ECDC Fellowship Programme (EPIET & EUPHEM)

Awarding body/institution:
European Centre for Disease Prevention and Control

Programme aims:

To strengthen the surveillance and control of infectious diseases and other cross-border health threats or issues of public health concern in the EU/EEA Member States and at EU level, supporting the implementation of Decision 1082/2013/EU;

To enhance response capacities for effective field investigation and communicable disease control at national and community level to meet public health threats;

To strengthen the European network of public health professionals through use of shared standards and methods, good practices and common public health objectives;

To support cascading of training and capacity building within the Member States;

To facilitate multi-disciplinary cooperation in the above fields.

More info at
https://ecdc.europa.eu/sites/portal/files/documents/ECDC%20Fellowship%20Manual%20Cohort%202019.pdf

In your own words, why do you think your programme/course should qualify for the award? What makes you feel proud about it?

Initially funded by the European Commission, EPIET (European Programme on Intervention Epidemiology Training) started in 1995 with the aim of strengthening the public health epidemiology workforce, and through the creation of a network of highly trained field epidemiologists in the European Union, who would learn together methods to allow them speak a common language in the discipline. EPIET follows the format of the Field Epidemiology Training Programmes (FETP), inspired by the Epidemic Intelligence Service (EIS) of the US CDC, but having particular features that distinguish EPIET from other FETPs.

While many countries have national FETPs, EPIET was the first regional programme created. Another specific feature is the exchange component, with fellows trained at public health institutes in countries different from their country of origin. Fellows acquire the competencies to tackle communicable disease threats of cross-border nature, learn about different public health systems, and become part of a European network of practitioners. EPIET is part of ECDC since 2006. In 2012, the Member State-track started, with fellows already working in a public health institute or laboratory, attending Modules and conducting their projects without moving to another country. Both the EU-Track and the MS-Track are in place now.

In 2008 EUPHEM (the European Public Health Microbiology Training Programme), with the aim to strengthen the capacity of public health laboratories across Europe by the training of leaders in public health microbiology. EUPHEM started also with only one EU-Track format; however, it also have since 2013 a MS-Track.

Since Cohort 2017, the "ECDC Fellowship Programme" is the result of combining EPIET and EUPHEM. This learning by doing programme provides training and practical experience in public health

microbiology at national and regional centres for surveillance and control of communicable diseases, laboratories with public health functions, or training sites with a consortium of laboratories in the European Union (EU) and European Economic Area (EEA) Member States.

Training sites contribute resources to the programme in several ways, including access to field assignments, on-site supervision, engagement in the peer review process of site visits, and facilitation in training modules.

The curriculum is based on defined core competencies for field epidemiologists and public health microbiologists, respectively. Participation in the Introductory Course and subsequent training modules provides the basic induction required to develop competencies through practice.

During their training, fellows are treated as fully-fledged professionals and contribute to surveillance, outbreak investigation, operational research, and response to public health emergencies at all levels (local, national, European and international) producing evidence that decision makers use when implementing public health interventions.

Training site supervisors play a key role, by providing technical input and mentoring throughout the fellowship.

A team of scientific coordinators, composed by ECDC staff and seniorepidemiologists and microbiologists in different institutes and at ECDC supports fellows' achievement of learning objectives and monitor their progress.

The main value of the programme is its contribution to a common language in intervention epidemiology and public health microbiology, and the creation of a sustainable network of engaged professionals in this field, who work without borders.

IMPACT:

While fellows' acquisition of competencies and their outputs are regularly monitored during their fellowship, it takes more effort to follow the career path of graduates, their publications or the impact of their training in public health policy or decision making in the public health systems, after their recruitment.

Impact can be interpreted as the contribution that the programme makes to strengthen the surveillance and control of communicable disease and other cross-border health threats, and to the improvement of public health in the EU, in relation to the prevention and control of those threats.

Measuring the impact of the ECDC Fellowship Programme involves evaluating if it achieves its objectives. These are, as stated in the Manual of Cohort 2019, the following:

- To strengthen the surveillance and control of infectious diseases and other cross-border health threats or issues of public health concern in the EU/EEA Member States and at EU level, supporting the implementation of Decision 1082/2013/EU;
- To enhance response capacities for effective field investigation and communicable disease control at national and community level to meet public health threats;
- To strengthen the European network of public health professionals through use of shared standards and methods, good practices and common public health objectives;
- To support cascading of training and capacity building within the Member States;

- To facilitate multi-disciplinary cooperation in the above fields.

