ECDC **CORPORATE**

Annual Report of the Director

2019

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This report of the European Centre for Disease Prevention and Control (ECDC) was coordinated and written by Philippe Harant.

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Abbreviations

ABAC	Accrual-Based Accounting, the EC integrated budgetary and accounting system
AMR	Antimicrobial resistance
ARHAI	Antimicrobial Resistance and Healthcare-Associated Infections (ECDC Disease Programme)
ASPHER	Association of Schools of Public Health in the European Region
CAF	Common Assessment Framework
CCB	Coordinating Competent Body
CDC	Centers for Disease Control and Prevention, USA
CDTR	Communicable disease threats reports
CHAFEA	Consumers, Health, Agriculture and Food Executive Agency
CPCG	Committee on procurement, contracts and grants
CPDP	ECDC Continuous Professional Development Programme
CRM	Customer Relationship Management
DG NEAR	Directorate-General for Neighbourhood and Enlargement Negotiations
DG SANTE	Directorate-General for Health and Food Safety
DPO	Data protection officer
DRC	Democratic Republic of the Congo
CONT	Committee for Budgetary Control of the European Parliament
EA	Enterprise architecture
EEA	European Environment Agency
EAAD	European Antibiotic Awareness Day
EARS-Net	European Antimicrobial Resistance Surveillance Network
EEA/EFTA	European Economic Area/European Free Trade Association
EEAS	European External Action Service
EHFG	European Health Forum Gastein
eIIS	Electronic immunisation information systems
ELiTE	European Listeria Typing Exercise
ELDSNet	European Legionnaires' disease Surveillance Network
EFSA	European Food Safety Authority
EMA	European Medicines Agency
EMCDDA	European Monitoring Centre for Drugs and Drug Addiction
EMERGE	Joint action for Efficient response to highly dangerous and emerging pathogens at EU level
ENP	European Neighbourhood Policy
ENPI	European Neighbourhood and Partnerships Instrument (or ENI – European Neighbourhood Instrument)
ENVI	Committee on the Environment, Public Health and Food Safety of the European Parliament
EOC	Emergency Operations Centre
EPIET	Intervention epidemiology path of the ECDC fellowship programme
EPIS	Epidemic Intelligence Information System
EPM	Epidemiological Methods section (ECDC)
EQA	External quality assessment
ERLI-Net	European Reference Laboratory Network for Human Influenza
ESAC-Net	European Surveillance of Antimicrobial Consumption Network
ESCAIDE	European Scientific Conference on Applied Infectious Disease Epidemiology
EU-ANSA	EU Agencies Network on Scientific Advice
EUCAST	European Committee on Antimicrobial Susceptibility Testing
EU-JAMRAI	EU joint action on AMR and healthcare-associated infections
EUPHEM	Public health microbiology path of the ECDC Fellowship Programme
EuroCJD	European and allied countries collaborative study group of Creutzfeldt-Jakob disease

EuSCAPE	European survey on carbapenemase-producing Enterobacteriaceae
EVAP	WHO European Vaccine Action Plan 2015–2020
EVD	Emerging and Vector-Borne Diseases (ECDC Disease Programme)
EWRS	Early Warning and Response System
FRA	European Union Agency for Fundamental Rights
FWD	Food- and Waterborne Diseases and Zoonoses (ECDC Disease Programme)
HAI	Healthcare-associated infections
HAI-Net	Healthcare-Associated Infections Surveillance Network
HIV	Human immunodeficiency virus
HSH	HIV, Sexually Transmitted Infections and Viral Hepatitis (ECDC Disease Programme)
ICT	Information and communication technology
IHR	International Health Regulations
IRIS	Issue, Resources, Solidarity, Impact (ECDC priority assessment tool)
IRV	Influenza and other Respiratory Viruses (ECDC Disease Programme)
MediPIET	Mediterranean Programme for Intervention Epidemiology Training
MERS-CoV	Middle East respiratory syndrome coronavirus
MCS	Microbiology section (ECDC)
MMR	Measles, mumps and rubella
MRSA	Meticillin-resistant *Staphylococcus aureus*
NFP	National Focal Point
NMFPs	National microbiology Focal Points
OCP	Operational contact points
OCS	Office of the Chief Scientist
PHC	Public Health Capacity and Communication unit
RMC	Resource Management and Coordination unit
RRA	Rapid risk assessment
SACS	Scientific Advice Coordination Section
SARMS	Scientific Advice Repository and Management System
SAS	Scientific Assessment Section
SLA	Service level agreement
SMAP	Strategic multiannual work programme 2014–2020
SMT	Senior management team
SRS	Surveillance and Response Support unit
STEC	Shiga toxin-producing Escherichia coli
STI	Sexually transmitted infections
TB	Tuberculosis (also: ECDC Disease Programme)
TESSy	The European Surveillance System
VBORNET	European Network for Arthropod Vector Surveillance for Human Public Health
VectorNet	European Network for Arthropod Vector Surveillance for Human Public Health and Animal Health
VENICE	Vaccine European New Integrated Collaboration Effort
VPD	Vaccine-Preventable Diseases (also: ECDC Disease Programme)
VTEC	Verocytotoxin-producing *Escherichia coli*
WGS	Whole genome sequencing
WHO	World Health Organization
WHO Europe	World Health Organization, Regional Office for Europe

Foreword by the Chair of the Management Board

I am delighted to introduce the Director's Annual Report 2019 which provides a summary of ECDC's work during the last year.

One major achievement of the Management Board in 2019 was the finalisation of the third independent external evaluation of the Centre for the period 2013–2017, and I would like to thank the Management Board's External Evaluation Steering committee that was in charge of overseeing the evaluation process. The evaluation provides insights into the progress made since the previous evaluation five years ago and indicates areas for further improvement. The evaluation concluded that ECDC 'successfully supported the EU and national policy priority areas and demonstrated the capacity to successfully adapt to policy developments, confirming the relevance of its activities'. ECDC's coherence and coordination with other relevant bodies was also evaluated positively.

The Management Board agreed on a set of recommendations to further improve the Centre's work and will follow up on implementation.

The Management Board also discussed ECDC's long-term strategy 2021–2023 which will be approved later this year.

In 2019, ECDC continued to provide scientific and operational support to the Member States and the European Commission by:

- delivering 24 rapid risk assessments that provided important information on risk levels and management at the EU and national levels
- further improving its surveillance processes and reengineering its surveillance systems. For the first time in its existence, ECDC published 75% of its surveillance data within three months of collection
- providing technical support to the European Commission in the implementation of Article 4 of Decision No 1082/2013/EU[1] on serious cross-border threats to health; in this context, ECDC also updated the 'Early Warning and Response System'
- sending a response team to Mozambique to support the control of the cholera outbreak; another team went to the Democratic Republic of Congo in response to the Ebola outbreak.

The Centre continued to support policymaking at EU and national levels by providing relevant public health data, for example an interactive disease atlas, a vaccine scheduler, evidence-based data, interactive maps, and assessments of laboratory quality. ECDC also helped countries who lacked whole genome sequencing capacities.

At a time when the world – and Europe in particular – is confronted with an unparalleled pandemic, ECDC plays an even more crucial role in providing decision makers with reliable data, comprehensive risk assessments, mitigation options and practical guidance for the optimal European response to COVID-19. The last 15 years have shown ECDC's growing ability to establish harmonised and evidenced-based standards and methods to be used across Europe. The Centre's continued efforts in epidemiology, disease surveillance, prevention of communicable diseases and promotion of vaccination have significantly contributed to European public health.

Dr Anni-Riitta Virolainen-Julkunen
Chair of the ECDC Management Board
26 February 2020

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[1] Decision No 1082/2013/EU of the European Parliament and of the Council of 22 October 2013 on serious cross-border threats to health

Introduction by the Director

2019 marked a year of many changes, many of which will shape our work over the coming years:

- A new long-term strategy (2021–2027) was discussed by the Management Board.
- The third external evaluation of the Centre for the period 2013 to 2017 was overall very positive of ECDC's work and its added value for the Member States.
- As part of the *Next Generation ECDC* initiative, the Centre's new organisational structure was put in place in January 2020; the new structure is intended to ensure efficient internal collaboration.
- Work started on two new programmes: *e-Health and Digital Technologies* and *Foresight*. The governance of both programmes was established, and the first datasets for e-health were collected recently.

ECDC continued to support the Member States and the European Institutions in the area of communicable diseases: we responded to 34 requests from the Commission and the European Parliament, published over 200 scientific documents on the ECDC website, and sent experts to Mozambique and the Democratic Republic of the Congo to support the efforts of the Directorate-General for European Civil Protection and Humanitarian Aid Operations.

In 2019, ECDC focused on five key priorities:

- Strengthening the Member States' and the EU's preparedness against epidemics: ECDC supported the implementation of Article 4 of Decision No 1082/2013/EU on serious cross-border threats to health.
- Increasing vaccinations coverage in Europe and tackling vaccine hesitancy: ECDC helped the Member States implement the 2018 Council Recommendation on vaccine-preventable diseases.
- Tackling antimicrobial resistance in Europe. ECDC supported the 2017 European *One health action plan* against antimicrobial resistance, providing evidence on antimicrobial resistance and promoting the prudent use of antibiotics.
- Reaching the targets set in the United Nations Sustainable Development Goals: ECDC helped countries raise awareness of the Sustainable Development Goals (SDGs); ECDC also aligned its monitoring with the SDGs, particularly for HIV, TB and hepatitis.
- Strengthening the cooperation with external partners: ECDC worked closely with WHO Regional Office for Europe and relevant EU agencies; ECDC also reinforced its links with other centres for disease control.

Major projects in 2019 included the reengineering of ECDC's surveillance systems, the outsourcing of the Centre's information technology, a redesign of the Early Warning and Response System, and making whole genome sequencing accessible to all Member States.

From September 2018 to February 2020, ECDC chaired the Network of EU Agencies, which provided an excellent opportunity to gain more visibility, engage in strategic exchanges with other agencies and help align our processes, with tangible benefits for our day-to-day work.

2019 was a particularly busy year for ECDC. Despite many cross-cutting and organisational projects, the Centre was able to deliver over 90% of its planned work programme. I would like to thank all ECDC staff for doing an excellent job. I am also grateful to our many partners in the Member States and the European Commission that relentlessly support our work.

At the end of 2019, during one of our daily round table meetings on epidemic intelligence, ECDC became aware of a small cluster of a new and unknown coronavirus in the city of Wuhan, China, which quickly developed into a public health crisis of unprecedented proportions – and an equally unprecedented challenge for ECDC that would keep us busy for weeks and months on end.

Dr Andrea Ammon
Director of ECDC
26 February 2020

Executive summary

Overview: 2019 at a glance

ECDC delivered 90.1% of the outputs promised in its Single Programing Document 2019–2022.

ECDC public health functions: main achievements

Surveillance. For the first time in its existence, ECDC managed to update 75% of the surveillance data collected on EU- reportable diseases and pathogens available in its Surveillance Atlas of Infectious Diseases within one month after the end date of the data collection. The interactive online *Surveillance Atlas of Infectious Diseases* now includes 58 diseases and health issues. As part of the EPHESUS project, ECDC completed the evaluation of the surveillance systems for tuberculosis, invasive bacterial diseases, STIs, and diphtheria. In the area of e-health, the Centre started mapping electronic health records for surveillance and public health research in European countries and developed protocols to support proof-of-concept studies in 2020 aimed at testing the feasibility of automatically collecting data from electronic health records and laboratory information management systems. The Centre made further progress on the reengineering of its surveillance systems (SSR project, 2017–2021). The new ECDC data warehouse, which will replace the current TESSy data warehouse, was developed for a number of diseases and their determinants, with the remaining diseases to be included in 2020. Finally, ECDC built a new system for the collection, analysis and storage of whole genome sequencing (WGS) data that will become available to Member States in April 2020. The Centre continued to offer WGS services to Member States that did not yet have the capacity or resources to support the investigation of multinational outbreaks.

Epidemic intelligence. In 2019, ECDC started piloting the use of social media and crowd-sourcing technologies to detect outbreaks. 306 events were detected through epidemic intelligence, applying criteria set by the EU Early Warning and Response System (EWRS) on public health threats. The Centre supported the screening of a number of mass gathering events. More than 4 700 users have installed the *Threat Report* app for mobile devices and downloaded over 30 000 documents since its release. The Centre provided training and e-tutorials on epidemic intelligence. Regular exchanges took place with similar epidemic intelligence services and with agencies in other countries.

Scientific advice. ECDC continued with the implementation of its scientific strategy. In 2019, ECDC published over 200 scientific outputs on its website, including 58 technical reports/guidance documents. The Centre also submitted 86 peer-reviewed articles in scientific journals. Two major scientific advice publications were prepared, one on non-pharmaceutical measures against pandemic influenza and one on human papillomavirus (HPV) vaccination. The ECDC IRIS 2.0 tool for prioritisation of scientific outputs was successfully applied to assess the ECDC strategy 2021–2027. The Centre responded to 34 formal scientific requests from the European Commission and the European Parliament. ESCAIDE, ECDC's flagship scientific conference, attracted around 600 participants from 50 countries.

Microbiology. ECDC continued implementing its public health microbiology strategy for 2018–2022. The Centre performed its biannual survey of microbiology capabilities for national and EU-wide surveillance and epidemic preparedness (EULabCap) and published key findings and country performance maps. The median EULabCap index reached 7.8/10 for 2018, showing an increase to fair to high capacity levels across the EU/EEA and a one-third reduction in the capacity gap between the participating countries compared with 2013. ECDC continued implementing its external quality assessment strategy 2017–2020 for laboratories. The Centre started implementing its strategic framework for the integration of molecular typing into European surveillance and multi-country outbreak investigations. In the area of e-health, ECDC conducted a survey on automated laboratory data reporting to national surveillance databases among its Focal Points for microbiology and those for surveillance. The Centre also provided technical support to the European Commission and CHAFEA (Consumers, Health, Agriculture and Food Executive Agency) on initiatives to strengthen microbiology capacity.

Preparedness. ECDC continued to provide technical support to the European Commission for the implementation of Article 4 of Decision No 1082/2013/EU on serious cross-border threats to health: it reviewed, among other things, a template and a list of questions for a triennial survey of the Member States' preparedness plans. ECDC coordinated after-action reviews following a rapid risk assessment on West Nile virus in four affected countries and drafted a generic protocol to support future after-action reviews. ECDC completed a three-year project on community preparedness that highlighted the need to involve local communities in preparedness planning, response actions and evaluation activities. In October, ECDC held a simulation exercise on bio-threats with the Member States and the Commission; the results of the exercise will be the starting point for supporting the new EU joint action to strengthen health preparedness and response to biological and chemical terror attacks (BICTRA).

Response. ECDC produced 24 rapid risk assessments in 2019. ECDC also published 10 epidemiological updates. The Centre finalised the updated version of the EWRS (Early Warning and Response System) with additional

modules. ECDC finalised its methodology and procedures for rapid risk assessments to simplify the process, facilitate the identification of external experts, and better involve the Member States. ECDC sent response missions to Mozambique in order to support the control of the cholera outbreak. It also supported the efforts of the Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO) to stop the Ebola outbreak in the Democratic Republic of Congo.

Public health training. In 2019, 26 fellows graduated from the ECDC Fellowship Programme (EPIET and EUPHEM paths), and another 11 graduated from EPIET-associated programmes; 484 external participants participated in the continuous professional development courses offered to Member States. This included new and updated online courses in the ECDC Virtual Academy (EVA). The external evaluation of the ECDC Fellowship Programme was finalised, and ECDC started preparing an action plan. The ECDC Fellowship Programme received the Best Practice Award for excellence in public health education and training from ASPHER. ECDC continued to provide the scientific leadership for the Mediterranean and Black Sea field epidemiology training programme network to increase security in the EU neighbourhood (MediPIET); a third cohort of fellows began their studies in 2019. Collaboration continued with ASPHER, the Global Laboratory Leadership Programme (GLLP), and TEPHINET.

International relations. ECDC continued its cooperation, collaboration and coordination with the WHO Regional Office for Europe; activities are based on an annual plan of joint and collaborative activities. Collaboration with other major centres for disease prevention and control (CDCs), including the Africa CDC, were intensified, and a network of CDCs was established. With financial assistance from DG NEAR's (Directorate-General for Neighbourhood and Enlargement Negotiations) Instrument for Pre-accession Assistance, the Centre continued to provide technical support to the Western Balkans and Turkey in order to prepare national authorities for their participation in ECDC activities. In this context, a joint ECDC and EFSA regional workshop on One Health against antimicrobial resistance (AMR) was organised in Belgrade, Serbia. A new contribution agreement for 2020–2022 was signed with DG NEAR to enhance technical cooperation activities with a focus on One Health against AMR in the Western Balkan countries and Turkey. The new EU Initiative on Health Security wants to establish a regional competent workforce for the prevention and control of communicable diseases and enhance regional cooperation to tackle cross-border health security threats in EU candidate, potential candidate countries and European Neighbourhood Policy countries. The action will be implemented by ECDC in 2021–2024, with a total budget of six million euros. The European Commission, ECDC, and EFSA organised a workshop on AMR for European Neighbourhood countries in Amman, Jordan. The Centre also teamed up with experts from seven Member States and the WHO Regional Office for Europe, assessed the Georgia public health system, and assessed the capacity of the system with regard to communicable diseases.

Country support. Following two calls for Member States to request ECDC support in 2017 and 2018, the Centre received twenty-five requests from twelve countries, mainly regarding training and exchange visits for antimicrobial resistance and vaccine hesitancy. After an internal assessment, ECDC decided to discontinue the annual country support mechanism format because it generated a disproportionate burden given the small number of limited-scale requests. In addition, the process was not aligned with ECDC's planning cycle, leading to delays. Following discussions with the coordinating competent bodies, ECDC agreed on a more comprehensive approach that will be gradually developed in 2020 and rolled out in 2021.

Health communication. ECDC published 219 scientific reports in 2019; 614 742 website sessions were recorded. The Twitter accounts showed a remarkable growth (+19%). The Centre maintained a professional press office and intensified its work with health journalists. ECDC provided EU-wide communication response to a number of public health issues. ECDC developed communication campaigns for European Antibiotic Awareness Day, the European Immunisation Week, and World TB Day. Forty countries participated in the European Antibiotic Awareness Day in November 2018. In March, a simulation exercise on risk communication was organised with the national Focal Points for communication in order to test communication capacities at EU and country levels.

Eurosurveillance. *Eurosurveillance* is consistently ranked as one of the top journals in its field. Its impact factor reached 7.4; it also ranked fourth among infectious disease journals. In 2019, the journal received over 760 submissions, 220 articles were published. *Eurosurveillance* continued its social media activities on Twitter and expanded its LinkedIn presence. Journal editors contributed to capacity building with workshops on publication ethics and on 'How to get published'. A scientific seminar on 'point-of-care testing and its impact on surveillance of communicable diseases and public health' was held during the ESCAIDE conference.

ECDC Disease Programmes: major achievements

Antimicrobial Resistance and Healthcare-Associated Infections (AMR and HAI). ECDC supported a high-level AMR conference during the Romanian EU presidency in Bucharest in March 2019 by holding a simulation exercise and releasing a joint publication with OECD entitled 'Antimicrobial resistance – tackling the burden in the European Union'. In 2019, ECDC prepared and contributed to several rapid risk assessments on outbreaks of Enterobacteriaceae resistant to carbapenems. ECDC launched the 'European Antimicrobial Resistance Genes Surveillance Network' (EURGen-Net). The Network connects national reference laboratories in 37 European

countries in order to perform WGS-based surveillance of multidrug-resistant bacteria of public health importance. EURGen-Net initiated a Europe-wide survey of carbapenem- and/or colistin-resistant Enterobacteriaceae. Together with the Directorate-General for Health and Food Safety, ECDC conducted several country visits. On 18 November 2019, in conjunction with WHO's World Antibiotic Awareness Week, ECDC organised the 12th European Antibiotic Awareness Day to raise awareness about the threat to public health posed by antibiotic resistance, emphasising again the importance of prudent antibiotic use. The Centre continued to act as a key contributor to the Transatlantic Taskforce on Antimicrobial Resistance. It also contributed to the EU joint action on AMR and HAI (EU-JAMRAI).

Emerging and Vector-Borne Diseases. ECDC continued to closely monitor the 10th Ebola virus disease outbreak in the Democratic Republic of the Congo (DRC) and deployed experts to DRC from October onwards to assist DG ECHO's efforts to support the country's response measures. The Centre analysed the 2018 surveillance data on Lyme neuroborreliosis. An external expert panel assessed the requirements to implement a 2018 European Parliament resolution on Lyme disease and provided input on how to support Lyme surveillance and reporting in the Member States. ECDC continued publishing European vector distribution maps for mosquitoes, ticks and sandflies on its website. The Centre continued to monitor the spread of West Nile virus and fine-tuned a modelling tool to help countries predict West Nile virus activity and compare different vector-control strategies. ECDC conducted external quality assessments for orthopoxviruses to support the diagnostic capabilities of European laboratories.

Food- and Waterborne Diseases and Zoonoses. During 2019, 88 urgent inquiries (77 in 2018) were posted on the EPIS-FWD platform. ECDC and EFSA published three joint rapid outbreak assessments: one on *Salmonella* Agona in infant formula and two on listeriosis (one linked to cold-smoked fish products, the other on ready-to-eat meat products). ECDC and EFSA published two reports: 1) the EU One Health zoonosis report, and 2) a report on antimicrobial resistance in zoonotic and indicator bacteria from humans, animals and food. ECDC initiated the real-time routine surveillance of listeria through whole genome sequencing. In 2019, 38 multi-country clusters of *Listeria monocytogenes* genotypes were detected/monitored in Europe. Of these, 27 were detected by ECDC, and 11 were reported by Member States through an urgent inquiry. The European Commission mandated ECDC and EFSA to implement a joint One Health approach for the collection and analysis of WGS data from human and food isolates. The ECDC Food- and Waterborne Diseases and Zoonoses Programme (FWD) was evaluated in 2018–2019. The evaluation showed that the Programme contributed positively to the capacity and capability building of EU Member States; outputs were considered useful by the stakeholders, including decision makers.

HIV, Sexually Transmitted Infections and Viral Hepatitis. ECDC started a pilot sentinel system to improve the surveillance of hepatitis B and C to collect better data and provide more accurate estimates of hepatitis B and C morbidity and disease burden in Europe. The Centre published a standardised survey protocol for national estimates of hepatitis C prevalence and finalised plans to expand its online interactive prevalence databases of published studies on hepatitis B and C to include HIV. As part of the efforts to align hepatitis monitoring with the targets of the Sustainable Development Goals (SDG), ECDC established a monitoring system for hepatitis programmes. It monitors the progress of countries towards achieving the SDG targets for hepatitis. A comprehensive report will be published in 2020. ECDC initiated surveillance of HIV drug resistance at the national level; 10 countries reported data for 2018 to the new system. The Centre, in close collaboration with UNAIDS and leading HIV experts, prepared principles for HIV pre-exposure prophylaxis (PrEP) service delivery and established monitoring standards for the EU/EEA. A survey on antimicrobial resistance (resistant strains and resistance patterns) in *Neisseria gonorrhoeae* based on molecular typing was conducted in 2019. The Centre published a report on syphilis, highlighting the increase and acceleration of notifications rates for syphilis in Europe, predominantly among men having sex with men, and proposed evidence-based actions for mitigating this epidemic.

Influenza and other Respiratory Viruses. In March, ECDC organised three pandemic preparedness workshops on influenza, with all EU/EEA countries participating, to review their preparedness guidance and exchange experiences on preparedness planning. ECDC and the WHO Regional Office for Europe continued their joint influenza surveillance and the joint publication of the weekly influenza bulletin for Europe (FluNewsEurope.org). Increased efforts were made through social media to reinforce the awareness of influenza and the importance of vaccination. The surveillance systems for influenza and SARS were evaluated through the EPHESUS programme. The ECDC Disease Programme for Influenza and Other Respiratory Viruses (IRV) was also evaluated. The Centre produced an expert opinion on non-pharmaceutical countermeasures against pandemic influenza. The national immunisation technical advisory group (NITAG) collaboration project put the priority on a systematic review of evidence for influenza vaccines in children and the elderly. In December, ECDC and WHO Europe conducted the first regional joint situation assessment of seasonal influenza for all 53 WHO countries. At the end of December 2019, Chinese public health authorities reported several cases of acute respiratory syndrome in Wuhan City, Hubei province, China. This first outbreak of COVID-19 in Wuhan was also reported and discussed in the daily ECDC Round Table meeting.

Tuberculosis. World TB Day was held on 24 March. ECDC and WHO presented the joint annual report on tuberculosis surveillance and monitoring in Europe. A number of projects were prepared to support all Member

States in pushing for TB elimination through workshops, training activities, exchange visits between countries, and consultancy support to individual countries. A joint country visit with WHO to the Netherlands took place in June to advise on the extent and prioritisation of latent TB screening in migrants and on measures to retain knowledge and expertise on TB in the country, despite the rather small number of cases. A three-year project assessing the completeness of tuberculosis notification in six EU Member States was finalised. It showed that the completeness of TB notification in national surveillance systems varies substantially. It is therefore important to combine data from various sources to get a more accurate view of the actual incidence of tuberculosis. ECDC implemented a pilot project aimed at strengthening WGS in public health when analysing *Mycobacterium tuberculosis*. ECDC published eight peer-reviewed publications on TB in scientific journals.

Vaccine-Preventable Diseases. The Centre started to implement the Council Recommendation on strengthened cooperation against vaccine-preventable diseases. The network of the national immunisation technical advisory groups (NITAG), established in 2018, held its first meeting. A beta version of a new European vaccination information portal, established with the support of the European Medicines Agency and the European Commission (Directorate-General for Health and Food Safety, DG SANTE) was delivered to the Member States for consultation and testing in December. The official public launch is scheduled for April 2020. ECDC provided technical support for the Global Vaccination Summit, held on 12 September 2019 in Brussels. ECDC continued the surveillance of measles to provide 'data for action', i.e. to raise awareness on vaccination and support efforts by the Member States to reach the WHO measles elimination goal. ECDC finalised two four-year projects, PERTINENT (sentinel surveillance of pertussis) and SPIDNET (surveillance of invasive pneumococcal disease).

Other ECDC areas of activity: major achievements

General management. The Management Board adopted the final report of the third independent external evaluation of ECDC and started discussing the report's recommendations. The Management Board discussed the Centre's long-term strategy for 2021–2027, which is part of the 'Next Generation ECDC' initiative and voted in support of ECDC's new organisational structure, which will go into effect in January 2020. To support the new structure, a number of key processes were adapted.
ECDC implemented a new internal control framework to replace the existing internal control standards.
Between September 2018 and March 2020, ECDC chaired the EU agencies network (EUAN) and its subnetworks.
ECDC continued with the implementation and strengthening of its independence policy.

Collaboration and cooperation with EU institutions and Member States. ECDC provided the Health Security Committee and the European Commission with regular updates and technical support on questions related to communicable disease threats. Regular meetings and video conferences with the European Commission's Directorate-General for Health and Food Safety took place at the strategic and the operational level.
ECDC continued to invest in partnerships with individual Member States and collaborated closely with its host country Sweden. ECDC organised a session at the annual European Health Forum in Gastein, Austria. In November 2019, the five EU Agencies that are under the remit of the ENVI Committee of the European Parliament – ECDC, ECHA, EEA, EFSA and EMA – presented their responsibilities and activities to the new Members of the European Parliament. In addition to the agencies' individual presentations, the ECDC Director gave a joint presentation of the five agencies in her capacity as the current chair of the EU Agencies Network (EUAN).
The Annual Meeting for Directors of the Coordinating Competent Bodies convened in September 2019 at ECDC. The participants provided input on how to improve ECDC's knowledge of countries and optimise support activities.

Resource management. ECDC new office building is now in full operation. The new work environment makes working together easier, which will lead to increased efficiency and effectiveness compared to the Centre's old headquarters.
As of 31 December 2019, ECDC employed 268 staff members. The Centre reached a low job vacancy rate of 3.3%. Budget execution in terms of commitment appropriations at year-end reached 99.23%; payment appropriations at year-end reached 81.41%. The use of electronic workflows was continued and ensured faster and more efficient processes. An electronic travel mission module was established. To reduce environmental impact, ECDC launched a scoping study aimed at introducing the EU's Eco-Management and Audit Scheme (EMAS).

Information and communication technologies. ECDC maintains approximately 28 information systems that support business users. In 2019, ECDC delivered a new version of the EWRS system that also featured five additional modules.
The Centre continued its surveillance system reengineering (SSR) project, which is still on track.
In pursuit of a paperless administration, ECDC continued to invest in a workflow digitalisation platform. The platform will reduce costs, increase quality, leave less room for human errors, ensure process compliance and improve control by monitoring, measuring and identifying bottlenecks in workflow execution.
ECDC progressed significantly with the implementation of the IT 2021 transformational programme: the externalisation of several IT services was almost completed in 2019. All existing IT systems were amended to comply with the new organisational structure. ECDC's ICT services met the performance standards set in the service level agreement (SLA) with its internal users and the European Commission.

Legal and procedural background

This document is based on Regulation (EC) No 851/2004 of the European Parliament and of the Council of 21 April 2004, Article 14.5(d): The Board shall adopt the Director's Annual Report on the Centre's activities for the past year by 30 March. Following its forty-eight meeting on 26–27 March 2020, the Management Board approved the final version of the Annual report 2019.

Mission statement

The Centre's mission is laid down in Article 3 of the Founding Regulation, which states:

'The mission of the Centre shall be to identify, assess and communicate current and emerging threats to human health from communicable diseases. In the case of other outbreaks of illness of unknown origin, which may spread within or to the Community, the Centre shall act on its own initiative until the source of the outbreak is known. In the case of an outbreak which clearly is not caused by a communicable disease, the Centre shall act only in cooperation with the competent authority, up on request from that authority.'

Key tasks of ECDC include:

- Operating dedicated surveillance networks
- Providing scientific opinions and promoting and initiating studies
- Operating the Early Warning and Response System
- Providing scientific and technical assistance and training
- Identifying emerging health threats
- Collecting and analysing data
- Communicating on its activities to key audiences.

ECDC operates in accordance with its core values: service orientation, quality, and working as 'one team'.

The ECDC vision

ECDC is a strong and trusted partner enabling and supporting the Member States and the European Commission in protecting everyone in the EU equitably from communicable diseases.

Strategic work areas

- Providing evidence for effective and efficient decision-making: We support efficient public health decision-making by providing timely, accurate and relevant information.
- Support the strengthening of public health systems: We strengthen European capacities and capabilities effectively prevent and control communicable diseases.
- Supporting response to threats: We support effective health threats detection, assessment and control.

Figure 1. ECDC work areas
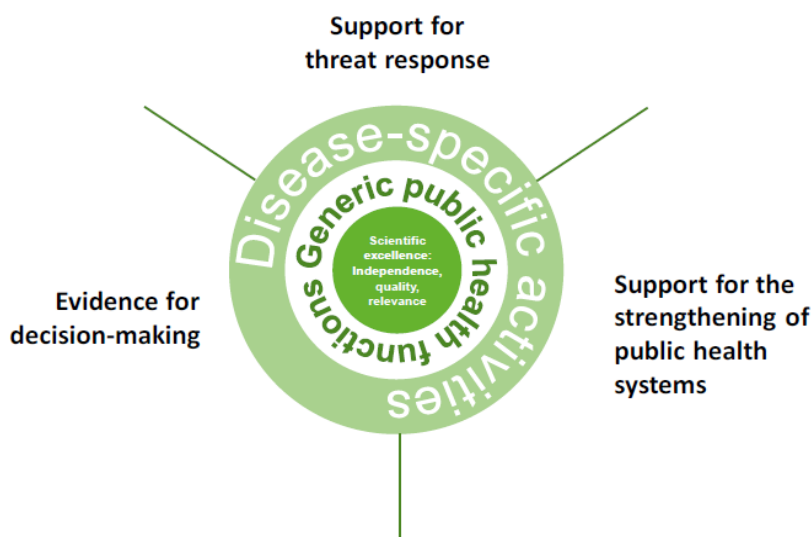
How we work

- Our work is founded on scientific excellence: independence, quality and relevance.
- We deliver through disease-specific activities and generic public health functions.
- We carry out our work in partnership with our stakeholders.
- Our work is supported by efficient administrative and IT tools and services.
- The way we work is inspired by our core values.

Part I. Policy achievements

Multiannual indicators

No.	Multiannual objective	Indicator	Target 2022	Verification	Result 2019
1	Provide scientific advice and authoritative information that enables effective decision-making by Member States and the European Commission	Proportion of ongoing and completed ECDC scientific outputs, available on the ECDC website	At least 90% of the ECDC scientific outputs planned	Annual plan of scientific outputs	● 75%
2	Provide scientific advice and authoritative information that enables effective decision-making by Member States and the European Commission	• Use of the surveillance Atlas by external users • Use of surveillance reports	+10% per year	• Web statistics • Downloads of surveillance reports and number of citations of annual epidemiological report and enhanced surveillance reports	● 323 402 users (26 353 in 2018; +1 127 %) and 1 777 887 pages views (86 363 in 2018; +1 958 %) ● 17 506 downloads* (-51%)
3	Support efficient decision-making by enabling the sharing of evidence and expertise	Impact factor of *Eurosurveillance*	>3	Journal Citation Reports, Thomson Reuters, SCImago	● 7.4 (see page.37)
4	Strengthen public health infrastructure and processes	Proportion of Member States finding EULabCap country reports useful for their lab infrastructures and processes improvement	70 % response of Member States; satisfaction >70% of respondents	Report from annual survey on Competent Bodies' feedback on usefulness of EULabCap report	● 77% (23/30) Member States find the EULabCap reports useful
5	Strengthen public health workforce capacity and capability	Proportion of target population of professionals (NFPs and OCPs) trained on cross-border threats prevention and control	30% of target population trained	Target based on the ongoing training needs assessment conducted with Member States, CRM	● Not available for 2019.
6	Timely detect serious cross border health threats	Number of connections on CDTR	At least +10% per year	ECDC website statistics	● 151 websites sites linked to the CDTR issues (-56 %)
7	Coordinate and support the rapid assessment of risks and the identification of options for response	Average number of downloads per RRA	At least +10% per year	ECDC website statistics	● On average, an RRA was downloaded by 78 persons in 2019 (in total 5 396 downloads*) +123 %
8	Support national and international field response	Proportion of field response requests positively replied by ECDC	100% of requests positively replied	SRS Unit statistics	● 100%
9	Further improve efficiency and further clarify responsibilities in close cooperation with relevant stakeholders, while retaining control over quality and service delivery.	Proportion of activities implementation of the Annual Work programme	>85%	Management Information System	● 90.1% (see Figure 30, p.55)
		Timeliness of digitalised key processes	80% processes on time	As per list of key processes (covers processes for which digitalisation has been completed)	● Four new electronic workflows available. Average process time reduced after digitalisation: • Request for service: -75% • Data process notification: -65%. • Authorisation for requests for exceptions: -95%
		Percentage of budget committed (C1) and percentage of payments executed (C1) in the same year as the commitment	100% committed; 80% paid minimum	Monthly monitoring report	● 99.23% of budget committed ● 81.41% of budget paid (see Figure 31, p.55)

* Downloads are only counted if users accept cookies. This change was introduced in June 2019.

1. Surveillance and epidemic intelligence

1.1 Surveillance

Context

Surveillance is one of the key tools for preventing and controlling infectious diseases. Consistent and comparable surveillance data of good quality enable public health professionals to monitor the spread and epidemiology of diseases and assess the effectiveness of interventions to prevent them. Supporting EU-level surveillance is one of the core tasks of ECDC according to its Founding Regulation and was reiterated in Decision No 1082/2013/EU on serious cross-border threats to health. ECDC coordinates the collection of disease data so that the Member States can fulfil their legal obligation to report data. ECDC's overarching priorities for disease surveillance are to:

- add more value to the collected data by making them available in user-friendly formats and using them for informing prevention and control policies;
- reduce the burden of data provision by the Member States; and
- take advantage of emerging technologies, in particular molecular typing for surveillance and information technology.

Results achieved in 2019

Routine surveillance data more timely available

For the first time in its existence, ECDC managed to publish 75% of the surveillance data collected on EU-reportable diseases and pathogens on its Surveillance Atlas of Infectious Diseases within three months of closing the data collection. This ensures that ECDC surveillance data become available much faster so that experts and decision makers at the EU level and in the Member States make use of them much sooner. (Incidentally, publishing 75% of all data within three months also meets one of ECDC's performance indicators.)

The Surveillance Atlas covers 58 diseases and health issues as well as indicators of data quality. In 2019, it was accessed by over 25 000 users with nearly 90 000 page views. Depending on the disease, datasets are available in a weekly, monthly or yearly format.

Figure 2. **Proportion of diseases for which surveillance data are published within three months of data collection**

2018 — 5%

2019 — 75%
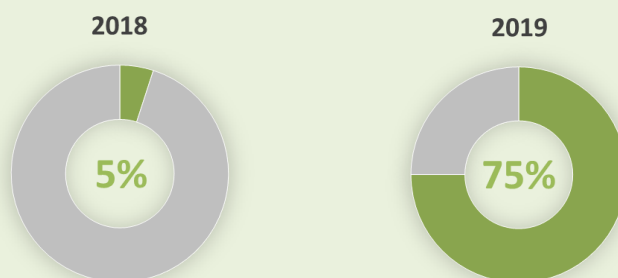
ECDC is still in the process of evaluating EU/EEA surveillance systems: EPHESUS is a four-year project (2017–2020) aimed at evaluating all infectious disease surveillance systems coordinated by ECDC. The objective is to ensure that efficient and effective surveillance systems in Europe generate information relevant for public health action. In 2019, ECDC completed the evaluation of the surveillance systems for tuberculosis, invasive bacterial diseases, STIs and diphtheria. For these diseases, reports were delivered according to plan and discussed at the Advisory Forum.

ECDC started its work on e-health by establishing a cross-organisational programme steered by a dedicated taskforce. In 2019, the Centre started mapping electronic health records on surveillance and public health research in European countries. A report will be published in April 2020. ECDC also developed protocols to implement proof-of-concept studies in 2020. The studies will assess the automatic collection of selected data from e-health records and laboratory information management systems for disease surveillance purposes. Eight countries expressed their interest in participating in these proof of concept studies in 2020. ECDC also participated in the annual meeting of the e-health network organised by the European Commission in June in Bucharest.

The Centre made further progress in reengineering its surveillance systems (SSR project, 2017–2021). In 2019, the ECDC data warehouse, the successor to the current TESSy data warehouse, could already accommodate number of diseases. The data warehouse adds a wider range of information to surveillance data, including data on determinants (e.g. population, vaccination coverage, antimicrobial consumption data, vectors, and environmental data) to analyse surveillance data in their context. Additional automated processes will facilitate the upload, cleaning and transformation of data. The new data warehouse will gradually become available to Member States as from April 2020. ECDC developed a new Event and Threat Management Solution (ETMS) that will replace the ECDC Threat Tracking Tool (TTT) and the Epidemic Intelligence Information System (EPIS) in 2020. Furthermore, ECDC finalised a new surveillance portal (extranet) that will allow Member States to perform all surveillance operations from one single entry point.

In 2019, ECDC continued to support the European Commission in the implementation of Decision 1082/2013/EU on serious cross-border health threats by providing technical support for the drafting of the second implementing decision (operation of surveillance networks).

During a meeting of the ECDC National Focal Points (NFPS) for Surveillance, the Member States and candidate countries presented their national surveillance strategies and provided feedback on their expectations for the ECDC long-term surveillance framework (2021–2027).

Supporting Member States with whole genome sequencing data for surveillance and outbreak detection

ECDC has been using WGS data for outbreak detection and investigation since 2016. This has proved effective in better detecting and delineating outbreaks and in identifying and controlling the sources of outbreaks.

In 2019, ECDC started to build a new system for the collection, management, analysis and storage of whole genome sequencing data that will allow for a real-time analysis and a visual comparison of sequences to identify common strains and detect outbreaks. The new system will be applied first to listeriosis, salmonellosis, STEC infection, invasive meningococcal infection, MDR-TB and influenza, in accordance with the 'strategic framework for integration of molecular and genomic typing into European surveillance and multi-country outbreak investigations, 2019–2021' (see also 2.2 Microbiology). The WGS typing data platform will eventually be interoperable with an EFSA database for microbial typing (food safety). It will be released to Member States in April 2020.

In 2019, ECDC started the WGS-based data collection for continuous listeria surveillance. ECDC also continued to offer, at no cost, limited WGS services to Member States that do not yet have the capacity or resources to support the investigation of multinational outbreaks of selected food- and waterborne diseases. Because of the success of this initiative, ECDC extended the offer of WGS services to cover any disease under EU-level surveillance in 2019; in December 2019, the Centre supported an investigation of carbapenem-resistant Enterobacteriaceae in a Member State.

Figure 3. Number of countries that benefited from ECDC WGS services (by pathogen), 2015–2019
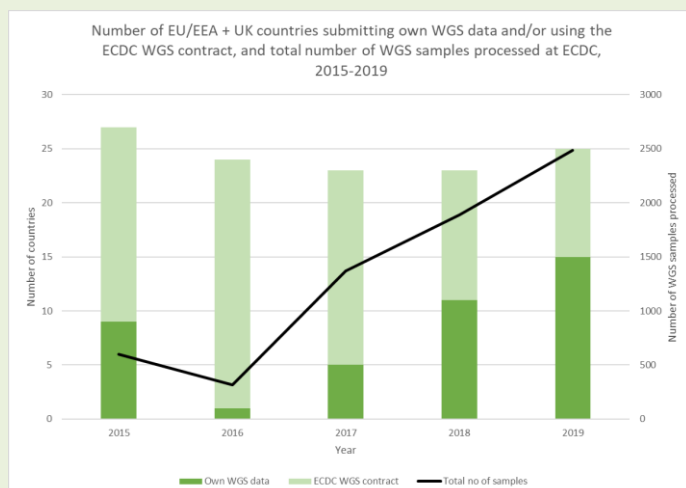
Note: In 2015, ECDC conducted the 'European Listeria Typing Exercise II' (ELiTE II) study, which was characterised by comprehensive collection and sequencing of all available Listeria monocytogenes *isolates. The WGS data collection for the three FWD pathogens* Salmonella *enterica,* Listeria monocytogenes *and STEC was started in 2016 and supported by an ECDC WGS contract. This contract was expanded at the end of 2019 to include all pathogens under EU surveillance.*

Indicators for surveillance

No.	Objective	Indicator	Target 2019	Verification	Result 2019
1	Ensure the timely processing and availability of surveillance data	Time from closure of Member States data collection to the publication of the results of the Surveillance Atlas	3 months	Surveillance systems data monitoring	● Within three months for 75% of all diseases (compared to 5% in 2018) 25% of diseases take more time due to the complexity of the data collection
2	Evaluate EU/EEA-level surveillance systems as per EPHESUS project plan and define EU/EEA and national minimum surveillance standards and monitoring indicators	• Number of surveillance systems evaluated (as per milestones' in EPHESUS project plan) • Surveillance standards and monitoring indicators for each enhanced surveillance system are published on ECDC website within one year after sharing the evaluation report with the relevant network.	11 surveillance systems evaluated. Surveillance standards and monitoring indicators published on ECDC website for HIV and AMR	Monitoring of milestones and quality indicators	● 100% of the surveillance systems to be evaluated according to plan in 2019: tuberculosis, invasive bacterial diseases, STIs, diphtheria.(see Figure2, p.10) ● Publication of the surveillance standards and monitoring indicators postponed to 2020
3	Publish in-depth surveillance data analyses in peer-reviewed scientific journals	Manuscripts accepted for publication in peer-reviewed scientific journals with open access.	≥ 5 manuscripts with in-depth surveillance data analyses accepted for publication in peer-reviewed scientific journals with open access	Acceptance letters from journals received by first authors.	● 25 peer-reviewed scientific articles published based on EU/EEA surveillance data
4	Consolidate and further develop molecular surveillance at EU/EEA level	Completion of milestones as per revised molecular surveillance roadmap.	WGS-based surveillance operational for: • _Listeria monocytogenes_ • Carbapenemase- producing Enterobacteriaceae, • Invasive _N. meningitidis_ • Antibiotic resistant _N. gonorrhoeae_	Monitoring of milestones against roadmap	● Milestones completed as per roadmap: • _Listeria monocytogenes_ • Carbapenemase-producing Enterobacteriaceae, • Invasive _N. meningitidis_ (in progress), • Antibiotic resistant _N. gonorrhoeae_.

