience and 13% other prerequisites.

Seventy-seven percent of courses/programmes were accredited. The study revealed that 73% of the training courses used the European Credit Transfer and Accumulation System (ECTS) as the academic credit system, while only 9% used the Agency for Public Health Education Accreditation (APHEA) accreditation system.

It should be noted that this catalogue includes only training courses from schools that voluntarily answered the questionnaire on resources and competencies in communicable disease prevention and control and that they cannot be considered neither exhaustive nor representative of all academic institutions of public health.

Catalogue: course listing overview

The tables below present the different training programmes who responded to the survey. They are classified in 3 groups: short courses, master/doctoral programmes and other courses dealing with communicable diseases but not specific to the theme. The courses were classified taking into account their main topic, however they can cover several topics.

Short courses

Public health emergency preparedness and response		
Research methodology in clinical sciences Medical Law Safety and risk management in healthcare	Medical University in Warsaw	Poland
Public health alerts and emergency response	Spanish National School of Public Health	Spain
Global challenges in infectious diseases	Swedish Red Cross University College	Sweden
Disasters and emergency preparedness (course in public health programme)	Swedish Red Cross University College	Sweden
Communicable disease control (Master's of Public Health)	University of Sheffield	United Kingdom

Risk assessment		
Risk communication part I and part II	Netherlands School for Public and Occupational Health	The Netherlands

Surveillance and epidemiology of communicable diseases		
Master's programmes		
Infectious disease epidemiology Master's in Public Health	School of Public Health, Physiotherapy & Sports Science, University College Dublin	Ireland
Epidemiology of communicable diseases	Al Quds University School of Public Health	Palestine[8]
Control of communicable diseases Master's in Public Health	Instituto de Saúde Pública da Universidade do Porto	Portugal
Prevention of communicable diseases Master's in Health Education	Instituto de Saúde Pública da Universidade do Porto	Portugal
Diploma programme		
IDEA – Course international d'épidémiologie appliquée	École des Hautes Etudes en Santé Publique	France
New knowledge in epidemiology of infectious diseases	Faculty of Public Health, Slovak Medical University, Bratislava	Slovakia
Epidemiology of infectious diseases	Dokuz Eylul University Medical School Department of Public Health	Turkey

Outbreak investigation		
Epidemic outbreak investigation	Spanish National School of Public Health	Spain
Science of eradication	Swiss School of Public Health	Switzerland
Outbreak investigation, epidemiological aspects	Netherlands School for Public and Occupational Health	The Netherlands
Outbreak management	Netherlands School for Public and Occupational Health	The Netherlands

Laboratory support for investigation of health threats		
Molecular diagnostics of tropical diseases	Spanish National School of Public Health	Spain

Specific communicable diseases		
WHO Collaborative Center for HIV Strategic Information – several courses	University of Zagreb, School of Medicine, Andrija Stampar School of Public Health	Croatia
Control of communicable disease, epidemiology of infection; HIV	Braun School of Public Health and Community Medicine	Israel
Course in tuberculosis control consultancy	Braun School of Public Health and Community Medicine	Israel
Tuberculosis	Instituto de Saúde Pública da Universidade do Porto	Portugal
School of vaccinology for general practitioner in residential programme	Faculty of Public Health, Slovak Medical University, Bratislava	Slovakia
Epidemiological aspects of immunisation programmes	Spanish National School of Public Health	Spain

[8] This designation shall not be construed as recognition of a State of Palestine and is without prejudice to the individual positions of the Member States on this issue.

Master's/doctoral programmes in surveillance and epidemiology of communicable disease

Surveillance and epidemiology of communicable diseases		
Master's		
MSc Infectious Diseases	Department of Health Sciences, European University Cyprus	Cyprus
MSc Infection Biology	Swiss School of Public Health	Switzerland
MSc Control of Infectious Diseases	London School of Hygiene and Tropical Medicine	United Kingdom
Doctoral study programme		
Dutch training programme for medical doctors in infectious disease control	Netherlands School for Public and Occupational Health	The Netherlands

Other public health training programmes with content in the area of prevention and control of communicable diseases

Public health training courses with content on communicable diseases prevention and control are presented in Annex 1. This is not an exhaustive list. Other training providers may have similar curricula. However, the list includes only those who responded to the survey.

4 Short courses

Training in public health emergency preparedness and response

Research methodology in clinical sciences/Medical law/Safety and risk management in healthcare	
Medical University in Warsaw, Poland	
In this course, students will be train in the research methodology in clinical sciences, medical law, safety and risk management in healthcare. It is taught in Polish and is worth 3 credits.	
Technical domains covered in course	
Communicable disease prevention and control functions (also under EPHO 1 and 2)	Public health emergency preparedness and response
Specific communicable diseases	Vaccine-preventable diseases Sexually transmitted diseases
Transversal	Communication Pedagogy Ethics Multidisciplinary collaboration
Course characteristics	
Granted certificate	Master's degree Postgraduate diploma Postgraduate certificate
Delivery mode	On-site Blended
Education and training method	Lecture (face-to-face training) Group discussion Case study Problem-based leadership
Training includes research project	Yes
Language	Polish
Accredited course/programme	Yes
Academic credit system	ECTS
Number of ECTS credits	3
Target audience	Multidisciplinary
Funding/fellowship for participants	No
Course fee excluding travel cost	EUR 500 to 1 500
Course website	http://www.ckp.wum.edu.pl http://ckp.wum.edu.pl/studia-podyplomowe

Public health alerts and emergency response	
Spanish National School of Public Health, Spain	
This course provides an overall description of the Spanish, European and global systems of preparedness and response, introducing the concept of epidemic intelligence, its scope and reach. From a rigorous public health risk assessment, we analyse the conditions and components for an effective and coordinated response to health alerts and emergences. The main contents of the course are: public health alerts, emergences, and crisis, public health risk assessment, transmissible disease-associated risks, International Health Regulations (IHR 2005), the European Early Warning and Response System and Decision 1082/2013/EU on serious cross-border threats to health and the Spanish system of early alert and rapid response.	
Technical domains covered in course	
Communicable disease prevention and control functions (also under EPHO 1 and 2)	Public health emergency preparedness and response Risk assessment
Specific communicable diseases	Food-borne diseases Respiratory infections Emerging and vector-borne infections
Transversal	Communication Leadership Ethics Multidisciplinary collaboration
Course characteristics	
Granted certificate	Postgraduate certificate
Delivery mode	On-site
Education and training method	Lecture (face-to-face training) Group discussion Practical exercise (e.g. leadership exercise)
Duration	25 hours
Training includes research project	No
Language	Spanish
Accredited course/programme	No
Academic credit system	ECTS
Number of ECTS credits	1
Prerequisites	Specific technical education or training
Target audience	Specific for health professionals
Number of participants	11–25
Funding/fellowship for participants	No
Course fee excluding travel cost	Less than EUR 500
Course website	http://sigade.isciii.es/publico/actual/VerCurso.asp?ID=4&CodProp=2931&CodEd=3029
Email	fsimon@msssi.es

Global challenges in infectious diseases	
Swedish Red Cross University College, Sweden	
Global challenges in infectious diseases is a five-week course (i.e. 7.5 ECTS credits) that gives students deeper knowledge in global health situation in the context of nursing. It covers areas such as prevention, nursing care activities and medical treatment of global infectious diseases. Global health organisations and their work with surveillance and interventions are studied. Students gain knowledge about pathophysiology, microbiology and immunology in order to be able to assess and explain global infectious diseases and suggest medical measures and nursing care activities. Intercultural communication and human rights are studied. Ethical dilemmas in relation to the subject are identified and reflected upon.	
Technical domains covered in course	
Communicable disease prevention and control functions (also under EPHO 1 and 2)	Public health emergency preparedness and response Risk assessment
Specific communicable diseases	Global infectious diseases
Transversal	Communication Pedagogy Leadership Ethics Multidisciplinary collaboration
Other core disciplines in relation to communicable disease prevention and control	Human rights and international law
Course characteristics	
Granted certificate	Module certificate Master's
Delivery mode	On-site E-learning Blended
Education and training method	Lecture (face-to-face training) Group discussion Case study Practical exercise (e.g. leadership exercise) Problem-based leadership
Duration	200 hours
Training includes research project	No
Language	Swedish
Accredited course/programme	Yes
Academic credit system	ECTS
Number of ECTS credits	7.5
Prerequisites	Bachelor's in Nursing
Target audience	Nurses
Number of participants	11–25
Funding/fellowship for participants	Course included in regular programme funded by government
Course website	http://www.rkh.se
Email	schm@rkh.se