The scientific outputs of EPIET and EUPHEM fellows are summarised in Portfolios, published at the time of graduation. These function as a reflective tool where fellows document and self-assess the competencies acquired during the fellowship, completed by the assessment of their supervisors. They are also a way of presenting the results and outputs of the programme being the best way of presenting the fellowship programme, its scope and methods. Finally, in the absence of more precise indicators, they can function as a proxy of the impact. For examples, visit https://ecdc.europa.eu/en/epiet-euphem/who-we-are/fellows.

One of the main reasons to combine EPIET and EUPHEM in one single programme was to acknowledge the interdisciplinary nature of infectious disease epidemiology and health security, and the development and rapid changes experienced by disciplines like field epidemiology and public health microbiology, which are incorporating new methods and in some aspects are becoming closer to each other.

Cooperation between professionals and public health institutes is indispensable in this field, where different types of scientific evidence are often necessary to "solve" and control an outbreak of infectious origin. Because the fellowship is an in-service programme, with alumni being trained in public health institutes and laboratories, as employers, the collaboration is the basis of its success. Framework Partnership Agreements (Grants) signed between ECDC and the respective public health institutes are in place, making also possible the funding by ECDC (90%) in a true partners' spirit.

The EPIET Alumni Network (EAN) counts with more than 500 members and was formally established in 2001 with the goal of supporting the development and maintenance of a network of European public health epidemiologists that have participated in EPIET. Currently it also accepts alumni from EUPHEM and other European FETPs and EAPs as members. Among its initiatives, they organise courses of continuous professional development for alumni, announce job vacancies in different PH organisations, and publish regular updates about relevant news of interest for alumni and fellows. They also participate in the selection committees for the selection of each new cohort of fellows, and have a seat on the scientific committee of the European Scientific Conference on Applied Infectious Disease Epidemiology (ESCAIDE).

EAN conducted a survey among their members to investigate the network's role within European public health, analysing the demographics and professional background, that was published in December 2014 in Epidemiology and Infection (Pezzoli et al, Time, place, and people: composition of the EPIET Alumni Network and its contribution to the European public health resource in 2013, accessible at https://doi.org/10.1017/S0950268814003392). According to the results of this survey, and in the chapter on current employment of alumni:

Out of the 155 respondents excluding current fellows, 94 (61%) reported public health epidemiologist as their job status, followed by academic (10%). One third (53/155, 34%) reported working in national public health institutes (PHIs), followed by international PHIs (16%), including ECDC; regional PHIs (10%); and research institutions (8%).

The impact in health and wellbeing of communities is difficult to measure, except by the analysis of work done by fellows in the response to public health emergencies, locally in their countries of origin and internationally.

Finally, the impact is also related to the knowledge transfer initiatives, cascading of training, and capacity building in the Member States. Fellows have among their field assignments the training and

teaching of public health professionals. By engaging in the training of other public health professionals, fellows develop skills in adult education applying appropriate teaching and evaluation methods. The focus is on learning as a cognitive process, and the alignment of instructional design and evaluation. The aim of the training assignment is to develop and employ learning tools using pedagogical techniques suitable for adult learners. This includes: conducting training needs assessment and defining learning objectives; designing and preparing learning materials (e.g. interactive lecture, case study, problem-based learning, short course or workshop design; conducting and evaluating learning activities. To complete the teaching assignment, the fellow must develop new or revise existing training materials, engage in active teaching/training (i.e. not just deliver a lecture) and produce at least one reflective report on the training activities conducted (e.g. results of the training evaluation, summary of the instructional design process, reflection on delivery of content and interaction with learners).

INTERNATIONALISATION:

The main feature of the ECDC Fellowship Programme (EPIET & EUPHEM) is its European nature, and its work at all levels:

- local, with fellows investigation outbreaks in the field
- sub-national and national, with most of the work conducted in public health institutes and laboratories,
- regional/EU, with projects conducted with input of professionals from several countries in particular when there is a cross-border serious threat to public health
- international, by contributing to global networks and with fellows and staff giving support to the assessment and response to complex emergencies [i.e. Ebola in West Africa 2014-2015, where the contribution of our EPIET and EUPHEM fellows was acknowledge by WHO/Global Outbreak Alert Network (GOARN), MSF, and other institutes and NGOs]

Students and faculty come from the 28 European Union Member States and Norway.

The ECDC Fellowship Programme works in close collaboration with several EPIET-associated programmes (FETPs run and governed by the Member States). At the time or writing this report, there are 71 programmes, with around 12000 graduates, worldwide according to TEPHINET, the global network of FETPs.

Modules regularly apply and receive accreditation under the EUMS European Accreditation Council for CME (EACCME®). In Germany, EPIET fellows are integrated in the PAE-programme and have the opportunity to enroll in the Master of Science in Applied Epidemiology (MSAE) programme (120 ECTS points), which is organized in cooperation with the Charité University and is incorporated into the EPIET- and PAE- training courses and activities.

