



## **TECHNICAL** REPORT

# Training needs assessment for EU/EEA countries

Assessment methodology and 2015 survey

**ECDC TECHNICAL REPORT**

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Assessment methodology and 2015 survey



This report of the European Centre for Disease Prevention and Control (ECDC) was coordinated by Barbora Kinross as project manager and by Carmen Varela Santos, as the subject matter supervisor. Rodrigo Filipe and Pride Linda contributed in different phases of the project, particularly in data analysis. The project has been carried out under the executive leadership of Karl Ek Dahl and Arnold Bosman.

#### *Contributing authors*

The following members of the ECDC Public Health Training Coordination committee contributed to the survey design and validation: Pavla Křížová (Czech Republic), Brigitte Helynck (France), Agoritsa Baka (Greece), Paolo D'Ancona (Italy), Darina O'Flanagan (Ireland), Paulo Nogueira (Portugal), Irena Klavs (Slovenia), Samantha Bracebridge (UK).

In their capacity as National Coordinators of the Coordinating Competent Bodies, the following Member State experts coordinated their respective national data collection and facilitated Member State consent on ECDC use of the data and publication of survey results: Pamela Rendi-Wagner (Austria), Sophie Quoilin (Belgium), Mira Kojouharova (Bulgaria), Marijan Erceg (Croatia), Maria Koliou (Cyprus), Hana Orliková (Czech Republic), Marianne Kristensen (Denmark), Estonia, Mika Salminen (Finland), Anne-Catherine Viso (France), Andreas Gilsdorf (Germany), Theodoros Papadimitriou (Greece), Márta Melles (Hungary), Thorolfur Gudnason (Iceland), Darina O'Flanagan (Ireland), Maria Grazia Pompa (Italy), Nicole Werner-Keišs (Latvia), Sabine Erne (Liechtenstein), Loreta Ašoklienė (Lithuania), Pierre Weicherding (Luxembourg), Charmaine Gauci (Malta), Marianne Van der Sande (Netherlands), Hanne Nøkleby (Norway), Rafał Gierczyński (Poland), Paula Vasconcelos (Portugal), Florin Popovici (Romania), Slovakia, Alenka Kraigher (Slovenia), Fernando Simón Soria (Spain), Anders Tegnell (Sweden), Ian Fisher (United Kingdom).

The following Member State experts contributed to data collection/validation and interpretation of results, in their capacity as National Focal Points for Training: Robert Muchl and Reinhild Strauss (Austria), Javiera Rebolledo (Belgium), Anna Kurchatova (Bulgaria), Natasa Antoljak and Branko Kolaric (Croatia), Maria Koliou (Cyprus), Pavla Křížová (Czech Republic), Kåre Mølbak and Tyra Grove Krause (Denmark), Natalia Kerbo (Estonia), Outi Lyttikainen (Finland), Delphine Antoine (France), Katharina Alpers and Elke Mertens (Germany), Agoritsa Baka and Takis Panagiotopoulos (Greece), Marta Majorosne Melles (Hungary), Thorolfur Gudnason (Iceland), Darina O'Flanagan and Margaret Fitzgerald (Ireland), Paolo D'Ancona (Italy), Dzintars Mozgis (Latvia), Nerija Kuprevičienė (Lithuania), Martine Debacker (Luxembourg), Charmaine Gauci (Malta), Jeannette De Boer (Netherlands), Katrine Borgen (Norway), Dorota Cianciara (Poland), Paulo Nogueira (Portugal), Florin Popovici (Romania), Zuzana Krištúfková and Henrieta Hudečková (Slovakia), Irena Klavs (Slovenia), Maria Victoria Martinez and Silvia Herrera-León (Spain), Mia Brytting (Sweden), Samantha Bracebridge and Helen Maguire (United Kingdom).

All Member States have granted consent on ECDC use of the submitted national data and on publication of the survey results.

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## Abbreviations

CBs	Competent Bodies
EPIET	European Programme for Intervention Epidemiology Training
EUPHEM	European Programme for Public Health Microbiology Training
IAS	Internal Audit Service, European Commission
NFP-T	National Focal Points for Training
TRNA	Training needs assessment

# 1 Introduction: Recommendations of the European Commission's Internal Audit Service (2014) and ECDC action plan

In May 2014, the Internal Audit Service (IAS) recommended that ECDC should 'tailor the training efforts to cover the existing capacity gap'. Specifically, the IAS expressed that ECDC should:

- 'Estimate, on the basis of a methodology agreed with the Member States and in collaboration with the National Focal Points for Training (NFP-T), the desirable number of specialists and their related skills and take stock of the currently existing resources in the area of disease prevention and control across Europe.'
- 'Carry out, in collaboration with the national competent bodies, a comprehensive training needs analysis in the area of disease prevention and control, using a harmonised assessment approach.'
- 'As a result, determine the capacity gap at Member State level at short, medium and long-term perspective and tailor further actions, in collaboration with national and regional competent authorities, to address the existing gap.'

To fulfil the IAS recommendations, ECDC initiated a training needs assessment by conducting a Training Needs Assessment (TRNA) survey in 2015 and proposing the following action plan:

- Action 1: ECDC plans, as far as possible, to use the results of the mandatory reporting from Member States to the Commission on the state of their preparedness under Decision 1082/2013/EU to assess how many specialists in the national workforce in each Member State comply with the EU-competencies for epidemiologists and that are able to fulfil the tasks related to their needs.
- Action 2: As this will not cover all the assessment needs, ECDC will in addition rely on the National Focal Points for Training (NFP-Ts) to supply complementary information.
- Action 3: ECDC will discuss the results of the survey with NFP-Ts and produce a training roadmap to meet the training needs in epidemiology; a similar analysis will be conducted for other related disciplines in a structured set of dialogues.
- Action 4: In coordination with NFP-Ts and the ECDC Advisory Forum (AF), ECDC will conclude the gap analysis and finalise the related roadmap (i.e. add training activities aimed at closing the gap).

This summary report presents the results of this action plan and is divided into two main parts:

- Part 1 maps information on expressed public health training needs and identifies the most appropriate methodology for an EU/EEA-wide training needs assessment to complement the data.
- Part 2 presents the results of the TRNA survey 2015.

A detailed action plan with concrete activities and timeline can be found in Annex 1.

## 2 Assessment methodology

In preparation for the production of this report, ECDC reviewed its assessment tools and mechanisms, conducted review of grey literature, reviewed the literature on assessment methodologies, and held several consultative meetings with key stakeholders, representatives of the Member States, in-house specialists, and external experts.

The **internal mapping of existing sources** included an overview of ECDC's previous activities and the Centre's approach to identifying training needs in the Member States. An integral part of this exercise was to rank each identified source according to relevance and conduct a review of three most relevant sources: International Health Regulations (IHR) monitoring questionnaire (the results of which became an essential part of our data analysis), the assessment and status report on pandemic influenza preparedness (particularly relevant because the format combines a country's self-assessment with a country assessment visit by ECDC experts and a desk-based review), and previously administered ECDC surveys.

In addition, ECDC conducted a **literature review** to guide its assessment of training needs in the EU/EEA and to ensure a 'harmonised assessment approach' as recommended by the IAS<sup>1</sup>.

In the above literature review, the administration of a questionnaire (survey) was identified as the single most commonly used method, with 12 out of 13 studies. Out of these 12 studies, nine used a survey in combination with another method (75%). The most common combination was the administration of a questionnaire (web-based) and one or more other methods: interview, desk-based review, focus group discussion, field visit, and environmental scan.

Our approach of choice was to conduct an online survey to assess training needs in the EU/EEA and combine the survey with other methods because this gave us the opportunity to validate the information collected in the questionnaire (i.e. by interviews with key informants, country visits, or face-to-face meetings).

ECDC conducted a **second literature review** in order to identify indicators and targets that would help us to determine how many trained specialists were needed: what should be the minimum number of epidemiologists to sustain services and what would be the ideal number of epidemiologists to fully meet all epidemiological and surveillance needs<sup>2</sup>?

Enumeration, recognised by most studies as a relevant indicator to be systematically monitored, must take into account not only the number of workers, but also their location, functions, education and training, experience and competencies. The Global Health Security Agenda stipulates at least one trained field epidemiologist per 200 000 population to fully implement the IHR (2005) and sustain the functions of public health operations.

The presence of specialised and advanced-level training programmes and research institutions indicate that a country actively develops its epidemiological capacity, both in terms of the number of graduates and the areas of epidemiological knowledge. Additionally, the number of publications on epidemiology can be used as an indicator of epidemiological research activity and epidemiological knowledge. While the International Epidemiological Association (IEA)'s European Epidemiology Federation (EEF) member register cannot be used to determine the number of epidemiologists in the region, both membership of individuals and registration of associations from countries in the Federation can be seen as representative of epidemiological activity and development present in the country.

An additional **review of grey literature** from key public health institutions worldwide<sup>3</sup> indicated a number of key findings for the assessment methodology proposal, namely:

- **Multi-dimensional nature of capacity:** A conceptual framework entitled 'A review of public health capacity in the European Union' (proposed by a consortium of institutes, led by Maastricht University) suggested that workforce is only one of seven dimensions of public health capacity, the other six being leadership and governance, organisational structures, financial resources, partnerships and knowledge development, interacting, and influencing capacity in various ways.
- **Importance of strategic planning:** WHO invited each Member State to develop a strategic plan for capacity building in public health education and training. All plans are based on a SWOT analysis, a definition of specific objectives and targets, and the framework of European Action Plan (EAP) for Strengthening Public Health Capacities and Services (WHO Regional Office for Europe, 2012). The ten

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<sup>1</sup> European Centre for Disease Prevention and Control. A literature review of Training Needs Assessment (TRNA) methodology. Stockholm: ECDC; 2017. Available from: [https://ecdc.europa.eu/sites/portal/files/documents/LR-TRNA\\_Methodology\\_25042017\\_Final.pdf](https://ecdc.europa.eu/sites/portal/files/documents/LR-TRNA_Methodology_25042017_Final.pdf)

<sup>2</sup> European Centre for Disease Prevention and Control. A literature review of indicators of countries' capacity for the prevention and control of communicable diseases. Stockholm: ECDC; 2017. [In press.]

<sup>3</sup> Review is available upon request.

Essential Public Health Operations (EPHO) serve as the basis of the EAP, with EPHO 7 (ensuring a sufficient and competent public health workforce) covering education, training, development and evaluation of the public health workforce in order to efficiently address priority public health problems and to adequately evaluate public health activities.

- **Peer-to-peer assessments:** Peer-to-peer assessment tools developed by the International Association of Public Health Institutes (IANPHI) provide elements of experience sharing, mentoring, and twinning of national public health institutes. Experienced countries can provide mentorship to less experienced Member States, which improves the skills and competencies of all involved countries.
- **Combined methodology is preferable:** Drawing from an approach taken by the World Organization for Animal Health (OIE), assessments combine several methods, e.g. an initial self-assessment (49 critical competencies and indicators) is complemented by a country mission and a gap analysis, which is translated into a five-year action plan to address the gaps, is undertaken. This allows for a more rigorous evaluation and an effective follow-up (Performance of Veterinary Services Pathway Tool). Similar conclusions are drawn by WHO for the improvement of the monitoring of core capacities under IHR (2005) and by the Chemical Biological Radiological and Nuclear (CBRN) Centres of Excellence in the assessment of national risk mitigation capacities and needs in the field of CBRN.
- **Aligning methods to improve efficiency:** International stakeholders should align their efforts in order to avoid duplications, achieve efficiency and ensure coherence when similar goals and objectives are sought. When implementing the proposed new methodology for the development, monitoring and evaluation of functional core capacity for IHR (2005), ECDC could identify synergies with WHO, for example by combining self-assessments, joint country visits, and joint simulation exercises.

Seven **consultative meetings** took place, focusing on both the methodology proposal and the process of the assessment. An overview of the meetings is provided in Table 1.