Disasters and emergency preparedness – course in public health programme	
Swedish Red Cross University College, Sweden	
Disaster and emergency preparedness is a five-week course (i.e. 7.5 ECTS) that introduces students to the meaning and implications of disasters and emergency preparedness. It covers areas such as humanitarian consequences of disasters, epidemics, acts of war and other types of catastrophes. Policy documents, migration, humanitarian rights and the activities of humanitarian organisations, including the Red Cross and Red Crescent Movement, are studied. Students learn about responses, including psychological first aid and the principles of prioritisation and care in disasters and emergencies. Intersections between public health ethics, human rights and health are examined.	
Technical domains covered in course	
Communicable disease prevention and control functions (also under EPHO 1 and 2)	Public health emergency preparedness and response risk assessment
Specific communicable diseases	No
Transversal	Communication Pedagogy Leadership Multidisciplinary collaboration
Other core disciplines in relation to communicable disease prevention and control	Humanitarian organisations and their role
Course characteristics	
Granted certificate	Module certificate Bachelor of Science
Delivery mode	On-site E-learning Blended
Education and training method	Lecture (face-to-face training) Group discussion Case study Problem-based leadership
Duration	200 hours
Training includes research project	No
Language	English
Accredited course/programme	Yes
Course/programme accreditors	Government
Academic credit system	ECTS
Number of ECTS credits	7.5
Prerequisites	Previous academic courses in the programme
Target audience	Multidisciplinary
Number of participants	11–25
Funding/fellowship for participants	Course included in new programme for autumn 2018 and working with funding for students coming from outside EU.
Course fee excluding travel cost	EUR 500 to 1 500
Email	schm@rkh.se

Communicable disease control (MPH)	
University of Sheffield, United Kingdom	
The Master of Public Health programme has 2 courses: communicable disease control and disaster and emergency management. The communicable disease control module covers the core principles of infectious disease surveillance, outbreak investigation and management, immunisation, as well as various key topics including antimicrobial resistance, healthcare associated infections, blood-borne infections, respiratory and gastrointestinal infections. The course is predominantly delivered by communicable disease control practitioners and infectious disease specialists here in the UK. It also covers tropical diseases, tuberculosis, and environmental health in developing countries. The Disaster and emergency management module covers the principles of hazard analysis, emergency planning/preparedness, business continuity management, emergency response and recovery. In addition, we have key topics on emergency needs assessment, monitoring & evaluation, logistics in disasters, community engagement, water and sanitation, and nutrition emergencies. The module covers material relevant to both practitioners in high-income country settings but also for those preparing to work in humanitarian settings in low-/middle-income countries.	
Technical domains covered in course	
Communicable disease prevention and control functions (also under EPHO 1 and 2)	Public health emergency preparedness and response Risk assessment Surveillance Outbreak investigation
Specific communicable diseases	Vaccine-preventable diseases Sexually transmitted diseases Food-borne diseases Tuberculosis Healthcare-associated infections and antimicrobial resistance Respiratory infections Hepatitis and other blood-borne infections Emerging and vector-borne infections
Other specific communicable diseases	Tropical diseases, environmental hazards
Transversal	Communication Mentoring Pedagogy
Other core disciplines in relation to communicable disease prevention and control	Epidemiology, disaster & emergency management
Course characteristics	
Granted certificate	Master Postgraduate certificate
Delivery mode	On-site E-learning
Education and training method	Lecture (face-to-face training) Group discussion Role play Case study Practical exercise (e.g. leadership exercise) Problem-based leadership
Duration	120 hours
Training includes research project	No
Language	English
Accredited course/programme	Yes
Course/programme accreditors	APHEA
Academic credit system	APHEA
Target audience	Multidisciplinary
Number of participants	51–100
Funding/fellowship for participants	No
Course fee excluding travel cost	EUR 500 to 1 500
Course website	http://www.sheffield.ac.uk/scharr/prospective_students/masters/mph
Email	andrew.lee@shef.ac.uk

Training in risk assessment

Risk communication part I and part II	
Netherlands School for Public and Occupational Health, The Netherlands	
In this course, students will be train in the communication of risks, preparation and response to public health emergencies. It is taught in Dutch and the duration is 24 hours.	
Technical domains covered in course	
Communicable disease prevention and control functions (also under EPHO 1 and 2)	Public health emergency preparedness and response
Specific communicable diseases	No
Transversal	Communication
Other core disciplines in relation to communicable disease prevention and control	Risk communication
Course characteristics	
Granted certificate	Postgraduate certificate
Delivery mode	On-site
Education and training method	Lecture (face-to-face training) Group discussion Role play Practical exercise (e.g. leadership exercise) Other: media training
Duration	24 hours
Training includes research project	No
Language	Dutch
Accredited course/programme	Yes
Course/programme accreditor	Governmental
Prerequisites	Experience in public health
Target audience	Multidisciplinary
Number of participants	11–25
Funding/fellowship for participants	No
Course fee excluding travel cost	EUR 500 to 1 500

Training in surveillance and epidemiology of communicable diseases: short modules in master's programmes

Infectious disease epidemiology in MPH programme	
School of Public Health, Physiotherapy & Sports Science, University College Dublin, Ireland	
In this module, students learn the epidemiology of important infectious diseases, including vaccine-preventable disease. national and international infectious disease surveillance systems and the requirements of countries under IHR are addressed. Blood-borne viruses, healthcare-associated infections, antibiotic resistance and emerging pathogens of public gealth significance are examined. Students acquire in-depth knowledge of epidemiological principles relevant to infectious diseases. They learn how to investigate and manage an infectious disease outbreak and how to interpret surveillance data. They can describe, implement, monitor and evaluate control measures against infectious diseases. They understand important aspects of antibiotic resistance development and prevention.	
Technical domains covered in course	
Communicable disease prevention and control functions (also under EPHO 1 and 2)	Surveillance Outbreak investigation Laboratory support for investigation of health threats
Specific communicable diseases	Vaccine-preventable diseases Sexually transmitted diseases Food-borne diseases Tuberculosis Healthcare-associated infections and antimicrobial resistance Respiratory infections Hepatitis and other blood-borne infections Emerging and vector-borne infections
Course characteristics	
Granted certificate	Module certificate Master
Delivery mode	On-site over 12 weeks (2 hours per week)
Education and training method	Lecture (face-to-face) Tutorials
Duration	100 hours
Training includes research project	Assignment requiring literature search
Language	English
Accredited course/programme	Yes
Academic credit system	ECTS
Number of ECTS credits	5
Target audience	Multidisciplinary
Number of participants	26–50
Funding/fellowship for participants	No
Course fee excluding travel cost	EUR 90 per credit – total EUR 450
Course website	http://www.ucd.ie/phpss/study/graduateprogrammes/publichealth
Email	patricia.fitzpatrick@ucd.ie