1.2 Epidemic intelligence

Context

Epidemic intelligence can be defined as 'all activities related to the early identification of potential health threats, their verification, assessment and investigation, in order to recommend public health measure to control them'[2].

Monitoring and assessing threats to health in Europe from infectious diseases are core tasks of ECDC, performed either by screening various information sources or via notification by formal sources, e.g. the Early Warning and Response System (EWRS). Identified threats are discussed at the daily ECDC round table meeting, and an initial assessment on appropriate ECDC actions is carried out. The European Commission and the EU Member States rely on the Centre's rapid risk assessments and technical support when faced with serious multi-country infectious disease threats. ECDC is also working closely with the epidemic intelligence teams of WHO and other partners under the Global Health and Security Action Group.

Results achieved in 2019

In 2019, ECDC started piloting the use of social media and crowd sourcing technologies to detect outbreaks. The Ebola outbreak and the global poliomyelitis situation were monitored through social media trend analyses. This proof of concept was successful and showed that using social media can be useful for picking up early signals of an outbreak. Social media analysis can also provide better geographical coverage, particularly in areas where traditional media coverage is low. Starting in 2020, social media analyses will be used for monitoring selected diseases, for example COVID-19.

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[2] Kaiser R, Coulombier D, Baldari M, Morgan D, Paquet C. What is epidemic intelligence, and how is it being improved in Europe? Euro Surveill. 2006 Feb 2;11(2):E060202.4.

In 2019, ECDC detected 306 events (2018: 377) that met the criteria of a public health threat as defined in the EU Early Warning and Response System. Fifty-eight of the detected threats led to the monitoring of a new threat (2018: 71). Of all events, 192 (62%) originated in the EU (2018: 62%). Eighty-one EWRS messages and 153 comments were posted (2018: 104 EWRS messages, 139 comments). Seven EWRS messages were classified as 'alert notifications', and 74 as 'other information'; 11 resulted in opening a new threat assessment in the Threat Tracking Tool (TTT).

The Centres maintained and updated its database for selected diseases (cholera, dengue chikungunya, measles), and data access was granted to Member States and WHO. Regular exchanges took place with epidemic intelligence services and agencies in other countries. ECDC remained involved in the Early Alert and Response project of the Global Health Security Action Group.

The Centre supported the screening of mass gathering events, such as the rugby World Cup in Japan, the Chinese New Year and the Hajj in Saudi Arabia.

More than 4 700 users (3 600 in 2018) have installed the *Threat Report* app for mobile devices[3] and downloaded over 31 600 ECDC documents since its release (25 000 in 2018).

ECDC trained experts from the Member States and other international experts (including experts from WHO) on epidemic intelligence. An ECDC e-tutorial on epidemic intelligence was updated and released on ECDC's web portal.

Indicators for epidemic intelligence

No.	Objective	Indicator	Target 2019	Verification	Result 2019
5	Ensure timely and effective monitoring of health determinants* through a determinants platform	Internal and external access to the health determinants platform	+ 10% for both internal and external access	Atlas statistics Statistics included in, for example, CDTR, ECDC reports, other publications	● n/a Data will be directly available in the Atlas data warehouse (starting 2020)
6	Provision of relevant and timely updates on threats to the Member States and the European Commission	Provision of regular epidemiological updates for threats under mid (1–6 months) and long-term monitoring (>6 months)	Update provided for 100% of threats under mid-term (1–6 months) and long-term monitoring (>6 months)	CDTR, epidemiological updates available on ECDC website	● 100%

* Health determinants, as potential early warning signals for infectious disease threats, provide increased evidence for supporting rapid risk assessments on the importation and spread of threats in the EU; they are included as part of risk assessments to the Commission and Member States to allow for rapid action.

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[3] https://ecdc.europa.eu/en/publications-data/threat-reports-app

2. Scientific support

2.1 Scientific advice

Context

The production of independent, evidence-based scientific advice that is methodologically sound, useful and timely is one of the ECDC's foremost tasks. As a technical, publicly funded EU agency, ECDC is committed to scientific excellence, independence, and transparency in its methods and processes. The Centre plays a crucial role as a trustworthy evidence-based and independent source of information. Producing reliable evidence syntheses at the EU level has the potential to save resources and avoid the duplication of efforts. ECDC is committed to enhancing the consistency of its scientific advice outputs and aims to improve its analytical methods and processes as part of an overarching scientific strategy.

Prioritising work in the right areas at the right time is achieved through close exchange with stakeholders at the EU and Member State levels. ECDC uses structured mechanisms to engage relevant stakeholders and make the decision-making process as transparent as possible. The Centre works closely with its established public health and disease networks to identify priority areas, exchange expertise, and share information. At the EU level, ECDC develops robust relationships with EU institutions and EU agencies responsible for risk assessment (e.g. through the EU-ANSA network of scientific advice in EU agencies). The Centre also contributes to other EU networks.

This collaborative and networking approach expands beyond the borders of the European Union and includes international partners as well as research bodies working in the areas of infectious diseases. To fulfil its core functions, ECDC needs to follow new developments in research and methodology on a global scale to ensure its work stays relevant and scientifically sound. Continued mutual learning and capacity building in collaboration with stakeholders are essential means to keep scientifically and technically up to date.

Results achieved in 2019

ECDC continued to work on the implementation of its scientific strategy. ECDC published 219 scientific outputs in 2019 (including 58 technical reports/guidance documents and 89 peer-reviewed articles in scientific journals; see Annex 8). The Centre also developed two major scientific advice documents which will be released in 2020:

- Non-pharmaceutical measures against pandemic influenza
- Update on human papillomavirus vaccination

ECDC continued to manage its scientific outputs, including rapid risk assessments through its Scientific Advice Repository and Management System (SARMS) that supports all aspects of producing, sharing, peer reviewing, clearing, and editing of scientific reports. SARMS allows for quality monitoring and manages deadlines while increasing transparency, compliance, and internal collaboration.

As a publicly funded agency, ECDC makes sure that most of its scientific output is freely available, both on its website and on the websites of scientific journals. Open access is considered the 'gold-standard'[4]. In 2019, 82% of ECDC publications in peer-reviewed journals were in open access.

ECDC's IRIS 2.0 tool for the prioritisation of scientific outputs was successfully applied to assess the ECDC strategy 2021–2027: the Advisory Forum provided feedback on the strategy using the IRIS methodology. IRIS advises on the strategic direction of the Centre's activities and suggest activities that could be up-scaled or down-scaled. It takes into account four dimensions that guide the prioritisation of ECDC actions: topics (i.e. what is relevant for public health in Europe through collective engagement?), resources (are the potential benefits worth the investment?), impact (will this help protect/improve public health?) and solidarity (does this reduce health inequalities in Europe?).

ECDC also published a methodological guidance on managing heterogeneity when pooling data from different surveillance systems.

ECDC's Advisory Forum continued to play a vital role: it provided scientific feedback, supported scientific advice, helped with guidance prioritisation, and provided peer reviews. A detailed report of the work of the Advisory Forum in 2019 is available in Part II (a).

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[4] According to ECDC's 'gold standard' open access policy, all ECDC publications, including articles published in peer-review journals that were produced or commissioned by the Centre, should be published as open access, with no embargo period before access is granted.

Figure 4. **Number of publications and rate of open access**
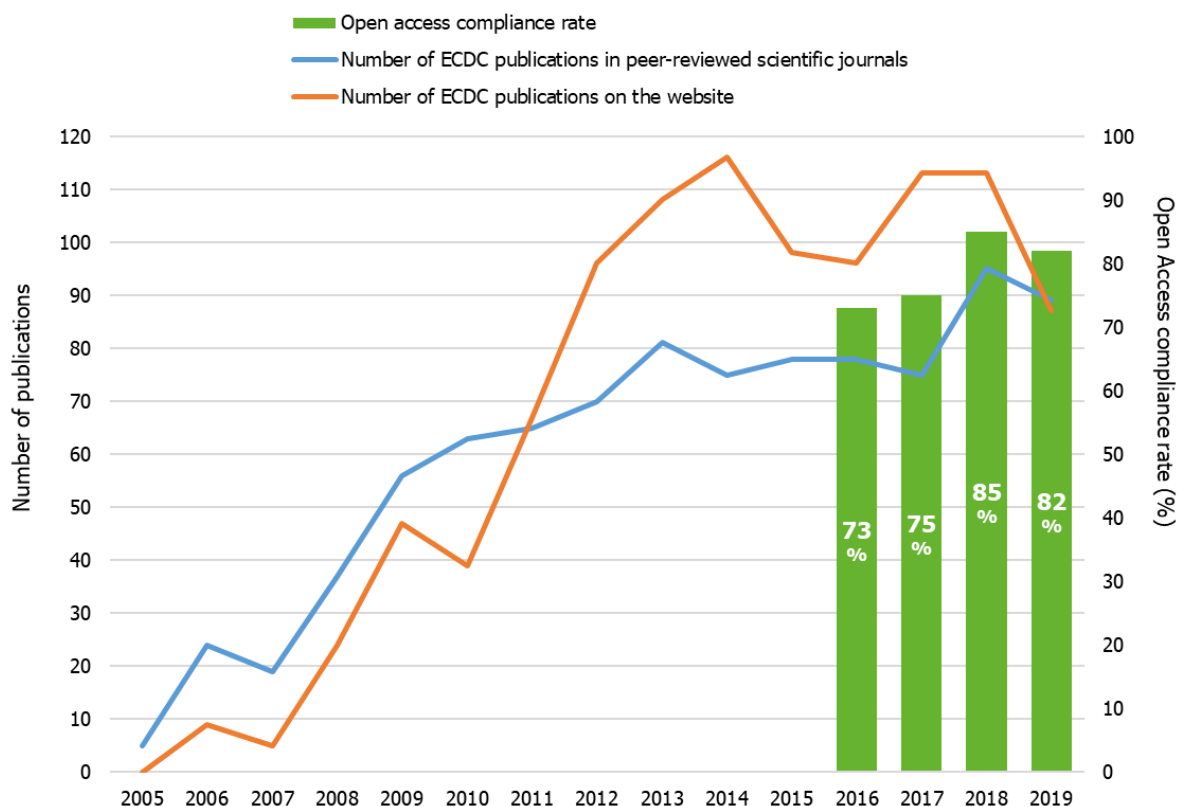
The Centre responded to 34 formal scientific requests from the European Commission, ten of which were forwarded from members of the European Parliament, and one was received from FRONTEX, the European Border and Coast Guard Agency.

Figure 5. **Number of formal external requests answered**
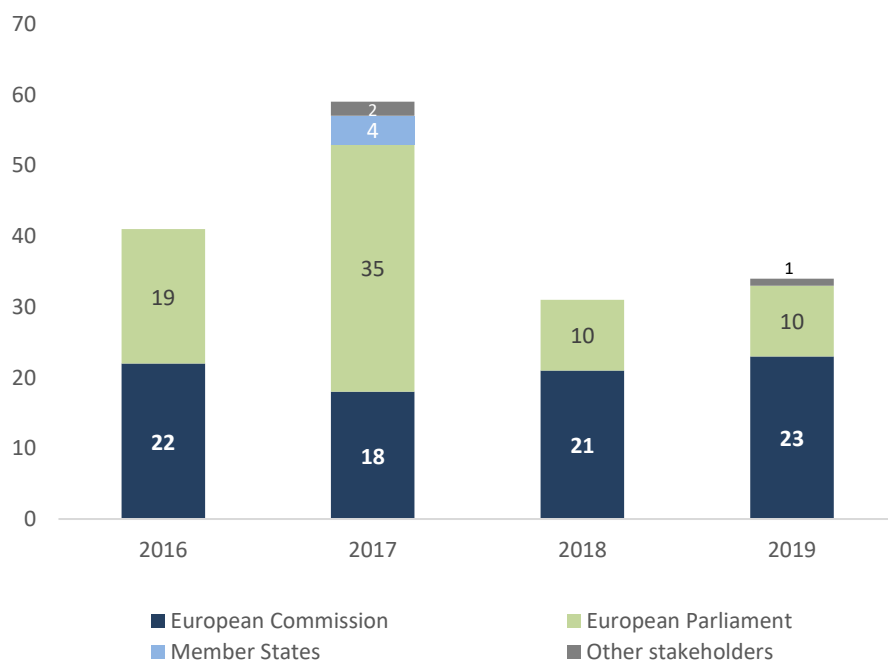
The 2019 ESCAIDE conference (https://www.escaide.eu/en) took place in Stockholm and attracted over 600 delegates from 50 countries. The conference consisted of plenary sessions, parallel sessions and poster presentations. Dr Mike Ryan (World Health Organization) delivered the keynote speech on 'Health security and preparedness: lessons from Ebola'. Plenary sessions discussed the microbiome, the definition of public health

research priorities, vaccine confidence in a post-factual world, and public health challenges related to climate change in Europe.

Figures 6 and 7. Impact factor of scientific publications and average number of citation per article

Average impact factor of ECDC scientific publications
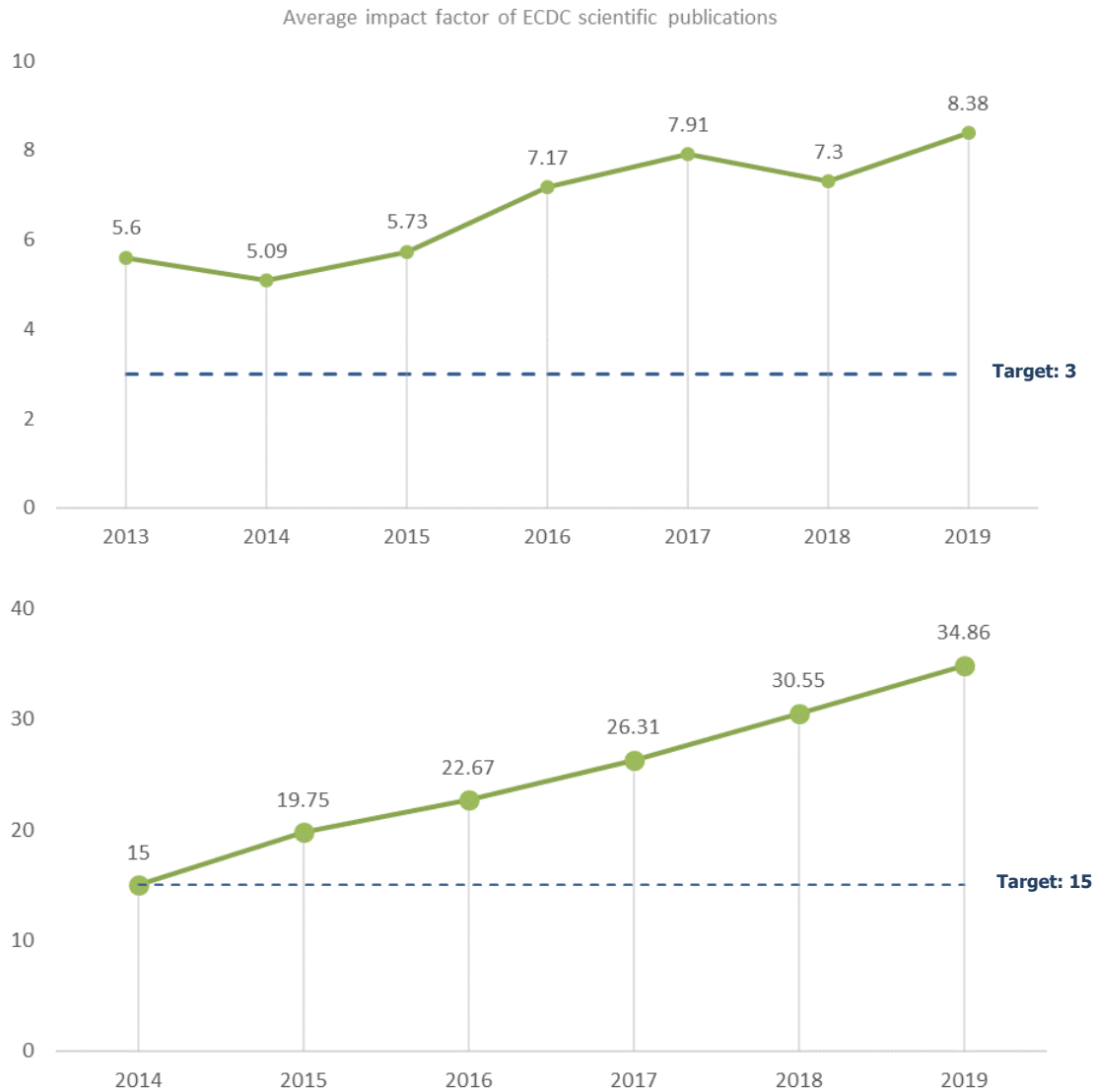
Indicators for scientific advice

No.	Objective	Indicator	Target 2019	Verification	Result 2019
7	Ensure integrity of ECDC's scientific activities in relation to technical and scientific content, methods, and internal policies and processes.	• Proportion of ECDC scientific outputs processed through SARMS, following the respective workflows and templates	At least 90%	SARMS	● 100%
	Ensure that the Centre's scientific activities are published, disseminated and easily accessible to all.	• Proportion of ongoing and completed ECDC scientific outputs, available on the ECDC website	At least 90% of the ECDC scientific outputs planned	ECDC web portal. This excludes articles in peer review journals.	● 75%.
		• Proportion of ECDC peer-reviewed articles, published as gold standard open access in scientific journals	At least 90%	ECDC Library. Citations based on scientific databases such as Scopus, PubMed and Embase	● 82% (see Figure 4, p.15)
		• Proportion of ECDC scientific opinions and guidance, perceived as relevant and useful by ECDC stakeholders.	At least 70% of the feedback judged the outputs relevant and useful.	ECDC website statistics and surveys, dedicated meetings (e.g. AF); rating of ECDC publications on the web portal	● n/a There was no satisfaction survey nor rating of ECDC publications on the web in 2018.
8	Promote the Centre's scientific work through outreach to the scientific and public health communities.	• 5-year impact factor* of ECDC peer-reviewed publications	> 3	Journal Impact Factor and citations reports in scientific databases such as Thomson Reuters, SCImago, Scopus, PubMed and Embase, via the ECDC library services	● 8.38
		• Average number of citations per publication**	> 15 in 5 years		● 34.86 (see Figures 6 and 7)
		• Proportion of abstracts submission and participants from EU/EEA at ESCAIDE	following publication At least 70%	ESCAIDE registrations, abstract database and evaluation and work plan	● 79% of submitted abstracts were from EU/EEA countries and 92% of the participants came from the EU/EEA
		• Rating evaluations of ESCAIDE as 'excellent' or 'good'	At least 75% of the respondents		● 94% of respondents (252/268)
		• Meeting with EU key partners in public health research and risk assessment	At least one per year	Meetings with, for example, EU Agencies Network on Scientific Advice (EU-ANSA), JRC, etc.	• Two EU-ANSA meetings • One meeting with DG RTD • Participation in research and innovation open days (DG RESEARCH and DG SANTE).
9	High responsiveness to requests by providing authoritative and reliable scientific opinions and evidence-based guidance to Member States, European Commission and Parliament	Proportion of requests answered within agreed deadlines: • European Parliament • European Commission • Member States • Others.	At least 95% of requests answered within agreed deadlines	SARMS	● 94 %

* The 5-year impact factor for X is calculated using the following formula, where X is year: impact factor (Y) = citations in Y to articles published in Y-5 to Y-1 / articles published in Y-5 to Y-1

** The 5-year average citation per article is calculated based on Y-1 to Y-5, where Y is year

2.2 Microbiology

Context

According to the EU health strategy, every Member State should have access to routine and emergency diagnostic and reference laboratory services to detect, identify, characterise and subtype human pathogens of public health significance. This requires maintaining and constantly adapting laboratory-testing capabilities at clinical, national and supranational reference levels. Rapid microbial and drug resistance screening tools are part of routine practices at point-of-care.

Whole genome sequence analysis is transforming microbiological diagnostics and typing, revealing outbreaks and identifying markers of virulence and drug resistance. The accuracy and usefulness of new microbiology technologies still need to be assessed. National reference laboratories need access to training and external quality assessment (EQA) schemes for novel technologies to ensure comparability and accuracy of surveillance data across Europe.

ECDC assists its networks of partners in the Member States to maintain and further improve their public health microbiology capacity by monitoring microbiology capacity at the EU and national levels. ECDC and several laboratory networks (which are built around diseases or pathogens) organise external EQA schemes to evaluate the proficiency of laboratories to test key pathogens and drug resistance characteristics. ECDC and its networks agreed on an updated strategic framework for the gradual, coordinated and cost-efficient integration of data generated by whole genome sequencing into EU-level disease surveillance and outbreak investigations.

Results achieved in 2019

ECDC's public health microbiology strategy for 2018–2022 has five priorities:

- facilitating the EU-wide use of whole genome sequencing;
- benchmarking public health microbiology services and promoting best practices across the EU;
- strengthening the EU public health microbiology capacity;
- strengthening the cross-sectoral and inter-agency integration of laboratory-based EU surveillance; and
- developing synergies in the EU with innovative laboratory methods and e-health initiatives.

In 2019, ECDC carried out technical support activities, through the ECDC Disease Programmes' surveillance networks, that contributed to the consolidation, modernisation and efficient use of existing capacities in public health microbiology for the EU-wide surveillance of communicable diseases and epidemic preparedness.

Measuring the performance of national microbiology laboratories in Europe

In 2019, ECDC conducted its biannual assessment of microbiology laboratory capabilities for the national and EU-wide surveillance of communicable diseases and epidemic preparedness (EULabCap), based on a set of 60 agreed indicators. All EU/EEA countries participated. The EULabCap index, which expresses the capacity of the Member States' public health microbiology laboratories, continues to improve. The average EU score reached 7.8/10 in 2018 (fair to high capacity level) and showed a gradual reduction of about one-third of the capacity gap between countries compared with 2013. The 2018 performance index ranges from 6.2 to 9.7 by country. For the first time, all 30 countries have reached intermediate or high capacity levels in 2018, and more than two thirds of the countries have laboratory capabilities sufficient for robust public health preparedness. Overall, EU laboratory capacity has increased by 15% on average over the past five years. Notable progress was made in the areas of molecular surveillance, outbreak detection and investigation, and preparedness to identify emerging diseases, showing that a large majority of reference laboratories are able to respond adequately to future diagnostic challenges. Suboptimal performance was detected for key diagnostic tests, the EU surveillance of antimicrobial resistance in influenza viruses, and food-borne bacterial pathogens (see Figures below).

Figure 8. Composite index of capacities in national public health laboratory, EU/EEA, 2018

Levels of system capability/capacity
- Low (0 – 5.9)
- Intermediate (6.0 – 7.9)
- High (8.0 – 10)

Countries not visible
in the main map extent
- Luxembourg
- Malta

Data source: EULabCap on 2018 data
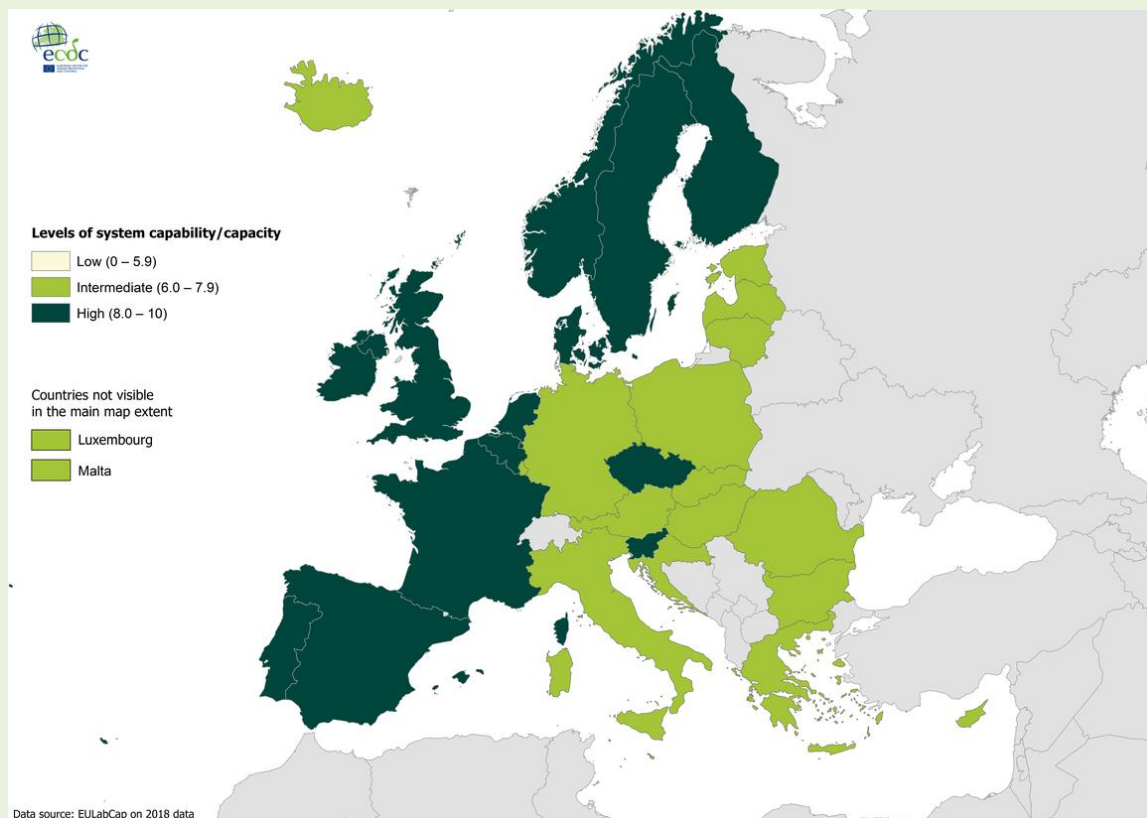
Figure 9. EULabCap index 2013–2018
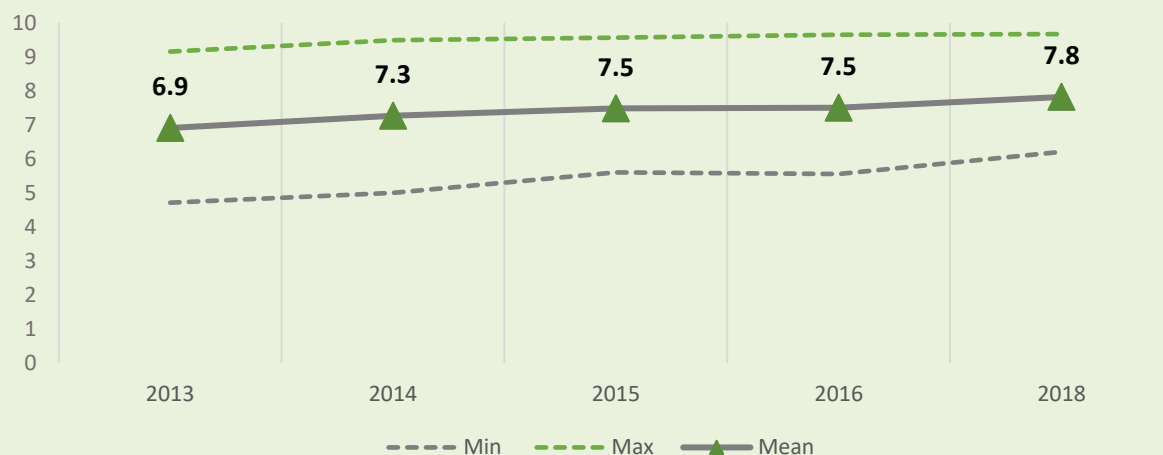
ECDC's external quality assessment (EQA) strategy (2017–2020) defines standard criteria for the prioritisation of topics and gives performance indicators to evaluate the usefulness, service quality, cost efficiency, and added value for public health of each EQA the Centre conducts. In 2019, an evaluation of ECDC EQAs (2017–2018) – based on performance indicators and stakeholder surveys – showed that the average EQA performance score increased from 45 to 62/100 between 2015 and 2018. In the survey, 62 to 70% of the participants replied that EQAs improved laboratory proficiency or facilitated quality accreditation.

In the area of e-health, ECDC conducted a survey among its Focal Points for microbiology and surveillance on automated laboratory data reporting to national surveillance databases. Nearly half of the Member States (13 countries) already had partially or completely automated systems for reporting diseases in 2018. These findings will serve as a starting point for developing an EU digital surveillance system for communicable diseases (see also 1.1 Surveillance).

ECDC finalised and started implementing its third roadmap for molecular typing, entitled 'strategic framework for integration of molecular and genomic typing into European surveillance and multi-country outbreak investigations, 2019–2021'.

Figure 9. **Expansion of WGS-based typing for national surveillance, 30 EU/EEA countries (2013−2019)**
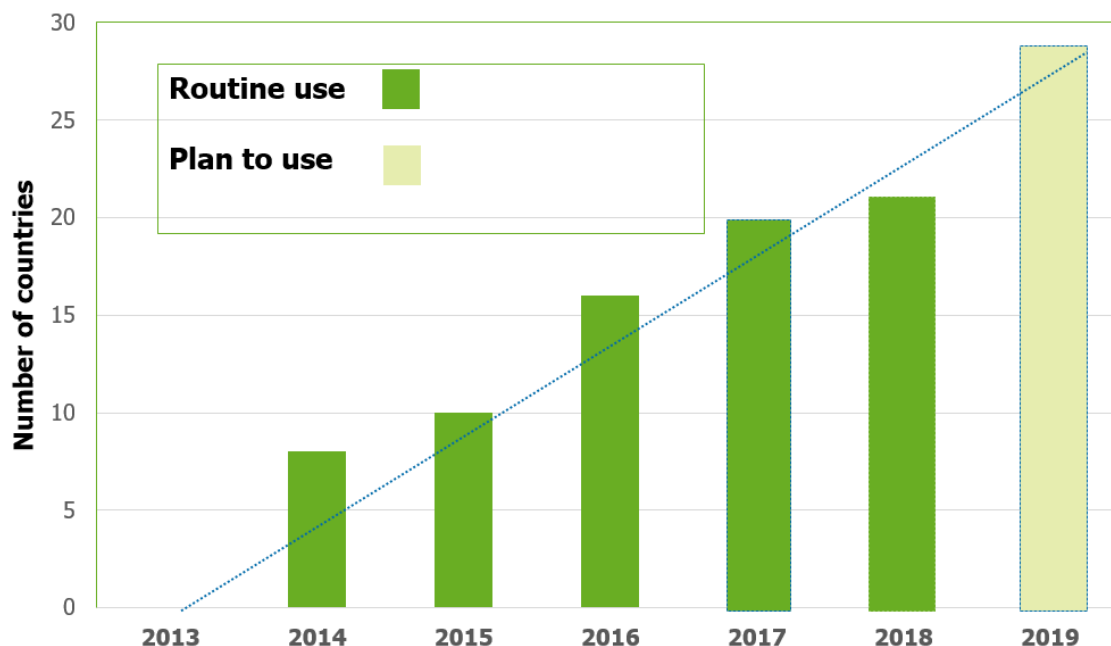
ECDC also supported the European Commission in the implementation of the European regulation on in-vitro diagnostic devices. The Centre also assisted CHAFEA in the preparation of calls to strengthen the capacity of EU reference laboratories concerning antibiotic resistance.

Indicators for microbiology support

No.	Objective	Indicator	Target 2019	Verification	Result 2019
10	Implementation of the ECDC microbiology strategy to support the development of sufficient microbiology capacity within the EU in order to detect, prevent and manage infectious threats.	Proportion of Member States finding EULabCap country reports useful for laboratory infrastructures and process improvements.	At least 70% of Member States reporting practical use of annual EULabCap report	Report on annual survey on Competent Bodies' feedback on usefulness of EULabCap report	● 77% (23/30) Member States find the EULabCap reports useful. (2018 data)

3. Preparedness and response

3.1 EU and country preparedness support

Context

Capacity building and continued preparedness and response planning, including the identification of current gaps in preparedness capacity, are critical elements in the European response to major epidemics and other serious cross-border health threats. Recent international threats showed the importance of reliable scientific evidence for all aspects of preparedness. The European Commission and the Member States, via the Health Security Committee, have committed to working together to ensure that preparedness plans in Europe are interoperable between countries and sectors. Article 4 of Decision No 1082/2013/EU on serious cross-border threats to health stipulates the cooperation between Member States and the European Commission and facilitates having an overview of state of preparedness by means of a three-year survey. ECDC provides technical support for this survey, in addition to a wide range of other technical support services.

Results achieved in 2019

After-action reviews

ECDC coordinated several after-action reviews, following the rapid risk assessment on West Nile virus in four affected countries (Slovenia, Italy and Greece; Serbia was reviewed jointly with WHO). ECDC acted as a facilitator by conducting country visits and initiating exchanges between the affected countries. The reports (one generic, three country specific) will be published in 2020.

After-action reviews take place during the recovery phase after an outbreak and assess all previous actions. They identify gaps in preparedness so that preparedness plans can be adjusted. After-action reviews are an essential tool to improve preparedness in countries because they take into account lessons learned from past actions. This is achieved by conducting a root cause analysis (What worked out, what did not? Which decisions were taken and why? Who was involved?), and by looking at possible consequences of alternative actions.

Based on the after-action reviews for West Nile virus and a number of discussions during experts' meetings, ECDC drafted a generic protocol for after-action reviews, which will be published in 2020.

Figure 10. **Cycle of anticipation – response – recovery**
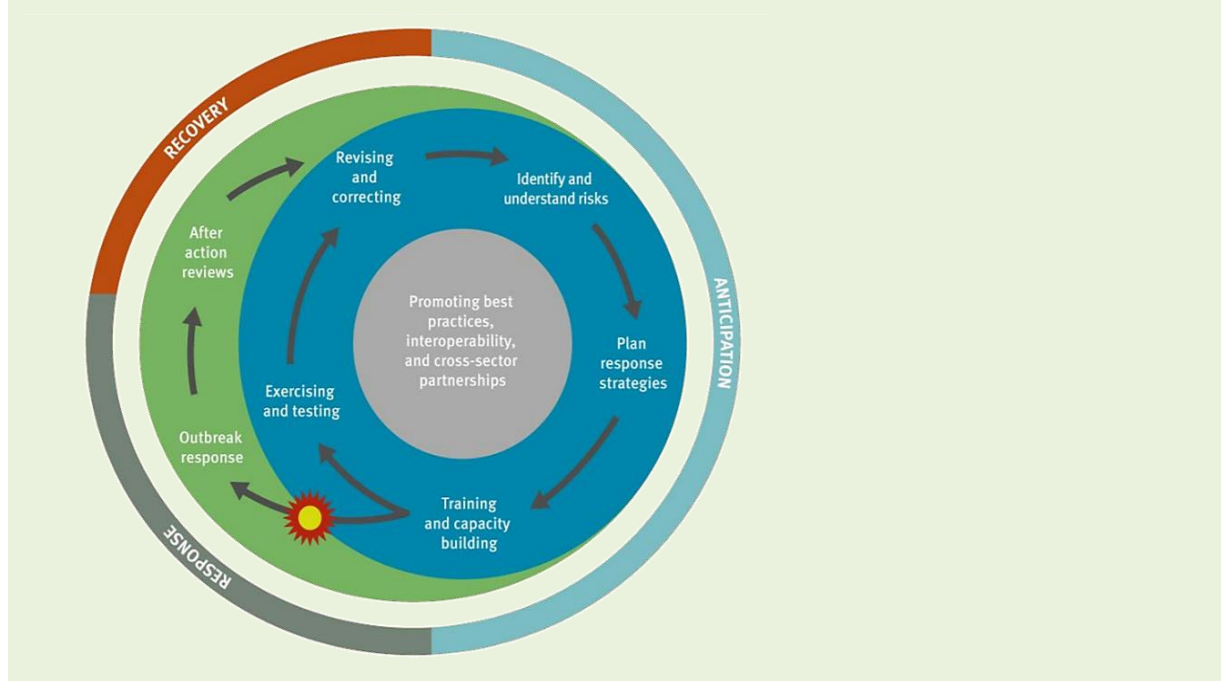
In the area of community preparedness, ECDC completed a three-year project aimed at exploring how communities (local communities, citizen associations) collaborate with institutions in charge of preparedness and response during public health emergencies. Literature reviews, fieldwork and expert meetings took place, with case studies in four countries: on tick-borne diseases in the Netherlands and Spain, and on food- and waterborne diseases in Iceland and Ireland. The four countries reports were published in 2019, and a generic guidance report on community preparedness was finalised and will be published in 2020. The project concluded that countries should involve communities in preparedness planning at a very early stage; this is also true for response and evaluation activities.

ECDC provided technical support to the European Commission on the implementation of Article 4 of Decision 1082/2013/EU on serious cross-border threats to health. ECDC was part of a task force which revised the triennial survey on the levels of national preparedness. In March, all countries participated in workshops on influenza pandemic preparedness to discuss updates in national pandemic preparedness plans.

In October, ECDC organised a simulation exercise in Greece with 27 countries on the intentional release of pathogens in order to assess preparedness for bio-risk awareness, biosafety and bioterrorist events. The exercise aimed at improving and assessing the collaboration between public health and law enforcement and involved several sectors (civil protection, police, and law enforcement) in the Member States. The exercise was the starting point for the development of an ECDC–EUROPOL handbook on bioterrorism from the EU perspective. The handbook is now under final review and will be published in 2020. It will support a new joint action plan[5] on terror attacks, an initiative of the European Commission and the Member States.

A repository of all past simulation exercises funded by ECDC since 2007 was created on the ECDC Virtual Academy (EVA), with summaries readily available for adaption to local contexts. In 2020, the repository will be completed with exercises funded by DG SANTE since 2005.

The Centre finalised a literature review on how expert evidence is used in the decision-making process during the response to emergencies. Findings were discussed at an expert meeting, and plans for fieldwork in 2020 have been finalised. A guidance document on evidence-based decision-making for public health emergencies will be developed in 2021.

In May, ECDC organised its annual meeting with the Focal Points for preparedness and response. In September, a training workshop on risk communication and crisis coordination with selected countries took place in Slovenia. In December, an expert meeting on indicators for public health preparedness was held.

Indicators for EU and country preparedness support

No.	Objective	Indicator	Target 2019	Verification	Result 2019
11	Support the European Commission in monitoring the implementation of Decision No 1082/2013/EU (in particular Art. 4 – preparedness) with scientific evidence base, gap analysis on PH preparedness of individual Member States and identification of areas for enhanced support.	Annual monitoring report on analysis of Member States progress plans, as mentioned in article 4 of Decision No 1082/2013/EU, submitted to the European Commission	Monitoring report on Art. 4 accepted by European Commission and submitted to HSC. Agenda of HSC	Monitoring report on Art. 4 accepted by European Commission and submitted to HSC. Agenda of HSC	● n/a because reports are produced every 3 years. In 2019, ECDC provided input on the revision of the reporting template to the European Commission.
12	Strengthen preparedness in countries by pointing out gaps in preparedness plans and providing action plan.	Number of review of Member State preparedness plans	Five EU/enlargement countries' preparedness plans reviewed by ECDC. Technical reports published on ECDC website.	Five EU/enlargement countries' preparedness plans reviewed by ECDC. Technical reports published on ECDC website.	● ECDC held three workshops for all EU/EA Member States on pandemic preparedness plans in March 2019. All countries except Luxemburg attended and exchanged information on their pandemic preparedness plans and the revision of plans after 2009 (H1N1 pandemic) ● No report published.

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[5] Joint actions are actions implemented with the Member States' competent authorities, funded through the Third EU Health Programme (2014–2020). ECDC participates in a number of joint actions, such as SHARP (strengthen implementation of Decision 1082/2013/EU, support EU level preparedness and response to health threats, and implement the International Health Regulations (2005)). The Centre also participates in 'Healthy Gateways', a programme that addresses points of entry, EU-JAV (joint action on vaccination), and EU-JAMRAI (joint action on antimicrobial resistance).

3.2 Response and emergency operations

Context

One of ECDC's core tasks is to provide technical support to the EU-level response to disease threats. Decision No 1082/2013/EU on serious cross-border threats to health strengthens the coordination between the European Commission and Member States in this area. ECDC public health experts support the European Commission and Member States in the area of emergency response. The EU Early Warning and Response System (EWRS) on public health threats is operated by ECDC on behalf of the European Commission and serves as a key tool to support the EU-level response to cross-border health threats.

ECDC prepares and publishes rapid risk/outbreaks assessments that are aimed at supporting the countries and the European Commission in their preparedness and response to public health threats. They provide a timely summary and risk assessment of public health threats for EU/EEA countries related to a specific event. They also include options for response. ECDC may issue updated risk assessments and epidemiological updates as outbreaks or public health events progress.

ECDC also operates an emergency operations centre. ECDC's public health emergency plan enables the Director to mobilise resources to support the EU-level response to serious cross-border threats to European public health. ECDC constantly reviews and updates the plan based on lessons learned from crisis simulation exercises and real-life emergencies.

Results achieved in 2019

Rapid risk assessments aim at supporting the countries and the European Commission in their preparedness and response to a public health threat. They provide a timely summary and risk assessment of a public health threat for EU/EEA countries related to a specific event and point out options for response.

In 2019, the Centre produced 24 rapid risk assessments, three of which were rapid outbreak assessments, jointly produced with EFSA. Threats included carbapenem-resistant Enterobacteriaceae (5), Ebola in the Democratic Republic of the Congo (4), dengue fever (3), listeriosis (2), and Zika virus disease (2) (Annex 8).

ECDC also published 10 epidemiological updates that provided updated information on currently evolving outbreaks or public health threats. Epidemiological updates typically contain case numbers, the temporal and geographical distribution, age and sex distribution, information on identified or potential risk factors, and a risk assessment. In 2019, epidemiological updates dealt with the Ebola outbreak in the Democratic Republic of the Congo, Zika virus disease and West Nile fever.

ECDC finalised its methodology (and a set of templates) for rapid risk assessments. The new methodology simplifies the process, facilitates the identification of external experts (including their declarations of independence), and ensures the engagement of the Member States. Member States can now contribute to ECDC rapid risk assessments at an early stage through the Centre's Scientific Advice Repository and Management System (SARMS).

Figure 11. Number of rapid risk assessments published per year
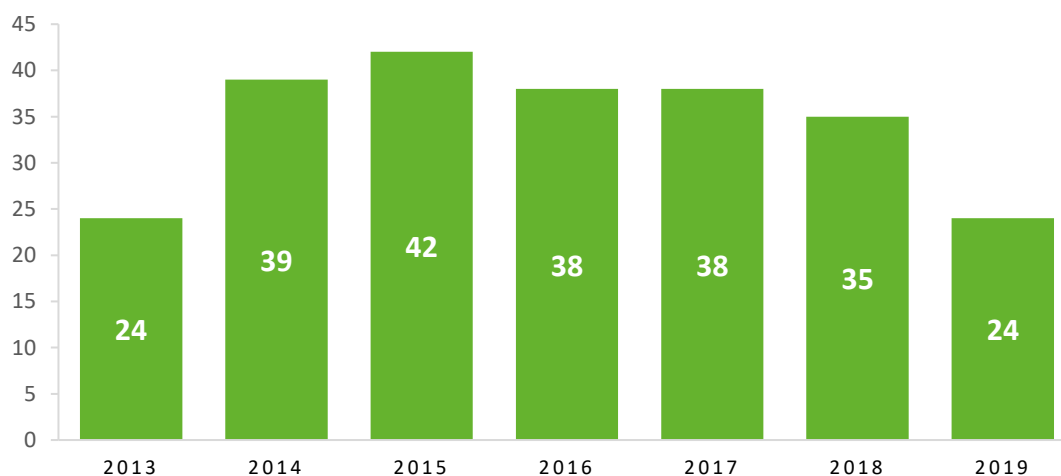
Finalising the new EU Early Warning and Response System on public health threats

The European Union's Early Warning and Response System (EWRS) is a tool for monitoring public health threats in the EU. Access and posting are confidential and only open to ECDC, the Member States and the European Commission. The EWRS is used to address threats that are unusual or unexpected, that present a risk of significant incidence or mortality, or that have the potential to exceed national response capacities.