**Table 1. Overview of consultations**

Date	Title	Purpose
24–25 Sep 2014	39th meeting of the ECDC Advisory Forum	To discuss public health training strategy
4 Nov 2014	Joint EPIET Training Site Forum and EUPHEM Forum meeting	To discuss and advise on training assessment and relevant indicators
23 Mar 2015	Expert meeting for technical guidance on methodology for training needs assessment	To map related and relevant activities at EU level; to discuss the best methodology to address the mandate
28–29 Apr 2015	Member State consultation with National Focal Points for Training (NFP-Ts)	To propose and reach consensus on a combined assessment methodology
16-17 Jun 2015	MB34/16 Management Board	To endorse the Public Health Training Strategy (new needs-based approach)
14 Sep 2015	First meeting of the Coordination Committee for Public Health Training	To invite members of the Coordination Committee to validate the TRNA survey
23–24 Sep 2015	2nd Joint Strategy Meeting	To seek further Member States advice and feedback on the assessment methodology proposal

A proposal for an assessment methodology was decided upon and presented to the National Focal Points for Training (NFP-Ts) during their annual consultation. The assessment would comprise of the elements shown in Figure 1.



**Figure 1. Assessment methodology proposal: ECDC gap analysis and training needs assessment in EU/EEA countries**



## 3 TRNA survey 2015

The TRNA questionnaire<sup>4</sup> was administered to the 28 EU Member States and three European Economic Area (EEA) countries through their National Coordinators of the Coordinating Competent Bodies using the EU Survey Tool<sup>5</sup>. The invitations to participate in the TRNA survey 2015 were sent out on 1 October 2015, with an original deadline of 29 October 2015, which was extended twice (9 November and 27 November 2015). A number of countries submitted their responses after 27 November.

The questionnaire combined two sources (ECDC training needs assessment and IHR monitoring questionnaire) and allowed for closed and open questions on the following topics:

- How many sufficiently trained public health specialists work in the area of communicable disease prevention and control in each Member State? How many public health specialists need to be trained in each Member State over the next five years?
- Which core capacity gaps with regard to public health specialists for the prevention and control of communicable diseases exist in the Member States?
- Which training needs exist in the Member States? Which ECDC- training activities would the Member States most benefit from? Which training needs are the most urgent? The overall goal is to reach a sufficient number of trained public health specialists in each Member State to cover all needs in the field of communicable disease prevention and control.

The questionnaire was divided into seven parts. Parts 1–6 covered capacity and training needs in the domains of 1) event detection, 2) threat assessment, 3) threat management, 4) communication, 5) crisis evaluation and 6) preparedness. Part 7 requested additional information on:

- National health priorities, public health systems and organisation
- Public health workforce: policy, planning, recruitment and retention
- Enumeration of public health specialists<sup>6</sup> in the area of communicable disease prevention and control
- Migrants and communicable disease prevention and control
- Reported data on country capacities via the IHR monitoring questionnaire.

In addition, we extracted data from the IHR monitoring questionnaire relevant to the area of training and workforce capacity.

Before the survey was sent out, members of the NFP-T coordination committee validated its form, structure and content.

## Results

Out of the 31 EU/EEA countries invited to participate, 20 Member States<sup>7</sup> (representing 66% of the EU population) responded via the EU survey tool by 18 December 2015. Twenty Member States (representing 69% of the EU population) gave access to the IHR monitoring questionnaire. Six respondents did not give any figures on training needs and training capacity gaps. Member States marked as 'Cannot respond' in the legend below (Figure 2) signalled their intention to submit results, but did not respond, mainly due to lack of conclusive information on the national level and other factors (e.g. complexity of national system).

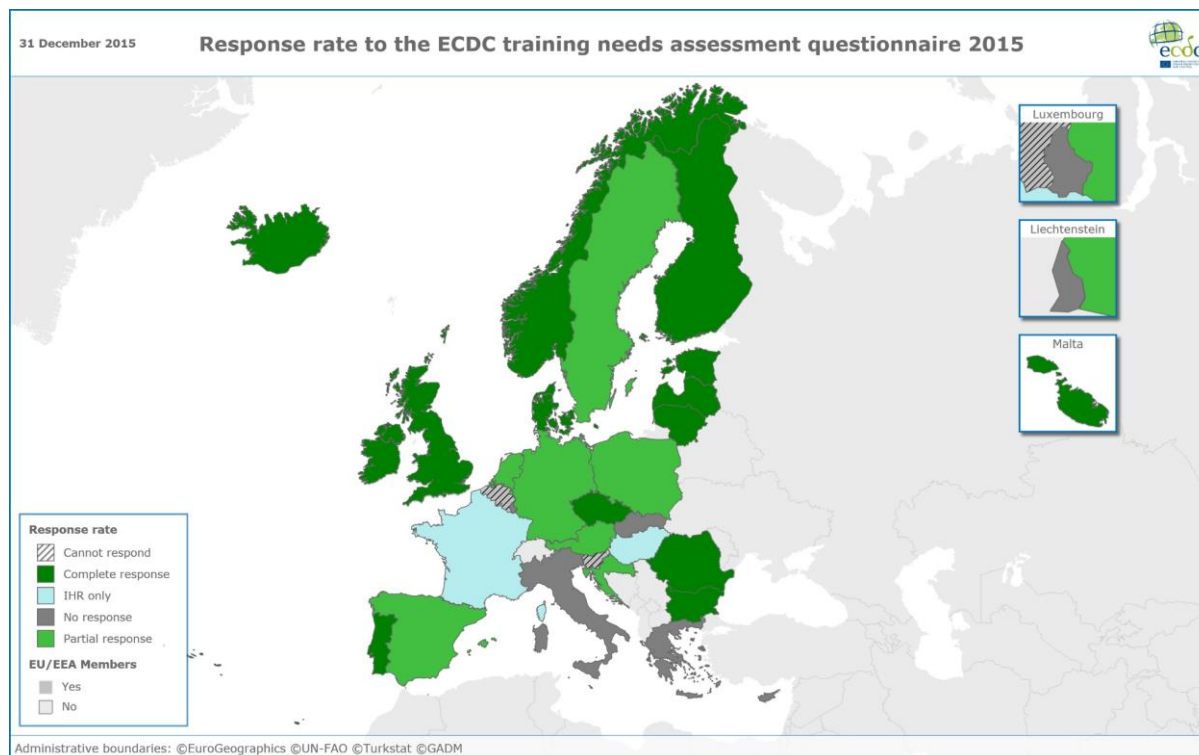
<sup>4</sup> The TRNA questionnaire can be found in the appendix.

<sup>5</sup> <https://ec.europa.eu/eusurvey/>

<sup>6</sup> According to Article 9.6 of the ECDC Founding Regulation, the Centre shall 'support and coordinate training programmes in order to assist Member States (Member States) and the Commission to have sufficient numbers of trained specialists [...]'. For the purpose of the questionnaire, 'public health specialists' were defined as professionals working in the field of communicable diseases: event detection, threat assessment, threat management, communication, crisis evaluation, and preparedness.

<sup>7</sup> The 20 respondents that provided IHR are not identical with the 20 that responded to the questionnaire, hence different proportions of the population are represented in both analyses.

**Figure 2. Geographical representation of responses from the surveyed countries**



## Human resources and public health workforce planning

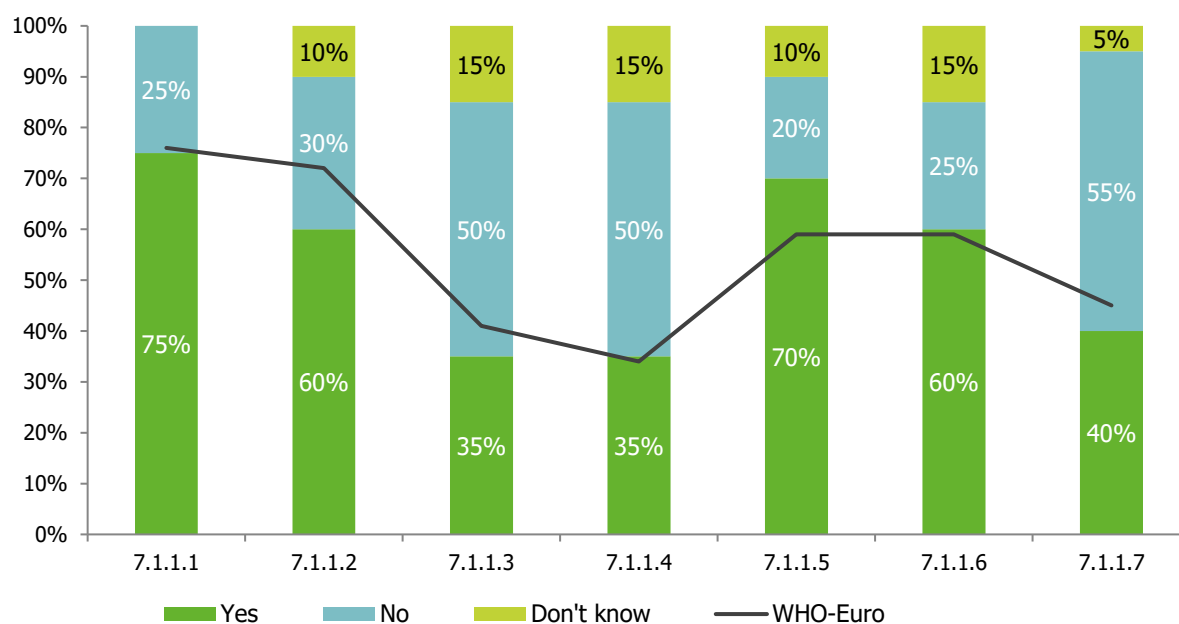
Of the twenty Member States that responded, only seven stated that they had relevant policy documents for public health workforce planning, particularly with regard to public health specialists working in the area of communicable diseases in their Member States. Of these seven countries, one country stated that national strategies were not available at the national level because the national level was not responsible for the planning of (workforce) resources.

Three Member States provided access to the relevant documents. Almost all national plans or policy documents that are available refer mainly to training strategies. The remaining thirteen Member States stated that their countries had no policy documents on this topic.

The situation regarding workforce capacity is far from optimal, as shown by the results proposed by IHR under the key indicator 'Human resources available to implement IHR core capacity requirements' for the questions: existence of a workforce development or training plan that includes human resource requirements for IHR (35%); existence of specific programmes with allocated budgets to train workforces in IHR-relevant hazards (40%); and progress for meeting workforce numbers and skills, consistent with training programme milestones (35%).

Only 60% of the responding countries had conducted a needs assessment to identify gaps in human resources and training to meet IHR requirements, and only 75% have a Unit that is responsible for development of human resources capacities. A strategy or a plan was developed for the country to access field epidemiology training (one year or more) domestically, regionally, or internationally in 70% of the responding countries, and 60% of the responding countries implemented such a plan/strategy. Please refer to Figure 3 below for further details.

**Figure 3. Overview of indicators for core capacity 7 under IHR in participating Member States: human resources (N=20)**



- 7.1.1.1 Country has a unit responsible for the development of human resource capacities which also covers IHR requirements
- 7.1.1.2 A needs assessment was conducted to identify gaps in human resources and training<sup>63</sup> to meet IHR requirements
- 7.1.1.3 Country has a workforce development or training plan which also covers IHR requirements
- 7.1.1.4 Progress was made in meeting workforce numbers and skills consistent with milestones as set out in the training plan
- 7.1.1.5 Country has a strategy or plan to access field epidemiology training (one year or more) domestically, regionally or internationally
- 7.1.1.6 Country has a plan or strategy implemented to access field epidemiology training (one year or more) domestically, regionally or internationally
- 7.1.1.7 Country has specific programmes with allocated budget lines to train workforces for IHR-relevant hazards

Note: The black line represents the WHO European Region average according to the IHR global report 2014<sup>8</sup>.

### Capacity and training needs

Member States' self-assessed (percentage of ideal full capacity) their capacity in communicable disease prevention and control, as shown in Table 2.