Epidemiology of communicable diseases in MPH programme	
Al Quds University School of Public Health, Palestine	
The course considers the public health consequences of different communicable diseases of importance for the Palestinian population; it includes some important diseases, case studies and articles to cover important epidemiological aspects. The focus is on two major components in Epidemiology of communicable diseases. The first is general knowledge about components of the epidemiological triangle and the cycle of the disease transmission. The second component is dealing with specific public health issues of importance for the epidemiology and control/prevention of communicable diseases. The course examines strategies for surveillance, outbreak investigation and prevention (including immunisation) and potentiality of spreading of infectious diseases in different settings. The major epidemiological methods for investigating and assessing strategies for surveillance should be explained, to identify groups at risk and preventive measures for each of these diseases.	
Technical domains covered in course	
Communicable disease prevention and control functions (also under EPHO 1 and 2)	Public health emergency preparedness and response Risk assessment Surveillance Outbreak investigation Laboratory support for investigation of health threats
Specific communicable diseases	Vaccineppreventable diseases Sexually transmitted diseases Food-borne diseases Healthcare-associated infections and antimicrobial resistance Respiratory infections Hepatitis and other blood-borne infections Emerging and vector-borne infections
Transversal	Communication Mentoring Leadership Ethics Multidisciplinary collaboration
Course characteristics	
Granted certificate	Master Postgraduate diploma Postgraduate certificate
Delivery mode	On-site E-learning Blended
Education and training method	Lecture (face-to-face training) Group discussion Role play Case study Practical exercise (e.g. leadership exercise) Problem-based leadership Thesis
Duration	37 hours
Training includes research project	Yes
Language	English
Accredited course/programme	Yes
Course/programme accreditors	Palestinian Ministry of Higher Education
Academic credit system	Unified Palestinian system for master programmes in Palestine. Built on semester-credited hours similar to American credit system of credit.
Prerequisites	Field experience
Target audience	Multidisciplinary Must have a scientific background either in science or health and at least two years of experience in field.
Number of participants	11–25
Funding/fellowship for participants	No
Course fee excluding travel cost	More than EUR 1 500
Course website	http://www.alquds.edu/en/faculty-of-public-health/mph-in-public-health-program.html
Email	nsharif@staff.alquds.edu

Control of communicable diseases in MPH programme	
Instituto de Saúde Pública da Universidade do Porto, Portugal	
This course provides a broad understanding of infectious diseases and has particular relevance to in-service health professionals. Strategies for prevention and control of infectious diseases are discussed, allowing the students to acquire new knowledge and update their current expertise. The course aims to address the challenges of infectious diseases in the 21st Century, namely those representing public health threats and to present the specificities on infectious diseases impact evaluation, surveillance, preparedness and response.	
Technical domains covered in course	
Communicable disease prevention and control functions (also under EPHO 1 and 2)	Public health emergency preparedness and response Risk assessment Surveillance
Specific communicable diseases	Vaccine-preventable diseases Sexually transmitted diseases Food-borne diseases Tuberculosis Hepatitis and other blood-borne infections Emerging and vector-borne infections
Transversal	Communication Mentoring
Course characteristics	
Granted certificate	Master's Postgraduate certificate
Delivery mode	On-site
Education and training method	Lecture (face-to-face training) Group discussion Practical exercise (e.g. leadership exercise)
Duration	27 hours
Training includes research project	No
Language	English
Accredited course/programme	Yes
Course/programme accreditor	Government (A3ES)
Academic credit system	ECTS
Number of ECTS credits	3
Prerequisites	Specific technical education or training
Target audience	Specific for health professionals
Number of participants	11–25
Funding/fellowship for participants	No
Course fee excluding travel cost	Less than EUR 500
Course website	http://ispup.up.pt/academics/msc-programmes
Email	lsilva@med.up.pt

Prevention of communicable diseases – Master's in Health Education	
Instituto de Saúde Pública da Universidade do Porto, Portugal	
The objective of this course is to promote knowledge on specific aspects of the population dynamics of infectious diseases, integrating basic science and clinical aspects with epidemiology and public health, particularly discussing the control strategies and mechanisms of transmission. The main contents of the course are the infectious diseases epidemiology specificities and definitions, the distribution of communicable diseases, their determinants, transmission, prevention and control, the history and epidemiology of HIV /AIDS and other sexually transmitted diseases. Topics are presented taking into account the heterogeneity of backgrounds among the participants.	
Technical domains covered in course	
Communicable disease prevention and control functions (also under EPHO 1 and 2)	Surveillance
Specific communicable diseases	Vaccine-preventable diseases Sexually transmitted diseases Food-borne diseases Tuberculosis Healthcare-associated infections and antimicrobial resistance Hepatitis and other blood-borne infections Emerging and vector-borne infections
Transversal	Communication Pedagogy
Course characteristics	
Granted certificate	Master's Postgraduate certificate
Delivery mode	On-site
Education and training method	Lecture (face-to-face training) Group discussion Practical exercise (e.g. leadership exercise)
Duration	36 hours
Training includes research project	No
Language	Portuguese
Accredited course/programme	Yes
Course/programme accreditors	Government (A3ES)
Academic credit system	ECTS
Number of ECTS credits	4
Prerequisites	Specific technical education or training
Target audience	Multidisciplinary: teachers, social workers, community health workers, nurses
Number of participants	11–25
Funding/fellowship for participants	No
Course fee excluding travel cost	Less than EUR 500
Course website	http://ispup.up.pt/academics/msc-programmes
Email	lsilva@med.up.pt

Training in surveillance and epidemiology of communicable diseases: diploma courses

IDEA – Cours International d' Épidémiologie Appliquée	
École des Hautes Études en Santé Publique (EHESP), France	
Organised in partnership with the National Public Health Agency (ANSP), École Pasteur Cnam, the army service and the association EPITER, EHESP course IDEA allows public health professionals to appropriate the intervention epidemiology methods for use in their daily practice. This training, which has been taught for more than 30 years, is recognised as a continuing professional development programme accredited by the National Agency for Continuing Professional Development. The objectives are mastering basic principles in statistics, descriptive and analytical epidemiology, implementing adapted methods for the treatment of health signals, investigating epidemics, epidemiological surveillance; conducting public health surveys and adequately communicating epidemiological information. The training is for public health professionals, including doctors, veterinarians, pharmacists, sanitary engineer and nurses, whose activity is oriented towards the practice of epidemiology.	
Technical domains covered in course	
Communicable disease prevention and control functions (also under EPHO 1 and 2)	Public health emergency preparedness and response Surveillance Outbreak investigation
Specific communicable diseases	Vaccine-preventable diseases Food-borne diseases Respiratory infections Emerging and vector-borne infections
Transversal	Communication Mentoring Multidisciplinary collaboration
Course characteristics	
Granted certificate	Postgraduate certificate
Delivery mode	On-site
Education and training method	Lecture (face-to-face training) Group discussion Role play Case study Practical exercise (e.g. leadership exercise)
Duration	120 hours
Training includes research project	No
Language	French
Accredited course/programme	Yes
Course/programme accreditor	Agence nationale du Développement Professionnel Continu
Academic credit system	Other
Prerequisites	Specific technical education or training
Target audience	Specific for health professionals
Number of participants	26–50
Funding/fellowship for participants	Yes
Course fee excluding travel cost	More than EUR 1 500
Course website	http://idea.ehesp.fr
Email	candidaturefc@ehesp.fr

New knowledge in epidemiology of infectious diseases	
Faculty of Public Health, Slovak Medical University, Bratislava, Slovakia	
Current issues in epidemiology of infectious diseases The course provides new insights into current infectious diseases issues and threats such as measles in the EU, hepatitis A, Zika virus, Ebola virus disease and avian flu and is annually updated. The target group is epidemiologists working at public health authorities. Slovakia's preparedness for such threats is also discussed. Outbreak management The course provides examples of outbreaks investigated by epidemiological studies (cohort and case-control). The target group is epidemiologists working at public health authorities responsible for outbreak investigation. The aim is wide implementation of intervention epidemiology in praxis.	
Technical domains covered in course	
Communicable disease prevention and control functions (also under EPHO 1 and 2)	Public health emergency preparedness and response Risk assessment Surveillance Outbreak investigation
Specific communicable diseases	Vaccine-preventable diseases Sexually transmitted diseases Food-borne diseases Tuberculosis Healthcare-associated infections and antimicrobial resistance Respiratory infections Hepatitis and other blood-borne infections Emerging and vector-borne infections
Course characteristics	
Granted certificate	Postgraduate certificate
Delivery mode	On-site
Education and training method	Lecture (face-to-face training) Group discussion Practical exercise (e.g. leadership exercise) Problem-based leadership
Duration	28 hours
Training includes research project	No
Language	Slovak
Accredited course/programme	No
Academic credit system	European Union of Medical Specialists (EUMS)/European Accreditation Council for Continuing Medical Education (EACCME)
Prerequisites	Field experience: work experience at public health authority or as infection control and hospital hygiene professionals
Target audience	Specific for health professionals
Number of participants	11–25
Funding/fellowship for participants	No
Course fee excluding travel cost	Less than EUR 500
Course website	http://www.szu.sk/userfiles/file/Plan_aktivit/2017/TP-2017-FVZ.pdf
Email	michal.adamisin@szu.sk