ECDC concluded a major redesign of the EWRS in 2019. The updated EWRS is more user-friendly and addresses the requirements of Decision No 1082/2013/EU on serious cross-border threats to health. The following modules were added in 2019:

- A situation awareness module which provides an overview of current threats by offering maps, epidemiological analyses, and other epidemiological data
- A line listing for reporting cases
- Libraries for preparedness and risk communication documents
- A module for simulation exercises.

ECDC publishes a weekly report entitled Communicable Disease Threats Report (CDTR). The CDTR summarises outbreak information gathered through epidemic intelligence activities. The CDTR is also available through 14 websites that feature a direct link to ECDC's CDTR page.

In April, ECDC sent an expert to Mozambique in order to support the response to the cholera outbreak. ECDC also signed a service level agreement with the Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO) for the deployment of two experts to the Democratic Republic of the Congo from October until December 2019 to contribute to response activities for the Ebola outbreak. All deployed ECDC experts passed DG ECHO's HEAT training on security requirements.

To support the investigation of multi-country outbreaks, ECDC further developed a new survey tool which helps Member States design questionnaires on threats and outbreaks that follow a common format so that affected countries can exchange information more efficiently.

In the area of substances of human origin, ECDC continued to support the European Commission by preparing a risk assessment on tick-borne encephalitis transmission and organising an after-action expert meeting on 'West Nile virus and blood donations'. ECDC also assessed the risk of bacterial disease transmission through substances of human origin, started a risk assessment of parasitic and fungal disease transmission through substances of human origin and produced scientific articles on West Nile virus and Usutu virus.

ECDC's new Emergency Operations Centre (EOC) has been operational since May 2018; new additions to the EOC increased ECDC's epidemic intelligence capacity in 2019.

ECDC is a member of the steering committee of the Global Outbreak Alert and Response network (GOARN) until 2022 and contributes to developing a mechanism for the monitoring and evaluation of GOARN activities.

Indicators for response and emergency operations

No.	Objective	Indicator	Target 2019	Verification	Result 2019
13	Provision of relevant, timely and high-quality rapid risk assessments to support the risk management carried out by the Member States and the European Commission	Average number of downloads per RRA	+ 10% increase	Timeliness: RRA statistics. Source: SARMS (internal database on external scientific advice requests)	● Average number of downloads per RRA: on average 357 persons (276 in 2018; +29.3%) downloaded an ECDC rapid risk assessment in 2019; 5 396 downloads total*. (* Downloads from users who did not accept cookies were not counted.) ● Timeliness: 24 RRAs (100%) were published by the date agreed upon at the Round Table meetings.
		• Level of satisfaction of the RRA by ECDC stakeholders	> 75% satisfaction on usefulness and impact	Survey among the members of the Health Security Committee (only for 2018)	● Survey conducted among HSC members in 2018. Satisfaction on: • Timeliness : 93% • Independence of judgment : 93% • Completeness : 93% • Readability : 93% • Layout: 87%
14	Mobilisation mechanisms for public health response teams developed	Provision of support teams upon request from Member States	100% of the requests for response support from Member States honoured	List of requests from Member States' repository of support teams to be set up (DMS)	● 100%

4. Training and capacity building

4.1 Public health training

Context

The defence against communicable diseases in the EU relies on a competent workforce at all levels. ECDC has the mandate to coordinate and support training programmes to ensure that Member States have sufficient numbers of trained specialists[6]. Consequently, the ECDC Public Health Training Strategy 2015[7] sets three objectives:

- To strengthen and maintain the workforce in the Member States and at the EU level by training key national experts to ensure adequate capacity for communicable disease preparedness, prevention, detection, assessment and control. This is ensured through two programmes:
  - ECDC Fellowship Programme, a two-year learning-by-doing programme, with a path for intervention epidemiology (EPIET) and one for public health microbiology (EUPHEM)
  - Continuous professional development training programme that targets mid-career and senior public health professionals.
- To strengthen and maintain a network of European and global training partners to support capacities for training at the community, local, subnational, national, and European levels. ECDC provides the scientific leadership for MediPIET[8], a regional field-epidemiology training programme in the Mediterranean region and Black Sea countries.
- To provide a virtual training infrastructure: the ECDC Virtual Academy (EVA).

Results achieved in 2019

In 2019, 37 fellows graduated from the ECDC Fellowship Programme and the EPIET-associated programmes (cohort 2017). At year's end, 78 fellows were enrolled (41 from cohort 2018 and 37 from cohort 2019). The Programme, which operates in public health institutes and laboratories located in EU/EEA countries, features an introductory course, training modules, and field investigations in and outside the EU/EEA. Scientific coordinators and supervisors conduct site visits to ensure the sufficient capacity of the training sites.

An external evaluation of the Fellowship Programme was completed in 2019 and concluded that the Programme's aims and objectives are relevant for its stakeholders at national and EU level. Its contribution to a network of public health professionals who can effectively respond to cross-border threats in a harmonised way was seen as particularly valuable. The evaluation also found that the Programme contributed significantly to the growing public health capacity in the Member States. The Member States track, which is partly subsidised by the Member States, was viewed as a relevant addition to the main EU track and a good way to reduce inequalities in capacity between Member States.

The evaluators recommended that the Programme should clarify its objectives, add new methods in the areas of epidemiological surveillance and preparedness and response to its curriculum, modify the name of the programme, explore academic accreditation, and improve organisational efficiency and effectiveness. ECDC has already begun to initiate changes based on these recommendations.

The ECDC Fellowship Programme received the 2019 'Deans' and directors' good practice award for excellence in public health training and education' from the Association of Schools of Public Health in the European Region (ASPHER).

ECDC carried out its continuous professional development activities (summer school, senior exchange visits, e-learning opportunities, and dedicated training courses; 190 participants in total). In 2019, ECDC launched an assessment of the Member States' capacity and needs with regard to the prevention and control of communicable diseases. The results of this assessment will help to adjust and upgrade ECDC's continuous professional development offerings.

The ECDC Virtual Academy (EVA), an e-learning platform, hosted nine courses: seven updates of existing ones and two new courses that were piloted. In 2019, 1 145 people were enrolled, and 286 graduated with a certificate. The Programme produced two new courses on simulation exercises that will launch in 2020. It also updated its course on epidemic intelligence.

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[6] Article 9 (6) of the ECDC Founding Regulation and Article 4 of Decision No 1082/2013/EU
[7] https://ecdc.europa.eu/en/publications-data/ecdc-public-health-training-strategy
[8] MediPIET was established by ECDC in 2013–2014. It is funded by the European Commission and currently managed by the Instituto de Salud Carlos III.

ECDC continued to provide scientific leadership for MediPIET, the Mediterranean and Black Sea field epidemiology training programme network. A third cohort of fellows entered MediPIET in 2019. In July, the EU Initiative on Health Security was approved by the European Commission as part of an action programme for European Neighbourhood countries[9]. It includes financial support for MediPIET from DG NEAR covering the period 2021–2025; all financial contributions will be managed by ECDC.

ECDC exchanged experiences and collaborated with different networks, for example with ASPHER. The Centre also contributed to TEPHINET's learning advisory council for the field epidemiology training programme. Collaboration continued with the Food and Agriculture Organization (FAO) by providing expert guidance on frontline field epidemiology training for veterinarians. ECDC contributed to the design of the Global Laboratory Leadership Programme, together with WHO, FAO, OIE, the US CDC and the American Association of Public Health Laboratories.

Table 1. **Modules and participants, ECDC training programmes**

Programme	Topic / track	Participants	Total
Fellowship Programme	EPIET cohort – EU-track 2018 EPIET/EUPHEM cohort – Member States track 2018 EUPHEM cohort – EU-track 2018 EPIET-associated programmes	12 11 5 13	78
	EPIET cohort – EU-track 2019 EPIET/EUPHEM cohort – Member States track 2019 EUPHEM cohort – EU-track 2019 EPIET-associated programmes	11 16 5 5	
CPDP/short courses	Summer school 2019	34	172
	Winter workshop 2019: The science of using science to support policymaking for the prevention and control of communicable diseases	33	
	Control of multidrug-resistant microorganisms in healthcare settings (MDRO)	29	
	Public health genomics workshop	20	
	Cross-sectoral biorisk awareness and mitigation training (ECDC–EUROPOL), third edition	56	
CPDP exchange visits	Senior exchange visits, FWDEEP exchange visits	16 + 2	18
Online courses (ECDC Virtual Academy – EVA)	Cross-border public health data sharing – pilot project	54/8*	294**
	PRECEPT online course – pilot project	136/35*	
	Introduction to outbreak investigation: pilot course	378/90*	
	Rapid risk assessment, e-learning pilot project	301/87*	
	Writing and reviewing scientific abstracts: a field epidemiology focus: essentials	121/30*	
	Influenza vaccination among healthcare workers – assess and communicate to improve uptake	122/32*	
	Influenza bioanalytics	87/12*	
MediPIET (scientific leadership)	In 2019 – 15 fellows started their training	15	15
Total			**577**

* Number of enrolled participants/issued certificates
** Number of people who completed the e-learning courses and received a certificate

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[9] Commission implementing decision C (2019) 5693 final, on the Annual Action Programme for ENI South countries Part 1 – 2019

Indicators for public health training

No.	Objective	Indicator	Target 2019	Verification	Result 2019
15	Strengthen and maintain the workforce in the Member States and at the Community level through relevant training of key national experts in order to ensure adequate performance of functions for communicable disease preparedness, prevention, detection, assessment and control	A. Number of people trained, per Member State, per core function*	A. 40 fellows in two cohorts enrolled in ECDC Fellowship Programme, >300 participants in CPDP training activities (short courses, e-learning and senior exchange)	A. From ECDC training database (CRM): number of trained people	A. Number of persons trained: ● 40 fellows graduated in 2019: 20 EPIET (11 EU track, 9 Member States track, 10 from associated programmes) and 10 EUPHEM (6 EU track, 4 Member States track) ● 484 external experts trained in the CPDP courses (including 294 through online courses, and 18 in exchange visits) (see Figure 14)
		B. Participant satisfaction with ECDC training activities	B. >75% satisfaction	B. Course evaluation	B. Course evaluation – satisfaction ● ECDC Fellowship Programme (EPIET/EUPHEM): 100% positive feedback in portfolios from fellows. ● Short courses: 93% (data from five courses: Control of multidrug-resistant organisms in healthcare settings MDRO (89%); cross-sectoral biorisk awareness and mitigation training (ECDC–EUROPOL), third edition (88%); public health genomics (100%); summer school (90%); winter workshop (97%)
		C. Number of scientific articles of public health relevance by EPIET/EUPHEM fellows during and two years after graduation.	C. > 50% increase compared to the 2-year period before entering the programme.	C. Database + ECDC Virtual Academy (EVA) platform, bibliometrics (PubMed, Scopus)	C. Number of scientific articles ● Increase/decrease of publications: two-fold (202% increase) Average number of annual publications per fellow before fellowship: 1.44 Average number of annual publications per fellow in the two years after fellowship: 2.92. (Source: PubMed, Scopus, out of 27 [ECDC-funded] fellows in Cohort 2015)
		D. Number of fellowship graduates working in public health per Member State, per discipline (absolute and proportional)	D. Reduction of the gaps identified by the training needs assessment	D. ECDC Virtual Academy (EVA): follow-up of graduates (profile updates), Linkedin, PubMed, CCB	D. Number of graduates working in public health per Member State ● 100% of surveyed EPIET Alumni and 90% EUPHEM alumni
16	Strengthen and maintain a network of European and global training partners, supporting capacities to provide training to the workforce in the EU at local, subnational, national and community levels.	Perceived added value of ECDC public health training activities by training stakeholders.	A. > 75%	Annual consultation with NFP for training	● Perceived added value: n/a (no dedicated survey in 2019)

Figure 12. ECDC Fellowship Programme: number of participants per cohort, 2012–2019
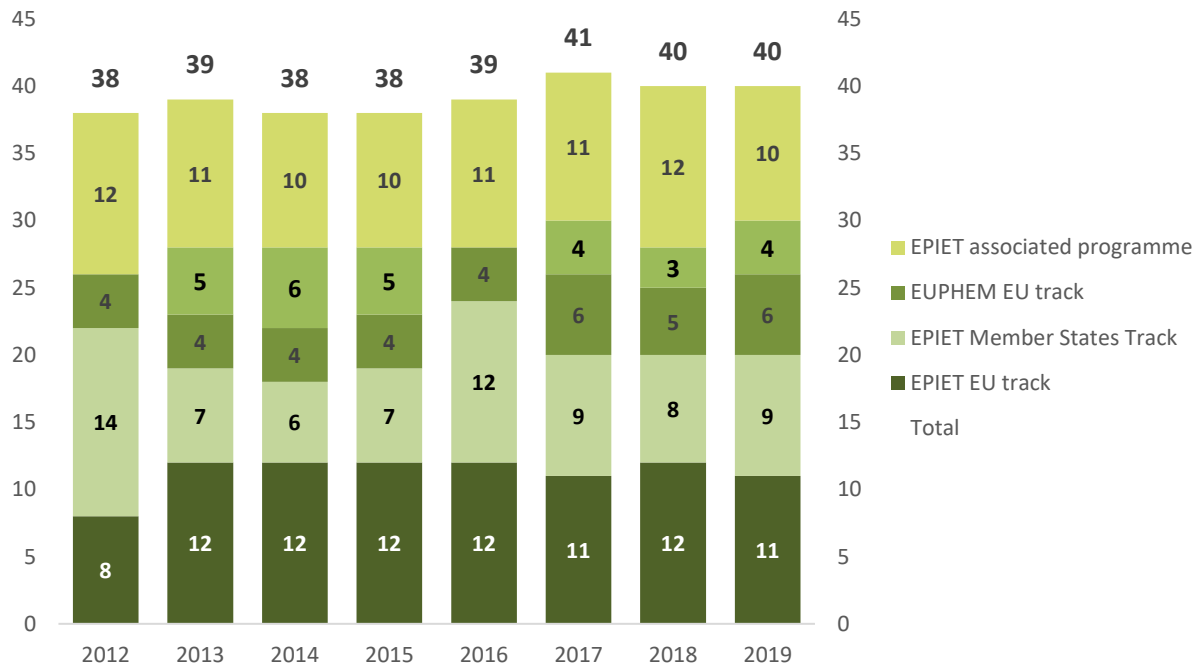
Figure 13. Number of participants enrolled in ECDC training activities, 2012–2019
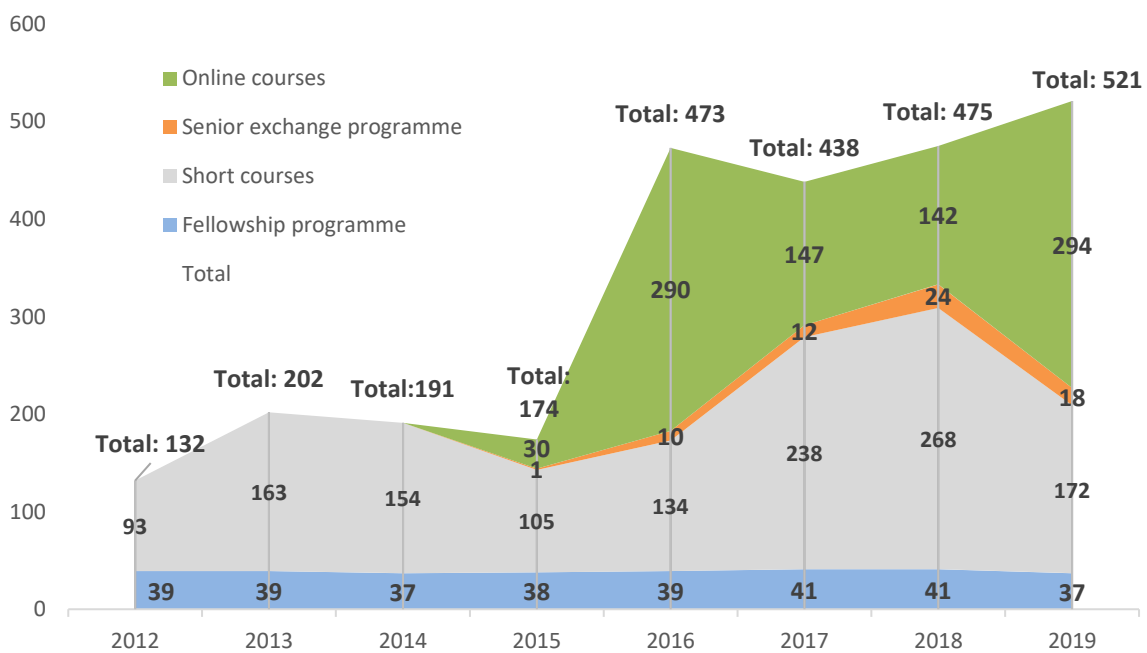
Note: Graph shows the number of people who completed the e-learning courses and received a certificate; the actual number of participants was higher

Figure 14. **Total EU-track fellows (sent and hosted) per country since start of the Fellowship Programme**

Sent/hosted EU-track fellows C1-C2017

Legend: Sent EPIET-EU | Sent EUPHEM-EU | Hosted EPIET-EU | Hosted EUPHEM-EU
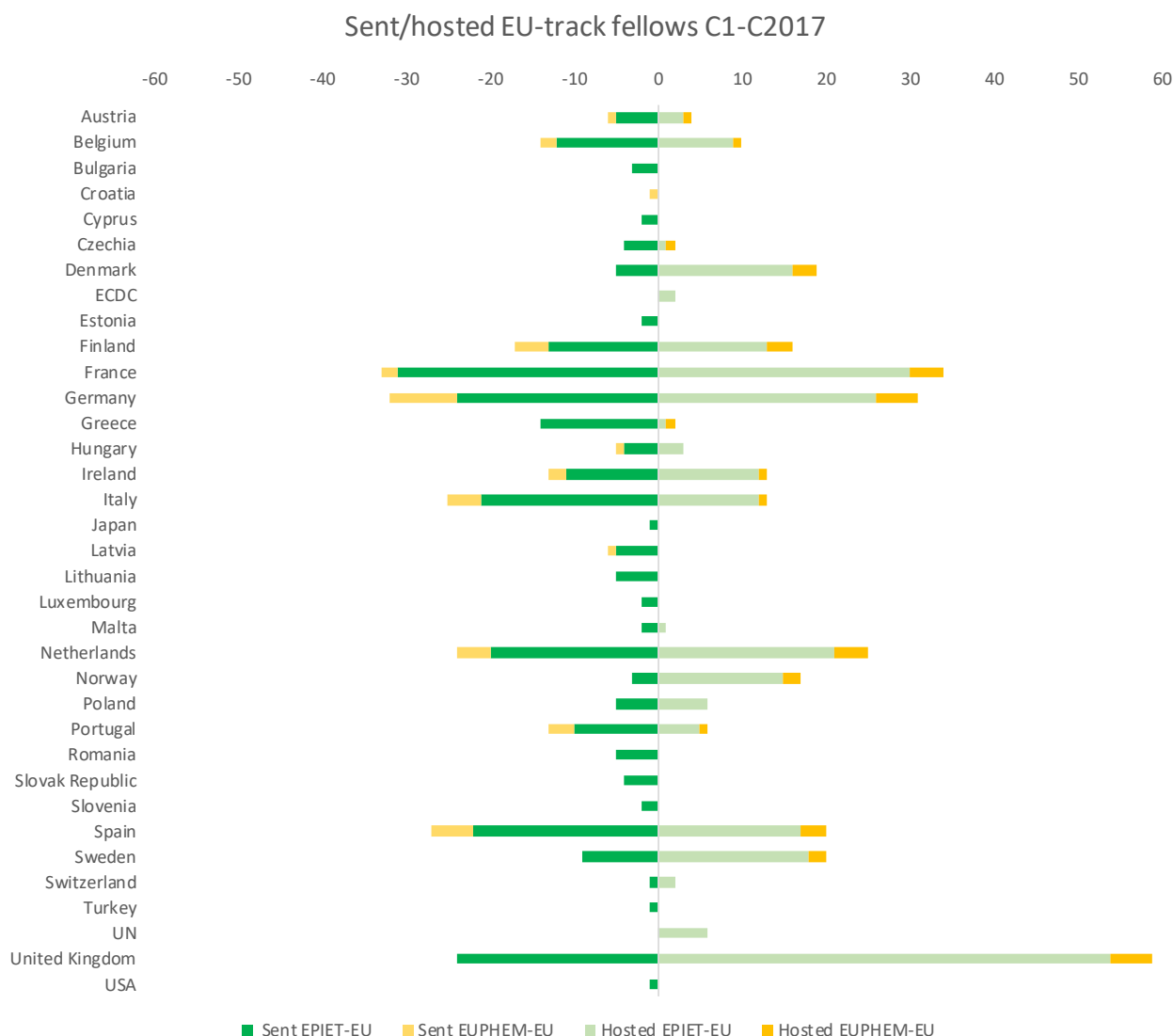
4.2 International relations

Context

Emerging pathogens and epidemics in other continents can threaten public health in the EU. ECDC therefore needs to maintain lines of communication with key technical counterparts around the world, most importantly with the World Health Organization and its Regional Office for Europe. ECDC also works closely with other public health centres, such as the US CDC and Public Health Canada. Developing technical cooperation and exchange of information with the EU candidate and potential candidate countries and the European Neighbourhood Policy partner countries is also essential. ECDC works with public health authorities in these countries to introduce them to the EU's infectious disease surveillance and rapid alert systems and help them align with the EU acquis in the area of communicable disease prevention and control. ECDC's International relations policy 2020 – adopted by the Management Board in 2017 – provides a coherent framework for priority setting and action in this area.

Results achieved in 2019

ECDC completed a two-year project (2017–2019) aimed at preparing national authorities in Western Balkan countries and Turkey for their participation in ECDC systems and networks. The ECDC-IPA5 project, implemented with external financial assistance from the Directorate-General for Neighbourhood and Enlargement Negotiations under the Instrument for Pre-Accession Assistance, contributed to the strengthening of national capacities in surveillance, public health microbiology, and preparedness. In February, ECDC and EFSA organised a regional

workshop in Belgrade, Serbia, on the 'One Health' approach against AMR[10] with 44 participating experts from the human and animal health sectors. Participants came from six Western Balkan countries, Turkey, four EU/EEA countries, the European Commission and the WHO Regional Office for Europe and discussed response options to antimicrobial resistance in the region. To continue the cooperation in these domains, ECDC submitted a proposal for pre-accession assistance to DG NEAR. A new contribution agreement was signed in December, with total budget of one million euros for 2020–2022.

In July, The European Commission adopted an implementing decision on the European Neighbourhood Instrument[11] (ENI) to carry out a new 'EU Initiative on Health Security', with a grant of six million euros for 2021–2024. This initiative aims to set up a regional competent workforce for the prevention and control of challenges posed by communicable diseases and enhance regional cooperation to tackle cross-border health security threats in European Neighbourhood Policy (ENP) and EU candidate/potential candidate countries. In close consultation with the European Commission, ECDC started preparing a technical proposal to be submitted to DG NEAR in 2020.

In November, 87 public health and animal health experts from 15 ENP partner countries gathered in Amman, Jordan, to hold an exchange on intersectoral collaboration for the prevention and control of AMR. Seven experts from EU Member States and representatives from DG SANTE, EFSA, WHO Regional Office for Europe, the WHO Regional Office for the Eastern Mediterranean, the World Organisation for Animal Health (OIE), and the Food and Agriculture Organization of the United Nations (FAO) attended and discussed AMR surveillance, AMR awareness, and the prudent use of antimicrobials, based on a 'One Health' approach.

ECDC organised an informal meeting of EU agencies working with Pre-Accession and European Neighbourhood programmes. Fifteen EU agencies and DG NEAR participated and exchanged practices in implementing activities with IPA and ENI beneficiaries.

Initiated by the European Commission, ECDC conducted an assessment of the public health system in Georgia and its capacity to address communicable diseases. The Director of ECDC visited Georgia in July before the formal assessment began in November. Experts came from seven Member States and the WHO Regional Office for Europe; back-office support was provided by the TAIEX Office (European Commission). Over 150 Georgian officials and experts from 40 competent institutions were involved. Having signed an association agreement with the EU, Georgia is expected to align its legislation with EU law. The assessment report, which includes recommendations, is expected in 2020.

ECDC monitored the level of preparation in EU candidate countries and regularly briefed the European Commission on the progress made. The Centre also assisted in the preparation of a post-assessment action plan for Kosovo.

ECDC continued its close collaboration with the WHO Regional Office for Europe. In October, the annual ECDC–WHO Europe programme coordination meeting took place. Participants reviewed the achievements and lessons learnt and agreed on a number of joint activities for 2020.

Liaising with major CDCs worldwide

ECDC held a first meeting with its CDC Focal Points in Stockholm. Participants work in the disease control centres for Africa, Canada, the Caribbean, China, Israel, Thailand, and the USA. The meeting participants established a network of major CDCs, agreed on annual meetings and quarterly videoconferences. Two videoconferences already took place in September and December 2019.

In close liaison with the Directorate-General for International Cooperation and Development (DG DEVCO) and through continuous discussions with the Africa CDC, ECDC started preparing a development partnership project on health security in Africa. Support from DG DEVCO is expected for this project which has been dubbed *ECDC4Africa CDC*). ECDC will share EU practices with the Africa CDC and strengthen Africa CDC capacities in the areas of preparedness, surveillance, and response to health threats from communicable diseases.

In December, the Director of ECDC attended the conference of the International Association of National Public Health Institutes (IANPHI) in Addis Ababa, where she also met with the Director of the Africa CDC.

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[10] https://www.ecdc.europa.eu/en/news-events/ecdc-efsa-regional-workshop-one-health-approach-against-antimicrobial-resistance-eu-pre

[11] Commission Implementing Decision C (2019) 5693 final, on the Annual Action Programme for ENI South countries Part 1, 2019

Indicators for international relations

No.	Objective	Indicator	Target 2019	Verification	Result 2019
17	Assess the capacities of EU pre-accession countries in the area of prevention and control of communicable diseases and their progress in the implementation of the EU acquis	Proportion of pre-accession countries for which progress is monitored annually	Annual update sent to the Commission for 100% of countries assessed	Survey with recipients of the support mechanism	● 100% of the countries assessed were monitored. (6 out of 7 EU pre-accession countries assessed).
18	Support the progressive integration of EU pre-accession and European Neighbourhood Policy partner countries into ECDC activities; integration activities are funded through external EU financial assistance	Average annual attendance rate to ECDC events by EU pre-accession and ENP partner countries	75%	Meeting attendance lists = total number of national experts attending ECDC meetings/total invited	● 91% (average annual attendance ratio for Western Balkan countries and Turkey)
		Level of satisfaction from EU pre-accession and ENP partner countries on ECDC support for their progressive integration into ECDC	75% of respondents satisfied	Bi-annual survey with all experts of pre-accession countries	● 82% of the respondents very satisfied or satisfied with opportunities to technically cooperate in different areas of ECDC activities (2018 data)
19	Strengthen cooperation and partnership with major CDCs across the globe through formal bilateral agreements with ECDC	Proportion of partner CDCs for which focal points have been designated	100%	CRM, statistics from International Relations Section	● 100%
		Proportion of partnership agreements for which evaluations are conducted	75% of memoranda of understanding/partnerships evaluated		● 100%
20	Enhance the collaboration with the WHO Regional Office for Europe and revitalise the existing memoranda of understanding with the CDCs in non-EU countries	Level of satisfaction from EU/EEA Member States on ECDC collaboration with WHO-Europe	75% of EU/EEA countries satisfied	ECDC stakeholder satisfaction survey includes the question that measures satisfaction of countries regarding ECDC–WHO collaboration and joint outputs	● n/a (no stakeholder survey conducted)

4.3 Country support

Context

ECDC provides the Member States with training activities, carries out assessments, holds peer-reviewed country visits, helps with the sharing of experiences and good practices, develops toolkits and guidance documents, and secures laboratory capacity support to Member States. In the past, these activities were not always properly coordinated did not sufficiently focus on the countries' actual needs. The second and third external evaluations of ECDC encouraged the Centre to gain a better understanding of national health systems and the needs of individual countries. To achieve this, a dedicated support framework was established.

ECDC launched two pilot calls in 2017 and in 2018 and asked the Member States to express their exact needs. The Centre is able to support Member States with activities such as training courses, sharing of experiences and best practices, country capacity strengthening, laboratory support, surveillance support, and support for policymaking.

Results achieved in 2019

ECDC launched a pilot call in 2017 and 2018 to elicit support requests from the Member States.

In 2018, the Centre received a total of eight requests from four countries (17 requests from eight countries in 2017). The responses were mainly requests for training and exchange visits in the areas of antimicrobial resistance and vaccine hesitancy. In response to these requests, ECDC will organise two multi-country training activities: short courses and exchange visits on AMR in 2020 for Latvia, Lithuania, Poland and Romania; training courses on vaccine hesitancy will be held for Estonia, Lithuania, and Romania in 2020-2021. Three Member States (Czechia, Estonia, Malta) requested support for both activities.

Figure 15. Countries requesting support in 2017 and 2018
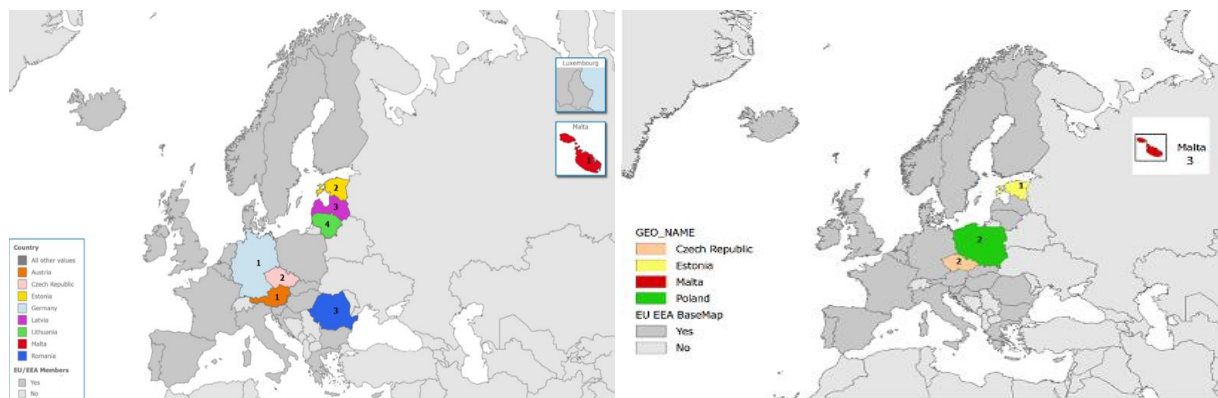
Figures 16 and 17. Requests by work area (top) and disease programme (bottom), 2017–2018
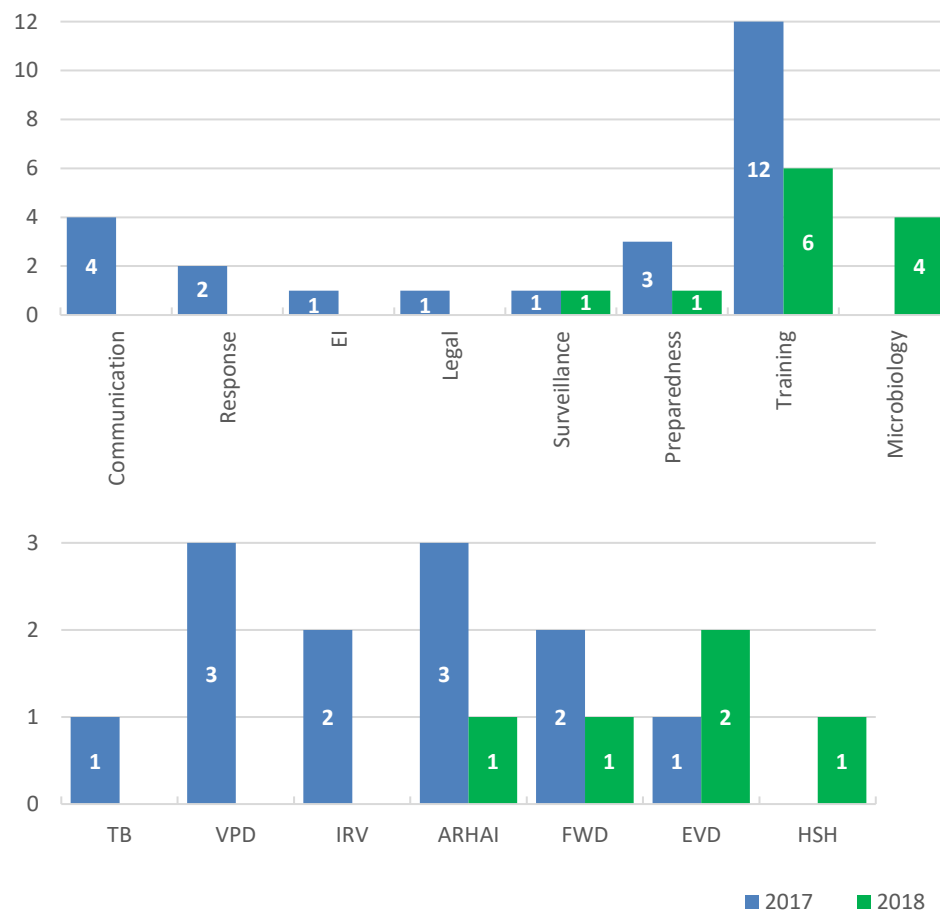
Following the two calls, ECDC conducted an informal assessment of the mechanism and concluded that the mechanism added value to the beneficiary countries. However, it also created a disproportional administrative burden and lacked alignment with ECDC planning processes, which is why ECDC decided to discontinue the annual country support mechanism.

Following discussions with the Coordinating Competent Bodies in 2019, the Centre agreed on a new and more comprehensive approach that will be rolled out as from 2021. It contains the following elements:

- The development of a methodology to identify vulnerabilities and needs in the Member States
- The development of a corporate approach to plan and conduct ECDC country visits
- The harmonisation of the collection of information during network meetings
- The identification of a dedicated IT tool to capture data and information on countries
- The compilation of a list of additional funding sources to support Member States.

In 2019, ECDC continued to provide input to the Commission's 'State of Health in the EU'[12] report (on communicable diseases). The Centre strengthened country-specific and EU-wide knowledge on health, which improved its ability to support the EU Member States and several Commission services in their evidence-based policymaking.

Indicators for country support

No.	Objective	Indicator	Target 2019	Verification	Result 2019
21	Provide coordinated support to the Member States through the coordinated country support mechanism (CCS)	Level of satisfaction of the countries requesting support to ECDC through the coordinated country support mechanism (CCS)	>75% of the countries satisfied	Survey with recipients of the support mechanism	● The support mechanism was discontinued, following the two pilot calls. Therefore, satisfaction was not assessed in 2019 (result 2018: 80%). The requested support measures for 2020 will be assessed after the support has been provided.

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[12] https://ec.europa.eu/health/state/summary_en

5. Communication

5.1 Health communication

Context

The obligation to communicate results and make them available on the Centre's website is set out in Article 12 of ECDC's Founding Regulation. In addition, the EU and its Member States consider 'consistent communication messages to citizens based on robust and independent evaluation of public health risks'[13] as a vital area of cooperation when responding to serious cross-border threats to health. Being able to agree rapidly on a set of coherent, technically sound core messages about a threat can be a huge support to response efforts and ensure the alignment of risk communication messages in the EU.

Results achieved in 2019

ECDC published 219 scientific publications in 2019 (Annex 8), including rapid risk assessments and regular surveillance reports. The publications newsletter had 4 217 subscribers in 2019, 488 more than last year. ECDC is increasingly publishing data, graphs, maps and infographics as downloadable, copyright-free assets to allow partners and stakeholders to reuse ECDC content.

Overall, 614 742 website sessions were recorded during 2019, compared with 638 713 in 2018. The most downloaded publications were:

- Surveillance of antimicrobial resistance in Europe 2017
- Zika virus transmission worldwide
- Antimicrobial consumption: Annual Epidemiological Report for 2017
- Monthly measles and rubella monitoring report: March 2019
- HIV/AIDS surveillance in Europe, 2018–2017 data

The number of followers on ECDC's corporate Twitter account (@ECDC_EU) grew by 4 738 new followers, a plus of 19% percent. ECDC has now almost 30 000 followers on Twitter. All ECDC social media accounts are verified as a trusted source, which reinforces their credibility.

A media analysis for 2019 shows that 7 973 (10 047 in 2018) media clippings mentioning ECDC were published in the EU (both print and online, excluding social media), a decrease of 20%. The most popular topics mentioned in the news were vaccines and immunisation, measles, AMR and antibiotic consumption, seasonal and avian influenza, TB, STIs, HIV, and hepatitis.

Figure 18. **Referencing of ECDC in European media: number of clippings (online and print)**
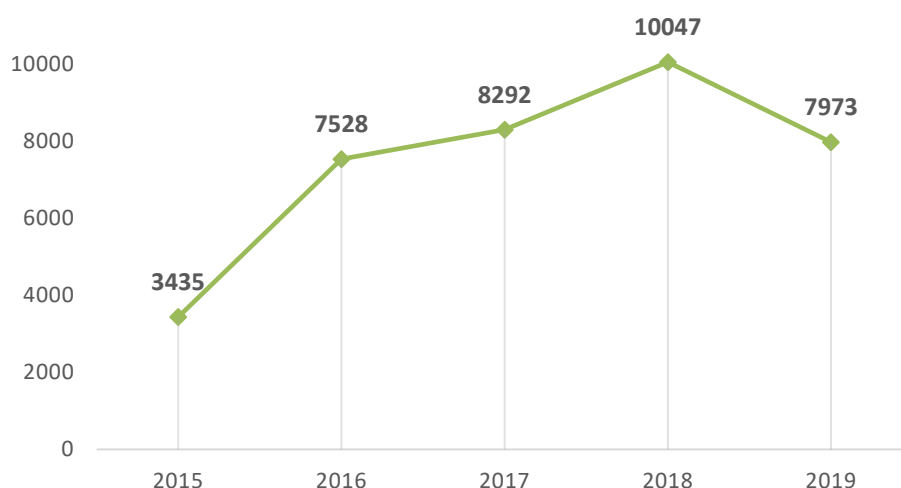
Note: Due to a new contractor, data until the end of May 2019 include both prints and online clippings. As of 1 June 2019, only online clippings were included, which might explain the decrease compared to previous years.

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[13] Decision No 1082/2013/EU of the European Parliament and of the Council of 22 October 2013 on serious cross-border threats to health

During a meeting in December 2019, it was agreed to extend co-branding with the WHO Regional Office for Europe.

ECDC maintains a professional press office service. In 2019, the Centre intensified its work with health journalists. In close cooperation with the European Commission, the Health Security Committee and the WHO Regional Office for Europe, ECDC provided EU-wide communication response to public health issues.

ECDC developed a number of communication campaigns, using traditional media, social media, videos, toolkits, infographics and PowerPoint materials that can be easily adapted to local languages and practices. Many of the campaign materials support public awareness campaigns such as European Antibiotic Awareness Day, European Immunisation Week, and World TB Day.

Over 40 countries across Europe participated in the twelfth edition of the European Antibiotic Awareness Day (18 November 2019). Ahead of the event, a press briefing with a keynote speech by the Commissioner for Health and Food Safety, Vytenis Andriukaitis, was organised. The Day was marked by national campaigns and events on the prudent use of antibiotics. ECDC continued to collaborate with the WHO Regional Office for Europe for the World Antibiotic Awareness Week.

In November, ECDC launched a beta version of the European vaccination portal, developed together with the Directorate-General for Health and Food Safety. The vaccination portal will provide authoritative, scientific, evidence-based and transparent up-to-date information on immunisation to healthcare professionals and citizens in Europe. The vaccination portal will be officially launched in April 2020.

In June 2019, ECDC organised a meeting of the national Focal Points for communication in Luxembourg, with the participation of DG SANTE and the WHO Regional Office for Europe. During the meeting, the Member States provided feedback on the vaccination portal.

Indicators for health communication

No.	Objective	Indicator	Target 2019	Verification	Result 2019
22	Ensure that ECDC's scientific and technical outputs are timely, easily available, impactful, reusable and adjusted to the needs of our target audiences	(1) Usage of the ECDC web portal and social media channels	+ 5% web visitors + 10% followers on Twitter	Web and social metrics used for verification	(1) ● 614 742 website sessions were recorded for 2019, compared with 638 713 in 2018 (-3.75%). ● The number of followers on ECDC's corporate Twitter account (@ECDC_EU) grew by 19% = 4 217 new followers in 2019.
		(2) Perception of timeliness, usability and usefulness of ECDC outputs	Favourable perception of at least 75% respondents	Perception study, stakeholder survey and feedback collected through annual NFP meeting for communication	(2) ● Not available for 2019
23	Consolidate the reputation of ECDC as an independent, transparent agency that produces and disseminates high quality scientific content	Increase of media articles in Europe referencing ECDC and its experts	+ 5% compared with previous year	Media monitoring	● 20% (see Figure18, p.34) The media analysis shows that 7 973 (vs. 10 047 in 2018) media clippings mentioning ECDC were published in the EU in 2019 (both published and online, excluding social media) Note that due to a change of contract for the outsourcing, data until end of May include both prints and online clippings, while as from 1st June only online clippings are included, which might explain the decrease compared to previous years.
24	Support sharing of knowledge, data and analysis among stakeholders with a focus on strengthening communication capacity and preparedness in EU Member States	Favourable perception of ECDC communication capacity support activities by NFPs (material, workshops, meetings, country visits, training activities) in the area of risk and crisis communication	Favourable perception of at least 75% respondents	Perception study, stakeholder survey and feedback collected through annual NFP meeting for communication	● Not available in 2019

5.2 *Eurosurveillance*

Context

Eurosurveillance is ECDC's scientific journal. It is recognised internationally as a leading platform for peer-reviewed publications on the epidemiology, surveillance, prevention and control of communicable diseases, with a focus on Europe. The Journal is published weekly at www.eurosurveillance.org. All articles are open access, and there are no author fees.

Results achieved in 2019

Eurosurveillance published 220 articles (65 rapid communications published within two to three weeks of submission, 155 regular articles) and 21 other items (such as editorials, letters, and meeting reports). The Journal remained an attractive outlet for public health experts and scientists, as reflected by the number and quality of submissions. The total number of submissions reached 761 in 2019 (2018: 727; 2017: 901), an average of 15 per month. The 2019 acceptance rate of 25% was similar to previous years. Europe remains the geographical focus of submitted and published articles, even though 15% of accepted articles in 2019 were from non-European countries as they were of general relevance for public health and/or impacted Europe. *Eurosurveillance* received submissions from 31 of the 34 countries represented on its Board, and from some 70 countries overall.

Some 550 experts acted as peer reviewers and dedicated time to support the decision-making process by sharing their views and comments on articles before publication.

Eurosurveillance is consistently ranked as one of the top journals in its field. Its impact factor reached 7.4, and it ranked fourth among infectious disease journals. In the SCImago journal rank, *Eurosurveillance* featured in the top 25 per cent in four categories (for all categories listed). The Scopus-based CiteScore ranked *Eurosurveillance* 13th among 489 journals in the medicine category 'public health, environmental and occupational health'.

The journal is active on Twitter where it hit 10 000 followers at the end of 2019. It expanded its social media activities to the professional network LinkedIn, where the number of connections continues to grow steadily.

To provide evidence and support response to ongoing or emerging threats, *Eurosurveillance* covered various aspects of AMR such as the emergence of multidrug-resistant *Neisseria gonorrhoeae* related to international travel, an outbreak of extensively drug-resistant *Klebsiella pneumoniae* in a German hospital, and the surveillance of antimicrobial consumption and prescribing in Belgium, Israel and Switzerland. The journal also published articles on vaccine hesitancy, mandatory vaccination, and interventions to improve confidence in vaccines, for example, motivational interviews conducted with parents of newborns on maternity wards that resulted in lower hesitancy and greater intention to vaccinate. Food- and waterborne diseases, HIV/AIDS and blood-borne diseases, emerging and vector-borne diseases, influenza and other respiratory diseases remained important subjects covered in the journal. A special issue, published in January 2019, illustrated *How advanced diagnostics support public health policy development.*

Over 150 participants attended the 2019 *Eurosurveillance* seminar, which focused on 'Point-of-care testing and its impact on surveillance of communicable diseases and public health', organised as previously, on the margins of the European Scientific Conference on Applied Infectious Disease Epidemiology (ESCAIDE).