Eight countries estimated 50% or less capacity in the areas of population-based research<sup>9</sup> and simulation exercises<sup>10</sup>. Six countries estimated 50% or less capacity in the areas of scientific writing<sup>11</sup>, evaluating response<sup>12</sup> and training<sup>13</sup>.

**Table 2. Member State estimates of capacity in public health domains**

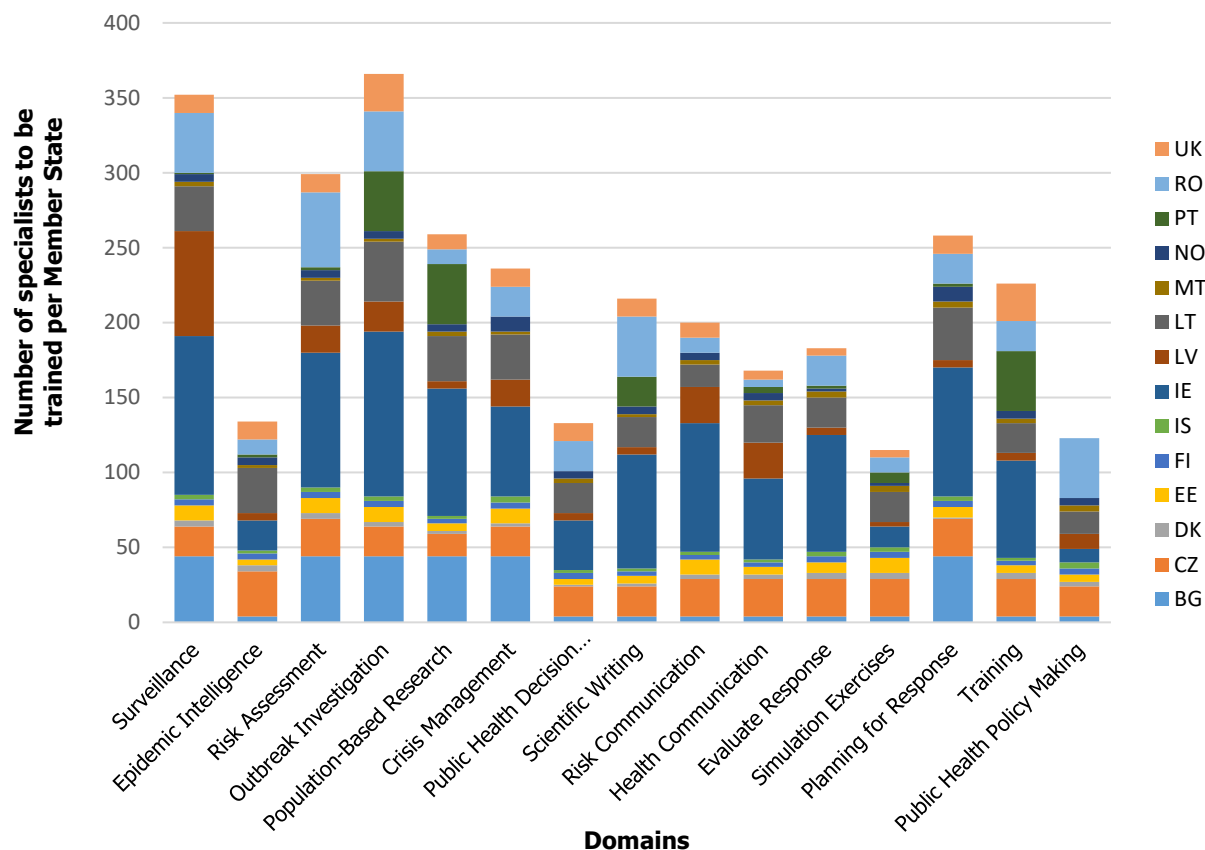
Member State estimates	Event detection			Threat assessment		Threat management			Communication			Crisis evaluation		Preparedness	
	Surveillance	Epidemic intelligence	Formal and rapid risk assessment	Outbreak investigation	Population-based research	Crisis management	Public health decision making	Scientific writing	Risk communication	Health communication	Evaluating response	Simulation exercises	Planning for response	Training	Public health policy making
100%					1	1	2	1	2	1					2
76%–99%	7	8	8	8	4	7	8	7	9	8	7	5	8	5	5
51%–75%	7	3	3	6	2	6	4	2	2	1	2	4	4	5	4
25%–50%	1	2	5	1	4	1	1	4	2	4	3	5	2	4	3
<25%		3			4	1	1	2	1	1	3	3	2	2	2
Do not know	5	4	4	5	5	4	4	4	4	5	5	3	4	4	4

Some countries estimated 100% or full capacity for each of the following domains: population-based research<sup>14</sup>, crisis management<sup>15</sup>, public health decision making<sup>16</sup>, scientific writing<sup>17</sup>, risk communication<sup>18</sup>, health communication<sup>19</sup> and public health policy making<sup>20</sup>. Nine Member States estimated more than 75% capacity for risk

communication<sup>21</sup>, and eight countries saw themselves above 75% capacity for each of the following domains: epidemic intelligence<sup>22</sup>, formal and rapid risk assessment<sup>23</sup>, outbreak investigation<sup>24</sup>, public health decision making<sup>25</sup>, health communication<sup>26</sup> and planning for response to outbreaks of communicable diseases<sup>27</sup>.

The survey showed that three areas clearly stood out in the estimated number of public health specialists that need to be trained in order to reach and maintain full capacity: surveillance, risk assessment and outbreak investigations (see Figure 4).

**Figure 4. Estimated number of public health specialists to be trained in order to reach and maintain full capacity**



Of the total number of the public health specialists that should receive training, roughly **half could be trained by or in their own countries** (see Figure 5). Surveillance, outbreak investigations and population-based research are domains with a relatively high need for training, but this need can be met in the Member States. Further areas

<sup>8</sup> World Health Organization. Summary of states parties 2013 – report on IHR core capacity implementation. Geneva: WHO; 2014. Available from: [http://apps.who.int/iris/bitstream/10665/145084/1/WHO\\_HSE\\_GCR\\_2014.10\\_eng.pdf](http://apps.who.int/iris/bitstream/10665/145084/1/WHO_HSE_GCR_2014.10_eng.pdf).

<sup>9</sup> Estonia, Iceland, Ireland, Latvia, Lithuania, Malta, Romania and the Netherlands

<sup>10</sup> Czech Republic, Denmark, Estonia, Ireland, Latvia, Lithuania, Malta and Romania

<sup>11</sup> Czech Republic, Estonia, Lithuania, Malta, Romania and United Kingdom

<sup>12</sup> Czech Republic, Denmark, Lithuania, Malta, Romania and United Kingdom

<sup>13</sup> Czech Republic, Estonia, Ireland, Latvia, Malta and Sweden

<sup>14</sup> Sweden

<sup>15</sup> Portugal

<sup>16</sup> Portugal and Spain

<sup>17</sup> Sweden

<sup>18</sup> Portugal and Sweden

<sup>19</sup> Sweden

<sup>20</sup> Portugal and Spain

<sup>21</sup> Austria, Denmark, Estonia, Finland, Iceland, Ireland, Norway, Spain and Sweden

<sup>22</sup> Austria, Estonia, Iceland, Latvia, Norway, Spain, Sweden and the Netherlands

<sup>23</sup> Austria, Estonia, Iceland, Ireland, Norway, Spain, Sweden and the Netherlands

<sup>24</sup> Austria, Czech Republic, Denmark, Estonia, Ireland, Latvia, Norway and Sweden

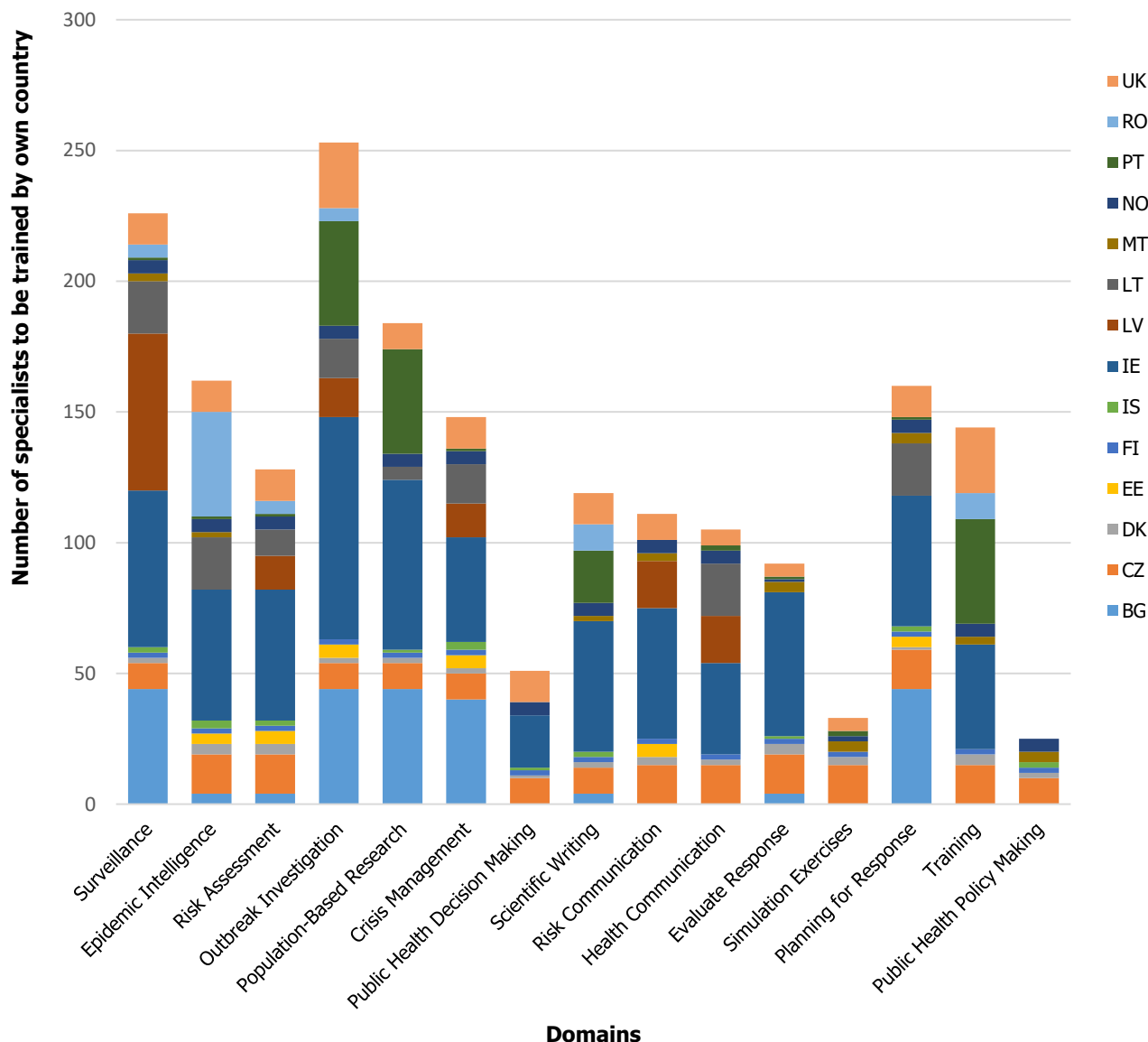
<sup>25</sup> Austria, Denmark, Estonia, Iceland, Latvia, Lithuania, Norway and Sweden

<sup>26</sup> Austria, Denmark, Estonia, Finland, Iceland, Ireland, Norway and the Netherlands

<sup>27</sup> Austria, Denmark, Estonia, Iceland, Norway, Portugal, Sweden and the Netherlands