Epidemiology of infectious diseases	
Dokuz Eylul University Medical School Department of Public Health, Turkey	
This is a 2-credit course for the Master's of Public Health programme. Public health residency students (MDs) also take this course. The epidemiology of water and food-borne diseases, vaccine-preventable diseases, certain diseases which Turkey has vertical control programmes, such as malaria, Crimean-Congo haemorrhagic fever, outbreak investigation, epidemiologic measures and indicators for infectious diseases are covered in this course.	
Technical domains covered in course	
Communicable disease prevention and control functions (also under EPHO 1 and 2)	Surveillance Outbreak investigation
Specific communicable diseases	Vaccine-preventable diseases Sexually transmitted diseases Food-borne diseases Tuberculosis Healthcare-associated infections and antimicrobial resistance
Other core disciplines in relation to communicable disease prevention and control	Epidemiology
Course characteristics	
Granted certificate	Postgraduate diploma
Delivery mode	On-site
Education and training method	Lecture (face-to-face training) Group discussion Case study Practical exercise (e.g. leadership exercise)
Training includes research project	No
Language	Turkish
Course/programme accredited	No
Target audience	Specific for health professionals
Number of participants	<10
Funding/fellowship for participants	No

Training in outbreak investigation

Epidemic outbreak investigation	
Spanish National School of Public Health, Spain	
The main objective of the course is to enable students to identify, describe, asses and control communicable disease outbreaks, as well as to communicate the risks associated with those outbreaks. An outbreak can become a public health emergency, with potential risk for the health of the population demanding rapid and effective response, based on good quality research. We need exhaustive information regarding people affected, place and time, as well as socioeconomic and physical environments where the cases occur.	
Technical domains covered in course	
Communicable disease prevention and control functions (also under EPHO 1 and 2)	Surveillance Outbreak investigation
Specific communicable diseases	Vaccine-preventable diseases Sexually transmitted diseases Food-borne diseases Tuberculosis Emerging and vector-borne infections
Transversal	Communication Multidisciplinary collaboration
Course characteristics	
Granted certificate	Postgraduate certificate
Delivery mode	On-site
Education and training method	Lecture (face-to-face training) Group discussion Case study Problem-based leadership
Duration	40 hours
Training includes research project	No
Language	Spanish
Accredited course/programme	No
Academic credit system	ECTS
Number of ECTS credits	2
Prerequisites	Specific technical education or training
Target audience	Specific for health professionals
Number of participants	11–25
Funding/fellowship for participants	No
Course fee excluding travel cost	Less than EUR 500
Course website	http://sigade.isciii.es/publico/actual/VerCurso.asp?ID=4&CodProp=2904&CodEd=3002
Email	juan_donado_campos@hotmail.com

Science of eradication	
Swiss School of Public Health, Switzerland	
Participants of the science of eradication: malaria leadership development course gain knowledge and skills to develop and direct malaria control, elimination, and eradication programmes through an understanding of a broad range of topics, including lessons learned from past eradication efforts, challenges in malaria biology and epidemiology, gaps and opportunities in vector control strategies, drug and vaccine strategies, and surveillance techniques. The 2017 edition of the Science of Eradication: the malaria leadership development course was hosted by the Swiss Tropical and Public Health Institute. The course provided individuals working in broad areas of malaria with a multidisciplinary perspective of disease eradication. Faculty from the three partner institutions, as well as malaria experts from around the world, shared their expertise on a range of malaria topics including: Past disease eradication efforts; Malaria biology and epidemiology; vector and parasite biology; Application of vector control, drug, and vaccine strategies; economic and financial tools and strategies; impact of social and political factors; Surveillance techniques; and Modelling to evaluate the effectiveness of eradication strategies. This course is accredited (2 tropEd ECTS credits) by the University of Barcelona.	
Technical domains covered in the course	
Communicable disease prevention and control functions (also under EPHO 1 and 2)	Surveillance Outbreak investigation Laboratory support for investigation of health threats
Specific communicable diseases	Emerging and vector-borne infections
Transversal	Communication Mentoring Pedagogy Leadership Ethics Multidisciplinary collaboration
Course characteristics	
Granted certificate	Postgraduate certificate
Delivery mode	On-site
Education and training method	Lecture (face-to-face training) Group discussion Case study Practical exercise (e.g. leadership exercise) Problem-based leadership
Duration	60 hours
Training includes research project	No
Language	English
Accredited course/programme	Yes
Course/programme accreditors	tropEd
Academic credit system	ECTS
Number of ECTS credits	2
Prerequisites	Field experience; specific technical education or training
Target audience	Multidisciplinary
Number of participants	26–50
Funding/fellowship for participants	Yes
Course fee excluding travel cost	Free
Course website	http://www.scienceoferadication.org
Email	nuria.casamilijona@isglobal.org

Outbreak investigation, epidemiological aspects	
Netherlands School for Public and Occupational Health, The Netherlands	
The course is on the epidemiological aspects of outbreak investigation. The course accreditors are governmental and APHEA. It is taught in English and certain parts are in Dutch.	
Technical domains covered in the course	
Communicable disease prevention and control functions (also under EPHO 1 and 2)	Outbreak investigation
Specific communicable diseases	No
Transversal	Multidisciplinary collaboration
Course characteristics	
Granted certificate	Postgraduate certificate
Delivery mode	On-site Blended
Education and training method	Lecture (face-to-face training) Group discussion Case study Practical exercise (e.g. leadership exercise)
Duration	30 hours
Training includes research project	No
Language	English Elements in English and Dutch
Accredited course/programme	Yes
Course/programme accreditors	Government/APHEA
Academic credit system	APHEA
Target audience	Specific for health professionals (doctors, nurses in centres for disease control, epidemiologists in public health)
Number of participants	11–25
Funding/fellowship for participants	No
Course fee excluding travel cost	EUR 500 to 1 500
Course website	http://www.nspoh.nl
Email	c.deruiter@nspoh.nl

Outbreak management	
Netherlands School for Public and Occupational Health, The Netherlands	
The course on outbreak management deals with issues related to public health emergency preparedness and response, risk assessment, vaccine-preventable diseases, food-borne diseases, respiratory infections, emerging and vector-borne infections and outbreak management. The course accreditors are professional bodies and APHEA. It is taught in Dutch and the duration is 24 hours.	
Technical domains covered in course	
Communicable disease prevention and control functions (also under EPHO 1 and 2)	Public health emergency preparedness and response Risk assessment
Specific communicable diseases	Vaccine-preventable diseases Foodborne diseases Respiratory infections Emerging and vector-borne infections
Transversal	Communication Leadership Multidisciplinary collaboration
Other core disciplines in relation to communicable disease prevention and control	Outbreak management
Course characteristics	
Granted certificate	Postgraduate certificate
Delivery mode	On-site
Education and training method	Lecture (face-to-face training) Group discussion Role play Case study
Duration	24 hours
Training includes research project	No
Language	Dutch
Accredited course/programme	Yes
Course/programme accreditors	Professional accreditation body/APHEA
Academic credit system	APHEA
Prerequisites	Specific technical education or training (experience in public health)
Target audience	Multidisciplinary
Number of participants	11–25
Funding/fellowship for participants	No
Course fee excluding travel cost	EUR 500 to 1 500
Course website	http://www.nspoh.nl
Email	c.deruiter@nspoh.nl

Training in laboratory support for investigation of health threats

Molecular diagnostic of tropical diseases	
Spanish National School of Public Health, Spain	
This course provides health and biologic sciences students with knowledge and skills about management and laboratory diagnostic of tropical diseases. The main objectives of the course are to become familiar with the more prevalent tropical diseases, provide basic information about biology, epidemiology, diagnosis and treatment for a wide range of tropical diseases, as well as practical laboratory skills for the differential diagnosis of them.	
Technical domains covered in the course	
Communicable disease prevention and control functions (also under EPHO 1 and 2)	Laboratory support for investigation of health threats
Specific communicable diseases	Vaccine-preventable diseases Sexually transmitted diseases Food-borne diseases Hepatitis and other blood-borne infections Emerging and vector-borne infections
Transversal	Multidisciplinary collaboration
Course characteristics	
Granted certificate	Postgraduate certificate
Delivery mode	On-site
Education and training method	Lecture (face-to-face training) Practical exercise (e.g. leadership exercise)
Duration	80 hours
Training includes research project	No
Language	Spanish
Accredited course/programme	No
Academic credit system	ECTS
Number of ECTS credits	4
Prerequisites	Field experience; specific technical education or training
Target audience	Specific for health professionals
Number of participants	11–25
Funding/fellowship for participants	No
Course fee excluding travel cost	Less than EUR 500
Course website	http://sigade.isciii.es/publico/actual/VerCurso.asp?ID=4&CodProp=2818&CodEd=2916
Email	erodrgez@isciii.es