Case studies are developed based on real outbreak investigations, epidemiological and microbiological studies. This is essential, because of the applied nature of the training. Lessons learnt from real public health emergencies are used.

International organisations or agencies including WHO, ECDC, ministries of health and public health institutes of the EU/EEA Member States or Centres for Disease Control (CDCs) in different countries, non-governmental organisations (NGOs), and research agencies/institutes may request assistance and offer fellows opportunities to carry out field work in an international setting, outside of their

usual training site. ECDC/EAP fellows may participate in these activities, when assignments offer experience appropriate to the training objectives.

Typically, assignments (deployments) last 2–4 weeks. However, the duration of the assignment may vary depending on the project, and under special circumstances can last up to 6–8 weeks.

Examples of international assignments, from fellows' portfolios

1. Ebola Virus Outbreak in Guinea, March-April 2015

Fellow: Sabrina Weiss, cohort 2014 of the European Public Health Microbiology Training Programme (EUPHEM) at Public Health England (PHE), London, UK.

Following a call for assistance by the Global Outbreak Alert and Response Network (GOARN) the fellow was deployed to Boffa, Guinea. The overall objective of the mission was to support the World Health Organisation (WHO) country office and the Ministry of Health by contributing to the rapid control of the outbreak and prevention of further spread by breaking the cycle of transmission in the community and health care facilities. Together with a second epidemiologist from ECDC the fellow joined a team of six Guinean doctors already placed in Boffa via the WHO, one infection, prevention and control consultant from DRC and two consultants recruited from Cameroon. Specific activities were focused on active case finding, case investigation, mapping chains of transmission, contact monitoring, surveillance, and analysis of epidemiological data. These data were reported daily and weekly to the central level. Training and technical assistance provided to the team included support in the design and operation of the alert system, active surveillance protocols and case/contacts databases as well as software training. Since reticence towards activities of WHO and the Red Cross was prominent in the prefecture of Boffa, specifically the island of Kito, the team was involved in sensitisation campaigns and in supporting contacts and affected families, conducted in liaison with other response partners such as the World Food Programme (WFP) or UNICEF. Despite that widespread acceptance of secured burials remained an issue, sensitisation activities and efficient support were successful in lifting most of the reticence. Follow-up of contacts proved successful and no new cases were reported from the area after the team had left.

https://ecdc.europa.eu/sites/portal/files/media/en/epiet/who-we-are/Documents/Portfolios%20C2014/Summary%20of%20work%20%20activity_%20Sabrina%20Weiss_2016.pdf

2. GOARN deployment for support in the response to the plague outbreak in Madagascar, October-November 2017

Fellow: Fanny Chereau (French research epidemiologists, hosted by Public Health Agency of Sweden, Cohort 2016)

An outbreak of plague in Madagascar started in August 2017, and was notified to WHO in September. Soon after, WHO classified the event as a Grade 2 emergency, and GOARN issued a request for assistance from international partners. I was deployed on October 10th, for 6 weeks. I was involved in the epidemiological response and the laboratory support. During the first week of deployment, I joined the surveillance platform and worked with national and international field epidemiologists to develop and adapt tools for contact tracing and case investigation. We organized training sessions for healthcare and community workers. The priority at that early stage of the outbreak was to identify and break the transmission chains. For the following weeks, I supported the laboratory response, in team with a WHO laboratory logistician. Rapid laboratory diagnosis with good performance is essential, particularly because the clinical picture for pneumonic plague is not

specific at early stages of the disease. We evaluated the national capacity and capability for plague diagnosis in the context of the outbreak, and identified how WHO could support improvements. We implemented a system to ensure fast and safe transportation of cases' specimens, and promoted laboratory capacities (equipment, human resources).

During this mission, I learned about crisis management, emergency response, and coordination with national authorities, political bodies and with representatives from international NGOs, in a setting where resources were limited and team members had to use all their skills and knowledge. Working across disciplines to tackle a critical public health emergency is a valuable experience that I will carry with me in my future role as an epidemiologist. I also learnt how to be an effective and diplomatic player in international and multidisciplinary teams responding to complex emergencies situations. I got acquainted with the role and operational approach of the UN system.

https://ecdc.europa.eu/sites/portal/files/documents/EPIET%20report%20-%20Summary%20of%20work%20activities%2C%20Fanny%20Chereau.pdf

3. World Health Organization (WHO) Ebola Virus Disease preparedness- Mauritania & Burkina Faso

The WHO set in motion a preparedness strategy to support 15 countries develop the necessary capacity to manage the importation EVD (Ebola virus disease). One element of this strategy was the deployment of international Preparedness Strengthening Teams (PST) to assess countries current level of preparedness and to set specific plans for strengthening health measures to manage EVD. The fellow gave lectures on: Case finding and case reporting, Data collection, Analysis of data and Reporting of surveillance data

Educational outcome: Training on epidemiological surveillance and contact tracing at field level. Learned about the importance of providing proper and thorough training to outbreak response teams in order to prepare them for the possible occurrence of an outbreak. Gained insight into working with people from different background and cultures.