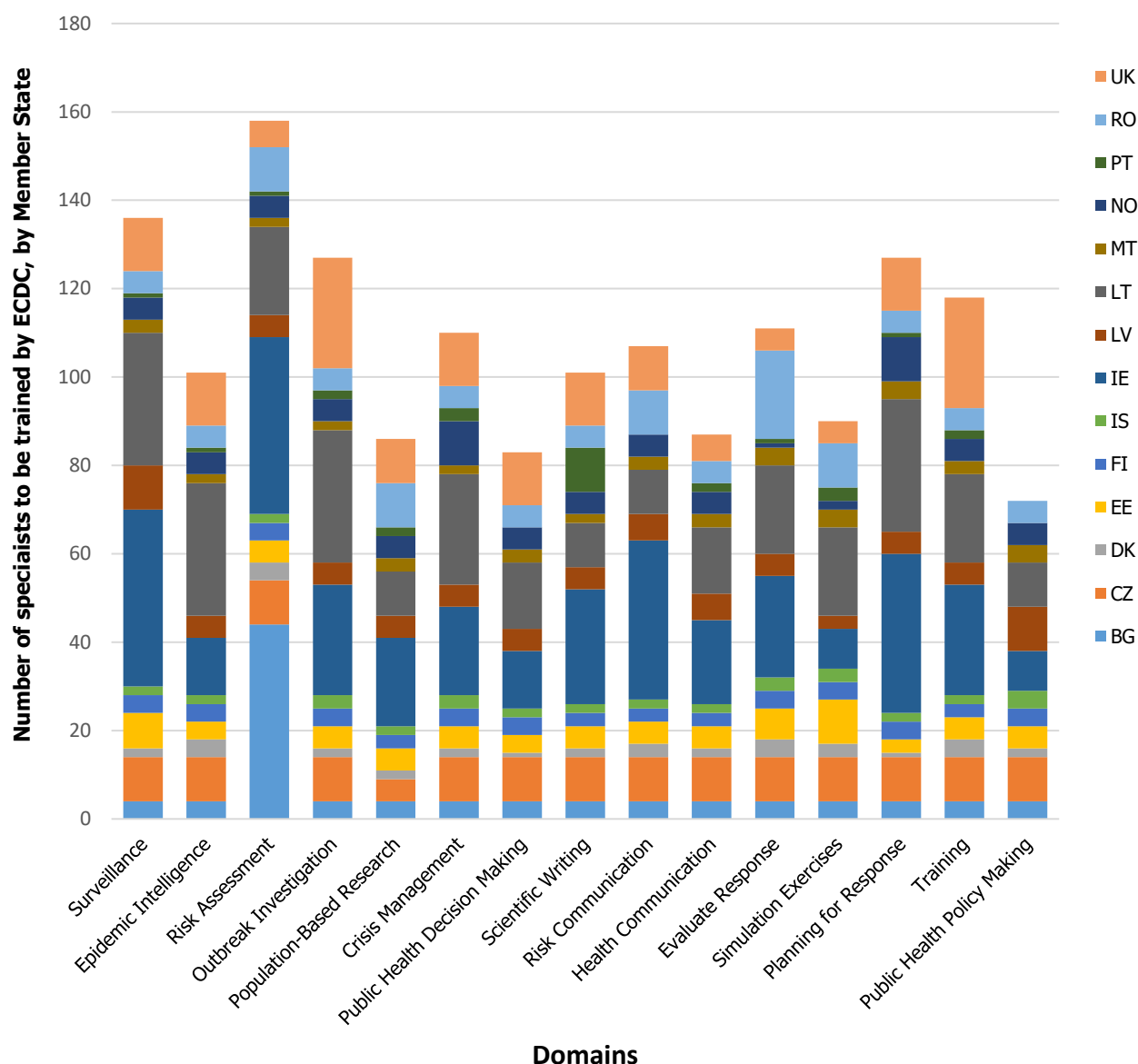
that could potentially be covered by national training activities are epidemic intelligence, crisis management, planning for response, and increasing a Member States’ training capacity.

**Figure 5. Estimated number of public health specialists that could be trained in their own countries**



Roughly **one third of the estimated total** number of public health specialists that need training **could be trained by ECDC** (see Figure 5). Surveillance and risk assessments are estimated as areas with the greatest need for training by the Centre. Domains with a cumulative total over 100 specialists in need of ECDC training include the following: outbreak investigation, planning for response, training, crisis management, response evaluation, risk communication, epidemic intelligence and scientific writing.

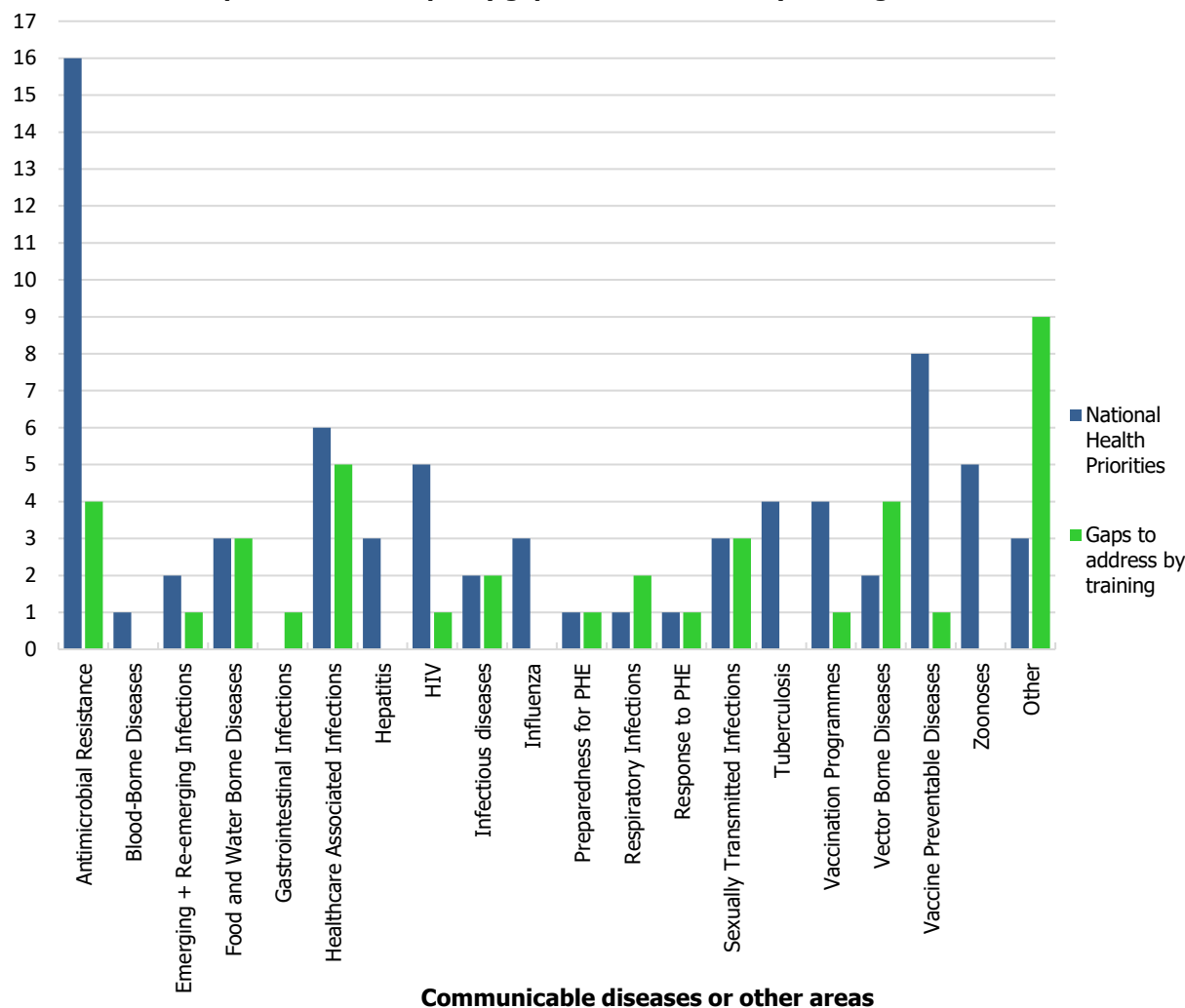
**Figure 6. Estimated number of public health specialists that could receive training from ECDC, by Member State and public health domain**



Of the twenty Member States that responded, 17 Member States stated that communicable diseases are among their **national health priorities** (see Figure 7). When invited to propose additional national priorities, rare and imported pathogens, and travel-related diseases were suggested.

Nine Member States reported additional capacity gaps that could be addressed by training. These included: application of behavioural sciences in the prevention and control of infectious diseases; balancing evaluation, application and control within and between the different surveillance areas (clinical, epidemiological, entomological and environmental); communication; disease modelling and burden of disease; epidemic intelligence; evaluation of surveillance system; high-quality health registries; migrant health; need to support EUPHEM and Member State tracks; population-based research; public health emergencies; research on effect of interventions; risk assessment; risk management; scientific writing; simulation exercises to strengthen response to public health events; surveillance of (serious viral) infections; and training in public health microbiology. Training courses for microbiologists in public health microbiology and a focus on migrant health were also areas highlighted for further strengthening.

**Figure 7. Number of Member States with communicable diseases or other areas that are designated as 'national health priorities' and 'capacity gaps to be addressed by training'**



The TRNA survey also explored the Member States' capacity with regard to **migrant and refugee health** in the area of **communicable disease prevention and control**. Out of 20 respondents, 13 Member States indicated that they experienced an influx of migrants and refugees<sup>28</sup>. Among those countries experiencing an influx of migrants and refugees, all respondents – except Denmark – said that their current systems were able to detect public health events, timely assess public health threats and respond to those threats. All 13 countries that indicated an influx of migrants and refugees agreed with the statement 'More capacity of workforce is needed to ensure detection of public health events and/or assessment of health threats among migrants and refugees'. Out of these 13 Member States, eight<sup>29</sup> agreed with the statement 'More specific training is needed to deal with assessing public health events among migrants and refugees'. Six countries<sup>30</sup> agreed that 'More specific training is needed in preparedness and response to public health events among migrants and refugees'.

Only seven Member States stated that they had relevant policy documents for **public health workforce planning** with regard to public health specialists working in the area of communicable diseases in their countries. One of them stated that national strategies were not available at the national level as the national level was not responsible for the planning of (workforce) resources. Three Member States provided access to the relevant documents. Only two Member States<sup>31</sup> indicated that they were always able to recruit personnel with the skills and expertise appropriate for the advertised position. The majority of respondents (n=10) stated that this was only

<sup>28</sup> Austria, Bulgaria, Czech Republic, Denmark, Finland, Germany, Iceland, Ireland, Malta, Norway, Sweden and the Netherlands

<sup>29</sup> Czech Republic, Denmark, Iceland, Ireland, Malta, Norway, Romania and the Netherlands

<sup>30</sup> Czech Republic, Denmark, Iceland, Ireland, Malta, and Romania

<sup>31</sup> Iceland, Norway



sometimes the case<sup>32</sup>. Four Member States<sup>33</sup> reported that they rarely recruited enough qualified personnel in the area of communicable disease prevention and control.

Ten or more Member States reported moderate to major problems in the following areas:

- Recruitment: salaries too low, lack of qualified applicants, lack of opportunities for career development (including lack of training opportunities)
- Employee retention: salaries too low, lack of opportunities for career development (including lack of training opportunities)

Retirement of qualified staff members poses a problem for five Member States and moderate problem for another four Member States.

Problems experienced with recruitment and/or employee retention include the following areas:

- Financial aspects: low salaries in public health, having no or limited resources, cuts in government spending, and no new vacancies posted because of financial constraints
- Training: not having a specialist degree for public health officers, not having a clearly defined training strategy (or not having a sufficient number of specialist training programmes), and not investing in resources for training activities or training programmes
- Interest: medical doctors and young professionals are generally not interested in public health (i.e. working as a clinical specialist is more attractive than working as a public health officer)
- Political priorities: public health is not a priority; citizenship is a requirement in order to work for the public sector
- Recruitment at national vs. regional levels: recruitment possible at the national level, but limited/not possible at the regional or local level
- One Member State had no data access to respond to this question.