Training in specific communicable diseases

WHO Collaborating Centre for HIV Strategic Information – several courses	
University of Zagreb, School of Medicine, Andrija Stampar School of Public Health, Croatia	
Many training workshops are organised within the centre. Those presented in detail are the ones offered in 2018. For the previous ones, the title of the workshop is presented. • Training workshop on using HIV care and treatment cascades to improve 90-90-90 targets, March 2018, Dubrovnik, Croatia The main course objective was to enhance the skills of participants in analysis and use of the HIV 'care cascade' that is used to determine the magnitude of losses and gaps along the continuum of HIV care and explore reasons for these losses. The HIV care cascade is a way to show the proportion of individuals living with HIV who are engaged at each stage of HIV care, typically illustrated by a cascading bar chart. Cascades consist of a series of events in which each event is contingent on having achieved the preceding event until the final outcome is reached. The HIV care cascade enables to monitor the progress against 90-90-90 targets that the international community set towards achieving the Sustainable Development Goals and ending AIDS. • Training workshop on getting to zero: PrEP, treatment for all and differentiated care to reduce incidence and mortality, June 2018, Zagreb, Croatia This training workshop described the major role that pre-exposure prophylaxis (PrEP) to prevent HIV acquisition and treatment as prevention have in reducing HIV incidence and mortality and bringing the epidemic under control. As of September 2015, WHO recommends that people at substantial risk of HIV infection should be offered PrEP as an additional prevention choice, as part of comprehensive prevention strategies. Lectures outlined steps that are necessary for the implementation of PreP programmes. The course also focussed on the HIV treatment as prevention strategy and participants learned about various differentiated ART delivery models and monitoring and evaluation approaches. • Training workshop on improving HIV programmes through the use of cohort data: ART cohort data analysis, March 2015, Croatia • Training workshop on HIV prevention and treatment cascade analysis, June 2015, Zagreb, Croatia • Training workshop on data analysis and population size estimations using RDS analyst (RDS-A), October 2015, Zagreb, Croatia • Training workshop on HIV prevention, diagnosis, treatment and care for key populations and programme evaluation, March 2016, Zagreb, Croatia • Workshop on population size estimations in key populations: methods and lessons learned around the world, 30 May–2 June 2016, Zagreb, Croatia • Training workshop in design and implementation of respondent-driven sampling (RDS) and RDS data analysis, October 2016, Zagreb, Croatia • Workshop in HIV case-based surveillance and patient monitoring March 2017, Zagreb, Croatia • Training workshop on HIV interventions for key populations and programme evaluation, June 2017, Zagreb, Croatia • Training workshop on HIV data quality improvement, programme quality improvement and data use, October 2017, Zagreb, Croatia	
Technical domains covered in course	
Communicable disease prevention and control functions (also under EPHO 1 and 2)	Risk assessment Surveillance
Specific communicable diseases	Sexually transmitted diseases Hepatitis and other blood-borne infections
Transversal	Mentoring Leadership Multidisciplinary collaboration
Course characteristics	
Delivery mode	On-site
Education and training method	Lecture (face-to-face training) Group discussion Role play Case study Practical exercise (e.g. leadership exercise) Problem-based leadership
Training includes research project	No
Language	English
Accredited course/programme	Yes
Course/programme accreditors	WHO
Target audience	Multidisciplinary
Number of participants	11–25
Course fee excluding travel cost	EUR 500 to 1 500
Course website	http://www.whohub-zagreb.org/trainings
Email	training@snz.hr

Control of communicable disease, epidemiology of infection; HIV	
Braun School of Public Health and Community Medicine, Israel	
In this course, students will be trained in the Control of Communicable Disease, Epidemiology of Infection; HIV. The course accreditors are APHEA Institutional accreditation.	
Technical domains covered in course	
Communicable disease prevention and control functions (also under EPHO 1 and 2)	Risk assessment Surveillance Outbreak investigation
Specific communicable diseases	Vaccine-preventable diseases Tuberculosis Emerging and vector-borne infections
Transversal	Communication Mentoring Pedagogy Multidisciplinary collaboration
Course characteristics	
Granted certificate	Doctorate/Master's
Delivery mode	On-site
Education and training method	Lecture (face-to-face training) Group discussion Case study Practical exercise (e.g. leadership exercise) Problem-based leadership
Duration	42 hours
Training includes research project	Yes
Language	English
Accredited course/programme	Yes
Course/programme accreditors	APHEA
Academic credit system	APHEA
Target audience	Specific for health professionals
Number of participants	11–25
Funding/fellowship for participants	Yes

Course in tuberculosis control consultancy	
Braun School of Public Health and Community Medicine, Israel	
In this course, students will be trained in tuberculosis control consultancy. This course deals with issues related to public health emergency preparedness and response, risk assessment and tuberculosis.	
Technical domains covered in course	
Communicable disease prevention and control functions (also under EPHO 1 and 2)	Public health emergency preparedness and response Risk assessment
Specific communicable diseases	Tuberculosis
Transversal	Communication Mentoring Pedagogy Multidisciplinary collaboration
Course characteristics	
Granted certificate	Postgraduate certificate
Delivery mode	On-site
Education and training method	Lecture (face-to-face training) Group discussion Practical exercise (e.g. leadership exercise) Problem-based leadership
Duration	39 hours
Language	English
Accredited course/programme	No
Target audience	Multidisciplinary
Number of participants	<10

Tuberculosis	
Instituto de Saúde Pública da Universidade do Porto, Portugal	
This course promotes the application of tuberculosis epidemiology in clinical practice and raises awareness about the appropriate use and interpretation of diagnostic tools in the study of a patient with suspected tuberculosis, the use of available drugs for the treatment of tuberculosis, and also addresses the impact of adverse effects and co-morbidities. The principles in multidrug-resistant tuberculosis approach, how to track populations at-risk, how to study a tuberculosis outbreak and the dynamics of tuberculosis transmission in a community will be presented and discussed.	
Technical domains covered in course	
Communicable disease prevention and control functions (also under EPHO 1 and 2)	Risk assessment Surveillance Outbreak investigation Laboratory support for investigation of health threats
Specific communicable diseases	Tuberculosis
Transversal	Communication Leadership Multidisciplinary collaboration
Course characteristics	
Granted certificate	Postgraduate certificate
Delivery mode	On-site
Education and training method	Lecture (face-to-face training) Group discussion Case study Practical exercise (e.g. leadership exercise)
Duration	28 hours
Training includes research project	No
Language	Portuguese
Accredited course/programme	No
Prerequisites	Specific technical education or training
Target audience	Specific for health professionals
Number of participants	51–100
Course fee excluding travel cost	Less than EUR 500
Course website	http://ispup.up.pt/academics/short-courses/next/525
Email	secretaria@ispup.up.pt