The *Eurosurveillance* editors also organised, during the year, several workshops on publication ethics, tools to increase transparency in scholarly communications, and on how authors can improve their chances of getting published. These workshops took place at several national public health institutes, as well as during the ECDC summer school and in the context of the ECDC fellowship programme.

Indicators for *Eurosurveillance*

No.	Objective	Indicator	Target 2019	Verification	Result 2019
25	Consolidate the high-level profile and attractiveness of *Eurosurveillance*	Number of issues and items published	50 issues and 200 items published in 2018	*Eurosurveillance* web site	● 50 issues (220 items) published in 2019
		Impact factor for *Eurosurveillance* and journal rank positioning in quartile 1	Impact factor >3	Journal citation reports, SCImago, Citescore	● IF = 7.4 (see Figure 19) CiteScore ranked *Eurosurveillance* 13 among 489 journals in its category. In the SCImago journal rank, *Eurosurveillance* featured in the top 25% in four categories (medicine general, virology, public health, environmental and occupational health).

Figure 19. *Eurosurveillance* **impact factor**
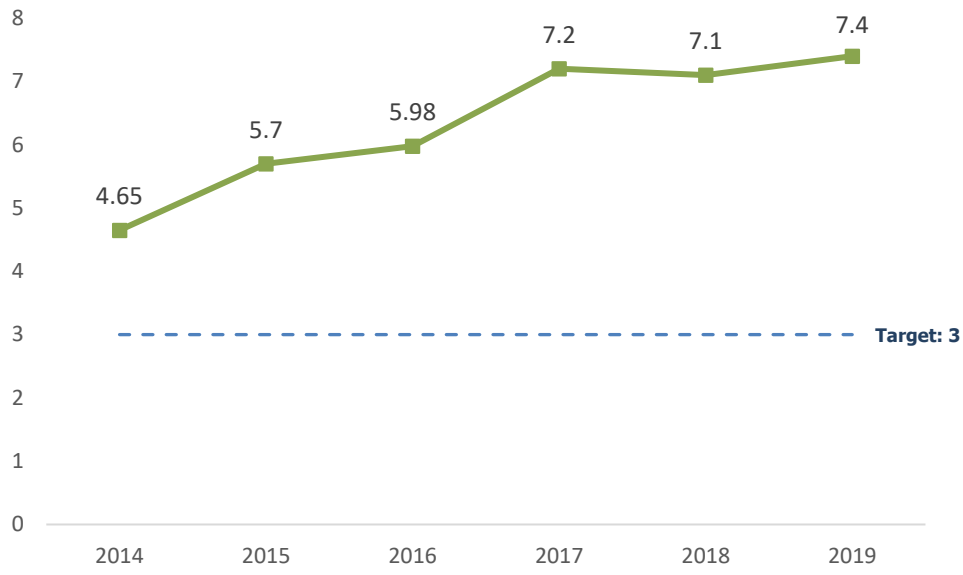
6. Disease Programmes

6.1 Antimicrobial Resistance and Healthcare-Associated Infections

Context

Antimicrobial resistance (AMR) and healthcare-associated infections are high on the European and global agenda (WHO global action plan on AMR[14]) as the various AMR threats keep increasing in number and intensity. In 2018, ECDC produced revised estimates showing that in the EU/EEA each year 33 000 people die from infections due to bacteria resistant to antibiotics[15]. Since 2014, stakeholders have asked for intensified efforts on the surveillance, prevention and control of AMR and healthcare-associated infections (HAI). In 2017, the European Commission adopted the European One Health Action Plan against Antimicrobial Resistance. European initiatives[16] have focused on improved surveillance, the prudent use of antimicrobials, infection prevention and control, and the need for new antibiotics. The alarming trend of increasing resistance to last-line antimicrobial agents in gram-negative bacteria will require close surveillance and concerted efforts at all levels. Despite recent successes, awareness of the need for prudent use of antibiotics and of infection prevention and control measures, both among the general public and healthcare professionals, is poor in many Member States. Moreover, guidance documents, examples of best practice, and success stories about the prevention and control of AMR and HAI are rarely shared between Member States.

Results achieved in 2019

ECDC supported a high-level AMR conference organised in Bucharest on 1 March 2019 during the Romanian EU presidency. During the conference, ECDC held a simulation exercise to explore the coordinated response of Member States and the EU to the emergence of a novel strain of a difficult-to-treat, extensively drug-resistant bacterium in a healthcare setting, with the potential for cross-border spread. ECDC also published, jointly with the Organisation for Economic Co-operation and Development (OECD), a briefing note on 'Antimicrobial resistance – tackling the burden in the European Union'[17], showing that an increased implementation of measures for the prevention and control of AMR and healthcare-associated infections led to lower AMR in acute care hospitals in Member States.

Getting a better understanding of AMR transmission through next-generation sequencing

Member States have over the last years reported an increasing number of events and outbreaks of AMR and/or healthcare-associated infections to ECDC via the EPIS platform. In 2019, ECDC prepared and contributed to several rapid risk assessments on outbreaks of Enterobacteriaceae resistant to carbapenems, a last-line group of antimicrobials that were a documented (or potential) cross-border threat to health. For several of these outbreaks, whole-genome sequencing (WGS) analysis of the isolates was crucial in establishing a genomic link between cases.

In 2019, ECDC launched the European Antimicrobial Resistance Genes Surveillance Network (EURGen-Net), a network for the WGS-based surveillance of multidrug-resistant bacteria of public health importance comprised of the national reference laboratories (or their equivalents) of 37 European countries (all EU Member States, Iceland, Norway, as well as Bosnia- and Herzegovina, Kosovo[18], Montenegro, North Macedonia, Serbia, Turkey and the UK). The objectives are to determine the geographic distribution and population dynamics of multidrug-resistant bacterial clones and transmissible resistance elements to inform risk assessment, prevention and control policies, and support countries in strengthening their technical capabilities to perform WGS-based surveillance of multidrug-resistant bacteria with epidemic potential.

The network started its activity with a Europe-wide survey of carbapenem- and/or colistin-resistant Enterobacteriaceae (CCRE), coordinated for ECDC by the Public Health Agency of Sweden. During a six-month

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[14] Global action plan on antimicrobial resistance, WHO World Health Assembly, May 2015, available from: http://apps.who.int/iris/bitstream/10665/193736/1/9789241509763_eng.pdf
[15] https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(18)30605-4/fulltext
[16] https://ec.europa.eu/health/amr/sites/amr/files/amr_action_plan_2017_en.pdf
[17] https://www.oecd.org/health/health-systems/AMR-Tackling-the-Burden-in-the-EU-OECD-ECDC-Briefing-Note-2019.pdf
[18] This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence.

period in 2019, hospitals and their clinical microbiology laboratories collected carbapenem- and/or colistin-resistant *Klebsiella pneumoniae* and *Escherichia coli* isolates. Bacterial isolates are collected at local hospital level, forwarded to the national reference laboratory for confirmatory testing, and sent to a central collection to perform WGS analysis. As of 20 January 2020, more than 3 400 isolates have been reported by 273 hospitals in 34 countries.

This survey complements data available from the European Antimicrobial Resistance Surveillance Network (EARS-Net) to identify high-risk bacterial clones and gain a more detailed understanding of transmission pathways.

Together with DG SANTE, ECDC conducted several country visits. The visits were taken from a one-health (humans, animals, environment) perspective and brought AMR experts to Estonia, Ireland and Portugal to discuss AMR issues and provide an objective assessment of the AMR situation, based on factual observations.

The Centre continued to act as a key contributor to the Transatlantic Taskforce on Antimicrobial Resistance (TATFAR), a collaborative effort of the EU, the United States, Canada and Norway in the field of AMR. ECDC also contributed to the EU joint action on AMR and healthcare-associated infections (EU-JAMRAI)[19].

On 18 November, in conjunction with WHO's World Antibiotic Awareness Week (18–24 November 2019), ECDC organised the 12th European Antibiotic Awareness Day to raise awareness about the threat to public health from antibiotic resistance, emphasising again the importance of prudent antibiotic use. ECDC published the results[20] of the first survey of healthcare workers' knowledge, attitudes and behaviours on antibiotics, antibiotic use and antibiotic resistance in the EU/EEA. While more than 89% of the respondents acknowledged the connection between prescribing, dispensing and administering of antibiotics and the emergence and spread of antibiotic resistance, only 58% were able to correctly answer all knowledge questions about antibiotics, antibiotic use and resistance. 25% of healthcare workers with direct patient or public involvement reported not having easy access to guidance on infection management, and 33% reported not having easy access to materials for advice on prudent antibiotic use and antibiotic resistance. This suggests that more investments are needed in producing and disseminating locally adapted guidance, resources and toolkits aimed at healthcare workers.

6.2 Emerging and Vector-Borne Diseases

Context

Emerging and vector-borne diseases[21] are challenging due to the complexity of their transmission patterns and their potential to cause large and sudden outbreaks. In recent years, several vector-borne disease outbreaks occurred in Europe caused by endogenous mosquitoes that spread emerging diseases, spread of invasive mosquitoes, and spread of ticks into new areas.

Most vector-borne diseases follow complex epidemiological patterns, such as seasonality and pathogen persistence in reservoir hosts and/or vectors without the occurrence of human disease. They can quickly emerge, re-emerge, or be introduced if conditions are suitable. During the transmission season, ECDC publishes maps of cases across Europe, for example weekly maps of West Nile virus infections in order to provide timely information to national health authorities on the need of blood transfusion testing in affected areas. ECDC also collects data to help public health experts understand the factors that could trigger sudden outbreaks.

Results achieved in 2019

ECDC continued closely monitor the tenth outbreak of Ebola virus disease in the Democratic Republic of the Congo (DRC). The 2018 outbreak was the biggest Ebola outbreak in the history of the country and the second biggest ever recorded worldwide. As the outbreak significantly escalated in 2019, ECDC released five updates of its rapid risk assessment and deployed experts to DRC from October onwards in order to support DG ECHO in assisting the country's response measures (see also Section 3.2).

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[19] EU-JAMRAI (https://eu-jamrai.eu/) brings together 44 partners and more than 30 stakeholders to foster synergies among Member States by developing and implementing effective 'One Health' policies to fight the rising threat of AMR and reduce healthcare-associated infections.

[20] https://www.ecdc.europa.eu/sites/default/files/documents/survey-of-healthcare-workers-knowledge-attitudes-behaviours-on-antibiotics.pdf

[21] The term 'disease vector' usually refers to arthropods (mosquitoes, flies, sandflies, lice, fleas, ticks, and mites) that carry and transmit infectious microorganisms into other living organisms.

ECDC monitored the first autochthonous[22] transmission of Zika virus detected in Europe, which occurred in France in August 2019 and published a rapid risk assessment. Fortunately, investigations by the French authorities showed that the virus had not spread further. ECDC also produced rapid risk assessments on an outbreak of Rift Valley fever in Mayotte (a French oversea territory) and on autochthonous cases of dengue in Spain and in France.

In November 2018, the European Parliament adopted a resolution on Lyme disease[23]. The resolution called on the European Commission and the Member States to harmonise and improve diagnostic methods, surveillance and treatment of Lyme disease in Europe. In 2018, Lyme neuroborreliosis (its neurological manifestation) was added to the list of diseases under EU surveillance[24]. In 2019, for the first time, ten Member States reported their Lyme neuroborreliosis 2018 surveillance data to ECDC's TESSy database. ECDC initiated a project aimed at supporting Lyme disease surveillance and reporting in the Member States. The project relies on surveys and individual consultations in the Member States, conducted by an external consultancy. The consultancy will identify what measures will have to be taken to implement the European Parliament resolution and provide up-to-date scientific data to the European Commission, the European Parliament and the Member States. Performance reports for this project are expected in 2020.

ECDC continued publishing updated distribution maps of European disease vectors on its website (e.g. mosquitoes, ticks and sandflies). Data for the maps were collected by the VectorNet project, which is jointly funded by ECDC and EFSA. The maps provide ECDC stakeholders, the scientific community and the general public with updated information on the distribution and surveillance of disease vectors for animals and humans. The maps can also be used to document the geographical spread (e.g. to previously non-affected areas) of several invasive species over time.

Figure 20. Map produced by ECDC and EFSA: distribution of *Aedes albopictus* in Europe in 2019
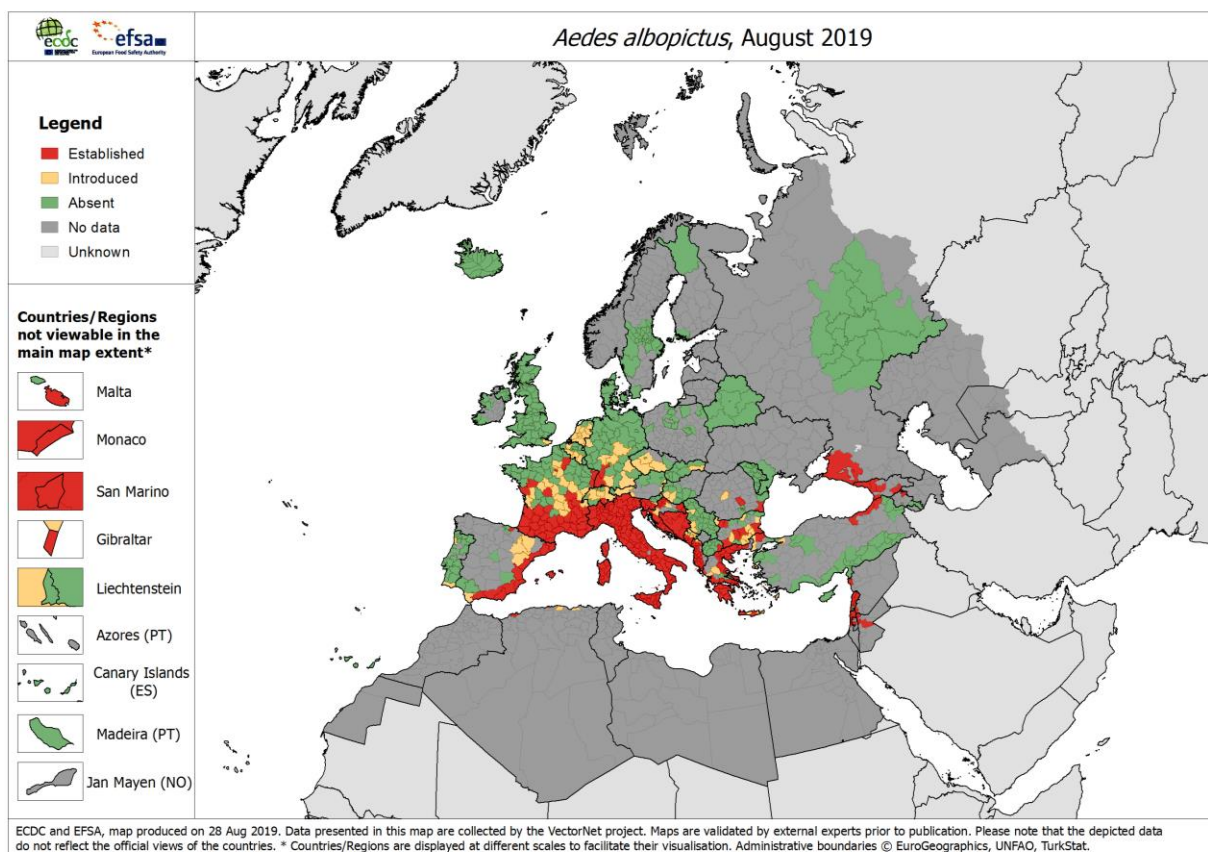
In December, an expert meeting took place on the control methods for mosquito vectors of the West Nile virus. Experts discussed the various approaches towards mosquitoes in European countries. ECDC continued to monitor the spread of West Nile virus, with over 460 cases in 10 EU countries (2019 data). In 2019, Germany and Slovakia

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[22] Previously only travel-associated cases were reported in EU/EEA countries

[23] P8_TA-PROV(2018)0465, Lyme disease (Borreliosis), European Parliament resolution of 15 November 2018 on Lyme disease (Borreliosis) (2018/2774(RSP))

[24] European Commission Implementing Decision (EU) 2018/945 of 22 June 2018 on the communicable diseases and related special health issues to be covered by epidemiological surveillance as well as relevant case definitions

reported their first autochthonous mosquito-borne West Nile virus infection in humans. ECDC continued to provide weekly updates and maps on the geographical distribution of the virus. The Centre also fine-tuned its modelling tool for anticipating and predicting West Nile virus presence and activity. The tool's mathematical model attempts to determine the risk of virus transmission to humans and compare vector-control strategies in order to advise decision-making on intervention measures. The tool will be made available in 2020.

The Centre continued developing another modelling tool to support the surveillance and control of viruses that are transmitted by *Aedes* mosquitoes (dengue, chikungunya and Zika virus disease). The modelling tool, complemented by field studies in Italy, Greece, Albania, and Spain provided significant results on mosquito control and reduction activities. The tool will be published in 2020.

ECDC conducted external quality assessments for orthopoxviruses through the laboratory network EVD-LabNet to assess the ability of laboratories to correctly detect and identify orthopoxviruses viruses.

In October, the Centre held its annual network meeting with the national Focal Points for emerging and vector-borne diseases.

6.3 Food- and Waterborne Diseases and Zoonoses, and Legionnaires' Disease

Context

Food- and waterborne diseases and Legionnaires' disease often cause clusters and outbreaks due to contaminated food, water, environment, or infected animals and humans. The potentially large economic impact on human health, productivity, trade, and the tourist industry makes the early detection and investigation of outbreaks important. In order to identify public health risks and implement timely control and prevention measures, the European public health community relies on multidisciplinary collaboration and regular communication between the food-safety, veterinary, environmental and healthcare sectors. For this reason, the European Food Safety Authority is a key partner of ECDC. A key objective is to improve EU-level surveillance to ensure timely public health actions. New technologies, for example looking at pathogens' genomes through whole genome sequencing (WGS), allow the detection of cases potentially linked to a common source. WGS also has an enormous potential to improve the response to cross-border health threats. Strengthening the public health microbiology capacity of the Member States through external quality assurance schemes and multi-disciplinary workshops for preparedness building is also important.

Results achieved in 2019

In 2019, ECDC and EFSA published two reports: 1) the EU One Health 2018 zoonosis report, and 2) the annual report on antimicrobial resistance in zoonotic and indicator bacteria from humans, animals and food in 2017. The trend of confirmed human cases of campylobacteriosis and salmonellosis in the EU was stable during 2014–2018. Shiga toxin-producing *Escherichia coli* (STEC) infections in humans were the third most commonly reported zoonosis in the EU and increased from 2014 to 2018. According to the AMR report (2017 data), resistance to fluoroquinolones (such as ciprofloxacin) is so high in *Campylobacter* bacteria in some countries that these antimicrobials are no longer effective in the treatment of severe campylobacteriosis cases.

Urgent inquiries (UI) are requests launched by participating countries or ECDC to assess the multi-country dimension of events occurring at the national level. They are launched and coordinated through the EPIS-FWD platform. In 2019, 88 urgent inquiries were initiated by 23 participating countries[25], and one UI was launched by ECDC. UIs were related to salmonellosis (39), listeriosis (20), verocytotoxin-producing *Escherichia coli* (VTEC) (11) infection and hepatitis A (8). On average, eleven countries replied to a single UI, and 31 countries replied to at least one UI.

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[25] Of a total of 52 network countries

Figure 21. Urgent inquiries related to food- and waterborne diseases, 2014–2019
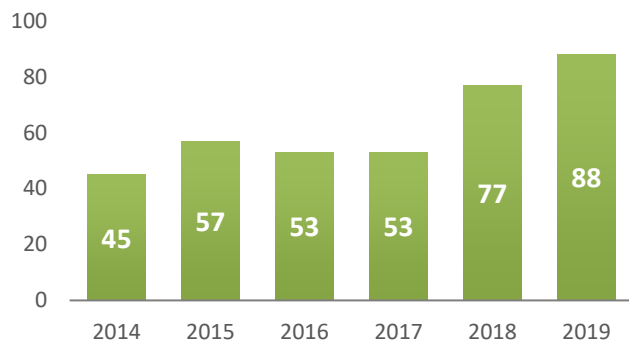
Cooperation with EFSA was strengthened by introducing weekly teleconferences to monitor the evolution of multi-country food-borne events and produce joint public health risk assessments. Joint rapid outbreak assessments are published by ECDC and EFSA, and are recognised as helpful information by risk managers in the Commission and the Member States when tracking the source of an outbreak. In 2019, ECDC published three joint rapid outbreak assessments with EFSA: two on multi-country listeriosis outbreaks and one on *Salmonella* Agona linked to infant formula. The listeriosis outbreaks were linked to cold-smoked fish products and ready-to-eat sliced meat products. More timely communication to risk managers is ensured through joint ECDC–EFSA notification summaries, which are made available to all EWRS and RASFF[26] contact points.

Detecting a multi-country listeriosis outbreak linked to cold-smoked fish products

In 2019, a multi-country food-borne outbreak of listeriosis was detected through an urgent inquiry by Denmark and verified by ECDC and EFSA. Using WGS techniques, 22 genetically close *Listeria monocytogenes* isolates in humans were associated with the consumption of cold-smoked fish products, originating from a single food processing company in Estonia. Five infections resulted in the death of the patient. Control measures were implemented in the affected countries and in the food processing plant to stop the spread of listeria and prevent further product contamination.

Figure 22. ECDC–EFSA multi-country rapid outbreak assessments and joint notification summaries 2011–2019
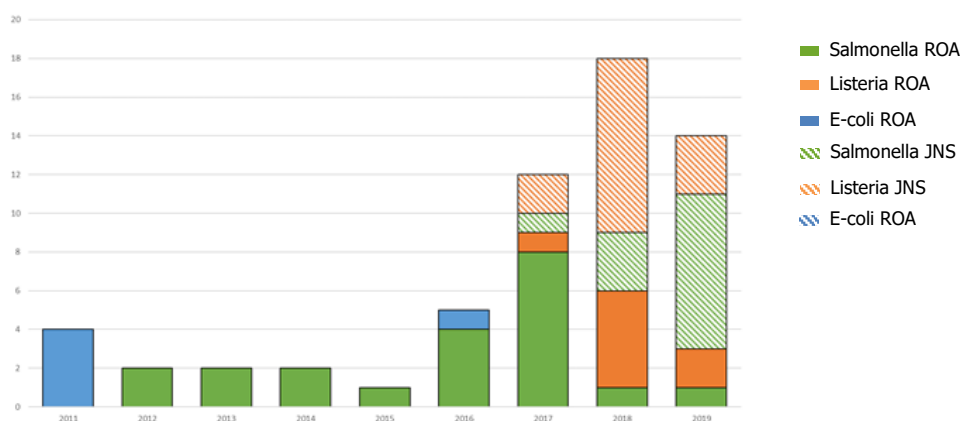
ROA: rapid outbreak assessments; JNS: joint notification summaries

In March 2019, ECDC initiated real-time routine surveillance for listeria through whole genome sequencing. By the end of 2019, ECDC had received sequences from 18 countries (seven countries submitted routinely and 11 countries because of outbreaks). In 2019, 38 multi-country clusters of *Listeria monocytogenes* genotypes were detected/monitored in the EU/EEA. Of these, 27 were detected by ECDC and 11 by Member States through an UI.

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[26] Rapid Alert System for Food and Feed

The European Commission mandated ECDC and EFSA to implement a joint 'One Health' approach for the collection and analysis of WGS data from human and food isolates. ECDC and EFSA databases will remain separate but exchange data in real time to perform searches in order to detect sequence identities among human and non-human isolates.

In 2019, ECDC organised three external quality assessment (EQA) schemes: Shiga-toxin producing *E. coli* (eighth EQA), susceptibility to AMR (third EQA), *Listeria monocytogenes* (sixth EQA)*.* The EQA schemes now also include a cluster analysis to support laboratories that want to develop their whole genome sequencing capabilities.

The ECDC food- and waterborne disease programme (FWD) was evaluated in 2018–2019. The evaluation report highlighted that the programme contributed positively to the capacity and capability building in the Member States and that the programme's outputs were considered useful by its stakeholders, including decision makers. The evaluation report recommended that synergies with EFSA should be strengthened and that the harmonisation and quality of surveillance data could be improved by using additional feedback forms.

The national Focal Points for food- and waterborne diseases met in February to exchange experiences and raise awareness for diseases that are not commonly reported (botulism, food-borne parasitic infections). Two ECDC FWD professional exchanges were organised: one between the UK and France on AMR in *Legionella*, and one between Ireland and the UK (Scotland) on WGS for VTEC and *E. coli*.

6.4 HIV, Sexually Transmitted Infections and Viral Hepatitis

Context

Sexually transmitted infections (STI), viral hepatitis and HIV share a number of commonalities such as the links to sexual behaviour, deprived or poor communities, and heavy stigma. In some circumstances, STI also affect marginalised and discriminated members of communities. These diseases have a tendency to persist as silent epidemics (several persisting in chronic infectious states), resulting in challenges for disease detection, burden estimates, and prevention and control. Dedicated programmes for each of these diseases need specific evidence and data that may be hard to obtain and even harder to validate. Reliable data are essential to inform EU policymakers on the real burden of STI and the effectiveness of measures to stop and/or reduce harm. Dedicated national programmes on HIV, STI and viral hepatitis also need significant advocacy to be resourced adequately; disease-specific data may help support this advocacy.

Results achieved in 2019

In 2019, ECDC worked on further improving the quality of surveillance data for hepatitis B and C. A new sentinel system (in hospitals and clinics) was piloted in order to supplement existing data and improve estimates on the real burden and morbidity of hepatitis in Europe.

ECDC has worked on expanding its online interactive prevalence databases of published studies: after hepatitis B[27] and C[28], HIV was added to the database. These databases also provide prevalence estimates by population group and countries based on studies published over the last ten years.

The Centre published a standardised survey protocol for national estimates of hepatitis C prevalence. A four-year project that will help Member States to conduct national prevalence surveys is now in phase one. When completed, it will help countries assess the true burden of the disease in their populations.

As part of the efforts to monitor progress to achieving the Sustainable Development Goals (SDG) targets, ECDC, together with WHO and EMCDDA, established the first monitoring system for national hepatitis programmes to assess the progress made in the EU/EEA to meet the SDG targets on hepatitis[29]. A first report, to be published at the beginning of 2020, shows many data gaps that need to be filled to enable a meaningful monitoring.

Working closely with WHO in Geneva and in line with the WHO Global action plan on HIV drug resistance 2017–2021[30], ECDC collected data on drug resistance at national level in ten countries. A report has been finalised and will be published in 2020.

ECDC worked in close collaboration with UNAIDS to produce a set of European principles for HIV pre-exposure prophylaxis (PrEP). This guidance focuses on PrEP service delivery and the monitoring of national programmes. It will

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[27] https://ecdc.europa.eu/en/all-topics-zhepatitis-btools/hepatitis-b-prevalence-database

[28] https://ecdc.europa.eu/en/all-topics-zhepatitis-ctools/hepatitis-c-prevalence-database

[29] SDG Target 3.3: By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, waterborne diseases and other communicable diseases. These targets include reducing mortality by 65% and reducing new infections by 80% by 2030, compared with 2015 rates

[30] https://www.who.int/hiv/pub/drugresistance/hivdr-action-plan-2017-2021/en/

be published in 2020. The objective is to support the Member States in implementing and monitoring pre-exposure prophylaxis for HIV and provide a standardised monitoring tool for PrEP in the EU/EEA.

Jointly with EMCDDA, ECDC started the evidence collection phase to update the guidance of prevention of infectious diseases for people who inject drugs (PWID). Data collection will be completed in 2020. An updated guidance document is scheduled for 2021.

A survey on antimicrobial resistant gonorrhoea using molecular typing was conducted in 2019. More than 3 000 samples were collected from laboratories from 26 European countries. All laboratories were members of the European Gonococcal Antimicrobial Surveillance Programme (Euro-GASP). The analysis and interpretation was carried out by the Sanger Institute in the UK and published on an online interactive tool directly accessible by each laboratory. The results will inform on the emergence of more resistant strains and resistance patterns and will be part of an ECDC report that will be released in 2020.

Assessing epidemiological trends of syphilis and proposing actions

ECDC was requested by its STI network coordination committee to assess the epidemiological trends for syphilis and propose options on how respond to the European syphilis situation. The Centre conducted a literature review and a systematic review and analysed several other data sources for syphilis and congenital syphilis. A report published in 2019 could demonstrate that notifications rates in Europe have been on an increase since 2010, picking up speed over the last few years, predominantly among men having sex with men. The report proposed a number of evidence-based actions for mitigating the syphilis epidemic.

Figure 23. Number of syphilis infections by route of transmission and year of report, EU/EEA countries
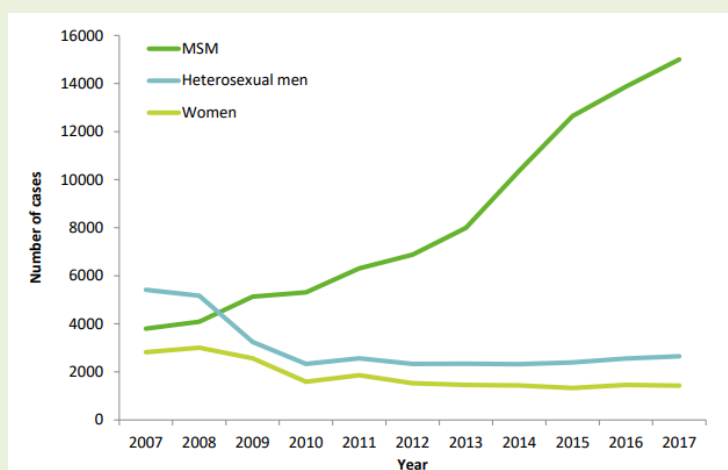
6.5 Influenza and other Respiratory Viruses

Context

Seasonal influenza creates a sizeable burden on healthcare services in Europe every winter, resulting in tens of thousands of deaths among the elderly. Zoonotic influenza and other emerging respiratory viruses also threaten public health in new and unexpected ways. Strong virological and epidemiological surveillance is needed to guide vaccination programmes for seasonal influenza. In 2009, the EU Council adopted a Recommendation[31] which established a vaccination coverage target of 75% among the elderly and those at risk for severe influenza. In 2018, a new Council Recommendation highlighted the needs for strengthened cooperation against vaccine-preventable diseases. In addition, strong preparedness for a possible pandemic is essential, especially in the areas of surveillance and laboratory diagnostics, in line with Decision No 1082/2013/EU on serious cross-border threats to health.

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[31] Council Recommendation 2009/1019/EU of 22 December 2009 on seasonal influenza vaccination

Examples of zoonotic influenza viruses of concern include avian influenza A(H5N1) (since the 1990s), avian influenza H5N8, H7N9, H7N7 and H10N8, and swine influenza A(H1N1). An example of an emerging non-influenza respiratory virus of concern is the Middle East respiratory syndrome coronavirus (MERS-CoV). Common needs for respiratory diseases include:

- strong surveillance systems for seasonal influenza/re-emerging respiratory viruses (disease severity, serological profiles);
- monitoring the overall impact of seasonal, zoonotic and pandemic influenza;
- a strong reference laboratory network in the EU;
- sustainable structures to promote vaccination and assess vaccine coverage, effectiveness and safety;
- and active participation in global surveillance and disease networks (laboratories, vaccination, research).

International collaboration is essential, in particular with the WHO Regional Office for Europe, WHO headquarters, and other key international partners such as the US CDC and the Chinese CDC.

Results achieved in 2019

In March, ECDC organised three pandemic preparedness workshops on influenza with all EU/EEA countries to review their preparedness guidance and exchange experiences on preparedness planning (see Section 3.1 on EU and country preparedness support).

ECDC and the WHO Regional Office for Europe continued their joint influenza surveillance and the publication of the weekly influenza bulletin for Europe (www.flunewseurope.org) during the influenza season. Other areas of joint work included an estimation of the burden of disease for influenza, a severity assessment of pandemic influenza, and contributions to the global strain selection process for influenza vaccines.

Figure 24. Weekly influenza update
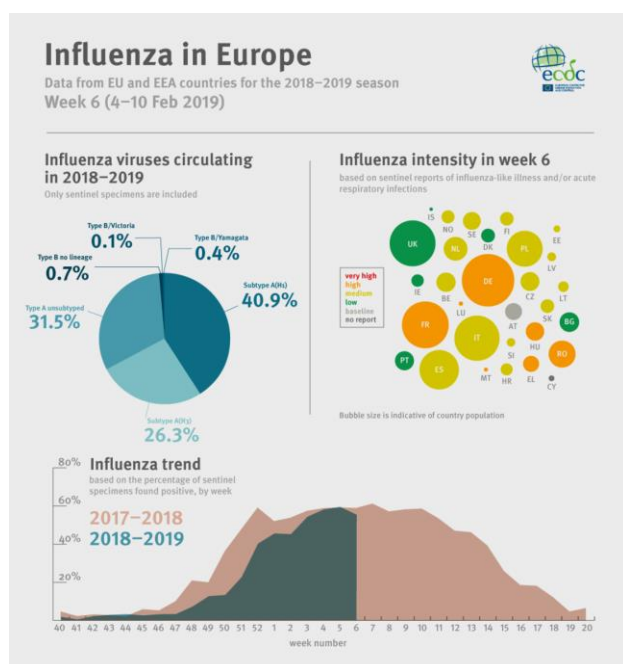
Increased efforts were made through social media to reinforce the awareness for seasonal influenza and the importance of vaccination. ECDC leveraged the @ECDC_Flu Twitter account by using videos, infographics and photo comics targeted at healthcare workers. The source files for the photo comics were made available to colleagues in the Member States so they could adapt them to their national contexts and languages.

Figure 25. ECDC photo comics published on ECDC_flu Twitter targeting healthworkers

The sick doctor who didn't want to go home

ECDC improved its surveillance systems in 2019 by strengthening the surveillance of severe disease. Genome-based surveillance, as part of its routine surveillance, now covers more countries and yields more and better data.

The surveillance systems for influenza and SARS were evaluated under the EPHESUS programme. The evaluation concluded that 'the major strength of European Influenza surveillance lies in its long tradition of collaboration and the well-functioning network with enthusiastic and knowledgeable members from all EU/EEA countries'. The ECDC Disease Programme for Influenza and Other Respiratory Viruses (IRV) was also evaluated. The final report concluded that capacity-building activities had a positive impact in the Member States. According to the report, surveillance and scientific advice was useful and effective and the coordination with WHO, other EU agencies and the WHO was coherent and clear. The evaluation recommended that surveillance data should be harmonised, systematic reviews should be considered as a source of evidence for setting objectives, and activities for other respiratory viruses should be developed.

The Centre produced an expert opinion on non-pharmaceutical countermeasures against pandemic influenza, which included new evidence on the efficiency of interventions other than vaccine and medicines (e.g. personal hygiene measures; personal protection equipment, such as masks, quarantine, border control, school closure). The members of the Member States' national immunisation technical advisory groups (NITAGs). Collaboration prioritised the systematic review of evidence for influenza vaccine, in children and elderly as first joint endeavour, and are currently comparing evidence of their policies in this domain (see Section 6.7 on Vaccine-Preventable Diseases).

In December, ECDC and the WHO Regional Office for Europe conducted the first regional joint situation assessment of seasonal influenza for all 53 countries in the European Region. The objective was to provide an early assessment to help the Member States prepare their health systems for the influenza season. ECDC also continued its funding of the external I-MOVE network[32], which provides estimates of seasonal influenza vaccine effectiveness in Europe and produces input for the composition of the next seasonal influenza vaccine.

ECDC monitors zoonotic influenza viruses and other emerging respiratory viruses in real time through its epidemic intelligence function. In 2019, ECDC and EFSA continued the publication of the quarterly situation assessment report on avian influenza.

ECDC continued coordinating the European Influenza Surveillance Network (EISN) and the European Reference Laboratory Network for Human Influenza (ERLI-Net). In 2019, ECDC prepared the biannual external quality assessments for the laboratory testing of influenza viruses; it will be completed in 2020.

In 2019, the Centre piloted e-learning courses for influenza bio-analytics. The courses demonstrate how to use and analyse sequencing data.

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[32] I-MOVE: Influenza Monitoring Vaccine Effectiveness, a network to monitor seasonal and pandemic influenza vaccine effectiveness in the EU/EEA.

6.6 Tuberculosis

Context

The EU/EEA Member States, EU pre-accession countries, and countries covered by the European Neighbourhood policy have different epidemiological profiles with regard to tuberculosis (TB): five eastern and south-eastern European countries are characterised by a medium burden of (drug-resistant) TB, while the western European countries are mostly low-burden countries, with the possibility of progressing towards TB elimination. In low-burden settings, people at risk for TB are often in vulnerable, hard-to-reach populations. TB in migrants also contributes to the epidemiology. In medium-burden countries, TB is more often present in the general population.

Diagnosing and treating patients is the main public health strategy. This requires sufficient human and financial resources and innovative strategies that allow for early case finding and optimal treatment. ECDC supports the EU/EEA Member States in the implementation of the WHO 'End TB' strategy and in reaching the UN's Sustainable Development Goals target for tuberculosis. ECDC implements its strategy by organising TB surveillance, together with the WHO Regional Office for Europe, by coordinating a laboratory network to strengthen TB laboratory diagnosis, by developing scientific advice tailored to the EU/EEA situation, and by directly supporting Member States.

ECDC and the WHO Regional Office for Europe produce a joint annual surveillance report on TB, covering all 53 countries of the WHO European Region, which measures the progress against the objectives of WHO Europe Tuberculosis Action Plan for the WHO European Region 2016–2020, which is the regional adaptation of the WHO 'End TB' strategy.

Results achieved in 2019

On World TB Day (24 March), ECDC and the WHO Regional Office for Europe presented the joint annual report on tuberculosis surveillance and monitoring in Europe (2017 data). The report showed that the decrease in TB notifications continues but remains at a level that is not sufficient to reach the targets laid down in the UN Sustainable Development Goals[33].

Following a successful three-year project that focused on the five high-priority countries for TB in Europe, efforts were made to extend similar support to all Member States. The project will consist of joint workshops, training activities, exchange visits between countries, and consultancy support to individual countries. The first activity is already scheduled: a workshop on the screening of migrants for tuberculosis will take place in Athens, Greece, in February 2020, with 11 countries participating (Austria, Belgium, Croatia, Cyprus, Germany, Greece, Italy, Malta, Portugal, Slovenia, and Spain).

A joint-country visit with WHO to the Netherlands took place in June to advise on the extent and prioritisation of latent tuberculosis infection screening in migrants. During the visit, the experts were also able to provide advice on how to retain knowledge and expertise on tuberculosis: how can health professionals maintain their skills when they only see a very low number of cases in their country?

A joint surveillance meeting with WHO took place in The Hague in May. Topics included the improvement of TB surveillance, prevention and control. This meeting was followed by the Wolfheze meeting, jointly organised by WHO, the Dutch KNCV Tuberculosis Foundation and ECDC. The meeting was called 'Translating the commitments of the United Nations high-level meeting on tuberculosis into actions.'

Estimating the prevalence of TB in the EU countries

A three-year project performing TB inventory studies was finalised. The objective of the project was to assess the completeness of TB notifications in six Member States (Croatia, Denmark, Finland, the Netherlands, Portugal and Slovenia). The project showed that completeness in these countries varies between 74% and 100%, which makes combining data from different sources (e.g. surveillance systems, hospitals, laboratories and insurance databases) a viable approach to get a more accurate view of the real burden of TB in these countries.

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[33] SDG Target 3.3: By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, waterborne diseases and other communicable diseases. The 2030 targets are a 90% reduction in TB deaths and 80% reduction in TB incidence compared with 2015 levels.

Figure 26. **Example of record linkage of three TB-related registers in two of six countries included in the study**
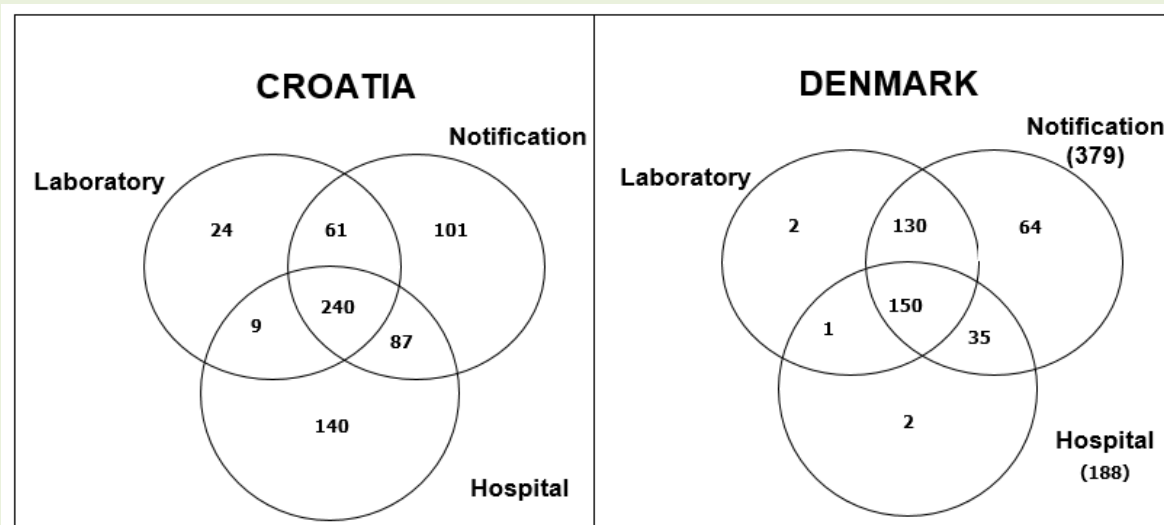
The circles show the number of patients in each register and their overlap (for clarity, the diagram is not projected to scale of the number of TB cases in each cell).

ECDC further implemented a pilot project aimed at strengthening the utilisation of WGS for sequencing *Mycobacterium tuberculosis* for public health purposes. Through the project, EU Member States provided 2 000 multi-drug resistant TB (MDR-TB) sequences or strains for analysis. ECDC will assess the results. The aim is to establish reporting standards, a standardised WGS methodology and a genotype nomenclature to ensure data comparability within the EU/EEA.

ECDC published eight peer-reviewed publications on TB in scientific journals on topics such as screening and management of latent TB infections, WGS for TB, and drug resistance.

ECDC continued to coordinate the TB surveillance and laboratory networks, and supported external quality assessments for TB diagnostics.

6.7 Vaccine-Preventable Diseases

Context

The implementation of effective national vaccination programmes across Europe is a public health success story. To safeguard the health of European citizens, vaccination programmes need to be continued and extended. ECDC supports the Commission and the Member States in addressing EU-wide challenges with regard to vaccine-preventable diseases and vaccination. The Centre also supports the implementation of the Council Conclusions on vaccination as an effective tool in public health (2014), the Council Conclusions on Childhood Immunisation (2011), and the Council Recommendation on strengthened cooperation against vaccine-preventable diseases (2018).

ECDC plays a proactive role as knowledge agent to address the challenges that national vaccination programmes face in Europe. The Centre provides timely scientific guidance and data for action that can support policies and decision-making at the national level. Some of the main challenges include:

- sizeable clustered or scattered populations across the EU that are not vaccinated or under-vaccinated;
- continued outbreaks of diseases such as measles and rubella that are targeted for elimination;
- evidence that waning immunity might undermine vaccination programmes (e.g. pertussis);
- shortages of routine vaccines that force countries to adapt existing vaccination schemes.

In addition, the availability of new vaccines for specific age groups (e.g. adolescents or the older people) opens the perspective of life-long vaccination calendars. Addressing these challenges requires a multi-disciplinary approach. Sustained multi-country studies on vaccine effectiveness, safety, and impact are also critical to inform vaccination policies at the EU and national levels.