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<sup>32</sup> Czech Republic, Denmark, Germany, Ireland, Lithuania, Malta, Romania, Spain, Sweden, United Kingdom

<sup>33</sup> Bulgaria, Estonia, Finland, Latvia

## 4 Conclusions

### Methodology

The literature review, the analysis of ECDC experience, and the assessment mechanisms developed by different stakeholders show that surveys on capacities and training needs are useful and necessary for monitoring trends, as long as they are conducted with some periodicity and complemented with other methods. Despite the budget and time implications of a multi-annual and combined methodology, there is consensus that a multi-annual and combined methodology is preferable.

Consultations on relevant public health functions should always include the National Focal Points.

Broader consultations at EU-subregional and national levels are expected to improve the quality and validity of the data.

The development of a strategic plan for capacity building in public health education and training is essential to efficiently address public health priorities and activities.

Tabletop and other types of simulation exercises can be used to identify areas in need of improvement or national capacity gaps. Simulation exercises should be complemented with the analysis of lessons learnt from actual public health events.

### Training needs survey 2015

Member States expressed needs in disease surveillance, outbreak investigation and population-based research that can be met by their own training initiatives.

Countries that provided an estimate of the number of public health specialists that should be trained by ECDC listed risk assessment, disease surveillance, and outbreak investigation as the three most relevant topics, in this order.

In addition, according to the survey, more than 100 specialists are in need of training by ECDC in the following areas: planning for response, training, crisis management, response evaluation, risk communication, epidemic intelligence, and scientific writing.

Countries also expressed the need of more specific training to deal with assessing public health events among migrants and refugees.

According to the IHR indicators, only 35% of the countries have a national workforce development or training plan. Progress in achieving workforce numbers and skills that are consistent with milestones set out in national training plans is reported by a similarly low proportion of countries.

Due to its limited completeness, the survey results can only be used as a rough guide or to provide insight into areas that may require focus. Individual capacity gaps and training needs can only be followed up and addressed on a country-to-country or, at best, an EU-subregional basis.

Strategic planning tools are an essential complement to assessment activities.

### Limitations

Despite clear confirmation by all 31 target countries of the importance of a training needs assessment, the 65% response rate of the 2015 survey indicates that countries experienced significant difficulties in mapping the current capacity, identifying the gaps and quantifying and qualifying training needs for disease prevention and control.

These difficulties were mainly related to:

- a) access to the data, which seems to be more difficult in decentralised countries,
- b) the diversity of public health systems, and
- c) the complexity of the distribution and professional profiles of the public health workforce.

## 5 Actions

This TRNA will serve to inform a number of activities of the Centre in capacity building and training, namely: a) the implementation of the ECDC public health training strategy in its different operational aspects, b) the annual consultations with the National Focal Points for Training and c) the establishment of a Country Support Task Force.

The ECDC public health training strategy was endorsed by the ECDC Management Board (MB) in June 2015. Adhering to its 'needs-based approach', the strategy ensures that ECDC's multi-annual planning incorporates the results of this TRNA at EU and national levels.

Annual consultations with the NFP-Ts will continue to be the best forum to update the baseline status of training needs.

The second external evaluation of ECDC showed the need for intensified contacts between ECDC and the Member States in order to better identify and understand needs at the country level. In 2015, responding to the evaluation, ECDC established a Country Support Task Force. An ECDC Country Support Strategy was developed to improve consultation with the ECDC governance bodies. Its three strategic objectives are: 1) to define, together with the Member States, robust methodologies to assess capacity, training and other support needs and opportunities in countries, regions and across the EU, 2) to agree with the Coordinating Competent Bodies and the AF on country-driven transparent methods for priority setting of ECDC country support activities, and 3) to plan and implement, in a structured and cost-efficient way, country support aimed at all or groups of countries, meeting identified needs and finding synergies between actions.

In order to be able to complete the roadmap for training, the following actions were carried out or are in the process of being implemented:

- Presentation of Country Support Strategy to Advisory Forum 44 (AF44) (February 2016)
- Interpretation of the results of this TRNA with the NFP-Ts (10–11 May 2016)
- Advice from the ECDC Advisory Forum 45 (AF45) (12–13 May 2016) on the best methodology for a multi-annual and sustainable TRNA
- Collection of data related to capacity indicators: number of publications on epidemiology as a marker of epidemiological research activity and epidemiological knowledge in the countries; mapping of national training providers in the area of prevention and control of communicable diseases in the Member States (since 2016)
- Development of harmonised tools for mapping, assessment, planning and forecasting of the public health workforce – in coordination with the NFP-Ts (since 2017)
- Organisation of regional workshops on good practice to exchange experience, carry out tabletop and/or simulation exercises (2017 onwards)
- Planning of country visits, in liaison with ECDC's Country Support Task Force (since 2017)
- Workshops on training needs assessment for disease groups (antimicrobial resistance and healthcare-associated infections; emerging and vector-borne diseases and vaccine-preventable diseases), in the context of annual network meetings
- Roadmap for e-learning with interviews of internal and external stakeholders.

To reduce additional burden for the countries and avoid the duplication of work, ECDC will align its efforts with several partner organisations (i.e. the World Health Organization and the Association of Schools of Public Health in the European Region).

## Annex 1. TRNA activities

No	Activity	Output	Timeline
<b>Action 1</b>			
1	Monitoring and analysis of results reported by EU/EEA countries through International Health Regulations (IHR) monitoring questionnaire	Data analysis (full-length report). Note: ECDC could only use the datasets from countries that gave their explicit consent.	Original deadline for countries to report to the IHR monitoring questionnaire was November 2014, which was extended by the World Health Organization (WHO) to March 2015. ECDC obtained explicit consent to use the reported data from 20 respondents <sup>34</sup> by November/December 2015.
<b>Action 2</b>			
2	Review of existing ECDC tools and mechanisms	<ul style="list-style-type: none"> <li>Ranking of existing mechanisms for relevancy to TRNA.</li> <li>Review of the three most relevant mechanisms and tools.</li> <li>Mission reports review</li> <li>Internal enquiry into alignment of the scope and purpose of ECDC visits to Member States</li> </ul>	Review was initiated in July 2014 and finalised in January 2015.
3	Desk-based reviews of literature	<ul style="list-style-type: none"> <li>Literature review on training needs assessment methodology (LR1)</li> <li>Literature review on indicators of capacity (LR2)</li> <li>Review of reports from key institutions about capacity in public health in Europe and indicators</li> </ul>	<ul style="list-style-type: none"> <li>LR1: initiated on 1 September 2014, conclusions were drawn in February 2015 and technical document finalised in December 2015.</li> <li>LR2: initiated on 4 December 2014, conclusions drawn in October 2015 and technical document finalised in December 2015.</li> <li>Review of reports has been a continuous activity throughout July 2014 – December 2015.</li> </ul>
4	Facilitation of consultative meetings to inform the process and arrive at a decision and consensus on TRNA Methodology	<ul style="list-style-type: none"> <li>39th ECDC Advisory Forum, discussion paper on public health training</li> <li>Joint EPIET Training Site Forum (ETSF) and European Programme for Public Health Microbiology (EUPHEM) Forum Meetings</li> <li>Expert meeting to discuss options for methodology proposal</li> <li>Member State consultation with NFP-Ts, during which Member States endorsed the methodology proposal</li> <li>First meeting of the Coordination Committee for Public Health Training</li> <li>ECDC Joint Strategy Meeting (JSM)</li> </ul>	<ul style="list-style-type: none"> <li>24–25 September 2014</li> <li>Stockholm, 4 November 2014</li> <li>Stockholm, 23 March 2015</li> <li>Stockholm, 28–29 April 2015</li> <li>Teleconference, 14 September 2015</li> <li>Stockholm, 23–24 September 2015</li> </ul>
5	TRNA survey 2015	<ul style="list-style-type: none"> <li>TRNA questionnaire created</li> <li>TRNA questionnaire validated through Coordination Committee for Public Health Training</li> <li>TRNA questionnaire administration and collection of responses</li> <li>Analysis of results from submissions</li> </ul>	<ul style="list-style-type: none"> <li>September 2015</li> <li>September 2015</li> <li>Questionnaire was sent out to National Coordinators of the Coordination Competent Bodies on 1 October 2015 with deadline for response submission originally set at 29th October 2015 (four weeks). This deadline was further extended to 9th November 2015 and to 27th November 2015.</li> <li>December 2015</li> </ul>
<b>Actions 3 and 4</b>			
6	Finalising and circulating a draft of a TRNA report containing the findings and conclusions of Actions 1–5 to IAS (reporting on recommendations above) and the EU/EEA countries (process of interpretation of findings and further Member States' input)	Draft TRNA report, including the main conclusions and an outline of next steps	December 2015 draft report finalised Q1 2016 draft report sent to IAS and EU/EEA countries
7	<ul style="list-style-type: none"> <li>Member State advice on combined methodology</li> <li>Consultative process of interpreting findings of TRNA survey 2015 and discussion on next steps (TRNA tools for cascading)</li> <li>Alignment of needs assessment methodologies with other related disciplines in a structured and systematic way</li> </ul>	<ul style="list-style-type: none"> <li>Member State consultation with NFP-Ts 2016</li> <li>45th meeting of the ECDC Advisory Forum (AF document)</li> <li>ECDC Country Support Task Force</li> <li>Key informant interviews</li> <li>Toolkit produced by ECDC</li> </ul>	<ul style="list-style-type: none"> <li>Stockholm, 10–11 May 2016</li> <li>Stockholm, 12–13 May 2016</li> <li>Throughout 2016 and 2017</li> </ul>

<sup>34</sup> Twenty Member States responded to ECDC regarding the questionnaire but not all completed all the sections of the questionnaire.

## Annex 2. TRNA questionnaire

Below is a transcript of the online TRNA questionnaire.

# ECDC Training Needs Assessment of EU Member States and other EEA countries

Fields marked with \* are mandatory.

## Cover page

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### Introduction

ECDC is carrying out a training needs assessment (TRNA) among all Member States (MSs) to collect up-to-date evidence for planning and prioritising of its training activities. The aim of this questionnaire is to contribute to continuous monitoring of Member States' training needs and a comprehensive analysis to support a well-informed decision making and tailoring of training efforts targeted at a desirable number of specialists in each MS to address existing gaps.

For further reference, please consult the ECDC Working Paper on Training Needs Assessment (2015). [*See Reference Document 1 below*].

For definitions of terms used throughout the questionnaire, please consult the Glossary of Terms. [*See Reference Document 2 below*].

### References

- [1\\_ECDC Working Paper on Training Needs Assessment 2015.pdf](#)
- [2\\_Glossary of Terms.pdf](#)
- [3\\_Core\\_Competerencies-EU-public-health-epidemiologists.pdf](#)
- [4\\_Microbiology-public-health-training-programme.pdf](#)

## Scope and Purpose of the Training Needs Assessment

The questionnaire aims at providing information to the following questions:

- How many sufficiently trained public health specialists working in the area of communicable disease prevention and control are there in each respective MS, and how many are required to be trained in each MS in the next 5 years?
- Of the public health specialists working in the area of communicable disease prevention and control, both current and future employees, what and where are the core capacity gaps with regards to core functions of prevention and control of communicable diseases in MSs?
- What are the current training needs and which training activities would each MS require/benefit from, with support from the ECDC, in order to reach the number of sufficiently trained public health specialists working in the field of communicable disease prevention and control in each MS [1]?

## Structure

The questionnaire consists of seven (7) sections. Six sections relate to capacity and training needs in the areas of:

1. Event Detection
2. Threat Assessment
3. Threat Management
4. Communication
5. Crisis Evaluation
6. Preparedness

The seventh section requests additional information in the following areas:

- National health priorities, public health systems and organisations;
- Public Health Workforce: policy, planning, recruitment and retention;
- Enumeration of public health specialists in the area of communicable disease prevention and control;
- Migrants and Communicable Disease Prevention and Control;
- Reported data on country capacities via IHR Monitoring Questionnaire.

## Instructions

Time for completion and submission of this questionnaire is four (4) weeks.

