ECDC Fellowship Programme

Core competencies for EPIET fellows
For use by fellows, coordinators, and training site supervisors

1 Background

The European Programme for Intervention Epidemiology Training (EPIET) is a two years fellowship programme, which provides training and practical experience in intervention epidemiology in national and regional centres for surveillance and control of communicable diseases in the European Union (EU) and Norway.

The programme is aimed at European public health professionals with previous experience in public health who want to pursue a career in field epidemiology.

The EPIET team is currently developing indicators to define the minimum requirements, in terms of competencies, that fellows are expected (1) to have at the beginning and (2) to have acquired at end of the fellowship.

The final aim of this process is to improve the graduation criteria and the selection process.

2 Core competencies for EU public heath epidemiologists in communicable disease surveillance and response*

ECDC, along with a group of experts (core competencies group) has developed a list of suggested core competencies for field epidemiologists working at all the levels from subnational (provinces, districts, regions) to national and supra-national (European and international) in the public health administrations of the EU. A competency is a combination of knowledge, skills and abilities that a professional must demonstrate and that are critical to perform work effectively.

The core competencies listed by ECDC are defined for mid-career professionals, as opposed to junior or senior epidemiologists.

Mid-career was defined as related to three years of experience in the area or after two year training programme of field epidemiology.

The term "core" indicates that the competencies should be a minimum pre-requisite for all field epidemiologists. Though the list of core competencies is not a regulatory document, it is intended to be used as a reference document for different institutions and individuals related to public health in the countries of the EU.

The uses of the list include:

- Evaluation of trainees: for recruitment and later, to assess their status in the learning process as achievements against competencies. Sub-competencies, considered as the ability to perform specific tasks, may be more suitable for this purpose.
- Curriculum development and instructional design.
- Accreditation of training programmes: competencies and curricula of training programmes should be assessed as part of any accreditation process.

For this, the core competencies for EU public heath epidemiologists in communicable disease surveillance and response could be the bases to establish a formal set of criteria for selection and graduation of EPIET fellows.

3 Monitoring the acquisition of competencies for EPIET fellows

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* http://goo.gl/3TyIn. TECHNICAL DOCUMENT. CORE COMPETENCIES for public health epidemiologists working in the area of communicable disease surveillance and response, in the European Union. Stockholm, January 2008

The EPIET team has developed the Competency Development Monitoring Tool (CDMT) that contains all ECDC core competencies on an excel file.

The starting fellow fills in the CDMT and then goes through it with the local host site supervisor during the first week of the latter one's fellowship. In continuation, the frontline coordinator of each fellow goes through the list of competencies the fellow brings with them during the EPIET/EUPHEM introductory course, so that agreement is reached upon the competencies self-assessment.

Fellows are expected to grow their competencies, which should reflect on the following reviews of the CDMT. Reviews should be done by the fellow every six months. At 12 months, the fellow can go through the 12-month column with their frontline and the local host site supervisor during the midterm review.

The final CDMT version can be prepared by the fellow before the exit interview at the end for the two years, where it can be discussed.

For each competency, the following scale is used:

1: unaware of the subject; the fellow has not been exposed to the topic, even though lectures
2: theoretical exposure, little or no practical exposure; the fellow has been exposed to this topic through lectures, readings, or presentations but have little practical experience.
3: intermediate confidence in practice; the fellow has been exposed to this topic having some practical exposure. The fellow can successfully conduct the task under guidance / supervision.
4: confident; the fellow can conduct the task as an independent professional
5: expert, can teach; the fellow can perform independently and could teach / mentor others.