Results achieved in 2019

The Centre started to implement the Council Recommendation on strengthened cooperation against vaccine-preventable diseases[34] (2018), in particular:

- ECDC established a collaboration network to support the national immunisation technical advisory groups (NITAG) in the Member States. NITAGs are independent committees assessing scientific evidence on vaccines and immunisation and provide recommendations to the national vaccination boards. The objective is to strengthen and improve the efficiency and effectiveness of scientific evidence assessment across Europe. The network, established in 2018, held its first meeting in 2019 to agree on its terms of reference; a series of webinars was also held. A working group has already looked at the scientific evidence behind vaccines and vaccination strategies, initially focusing on influenza vaccines in conjunction with children and older people.
- The Centre started collecting evidence to support guidelines for a core EU vaccination schedule, taking into account WHO recommendations for routine immunisation. One aim is to improve the compatibility of national schedules and promote equity in health protection for all citizens. A proposal will be finalised in 2020.
- A beta version of ECDC's new European vaccination information portal, established with the support of the European Medicines Agency and the European Commission (DG SANTE), was delivered to the Member States for consultation and testing in December, in view of its official public launch in April 2020. The website provides objective, transparent and up-to-date information on vaccines and vaccination, their benefits, vaccination safety, and the pharmacovigilance process.
- ECDC also started work on improving how vaccination coverage data are collected and managed at the EU level.

In addition, ECDC helped the Directorate-General for Health and Food Safety organise the global vaccination summit, held on 12 September 2019 in Brussels under the auspices of the President of the European Commission, Jean-Claude Juncker, and WHO Director General Tedros Adhanom Ghebreyesus. ECDC was part of the programme committee of the summit, and ECDC Director Dr Andrea Ammon participated in the discussion on vaccine hesitancy.

ECDC continued its collaboration with the Joint Action on Vaccination, co-funded by CHAFEA (the Consumers, Health, Agriculture and Food Executive Agency) and 17 EU Member States. The primary goal of the joint action is to increase vaccination coverage in the EU by establishing mechanisms for EU-wide collaboration.

With more than 34 067 users (26 556 in 2018) and over 184 602 page views (158 708 in 2018), the EU Vaccine Scheduler continued to be one of the most popular features on ECDC's web portal in 2019.

Providing Member States with 'data for action' to reach measles elimination

In 2019, ECDC continued its disease surveillance for measles and published monthly measles updates. In May, the Centre published a risk assessment, entitled 'Who is at risk of measles in the EU/EEA?' In spite of many efforts by the Member States, the continuous increase of measles in Europe remains a challenge. ECDC is committed to provide 'data for action', raise awareness, and support efforts by the Member States to reach the WHO measles elimination goal (including the WHO European Vaccine Action Plan 2015–2020) and contribute to the Sustainable Development Goals targets[35].

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[34] Council recommendation of 7 December 2018 on strengthened cooperation against vaccine-preventable diseases (2018/C 466/01)

[35] SDG Target 3.3: By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, waterborne diseases and other communicable diseases.

Figure 27. Number of measles cases in the EU/EEA, 2009–2019
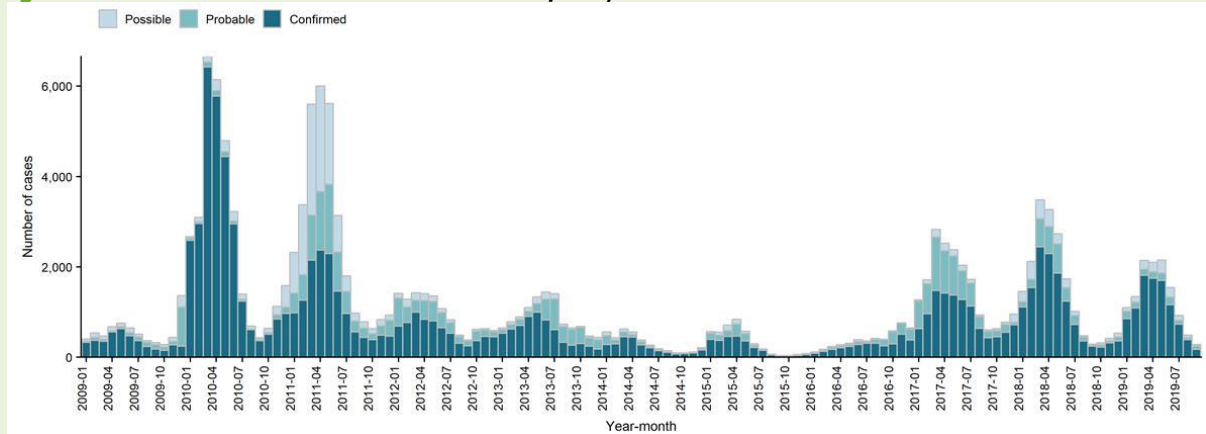
52 873 cases and 94 deaths in the period between 1 Jan 2016 and 30 Sep 2019. All EU/EEA countries were affected.

ECDC finalised two four-year projects, PERTINENT (sentinel surveillance of pertussis) and SPIDNET (surveillance of invasive pneumococcal disease). Surveillance is carried out through hospital-based networks in which laboratory experts, epidemiologists and clinicians work together to rapidly detect and diagnose pertussis and invasive pneumococcal cases. The projects provided relevant evidence and information on vaccine effectiveness and antimicrobial resistance patterns. The final reports concluded, among other things, that vaccines could lose their effectiveness and need to be adapted to changing pathogens to remain effective. They also provided information for decision-making at the national level.

Finally, ECDC supported the European Immunisation Week 2019, in close coordination with WHO Europe.

Common indicators for all Disease Programmes

No.	Objective	Indicator	Target 2019	Verification	Result 2019
26	Strengthened Europe's defences against infectious diseases by dedicated programmes aiming at the best possible knowledge and implementation for prevention and control.	Satisfaction by the Member States regarding the work of the Disease Programmes	>75% satisfaction by two-third of the respondents	As measured by the VPD networks annual survey	● In 2019, two Disease Programmes were successfully evaluated (Influenza and other Respiratory Viruses, Food- and Waterborne). An evaluation of the TB Disease Programme was launched in 2019; results are expected in 2020. Although the evaluations were conducted together with individual stakeholders, the results were aggregated, and no percentages were given. For IRV, the report concluded that capacity-building activities had a positive impact: surveillance and scientific advice were useful and effective, and the coordination with ECDC, other EU agencies and the WHO is coherent and clear. The evaluation recommended that the harmonisation of surveillance data should be improved and that systematic reviews should be used as a source of evidence when setting objectives and developing activities for other respiratory viruses. For FWD, the evaluation highlighted that the programme contributed positively to the capacities and capabilities in the Member States. Outputs are considered useful by the stakeholders, including decision makers. The evaluation recommended further strengthening the synergies with EFSA and improving the harmonisation and quality of surveillance data with feedback forms.
27		Added value of the disease programmes (as per periodical evaluation)	>75% satisfaction for the generic index, for each Disease Programme	Generic index based on the evaluation of the programme performed every 5 years (ongoing 2018–2020)	See indicator 26 above

7. Management

7.1 General management

Context

The Director of ECDC is responsible for the general management of the agency, and leads its strategic direction, leadership and good governance.

The ECDC Founding Regulation establishes two governing bodies, the Management Board and the Advisory Forum. The Director is responsible for providing substantive, logistical and programmatic support for meetings of the Management Board, the Advisory Forum, the Audit Committee, and the Coordinating Competent Bodies.

It is important that ECDC's products and communications are scientifically correct and impartial. As ECDC relies on many internal and external experts who together shape the Centre's scientific position, ECDC introduced an independence policy in 2016 that ensures transparency and identifies conflicts of interest. A compliance officer oversees the implementation of this policy. An electronic system for the submission of declarations of interest minimises the amount of errors in the submitted documents. This facilitates the implementation of the independence policy and increases the compliance rate.

Results achieved in 2019

The final report of the third independent external evaluation of ECDC was approved by the Management Board in September 2019. Based on the March 2020 evaluation, the Management Board agreed on a series of recommendations to be implemented by the Centre. The evaluation concluded that 'ECDC has successfully supported the EU and national policy priority areas and demonstrated the capacity to successfully adapt to policy developments, confirming the relevance of its activities'. ECDC's coherence and coordination with other relevant bodies was also evaluated positively.

In 2018, the Director launched an internal initiative called 'Next Generation ECDC' to pave the way for the future of ECDC. As part of this initiative:

- the long-term strategy for 2021–2027 was discussed by the Management Board;
- a new organisational structure was adopted in June 2019. The new organisation, to be operational as of 1 January 2020, disposes of the previous matrix scheme. Terms of reference for the different units and sections as well as the general governance structure have been established;
- a number of internal key processes were updated in 2019 to comply with the new organisational structure.

The Management Board approved the Single Programming Document (SPD) 2020 and the final draft of the SPD 2021, based on the draft strategy 2021–2027. The final draft of the SPD 2021 was sent to the EU institutions for consultation in January 2020, in accordance with the Framework Financial Regulation.

The new Internal Control Framework (which replaced the internal control standards) was approved by the Management Board (see Part III).

Between September 2018 and March 2020, ECDC chaired the EU agencies network (EUAN) and its sub-networks. The Agencies network provides a forum for coordination, information exchange and coordination of common positions on issues of mutual interest for EU Agencies. The network strengthens the voice of the EU Agencies and promotes good governance. Under the ECDC chairmanship, the network contributed to the ongoing discussions on the EU long-term budget (multi-annual financial framework) and the development of the new post-2020 strategy for the network. The ECDC Director also represented the Agencies in the discharge in respect of the implementation of the budget by budgetary committee of the Council.

ECDC continued to apply and strengthen its independence policy for non-staff and for staff members. In 2019, the Centre lacked only a very small percentage of declarations: 11% of the appointed MB members/alternates did not file, 19% of the appointed AF members/alternates failed to submit, and 0.003% of the external experts at meetings did not submit a declaration of interest.

Figure 28. Percentage of declarations of interest received, by group
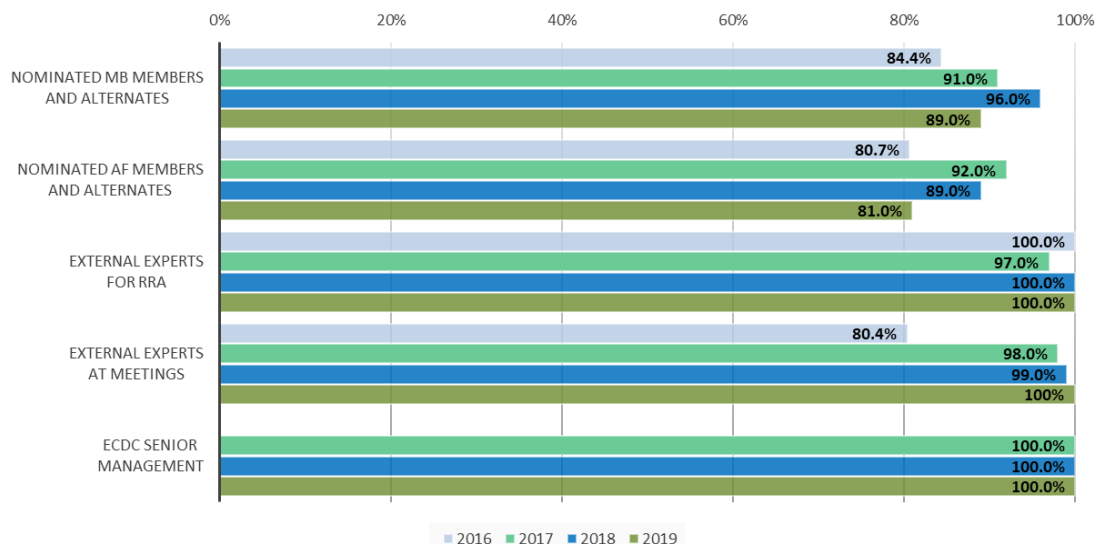
Indicators for general management

No.	Objective	Indicator	Target 2019	Verification	Result 2018
28	Implementation of the independence policy of the agency	Proportion of approved annual and specific declarations of interest for delegates to governing bodies, ad hoc scientific panels, invited experts and ECDC staff members before participation to the specified activities as defined in the policy.	100%	Report from the compliance officer	● Annual declarations of interest submitted by: • appointed Management Board members and alternates: 89 % • appointed Advisory Forum members and alternates: 81 % • Director and Heads of Unit: 100% • External experts • External experts for rapid risk assessment: 100% • External experts at meetings: 99.997%

7.2 Collaboration and cooperation with EU institutions and Member States

Context

ECDC operates as the hub of a network organisation. Most of the resources ECDC draws on for disease prevention and control – including public health laboratories and disease experts – are located at the Member States' national public health institutes and associated academic bodies. The Centre's key partners are the Coordinating Competent Bodies (CCB) and ECDC's official national counterpart organisations, formally appointed by the Member States. ECDC operates a Customer Relationship Management (CRM) system to ensure the flow of information and support collaboration between the Member States and ECDC.

Country visits help the Director to understand better the public health systems and policies of individual Member States. ECDC also nurtures its relationship with ECDC's host country, Sweden.

As a European Agency, the Centre is part of the EU family of institutions and organisations and collaborates closely with them to ensure its actions are coherent with EU policy objectives and properly coordinated with other EU bodies, primarily the European Commission's Directorate-General for Health and Food Safety (DG SANTE). The Centre also collaborates with other European Commission DGs, e.g. the Directorate-General for Research and Innovation, the Directorate-General for European Neighbourhood and Enlargement Negotiations, and the Directorate-General for Humanitarian Aid and Civil Protection. ECDC is active in the EU Agencies Network, which shares best practices, and regularly works with other EU agencies, most notably the European Food Safety Authority (EFSA), the European Medicines Agency (EMA), and the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA).

ECDC has a strong partnership with the European Parliament, its budgetary and discharge authority. ECDC's Director has an annual exchange of views with the European Parliament's Committee for the Environment, Public Health and Food Safety (ENVI) and submits annual written reports to the Committee for Budgetary Control

(CONT). In addition, the European Parliament regularly invites the Director for exchanges of views or for providing information on specific diseases and/or outbreaks.

Results achieved in 2019

Maintaining and improving coordination with the Member States and the European Commission remained a top priority. In 2019, ECDC continued supporting the European Commission with the implementation of Decision 1082/2013/EU on serious cross-border threats to health, which provides a legal framework for the cooperation between the European Commission and Member States via the Health Security Committee (HSC).

ECDC provided the HSC and the European Commission with regular updates and technical support on questions related to communicable disease threats. Regular meetings and video conferences with DG SANTE took place at both the strategic and the operational levels.

Following the 2019 European Parliament elections, the directors of the five EU agencies under the ENVI Committee remit presented their agencies' respective roles, responsibilities and main priorities to the new Committee. The ECDC Director also gave an overview presentation of the five agencies, acting in her capacity as the current chair of the EU Agencies Network (EUAN). The Centre continued to invest in partnerships with individual Member States and closely collaborated with its host country Sweden.

As in previous years, ECDC participated in the annual European Health Forum Gastein inAustria (EHFG), which provides a platform for discussions within the field of public health and healthcare for policymakers and public health professionals. In 2019, the Centre organised a workshop for around 200 participants on the opportunities and challenges of digital healthcare and the use of big data for public health surveillance.

The Annual Meeting of the National Coordinators of the Coordinating Competent Bodies (CCBs) convened in September 2019 at ECDC. The participants were informed about the ECDC Next Generation initiative and discussed how the new ECDC structure will impact the CCBs. The national coordinators also received information on the ongoing development of the ECDC Customer Relationship Management (CRM)/Stakeholder Management System (SRM) and the Event & Threat Management System (ETMS). Approaches of how ECDC could engage more with the Member States were discussed during a workshop. Participants provided feedback to ECDC's proposed operational plan on country support activities.

ECDC continued to collaborate with other European agencies, in particular EFSA, EMA, EMCDDA, and the European Commission's executive agency CHAFEA. Between September 2018 and February 2020, ECDC has been chairing the network of EU agencies (see Section 7.1 General Management).

Indicators for collaboration and cooperation

No.	Objective	Indicator	Target 2019	Verification	Result 2019
29	Achievement of a high level of effective communication and coordination between ECDC and its Competent Bodies	Satisfaction of the Coordinating Competent Bodies on the communication with ECDC	70% satisfied with communication and coordination	Measure through dedicated surveys	● No dedicated survey in 2018
30	Successful meetings achieved through the provision of enhanced and more cost-effective organisational and substantive support.	Level of satisfaction among representatives of Member States.	75% of questionnaires completed provided ratings of very good to excellent.	Measure to be integrated into the questionnaire	● Data not yet available from meetings questionnaires

7.3 Resource management

Context

ECDC's Resource Management Services provide the structure, means, services and expertise to manage ECDC's human, physical and financial resources in the most efficient and effective way. By definition, some of the main goals remain unchanged, e.g. ensuring the reliability of the accounts and the legality and regularity of the underlying transactions.

ECDC constantly aims to improve its administrative processes to support its core activities. The overall objective is to provide administrative support and reduce its potential burden to make operational work more efficient and strengthen the Centre's ability to deliver tangible benefits for public health in Europe. This includes continuing the clarification of roles and responsibilities, process review and reengineering, increased knowledge sharing and staff

training. One of the goals is to introduce a paperless administration through process automation as this would lead to better compliance and save resources.

Results achieved in 2019

In 2019, ECDC's relocation to a new building was completed in every respect: all components of the building infrastructure were in full operation and the staff settled into their new offices. The new offices and facilities like meeting rooms and the emergency operations centre facilitate better collaboration and had an overall positive effect on operational work.

As of 31 December 2019, ECDC employed 268 staff members. Almost all EU Member States are represented among the Centre's staff (with Luxembourg being the exception). The Centre reached a low vacancy rate of 2.5% (including job offers accepted). For temporary agents, the vacancy rate was 3.3%. The Centre continued to adopt the implementing rules to the EU Staff Regulations with regard to staff entitlements and working conditions. ECDC implemented a change management programme for the ongoing and upcoming changes in the organisation in 2019 and 2020 (such as the re-organisation, part of the Next Generation ECDC initiative). The Centre continued to support health and wellbeing with the kick-off of a stress-prevention programme that included a series of workshops and individual support to staff. This programme will continue in the coming years to build resilience in the workplace.

Budget execution in terms of commitment appropriations at year-end reached 99.23%, equivalent to EUR 58.7 million. The budget execution in terms of payment appropriations at year-end reached 81.41%, equivalent to EUR 48.1 million.

The use of electronic workflows for procurement, based on the European Commission's DIGIT application e-PRIOR, helped to launch 11 procurement procedures in 2019. During the course of the year, ECDC moved to a new system for the ex-ante publications, i.e. when negotiated procurement procedures under the threshold are published. Now the EU survey tool is used, creating a simpler and more robust process. In total, ECDC started and finalised 57 negotiated procedures during 2019.

ECDC organised 175 operational meetings for external participants and supported 704 business trips for staff in 2019.

A new module for Allegro, ECDC's human resource system, was launched. It supports all aspects of business trips. The objective is to ensure a seamless and faster preparation and follow up of missions for both the administration and the operational staff.

ECDC continued to improve and strengthen its internal processes. Improvements included four new internal electronic workflows to ensure more efficient processes, increase compliance and reduce errors. Electronic workflows established in 2019 covered procurement and legal processes (request for services, request for specific contract, authorisation and registration of exceptions, and data protection notification) and the further development of workflows for personnel change notification. Further work was invested in SARMS, ECDC's scientific advice repository management system. Four additional workflows have been initiated and are expected at the beginning of 2020. By 2021, all internal procurement operations will be managed through electronic workflows. Additional workflows foreseen later in 2020 will cover some of ECDC's operational processes, for example surveillance. In 2019, 560 electronic workflows were initiated, allowing a reduction of the completion time between −65% and −95% for processes where comparisons with the previous manual workflow are available.

Internal communication and knowledge services continued to improve. ECDC conducted an evaluation of its document management system (DMS). The DMS was also adapted to the new organisational structure. The ECDC library expanded its selection and improved its services.

Finally, ECDC initiated the further strengthening of its environmental management system with the aim to reduce its impact on the environment and optimise the use of resources. A scoping study will assess the current baseline at ECDC and explore the possible use of the EU Eco-Management and Audit Scheme (EMAS), a management instrument developed by the European Commission to evaluate, report, and improve environmental performance.

Figure 29. Budget execution
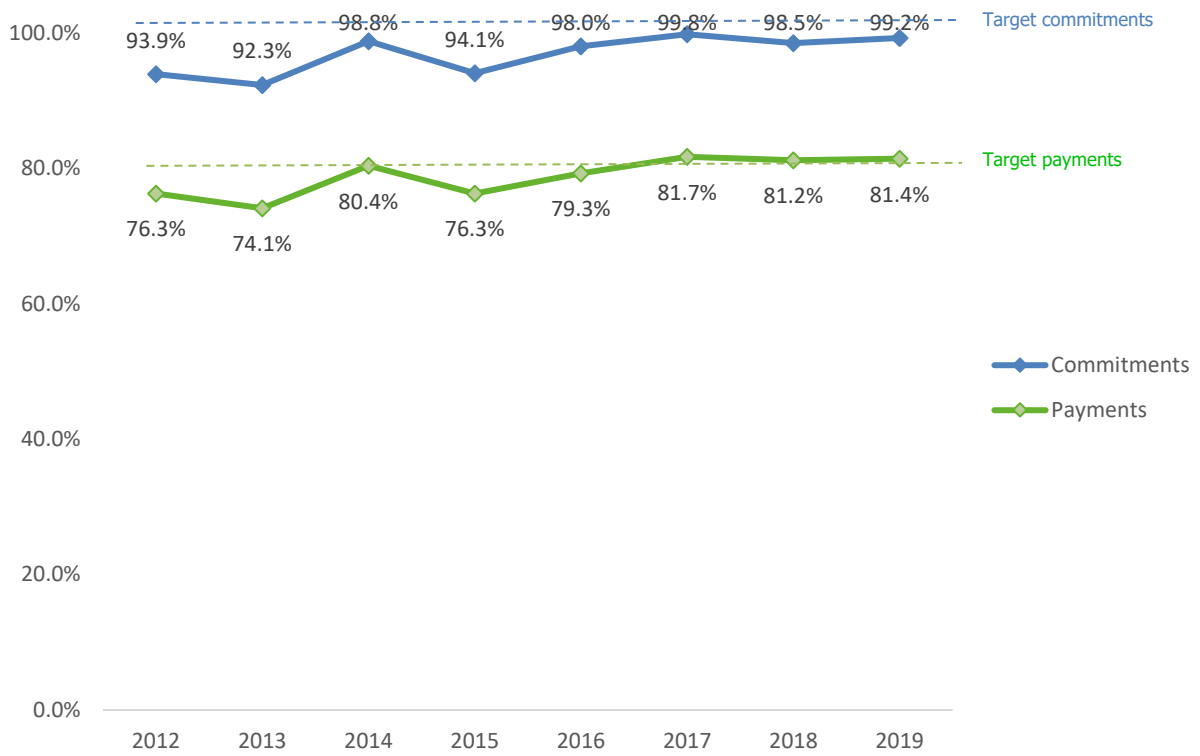
Figure 30. Work programme implementation
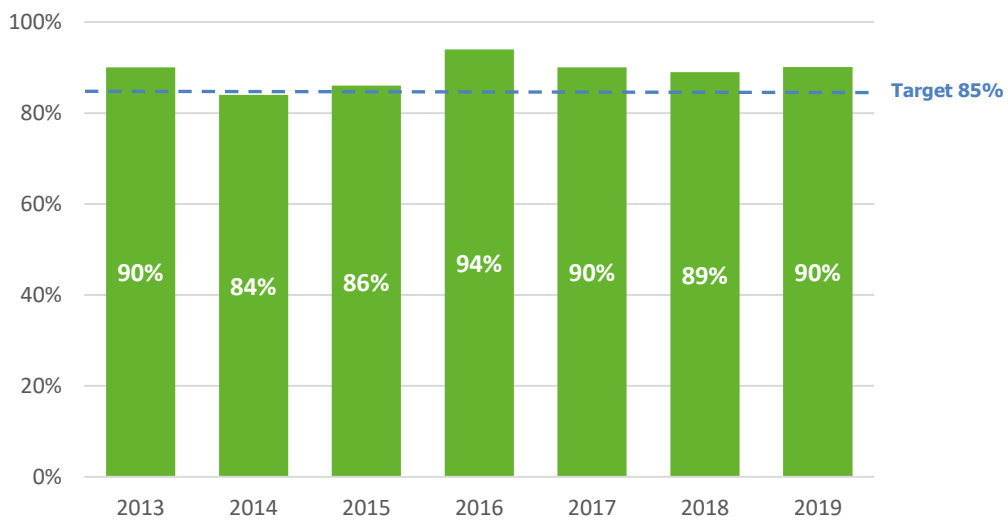
Indicators for resource management

No.	Objective	Indicator	Target 2019	Verification	Result 2019
31	Ensured best use of financial resources, timely correlated to the implementation of activities of the work programme.	Percentage of budget committed (C1) and percentage of payments executed (C1) in the same year as the commitment	100% committed 80% paid	Verified by Internal Audit Services	● 99.23% of budget committed ● 81.41% of payments executed
		Percentage of invoices paid within the time limits of the ECDC Financial Regulation	95%		● 94%
		Rate of cancellation of payment appropriations	5%		● 1.93%
		Rate of outturn	5%	Dividing the balance of the outturn 2019 by the total revenue	● 2.44%
32	Implementation of the *annual* work programmes, aligned with the SMAP in order to ensure the full implementation of the SMAP by 2020	Proportion of activities implementation of the Annual Work programme	85%	Verified by Internal Audit Services	● 90.1% of activities implemented (86.5 % fully completed, 3.6% partly) 3.1% delayed, 3.1% postponed to 2020 4% cancelled
33	Ensured swift and timely fulfilment of the Agency's establishment plan correlated to the implementation of activities of the work programme	Average vacancy rate	5%	% of authorised posts of the annual establishment plan which are vacant at the end of the year, including job offers sent before 31st December	● 3.3 % vacancy rate (174 posts filled including offers sent and accepted, number of posts in the establishment plan: 180)
		Percentage of staff satisfaction/engagement	65%	ECDC biannual staff survey	● Staff engagement index 51% (staff survey 2019)
34	Timely improvements in the adequacy and effectiveness of internal control systems	Rate (%) of external and accepted internal audit recommendations implemented within agreed deadlines (excluding 'desirable')	90%	Internal Control	● 80% (8 out of 10) recommendations implemented within the agreed deadlines.

7.4 Information and communication technologies

Context

ECDC's Information and Communication Technologies (ICT) plays an important role in enabling ECDC's core missions such as disease surveillance, epidemic intelligence, and response. Some key information systems operated by ECDC are The European Surveillance System (TESSy), the Epidemic Intelligence Information System (EPIS), the ECDC web portal, and the EU's Early Warning and Response System (EWRS) for public health threats which the Centre operates on behalf of the European Commission. Developing, operating and maintaining these systems at all times requires highly secure, interoperable and robust infrastructures. In addition, ECDC depends on ICT systems to support its administrative processes.

Maintaining and developing ECDC's ICT systems requires significant investments of both staff time and financial resources. According to its IT strategy management framework adopted in early 2017, the Centre allocates ICT resources based on strategic principles. ICT are strategically governed and enabling ECDC's mandate with fit-for-purpose, interoperable, sustainable, innovative and best-value-for-money services.

Results achieved in 2019

In November 2019, ECDC successfully completed and delivered a new release of the EWRS system called EWRS2. The interface and functionalities of the system were improved. Five new modules were implemented and deployed in production. The European Commission and the EU Member States expressed their appreciation of the new system.

During 2019 ECDC continued the implementation of the new surveillance system reengineering (SSR) project, in accordance with the roadmap adopted in 2017 which foresees the implementation of new core surveillance IT solutions (see also Section 1.1 Surveillance). ECDC developed the 'MyECDC Surveillance Portal' (i.e. event and threat management solution and whole genome sequencing solution) as well as a surveillance data warehouse and its related outputs such as dashboards.

In pursuit of a paperless administration, ECDC continued to invest in a workflow digitalisation platform, an automation tool which will benefit the organisation by reducing costs, increasing quality, ensuring process compliance and improving control: key users will be able to monitor, measure and identify bottlenecks in workflow execution. Electronic workflows established in 2019 covered procurement and legal processes (request for services, request for specific contract, authorisation and registration of exceptions, and data protection notification) and the further development of workflows for personnel change notification and SARMS, the scientific advice repository and management system (see Section 7.3 Resource management).

ECDC progressed significantly with the implementation of its IT2021 transformational programme. The Programme aims to transform the operating model of the IT service delivery from in-house services to outsourcing. The process to externalise gradually some of the IT services (software development, consultancy services for IT project management and business analysis, infrastructure services and quality assurance) was mostly completed in 2019. A number of quality improvements were implemented as part of the Programme, for example an update of the IT Governance and the development of document standards for IT products.

ICT actively supported the ECDC Next Generation initiative with amendments of the existing systems, provision of dedicated digital storage space, move of electronic documents and archiving.

During 2019, ECDC chaired the Information and Communication Technologies Advisory Committee (ICTAC), a professional network constituted by the Heads of ICT at EU agencies and their representatives. Significant progress was achieved, such as digital shared services, digital workspace, emerging technologies and better governance and security.

ECDC's ICT services fulfilled the performance standards set in the service level agreement (SLA) with its internal users and the European Commission. Ninety-seven per cent of the 7 206 requests and incidents were fulfilled in time; 18 of the 28 business applications under the SLA had an uptime of 99.93% (lowest uptime: 99.42%); 26 of the 28 infrastructure back-end systems had an uptime of 99.93% (lowest uptime: 99.90%). ECDC handled 235 change requests, and tested and deployed 70 application releases or new applications.

ECDC maintains approximately 28 information systems that support business users. The maintenance of existing systems includes multiple activities, namely fixing defects, upgrading technical platforms, and making small improvements to existing functionalities.

Table 3. **List of mission-relevant IT solutions (not exhaustive)**

System/application	Description
Early Warning and Response System (EWRS)	Supports critical communication about serious cross-border health threats, in accordance with decision 1082/13/EC, through an email-based platform between the Member States, the European Commission, other EU agencies and WHO.
Epidemic Intelligence System (EPIS)	Supports risk assessment of public health events that may represent a serious cross-border health threat as per decision 1082 through an ECDC moderated communication platform (e.g. European Legionnaires' Disease Surveillance Network, the EPIS platform for food- and waterborne diseases and others). In 2019, it will be replaced by an Event and Threat Management System (as part of the SSR roadmap)
The European Surveillance System (TESSy)	Supports collection, validation, cleaning, analysis and dissemination of data for public health surveillance, provided by EU Member States and other associated countries.
Threat Tracking Tool (TTT)	Supports the collaboration and management of public health threats, including the preparation of regular daily round table reports and weekly communicable disease threats reports.
Emergency Operations Centre (EOC)	A set of IT solutions providing access to information on public health emergencies and supports their management.
ECDC web portal	ECDC's web site and as such the main tool for external communication; the site offers outputs for public health professionals and information for the public. The current portal, supported by a content management system, was launched in June 2017.

System/application	Description
Surveillance Atlas of Infectious Diseases	Launched in 2014, this tool provides interactive visual access to surveillance data. It is accessible through ECDC's web portal. The Atlas covers most communicable diseases that ECDC monitors and has been significantly expanded over the last few years.
Eurosurveillance website	Supports the publication of Eurosurveillance, a scientific journal on communicable diseases, which ranks among the top-10 journals in its field. An updated publication platform with interactive features was launched in September 2017.
ECDC Extranets	Support collaboration of public health networks, working groups and institutional bodies (MB and AF). Currently ECDC manages >20 extranets. In 2016, a major migration to an updated platform took place, making new functionalities available and bringing improvements to the user interface.
ECDC Virtual Academy (EVA)	Launched in 2016, the Virtual Academy allows ECDC to offer e-learning to support its public health training activities.
Customer Relationship Management (CRM) system	A business system that manages contacts, relationships (internal and external) and interactions with ECDC stakeholders. Supports the centralised management of Member State and other contacts.
Intranet	Tool for internal communication and support of internal processes.
Document / Records Management System (DMS/RM)	Supports the management of electronic documents; provides a single point of access to the Centre's documents (document management) and records (records management).
E-mail system	Supports electronic internal and external communication.
Remote access to ECDC systems	Allows the continuity of work by ECDC staff when away from the Centre's premises, e.g. during missions and on stand-by duty.
Scientific Advice Repository and Management System (SARMS)	Supports the monitoring of ECDC outputs with scientific content from production to clearance and dissemination.
ECED	ECDC expert directory is a roster of external experts that allows ECDC widening the number of experts and areas of knowledge and skills beyond its own expert staff and expertise.
ECDC library	The Library provides information delivery services and offers tools to ease access to information. The Library's collection is in digital and print formats) and can be accessed through the Library Intranet or in the library rooms at ECDC.
ECDC Knowledge Management (KM) Service Services	Knowledge Management Service is a collective term, describing terminology services, the talent map, and enterprise search.
Terminology Services (TS)	A system for shared professional vocabularies in order to improve the terminological consistency of ECDC documents; also used for consistent metadata tagging.
Enterprise Search (ES)	A single, unified search interface to retrieve information on ECDC from various systems. Available via the ECDC Intranet.
Talent Map (TaMa)	An internal database that collects professional competences of ECDC staff members; participation is voluntary.
Management Information System (MIS)	Internal system used to plan and monitor the implementation of the annual work programme.
IT Programme Management tool	Common planning and monitoring system for IT project management and other IT work programme items (e.g. IT solutions maintenance). Includes for example scheduling, risk and issue logging.
IRIS	A tool developed to prioritise scientific advice activities and support the Centre's work plan development, based on questions of Issue, Resources, Solidarity, Impact (IRIS). It uses the EUSurvey online tool (DG DIGIT).

Indicators for information and communications technologies

No.	Objective	Indicator	Target 2019	Verification	Result 2019
35	Ensured agencies operations by maintaining constant availability of IT services elements to ensure a smooth running of the Centre's activities (dedicated applications, databases, web portal)	Performance of ICT services in regards to: - availability of hosted applications under service level agreement (SLA) - proportion of ICT front-office incidents resolved as per SLA. Compliance with predefined Product Acceptance criteria	99% each 90% of requests and 95% of incidents >80% of all products are compliant		● 26/28 infrastructure services and backend systems had an uptime of 99.93%; lowest uptime = 99.90% ● 18/28 applications had an uptime of 99.93%; lowest uptime = 99.42% ● 97.03% of 3 699 requests) and 96.17% of 3 507 incidents were handled (SLA target) ●100% compliance with the Product Acceptance criteria

Part II (a). Management

1 Governing bodies

1a Management Board

In 2019, the Management Board approved the updated ECDC Internal Control Framework. The Board also adopted its Code of Conduct. The Board further approved the ECDC Independence Policy for Staff and the ECDC Financial Regulation through a written procedure. The Board also endorsed the ECDC internal rules concerning restrictions of certain rights of data subjects in relation to processing of personal data.

In 2019, the Management Board External Evaluation Steering Committee (MEES) continued its work to supervise the third external evaluation of ECDC which was launched in August 2018. The final evaluation report was delivered in September 2019 and approved by the Management Board in October 2019 through written procedure. Based on the final report, the Management Board External Evaluation Recommendations Drafting Group presented its draft conclusions and recommendations of the external evaluation during the 47th Management Board meeting in November 2019. The final conclusions and recommendations are expected to be approved by the Management Board by March 2020.

During the course of 2019, the Management Board approved the Annual Report of the Director 2018 and endorsed the Final Annual Accounts 2018 in accordance with legal obligations. The Board also approved the ECDC Single Programming Document 2020 and the Budget and Establishment Table 2020. The ECDC Single Programming Document 2021–2023 was discussed by the Board members.

1b Advisory Forum (report from the Chief Scientist)

Article 18 of the ECDC Founding Regulation states that the Advisory Forum's role is:

- (i) to support the director in ensuring the scientific excellence and independence of activities and opinions of the Centre, and
- (ii) to constitute a mechanism for an exchange of information on health threats and the pooling of knowledge [and to] ensure close cooperation between the Centre and the competent bodies in the Member States.

In 2019, the Advisory Forum reviewed two large and complex scientific advice documents: a public health guidance on HPV vaccination, and an expert opinion on non-pharmaceutical countermeasures against pandemic influenza.

The revised IRIS prioritisation framework was used in seeking the Advisory Forum's advice on the development of the Centre's new strategy (2021–2027). The Advisory Forum also applied the revised IRIS prioritisation process to two new cross-organisational initiatives, one on e-health and one on a project entitled 'Foresight'. The Advisory Forum provided advice and opinions on a range of evaluations of surveillance and disease programme activities, including the surveillance of antimicrobial consumption, influenza, sexually transmitted diseases, and food- and waterborne diseases. Advice was also provided on the activities and deliverables of the Disease Programmes on Influenza and other Respiratory Viruses.

The Advisory Forum has been effective in challenging the Centre on important strategic issues, such by providing feedback on the expert opinion on non-pharmaceutical countermeasures against pandemic influenza proposals, which has undergone substantial revisions after the Forum's comments were received. Similarly, with regard to Foresight activities, the Advisory Forum strongly advised that ECDC should focus on antimicrobial resistance and vaccine-preventable diseases rather than on climate change and other environmental determinants of infectious disease as initially proposed.

An important function of the Advisory Forum is to serve as a forum for informational exchange on infectious disease threats and other topics. Advisory Forum members reiterated the issue of the implications of the implementation of the new General Data Protection Regulation.

Overall, a high level of consensus was reached on most topics discussed. However, members expressed diverging views on the options for future ECDC activity with regard to variant Creutzfeldt–Jakob Disease, respiratory syncytial virus (should ECDC increase its activities in view of the likelihood of availability of a vaccine in the near future?) and Lyme neuroborreliosis (what is the most appropriate approach to monitor Lyme?).

2 Major events

14 January	Visit to ECDC by the DG SANTE B4 Unit – Medical Products: Quality, Safety and Innovation delegation, Stockholm
15 January	Hearing with the EUAN representatives – Budget Committee, Brussels
18 January	Meeting of ECDC and DG SANTE senior management 2019, Brussels
29 January	Presentation on designing effective HAI prevention and control programmes in Europe, European Parliament, Brussels
12 –13 February	EUAN Heads of Agencies Meeting, Brussels
19 – 20 February	56th meeting of the ECDC Advisory Forum, ECDC, Stockholm
29 February – 01 March	Participation in the 'Next steps towards making the EU a best-practice region in combating AMR', Bucharest
7 March	Visit to EMCDDA, Lisbon
8 March	Inter Agency Meeting, Brussels
13 – 14 March	2nd International Conference on Re-Emerging Infectious Diseases, Africa CDC, Addis Ababa
15 March	Citizens' dialogue with EU Commissioner for Health and Food Safety, Vytenis Andriukaitis, House of Europe, Stockholm
15 March	Visit to ECDC by EU Commissioner for Health and Food Safety, Vytenis Andriukaitis
20 – 21 March	45th Meeting of the ECDC Management Board, ECDC, Stockholm
8 – 9 April	IANPHI Europe Meeting and Workshop, Chisinau
8 May	Europaforum, Hässleholm
14 – 15 May	57th Meeting of the ECDC Advisory Forum, ECDC, Stockholm
17 May	Official ceremony 'EU Saves Lives in Europe and around the world', Stockholm
4 June	2nd Advisory Committee Meeting for the European Health Forum in Gastein 2019, Brussels
18 – 19 June	46th Meeting of the Management Board Meeting, ECDC, Stockholm
2 July	Joint ECDC–EFSA session at the World Conference of Science Journalists, Lausanne
3 – 4 July	Health Security Committee, Luxembourg
11 – 12 July	Country visit to Georgia
17 – 18 July	Country visit to Hungary
23 July	Budgetary hearing, Brussels (as current chair of the EU agencies network)
4 – 5 September	Country visit to Israel
12 September	Global Vaccination Summit, Brussels
16 – 19 September	WHO Regional Committee, Denmark
24 – 25 September	58th Meeting of the Advisory Forum, ECDC, Stockholm
2 – 4 October	European Health Forum Gastein
23 – 24 October	EUAN Director's workshop, Stockholm
24 October	EUAN Heads of Agencies meeting, Stockholm
28 October	Conference of the Evaluation of the EU legislation on blood, tissues and cells, Brussels
5 November	Second Inter Agency meeting, Brussels

6 – 7 November	Hearing with the Directors of EU Agencies under ENVI Committee in the European Parliament, Brussels
13 – 14 November	47th Meeting of the ECDC Management Board, Stockholm
21 November	WHO Meeting on AMR, Geneva
27 – 29 November	ESCAIDE, Stockholm
4 – 6 December	IANPHI Annual Meeting, Addis Ababa, Ethiopia
5 December	Meeting with the Director of Africa CDC Dr John Nkengasong, Addis Ababa, Ethiopia
11 December	Health Security Committee meeting, Luxembourg

3 Budgetary and financial management

Fund source C1 (current year appropriations)

Budget execution in terms of commitment appropriations at year-end reached 99.23%, equivalent to EUR 58.7 million.

Budget execution in terms of payment appropriations at year-end reached 81.4%, equivalent to EUR 48.1 million.

Information on transfers and amending budgets

The Director exercised her right to amend the budget within the limitations of Article 26.1 of ECDC's Financial Regulation and approved net budget transfers for EUR 0.8 million between several budget lines of the same and between titles in order to optimise the use of the budget.

Level of appropriations carried forward to the following financial year

ECDC carried forward the amount of EUR 10.5 million to 2020 (EUR 10 million to 2019).

Implementation of appropriations carried forward from the previous financial year

Budget execution in terms of payment appropriations for the fund source C8 at year-end reached 91.2%, equivalent to EUR 9.1 million.

Procurement procedures

During 2019 a total of 51 framework contracts were concluded. 10 framework partnership agreements and 47 specific grant agreements were concluded. ECDC also concluded 146 specific contracts.

The contracts were based on procurement procedures started in 2018 as well as in 2019. In 2019, ECDC started and finalised 9 open calls for tender, 2 open calls for proposals as well as 49 specific grant agreement procedures. In addition, the Centre started and finalised 2 competitive procedures, 57 negotiated procedures and 24 re-openings of competition.

Interest charged by suppliers through late payments (> 30 days): EUR 950.51.

Summary information on budgetary operations for the year

The core budget of the Centre for 2019 (EUR 59.2 million) increased by 2% compared to 2018 (EUR 58 million).

For additional information see Annex 6, annual accounts (Document MB 50/xx): 'Report on budget and financial management of the European Centre for Disease Prevention and Control'.

4 Human resources management

Human Resources management aims at supporting the Centre's management and staff by providing continuous HR services in areas such as recruitment, working conditions, pay and entitlements, learning and development, staff well-being and change management. The objective of the Centre's learning and development activities is to offer professional growth for the individual and maintain and further strengthen the Centre's organisational performance.

The majority of the Centre's jobs (77.2%) are related to the implementation of activities linked to the Centre's operational work. 15.0% of the jobs belong to 'administrative support and coordination', while 7.8% of the jobs are defined as neutral (i.e. primarily in the area of finance/accounting and internal control) (see Annex 4).

5 Assessment by management

ECDC has a system of management supervision and internal control in place to assure ECDC is managed effectively and efficiently. The main elements of the system are described below.

5.1 Management supervision

ECDC has five Units and a Director's Office. The Heads of Unit are responsible for the activities in their Units. There is also a level of middle management, where a number of Heads of Section are responsible for the activities. In 2018, ECDC revised part of its management structure and replaced the former Senior Management Team (SMT) with so-called Director's Consultation Groups (DCG) to offer advice to the Director.

Planning and performance activities are a crucial part of the ECDC management and control system. ECDC had a multiannual strategic work programme for 2014–2020 in place, which was reviewed at mid-term by the Management Board in November 2016. To avoid overlap with the multiannual part of the Single Programming Document (SPD), it was decided to monitor ECDC's progress exclusively through the SPD as from 2017, until a long-term strategy (2021–2027) was in place. A set of indicators from the SPD is measured annually in the annual report. The Management Board revised the indicators in November 2017. A new set of indicators will be included in 2021, as part of the 2021–2027 strategy. ECDC internally monitors its annual work programme projects and activities on a quarterly basis. Their implementation is reported at each Management Board meeting and in the Annual Report of the Director. During the year, projects are discussed with the Units and Programmes, and corrective actions are taken as necessary. The financing decision (list of procurements), annexed to the SPD, is reviewed at each meeting of the Management Board and updated (and approved by the Board) whenever needed.