Deadline for submission is the **29th October 2015**.

The questionnaire is sent to the Member States via their nominated ECDC National Coordinators (NC) of Coordinating Competent Bodies, who have the overall responsibility for its distribution, completion and timely submission. The EU-Survey allows for sharing of the content with national leading experts in the respective areas (e.g. Ministry of Health for policy and planning), who may need to be involved in completing the survey. Each country is issued with one country-specific URL link (above), which can be further shared with others electronically via email for filling in specific chapters or questions.

While sharing with others, please keep in mind that these partial answers should then be saved by clicking on "Save as Draft". Please note that concurrent access is dis-recommended due to potential information loss. The only person who should click on "Submit" should be the person responsible for submitting the entire questionnaire (once fully completed) on behalf of the Member State – the ECDC National Coordinator.

During the process of collecting the information and completing the survey, you are highly encouraged to receive input from your Member State's ECDC National Focal Point for Public Health Training (NFP-T), as well as other NFPs as needed. NFP-Ts of all Member States have been informed and consulted during the process of designing the approach and some NFP-Ts have validated the survey itself.

The above timeframe allows for the review, coordination and approval of the responses, and return of the questionnaire by the NC's.

If you have any questions, please contact the Public Health Training Section at ECDC in Stockholm via e-mail: [Courses@ecdc.europa.eu](mailto:Courses@ecdc.europa.eu). In your enquiries to ECDC, please keep in copy your respective National Coordinator and National Focal Point for Public Health Training.

## Footnotes

*[1] Please note that as per the approved ECDC Public Health Training Strategy, "ECDC neither has the mandate nor the capacity to take over the Member States' responsibility to train staff for sub-national and local needs without a cross-border dimension. However, the Centre should play an important role in supporting the countries to strengthen their own national training capacities, through support to the build-up of national field epidemiology training programmes (FETPs), continuous professional development and training-of-trainers programmes, providing e-learning and other training resources that could be utilised by the national training partners or directly by a broader audience. ECDC should further support the national efforts to cascade training in the countries."*



## Member State information

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### \*Member State

Select a Member State from the drop down list below.

- Austria-AT
- Belgium-BE
- Bulgaria-BG
- Croatia-HR
- Cyprus-CY
- Czech republic-CZ
- Denmark-DA
- Estonia-ES
- Finland-FI
- France-FR
- Germany-DE
- Greece-EL
- Hungary-HU
- Iceland-IS
- Ireland-IE
- Italy-IT
- Latvia-LV
- Liechtenstein-LI
- Lithuania-LT
- Luxembourg-LU
- Malta-MT
- Norway-NO
- Poland-PL
- Portugal-PT
- Romania-RO
- Slovakia-SK
- Slovenia-SL
- Spain-ES
- Sweden-SE
- The Netherlands-NL
- United Kingdom-UK

### Person completing this questionnaire

\*First Name

\*Last Name

Institution

**\*E-mail**

Please provide an e-mail address in case an answer requires further clarification.

Phone

## Other information

Are other people involved in completing this questionnaire? Please add more names as necessary in the space provided below:

Other Comments or additional information

### **Privacy Statement**

ECDC processes the personal data collected through the Training Needs Assessment Survey in accordance with Regulation (EC) 45/2001[1].

The data controller for this processing operation is the Head of the Public Health Training Section, Arnold Bosman.

The purpose of the processing of personal data is to identify one person responsible for data collection and survey submission on behalf of the EU Member State or other EEA country with the aim of verification of reported data and any necessary follow-up action.

The recipients of the data are staff members of the ECDC Public Health Capacity and Communication Unit.

The legal basis of the processing operation at stake is Article 9.6 of ECDC Founding Regulation.

Personal data collected through the survey will be retained for the period of 3 years.

Please be reminded that data subjects have the right to access and rectify the information concerning them, stored by ECDC by the Public Health Training Section (courses@ecdc.europa.eu). Data subjects can obtain the erasure of their data if the processing is unlawful. Data subjects may also contact the ECDC Data Protection Officer (DPO) in case of any difficulties or for any questions relating to the processing of their personal data at the following email address: dpo@ecdc.europa.eu.

The data subject has the right of recourse at any time to the European Data Protection Supervisor (<http://www.edps.europa.eu/EDPSWEB/>; edps@edps.europa.eu).

[1] Regulation (EC) 45/2001 of the European Parliament and of the Council of 18 December 2000 on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data.

## 1. Event Detection: Capacity and Training Needs

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### 1.1 Surveillance

Note: For easier reporting and your reference, these are the ECDC core competencies for EU public health epidemiologists relating to the area of **public health surveillance (domain 1.2.2)**:

1. Run a surveillance system.
2. Conduct surveillance data management.
3. Perform descriptive analysis of surveillance data.
4. Interpret disease and public health events trends from time series analysis.
5. Identify key findings from surveillance data analysis and draw conclusions.
6. Evaluate surveillance systems.
7. Recognise the need for and set up a new surveillance system.
8. Use event-based surveillance, also called epidemic intelligence, to detect health threats.
9. Be familiar with laws on surveillance and reporting of communicable diseases at national, EU level and globally (International Health Regulations).

**\*1.1.1** What is the current **estimated capacity level in your Member State** in the workforce for communicable disease surveillance?

- 100% (= sufficient number of trained specialists working in this area)
- 76%-99%
- 51%-75%
- 25%-50%
- <25%
- I don't know

Further descriptive explanation or comment related to question 1.1.1.

**\*1.1.2** In order to maintain the full capacity, what is the estimated number of specialists requiring training in this area in the next five years?

(number)

**\*1.1.2** In order to reach and maintain the full capacity, what is the estimated number of specialists in your Member State requiring training in communicable disease surveillance in the next five years?

(number)

**\*1.1.3** How many of those (question 1.1.2) would fall into the ECDC prime target audience?

ECDC's training strategy defines ECDC prime target audience as national level specialists and subnational level specialists with cross-border dimension.

(number)

**\*1.1.4** How many of those (question 1.1.2) can be trained by organisations in your Member State?

(number)

Further descriptive explanation or comment related to the questions of section 1.1 Surveillance.

## 1.2 Epidemic Intelligence

Note: For easier reporting and your reference, please consider this clarification for question 1.2:

**Epidemic intelligence** integrates indicator-based and event-based components. 'Indicator-based surveillance' refers to structured data collected through routine surveillance systems. The 'event-based' surveillance refers to unstructured data gathered from formal and informal sources, such as the media and scientific publications. The purpose of both these components of epidemic intelligence is to quickly identify any event which might become a public health concern.

Early detection comprises six elements:

1. Screening news, official reports or notes and rumours relevant from a European perspective in order to distinguish the meaningful information signals by applying specified criteria.
2. Filtering the events to identify potential public health events of European interest.
3. Validating the events that originate from unofficial sources, by cross-checking with official and/or reliable media sources to ensure that the event detected is real and fully understood.
4. A validated event is then analysed to capture the full information available about the event, including epidemiological data, facts related to exposures and contextual information.
5. Based on the analysis, an assessment is made to estimate the risk associated with the event.
6. Finally, communication and documentation of the identified threats are an integral part of the epidemic intelligence, throughout the five steps above.

\*1.2.1 What is the current **estimated capacity level in your Member State** in the workforce for communicable disease epidemic intelligence?

- 100% (= sufficient number of trained specialists working in this area)
- 76%-99%
- 51%-75%
- 25%-50%
- <25%
- I don't know

Further descriptive explanation or comment related to question 1.2.1.

\*1.2.2 In order to maintain the full capacity, what is the estimated number of specialists requiring training in this area in the next five years?

(number)

\*1.2.2 In order to reach and maintain the full capacity, what is the estimated number of specialists in your Member State requiring training in communicable disease epidemic intelligence in the next five years?

(number)

**\*1.2.3 How many of those (question 1.2.2) would fall into the ECDC prime target audience?**

ECDC's training strategy defines ECDC prime target audience as national level specialists and subnational level specialists with cross-border dimension.

 (number)

Further descriptive explanation or comment related to the questions of section 1.2 Epidemic Intelligence.

## 2. Threat Assessment: Capacity and Training Needs

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### 2.1 Formal and Rapid Risk Assessment

Note: For easier reporting and your reference, these are the ECDC core competencies for EU public health epidemiologists relating to the area of **risk assessment (domain 1.2.1)**:

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

**\*2.1.1 What is the current **estimated capacity level in your Member State** in the workforce to carry out formal and rapid risk assessment of communicable diseases?**

- 100% (= sufficient number of trained specialists working in this area)
- 76%-99%
- 51%-75%
- 25%-50%
- <25%
- I don't know

Further descriptive explanation or comment related to question 2.1.1.

**\*2.1.2 In order to maintain the full capacity, what is the estimated number of specialists requiring training in this area in the next five years?**

 (number)

\*2.1.2 In order to reach and maintain the full capacity, what is the estimated number of specialists in your Member State requiring training in communicable disease formal and rapid risk assessment in the next five years?

 (number)

\*1.2.4 How many of those (question 1.2.2) can be trained by organisations in your Member State?

 (number)

\*2.1.3 How many of those (question 2.1.2) would fall into the ECDC prime target audience?

ECDC's training strategy defines ECDC prime target audience as national level specialists and subnational level specialists with cross-border dimension.

 (number)

\*2.1.4 How many of those (question 2.1.2) can be trained by organisations in your Member State?

 (number)

Further descriptive explanation or comment related to the questions of section 2.1 Formal and Rapid Risk Assessment.

## 2.2 Outbreak Investigation

Note: For easier reporting and your reference, these are the ECDC core competencies for EU public health epidemiologists relating to the area of **outbreak investigation (domain 1.2.3)**:

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

**\*2.2.1** What is the current **estimated capacity level in your Member State** in the workforce for outbreak investigation of communicable diseases?

- 100% (= sufficient number of trained specialists working in this area)
- 76%-99%
- 51%-75%
- 25%-50%
- <25%
- I don't know

Further descriptive explanation or comment related to question 2.2.1.

**\*2.2.2** In order to maintain the full capacity, what is the estimated number of specialists requiring training in this area in the next five years?

(number)

**\*2.2.2** In order to reach and maintain the full capacity, what is the estimated number of specialists in your Member State requiring training in communicable disease outbreak investigation in the next five years?

(number)

**\*2.2.3** How many of those (question 2.2.2) would fall into the ECDC prime target audience?

ECDC's training strategy defines ECDC prime target audience as national level specialists and subnational level specialists with cross-border dimension.

(number)

**\*2.2.4** How many of those (question 2.2.2) can be trained by organisations in your Member State?

(number)

Further descriptive explanation or comment related to the questions of section 2.2 Outbreak Investigation.



## 2.3 Population-Based Research

Note: For easier reporting and your reference, these are the ECDC core competencies for EU public health epidemiologists relating to the area of **epidemiological studies (domain 1.2.4)**:

1. Write a study protocol using investigation techniques consistent with the public health problem.
2. Conduct epidemiological studies.
3. Report and present results of a study.
4. Recommend evidence-based interventions in response to epidemiological findings.

**\*2.3.1** What is the current **estimated capacity level in your Member State** in the workforce that is required to respond to communicable disease threats through applied epidemiological studies?

- 100% (= sufficient number of trained specialists working in this area)
- 76%-99%
- 51%-75%
- 25%-50%
- <25%
- I don't know

Further descriptive explanation or comment related to question 2.3.1.

**\*2.3.2** In order to maintain the full capacity, what is the estimated number of specialists requiring training in this area in the next five years?

(number)

**\*2.3.2** In order to reach and maintain the full capacity, what is the estimated number of specialists in your Member State requiring training in applied epidemiological studies supporting direct public health actions in the area of communicable disease prevention and control in the next five years?

(number)

**\*2.3.3** How many of those (question 2.3.2) would fall into the ECDC prime target audience?

ECDC's training strategy defines ECDC prime target audience as national level specialists and subnational level specialists with cross-border dimension.