School of vaccinology for general practitioner (GP) in residential programme	
Faculty of Public Health, Slovak Medical University, Bratislava, Slovak Republic	
• School of vaccinology for general practitioner The aim of the course is to increase the knowledge of GPs in the field of vaccinology and subsequently to increase the vaccination coverage of the adult population. Vaccination of adults is a part of continuous work engagement and healthy aging. Since GPs for adults do not have sufficient knowledge about vaccination, they are under the pressure of anti-vax patients and parents. The target group is medical doctors in residential programmes preparing for GP specialisation. The main content of the course is immunisation and the basics of vaccine immunology, types and composition of vaccines, types of vaccination and its reimbursement, vaccines storage and administration, contraindications and safety of vaccination, management of vaccination in the GP praxis and compulsory vaccination of children and adult vaccination against individual diseases. • School of vaccinology for general paediatricians The aim of the course is to increase the knowledge of general paediatricians in the field of vaccinology and subsequently to maintain high vaccination coverage of compulsory vaccinated diseases and increase vaccination coverage of recommended vaccination. Paediatricians are under the pressure of anti-vax parents. The target group is medical doctors preparing for paediatric specialisation. The main content of the course is immunisation and the basics of vaccine immunology, types and composition of vaccines. types of vaccination and its reimbursement, vaccine storage and administration, contraindications and safety of vaccination, management of vaccination in the paediatric praxis, compulsory vaccination of children and recommended vaccination against individual diseases.	
Technical domains covered in course	
Specific communicable diseases	Vaccine-preventable diseases
Transversal	Communication
Course characteristics	
Granted certificate	Postgraduate certificate
Delivery mode	On-site
Education and training method	Lecture (face-to-face training) Group discussion Practical exercise (e.g. leadership exercise) Problem-based leadership Interactive via http://www.sli.do
Duration	16 hours
Training includes research project	No
Language	Slovak
Accredited course/programme	No
Academic credit system	EUMS/EACCME
Target audience	Specific for health professionals GP for adults
Number of participants	51–100 participants
Funding/fellowship for participants	No
Course fee excluding travel cost	Less than EUR 500
Email	kristufkova@gmail.com

Epidemiological aspects of immunisation programmes	
Spanish National School of Public Health, Spain	
After attending the course the participant should be familiar and able to describe the immunisation policy in Spain, the natural history of vaccine preventable diseases and the implications of introducing a vaccination programmes, the parameters involved in the dynamics of the vaccine preventable diseases, the characteristics of the different types of vaccines and their mechanisms of action, the process of authorisation and marketing of vaccines, the surveillance of immunisation coverage, different methods for estimating the efficacy/effectiveness of vaccines, the evaluation of vaccines safety and to have some understanding on mathematical models and their application to design vaccination strategies.	
Technical domains covered in course	
Communicable disease prevention and control functions (also under EPHO 1 and 2)	Public health emergency preparedness and response Surveillance
Specific communicable diseases	Vaccine-preventable diseases
Transversal	Communication Pedagogy Leadership Ethics Multidisciplinary collaboration
Course characteristics	
Granted certificate	Postgraduate certificate
Delivery mode	On-site
Education and training method	Lecture (face-to-face training) Group discussion Practical exercise (e.g. leadership exercise)
Duration	25 hours
Training includes research project	No
Language	Spanish
Accredited course/programme	No
Academic credit system	ECTS
Number of ECTS credits	1
Prerequisites	Specific technical education or training
Target audience	Specific for health professionals
Number of participants	11–25
Funding/fellowship for participants	No
Course fee excluding travel cost	Less than EUR 500
Course website	http://sigade.isciii.es/publico/actual/VerCurso.asp?ID=4&CodProp=2837&CodEd=2935
Email	alimia@msssi.es

5 Master's/doctoral programmes in surveillance and epidemiology of communicable diseases

Doctoral study programmes

Dutch training programme for medical doctors in Infectious disease control (medical specialisation, accredited)	
Netherlands School for Public and Occupational Health, The Netherlands	
Dutch training programme for medical doctors in infectious disease control. The topics covered in this course are public health emergency preparedness and response, risk assessment, surveillance and outbreak investigation. The accreditors of the course are the government and the Netherlands School for Public and Occupational Health. It has APHEA accreditation. It is taught in Dutch and certain parts are in English.	
Technical domains covered in the course	
Communicable disease prevention and control functions (also under EPHO 1 and 2)	Public health emergency preparedness and response Risk assessment Surveillance Outbreak investigation
Specific communicable diseases	No
Transversal	Communication Mentoring Pedagogy Leadership Ethics Multidisciplinary collaboration
Other core disciplines in relation to communicable disease prevention and control	Different communicable diseases, does not exclude specific ones
Course characteristics	
Granted certificate	Postgraduate diploma License to work as medical doctor in infectious disease control
Delivery mode	On-site Blended Learning by doing combined with on-site and blended learning
Education and training method	Lecture (face-to-face training) Group discussion Case study Practical exercise (e.g. leadership exercise) Assignments in practice, supervised competency-based learning
Training includes research project	Yes
Language	Dutch, certain parts in English
Accredited course/programme	Yes
Course/programme accreditors	Government/APHEA
Academic credit system	ECTS
Number of ECTS credits	120
Prerequisites	Specific technical education or training (medical doctor)
Target audience	Specific for health professionals (medical doctors working in public health)
Number of participants	26–50
Funding/fellowship for participants	Yes
Course fee excluding travel cost	More than EUR 1500
Course website	http://www.nspoh.nl
Email	c.deruiter@nspoh.nl

Master's

MSc Infectious Diseases	
Department of Health Sciences, European University Cyprus, Cyprus	
The MSc in Infectious Diseases is a new programme offered by the European University Cyprus as of 2018. It has a duration of 18 months full-time/90 ECTS credits. It is open for enrolment till 30 September each year for any health profession Bachelor graduate with an English knowledge at level B2 of COE or higher and prior academic, research or professional interest in infectious diseases and a maximum of 30 students can enrol annually. The programme is in English with a block format (i.e. live courses offered in the Nicosia campus on a whole day schedule within only 3–4 days each month to facilitate international student participation). Each course is assessed on the basis of projects, class participation, midterm and final examination and there is also a compulsory research thesis of 20 000 words in the last/third semester. The programme covers all ECDC field epidemiology and public health microbiology (EUPHEM) competences and is also indicated for professionals aiming at a relevant career with ECDC or other national/global regulatory authorities.	
Technical domains covered in course	
Communicable disease prevention and control functions (also under EPHO 1 and 2)	Public health emergency preparedness and response Risk assessment Surveillance Outbreak investigation
Specific communicable diseases	Vaccine-preventable diseases Food-borne diseases Healthcare-associated infections and antimicrobial resistance Hepatitis and other blood-borne infections Emerging and vector-borne infections Travel-related and tropical diseases
Transversal	Communication Mentoring Pedagogy Multidisciplinary collaboration
Other core disciplines in relation to communicable disease prevention and control	Epidemiology, biostatistics, clinical microbiology
Course characteristics	
Granted certificate	Master's
Delivery mode	Blended (e-learning, on-site)
Education and training method	Lecture (face-to-face training) Case study Practical exercise (e.g. leadership exercise) Problem-based leadership
Duration	18 months
Training includes research project	Yes
Language	English
Accredited course/programme	Yes
Course/programme accreditors	Government
Academic credit system	ECTS
Number of ECTS credits	90
Prerequisites	Degree in health sciences, English CEF level B2 and PC skills
Target audience	Multidisciplinary
Number of participants	26–50
Funding/fellowship for participants	No
Course fee excluding travel cost	More than EUR 1500
Course website	http://www.euc.ac.cy
Email	G.Lavranos@euc.ac.cy

MSc Infection Biology	
Swiss School of Public Health, Switzerland	
Swiss TPH offers the Master of Infection Biology for students with a special interest in basic biology and laboratory work. The master's at the University of Basel starts in the autumn semester. The Master of Science in Infection Biology normally requires three semesters for students with a bachelor's degree. Infection biology focuses on host-pathogen interactions and aims to understand the mechanisms through which viruses, bacteria, fungi or parasites colonise their hosts and cause disease. Infection biologists study molecular, cellular, metabolic or immunological aspects of pathogen biology and infection, try to elucidate mechanisms and evolution of drug resistance and immune evasion, or investigate dynamics of transmission and infection in the field. Knowledge gained from studying these and other aspects of infection biology provides the basis for the development of novel diagnostic tools, drugs and vaccines for improved prevention and treatment of infectious diseases. The MSc degree in infection biology centres mainly on laboratory based work. All courses and lab work are taught in English.	
Technical domains covered in course	
Communicable disease prevention and control functions (also under EPHO 1 and 2)	Public health emergency preparedness and response Risk assessment Surveillance Outbreak investigation Laboratory support for investigation of health threats
Specific communicable diseases	Vaccine-preventable diseases Sexually transmitted diseases Food-borne diseases Tuberculosis Healthcare-associated infections and antimicrobial resistance Respiratory infections Hepatitis and other blood-borne infections Emerging and vector-borne infections
Transversal	Communication Mentoring Pedagogy Leadership Ethics Multidisciplinary collaboration
Course characteristics	
Granted certificate	Master's
Delivery mode	On-site
Education and training method	Lecture (face-to-face training) Group discussion Role play Case study Practical exercise (e.g. leadership exercise) Problem-based leadership
Duration	Two years
Training includes research project	Yes
Language	English
Accredited course/programme	Yes
Course/programme accreditors	University of Basel
Academic credit system	ECTS
Number of ECTS credits	120
Prerequisites	BSc in related field
Target audience	Specific for health professionals
Number of participants	11–25
Funding/fellowship for participants	Yes
Course website	http://www.swisstph.ch/en/education-and-training/bachelor-and-master/msc-in-infection-biology
Email	christine.mendes@swisstph.ch