The Management Information System provides support to the organisation in the day-to-day implementation of the work programme. A comprehensive set of reports provides overviews and summaries for the monitoring of activities. Dashboards of operational key data on budget execution and implementation of the work programme are communicated regularly to the DCG and managers.

The Director of ECDC, as authorising officer (AO), delegated financial responsibility to the five Heads of Unit (authorising officers by delegation (AOD)). The Heads of Unit in turn delegate responsibility – but only in their absence – to the Deputy Heads of Unit (Authorising Officers by Sub-Delegation (AOSD)). Should the Deputy Head of Unit be unavailable, the authority returns to the Director. Thereby, a very limited number of persons act as authorising officers in ECDC. The authorising officers can enter into budgetary and legal commitments and authorise payments. However, all commitments above EUR 250 000 require the signature of the Director.

For the expenditures of 2019, the AODs signed a Declaration of Assurance to the AO, similar to the one signed by the AO herself, in the area for which they were delegated responsibility. No reservations were raised by the AODs.

5.2 Internal control system in place

The Management Board adopted a revised Internal Control Framework (ICF) at its 43rd meeting in November 2018, which forms the basis for the ECDC internal control system from 2019 onwards. The ICF replaced the former Internal Control Standards. The ICF was further strengthened through detailed indicators during 2019, which were approved by the Management Board in November 2019. The implementation of the ICF is assessed annually and reported to the Audit Committee of the Management Board (see also: Part III, Section 2).

The internal control system also includes a number of internal procedures. The internal procedures are approved by the Director of the Centre and include, for example, financial workflows and checklists for commitments and payments, guidance on conflicts of interest, a code of good administrative behaviour, and procurement procedures. New internal procedures are introduced when necessary, and existing procedures are revised at regular intervals.

There are also a number of additional Director's decisions (in the form of Administrative Decisions) regarding policies/rules in place.

ECDC has a number of centralised support and control functions in place. The most important ones are the centralised procurement function, the Committee on procurement, contracts and grants (CPCG), and the centralised financial ex-ante verification function.

The centralised procurement function is responsible for coordinating all procurement procedures, as well as ECDC procurement plans. The purpose of the CPCG is to ensure that ECDC's procurements, grants, contracts and agreements are carried out in accordance with ECDC's financial rules.

Centralised financial ex-ante verifications are performed for all commitments and payments and divided up into ex-ante verification of commitments by the finance officer and the budget officer and ex-ante verification of payments by the financial verification officer for payments, all in the Finance and Accounting Section.

ECDC has a procedure in place to ensure that overrides of controls or deviations from established processes and procedures are documented in exception reports, justified, duly approved before action is taken, and logged centrally.

In 2019, 46 such exceptions were recorded. The reasons for the exceptions were analysed, and an action plan to reduce their number was developed.

A grant verification policy is also in place. The policy attempts to find an effective and efficient mix of control activities, such as ex-ante verification of supporting documents, audit certificates, external audits, and own verification missions. A specific grant verification plan (GVP) is developed every year, which determines the verifications to be performed for that specific year. In 2019, the two verifications selected in the GVP 2018 were contracted out to an external audit firm.

Since 2015, ECDC has an anti-fraud strategy in place, following the guidelines issued by OLAF. In June 2018, the Management Board approved the strategy for 2018–2020.

6 Budget implementation tasks entrusted to other services and entities

None.

7 Assessment of audit results during the reporting year

7.1 Internal audit service

ECDC is audited by its internal auditor, the Internal Audit Service of the European Commission (IAS). The audit work is defined in the risk-based IAS strategic internal audit plan. The current plan covers the period 2018–2020. All observations and recommendations are taken into account and appropriate action plans are developed. The implementation of these actions is regularly followed up and presented to the Audit Committee of the Management Board.

In 2019, the IAS finalised its audit on 'Preparedness and Response in the ECDC' in accordance with the strategic internal audit plan; and the final report was received in June 2019. The audit made five recommendations, two classified as very important and three as important. An action plan was developed and agreed with the IAS. One very important and one important recommendation has been implemented, with the other three expected to be implemented by Q2 2020. ECDC furthermore provided its annual update on the strategic internal audit plan to IAS.

7.2 European Court of Auditors

The European Court of Auditors (ECA) audits ECDC every year. The audit provides a Statement of Assurance as to the reliability of the accounts of the Centre and the legality and regularity of the underlying transactions.

ECDC received an unqualified opinion[36] for 2018, indicating that the accounts are reliable and the transactions underlying the accounts are legal and regular.

The ECA made three comments in its final report for 2018, two of which have been implemented.

The ECA audit of the 2019 annual accounts is ongoing. The first part of the audit was performed in November 2019. The audit will be finalised during spring 2020, and a draft report will be available by June 2020.

8 Follow-up of recommendations and action plans for audits

ECDC successfully implemented a number of observations during 2019 and at the end of the year one very important and two important IAS observations remained open (from the 2019 internal audit on 'Preparedness and Response in the ECDC'). The other two observations from this report have been implemented and reported to the IAS for review.

The two outstanding issues with the ECA is one regarding the high carry-overs of committed appropriations in operating expenditure (Title III), an observation that was directed at a number of Agencies in 2017, and one regarding two payments for meeting events, where the auditors found weaknesses in the structure and documentation of checks and reconciliations on order forms, deliverables and invoices and recommended that the Centre should strengthen these aspects of its control system, in particular with respect to large and complex meeting events. Regarding the first one, ECDC continues to carefully analyse the advantages/disadvantages, in liaison with the ECA, of introducing differentiated budget appropriations, including the risks caused by added complexity and resources. A conclusion was originally planned to be reached by June 2018, however, ECDC postponed the implementation timeline to possibly benefit from the results of the external evaluation of the fellowship programme which was finalised in 2019. A final conclusion is now expected for Q2 2020. Regarding the ECA's comment on meeting events, the Centre will review the structure and documentation of checks and reconciliations in place regarding meetings, in particular large and more complex meetings, and adapt the internal procedures accordingly at the latest by Q4 2020.

9 Follow-up of observations from the discharge authority

Article 110 (2) of the ECDC Financial Regulation states: 'At the request of the European Parliament or the Council, the director shall report on the measures taken in the light of these observations and comments'.

This section provides an overview of the measures taken by the European Centre for Disease Prevention and Control (ECDC) in the light of observations and comments made by the Discharge Authority on 26 March 2019 in respect of the implementation of the budget of 2017.

Table 2. European Parliament's observations and measures taken by ECDC

Reference	Observation of the discharge authority	Response and measures taken by ECDC	Status/reference
P8_TA-PROV (2019)0263 paragraph 3	Notes with concern that the cancellations of carry-overs from 2016 to 2017 amounted to EUR 953 754, representing 8,73 % of the total amount carried over, showing however a decrease of 3,11 % compared to 2016;	ECDC continues its efforts to further reduce the cancellations of its carry-overs. Even though the yearly reductions are small, ECDC continued the trend to further reduce its cancellations in 2017–2018 to 7.75 %. In addition, ECDC continues to address the underlying carry-overs themselves and successfully reduced their absolute level by 4.0% between 2016-2017 and 2017–2018 (a reduction of Euro 438 000 from Euro 10.9 million to Euro 10.5 million).	Ongoing
P8_TA-PROV (2019)0263 paragraph 10	Takes note that an external evaluation for the period 2013–2017 will be carried out in 2018–2019; calls on the Centre to report to the discharge authority on its outcome;	The final report of the third independent external evaluation of ECDC is expected in July 2019 and will be forwarded to the European Parliament once approved by the ECDC Management Board.	Ongoing

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[36] Unqualified audit opinion = the auditor's report contains a clear written expression of opinion on the financial statements or the legality and regularity of underlying transactions as a whole. An unqualified opinion is expressed when the auditor concludes that, on the whole, the underlying transactions are legal and regular and the supervisory and control systems are adequate to manage the risk.

Reference	Observation of the discharge authority	Response and measures taken by ECDC	Status/reference
P8_TA-PROV (2019)0263 paragraph 14	Notes that the declaration of interest and the CV of the Director are published on the Centre's website; notes with concern that some declarations of interest and CVs of the management board and of the advisory forum are missing; calls on the Centre to report to the discharge authority on the measures taken in this regard;	While in 2017 not all nominated Management Board (MB) and Advisory Forum (AF) members submitted their declarations of interests (DoI), all members/alternates that physically attended meetings of the MB and AF and/or exercised their right to vote have submitted a DoI. 2018 showed a positive trend, with all MB members having submitted their DoI and all but two AF members. Again, all actual participants in MB/AF meetings have submitted a DoI. Since 2017 further improvements to ECDC's independence policy have been made: Revised versions of the independence policy for staff and non-staff (including external experts) have been adopted by ECDC's Management Board in March 2018 The revised policy for non-staff is fully implemented. The revision clarifies and strengthens the processes for the collection, assessment and publication of Declarations of Interest. The process is also supported by an electronic tool, which facilitates the timely submission and follow-up. Further measures (e.g. exclusion from access to extranet) are considered in cases of omission to submit DoIs. (Reference to the new policy: https://ecdc.europa.eu/en/publications-data/independence-policy)	Implemented
P8_TA-PROV (2019)0263 paragraph 16	Notes with concern that 26 overrides of controls and deviations from established processes and procedures occurred in 2017, representing however 14 fewer than in 2016; acknowledges that an action plan to reduce the number of such overrides was adopted; calls on the Centre to report to the discharge authority on the results of the corrective actions taken in this regard;	Two of the three actions in the Action Plan have been implemented. For the remaining one, regarding open access fees for publications of articles in scientific journals in non-EU countries, a permanent solution is still being investigated.	Implemented/ Ongoing
P8_TA-PROV (2019)0263 paragraph 17	Observes that, in addition to the internal procedure on meetings with the pharmaceutical industry, an internal procedure on the conclusion of memoranda of understandings and collaboration agreements with third parties is under development; calls on the Centre to report to the discharge authority on the progress made in this regard;	Draft procedures and templates have been prepared. The internal procedure on the conclusion of memoranda of understandings and collaboration agreements with third parties has been adopted. An internal procedure on meetings with commercial organisations, including the pharmaceutical industry, is currently in the formal internal adoption process.	Ongoing

Part II (b). Evaluations

External evaluation

ECDC's Founding Regulation requires the Centre to organise external evaluations every five years to assess how it performs with regard to its mission. The third Independent External Evaluation of ECDC, conducted by a Price Waterhouse Cooper (PwC), was concluded in 2018–2019. The report looked at the period 2013–2017. In response to the evaluation, the Management Board adopted a set of recommendations in its March 2020 meeting. Based on the recommendations of the Board, ECDC will develop an action plan for the implementation of actions. The implementation of the action plan will be monitored by the Management Board.

The evaluation provides insights into the progress made since the previous evaluation, and points out areas for further improvements. The evaluation concluded that 'ECDC has successfully supported the EU and national policy priority areas and demonstrated the capacity to successfully adapt to policy developments, confirming the relevance of its activities'. ECDC's coherence and coordination with other relevant bodies was also evaluated positively.

The third external evaluation and the recommendation of the management Board will be made available on the ECDC website.

Internal evaluations

Since 2015, ECDC conducts internal evaluation of its work. Every year, several of ECDC's projects or products are assessed. The scope of the procedure falls under the implementation of the Internal Control Framework 12: 'The Agency deploys control activities through corporate policies that establish what is expected and in procedures that put policies into action'. And: 'The impact assessment and evaluation of financial expenditure and other non-spending activities are performed in accordance with the guiding principles of the Commission's better regulation guidelines, to assess the performance of EU interventions and analyse options and related impacts on new initiatives.'

All evaluations are linked to activities listed in the Single Programming Document. Evaluations are generally conducted ex-post. Evaluations are carried out for interventions such as work programme activities, programmes, projects, processes, the work of disease networks and more generic functions performed by the Centre (e.g. preparedness, epidemic intelligence, procurement). The Director approves an annual evaluation plan and a multi-annual evaluation programme.

The following areas do not fall within the scope of this procedure:

- The five-year external evaluations; internal evaluations complement the five-year external evaluations by providing additional evaluations of specific products or services.
- Audits.
- Specific internal self-assessments/evaluations performed by individual Units with the purpose to continuously improve their products or services (e.g. peer reviews, evaluations of Unit-specific processes).
- Public Health Events evaluations, individual appraisals, as they follow dedicated methodologies.

In addition, ECDC Financial Regulation[37] (Art. 29) requires regular ex-ante, interim or ex-post evaluations for certain interventions.

The following internal evaluations were conducted in 2019:

- **Evaluation of the ECDC Fellowship programme**. The evaluation concluded that overall, the ECDC Fellowship Programme's aims and objectives are relevant for its stakeholders at national and EU level. It contributes to a network of public health professionals who speak a common language and can effectively respond to cross-border threats in a harmonised way, and increases the capacity of Member States. (see Section 4.1 Public health training)

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[37] Financial Regulation of ECDC adopted by the Management Board on 13 August 2019
https://www.ecdc.europa.eu/sites/default/files/documents/ECDC-financial-regulation-2019.pdf

- **Evaluation of the EU/EEA surveillance systems coordinated by ECDC** (EPHESUS - 2017–2020). In 2019, the surveillance systems for tuberculosis, invasive bacterial diseases, STIs, diphtheria were evaluated. By end of 2020 all surveillance systems will be evaluated. (see more details under 1.1 Surveillance, p.10)
- **Evaluation of two programmes**: Influenza and other respiratory diseases and for the Food- and Waterborne disease programmes. Both reports concluded that the programme contributed positively to the capacity and capabilities building of Member States and outputs are considered useful by its stakeholders, including decision makers. (see more details under 6. Disease Programmes, p.38)
- **Evaluation of ECDC's document management system (DMS)**, for which an internal action plan was approved.

Part III. Assessment of the effectiveness of the internal control systems

1 Risk management

1.1 Inherent nature and characteristics of ECDC's risk and control environment

ECDC deals only with direct expenditures. There are no Member States or implementing bodies involved in the execution of the budget. Most of the expenditures, apart from salaries and salary-related expenditures are, therefore, implemented through procurement procedures performed directly by ECDC.

The sections below describe the inherent nature and characteristics of ECDC's risk and control environment by area.

1.1.1 Scientific support

One of the main objectives of ECDC is to deliver scientific advice to the Member States, the European Commission, and the European Parliament. The main risks are that the delivered advice is seen by stakeholders as irrelevant, or that the scientific independence is being questioned. ECDC has therefore put in place an internal procedure as well as an electronic management and repository system for the delivery of scientific advice. Scientific independence is guaranteed by a strict system of selection of external experts that includes a review of declared interests to avoid any potential conflicts of interest. The relevance of the scientific advice is assessed by frequent consultations with the Advisory Forum and other stakeholders, as well as through a formal procedure to assess impact.

1.1.2 Surveillance and epidemic intelligence

The main objective of EU surveillance is to integrate data collection systems and to establish standard case reporting for EU Member States. The surveillance data are analysed to monitor trends and provide decision makers with timely and reliable data as a basis for public health decisions. These activities face risks such as receiving data too late for any action potentially required, receiving inaccurate data or making mistakes in data analysis or interpretation. These risks are addressed: by carefully planning the data calls long in advance, with clear deadlines, and by closely following up the data submissions and ensuring that reminders are sent; by accepting data only from authorised persons (appointed by a Competent Body); by at least two iterations of data validation prior to data analysis and another one prior to publication; and by a rigorous internal clearance involving multiple senior reviewers. In addition, the ongoing redesign of the EU/EEA surveillance system will automate processes and integrate different types of data, reducing the risk of errors and offering a modern, user-friendly platform for data reporting, analysis, visualisation and dissemination.

1.1.3 Preparedness

The main objective for ECDC's preparedness efforts is to support the capacities and capabilities of the European Commission and the Member States in having a high level of preparedness for dealing with cross-border health threats due to communicable diseases. Risks associated with these functions mainly relate to a mismatch between actual needs and support efforts. In order to mitigate these risks, ECDC works closely with the National Focal Points for Preparedness and Response to understand the gaps and needs at national and EU level.

In 2019, ECDC has again assisted the European Commission by working on a reporting template for country reports on national preparedness under Article 4 of Decision 1082/2013.

1.1.4 Response support

The main objectives for response are to detect emerging threats, assess them, and support response measures in the Member States. ECDC also supports the European Commission by operating the EWRS. Risks associated with these functions include the following: the risk of not detecting a threat; the risk of not assessing a threat correctly;

the risk of not providing Member States with the support required; the risk of interruptions in the EWRS service to the European Commission and the Member States. To address these issues, ECDC developed a thorough methodology to monitor/assess threats. ECDC also implemented a clearance process that ensures that threat assessments are cleared by the Head of Unit and the ECDC Chief Scientist. Standard operating procedures were developed and corresponding tools implemented. Finally, a complete reengineering of the system and a high level of redundancy ensure that EWRS operations have no downtimes.

1.1.5 Training and capacity building

The main objective of ECDC training activities is to train a sufficient number of specialists who can effectively detect and respond to cross-border communicable disease threats. The main identified risks relate to not striking the right balance between support to national and EU-level capacities. There is also the danger that Member States see ECDC training activities as a replacement of their own efforts, which could lead to the downsizing of national training programmes. Another risk is that training efforts do not meet actual needs. To address these risks, ECDC is in constant dialogue with the National Focal Points for Training, the EPIET/EUPHEM Training Site Forum, the Advisory Forum, and the European Commission. An external evaluation of the programme was finalised in 2019, and the results will be discussed in 2020. Based on a collaboration agreement, ECDC together with the Association of Schools of Public Health in the European Region (ASPHER), is mapping the curriculum on communicable disease (CD) control in the European schools of public health, and forming an ECDC-ASPHER network of schools with a strong CD curriculum to ensure alignment between our respective training activities and to meet the present and future needs of public health professionals.

1.1.6 Communication

An important ECDC objective is to communicate scientific content to public health professionals, policymakers, the general public, and various stakeholders across Europe; these efforts include risk communication. In this area, there are three main risks, namely that ECDC communicates incorrect or misleading information; that ECDC's risk communication activities are not properly coordinated with those of the European Commission or in the Member States; and that ECDC communication activities are seen not to be in line with the mandate of ECDC. In order to address these risks, ECDC has clear internal procedures that regulate the clearance of publication items. These procedures ensure that the relayed information is factual and correct. ECDC also works with the Communicators' Network under the European Commission's Health Security Committee and has a system in place that provides advance information to the European Commission and the Member States on major communication outputs.

1.1.7 Collaboration and cooperation with EU institutions, Member States, international organisations and non-EU countries

An important task for ECDC is to ensure good cooperation and coordination with the EU institutions, EU Member States, third countries, international partners, and other relevant stakeholders. ECDC is part of the wider EU family and works closely with the European Commission, in particular with the Directorate-General for Health and Food Safety (DG SANTE) and many EU agencies. In 2017, the revision of ECDC's International Relations Policy 2014–2020 was approved by the ECDC Management Board. It sets the priorities and objectives for ECDC actions. It is fully aligned with existing EU policies. ECDC's relationships with the EU Member States are the core of the Centre's work; consequently, relationships to Member States are very close in all areas, from disease surveillance to training.

ECDC works closely with the WHO Regional Office for Europe, coordinating activities and avoiding duplication of work. This has been achieved by regular contacts between technical counterparts and technical coordination meetings, as well as providing further operational guidance, e.g. on organising joint activities. ECDC's relations with other stakeholders (e.g. learned societies) have grown through mutual interests, and usually take the form of ECDC support to annual meetings.

There is a risk that ECDC may struggle to implement its policy and achieve set targets towards EU Enlargement and ENP countries due to dependency on the external funding from the European Commission. This fact prevents ECDC from developing long-term inter-institutional technical cooperation with these countries and may lead to a lower level of commitment from partner countries. In order to mitigate this risk and ensure constant engagement with non-EU countries, ECDC is using different methods, such as financial resources from its core budget, additional ad hoc financial instruments like TAIEX, or additional projects like the Mediterranean Programme for Intervention Epidemiology Training (MediPIET).

As regards the Commission, ECDC and DG SANTE have appointed liaison officers and established regular meetings at all levels (operational, strategic) to mitigate possible risks and to ensure effective coordination.

ECDC carries out most of its technical cooperation activities for Western Balkans, Turkey, ENP partner countries with funding from the European Commission. After ECDC-IPA5 project had come to an end, ECDC started a three-year follow-up Action that was funded by DG NEAR under IPA, with an additional envelope to focus on One-Health

approaches (antimicrobial resistance) in Western Balkan countries and Turkey. The grant-based funding for the work with the European Neighbourhood Policy (ENP) partner countries ran out at the end of 2016, and since then ECDC has used other Commission funding mechanisms, in particular TAIEX, to continue the collaboration. In addition, with the support from the Commission and under ENI, ECDC is developing a technical proposal on a four-year health security initiative for ENP countries to be funded by DG NEAR. However, such dependency on external funding via project-based approaches endangers the sustainability of technical support and threatens the collaboration with EU candidate/potential candidate countries and ENP partner countries. ECDC has been supporting MediPIET since 2013, a training programme and network covering 18 countries in the EU neighbourhood (MediPIET is funded by the European Commission). The second phase of the Programme was successfully concluded in 2017, and an additional two-year extension was signed.

Since 2012, official relations with the EU Member States and EEA/EFTA countries are managed through one national Coordinating Competent Body and a National Coordinator. EU candidate/potential candidate countries and European Neighbourhood Policy (ENP) partner countries appoint a National Correspondent. The coordination of activities is carried out by a dedicated European and International Relations section in the Director's Office at ECDC. The Customer Relation Management System (CRM) for contact maintenance and appointments was made available to the Member States in November 2013.

1.1.8 Resource management

The main purpose of resource management is to provide ECDC with the relevant structure, means, services and expertise to ensure the efficient operation of the Centre. The main objective is to manage ECDC's human and financial resources in the most efficient, effective and compliant way to support the successful achievement of the Centre's mission. The main risks lie in failing to deliver adequate and/or timely services in human and financial resources, business travel and meetings organisation, facilities and logistics, business continuity planning and security, procurement, sound legal advice and internal control coordination. ECDC has therefore implemented a number of procedures and defined reporting requirements to make sure that the support provided is appropriate and targeted, e.g. real-time dashboards, detailed yearly procurement plans, monthly reporting for budget execution, annual meeting plan, and a Committee for Procurement, Contracts and Grants to ensure the legality, regularity and compliance with the ECDC Financial Regulation.

1.1.9 Information and communication technologies

Information and Communication Technologies (ICT) support the ECDC's core functions such as surveillance, epidemic intelligence and response as well as the administrative ones such as HR, finances, planning, etc. Maintaining and further developing ECDC's ICT systems requires significant investments of both staff time and financial resources. Operating and developing these systems at all times requires highly secure, interoperable and robust infrastructures. The main risks that could affect the delivery of such systems are related to cyber security, the eventual underperformance of external service providers and the unavailability of required resources (human and financial). ECDC is mitigating these risks with continuous quality improvement initiatives, strengthening the IT PMO and IT security functions, strengthening the contract management capabilities, improving the service-level agreements for the IT service delivery and real-time monitoring of the infrastructure.

1.1.10 Risk assessment for the Single Programming Document

As part of the preparation of the Single Programming Document (SPD), a risk self-assessment exercise is performed every year. 'High' unmitigated risks are included in a risk register and an action plan is prepared. The identified main risks are also summarised and included in the SPD itself (see ECDC SPD 2019).

2 Compliance and effectiveness of internal control standards and of the internal control framework

Internal control standards

In 2006, ECDC introduced internal control standards (ICS). These standards specified the necessary requirements, actions and expectations needed to build an effective system of internal control which would allow the gauging of progress towards ECDC's objectives. These control standards were developed along the lines of the European Commission's Internal Control Standards, which in turn are based on the standards released by the International Committee of Sponsoring Organizations of the Treadway Commission (COSO).

The ICS covered the areas of mission and values, human resources, planning and risk management processes, operations and control activities, information and financial reporting, and evaluation and audit.

Each ICS was made up of a number of requirements to be met. For each such requirement, ECDC identified what was in place already, actions to be taken, the person responsible, and the deadline for entry into force.

A review of the implementation of the ICS was performed for the last time as part of the work for the Annual Report 2018. The results were validated by the ECDC's management and discussed in the ECDC Audit Committee. At the beginning of 2019, ECDC had implemented all internal control standards.

Internal control framework

In line with European Commission rules, the internal control standards were replaced with a new internal control framework (ICF).

The Management Board adopted the new ICF at its 43rd meeting in November 2018. Starting in 2019, the ICF forms the basis for ECDC's internal control system.

ECDC's ICF is designed to provide reasonable assurance regarding the achievement of the five objectives set in Article 30 of the ECDC Financial Regulation:

- effectiveness, efficiency and economy of operations;
- reliability of reporting;
- safeguarding of assets and information;
- prevention, detection, correction and follow-up of fraud and irregularities, and
- adequate management of the risks relating to the legality and regularity of the underlying transactions, taking into account the multiannual character of programmes as well as the nature of the payments concerned.

The framework supplements the ECDC Financial Regulation and other applicable rules and regulations, with a view to align ECDC standards with the highest international standards. The framework implemented by the European Commission served as a base for defining principles and their characteristics.

The internal control system at ECDC is based on the five internal control components:

- the control environment,
- risk assessment,
- control activities,
- information and communication, and
- monitoring activities.

They are the building blocks that underpin the framework's structure and support the Agency in its efforts to achieve its objectives. The five components are interrelated and must be present and effective at all levels of the organisation for internal control over operations to be considered effective.

Each component of the internal control system adheres to several principles which facilitate the system's implementation and make it possible to assess the system's operability at the management level. Working with these principles helps provide reasonable assurance that the organisation's objectives are met. The principles specify the actions required for internal control to be effective.

The internal control framework moves away from a purely compliance-based to a principle-based system, whereby the managers are offered the necessary flexibility to adapt to specific situations, characteristics and circumstances

while ensuring robust internal control and consistent assessment throughout the Agency. This approach aims at helping the organisation to achieve its objectives and sustain operational and financial performance by establishing diverse and objective-based managerial processes that meet each entity's specific needs (divisions, units, teams or equivalent).

Ongoing monitoring of the effective functioning of internal control is built into business processes and performed on a real-time basis at all levels of the organisation. This enables the entities to react timely to changing conditions and correct deviations from intended performance and effectiveness levels.

The Agency must be able to demonstrate not only that controls are in place but also that these controls are effective in controlling risks and that they work as intended.

Internal control principle 16 states that the assessment of internal control is founded both on ongoing (continuous) monitoring and on specific (periodical) assessments to ascertain whether the internal control systems and their components are present and functioning. ECDC must carry out an overall assessment of the presence and functioning of all internal control components at least once a year.

In 2019, the ICF was further reinforced with detailed indicators that were approved by the Management Board in November 2019. The implementation of the ICF is assessed annually and reported to the Audit Committee of the Management Board. The assessment of the ICF for 2019 was performed in January–February 2020 and presented to the Audit Committee in March 2020.

The main conclusions were as follows:

- The self-assessment regarding the implementation of the new ICF showed that the internal control system is functioning, but some improvements are needed.
- At the component level, all five components are functioning, but some improvements are needed. At the principles level, eight principles are in place and functioning well, with no or only minor improvements needed, while another nine principles are present and functioning, but with some improvements needed.
- Overall, 32 characteristics were rated as 'the characteristic is in place and functioning well, with no or only minor improvements needed', 12 characteristics were rated as 'the characteristic's control system is present and functioning, but some improvements are needed', five characteristics were rated as 'the characteristic is partially present and functioning, major improvements are needed'; none were rated as 'the characteristic is not present and functioning'.

The main improvements needed and the proposed deadlines were therefore:

- Characteristic 6.7, risk tolerance and materiality: management needs to better define and document the materiality criteria of risk tolerance for ECDC activities. Deadline: Q4 2020.
- Characteristic 10.2, control activities are integrated in a control strategy: a lot of control activities are performed, however, a specific control strategy needs to be developed. Deadline: Q2 2020.
- Characteristic 12.1, appropriate control procedures ensure that objectives are achieved: a lot of control procedures are in place, however, in the new format for internal procedures, a new section should be introduced to precisely describe the selected control activities and how the Centre will follow up on it. Deadline: Q3 2020.
- Characteristic 14.1, internal communication: internal communication is performed on a number of subjects and through various channels, however, an internal communications policy should be developed, including information on the objectives and responsibilities of internal control. Deadline: Q4 2020.
- Characteristic 16.3, risk-based and periodical assessments: specific risk-based assessments are performed by the external and internal auditors, however, an annual plan for specific ECDC risk-based assessments shall be prepared and implemented. Deadline: Q4 2020.

Part IV. Management assurance

1 Review of the elements supporting assurance

The main building blocks of the Director's Declaration of Assurance are:

- The Director's own knowledge of the management and control system in place.
- The declarations of assurance made by each Authorising Officer by Delegation to the Director.
- The overall self-assessment of internal control.
- The results of the self-assessment of the implementation of the Internal Control Framework.
- The results of the risk self-assessment exercises.
- The analysis and list of recorded exceptions.
- The status of the internal control and quality weaknesses reported.
- The results of the grant verifications known at the time of the declaration.
- The summary of OLAF activities.
- The observations of the Internal Audit Service known at the time of the declaration.
- The observations of the European Court of Auditors known at the time of the declaration.

2 Reservations

None.

3 Overall conclusions on assurance

Given the control system in place, the information attained from the building blocks above and the lack of critical findings from the Court of Auditors and the Internal Audit Service at the time of the declaration, there is no reason to question the efficiency or effectiveness of the control system in place. However, some improvements are needed regarding the implementation of the internal control framework (see part III, point 2 above).

Part V. Declaration of assurance

Director's Declaration of Assurance

I, the undersigned,

Director of the European Centre for Disease Prevention and Control (ECDC),

In my capacity as authorising officer,

Declare that the information contained in this report gives a true and fair view[1].

State that I have reasonable assurance that the resources assigned to the activities described in this report have been used for their intended purpose and in accordance with the principles of sound financial management, and that the control procedures put in place give the necessary guarantees concerning the legality and regularity of the underlying transactions.

This reasonable assurance is based on my own judgement and on the information at my disposal, such as the results of the self-assessment, ex-post controls, the work of the Internal Audit Service and the lessons learnt from the reports of the Court of Auditors for years prior to the year of this declaration.

Confirm that I am not aware of anything not reported here which could harm the interests of the European Centre for Disease Prevention and Control (ECDC).

Stockholm, 27 February 2020

Andrea Ammon

Director

Management Board's analysis and assessment

The Management Board has assessed the Annual Report of the Director for the financial year 2019. The Management Board appreciates the results achieved by the Centre and notes, in particular, the following:

ECDC was able to ensure a high level of implementation of its initial work programme (90.1%) for 2019. The Centre prepared 24 rapid risk assessments, responded to 31 scientific requests from the European Commission and the European Parliament, published 219 scientific reports and sent response missions in Mozambique to support the control of the Cholera outbreak and in the Democratic Republic of Congo in response to the Ebola outbreak.

The Management Board notes with satisfaction that for the first time, ECDC managed to publish 75% of its surveillance data within three months after their collection, a significant improvement compared to previous years (5% in 2018).

In 2019, the Board approved the report of the third external evaluation of the Centre, which provides insights into progress made during the period 2013–2017, and reflects overall a positive perception of the Centre by its stakeholders. Based on the conclusions of the evaluation, the Board will adopt in March 2020 a set of recommendations to drive further improvements, and follow up an action plan to be prepared by ECDC

The Board noted the progress made on the preparation of the ECDC strategy 2021–2027, for which final approval is expected in 2020, and of the revision of the internal organisational structure, decided by the Director and in place as from 1 January 2020.

The Centre continued to support the Member States, and the EU institutions, in the scope of its missions: surveillance, scientific advice, preparedness and response, health communication, and the seven Disease Programmes. ECDC continued to strengthen its relations with the Member States through the Coordinating Competent Bodies and with its EU and international partners, particularly WHO Regional Office for Europe, other EU agencies, and major CDCs world-wide for a strengthened response to the threat of communicable diseases in Europe.

ECDC also continued to implement actions to prevent and address a wide range of communicable diseases areas across Europe, as set in its mandate. The Centre continued to support the Commission and Member States by making available data, evidenced-based advices, guidance and practical tools to support policy making at EU and national levels.

In 2019, the Centre particularly focused on supporting the Member States and the European Commission to implement important EU legislation and policy documents in the field of communicable diseases, such as decision 1082/2013/EC on serious cross-border health threats, the 2018 Council Recommendation on vaccine-preventable diseases, and the 2017 European One health action plan against antimicrobial resistance. ECDC also contributed to help Member States implement the UN Sustainable Development Goals (SDGs) and several relevant WHO strategies in the EU/EEA.

The Annual Report 2019 follows the common template for all EU agencies, including the results of the key performance indicators set in the Single Programming Document (SPD 2019–2021), and in Annex 1-b – a systematic review of the implementation against the expected outputs set in the SPD adopted by the Board in November 2018.

The Management Board also appreciates that, as in previous years, ECDC produces a separate short version of the report, adapted for a larger audience, translated in all EU languages, with highlights of the achievements, challenges and major outputs of the Centre for 2019.

Annexes

Annex 1. Implementation of the work programme 2019

90.3% of the activities of the work programme for 2019 were implemented. The following tables provide more detail on the implementation of the work programme by activity as adopted by the Management Board in November 2018.

SPD Objective	Expected outputs 2019	Implemented	Comments
Strategy 1.1 Surveillance			
Complete the optimisation of the technical surveillance platforms and processes as identified through the 'surveillance systems reengineering' (SSR) project in 2015–2017.	1. Improved technical surveillance platforms, processes, and outputs.	Delay	The delay will be of few months for the WGS reporting/analysis solution and the data warehouse (expected April 2020 and September 2020 respectively).
Evaluate EU/EEA-level surveillance systems as per project plan.	2. Surveillance system evaluation reports as per project plan.	Implemented	EPHESUS evaluation
Use the EU/EEA surveillance system evaluations to define EU/EEA and national minimum surveillance standards and their monitoring indicators.	3. EU/EEA surveillance standards and monitoring indicators for surveillance systems evaluated in 2017/18.	Postponed until 2020	Template completed. The standards are postponed due to a dependency on EPHESUS evaluations and on lack of resources.
Publish in-depth surveillance data analyses in peer-reviewed open access scientific journals.	4. Peer-reviewed scientific articles, analysing surveillance data in depth.	Implemented	Continued at similar levels than in previous years.
Consolidate and further develop molecular surveillance at EU/EEA level as per revised ECDC strategy and roadmap.	5. Molecular surveillance data analysis integrated in surveillance outputs.	Delay	Listeria surveillance is ongoing since March. Due to the delay mentioned above (see 1) for the WGS, most of the remaining pathogens will be implemented in 2020-21. WGS-enhanced epidemiologic surveys launched for antibiotic resistant Enterobacteriaceae and *N. gonorrhoeae*
Pilot new surveillance indicators for antimicrobial resistance (AMR) and an outbreak alert threshold for monthly reported salmonella serotypes.	6. Results included in relevant surveillance outputs.	Partly implemented	AMR indicators reported as part of EARS-NET report; for salmonella, cancelled (as only 5 countries reporting due to the shift to WGS which will eventually replace serotype based reporting).
Assess the feasibility and added value of using existing electronic health data in Member States for EU surveillance.	7. ECDC taskforce on eHealth established.	Implemented	Done
	8. Draft ECDC eHealth strategy ready for first round of consultation with AF and relevant NFPs.	Implemented	The action plan was discussed in AF in December 2018 and February and May. First actions implemented (mapping)
Strategy 1.2. Epidemic intelligence			
Ensure timely and effective monitoring of potential threats from infectious diseases.	1. Daily Round Table report and weekly Communicable Diseases Threat Report (CDTR).	Implemented	Increase the frequency of editorials in the CDTR in 2019
Ensure the proper coordination with the National Focal Points (NFP) of Member States.	2. Annual meeting of the NFP for threat detection.	Implemented	Meeting on 23–24 May

SPD Objective	Expected outputs 2019	Implemented	Comments
Implement activities of the ECDC Epidemic Intelligence Strategy.	3. In partnership with WHO: Strategy for use of crowd sources (social media) for epidemic intelligence. Pilot of an external crowd-sourcing analysis tool. Protocol designed and used to evaluate crowd-sourcing tools within the epidemic intelligence field.	Implemented	
Disseminate event surveillance activities in an annual summary of the threats detected during the year.	4. Annual threat report produced in time, adhering to the quality standards of ECDC	Implemented	
Ensure timely and effective monitoring of health determinants through a determinants platform.	5. Determinants platform established and providing data.	Partly implemented	Determinants already available and used internally for rapid risk assessments as part of the new surveillance data warehouse that will be available externally in 2020 through the geoportal on ECDC website
	Strategy 2.1 Scientific advice		
Produce consistently high-quality scientific work and advice within agreed deadlines.	1. High-quality ECDC scientific advice outputs published on the Centre's website and/or as open access publication in peer-review scientific journals (see sections on Disease Programmes).	Implemented	24 rapid risk assessments, 34 technical reports and 11 surveillance reports published on the ECDC website, and 89 scientific manuscripts have been submitted for open access publication in peer-reviewed scientific journals or are in the process of being cleared. 34 European Commission requests for scientific input received and replied to, (10 were parliamentary questions). Scientific outputs are processed through SARMS (see no. 4 below)
	2. ECDC scientific advice in clearly defined formats, e.g. expert opinion, systematic review and public health guidance, using a structured format and providing sufficient information on rationale, applied methods, evidence base, analysis, as well as limitations and remaining uncertainties to allow informed decision-making at EU and Member State level.	Implemented	In place
Build strategic alliances to identify, prioritise and pursue public health research needs in order to create synergies and further improve ECDC scientific advice.	3. Collaborative agreements with key partners (e.g. EU-ANSA, learned scientific societies).	Implemented	EU-ANSA meeting in May and November. The Observer-ship programme took place in September in collaboration with ESCMID, ESCV, EUCIC. A call for expression of interest to involve other learned societies is currently under preparation.
Implement and assess processes for the development of scientific advice and other ECDC outputs with scientific content to enhance the Centre's performance and monitoring.	4. Use the ECDC Scientific Advice Repository and Management System (SARMS) to provide a comprehensive overview of the Centre's scientific outputs, ensure compliance with ECDC policies and monitor responsiveness to external requests.	Implemented	Continuous; see no. 1 above
Strengthen knowledge and skills needed for evidence-based practice and decision-making in the area of communicable diseases epidemiology, prevention and control, supporting continuous professional development.	5. Workshops in methods and tools for evidence-based practice and decision-making for ECDC staff and ECDC partners at EU and country level.	Implemented	Workshops in November 2019 and January 2020.

SPD Objective	Expected outputs 2019	Implemented	Comments
Organise the annual European Scientific Conference on Applied Infectious Disease Epidemiology (ESCAIDE) in cooperation with Member States, European Commission services (including SANTE, CHAFEA, JRC) and other EU agencies.	6. 2019 edition of ESCAIDE to be hosted in Stockholm, Sweden.	Implemented	ESCAIDE t in Stockholm on 27-29 November 2019.
Strategy 2.2 Microbiology			
Support the further strengthening and coordination of essential microbiology capabilities in Member States for surveillance, prevention and control of infectious diseases and antimicrobial resistance, informed by the EULabCap performance indicator monitoring.	1. Disease-specific and generic laboratory capacity building activities, including EQA schemes.	Implemented	Ongoing support to dedicated EU laboratory networks including EQA and training exercises. Fifth EULabCap survey conducted with 100% participation in 2019 showed continuing strengthening of microbiology capacities. Development of generic WGS data sharing and analysis platform. Training course on public health genomics and WGS typing for surveillance with 12 Member States on 23-24 October 2019.
Provide technical support to the European Commission on public health reference laboratory networks for human pathogens towards the objective that European Reference Laboratory networks have the capacity to develop new diagnostics and rapidly identify emerging and highly pathogenic agents.	2. Technical support provided to the European Commission on public health reference laboratory networks.	Implemented	Technical support to joint action SHARP for Commission including laboratory preparedness for high-threat pathogens ongoing. Technical support to the Commission in the networking and support for reference laboratory functions for antimicrobial resistance (request from the Commission) delivered. Technical support to the Commission Joint Research Centre in preparing implementation of Regulation (EU) 2017/746 on In vitro diagnostic medical devices
Provide technical advice on public health microbiology methods and disseminate information to stakeholders and the public about the Centre's microbiology support activities	3. Technical advice provided and disseminated on public health microbiology methods.	Implemented	New strategic framework for integration of WGS data in surveillance and multi-country outbreak investigations published after discussion with Advisory Forum. Technical opinion based on a survey on automated laboratory surveillance in the EU MS (peer review publication)
Strategy 3.1 EU and Country Preparedness Support			
Support the European Commission in monitoring the implementation of Decision 1082/2013/EU (in particular Art. 4 – preparedness) with strengthening of the scientific evidence base, gap analysis of the public health emergency preparedness of individual Member States, and identification of areas for enhanced support.	1. Based on agreement with WHO, activities aligned for improving the implementation and monitoring of country response capacities under IHR, by supporting national preparedness planning	Implemented	Participation to WHO Joint external evaluation in one country. Lithuania and Germany; Guidance on after-action reviews developed in cooperation with WHO EURO: implemented on WNV outbreaks review in four countries (Italy. Slovenia, Serbia and Greece).
Strengthen preparedness in countries by providing methodological advice on effective health emergency	2. Technical guidance and tools in support of national health emergency preparedness planning.	Implemented	Finalisation of three handbooks on: bioterrorism (under final review, publication first half 2020); simulation exercise (second handbook); Guidance on emergency preparedness community engagement

SPD Objective	Expected outputs 2019	Implemented	Comments
preparedness planning, evaluation of response plans and their interoperability while supporting the Health Security Committee and its working groups; additional WHO IHR technical consultations.	3. Technical support to the Preparedness Working Group under the Health Security Committee and IHR.	Implemented	• Contribution to HSC WG Action Plan (simex, trainings, tools). • Participation to HSC WG on preparedness (end of March, November and several TC) • Preparation of next cycle of MS survey on art 4 (2019–2020), work on reporting template with Task force under HSC preparedness working group.
	4. Direct support for countries' preparedness planning based on needs assessments in a country-specific and regional (multi-country) approach.	Implemented	• In collaboration with ECDC Influenza program – 3 workshops with all EU/EEA MS on pandemic preparedness planning (March 2019) • Case studies on evidence decision-making (2 EU MS) – October 2019-April 2020, (ongoing)
	5. Regional (multi-country) training workshops conducted on a set of proofing tools (simulation exercise planning, critical incident review, and assessment protocols) (Note: Can be deprioritised in case of emergency).	Implemented	• One training workshop on bio-risk planned (jointly with Europol) in Hungary with 14 MS in June 2019 • Workshop on PH Emergency preparedness competencies – 24–26 September 2019 in Slovenia (coordination and risk communication) • Simulation exercise – 29–31 October 2019 on biothreats, in Greece
	6. Set of standardised competencies on public health emergency preparedness adopted by National Focal Points and agreement reached on a pilot monitoring framework for their integration in national plans of at least four Member States.	Implemented	Workshop with selected countries on preparedness competencies – risk communication and crisis management
Support exchange of knowledge and good practice among relevant professionals and organisations at EU and regional (multi-country) level, to further strengthen country response system capacities and capabilities, and promote applied research for effectiveness of public health emergency preparedness in EU.	7. Annual NFP meeting focused on application of methodologies in different contexts and outcome of applied research projects	Implemented	23–24 May 2019 (Stockholm) – NFP preparedness and response + NFPs threat detection and IHR
	8. Links established with European research groups on public health preparedness.	Implemented	• Evidence based decision-making expert workshop – with public health experts and academia – March 2019; • Expert meeting on public health emergency indicators – public health experts and academia - December 2019; • Supporting Joint actions (JA) on preparedness and IHR (JA Sharp) and JA on points of entry (JA Healthy gateways) – participation in advisory board meetings, participation in general assembly and steering committee meetings, participation in kick off meetings of the JAs and individual work packages. • Literature review of costs of infectious disease outbreaks, (ongoing)
	Strategy 3.2 Response and emergency and operations		
Ensure timely delivery of high-quality rapid risk assessments (RRA) as requested by the Commission, the Member States, or ECDC's Round Table.	1. Timely rapid risk assessments for specific threats, in accordance with the criteria defined in Decision 1082/2013/EU, as requested by the Round Table, the European Commission, and the Member States.	Implemented	Three RRAs and one rapid outbreak assessment with EFSA (ROA)
Ensure the capacity and the involvement of Member States in the production of RRA.	2. Mechanisms and procedures established to ensure the proper participation of Member States in the production of RRA.	Implemented	This is being implemented through SARMS

SPD Objective	Expected outputs 2019	Implemented	Comments
Reinforce the participation of ECDC expert teams in response support activities for Member States and EU neighbouring countries facing outbreaks and crises in the area of infectious diseases and biological threats of intentional nature (e.g. bioterrorism).	3. ECDC missions to support Member States and neighbouring countries during outbreaks of infectious diseases, epidemics and biological threats of intentional nature.	Implemented	One mission in April in Mozambique to support the control of the Cholera outbreak, and two deployments to DRC to contribute to the EVD response. Both missions have been done in cooperation with ECHO
Ensure the participation of ECDC experts in international response missions (in cooperation with DG ECHO).	4. Validate the mechanism through which public health experts from ECDC and Member States participate in international missions (together with ECHO and civil protection officials)	Implemented	SLA with DG ECHO signed in October 2019 to support the missions in DRC
Contribute as trainer to GOARN, WHO and the EUCPM training sessions on 'Outbreak response for international missions'.	5. Contribution to training sessions for outbreak response. Attendance to the training sessions offered to ECDC staff and experts in Member States.	Implemented	
Finalise the updated version of the EWRS	6. Improve the functionalities and operation of the updated EWRS after its first release in 2018.	Implemented	Development of all modules and new functionalities for the updated EWRS implemented according to planned timeline.
Ensure the proper update of SoHO risk assessments.	7. Finalise assessing the risk and prevention of bacterial infection transmission through SoHO.	Implemented	Risk assessment of bacterial transmission through SoHO finalised
	8. Organise expert meeting on the prevention of HAV transmission through SoHO	Implemented	HAV meeting replaced by expert meeting on after action analysis of measures for the prevention of West Nile virus transmission through blood transfusion, as an urgent analysis of blood safety measures was needed due to enormous increase in the local transmission of WNV in EU/EEA
	9. New framework contract on safety of SoHO.	Implemented	New framework contract for assessing the risk of fungal and parasitic infections transmission through SoHO launched
	10. Perform biannual evaluation of the screening strategies.	Cancelled	Due to limited human resources
	11. Assess risks due to SoHO in the risk assessments.	Implemented	
Strategy 4.1 Training			
Continuous quality improvement of the 'ECDC Fellowship Programme', with the EPIET and EUPHEM paths	1. More efficient integrated administrative routines, better use of human resources and enhanced cross-discipline collaboration.	Partly implemented	Task force in October discussed the results of the fellowship programme external evaluation.
	2. Strengthened collaboration with other fellowship programmes, relevant for our mandate in a One-Health and All-Hazards approach (e.g. EFSA, WHO)	Implemented	ECDC created the Global Laboratory leadership programme, together with WHO, FAO, OIE, US CDC and Association of Public Health Laboratories (APHL). Meeting in November. VC exchange of experiences with EFSA in November regarding administrative management of the fellowship programmes.
Consolidate the new Continuous Professional Development Programme	3. ECDC summer school	Implemented	June 2019
	4. Core workshop and specific courses as defined by the CCB networks	Implemented	Winter workshop done in February; new edition planned for February 2020; course on Control of Multidrug Resistant Organisms conducted in September and workshop on Public Health Genomics in October.
	5. Senior exchange initiative	Implemented	18 visits took place (18 on different areas, and 2 specifically in FWD twinning)
	6. E-learning courses continuously added	Implemented	Several new courses piloted and available since beginning of 2019.