(number)

**\*2.3.4** How many of those (question 2.3.2) can be trained by organisations in your Member State?

(number)

Further descriptive explanation or comment related to the questions of section 2.3 Population-Based Research.

### 3. Threat Management: Capacity and Training Needs

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#### 3.1 Crisis Management to Control Outbreaks of Communicable Diseases

\*3.1.1 What is the current **estimated capacity level in your Member State** in the workforce for crisis management to control outbreaks of communicable diseases?

- 100% (= sufficient number of trained specialists working in this area)
- 76%-99%
- 51%-75%
- 25%-50%
- <25%
- I don't know

Further descriptive explanation or comment related to question 3.1.1.

\*3.1.2 In order to maintain the full capacity, what is the estimated number of specialists requiring training in this area in the next five years?

(number)

\*3.1.2 In order to reach and maintain the full capacity, what is the estimated number of specialists in your Member State requiring training in the area of crisis management to control outbreaks of communicable diseases in the next five years?

(number)

\*3.1.3 How many of those (question 3.1.2) would fall into the ECDC prime target audience?

ECDC's training strategy defines ECDC prime target audience as national level specialists and subnational level specialists with cross-border dimension.

(number)

\*3.1.4 How many of those (question 3.1.2) can be trained by organisations in your Member State?

 (number)

Further descriptive explanation or comment related to the questions of section 3.2 Crisis Management to Control Outbreaks of Communicable Diseases.

## 3.2 Public Health Decision Making for Communicable Diseases Prevention and Control

\*3.2.1 What is the current **estimated capacity level in your Member State** in the workforce for public health decision making in communicable diseases prevention and control?

- 100% (= sufficient number of trained specialists working in this area)
- 76%-99%
- 51%-75%
- 25%-50%
- <25%
- I don't know

Further descriptive explanation or comment related to question 3.2.1.

\*3.2.2 In order to maintain the full capacity, what is the estimated number of specialists requiring training in this area in the next five years?

 (number)

\*3.2.2 In order to reach and maintain the full capacity, what is the estimated number of specialists in your Member State requiring training in the area of public health decision making for communicable disease prevention and control in the next five years?

 (number)

\*3.2.3 How many of those (question 3.2.2) would fall into the ECDC prime target audience?

ECDC's training strategy defines ECDC prime target audience as national level specialists and subnational level specialists with cross-border dimension.

 (number)

\*3.2.4 How many of those (question 3.2.2) can be trained by organisations in your Member State?

 (number)

Further descriptive explanation or comment related to the questions of section 3.2 Public Health Decision Making for Communicable Diseases Prevention and Control.

## 4. Communication: Capacity and Training Needs

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### 4.1 Scientific Writing for Communicable Diseases Prevention and Control

Note: For easier reporting and your reference, these are the ECDC core competencies for EU public health epidemiologists relating to the area of **communication**:

#### **Risk communication (domain 2.3.1)**

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

#### **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, meeting minutes, etc.

#### **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, e-mail, etc.) effectively.

**\*4.1.1** What is the current **estimated capacity level in your Member State** in the workforce for scientific writing in communicable diseases prevention and control?

- 100% (= sufficient number of trained specialists working in this area)
- 76%-99%
- 51%-75%
- 25%-50%
- <25%
- I don't know

Further descriptive explanation or comment related to question 4.1.1.

**\*4.1.2** In order to maintain the full capacity, what is the estimated number of specialists requiring training in this area in the next five years?

(number)

**\*4.1.2** In order to reach and maintain the full capacity, what is the estimated number of specialists in your Member State requiring training in the area of scientific writing for communicable diseases prevention and control in the next five years?

(number)

**\*4.1.3** How many of those (question 4.1.2) would fall into the ECDC prime target audience?

ECDC's training strategy defines ECDC prime target audience as national level specialists and subnational level specialists with cross-border dimension.

(number)

**\*4.1.4** How many of those (question 4.1.2) can be trained by organisations in your Member State?

(number)

Further descriptive explanation or comment related to the questions of section 4.1 Scientific Writing for Communicable Diseases Prevention and Control.

## 4.2 Risk Communication for Communicable Disease Prevention and Control

\*4.2.1 What is the current **estimated capacity level in your Member State** in the workforce in risk communication for communicable disease prevention and control?

- 100% (= sufficient number of trained specialists working in this area)
- 76%-99%
- 51%-75%
- 25%-50%
- <25%
- I don't know

Further descriptive explanation or comment related to question 4.2.1.

\*4.2.2 In order to maintain the full capacity, what is the estimated number of specialists requiring training in this area in the next five years?

(number)

\*4.2.2 In order to reach and maintain the full capacity, what is the estimated number of specialists in your Member State requiring training in the area of risk communication for communicable disease prevention and control in the next five years?

(number)

\*4.2.3 How many of those (question 4.2.2) would fall into the ECDC prime target audience?

ECDC's training strategy defines ECDC prime target audience as national level specialists and subnational level specialists with cross-border dimension.

(number)

\*4.2.4 How many of those (question 4.2.2) can be trained by organisations in your Member State?

(number)

Further descriptive explanation or comment related to the questions of section 4.2 Risk Communication for Communicable Disease Prevention and Control.

## 4.3 Health Communication

**\*4.3.1** What is the current **estimated capacity level in your Member State** in the workforce in health communication for communicable disease prevention and control?

- 100% (= sufficient number of trained specialists working in this area)
- 76%-99%
- 51%-75%
- 25%-50%
- <25%
- I don't know

Further descriptive explanation or comment related to question 4.3.1.

**\*4.3.2** In order to maintain the full capacity, what is the estimated number of specialists requiring training in this area in the next five years?

(number)

**\*4.3.2** In order to reach and maintain the full capacity, what is the estimated number of specialists in your Member State requiring training in the area of health communication in communicable disease prevention and control in the next five years?

(number)

**\*4.3.3** How many of those (question 4.3.2) would fall into the ECDC prime target audience?

ECDC's training strategy defines ECDC prime target audience as national level specialists and subnational level specialists with cross-border dimension.

(number)

**\*4.3.4** How many of those (question 4.3.2) can be trained by organisations in your Member State?

(number)

Further descriptive explanation or comment related to the questions of section 4.3 Health Communication.

## 5. Crisis Evaluation: Capacity and Training Needs

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### 5.1 Evaluation of Response to Public Health Events

\*5.1.1 What is the current **estimated capacity level in your Member State** in the workforce that evaluates the response to public health events related to communicable disease outbreaks?

- 100% (= sufficient number of trained specialists working in this area)
- 76%-99%
- 51%-75%
- 25%-50%
- <25%
- I don't know

Further descriptive explanation or comment related to question 5.1.1.

\*5.1.2 In order to maintain the full capacity, what is the estimated number of specialists requiring training in this area in the next five years?

(number)

\*5.1.2 In order to reach and maintain the full capacity, what is the estimated number of specialists in your Member State requiring training in evaluation of response to public health events related to communicable disease outbreaks?

(number)

\*5.1.3 How many of those (question 5.1.2) would fall into the ECDC prime target audience?

ECDC's training strategy defines ECDC prime target audience as national level specialists and subnational level specialists with cross-border dimension.

(number)

\*5.1.4 How many of those (question 5.1.2) can be trained by organisations in your Member State?

(number)

Further descriptive explanation or comment related to the questions of section 5.1 Evaluation of Response to Public Health Events.



## 5.2 Simulation Exercises to Strengthen Response to Public Health Events

\*5.2.1 What is the current **estimated capacity level in your Member State** in the workforce for simulation exercises to strengthen response to public health events related to communicable disease outbreaks?

- 100% (= sufficient number of trained specialists working in this area)
- 76%-99%
- 51%-75%
- 25%-50%
- <25%
- I don't know

Further descriptive explanation or comment related to question 5.2.1.

\*5.2.2 In order to maintain the full capacity, what is the estimated number of specialists requiring training in this area in the next five years?

(number)

\*5.2.2 In order to reach and maintain the full capacity, what is the estimated number of specialists in your Member State requiring training in the area of simulation exercises to strengthen response to public health events related to communicable disease outbreaks?

(number)

\*5.2.3 How many of those (question 5.2.2) would fall into the ECDC prime target audience?

ECDC's training strategy defines ECDC prime target audience as national level specialists and subnational level specialists with cross-border dimension.

(number)

\*5.2.4 How many of those (question 5.2.2) can be trained by organisations in your Member State?

(number)

Further descriptive explanation or comment related to the questions of section 5.2 Simulation Exercises to Strengthen Response to Public Health Events.

## 6. Preparedness: Capacity and Training Needs

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### 6.1 Planning for Response to Communicable Disease Outbreaks

\*6.1.1 What is the current **estimated capacity level in your Member State** in the workforce in planning for response to communicable disease outbreaks?

- 100% (= sufficient number of trained specialists working in this area)
- 76%-99%
- 51%-75%
- 25%-50%
- <25%
- I don't know

Further descriptive explanation or comment related to question 6.1.1.

\*6.1.2 In order to maintain the full capacity, what is the estimated number of specialists requiring training in this area in the next five years?

(number)

\*6.1.2 In order to reach and maintain the full capacity, what is the estimated number of specialists in your Member State requiring training in the area of planning for response to communicable disease outbreaks?

(number)

\*6.1.3 How many of those (question 6.1.2) would fall into the ECDC prime target audience?

ECDC's training strategy defines ECDC prime target audience as national level specialists and subnational level specialists with cross-border dimension.

(number)

\*6.1.4 How many of those (question 6.1.2) can be trained by organisations in your Member State?

(number)

Further descriptive explanation or comment related to the questions of section 6.1 Planning for Response to Communicable Disease Outbreaks.

## 6.2 Training

**\*6.2.1** What is the current **estimated capacity level in your Member State** in the workforce to carry out trainings in the area of communicable disease prevention and control?

- 100% (= sufficient number of trained specialists working in this area)
- 76%-99%
- 51%-75%
- 25%-50%
- <25%
- I don't know

Further descriptive explanation or comment related to question 6.2.1.

**\*6.2.2** In order to maintain the full capacity, what is the estimated number of specialists requiring training in this area in the next five years?

(number)

**\*6.2.2** In order to reach and maintain the full capacity, what is the estimated number of specialists in your Member State requiring training to further train others in the area of communicable disease prevention and control?

(number)

**\*6.2.3** How many of those (question 6.2.2) would fall into the ECDC prime target audience?

ECDC's training strategy defines ECDC prime target audience as national level specialists and subnational level specialists with cross-border dimension.

(number)

**\*6.2.4** How many of those (question 6.2.2) can be trained by organisations in your Member State?

(number)

Further descriptive explanation or comment related to the questions of section 6.2 Training.

## 6.3 Public Health Policy Making for Communicable Disease Prevention and Control

Note: For easier reporting and your reference, these are the ECDC core competencies for EU public health epidemiologists relating to **public health policy (domain 1.1.2)**:

- Understand and analyse legal public health policy documents at local, national and European level.
- Use epidemiological findings to plan public health programmes.
- Implement public health programmes: translate policy into public health practice.
- Identify effective health promotion measures for specific problems.
- Identify appropriate health prevention measures for specific problems.
- Evaluate the impact of an intervention on population health.
- Measure health outcomes to guide decision making in prevention strategy.
- Use evaluation results of programme progress towards objectives and outcomes in further programme planning and modification.
- Identify an appropriate public health intervention based on surveillance data.

\*6.3.1 What is the current **estimated capacity level in your Member State** in the workforce in public health policy making for communicable disease prevention and control?

- 100% (= sufficient number of trained specialists working in this area)
- 76%-99%
- 51%-75%
- 25%-50%
- <25%
- I don't know

Further descriptive explanation or comment related to question 6.3.1.

\*6.3.2 In order to maintain the full capacity, what is the estimated number of specialists requiring training in this area in the next five years?

(number)

\*6.3.2 In order to reach and maintain the full capacity, what is the estimated number of specialists in your Member State requiring training in the area of public health policy making for communicable disease prevention and control?