MSc Control of Infectious Diseases	
London School of Hygiene and Tropical Medicine, United Kingdom	
This course aims to bridge the disciplines of epidemiology, laboratory sciences, and public health and policy for the training and retraining of students who wish to work directly on a multidisciplinary, practical approach to the control of infectious diseases. By the end of the programme, students should be well-equipped to: investigate the transmission of endemic and epidemic infections; select appropriate methods of control; design, implement, and evaluate co-ordinated control methods; assess constraints of local public health delivery systems; manage available resources in the context of infectious disease control; and focus their efforts on particular geographical regions or specific diseases.	
Technical domains covered in course	
Communicable disease prevention and control functions (also under EPHO 1 and 2)	Public health emergency preparedness and response Risk assessment Surveillance Outbreak investigation
Specific communicable diseases	Vaccine-preventable diseases Sexually transmitted diseases Food-borne diseases Tuberculosis Healthcare-associated infections and antimicrobial resistance Respiratory infections Hepatitis and other blood-borne infections Emerging and vector-borne infections
Transversal	Communication Leadership Ethics Multidisciplinary collaboration
Course characteristics	
Granted certificate	Master's
Delivery mode	On-site E-learning
Education and training method	Lecture (face-to-face training) Group discussion Role play Case study Practical exercise (e.g. leadership exercise) Problem-based leadership
Training includes research project	Yes
Language	English
Accredited course/programme	Yes
Course/programme accreditors	University of London
Prerequisites	Field experience and specific technical education or training
Target audience	Multidisciplinary
Number of participants	51–100
Funding/fellowship for participants	No
Course fee excluding travel cost	More than EUR 1 500
Course website	http://www.lshtm.ac.uk/study/masters/control-infectious-diseases

Annex 1. Other public health training programmes in prevention and control of communicable diseases

These training courses are general public health training courses where there are components on training communicable diseases prevention and control.

Country	Institution	Programme title	Website
Bulgaria	Medical University Plovdiv-Faculty of Public Health	Brief courses Clinical epidemiology for medical students	http://www.mu-plovdiv.bg/en/faculties/faculty-of-public-health
		Clinical epidemiology for nurses and midwives	
	Faculty of Public Health, Medical University of Pleven	Short course Public health prevention and control, courses for bachelor's degree students in public health, medical students, nurses and midwives	http://www.mu-pleven.bg
		Short course Epidemiology of infectious diseases, medical parasitology, microbiology and virology	http://www.mu-pleven.bg
Czech Republic	Faculty of Medicine & Dentistry, Palacky University, Olomouc	Doctoral study programme Hygiene, preventive medicine and epidemiology	http://old.lf.upol.cz/en/groups/studying/phd-studies
		Doctoral study programme Social medicine	http://old.lf.upol.cz/en/groups/studying/phd-studies
		Master's degree programmes: General medicine and dentistry	http://old.lf.upol.cz/en/groups/studying/master-degree-programmes
		Diploma course postgraduate specialty training in public health (for both medical and non-medical health professionals)	http://www.lf.upol.cz/en
Finland	Health Sciences, Faculty of Social Sciences, University of Tampere, Finland (formerly, School of Health Sciences)	Doctoral study programme International doctoral programme in epidemiology and public health	http://www.uta.fi/ippe
Germany	HAW Hamburg	Master's • Master's in Public Health • Master's in Health Sciences	http://www.haw-hamburg.de/?id=21128 http://www.haw-hamburg.de/fakultaeten-und-departments/ls/studium-und-lehre/master-studiengaenge/mhs.html

Country	Institution	Programme title	Website
Palestine	Al Quds University School of Public Health	Master's • Master's in Epidemiology • Master's in Public Health	http://www.alquds.edu/en/faculty-of-public-health.html
Poland	Poznan University of Medical Sciences	Short course Health promotion and health education, Epidemiology	http://pums.ump.edu.pl
Portugal	Instituto de Saúde Pública da Universidade do Porto	Diploma course Specialisation course in public health	http://ispup.up.pt/academics/specialization-course
Slovenia	Angela Boškin Faculty of Health Care	Short course Public health and the basic principles of health promotion	http://www.fzab.si/en/mainmenu-2/about-the-faculty/introduction
Spain	Escola Valenciana d'Estudis de la Salut (Valencian School of Health Studies, EVES)	Diploma course Diploma in public health	http://www.eves.san.gva.es/web/guest/detalle-cursos?codigo=11700101F&idi=valencia
	Facultad de Ciencias de la Salud, Universidad Pública de Navarra	Master's Master's in Public Health	http://www.unavarra.es/estudios/posgrado/oferta-de-posgrado-oficial/titulos-oficiales-de-master/escuela-universitaria-de-estudios-sanitarios/master-universitario-en-salud-publica
The Netherlands	Care and Public Health Research Institute (CAPHRI)	Master's and PhD • Master's in Global Health • PhD programme in statistics and epidemiology	http://www.maastrichtuniversity.nl
United Kingdom	University of the West of England, Bristol	Master's Health protection module within MSc in Public Health programme	http://courses.uwe.ac.uk/BL9412/public-health
	Faculty of Public Health, London	Diploma course Specialty training	http://www.fph.org.uk/specialty_training

Annex 2. Rationale for technical dimensions used to analyse competencies developed through courses in catalogue

The technical dimensions explored were categorised in three groups of competencies. The details of these three groups are competences related with:

- communicable disease prevention and control functions (also under EPHO 1 and 2)
- specific communicable diseases; and
- transversal areas

The competency domains explored originated from the following technical documents:

- Core competencies for public health epidemiologists working in the area of communicable disease surveillance and response, in the European Union[4].
- European action plan for strengthening public health capacities and services[5].
- From potential to action Public Health Core Competences for Essential Public Health Operations[6].
- Core competencies for interprofessional collaborative practice: Report of an expert panel[7].

Competences related with communicable disease prevention and control functions (also under EPHO 1 and 2)

Surveillance

These EPHO 1 (surveillance of population health and well being)[5,6] and ECDC core competencies for EU public health epidemiologists relate to public health surveillance (domain 1.2.2)[4]:

- Run a surveillance system.
- Conduct surveillance data management.
- Perform descriptive analysis of surveillance data.
- Interpret disease and public health events trends from time series analysis.
- Identify key findings from surveillance data analysis and draw conclusions.
- Evaluate surveillance systems.
- Recognise the need for and set up a new surveillance system.
- Use event-based surveillance, also called epidemic intelligence, to detect health threats.
- Be familiar with laws on surveillance and reporting of communicable diseases at national, EU and global levels (IHR).

Public health emergency preparedness and response

These EPHO 2 (monitoring and response to health hazards and emergencies) and ECDC core competencies for EU public health epidemiologists relate to public health emergency preparedness and response [5,6]:

- ability to define and describe public health disasters and emergencies that may trigger implementation of an emergency response plan
- development of a plan that defines organisational responsibilities, establishes communication and information networks and clearly outlines alert and evacuation protocols
- periodic assessment of the capacity for rapid response, including testing of the emergency plan through tabletop exercises and large-scale drills
- development of written epidemiological case investigation protocols for immediate investigation
- assessment of the effectiveness of past incident evaluations and identification of opportunities for improvement
- maintenance of written protocols to implement a programme of source and contact tracing for communicable diseases or toxic exposures
- maintenance of a roster of personnel with the technical expertise to respond to all natural and man-made emergencies
- coordination with other sectors/civil protection-coordinated approach; and
- implementation of IHR in the area of emergency planning.