SPD Objective	Expected outputs 2019	Implemented	Comments
	7. Simulation exercises as an essential component of the CPDP	Implemented	The exercise repository is a collection of all the previous simulation exercise funded by ECDC since 2007 and hosted on EVA. Each exercise is summarised and presented in a simple consistent format making them readily available to those wishing to adapt them to their local context.
Continue implementing the collaboration agreement with ASPHER.	8. Network of ASPHER schools of public health with a training on communicable diseases control established and working closely with ECDC and National Focal Points for Training; (Note: Can be deprioritised in case of emergency).	Implemented	Meeting with President and Director of ASPHER in March: work on requirements for future platform, and on networking schools and NFPs for training at national level.
	9. Core competencies defined and curricula developed by joint ECDC/CCB/ASPHER working groups; (Note: Can be deprioritised in case of emergency).	Implemented	Conceptual work presented at the NFP for Training and ECDC Fellowship Training Site Forum meeting in March. Technical advisory group established.
Strategy 4.2 Coordinated country support			
New mechanism implemented for targeted country support based on expressed needs; transparent prioritisation process	1. Country support agreements based on the new mechanism.	Cancelled	Preparation of the support to countries, following requests received in the 2017 and 2018 pilot calls. Support activities agreed and to be provided in 2020 and 2021.
	2 Mechanism implemented after a pilot in 2017.	Cancelled	Annual calls to be replaced by a new comprehensive approach for country support.
	3 Work initiated on an ICT tool supporting the work with the countries.	Delayed	Identification of a dedicated IT tool to take place as part as the new approach.
Strategy 4.3 International relations			
Complete, upon request from the European Commission, one technical assessment of an EU enlargement country and implement ECDC technical cooperation pre-accession activities with EU enlargement countries (ECDC-IPA5 project with external financial support from the European Commission, 2017–2019) (Note: Can be deprioritised in case of emergency)	1. Technical Assessment Report with recommendations.	Implemented	Done for Kosovo, and the Technical Assessment report provided to the Commission
	2. Advice and assistance to monitor the countries' progress in addressing assessment recommendations	Implemented	Via consulting countries' TAIEX requests, providing the Commission with briefings for sub-committee meetings. Preparing for Kosovo study visit to ECDC and assisting the country in developing post-assessment action plan.
	3. Follow-up regional meeting on topic of common interest for National ECDC Correspondents and other key stakeholders in EU enlargement countries.	Implemented	Regional workshop on a 'One-Health' approach to AMR in EU pre-accession countries, 26–27 February 2019, Belgrade, Serbia
	4. Participation of EU enlargement countries experts in ECDC networks, technical discussions, and projects.	Implemented	Through ECDC-IPA5 project
	5. Improved reporting on selected EU notifiable communicable diseases to ECDC surveillance and epidemic intelligence systems (TESSy, EPIS).	Implemented	Participation in EPIS-ELDSNet and EPIS-FWD monitored and dispatched to countries. Nominated Surveillance Atlas launched for HEPA; reporting on WNF, GONO and HAI PPS monitored and reported to countries. Third round of ENLabCap with 2018 data.
	6. Completion of ECDC-IPA5 technical cooperation project supported by EU external funding (through the IPA II by DG NEAR)	Implemented	ECDC-IPA5 project activities fully completed in November 2019. New ECDC-IPA6 project signed in December 2019 with DG NEAR for 2020–2022 with total budget of M1EUR
(If EU financial assistance is available) Upon request from the European Commission, and in coordination with international partners if appropriate, support the strengthening of communicable disease surveillance and control systems in Ukraine, Moldova, and Georgia.	7. Monitoring of post-assessment action plans and, upon request, technical cooperation activities implemented together with these countries.	Implemented	Georgia assessment in November

SPD Objective	Expected outputs 2019	Implemented	Comments
(If EU financial assistance is available) Continue to support the progressive integration of ENP partners into ECDC activities and enhance health security to strengthen the countries closest to EU borders' capacities to respond to health threats related to communicable diseases	3. Follow-up of project under the European Neighbourhood Instrument (ENI) or other financial instruments initiated; implementation started if grants from European Commission were made available.	Implemented	ECDC/EFSA Multi-country workshop on best practices on prevention and control of AMR for ENP partner countries will take place with support from EC/TAIEX on 6-7 November 2019 in Amman, Jordan,
	8. Sustainable capacity building initiative implemented in ENP partner countries and continuation of technical cooperation with ENP partners under ENI or other financial instruments, if grants from European Commission were made available.	Implemented	Workshop on AMR in Jordan in November 2019.
Strengthen and deepen ECDC cooperation with the major centres for disease prevention and control (CDCs) across the globe.	9. Regular interaction with contact points in other CDCs to coordinate, support and promote the cooperation. Monitoring and evaluating the implementation of the memorandums of understanding between ECDC and those organisations.	Implemented	• 3 June 2019: first Meeting of ECDC Focal Points in other CDCs: agreement to set up a Network of CDCs with yearly meetings and quarterly video conferences; • 30 September: first videoconference to discuss information exchange, role of ECDC Focal Points in CDCs, dengue and Ebola. • 9 December: second videoconference to share information on Human immunodeficiency virus (HIV) and Improving vaccination and pandemic influenza.
Enhance collaboration with WHO Regional Office for Europe to further implement the bilateral administrative agreement.	10. Reviewed set of processes for joint activities (e.g. joint reports, coordinated surveillance) under the collaboration framework with WHO Regional Office for Europe.	Implemented	Implementation review of 2019. First review completed; Second review completed in September. Annual ECDC/WHO Regional Office for Europe programmes coordination meeting in ECDC on 21–22 October.
	Strategy 5.1 Health Communication		
Ensure that ECDC scientific and technical outputs are timely, easily available, impactful, (re-)usable and adjusted to the needs of our target audiences.	1. Timely communications of ECDC scientific and technical content adapted to its main target audiences through an array of appropriate communication channels, fully utilising the website.	Implemented	
	2. Timely communication outputs targeting policymakers, suitable to inform policy and decision-making.	Implemented	
Consolidate the reputation of ECDC as an independent, transparent agency that produces high quality scientific content	3. Media coverage of ECDC in European public health media.	Implemented	
	4. Communication support for ECDC authors who send output to scientific publications, including peer-reviewed journals.	Implemented	
	5. Active presence in ESCAIDE and other key public health conferences and meetings.	Implemented	Active presence in ECCMID conference in April and ESCAIDE in November
	6. Presence in social media.	Implemented	
Support knowledge sharing; share information and analysis among stakeholders, with a focus on strengthening communication capacity and preparedness in EU Member States.	7. Capacity building activities (e.g. ECDC materials, workshops) in the area of emergency risk communication.	Implemented	Meeting of NFPs for communication in June (Luxembourg) with a risk communication component
	8. Technical support and joint activities with the communication working group of the Health Security Committee.	Implemented	Joint meeting NFP for communication and HSC communicators in June in Luxembourg
	9. Support to national health communication campaign activities, notably the European Antibiotic Awareness Day and the European Immunisation Week.	Implemented	Support material for TB day in March, immunisation week in April and EAAD in November.
	10. Active collaboration and sharing of information across communities of risk and crisis communicators in Europe.	Implemented	Meeting of NFPs for communication in June (Luxembourg) with a risk communication component
Xx	**Strategy 5.2 *Eurosurveillance***		
Continue production of Eurosurveillance as an attractive and informative journal, with good visibility and reputation that supports ECDC capacity building	1. 50 issues published.	Implemented	1 issue per week – 50 issues published
	2. One scientific seminar at the margins of ESCAIDE.	Implemented	*Eurosurveillance* seminar on 'Point-of-care testing (POCT) and its impact on surveillance of communicable diseases and public health' attended by over 50 participants.
	3. Regular provision of information through social media.	Implemented	Daily posts on Twitter and twice per week on LinkedIn

SPD Objective	Expected outputs 2019	Implemented	Comments
activities and contributes to closing the gap in the available evidence base in international scientific databases, with a clear focus on the prevention and control of communicable disease in Europe.	4. Provision of articles with data/evidence supporting public health decision-making from at least 15 different European countries.	Implemented	15 different countries
xx	**Strategy 6.1 Antimicrobial resistance and healthcare-associated infections - ARHAI**		
Improve the quality and sustainability of surveillance systems on AMR and antimicrobial consumption at EU level, as well as comparability of data.	1. Updated, comprehensive surveillance data on AMR (EARS-Net), including application of the new case definitions for AMR, continued molecular typing surveillance of carbapenem-resistant and/or colistin-resistant Enterobacteriaceae.	Implemented	
	2. First comprehensive report on AMR across communicable diseases.	Postponed until 2020 (decision MB 45 – March 2019)	To accommodate additional proposed requests from the European Commission
	3. Contribution to the standardisation of antimicrobial susceptibility testing.	Implemented	
	4. Updated, comprehensive surveillance data on antimicrobial consumption (ESAC-Net), including data from hospitals.	Implemented	
	5. Work jointly with EFSA and EMA on harmonising surveillance and joint analyses of AMR and antimicrobial consumption.	Implemented	Final report expected December 2020
Support activities on AMR, through the provision of advice, guidance and training, as well as country support, in cooperation with the European Commission and Member States.	6. Support to the European Commission on the implementation of the European One Health Action Plan against AMR, and close collaboration with Member States on their joint action on AMR (and HAIs), including country visits to discuss AMR issues.	Implemented	Only 3 country visits, jointly with DG SANTE/F in a one-health perspective, took place in 2019 (Estonia, Ireland, Portugal).
	6.2. **NEW:** Support the European Commission on the implementation of the European One Health Action Plan against AMR: - contribution to the work of the EMA on one delegated/implementing acts (criteria to designate antimicrobials reserved to humans) of regulation 2019/6 on veterinary medicinal products - Contribution to the EFSA/BIOHAZ Scientific Opinion on AMR in the environment (self-task) - Contribution to the Action 'Working together to Fight AMR – South America' led by DG SANTE	Implemented Added to SPD 2019 (decision MB 45 – March 2019)	New request from the European Commission (DG SANTE) – added to work programme
	6.3. **NEW:** Technical support to the Romanian EU Presidency High level AMR conference, Bucharest 1st March 2019	Implemented Added to SPD 2019 (decision MB 45 – March 2019)	New request from the Ministry of Health Romania – added to work programme
	7. Start work on ECDC–EMA joint scientific opinion/expert opinion on new antibacterial agents in human medicine (conditions for their use and measures to prevent and control the spread of resistance to these agents).	Postponed until 2020 (decision MB 45 – March 2019)	To accommodate additional proposed requests from the European Commission
Strengthen international collaborative activities on AMR, including collaboration with WHO, TATFAR, GHSA, NDPHS and other non-EU partners.	8. Support WHO on the implementation of the Global Action Plan on AMR, contribution the Transatlantic Task Force on AMR (TATFAR), and contribution to the Northern Dimension Partnership on Public Health and Social Well-being (NDPHS).	Implemented	No contribution was requested by the NDPHS.
Raise awareness about prudent use of antibiotics through the European Antibiotic Awareness Day (EAAD), in partnership with the WHO World Antibiotic Awareness Week.	9. European Antibiotic Awareness Day (EAAD), 18 November 2019, in partnership with the WHO World Antibiotic Awareness Week.	Implemented	
Improve the quality and sustainability of surveillance systems on HAIs at EU level, as well as comparability of data.	10. Updated, comprehensive surveillance data on HAIs, including on surgical site infections (HAI-Net SSI), infections acquired in intensive care units (HAI-Net ICU) and *Clostridium difficile* infections (HAI-Net CDI).	Implemented	
	11. Start work on an ECDC expert opinion on the usefulness and applicability of electronic data for surveillance of HAIs, and possible integration into HAI-Net.	Implemented	
Support activities on AMR-HAIs through the provision of advice,	12. Support to training of healthcare workers for the prevention and control of HAIs, and control of multidrug-resistant micro-organisms in health care settings.	Implemented	

SPD Objective	Expected outputs 2019	Implemented	Comments
guidance and training, as well as informing about good practices, in cooperation with the European Commission and Member States.	13. Further implementation of the ECDC directory of online resources and toolbox for the prevention and control of HAIs and AMR.	Postponed until 2020 (decision MB 45 – March 2019)	Any further implementation of the directory of online resources and toolbox is postponed to 2020. To accommodate additional proposed requests from the European Commission
	Strategy 6.2 Emerging and Vector-borne Diseases – EVD		
Provide support on country preparedness, effective and efficient decision-making and response to threats related to EVD	1. Scientific advice for ad-hoc risk assessments in the EU/EEA with the support of relevant networks (laboratory and medical entomology networks).	Implemented	EVD-LabNet and VectorNet
	2. Scientific advice and guidance on tick-borne diseases and on vector control strategies for EVD.	Delayed	Guidance on tick borne disease/toolkit update ongoing. Risk assessment on SoHo for tick borne encephalitis to be published in 2020.
	3. Modelling tools to support the decision-making (surveillance and vector control strategies) for mosquito-borne diseases in the EU/EEA.	Implemented	Two modelling projects for vector control strategies (West Nile mosquitoes, and invasive Aedes mosquitoes) have been finalised and expected at the beginning of 2020.
	4. Support inter-sectoral collaboration with regard to EVD.	Implemented	Meeting on control for mosquito vectors of the West Nile virus
	5. Assessment of the effects of social and environmental drivers of EVD (internal support).	Implemented	Manuscript on travel related dengue and Chikungunya submitted for publication.
	6. Strengthen EVD public health capacity and capability.	Implemented	Ongoing through our subnetworks and country visits. Contribution to the AWARE project (after-action reviews on response to West Nile disease).
	7. Participation in ad hoc country visits to assess preparedness and/or response plans for EVD.	Implemented	Four country visits were organised on West Nile (Slovenia and Italy in April, Greece and Serbia in May), together with CPS. One EVD expert joined the country visit in Madeira 'Aedes-transmitted arbovirus infections: strengthening capacity and information systems in Madeira, Portugal'.
Strengthen the surveillance of vector-borne diseases through the implementation of surveillance for notifiable EVD, the monitoring of vector distribution, and the timely reporting on EVDs that are prone to epidemics.	8. Analysis of TESSy surveillance data (using an integrated approach when appropriate).	Implemented	Annual Epidemiological report chapters on 2018 data
	9. Strengthen the epidemiological surveillance of Lyme borreliosis depending on the outcome of the survey in 2018.	Implemented	Work started on Lyme neuroborreliosis surveillance data analysis and country support to increase the quality of reporting, to support Member States. The feasibility of implementing the requests to COM/MS in the 2018 European Parliament resolution on Lyme disease is studied.
	10. Ad hoc and timely surveillance of EVD.	Implemented	
	11. Providing data on human disease vectors and their related pathogens for vector and pathogen distribution mapping (ticks, mosquitoes and sandflies).	Implemented	Framework contract for VectorNet is in place, kick-off meeting was organised in September and activities are now ongoing.
	12. Explore current operational early warning systems for EVD in the EU/EEA.	Postponed until	This activity belongs to the Determinants Platform project.
Increase laboratory capacity building for early detection and surveillance through an outsourced laboratory network in coordination with other EU initiatives	13. Conduct external quality assessment (EQA) on viral pathogens for vector-borne diseases.	Implemented	EQA on orthopoxviruses finalised by EVDLabNet in March.
	14. Provide short training courses to improve the diagnostic capability of EU expert laboratories in the EU/EEA.	Implemented	2 training courses (exchanges) held in march; A summer training organised by EVD LabNet took place on molecular and WGS technics for EVD in the summer.
Promote multidisciplinary networking and partnerships with international stakeholders	15. Strengthen EVD-related networks to share expertise, best practices and lessons learnt.	Implemented	EVD network meeting organised on 1–2 October. Content developed for ETMS to support the EVD networks
	16. Ensure close collaboration with WHO and other international stakeholders.	Implemented	Following meeting in November with WHO, joint actions are ongoing (e.g. country visit to Serbia in May), EVD expert attended a workshop organised by WHO in October on Vector-borne Disease Operational Readiness.
	Strategy 6.3 Food- and Waterborne Diseases and zoonoses - FWD		
Strengthen surveillance and in accordance with	1. Joint surveillance reports (zoonoses and AMR) with EFSA.	Implemented	AMR report published in February Zoonoses report published

SPD Objective	Expected outputs 2019	Implemented	Comments
the 'One Health' principle, foster joint analyses of collected data, including AMR, in collaboration with relevant EU agencies so that effective preventive and control measures can be implemented (short-, medium, and long term)	2. Joint rapid outbreak assessments with EFSA.	Implemented	Joint ROA on Multi-country outbreak of Salmonella Poona infections linked to consumption of infant formula published on 12 March 2019 Joint ROA on multi-country outbreak of Listeria monocytogenes linked to cold-smoked fish, published on 4 June 2019 8 Joint Notification Summaries for Salmonella and 3 for Listeria
	3. Guidance for national surveillance of hepatitis E.	Implemented	Options for national testing and surveillance of hepatitis E, published on 5 September 2019
	4. Establish a global WGS-based strain nomenclature for Listeria monocytogenes isolates in collaboration with PulseNet International, EFSA and other international partners, using a methodology/process that can be applied to other pathogens.	Postponed until 2020	Deprioritised due to priority to SSR WGS project (ETMS)
	5. Preparation of FWD AMR integration to online Surveillance Atlas.	Implemented	Analysis plan approved. Dataset prepared.
	6. Other joint publications (Note: Can be deprioritised in case of emergency).	Implemented	Time series analysis on listeriosis 2008–2017 ELITE report
Strengthen detection and investigation of prolonged multi-country food-/waterborne threats; real-time detection of outbreaks of travel-associated Legionnaires' disease (TALD) in collaboration with relevant partners and in the spirit of 'One Health'.	7. Multidisciplinary research on epidemiology of HEV (Note: Can be deprioritised in case of emergency)	Implemented	Technical guidance on national HEV surveillance published (ECDC webpage and peer-review publication JCV), involvement in clinical studies on chronic cases and outcomes related to HEV infection ongoing; plenary speaker presenting HEV as One Health topic at ECCMID conference (April 2019); no ECDC involvement in HEVnet as no ToR could be agreed with RIVM due to animal/food data within HEVnet so that ECDC access was perceived as risk from RIVM side; proficiency testing on HEV sequencing ongoing, see point 12 below.
	8. Multidisciplinary investigation on persistence of selected Listeria monocytogenes and Salmonella strains (one of each), in close collaboration with EFSA, EURLs and Member States (Note: Can be deprioritised in case of emergency).	Implemented	• Listeria: a big cluster persistent for over 10 years in the food chain with human cases under investigation • *Salmonella* Enteritidis, several clones epidemiologically linked to eggs and poultry meat production: ECDC took the lead over EFSA as this cannot be addressed using existing processes and outputs (outside the scope of ROA).
	9. Scientific communications; peer-reviewed publications, outbreak reports; (Note: Can be deprioritised in case of emergency).	Implemented	• Pijnaker et al. 2019: An international outbreak of Salmonella enterica serotype Enteritidis linked to eggs from Poland: an epidemiological and microbiological study • Schjørring et al. 2019: High comparability despite use of different laboratory and analysis approaches for Listeria monocytogenes cluster identification by Whole Genome Sequencing. Awarded in IMMEM meeting.
Promote the development of high quality analytical and technical capacity in national public health reference laboratories to detect, investigate and respond to emerging FWD and Legionnaires' disease (LD), and outbreaks allowing comparison of molecular typing data nationally and globally	10. External quality assessments services for selected FWD (Salmonella, Listeria, STEC, Campylobacter) and Legionnaires' disease (Note: Can be deprioritised in case of emergency).	Implemented	
	11. Expert meeting on the integration of WGS to surveillance of Legionnaires' disease in accordance with the roadmap (Note: Can be deprioritised in case of emergency).	Postponed until 2020	The status of the roadmap has been discussed in the ELDSNet Coordination Committee and in the ELDSNet meetings of September 2019. Roadmap activities deprioritised due to high workload for baseline surveillance activities and SSR project.
	12. Interlaboratory study on HEV diagnostics and typing.	Implemented	
	13. Interlaboratory study on WGS analysis pipeline for Salmonella in accordance with the roadmap.	Cancelled	Necessity was discussed and considered redundant with other projects.

SPD Objective	Expected outputs 2019	Implemented	Comments
with human, food, feed, animal, and environmental (water) data.	14. Capacity building opportunities through the FWD Expert Exchange Programme (FWDEEP) (Note: Can be deprioritised in case of emergency).	Implemented	Two exchanges took place in 2019 and two more applications have been received in 2019 but those exchanges are planned to occur in Q1, 2020. The countries involved in the two exchanges were: France, Ireland, Scotland, UK. The topics for the exchanges were core genome MLST in *Legionella pneumophila* and WGS for *E. coli*
Promote multidisciplinary networking and partnerships with international stakeholders	15. 9th FWD Network and CC meeting in Stockholm on 6–8 February 2019.	Implemented	Meeting held
	16. ELDSNet Network and CC meeting.	Implemented	Meeting held
	17. Collaborative activities with international stakeholders, e.g. WHO Regional Office for Europe and PulseNet International, US CDC (Note: Can be deprioritised in case of emergency).	Implemented	PulseNet International meeting will be held 2020 in US back to back with the InForm conference
Strategy 6.4 HIV, Sexually Transmitted Infections and viral Hepatitis – HSH			
Improve the current epidemiological understanding of HIV, hepatitis B and C, STIs, Antimicrobial-resistant gonorrhoea and drug-resistant HIV to support more effective decision-making by Member States and the Commission.	1. Improved quality of surveillance data (including data on drug-resistant HIV and antimicrobial resistance of gonorrhoea); surveillance systems consolidated and analysis methods improved (including modelling estimates) to produce better, more relevant outputs for effective decision-making.	Implemented	
	2. Alternative sources of data to better describe the burden of disease: clinical data; prevalence serosurveys; attributable mortality estimates and continue work to disseminate prevalence data through the online prevalence database.	Implemented	Meeting on prevalence surveys in April; online hepatitis prevalence database launched, expansion of the database to include HIV.
	3. Country missions in response to specific requests by Member States to help improve the national HIV or hepatitis surveillance systems and strengthen their processes and expert capacity (Note: Can be deprioritised in case of emergency).	Implemented	Country mission to Hungary
	4. Consultation and coordination of the HIV or hepatitis surveillance networks, with annual coordination committee meetings, and regular network meetings, in close collaboration with key stakeholders (Note: Can be deprioritised in case of emergency).	Implemented	Hepatitis network meeting took place in September; HIV and STI Coordination Committee meetings.
Strengthen international cooperation on HIV and Hepatitis B and C with relevant stakeholders to create synergies and improve efficiency.	5. Continuum-of-care estimates for HIV and hepatitis B and C, including key at-risk populations, in collaboration with WHO, EATG, EACS and EASL.	Implemented	HIV report published. Hepatitis data collected and being analysed as part of the new monitoring system
	6. Updated online European HIV/STI/HEP Test Finder, jointly with European Testing Week (Note: Can be deprioritised in case of emergency).	Implemented	
	7. Support to the international response by participation in major meetings or conferences organised by key partners; reciprocate invitations so that they participate in relevant ECDC conferences or meetings (Note: Can be deprioritised in case of emergency).	Implemented	EACS conference in Basel
Support the European Commission and the Member States through the provision of sound technical advice, relevant monitoring and evaluation; provision of evidence-based technical reports/guidance and training	8. Country missions with experts from WHO or EMCDDA to provide technical support to Member States on HIV and hepatitis issues (Note: Can be deprioritised in case of emergency).	Implemented	Country mission to Hungary
	9. Reports on monitoring the response to HIV and hepatitis in Europe (including continuum-of care estimates), focussing on sustainable development goals (SGDs), the Dublin Declaration and UN General Assembly commitments, in collaboration with WHO, EMCDDA and UNAIDS (including monitoring PrEP) (Note: Can be deprioritised in case of emergency).	Implemented	First hepatitis monitoring report to be published at the beginning of 2020. HIV Monitoring reports published. Report on PrEP monitoring to be published at the beginning of 2020
	10. Technical reports and scientific guidance on topics identified by Member States and the Commission as priority areas (e.g. guidance on prevention of STI, HIV and hepatitis among migrants (including recent migrants or refugees), guidance on the prevention of mother-to child transmission of hepatitis B and C, the impact of PrEP/PEP for STI, advances in STI testing, etc.).	Implemented	Guidance on migrants published. Mother to child guidance published. Technical report on PrEP in progress.
Communicate better to distribute more widely the ECDC evidence-based reports and outputs; raise awareness, especially on HIV and hepatitis.	11. All major technical outputs (including evidence briefs) include components to ensure that the evidence can be used to support efficient decision-making.	Implemented	Reports on Dublin monitoring published
	12. World AIDS Day, World Hepatitis Day, European Testing Week and similar events supported with a variety of external communication activities and outputs (Note: Can be deprioritised in case of emergency).	Implemented	
	4. Participation at relevant expert meetings organised by key partners; presentation of ECDC output (Note: Can be deprioritised in case of emergency).	Implemented	
Strategy 6.5 Influenza and other respiratory viruses - IRV			
Transform the European surveillance	1. Proposal on revised influenza surveillance paradigm to European Influenza Surveillance Network.	Delayed	Delayed due to procurement/contractual process

SPD Objective	Expected outputs 2019	Implemented	Comments
of influenza and other respiratory viruses, in collaboration with WHO Regional Office for Europe, based on the outcome of the evaluation of the Disease Programmes, ECDC Data Quality Project, Surveillance Systems Re-engineering Project, and the Evaluations of EU/EEA Public Health Surveillance Systems (EPHESUS)	2. Feasibility study on forecasting of yearly seasonal influenza epidemic (modelling).	Partly implemented	Delays due to contract. Work has progressed. Expected in 2020
	3. Weekly high-quality and high-impact surveillance reports on FluNewsEurope.org during the season.	Implemented	
Enable early detection, monitoring, and scientific advice for zoonotic and other emerging respiratory viruses (including MERS-CoV and avian/swine influenza viruses)	4. Timely and high-quality risk assessment and scientific advice on emerging respiratory pathogens.	Implemented	
	5. Relevant support to international outbreak assessment missions.	Implemented	Placeholder. No request received
	6. Publish quarterly ECDC/EFSA avian influenza reports.	Implemented	
Strengthen laboratory and surveillance capacity in the network through training and external quality assessment.	7. Online training and wet lab courses offered to Member State network members (Note: Can be deprioritised in case of emergency).	Implemented	
	8. External quality assessment (EQA) for influenza laboratory specimens.	Implemented	EQA will run in 2020, with 2019 budget, following biannual cycle. Contract ready and samples distributed.
Support Member State vaccination programmes by monitoring vaccination coverage (in coordination with WHO and the data collected in the Joint Reporting Form), vaccine effectiveness and safety signals, as well as communication campaigns	9. Timely vaccine effectiveness estimates provided by Member State study sites through the IMove project; vaccine coverage data available to stakeholders.	Implemented	Result expected in June
	10. Expert meeting in support of Member States planning cost–benefit analyses of influenza vaccination programmes.	Cancelled	Incorporated into the NITAG work.
Support European Commission and the EU joint action on vaccinations (whenever requested), with a scientific evidence base for influenza and RSV vaccine-related work.	11. One literature review on a requested influenza or RSV vaccine-related topic.	Cancelled	Incorporated into the NITAG work
	12. Scientific advice on an ad hoc basis to EC and/or joint action.	Implemented	No request received from Commission
	13. Adequate evidence base for the EU joint procurement of pandemic influenza vaccines provided	Implemented	As per request. Support to SECID joint procurement meeting in Istanbul. Oct 2019
Monitor and strengthen pandemic preparedness in the EU by supporting the European Commission, the Health Security Committee, EU Member States, Pandemic Influenza Preparedness Framework and the Global Health Security Initiative Pandemic Influenza Working Group.	14. Assessment of preparedness through, for example, case studies, country visits, simulation exercises.	Implemented	23 preparedness workshops on influenza in March
	15. Scientific advice to HSC, SANTE C3, WHO, upon request.	Implemented	Placeholder. No request received from Commission
	16. Scientific support to EU joint procurement process, upon request.	Implemented	Placeholder. No request received from Commission
	17. Regional pandemic preparedness workshop/exercise.	Implemented	3 regional pandemic preparedness workshops held in March, with all Member States
Support EU/EEA Member States in establishing surveillance of respiratory syncytial virus (RSV) surveillance	18. RSV surveillance protocol drafted (Note: Can be deprioritised in case of emergency).	Implemented	Work with RESCEU project
	19. Expert consensus meeting to agree on approaches to surveillance and case definitions (Note: Can be deprioritised in case of emergency).	Implemented	Support to RESCEU project

SPD Objective	Expected outputs 2019	Implemented	Comments
	Strategy 6.6 Tuberculosis - TB		
Strengthen TB (molecular typing) and LTBI surveillance at national and EU levels to reach an adequate coverage and completeness in order to inform TB prevention and control actions	1. Updated TB database that is analysed and reported on	Implemented	Surveillance report published on 19 March
Strengthen TB laboratory services: a) Improved management of TB so that all TB suspects are tested with tests that allow for adequate and rapid diagnosis, and all laboratory-confirmed TB cases are tested for drug resistance. b) Better detection and investigation of clusters with the use of adequate molecular typing methods.	2. Strengthened European Reference Laboratories through implementation of the European Reference Laboratories Network for TB activities, including the annual meeting, training of laboratory experts, and external quality assessments.	Implemented	Annual meeting held in February (Bucharest) Training of laboratory experts in Bucharest and small training workshop on WGS
Support TB prevention and control efforts of Member States to progress towards ending TB.	3. Country consultation visits for countries; training and/or exchange visits for persons involved in key strategic areas of TB prevention and control.	Implemented	Country visit in NL in June FWC country support for TB elimination signed and work on specific contract is ongoing
Provide relevant scientific advice on TB prevention and control in support of the European Commission and the EU Member States.	4. Timely and high-quality scientific advice in support of the work of the European Commission and the EU Member States, including support to the Commission for the Joint Procurement Procedures under Article 5 of Decision No 1082/2013/EU of the European Parliament and Council, in particular to the specific procurement procedure for BCG vaccines against tuberculosis.	Implemented	ECDC provided input for all request received from the European Commission. ECDC was not asked to provide feedback on the tender specifications for the Joint procurement for BCG (together with the VPD team) upon request of the Commission.
	Strategy 6.7 Vaccine-preventable diseases - VPD		
Develop authoritative, relevant, and timely scientific and technical advice for effective policy and decision-making on VPDs and immunisation, with a view to strengthening national immunisation programmes	1. Establish a formal collaboration with NFPs VPD in order to simplify, harmonise and streamline the production of scientific guidance;	Implemented	NITAG meeting in February 2019
	2. Set up a platform for sharing on going work in Member States that will be used as basis for NITAGs to provide recommendations to policymakers	Implemented	Meeting in February, extranet in place
Harness the vast potential of eHealth to the benefit of immunisation, providing technical guidance and support to countries to improve the performance and monitoring of vaccination programmes.	3. Country support to implement electronic Immunisation Information Systems	Cancelled	Reprioritisation to the implementation of the Council recommendation
Sustain and strengthen EU-wide VPD epidemiological and laboratory surveillance as well as infrastructures for monitoring impact and effectiveness of priority vaccines/vaccination programmes.	4. Contribution to Annual Epidemiological Report and to Atlas Surveillance of infectious diseases.	Implemented	
	5. Measles and rubella monthly monitoring.	Implemented	
	6. Hospital-based active surveillance for pertussis, IPD.	Implemented	
	7. EQAs, Twinning exchanges and training to build capacity for lab and molecular surveillance.	Partly implemented	No offer received for EQAs for outsourcing

SPD Objective	Expected outputs 2019	Implemented	Comments
Continue to assess in close collaboration with the Member States most adequate tools and guidance to address the multi-faceted issue of vaccine hesitancy; in addition, effectively support national communications campaigns aimed to increase VCRs	8. Evidence and knowledge on determinants of hesitancy and interventions in response, including in collaboration with the WHO Regional Office for Europe.	Postponed until 2020	Work started on systematic literature review on HPV vaccine-related determinants of hesitancy, but delayed. Expected 2020.
	9. Guidance toolkits for healthcare professionals and immunisation programme managers	Delayed	Kick-off meeting to launch a ToT training programme targeting healthcare professionals on 11–12 April 2019 Proposal for project plan prepared but not agreed yet
	10. Tools to strengthen national communications campaigns.	Cancelled	Other competing priorities (Council recommendations)
	11. European Immunisation Week 2019 activities in close collaboration with WHO Regional Office for Europe.	Implemented	Last week of April: publication of outputs during immunisation week (annual surveillance report on measles and rubella in the EU) + joint statement with WHO
Support the early detection and risk assessment for outbreaks, develop evidence to support the fight against diseases under elimination and eradication (measles, rubella, and polio) and build capacity and skills through training activities	12. Prioritise actions in support of measles and rubella elimination and polio eradication in close collaboration with WHO Regional Office for Europe.	Implemented	Meeting in May of the Regional Certification Committee for Polio. Meeting in June for the regional verification committee for measles elimination.
	13. Support Rapid Risk Assessments and Outbreak Response.	Implemented	RRAs remain ongoing upon requests or internal needs assessed
	14. Training on VPD Core Competences.	Cancelled	Not relevant anymore and therefore no longer needed following discussions at the last NFP meeting
Provide scientific and technical advice to support programmes and activities on vaccination implemented by DG SANTE/ CHAFEA/ DG RESEARCH/EMA and other EU actors and provide timely response to ad hoc requests for scientific advice from Member States.	15. Provide scientific and technical input or participate in key vaccine initiatives led by other EU actors (e.g. joint action on Vaccination, CHAFEA/DG RESEARCH-funded projects)	Implemented	
	16. Provide ad hoc response to unexpected requests for scientific advice from Member States.	Implemented	Provision of replies to 5 Member States during Q1
Develop networks and strategic collaborations with institutional and non-institutional actors (e.g. professional, learned, scientific societies, civil society) to strengthen the role of ECDC in the area of vaccination, and to build alliances for effective advocacy on the value of vaccines	17. Set-up of Technical Advisory Committee on communications and advocacy activities to increase VCR	Implemented	TC meeting took place in February and December
	18. Engage with key stakeholders to improve support for vaccination (e.g. healthcare professional associations)	Implemented	Support by ECDC to kick-off meeting organised by DG SANTE on 4 March Contribution to European Commission led initiative on workers coalition
	MANAGEMENT		
	Strategy 7.1 General Management		
Ensure the seamless management and coordination of ECDC, its' efficacy and efficiency in implement the centre's missions, programme of activities, and internal processes in the most efficient way and foster its performance.	1. New long-term strategy for ECDC as from 2020.	Partly implemented	Presented to MB in March, June and November; adoption expected in March 2020 MB meeting in order to ensure alignment with the recommendations of the MB on the external evaluation.
	2. Implementation of the recommendation from ECDC external evaluation 2013–2017.	Delayed	External evaluation received from contractor. Approval by MB in October 2019 - MB recommendations approved by MB in March 2020. The recommendations will be implemented in 2020.
	3. Further implementation of an organisation-wide Enterprise Architecture framework.	Cancelled	Following ECDC internal reorganisation
	4. Monitor the implementation of the SPD 2019.	Implemented	Review Q1 – Q3, Q4
	5. All processes are simplified to efficiently support ECDC missions.	Partly implemented	Ongoing process – key processes updated for the new organisation

| SPD Objective	Expected outputs 2019	Implemented	Comments
Apply the independence policy in a proportional manner to all meetings organised by ECDC.	6. All Declarations of Interest timely checked, using an electronic submission and storage system.	Implemented *(continuous)*	In routine operation
Ensure seamless communication with the Member States and coordinate the smooth implementation of Governance meetings.	7. Consolidated cooperation with the Member States.	Implemented	Ongoing
	8. AF, MB and CCB meetings smoothly implemented.	Implemented	AF organised in February, May, September, December; MB organised in March, June, November 2019; CCB in September
Strengthen transparency and accessibility to the information generated or held by ECDC in a secured way	9. Enhanced knowledge sharing with decision makers and the general public, compliant with the legal frameworks and rights of third parties (data protection and Regulation 1049/2001).	Implemented	
	10. As part of ECDC Enterprise Architecture approach, operate the Information Architecture domain, coordinating all information management operations and new initiatives under the Information Governance Steering Committee (IGSC).	Implemented	Coordination through meetings of IGSC
	11. Maintenance and improvement of information management policies and internal procedures to enable an efficient and transparent information access and retrieval. Effective operations enabling creation, distribution, retention and/or final disposition of information, in accordance with Council Regulation No 354/83, amended by CR (EU) 2015/496.	Implemented	Review of internal instructional documents structure: draft action plan in progress Document Management System evaluated (action plan approved), and updated to support the new organisation
	12. Continue the implementation of General Data Protection Regulation (GDPR).	Implemented *(continuous)*	
	Strategy 7.2 Collaboration and cooperation		
Invest in maintaining appropriate relationships with the European Parliament, in particular with the Committee for the Environment, Public Health and Food Safety (ENVI).	1. ECDC Director's annual exchange of views with the ENVI Committee of the European Parliament and, upon request, appearance before Parliamentary Committees.	Implemented	Preliminary date for the ECDC Director's annual hearing is 3 December 2019, as communicated by the ENVI Secretariat
	2. Biannual invitation for a delegation from the EP Committee for the Environment, Public Health and Food Safety to visit ECDC	Postponed until 2020	Due to Parliament election, bi-annual visit to ECDC of an ENVI delegation will now take place in the spring of 2020. Preliminary date communicated by the ENVI Secretariat is during the week 6-9 April 2020
	3. Provision of scientific opinions as requested by EP.	Implemented	10 EP questions received and replied to by end of Q3
	4. Information of ECDC activities and of the Centre's disease specific areas in a format useful for making decisions.	Implemented	Invitation to talk on HCAI in January 2019
Invest in maintaining and further enhancing the cooperation with our host country, Sweden, in particular through the designated contact person at the Swedish Ministry for Health and the ECDC liaison.	5. Actions as per the agreement regarding strategic co-operation between ECDC and the Swedish Government, represented by the Ministry of Health and Social Affairs.	Implemented	
	6. Liaison on a regular basis with key persons at the Ministry of Health and Social Affairs (contact person, state secretary, minister).	Implemented	Meeting with new MB alternate for Sweden
	7. Sharing of experiences, evidence and expertise with the Swedish authorities.	Implemented	
Invest in maintaining and further enhancing the cooperation with key stakeholders at the EU level.	8. ECDC participation and interaction in the European Health Forum Gastein.	Implemented	Participation to meeting in October 2019 – organisation of a workshop by ECDC
Further develop seamless, timely and efficient procedures for cooperation with the European Commission, in particular with a view to the practical consequences of Decision 1082/2013/EU.	9. Strategic planning meeting with DG SANTE to align the work.	Implemented	Meeting in January with DG SANTE and in March with other ENVI agencies
	10. Activities of ECDC support and complement the work of DG SANTE and CHAFEA.	Implemented	
Strengthen the existing collaboration with EU agencies through aligned planning, reporting, and monitoring of joint activities.	11. Processes in place to ensure alignment of planning, reporting, and monitoring of joint work.	Implemented	Meeting with EMCDDA

SPD Objective	Expected outputs 2019	Implemented	Comments
	Strategy 7.3. Resources Management		
Ensure efficient budget and financial management.	1. Provide the annual accounts of the Centre.	Implemented	Provisional account 2018 presented to MB in March; annual accounts approved in the June MB meeting
	2. Ensure the preparation of draft, approved and amending budgets.	Implemented	
	3. Perform financial initiation and ex-ante verification and Provide financial advice and support to all Units of the Centre.	Implemented	
Ensure that ECDC has adequate and effective staffing in order to enable ECDC to fulfil its strategic objectives.	4. Increased opportunities for scientific and non-scientific staff to develop and utilise their skills in the most effective ways; increase self-awareness of their roles and responsibilities; (Note: Can be deprioritised in case of emergency).	Implemented	The timely closure of the process on staff appraisal and setting of objectives for 2019 resulted in an early deployment of training courses based on staff needs. By Q3 the trainings requested have been deployed by 87% with a couple of remaining courses/activities to be delivered before the end of the year. New trainings offered for 2019 have been the peer-review course for scientific staff and the ICT procurement programme as well as Manager as mediator. New internal courses designed and deployed in 2019 were Change management, Roles and Tools for PHE manager, New Data Protection Regulation, Extranet training, Epidemic Intelligence tools and networks and training on the new Allegro Mission Module.
	5. 'Field Deployment Support Programme' – supported by external expertise in preparing ECDC staff for field missions and upon return from the deployment.	Postponed until 2020	ECDC is currently looking into possibilities for developing a frame for such support with external providers.
	6. Health and wellbeing support to staff in PHE operations and field deployments in cooperation with the medical and counselling service providers.	Implemented	Support (should there be a need) is available via contracts in place.
Ensure that ECDC has a continuous improvement approach to meet the objectives agreed with its partners and stakeholders	7. Continuous improvement culture based on Lean, Enterprise Architecture, Information management, project management to increase quality outputs, efficiency, free up staff time and improve decision-making.	Partly implemented (continuous)	As part of a new Integrated management Framework initiated in 2019 and expected in 2020
	8. eAdministration programme as a unique continuous improvement frame for all administrative process automation related initiatives in close collaboration with the European Commission.	Implemented	
	9. Operate within ECDC new premises, in a healthy and highly collaborative environment including business continuity and crisis management plans fully operational.	Implemented	Collaborative environment: Building Operational group (BOG) established and kicked off in Q2 to provide consistent solutions across the organisation. Testing of ECDC Business Continuity and Crisis Management plans done in Q2. Simulation exercise in Q4.
Further ensure that ECDC has an efficient management and operating model, and improve performance.	10. Management and operating model that ensure that ECDC's day-to-day activities are aligned with ECDC's strategic priorities through the development of the ECDC Enterprise Architecture.	Cancelled	Due to the reorganisation. Alignment between the strategy and operations will be managed through the roadmap expected in November 2020.
	11. Improved reports on ECDC's annual work programme performance towards its expected results, to allow better support to successful activities and propose redirection of ineffective budget allocations.	Implemented	Monitoring report provided Q1 and Q3; monthly implementation report to DCG
	12. Early strategic assessment of the procurement needs, at planning stage of the Single Programming Document.	Implemented	Done for the detailed planning of SPD 2020; should be done at an earlier stage for the planning 2021
	13.. System of cascading performance indicators starting with KPIs in the Single Programming Document, complemented by more operational indicators at the level of each area of work.	Implemented	Set of RMC indicators discussed for RMC – in operation in January 2020
	Strategy 7.4 Information and Communication Technology		
Enable ECDC operations by maintaining high availability of IT services (dedicated applications, databases, web portal) in regards to enterprise infrastructure services.	1. Maintained and secure infrastructures and applications, hosted as per SLA requirements.	Implemented	The applications and the technical services are currently operated according to the SLA.