4 Core competencies to be developed for EPIET fellows

1. Areas specific for the profession

Area 1.1. Public Health

Domain 1.1.1.: Public health science (relevant)

1. Use current knowledge of epidemiology of diseases to guide public health or epidemiological practice
2. Provide epidemiological input to develop measurable relevant objectives of public health programmes
3. Evaluate the impact of an intervention on population health
4. Identify, review and assess relevant literature and other evidence

Domain 1.1.2.: Public health policy (less relevant)

5. Use epidemiological findings to plan public health programmes
6. Measure health outcomes to guide decision making in prevention strategy
7. Identify an appropriate public health intervention based on surveillance data

Area 1.2. Applied Epidemiology

Domain 1.2.1.: Risk Assessment

8. Conduct risk assessments: identify and verify the existence of a public health problem and describe its magnitude
9. Identify surveillance data needs for risk assessments of public health threats

Domain 1.2.2.: Routine public health surveillance

10. Run a surveillance system
11. Conduct surveillance data management
12. Perform descriptive analysis of surveillance data

13. Interpret disease and public health events trends from time series analysis
14. Identify key findings from surveillance data analysis and draw conclusions
15. Evaluate surveillance systems
16. Recognise the need for and set up a new surveillance system
17. Use sources of information about potential public health threats
18. Use event-based surveillance to detect health threats (less relevant)
19. Be familiar with laws on surveillance and reporting of communicable diseases at national, EU level and globally (International Health Regulations)

Domain 1.2.3.: Outbreak investigation

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

Domain 1.2.4.: Epidemiological studies

26. Write a study protocol including the identification of a public health problem
27. Conduct epidemiological studies
28. Report and present results of a study
29. Plan and use available resources (prioritise and plan tasks, monitor progress against targets, manage available staff, time and budget resources, prepare activity reports) effectively (previous 2.4.1)
30. Recommend evidence-based interventions in response to epidemiological findings

Domain 1.2.5.: Infectious diseases

31. Be familiar with the concepts of infectious disease dynamics (R_0, incubation period, latent period, symptoms of foodborne, vector-borne, vaccine-preventable and gastrointestinal diseases)

Domain 1.2.6.: Laboratory issues for outbreak investigation and infectious disease surveillance

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

Domain 1.2.7.: Public health recommendations

35. Develop evidence-based recommendations for surveillance, prevention and control of communicable diseases and other acute public health events
36. Identify appropriate target groups for recommendations

2. General areas, common to other professions

Area 2.1. Biostatistics

Domain 2.1.1: Inferential statistics

37. Apply basic concepts of probability
38. Calculate and interpret point estimates and confidence intervals of measures of central tendency and dispersion
39. Calculate and interpret point estimates and confidence intervals of measures of disease frequency
40. Calculate and interpret point estimates and confidence intervals of measures of association and impact
41. Calculate and interpret significance tests
42. Use database software packages for entering and managing data
43. Use software packages for statistical analysis (measures of association, testing, and multivariable analysis) (from 2.2.2)
44. Draw conclusions from the results of the analysis

Domain 2.1.2.: Sampling methodologies

    45. Select an appropriate sampling strategy

Area 2.3. Communication

Domain 2.3.1.: Risk communication

    46. Adjust the message when presenting results of an investigation to different audiences

Domain 2.3.2.: Written communication

    47. Write a report of an epidemiological investigation for decision makers
    48. Write an article for a scientific journal
    49. Write an abstract for a scientific conference

Domain 2.3.3.: Oral communication

    50. Analyse and synthesise main points in an oral presentation

Area 2.4. Management

Domain 2.4.1.: Team building and negotiation

    51. Be an effective team member, adopting the role needed to contribute constructively to the accomplishment of tasks by the group (including leadership)

Area 2.5. Capacity development

Domain 2.5.1.: Training

    52. Train junior epidemiologists or other health professionals

Area 2.6. Ethics

Domain 2.6.1.: Protection of individuals and confidentiality

    53. Follow ethics principles and guidelines for planning studies, conducting research, and collecting disseminating and using data
    54. Respect and adhere to ethical principles regarding data protection and confidentiality regarding any information obtained as part of the professional activity
    55. Apply relevant laws to data collection, management, dissemination and use of information

Domain 2.6.2.: Conflicts of interests

    56. Identify and handle conflicts of interests