Example of international training and use of case studies

Iranian-German School on Field Epidemiology (IGSFE)

The Bernhard Nocht Institute for Tropical Medicine (BNITM) in Hamburg has asked for 1-2 fellows to organize and teach in the "Introduction to (Field) Epidemiology" course in Teheran, Iran in September 2016. Overall aim of the summer school; Introduction to Intervention epidemiology: At the end of the course the participants shall be able to investigate outbreaks and implement measures against the spread of infectious diseases.

Lectures given: Scientific communication, Scientific writing

- Case study: Salmonella in the Caribbean
- Case study: Tampon toxic shock syndrome
- Case study: Outbreak of gastroenteritis

For more detailed information, please see Portfolios of fellows at

https://ecdc.europa.eu/en/epiet-euphem/who-we-are/fellows

INNOVATION:

The Programme consists primarily of relevant and practical learning in public health practice. To develop the required competencies, fellows engage in a number of field assignments (projects) based on their own learning needs and the public health service needs of the training sites.

Field assignments include: outbreak investigations, surveillance projects, operational research, training and teaching public health professionals and public health management and communication. In EUPHEM, also: bio-risk management, laboratory quality management and applied microbiology and laboratory investigation.

The Programme is competency-based with a curriculum that has discipline-specific paths modelled after core competencies in field epidemiology and public health microbiology developed in consultation with relevant stakeholders.

While the Fellowship Programme is an on the job or in-service training programme, which allows fellows to learn on a daily basis by providing services in a professional setting as part of the public health systems, there is a strong awareness among the different stakeholders about the importance of keeping the curriculum and assignments up to date. The ECDC has just embarked on a project to update the competencies on applied epidemiology and health security. Social network analysis, public health genomics and whole genome sequencing, or public health informatics are only some examples of the emerging issues that are progressively incorporated to the programme.

Fellows begin the programme with a three-week introductory course. Specialised modules during the fellowship offer further training opportunities to develop core competencies. The Programme or the training sites may offer additional training opportunities if other training needs are identified. Team based learning and problem based learning are methods used in the class-room. However, modules only involve 10 weeks of the 24 months duration of the fellowship. Blended learning is also incorporated to the current approach. Fellows use the ECDC Virtual Academy (EVA) to access learning plans, self-assessment tools, readings and other training materials, in preparation before, during, or after the face-to-face Modules.

Individual fellows' initial competencies are assessed at the beginning of the programme, and acquisition of competencies is assessed during the course of the programme.

The Fellowship Programme uses the core competencies as a reference framework to:

- define the pre-requisites for selecting candidates
- determine the objectives to be achieved within the two-year fellowship (with input from the Training Site Forum)
- develop, organise, and update the curriculum, including modules; and
- monitor the progress of individual fellows and aid the planning of learning activities.

A number of quality standards to evaluate these products and determine whether field assignments are satisfactory and aligned with programme objectives.

All deliverables from the field assignments are subject to the role of the fellow, based on path-specific competencies, and rules and guidance on contributions, authorship, clearance and acknowledgements.

Throughout the two-year fellowship, supervisors, frontline coordinators and fellows are encouraged to select projects to cover the widest possible range of technical issues and infectious disease themes.

Fellows are required to share protocols and draft reports related to each project at an early stage with local/project supervisors and front line coordinators to allow for technical review and to ensure alignment with programme objectives.

Fellows are required to develop a short project proposal for planned field assignments, stating background, objectives, learning objectives, work plan (methodology), and proposed outcomes including public health importance, local/national/EU added value, and evidence for decision-makers.

This proposal should also outline specific supervision for each project and must be approved by the frontline coordinator before initiation of the assignment. Given their urgency, outbreaks may be exempt from this requirement.

Fellows are empowered and trained to become autonomous and proactive in their discipline. In the related assignment on public health management and communication, the aim is for fellows to communicate effectively with other public health professionals and authorities involved in decision-making for public health interventions.

Effective communication and coordination of efforts and investigations among different professionals and disciplines involved is essential. Fellows are required to communicate the results of their field (outbreak) investigations, surveillance projects and/or research projects to public health authorities or policy makers by producing written technical reports, briefings or other effective (oral and written) communication outputs.

The Module Public health management and communication and the corresponding assignment is mandatory for EUPHEM fellows, due to the history of this path which started linked to the aim of generating leaders in public health microbiology.