(number)

\*6.3.3 How many of those (question 6.3.2) would fall into the ECDC prime target audience?

ECDC's training strategy defines ECDC prime target audience as national level specialists and subnational level specialists with cross-border dimension.

(number)

\*6.3.4 How many of those (question 6.3.2) can be trained by organisations in your Member State?

 (number)

Further descriptive explanation or comment related to the questions of section 6.3 Public Health Policy Making for Communicable Disease Prevention and Control.

## 7. Additional Information

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### 7.1 National health priorities, public health system and organisations

\*7.1.1 Are communicable diseases or areas among health priorities of your Member State?

- Yes  
 No

Please, state which communicable diseases or areas (i.e. antimicrobial resistance) are considered a national health priority:

Please, state which communicable diseases or areas have an identified capacity gap which can be addressed by training:

7.1.2 Please provide any relevant information about organisations in the public health system in your Member State with particular focus on their mandated functions for communicable disease prevention and control:

\*7.1.3 Please provide relevant organograms (national public health authority and, if relevant, sub-national public health authorities) with indication of functions and roles in communicable disease prevention and control:

## 7.2 Public Health Workforce: National policy, planning, recruitment and retention

\*7.2.1 Are there relevant policy documents (national action plans, national strategies, legislation, etc.) for public health workforce planning, particularly with regard to public health specialists involved in communicable disease prevention and control in your Member State?

- Yes
- No

\*Could you please summarise this in a few lines and/or provide relevant web-links to the documents, if available:

Please, also upload the document/s here in English or in a translatable version (i.e. MS Word or open PDF format).

Are there any plans to develop policy documents, such as national action plan, national strategy or legislation that would address this area? Please, provide a timeline, if possible.

\*7.2.2 Is your Member State able to recruit personnel in the area of communicable disease prevention and control with the skills and expertise appropriate for the position?

- Always
- Sometimes
- Rarely
- I don't know
- Other

Please, specify:

\*7.2.3 To what extent is each of these factors a problem in RECRUITMENT and RETENTION of public health specialists (please rank each factor on a scale **0-3: 0 = no problem, 3 = major problem**).

	Recruitment	Retention
Salary Scale		
Enough qualified applicants		
Personnel policies and procedures		
Job benefits		
Job security		
Job location		
Opportunity for career development (job promotion) and further training		
Job interest/fulfilment		
Travel required		
Travel permitted		
Hiring freezes		
Age/Retirement		
Other (please explain in comment box below)		

Comment

### 7.3 Enumeration of public health specialists in the area of communicable disease prevention and control

\*7.3.1 Please indicate the total number of public health specialists (non-clinical) working in your Member State in the area of communicable disease prevention and control using the following list. If a public health specialist has responsibilities divided over more than one indicated area, please attribute the fraction of time the epidemiologist works in any given area to the nearest 0.1 full-time equivalent (i.e. a specialist employed at 100% of her/his time as a field epidemiologist would have 1.0 FTE as a field epidemiologist)

	Total number in FTEs	Number per 100,000 population
Applied/Field Epidemiology		
Public Health		
Public Health Microbiology		
Infection Control		
Health Economics		
Health Communication		
Data Management		
Migrant Health		
Other (please, specify in the comment box below)		

Comments

### 7.4 Migrants and Communicable Disease Prevention and Control

Currently, a number of Member States experience influx of migrants and refugees. The following questions are aimed to understand your specific training needs in communicable disease prevention and control regarding this recent development.



\*7.4.1 Does your Member State currently experience a noticeable influx of migrants and refugees?

- Yes
- No

\*7.4.2 Does the current system in your Member State enable detecting of public health events among this population?

- Yes
- No

\*7.4.3 Does the current system in your Member State enable timely assessment of communicable disease threats among this population?

- Yes
- No

\*7.4.4 Does the current system in your Member State enable timely response to communicable disease threats among this population?

- Yes
- No

\*7.4.5 Which of the following situations applies to your Member State (multiple answers are possible):

- More capacity of workforce is needed to ensure detection of public health events and/or assessment of health threats among migrants and refugees.
- More specific training is needed to deal with assessing public health events among migrants and refugees.
- More specific training is needed in preparedness and response to public health events among migrants and refugees.

Further descriptive explanation or comment related to the questions of section 7.4 Migrants and Communicable Disease Prevention and Control

\*7.5.1 This capacity and training needs assessment strives to avoid duplicate reporting and use existing data as much as possible, namely the recent WHO IHR Monitoring Questionnaire on monitoring progress in the implementation of IHR core capacities, which covered some provisions of the Decision 1082/2013/EU on serious cross-border threats to health.

Do you grant ECDC access to the data reported through the above-mentioned questionnaire?

- Yes (Upload a file with the **latest response** of your Member State to the IHR Monitoring Questionnaire)
- Yes, I hereby allow ECDC to request access to the IHR monitoring Questionnaire reported to the EC in response to the Preparedness questionnaire of article 4 of Decision 1082/2013/EU
- No

\*Please upload the most recent IHR Monitoring Questionnaire.

\*Please, fill in the following information extracted from the IHR Monitoring Questionnaire (for each question, please, mark only one value – Yes, No, Not Known; numbering of items below reflects original numbering of items in the IHR Monitoring Questionnaire)

#### **Core Capacity 4: Response**

Indicator: 4.1.1 \*Public health emergency<sup>40</sup> response mechanisms are established and functioning

4.1.1.6 Are there Rapid Response Teams<sup>41</sup> (RRTs) to respond to events that may constitute a public health emergency?

- Yes
- No
- Not Known

\*4.1.1.8 Have staff been trained (including RRT members) in specimen collection and transport?

- Yes
- No
- Not Known

#### **\*Core Capacity 4: Response**

Indicator 4.2.1 \*Infection Prevention and Control<sup>45</sup> (IPC) is established and functioning at national and hospital levels

4.2.1.6 Are there qualified IPC professionals in place in all tertiary hospitals?

- Yes
- No
- Not Known

**\*Core Capacity 5: Preparedness<sup>50</sup>**

Indicator 5.1.1 \*Multi-hazard National Public Health Emergency Preparedness and Response Plan is developed and implemented

5.1.1.6 Have procedures, plans or strategy been implemented to reallocate or mobilize resources from national and sub-national levels to support action at community /primary response level?

- Yes
- No
- Not Known

\*5.1.1.7 Have procedures, plans or strategy to reallocate or mobilize resources from national and sub-national levels to support action at community /primary response level been reviewed and updated as needed?

- Yes
- No
- Not Known

**\*Core Capacity 5: Preparedness**

Indicator 5.2.1 \*Priority public health risks and resources are mapped and utilized

5.2.1.1 Is a directory or list of experts in health and other sectors to support a response to IHR-related hazards available?

- Yes
- No
- Not Known

**\*Core Capacity 7: Human Resource Capacity**

Indicator 7.1.1 \*Human resources available to implement IHR Core Capacity requirements

7.1.1.1 Has a unit that is responsible for the development of human resource capacities including for the IHR been identified?

- Yes
- No
- Not Known

\*7.1.1.2 Has a needs assessment been conducted to identify gaps in human resources and training<sup>63</sup> to meet IHR requirements?

- Yes
- No
- Not Known

\*7.1.1.3 Does a workforce development or training plan that includes human resource requirements for IHR exist?

- Yes
- No
- Not Known

\*7.1.1.4 Is progress for meeting workforce numbers and skills consistent with milestones set in the training plan?

- Yes
- No
- Not Known

\*7.1.1.5 Has a plan or strategy been developed to access field epidemiology training (one year or more) in-country, regionally or internationally?

- Yes
- No
- Not Known

\*7.1.1.6 Has the plan or strategy to access field epidemiology training (one year or more) in-country, regionally or internationally been implemented?

- Yes
- No
- Not Known

\*7.1.1.7 Are there specific programs, with allocated budgets, to train workforces for IHR-relevant hazards?

- Yes
- No
- Not Known

Please provide the URL link(s) to any relevant documentation.

Please insert any comments or clarifications to the questions above and list any relevant activities that the country has conducted which are not reflected in this questionnaire.

**\*Core Capacity 8: Laboratory<sup>64</sup>**

Indicator 8.1.1 \*Laboratory services available to test for priority health threats

8.1.1.12 Has staff at national or relevant levels been trained for the safe shipment of infectious substances according to international standards (ICAO/IATA)?

- Yes
- No
- Not Known

**\*Indicator 8.2.1 \*Laboratory biosafety and laboratory biosecurity (Biorisk management<sup>71</sup>) practices in place and implemented**

8.2.1.4 Are relevant staff trained in laboratory biosafety and laboratory biosecurity guidelines?

- Yes
- No
- Not Known

**\*Core Capability 10: Zoonotic Events**

Indicator 10.1.1 \*Mechanisms for detecting and responding to zoonoses and potential zoonoses are established and functional

10.1.1.10 Is there a regularly updated roster (list) of experts that can respond to zoonotic events?

- Yes
- No
- Not Known

**\*10.1.1.13 In the last 12 months, have country experiences<sup>96</sup> and findings related to zoonotic risks and events of potential national and international concern been shared with the global community?**

- Yes
- No
- Not Known

**\*Core Capability 11: Food Safety**

Indicator 11.1.1 \*Mechanisms are established and functioning for detecting and responding to foodborne disease and food contamination

11.1.1.11 Is epidemiological data related to food contamination systematically collected and analysed?

- Yes
- No
- Not Known

\*11.1.1.14 Is there timely<sup>103</sup> and systematic information exchange between food safety authorities, surveillance units and other relevant sectors regarding food safety events?

- Yes
- No
- Not Known

**\*Core Capability 12: Chemical Events**

Indicator 12.1.1 \*Mechanisms are established and functioning for detection, alert and response to chemical emergencies that may constitute a public health event of international concern

12.1.1.1 Have experts<sup>107</sup> been identified for public health assessment and response to chemical incidents?

- Yes
- No
- Not Known

**\*Core Capability 13: Radiation Emergencies**

Indicator 13.1.1 \*Mechanisms are established and functioning for detecting and responding to radiological and nuclear emergencies that may constitute a public health event of international concern

13.1.1.1 Have experts been identified for public health assessment and response to radiological and nuclear events?

- Yes
- No
- Not Known

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**40** Emergencies here refer to emergencies relevant to IHR.

**41** RRT is a group of :multisectoral/multidisciplinary persons that are ready to respond on a 24 hour basis (Annex 1A, Article 6h) to a public health event; trained in outbreak investigation and control, infection control and decontamination, social mobilization and communication, specimen collection and transportation, chemical event investigation and management and if applicable, radiation event investigation and management. The composition of the team is determined by the country concerned.

**45** This capacity is considered as health facility based. Institutionalized National IPC programme (ToR, trained staff, available in hospitals, budget, activities etc.)

**50** Preparedness for development of public health emergency response capacity including implementation of IHR.

**63** Assessment of training needs includes circulating a questionnaire, a consensus of experts, a systematic review or other appropriate measures.

**64** Annex 1 Para 6 (b) Public health response to provide support through specialized staff, laboratory analysis of samples (domestically or through collaborating centres) and logistical assistance (e.g. equipment, supplies and transport).

**71** Management of biorisks in, or associated with the laboratory.

**96** This could include information products, standards, best practices, innovative tools, etc.

**103** Timeliness is judged and determined by each country.

**107** "Experts" include chemical risk assessors, risk managers and clinical toxicologists.

## Submission by the National Coordinator

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\*I, the National Coordinator of the ECDC Coordinating Competent Body, hereby approve and submit the content of my Member State's response to this questionnaire to the best available knowledge and understanding.

Yes

**European Centre for Disease  
Prevention and Control (ECDC)**

Postal address:  
Granits väg 8, SE-171 65 Solna, Sweden

Visiting address:  
Tomtebodavägen 11A, SE-171 65 Solna, Sweden

Tel. +46 858601000  
Fax +46 858601001  
[www.ecdc.europa.eu](http://www.ecdc.europa.eu)

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