Risk assessment

These ECDC core competencies for EU public health epidemiologists relate to risk assessment (domain 1.2.1)[4]:

- Identify sources of information about potential public health threats.
- Conduct risk assessments – verify, using critical thinking, if a public health problem exists and describe its magnitude.
- Identify surveillance data needs for risk assessments of public health threats.

Outbreak investigation

These ECDC core competencies for EU public health epidemiologists relate to outbreak investigation (domain 1.2.3)[4]:

- Create a case definition and adjust it as necessary during the investigation.
- Describe the outbreak in terms of person, place and time.
- Generate hypothesis about the cause and/or risk factors of the outbreak.
- Conduct analytical epidemiological investigation to identify the source.
- Recommend appropriate evidence-based measures to control the outbreak.
- Report and present results of an investigation.

Laboratory support for investigation of health threats

These EPHO 2 (monitoring and response to health hazards and emergencies) and ECDC core competencies for EU public health epidemiologists relate to laboratory support for investigation of health threats [5,6]:

- readily accessible laboratories capable of supporting research into public health problems, hazards and emergencies
- readily accessible laboratories capable of meeting routine diagnostic and surveillance needs
- ability to confirm that laboratories comply with regulations and standards through credentialing and licensing agencies
- ability to address the handling of laboratory samples through guidelines or protocols
- adequacy of the public health laboratory system and its capability to conduct rapid screening and high-volume testing for routine diagnostic and surveillance needs; and
- capacity to produce timely and accurate laboratory results for diagnosis and research of public health threats.

These ECDC core competencies for EU public health epidemiologists relate to laboratory issues (domain 1.2.6.):

- Interpret the diagnostic and epidemiological significance of reports from laboratory tests.
- Be familiar with different methods for diagnosis and typing, including molecular tests.
- Communicate effectively with the laboratory team.

Competences related with specific communicable disease

These ECDC core competencies for EU public health epidemiologists relate to familiarity with transmission dynamics of infectious diseases (domain 1.2.5.) [4]:

- vaccine-preventable diseases
- sexually transmitted diseases
- food-borne diseases
- tuberculosis
- healthcare-associated infections and antimicrobial resistance
- respiratory infections
- hepatitis and other blood-borne infections; and
- emerging and vector-borne infections.

Competences related with transversal areas

Communication

These ECDC core competencies for EU public health epidemiologists relate to communication[4]:

Risk communication (domain 2.3.1)

- Apply basic principles of risk communication, adjusting the message when presenting results of an investigation to different audiences: media, general public, professionals and policymakers.

Written communication (domain 2.3.2)

- Write a report of an epidemiological investigation for decision makers.
- Write an article for a scientific journal.
- Write an abstract.
- Write a press release.
- Produce documents, reports, letters and meeting minutes.

Oral communication (domain 2.3.3)

- Incorporate interpersonal skills in communication with colleagues and with the other audiences.
- Analyse and synthesise main points in a speech.
- Provide objective feedback (descriptive rather than judgemental).

Use of new communication technologies (domain 2.3.4)

- Use communication technologies (videoconference, teleconference and email).

Mentoring

These ECDC core competencies for EU public health epidemiologists relate to mentorship (Domain 2.5.1.)[4]:

- Mentor peers or junior epidemiologists.
- Assist others to clarify thinking, create consensus and develop ideas into actionable plans.

Pedagogy

For easier reporting and reference, these are the ECDC core competencies for EU public health epidemiologists relating to the area of training (Domain 2.5.2.)[4]:

- Train junior epidemiologists.

Ethics

These ECDC core competencies for EU public health epidemiologists relate to ethics[4].

Protection of individuals (domain 2.6.1)

- Respect and adhere to ethical principles regarding human welfare.
- Follow ethics principles and guidelines for planning studies, conducting research, and collecting disseminating and using data.
- Apply relevant laws to data collection, management, dissemination and use of information.

Confidentiality (domain 2.6.2)

- Respect and adhere to ethical principles regarding data protection and confidentiality regarding any information obtained as part of the professional activity

Conflicts of interests (domain 2.6.3)

- Handle conflicts of interests.

Multidisciplinary collaboration

These are the Core Competencies for Interprofessional Collaborative Practice: Report of an Expert Panel[7].

Values/ethics for interprofessional practice (domain 1)

- Place the interests of patients and populations at the centre of inter-professional healthcare delivery.
- Respect the dignity and privacy of patients while maintaining confidentiality in the delivery of team-based care.
- Embrace the cultural diversity and individual differences that characterise patients, populations and the healthcare team.
- Respect the unique cultures, values, roles/responsibilities and expertise of other health professions.

- Work in cooperation with those who receive and provide care and others who contribute to or support the delivery of prevention and health services.
- Develop a trusting relationship with patients, families and other team members (Center for International Humanitarian Cooperation, 2010).
- Demonstrate high standards of ethical conduct and quality of care in contributions to team-based care.
- Manage ethical dilemmas specific to inter-professional patient/population-centred care situations.
- Act with honesty and integrity in relationships with patients, families and other team members.
- Maintain competence in one's own profession appropriate to scope of practice.

Roles/responsibilities for collaborative practice (domain 2)

- Communicate one's roles and responsibilities clearly to patients, families and other professionals.
- Recognise one's limitations in skills, knowledge and abilities.
- Engage diverse healthcare professionals who complement one's own professional expertise, as well as associated resources, to develop strategies to meet specific patient care needs.
- Explain the roles and responsibilities of other care providers and how the team works together to provide care.
- Use the full scope of knowledge, skills and abilities of available health professionals and healthcare workers to provide care that is safe, timely, efficient, effective and equitable.
- Communicate with team members to clarify each member's responsibility in executing components of a treatment plan or public health intervention.
- Forge interdependent relationships with other professions to improve care and advance learning.
- Engage in continuous professional and interprofessional development to enhance team performance.
- Use unique and complementary abilities of all members of the team to optimise patient care.

Interprofessional communication practices (domain 3)

- Choose effective communication tools and techniques, including information systems and communication technologies, to facilitate discussions and interactions that enhance team function.
- Organise and communicate information with patients, families, and healthcare team members in a form that is understandable, avoiding discipline-specific terminology when possible.
- Express one's knowledge and opinions to team members involved in patient care with confidence, clarity and respect, working to ensure common understanding of information and treatment and care decisions.
- Listen actively and encourage ideas and opinions of other team members.
- Give timely, sensitive and instructive feedback to others about their performance on the team and responding respectfully as a team member to feedback from others.
- Use respectful language appropriate for a given difficult situation, crucial conversation or inter- professional conflict.
- Recognise how one's uniqueness, including experience level, expertise, culture, power and hierarchy within the healthcare team, contributes to effective communication, conflict resolution and positive inter- professional working relationships (University of Toronto, 2008).
- Communicate consistently the importance of teamwork in patient-centred and community-focused care.

Interprofessional teamwork and team-based practice (domain 4)

- Describe the process of team development and the roles and practices of effective teams.
- Develop consensus on the ethical principles to guide all aspects of patient care and team work.
- Engage other health professionals, appropriate to the specific care situation, in shared patient- centred problem-solving.
- Integrate the knowledge and experience of other professions, appropriate to the specific care situation, to inform care decisions while respecting patient and community values and priorities/preferences for care.
- Apply leadership practices that support collaborative practice and team effectiveness.
- Engage oneself and others to constructively manage disagreements about values, roles, goals and actions that arise among healthcare professionals, patients and families.
- Share accountability with other professions, patients and communities for outcomes relevant to prevention and healthcare.
- Reflect on individual and team performance for improvement.
- Use process improvement strategies to increase the effectiveness of inter-professional teamwork and team-based care.
- Use available evidence to inform effective teamwork and team-based practices.
- Perform effectively on teams and in different team roles in a variety of settings.

European Centre for Disease Prevention and Control (ECDC)

Gustav III:s Boulevard 40, 16973 Solna, Sweden

Tel. +46 858601000
Fax +46 858601001
www.ecdc.europa.eu

An agency of the European Union
www.europa.eu

Subscribe to our publications
www.ecdc.europa.eu/en/publications

Contact us
publications@ecdc.europa.eu

Follow us on Twitter
@ECDC_EU

Like our Facebook page
www.facebook.com/ECDC.EU

Publications Office