SPD Objective	Expected outputs 2019	Implemented	Comments
Develop new systems according to the annual work programme and maintain the existing products for ensuring their reliability, their need to meet evolving business needs and the need to be kept interoperable with other systems overtime.	2. New systems developed as per ICT work plan commitments.	Implemented	Development of new systems as scheduled.
	3. Existing solutions maintained as per ICT work plan commitments (Note: Can be deprioritised in case of emergency).	Implemented	Existing solutions maintained as per ICT work plan commitments. Some risks have been identified and are closely monitored
IT Strategy 2020 (phase 2019) implemented.	4. IT Quality Management aligned with Enterprise Quality Management function.	Implemented	IT Quality Management is aligned with Enterprise Quality Management. Continual service improvement for IT services was defined as part of the new internal procedure on IT Governance. IT contributed to the definition of high-level corporate processes. IT Quality expert facilitated a number of lessons learnt sessions together with the enterprise quality management experts.
	5. Established processes evaluated, measured and improved.	Implemented	Annual Key quality measurement report for 2018 Revised internal procedure on Information security. Performed root-cause analysis for issues. Work instructions for processes related to external services, for Software development - approved.
	6. IT Security function strengthened.	Implemented	IT security function strengthened by updating the out-dated security policies, running ECDC-wide awareness campaigns, performing reviews and risk assessments of all critical assets as well as improving a number of technical security configuration to reinforce cyber-security defence.
	7. Functional Architecture (based on the interaction, insight, support and integration domains) defined.	Implemented	Application map defined according to functional domain. All IT products mapped to the functional domains (insight, interact, integration, support).
IT Target Operating Model (phase 2019) implemented.	8. IT product maintenance activities (in scope) migrated (initiated) to external provider.	Implemented	IT product maintenance activities migrated to external service provider according to the schedule.
	9. ECDC mid-term consultancy approach implemented (Note: Can be deprioritised in case of emergency).	Implemented	Externalisation of IT services implemented in accordance with the plans. Significant reduction in the number of intramural consultants.
New IT trends and technologies identified, assessed, piloted, and implemented.	10. Technology watch reports (Note: Can be deprioritised in case of emergency).	Implemented	Technology watch site continuously maintained and report published in June, topic data science and machine learning platforms.
	11. Cloud services acquired.	Implemented	Cloud services acquired on selected use cases e.g. SaaS for Portal and *Eurosurveillance*. Azure IaaS are used for application monitoring, log analytics and Shiny apps.
Develop a continuous improvement plan for IT according to ECDC expected benefits, capacity and annual work plan.	12. IT continuous quality improvement plan defined for 2019 and actions implemented (Note: Can be deprioritised in case of emergency).	Implemented	ICT Quality improvement project 2018–2019 approved.

Annex 2. Statistics on financial management

Report on budget and financial management of the European Centre for Disease Prevention and Control. For details, see: https://ecdc.europa.eu/en/about-usour-key-documents/financial-documents

Annex 3. Organisational chart
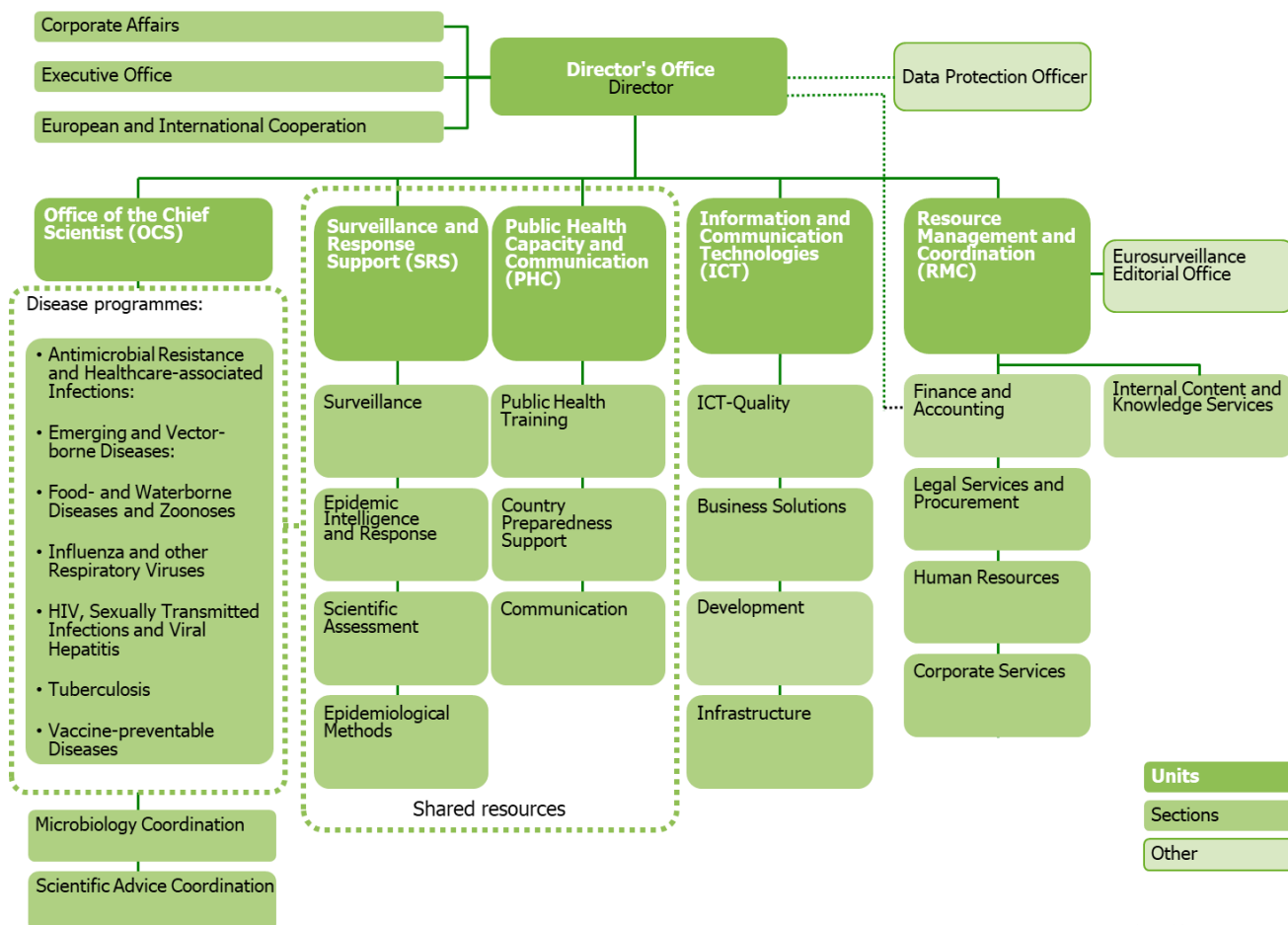
Annex 4. Establishment plan

ECDC establishment table 2019

Category and grade	Establishment plan in voted EU budget 2019	
	Officials	TA
AD 16		
AD 15		1
AD 14		2
AD 13		3
AD 12		7
AD 11		8
AD 10		23
AD 9		24
AD 8		22
AD 7		26
AD 6		10
AD 5		
Total AD		126
AST 11		
AST 10		1
AST 9		2
AST 8		3
AST 7		11
AST 6		10
AST 5		15
AST 4		5
AST 3		5
AST 2		
AST 1		
Total AST		52
AST/SC6		
AST/SC5		
AST/SC4		
AST/SC3		2
AST/SC2		
AST/SC1		
Total AST/SC		2
Total		180

Information on the entry level for each type of post

Key functions (examples)	Type of contract (official, TA or CA)	Function group, grade of recruitment (or bottom of the brackets if published in brackets)	Indication whether the function is dedicated to administration support or policy (operational)
CORE FUNCTIONS			
Head of Department (please identify which level in the structure it corresponds to taking the Director as level 1)	Not applicable		
Head of Unit (please identify which level in the structure it corresponds to taking the Director as level 1)	TA (level 2)	AD 11, AD 12	Operational: Head of Unit
Head of Sector (please identify which level in the structure it corresponds to taking the Director as level 1)	TA (level 3)	AD 8	Operational or Support: Head of Section
Senior Officer	TA	AD 8	Operational: Principal Expert
Officer	TA	AD 5	Operational: Expert
Junior Officer	CA	FG IV	Operational: Scientific Officer
Senior Assistant	Not applicable		
Junior Assistant	Not applicable		
SUPPORT FUNCTIONS			
Head of Administration	TA	AD 11	Support
Head of Human Resources	TA	AD 8	Support
Head of Finance	TA	AD 8	Support (Head of Finance and Accounting)

Key functions (examples)	Type of contract (official, TA or CA)	Function group, grade of recruitment (or bottom of the brackets if published in brackets)	Indication whether the function is dedicated to administration support or policy (operational)
Head of Communication	TA	AD 8	Operational (Health communication is part of the mandate of ECDC)
Head of IT	TA	AD 11	Operational: Head of Unit (ICT is a key function to fulfil the mandate of ECDC, e.g. operating EWRS, TESSy)
Senior officer	TA	AD 5	Support
Officer	TA CA	AST 4 FG IV	Support
Junior officer	CA	FG III	Support
Webmaster – editor	CA	FG IV	Operational (health communication is part of the mandate of ECDC)
Secretary	TA CA	AST/SC 1 FG II	Support
Mail clerk	Not applicable		
SPECIAL FUNCTIONS			
Data Protection officer	TA	AD 8	Support (this is the same post as the Head of the Legal Section)
Accounting officer	TA	AD 8	Support (this is the same post as the Head of Finance)
Internal Auditor	TA	AD 8	Support (Internal Control Coordinator)
Secretary to the Director	TA	AST 4	(Support)

Benchmarking against last year's results

Job type (sub) category	Year N-1 (%)	Year N (%)
Administrative support and coordination	**15.8**	**15.0**
Administrative support	14.0	12.9
Coordination	1.8	2.1
Operational	**77.2**	**77.2**
Top-level operational coordination	3.0	3.6
Programme management and implementation	64.0	63.4
Evaluation and impact assessment	0.0	0.0
General operational	10.2	10.2
Neutral	**7.0**	**7.8**
Finance/control	7.0	7.8
Linguistics	0.0	0.0

Annex 5. Human and financial resources by activity

The activity-based costing (ABC) provides an overview of human and financial resources consumed by activity in 2019.

Strategic activities	FTEs	Admin support	TITLE 1	TITLE 2	TITLE 3	TOTAL CONSUMED
1. Surveillance and epidemic intelligence	**29.85**	**8.29**	**2,462,706**	**653,648**	**1,361,046**	**4,477,400**
1.1 Surveillance	**19.25**	**5.35**	**1,639,052**	**421,526**	**1,258,873**	**3,319,451**
1. Public health surveillance	1.22	0.34	113,211	26,651	304,154	444,016
2. Molecular surveillance	2.55	0.71	195,644	55,832	118,922	370,398
3. Methods to support disease prevention and control	8.24	2.29	613,895	180,440	835,797	1,630,132
4. Management and administrative support	7.24	2.01	716,302	158,603	-	874,904
1.2 Epidemic intelligence	**10.60**	**2.95**	**823,654**	**232,122**	**102,173**	**1,157,949**
1. Epidemic intelligence	10.02	2.78	773,515	219,433	102,173	1,095,122
2. Rapid assessment of public health events	0.58	0.16	50,139	12,689	-	62,827
2. Scientific support (including microbiology)	**14.07**	**3.91**	**1,180,251**	**308,129**	**920,038**	**2,408,418**
2.1 Scientific Advice	**10.52**	**2.92**	**849,698**	**230,318**	**722,930**	**1,802,946**
1. Scientific advice coordination	3.59	1.00	285,691	78,524	689,919	1,054,134
2. Research coordination and studies	0.41	0.11	39,492	8,880	-	48,372
3. Scientific liaison activities	0.42	0.12	35,684	9,130	3,971	48,786
4. Management and administrative support	6.11	1.70	488,832	133,783	29,040	651,654
2.2 Microbiology	**3.55**	**0.99**	**330,553**	**77,812**	**197,108**	**605,472**
1. Microbiology support	3.55	0.99	330,553	77,812	197,108	605,472
3. Preparedness and response	**12.07**	**3.36**	**1,196,218**	**264,400**	**578,914**	**2,039,532**
3.1 EU and country preparedness support	**6.09**	**1.69**	**666,402**	**133,411**	**467,359**	**1,267,172**
1. Country preparedness	3.62	1.01	385,385	79,351	464,969	929,705
3. Management and administrative support	2.47	0.69	281,017	54,061	2,390	337,468
3.2 Response	**5.98**	**1.66**	**529,816**	**130,989**	**111,555**	**772,359**
1. Support to EU outbreaks	1.59	0.44	135,798	34,734	43,455	213,987
2. Emergency operations	2.78	0.77	237,499	60,867	68,100	366,467
3. Management and administrative support	1.62	0.45	156,518	35,388		191,905
4. Training and capacity building	**22.16**	**6.15**	**1,614,317**	**485,252**	**3,781,183**	**5,880,753**
4.1 Training	**14.55**	**4.04**	**1,095,787**	**318,655**	**3,685,605**	**5,100,046**
1. Fellowships EUPHEM -EPIET	9.27	2.57	648,621	203,021	3,269,219	4,120,860
2. Training networks	2.77	0.77	217,301	60,557	321,174	599,032
3. e-learning	1.70	0.47	135,049	37,252	95,212	267,514
4. Management and administrative support	0.53	0.15	68,447	11,599		80,045
5. MediPiet	0.28	0.08	26,369	6,225		32,595
4.2 Coordinated Country support	**0.80**	**0.22**	**82,852**	**17,430**		**100,282**
1. Coordinated Country Support	0.80	0.22	82,852	17,430		100,282
4.3 International Relations	**6.81**	**1.89**	**435,678**	**149,167**	**95,578**	**680,424**
1. Cooperation with the World Health Organisation (WHO)	0.33	0.09	20,057	7,212	1,568	28,837
2. Working with non-EU Countries	3.72	1.03	247,618	81,387	94,010	423,015
3. Management and administrative support	2.77	0.77	168,004	60,568		228,572
5. Communication	**30.13**	**7.29**	**2,115,407**	**659,810**	**393,902**	**3,169,119**
5.1 Health communication	**21.34**	**4.84**	**1,527,824**	**467,332**	**367,491**	**2,362,647**
1. Press, media and Information services	2.46	0.67	182,273	53,921	71,821	308,016
2. Editorial services	4.72	0.96	292,543	103,442	80,911	476,896
3. Web portal and extranets	4.71	1.16	268,258	103,172		371,430
4. Translations	0.13	0.03	121,901	2,785	159,403	284,089
5. Country support on risk communication	0.40	0.11	32,544	8,780		41,324
6. Stakeholders and networking	2.12	0.30	144,299	46,387	55,355	246,041
7. Management and administrative support	5.39	1.45	385,219	118,079		503,298
8. Internal comunication	1.41	0.16	100,788	30,766		131,554
5.2 Eurosurveillance	**8.79**	**2.44**	**587,582**	**192,479**	**26,411**	**806,472**
1. Eurosurveillance	8.50	2.36	549,633	186,176	26,411	762,220
2. Management and administrative support	0.29	0.08	37,949	6,303		44,252
6. Disease programmes	**58.40**	**16.19**	**4,964,718**	**1,278,880**	**7,041,873**	**13,285,472**
6.0 Disease work: Management, coordination and support						
6.1 ARHAI - Antimicrobial resistance and healthcare-associated infections	15.34	4.26	1,358,991	335,990	1,043,290	2,738,271
6.2 EVD - Emerging and vector borne diseases	4.17	1.16	378,348	91,301	600,393	1,070,042
6.3 FWD - Food- and Waterborne Diseases and Zoonoses	9.63	2.68	795,015	210,838	618,858	1,624,711
6.4 HSH - HIV, Sexually Transmitted Infections and viral Hepatitis	9.28	2.57	765,496	203,162	1,007,992	1,976,651
6.5 IRV - Influenza and other Respiratory Viruses	5.29	1.47	462,242	115,927	1,417,475	1,995,644
6.6 TB - Tuberculosis	6.19	1.72	522,646	135,523	638,332	1,296,502
6.7 VPD - Vaccine Preventable Diseases	8.50	2.34	681,980	186,139	1,715,533	2,583,651

	FTE	Col 1	Col 2	Col 3	Total
7. Management	**29.74**	**7,090,634**	**2,707,043**	**5,356,157**	**15,153,833**
7.1 General management	1.58	878,966	200,181	20,409	1,099,556
1. Strategic Advice	1.58	223,441	34,548		257,989
3. Organisation Governance meetings		157,435	165,633	20,409	343,477
4. Management and administrative support		498,090			498,090
7.2 Collaboration and cooperation	0.06	187,416	294,843	57,666	539,926
1. ECDC in the 'family' of European Institutions and Bodies	0.06	139,131	294,843	57,666	491,640
2. Working with the European Union Member States		48,286			48,286
7.3 Resource management	22.10	3,518,619	1,486,352	484,298	5,489,269
1. Human Resources	9.69	909,811	320,149		1,229,960
2. Finance and Accounting		164,068			164,068
3. Legal and procurement	2.72	778,194	91,806		870,000
4. Quality management, project management and planning	0.02	530,265	176,781		707,045
5. Internal Control	0.57	114,289	38,972		153,261
6. Internal and corporate Communication and Knowledge Services	4.28	358,316	561,362	484,298	1,403,976
7. Corporate Services	3.27	652,951	71,704		724,655
8. Management and administrative support	1.55	174,793	61,510		236,303
7.4 ICT	6.00	2,505,633	725,666	4,793,783	8,025,082
1. Software services	0.31	912,540	412,266	2,424,606	3,749,412
2. Hosting, operating, maintenance, administration and security of appl	5.64	938,169	123,549	2,312,097	3,373,814
3. Business support	0.02	100,619	505		101,125
4. Management and administrative support	0.03	554,305	189,346	57,080	800,731
9. Benchmarking	**24.83**	**2,187,992**	**543,765**	.	**2,731,757**
9.0 Neutral category as per Benchmarking Methodology	24.83	2,187,992	543,765		2,731,757
Neutral category as per Benchmarking Methodology	24.83	2,187,992	543,765		2,731,757
4228-1. Human Resources (Benchmarking)	**2.30**	**179,448**	**50,414**		**229,861**
4229-2. Finance and Accounting (Benchmarking)	**14.39**	**1,277,250**	**315,119**		**1,592,369**
4230-3. Legal and procurement (Benchmarking)	**3.38**	**271,826**	**73,927**		**345,753**
4231-4. Internal control, quality management, project management an	**1.91**	**222,512**	**41,861**		**264,373**
4234-7. Corporate Services (Benchmarking)	**1.73**	**157,871**	**37,785**		**195,656**
4235-8. Management and administrative support (Benchmarking)	**1.13**	**79,085**	**24,660**		**103,745**
0. Generic actions	**26.14**	**2,850,282**	**572,358**	.	**3,422,640**
0.0 Generic actions not related to core work	26.14	2,850,282	572,358		3,422,640
	26.14	2,850,282	572,358		3,422,640
3818-ECDC generic activities not related to core work	**26.14**	**2,850,282**	**572,358**		**3,422,640**
10687-Non core and administrative tasks	17.53	1,828,574	383,755		2,212,329
10690-Ad hoc request (not included in Annual Work programme)	4.43	502,584	97,051		599,635
10692-Activity carried over from previous year	1.12	168,456	24,469		192,924
10693-Preparation of activity for next year	0.94	120,181	20,664		140,846
10695-Training for individual professional development	1.48	160,612	32,440		193,052
10697-Contribution to RRA preparation	0.61	66,154	13,251		79,405
10699-Public Health Emergency (PHE)	0.03	3,721	728		4,449
Grand Total	**247.41**	**25,662,525**	**7,473,284**	**19,433,113**	**52,568,922**
Time not worked or not reported	**32.59**	**6,245,641**			**6,245,641**
TOTAL	**280**	**31,908,166**	**7,473,284**	**19,433,113**	**58,814,563** ∗

This line reflects: time underreported by staff, sick leave, medical part-time, part-time work, parental leave.

The Activity Based Costing reflect the structure of the presentation of the Activity based Budget (ABB) in the Single Programming Document. ECDC staff members record their working time per activity in the Human Resources system Allegro, reflected in the first columns (FTEs). The column 'Administrative support' reflects the administrative support for operations, considered as operational work following the benchmarking exercise (Annex 4).

Annex 6. Final annual accounts 2019 of the European Centre for Disease Prevention and Control

See final annual accounts 2019 and report on budget and financial management of the European Centre for Disease Prevention and Control (MB document MB50/xx).

For details, see: https://ecdc.europa.eu/en/about-usour-key-documents/financial-documents.

Annex 7. Additional EU funding: grant, contribution and service-level agreement

REVENUES	General information	Resources	
	Date of signature, duration, counterpart, short description of tasks	Executed budget (2019)	Human resources
Additional EU funding stemming from grants (FFR Art. 7)	DG NEAR Grant Agreement for Pillar Assessed Organisations No 2017/386-267 (ECDC-IPA6 project), signed on 18/08/2017 for 27 months with total budget of 350.000EUR on Preparatory measures for the participation of EU pre-accession countries in the ECDC	202 352.66 EUR	No project staff ECDC staff – 1FTE, CA FGIV
Additional EU funding stemming from Contribution agreements (FFR Art. 7)	Advance Project – IMI Grant	31 536.25 EUR	
Additional EU funding stemming from Service level agreements (FFR Art. 7)	DG NEAR Contribution Agreement No 2019/409-781 (ECDC-IPA6 project) signed on 10/12/2019 with implementation period of 36 months starting 1 January 2020 and total budget of 1milion EUR on Preparatory measures for the participation of Western Balkans and Turkey in ECDC with special focus on One-Health against AMR, 2020 – 2022.[38]	0 EUR	One project staff to be recruited – CA FGIII ECDC staff – 1FTE, CA FGIV
TOTAL		233 88.91 EUR	

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[38] The Centre received on 20 December 2019 a financial contribution of EUR 1 000 000 to finance the implementation of the action 'Preparatory measures for the participation of the Western Balkans and Turkey in the European Centre for Disease Prevention and Control with special focus on One-Health against AMR, 2020 — 2022'. Due to year-end, no budget was executed in 2019 for this grant.

Annex 8. ECDC MB/AF/Coordinating Competent Bodies

Members and Alternates of the ECDC Management Board

Austria	Dr Bernhard Benka	Member
	Nomination pending[39]	Alternate
Belgium	Mr Lieven De Raedt	Member
	Dr Carole Schirvel	Alternate
Bulgaria	Dr Angel Kunchev	Member
	Dr Galin Kamenov	Alternate
Croatia	Dr Bernard Kaić	Member
	Assistant Professor Krunoslav Capak	Alternate
Cyprus	Dr Irene Cotter	Member
	Ms Maroussa Konnari Jeronymides	Alternate
Czechia	Mgr Eva Gottvaldová	Member
	Dr Jozef Dlhý	Alternate
Denmark	Ms Marlene Øhrberg Krag[40]	Member
	Ms Bolette Søborg[41]	Alternate
Estonia	Ms Heli Laarmann	Member
	Ms Merike Jürilo	Alternate
Finland	Dr Anni-Riitta Virolainen-Julkunen	Member
	Dr Taneli Puumalainen	Alternate
France	Professor Geneviève Chêne[42]	Member
	Ms Anne-Catherine Viso	Alternate
Germany	Ms Susanne Wald	Member
	Dr Gesa Lücking	Alternate
Greece	Professor Georgios Saroglou	Member
	Nomination pending	Alternate
Hungary	Ms Ágnes Dánielisz	Member
	Ms Krisztina Biró	Alternate
Ireland	Dr Ronan Glynn	Member
	Mr Daniel Shine	Alternate
Italy	Nomination pending	Member
	Dr Francesco Maraglino	Alternate
Latvia	Ms Jana Feldmane	Member
	Professor Dzintars Mozgis	Alternate
Lithuania	Dr Audrius Ščeponavičius	Member
	Professor Saulius Čaplinskas	Alternate
Luxembourg	Dr Jean-Claude Schmit	Member
	Dr Pierre Weicherding	Alternate
Malta	Dr Patricia Vella Bonanno	Member
	Dr Mariella Borg Buontempo	Alternate
Netherlands	Ms Ciska Scheidel	Member
	Ms Francine L'Ortye[43]	Alternate
Poland	Mr Dariusz Poznański	Member
	Mr Michał Ilnicki	Alternate
Portugal	Dr Maria da Graça Gregorio de Freitas	Member
	Dr Paula Vasconcelos	Alternate
Romania	Dr Amalia Serban	Member
	Dr Adriana Pistol	Alternate
Slovak Republic	Dr Ján Mikas	Member
	Ing Dagmar Nemethova	Alternate
Slovenia	Dr Mojca Gobec	Member
	Ms Maja Sočan	Alternate

[39] Mag Martina Brix Alternate from January to March 2019

[40] Appointed Alternate in replacement of Bolette Søborg as of February 2019

[41] Appointed Alternate as of February 2019

[42] Appointed Member in replacement of Dr Françoise Bourdillon as of December 2019

[43] Appointed Alternate in replacement of Ms Judith Elsinghorst as of November 2019

Spain	Dr Pilar Aparicio Azcárraga[44]	Membe
	Dr Manuel Cuenca Estrella[45]	Alternate
Sweden	Dr Johan Carlson	Member
	Mr Andreas Johansson	Alternate
United Kingdom	Ms Emma Reed	Member
	Dr Morwenna Carrington	Alternate
European Parliament	Ms Zofija Mazej Kukovič	Member
	Ms Maria Eleni Koppa	Member
	Mr Antonio Fernando Correia de Campos	Alternate
European Commission	Mr Martin Seychell	Member
	Mr John F Ryan	Member
	Ms Isabel de la Mata Barranco	Alternate
	Mr Wolfgang Philipp	Alternate
	Ms Barbara Kerstiëns[46]	Member
	Dr Karim Berkouk[47]	Alternate
Iceland (EEA/EFTA)	Nomination pending	Member
	Ms Margrét Björnsdóttir	Alternate
Liechtenstein (EEA/EFTA)	Dr Marina Jamnicki Abegg[48]	Member
Norway (EEA/EFTA)	Dr Karl-Olaf Wathne	Member
	Nomination pending	Alternate

Members and Alternates of the ECDC Advisory Forum

Austria	Professor Dr Petra Apfalter	Member
	Professor Dr Franz Allerberger	Alternate
Belgium	Professor Dr Herman Van Oyen	Member
	Dr Sophie Quoilin	Alternate
Bulgaria	Nomination pending	Member
	Dr Radosveta Filipova	Alternate
Croatia	Dr Sanja Kurečić Filipović	Member
	Dr Aleksandar Šimunović	Alternate
Cyprus	Dr Linos Hadjihannas	Member
	Dr Ioanna Gregoriou	Alternate
Czech Republic	Dr Jan Kynčl	Member
	Dr Kateřina Fabiánová	Alternate
Denmark	Dr Kåre Mølbak	Member
	Dr Tyra Grove Krause	Alternate
Estonia	Dr Kuulo Kutsar[49]	Member
	Dr Natalia Kerbo	Alternate
Finland	Dr Mika Salminen	Member
	Dr Carita Savolainen-Kopra	Alternate
France	Dr Jean-Claude Desenclos	Member
	Dr Bruno Coignard	Alternate
Germany	Dr Osamah Hamouda	Member
	Dr Ole Wichmann[50]	Alternate
Greece	Dr Sotirios Tsiodras	Member
	Nomination pending	Alternate
Hungary	Ms Zsuzsanna Molnár	Member
	Ms Ágnes Hajdu	Alternate
Ireland	Dr Kevin Kelleher	Member

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[44] Appointed Member in replacement of Dr Elena Andradas Aragones as of April 2019

[45] Appointed Alternate in replacement of Dr Maria Araceli Arce Arnáez as of April 2019

[46] Appointed Member in replacement of Mr Cornelius Schmaltz as of June 2019

[47] Appointed Alternate as of June 2019

[48] Member from January to October 2019

[49] Member from January to February 2019, nomination pending

[50] Appointed Alternate as of May 2019

	Dr Derval Igoe	Alternate
Italy	Dr Silvia Declich	Member
	Dr Giuseppe Ippolito	Alternate
Latvia	Dr Jurijs Perevoščikovs	Member
	Nomination pending	Alternate
Lithuania	Dr Loreta Ašoklienė	Member
	Ms Nerija Kuprevičienė	Alternate
Luxembourg	Dr Isabel De La Fuente Garcia	Member
	Professor Friedrich Muehlschlegel	Alternate
Malta	Dr Charmaine Gauci	Member
	Dr Tanya Melillo Fenech	Alternate
Netherlands	Prof Dr Jaap van Dissel	Member
	Dr Susan van den Hof	Alternate
Poland	Dr Malgorzata Sadkowska-Todys	Member
	Dr Magdalena Rosińska	Alternate
Portugal	Mr Carlos Matias Dias	Member
	Dr Ana Maria Correia	Alternate
Romania	Dr Florin Popovici	Member
	Dr Cristian Gheorghe Cristian Gheorghe	Alternate
Slovak Republic	Dr Mária Avdičová	Member
	Professor Henrieta Hudečková	Alternate
Slovenia	Dr Irena Klavs	Member
	Dr Marta Grgič-Vitek	Alternate
Spain	Dr Fernando Simón	Member
	Dr Marina Pollan Santamaria[51]	Alternate
Sweden	Dr Anders Tegnell	Member
	Dr Birgitta Lesko	Alternate
United Kingdom	Dr Paul Cosford	Member
	Professor John Watson	Alternate

Observers

Albania (Candidate Country)	*Pending nomination*	
Iceland (EEA/EFTA)	Dr Thorolfur Gudnason	Member
	Dr Guðrún Sigmundsdóttir	Alternate
Liechtenstein (EEA/EFTA)	Dr Marina Jamnicki Abegg[52]	Member
Montenegro (candidate country)	Dr Zoran Vratnica	Observer
Norway (EEA/EFTA)	Dr Frode Forland	Member
	Dr Line Vold	Alternate
Serbia (candidate country)	*Nomination pending*	
The former Yugoslav Republic of Macedonia (candidate country)	Nomination pending	
Turkey (candidate country)	Professor Mustafa Gokhan Gozel[53]	Observer
European Commission	Dr Frank Van Loock	Observer
WHO Regional Office for Europe	Dr Nedret Emiroglou	Observer

Non-governmental organisations

European Institute of Women's Health	Mr Rebecca Moore	Member
European Public Health Association	Dr Aura Timen	Member
Steering Committee AIDS Action Europe	Mr Aigars Ceplitis	Alternate
European Association of Hospital Pharmacists	Ms Inese Sviestina	Alternate

[51] Appointed Alternate as of April 2019 in replacement of Dr Isabel Noguer

[52] Member from January to October 2019, nomination pending

[53] Appointed Observer in replacement of MD Gamze Aktuna as of February 2019

ECDC Coordinating Competent Bodies

In 2010, ECDC decided to strengthen and simplify its way of working with the Member States. A new process has been introduced in 2011 with the nomination of one national Coordinating Competent Body (CCB) in each of the EU/EEA Member State.

Austria	**Federal Ministry of Health** Radetzkystrasse 2 1031 Vienna http://www.bmg.gv.at +431711004637
Belgium	**Sciensano** Rue Juliette Wytsman 14 1050 Brussels https://www.sciensano.be/en +3226425111
Bulgaria	**National Center of Infectious and Parasitic Diseases** Yanko Sakazov Blvd. 26 1504 Sofia http://www.ncipd.org +35929442875
Croatia	**Croatian Institute of Public Health** Rockefellerova 7 10000 Zagreb http://www.hzjz.hr +38514683010
Cyprus	**Ministry of Health** Directorate Medical and Public Health Services 1 Prodromou 1449 Nicosia http://www.moh.gov.cy +35722605650
Czechia	**National Institute of Public Health** Šrobárova 48 10042 Prague 10 http://www.szu.cz +420267082295
Denmark	**Danish Health Authority** Axel Heides Gade 1 2300 Copenhagen http://sundhedsstyrelsen.dk +4572227400
Estonia	**Health Board** Tartu road 85 10115 Tallinn http://www.terviseamet.ee +3726943500
Finland	**National Institute for Health and Welfare** Mannerheimintie 166 00271 Helsinki http://www.thl.fi +358295246000
France	**French Public Health Agency** 12 rue du Val d'Osne 94415 Saint-Maurice http://www.santepubliquefrance.fr +33141796700
Germany	**Robert Koch Institute** Nordufer 20 13353 Berlin http://www.rki.de +4930187540
Greece	**National Public Health Organization** Agrafon Street 3-5 15123 Marousi https://eody.gov.gr/eody/ +302105212000
Hungary	**National Public Health Center** Albert Flórián út 2-6 1097 Budapest http://www.kormany.hu/en/ministry-of-human-resources +3614761279
Iceland	**Centre of Health Security and Communicable Disease Prevention** Austurströnd 5 170 Seltjarnarnes http://www.landlaeknir.is +3545101900

Ireland	**Health Protection Surveillance Centre** 25-27 Middle Gardiner Street Dublin http://www.hpsc.ie +35318765300
Italy	**Ministry of Health** Via Giorgio Ribotta 5 00144 Rome http://www.salute.gov.it +390659946115
Latvia	**Centre for Disease Prevention and Control** Duntes 22 1005 Riga http://spkc.gov.lv +37167501590
Liechtenstein	**Principality of Liechtenstein** Äulestrasse 51 9490 Vaduz http://www.ag.llv.li +4232367334
Lithuania	**Ministry of Health** Vilniaus 33 01506 Vilnius http://www.sam.lt +37052661466
Luxembourg	**Health Directorate** Ministry of Health 20, Rue De Bitbourg 1273 Luxembourg http://www.ms.public.lu +35224785550
Malta	**Superintendence of Public Health** Ministry for Energy and Health St Luke's Hospital, Pjazza San Luqa MRS9010 Pieta https://deputyprimeminister.gov.mt/en/sph/Pages/Superintendence-of-Public-Health.aspx +35623266109
Netherlands	**National Institute for Public Health and the Environment** Antonie van Leeuwenhoeklaan 9 3720 BA Bilthoven http://www.rivm.nl +31302742767
Norway	**National Institute of Public Health** PO BOX 4404 Nydalen 0403 Oslo http://www.fhi.no +4721077000
Poland	**National Institute of Public Health – National Institute of Hygiene** 24 Chocimska Street 00791 Warsaw http://www.pzh.gov.pl +48228497612
Portugal	**Directorate-General of Health** Ministry of Health Alameda D. Afonso Henriques 45 1049-005 Lisbon www.dgs.pt +351218430500
Romania	**National Institute of Public Health** Dr Leonte Anastasievici 1-3, Sector 5 050463 Bucharest http://www.insp.gov.ro/ +40213183612
Slovak Republic	**Public Health Authority of the Slovak Republic** Trnavská cesta 52 82645 Bratislava http://www.uvzsr.sk +421244372906
Slovenia	**National Institute of Public Health** Trubarjeva cesta 2 1000 Ljubljana http://www.nijz.si +38612441400
Spain	**Ministry of Health, Social Services and Equality** Paseo del Prado 18–20, 7 planta 28071 Madrid http://www.msssi.es +34915962062

Sweden	**Public Health Agency of Sweden** Nobels väg 18 17182 Solna http://folkhalsomyndigheten.se/ +46102052000
United Kingdom	**Public Health England** Colindale Avenue 61 NW95EQ London https://www.gov.uk/government/organisations/public-health-england +442082004400

Annex 9. ECDC outputs published in 2019

Risk assessments

February

Rapid risk assessment: Ebola virus disease outbreak in North Kivu and Ituri Provinces, Democratic Republic of the Congo – third update

March

Rapid outbreak assessment: Multi-country outbreak of Salmonella Poona infections linked to consumption of infant formula

Rapid risk assessment: Outbreak of VIM-producing carbapenem-resistant Pseudomonas aeruginosa linked to medical tourism to Mexico

Rapid risk assessment: Rift Valley fever outbreak in Mayotte, France

April

Rapid risk assessment: Ebola virus disease outbreak in North Kivu and Ituri Provinces, Democratic Republic of the Congo – fourth update

Rapid Risk Assessment: Cyclone Idai – risk of communicable diseases in southern Africa

Zika virus transmission worldwide

May

Risk assessment: Who is at risk of measles in the EU/EEA?

June

Rapid risk assessment: Regional outbreak of New Delhi metallo-betalactamase-producing carbapenem-resistant Enterobacteriaceae, Italy, 2018–2019

Multi-country outbreak of Listeria monocytogenes clonal complex 8 infections linked to consumption of cold-smoked fish products

Rapid risk assessment: Chlamydia trachomatis false-negative test results by Aptima Combo 2 CT/NG assay (Hologic) in the EU/EEA, 2019

Rapid risk assessment: Dengue outbreak in Réunion, France, and associated risk of autochthonous outbreak in the EU/EEA

July

Rapid risk assessment: Public health risks related to communicable diseases during the hajj 2019, Saudi Arabia, 9–14 August 2019

Rapid risk assessment: Ebola virus disease outbreak in North Kivu and Ituri Provinces, Democratic Republic of the Congo – fifth update

August

Rapid risk assessment: Ebola virus disease outbreak in North Kivu and Ituri Provinces, Democratic Republic of the Congo – sixth update

September

Carbapenem resistant Enterobacteriaceae – second update

October

Rapid risk assessment: Autochthonous cases of dengue in Spain and France

Rapid risk assessment: Zika virus disease in Var department, France

Outbreak of carbapenemase-producing (NDM-1 and OXA-48) and colistin-resistant Klebsiella pneumoniae ST307, north-east Germany, 2019

November

Rapid risk assessment – Sexual transmission of dengue in Spain

Rapid outbreak assessment: Multi-country outbreak of Listeria monocytogenes sequence type 6 infections linked to ready-to-eat meat products

Rapid risk assessment: Cases of Lassa fever in the Netherlands ex Sierra Leone

December

Rapid risk assessment: Outbreak of carbapenemase-producing Enterobacterales in Lithuania, 2019

Technical reports

January

Expert consensus protocol on colistin resistance detection and characterisation for the survey of carbapenem- and/or colistin-resistant Enterobacteriaceae

Expert consensus protocol on carbapenem resistance detection and characterisation for the survey of carbapenem- and/or colistin-resistant Enterobacteriaceae

External quality assessment for the detection of Bordetella pertussis by PCR, 2018

Point prevalence survey of healthcare-associated infections and antimicrobial use in European acute care hospitals – ECDC PPS validation protocol version 3.1.2.

February

Eighth external quality assessment scheme for typing of Shiga toxin-producing Escherichia coli

Laboratory manual for carbapenem and colistin resistance detection and characterisation for the survey of carbapenem- and/or colistin-resistant Enterobacteriaceae

European external quality assessment programme for influenza virus 2018

Continuum of HIV care – Monitoring implementation of the Dublin Declaration – 2018 progress report

March

Operational tool on rapid risk assessment methodology – ECDC 2019

April

ECDC strategic framework for the integration of molecular and genomic typing into European surveillance and multi-country outbreak investigations

May

Collection and analysis of whole genome sequencing data from food-borne pathogens and other relevant microorganisms isolated from human, animal, food, feed and food/feed environmental samples in the joint ECDC–EFSA molecular typing database

Third external quality assessment on species identification and antimicrobial susceptibility testing of Campylobacter, 2017

Proficiency test for Listeria monocytogenes whole genome assembly 2018

July

Syphilis and congenital syphilis in Europe – A review of epidemiological trends (2007–2018) and options for response

Investigation and public health management of people with possible Ebola virus disease infection

The use of evidence in decision-making during public health emergencies

August

Sixth external quality assessment scheme for Listeria monocytogenes typing

EMIS-2017 – The European Men-Who-Have-Sex-With-Men Internet Survey

September

Euro-GASP external quality assessment scheme for Neisseria gonorrhoeae antimicrobial susceptibility testing

Developing a national strategy for the prevention and control of sexually transmitted infections

Options for national testing and surveillance for hepatitis E virus in the EU/EEA – Operational guidance

October

Response plan to control and manage the threat of multi- and extensively drug-resistant gonorrhoea in Europe

HIV and people who inject drugs – Monitoring implementation of the Dublin Declaration on partnership to fight HIV/AIDS in Europe and Central Asia: 2018 progress report

Managing heterogeneity when pooling data from different surveillance systems

Health emergency preparedness for imported cases of high-consequence infectious diseases

November

A spatial modelling method for vector surveillance

Survey of healthcare workers' knowledge, attitudes and behaviours on antibiotics, antibiotic use and antibiotic resistance in the EU/EEA

Community and institutional public health emergency preparedness synergies – enablers and barriers

Community engagement and institutional collaboration during outbreaks of Shiga toxin/verocytotoxin-producing Escherichia coli in Ireland

Community engagement and institutional collaboration in Iceland during a norovirus outbreak at an outdoor/scout centre (10–15 August 2017)

Influenza communication guide: How to increase influenza vaccination uptake and promote preventive measures to limit its spread

External quality assessment of laboratory performance – European Antimicrobial Resistance Surveillance Network (EARS-Net), 2018

HIV testing, Monitoring implementation of the Dublin Declaration on partnership to fight HIV/AIDS in Europe and Central Asia: 2018 progress report

ECDC Evidence Brief: Pre-exposure prophylaxis for HIV prevention in Europe and Central Asia

December

European surveillance of Clostridioides (Clostridium) difficile infections – surveillance protocol version 2.4

Surveillance reports

February

Gonococcal antimicrobial susceptibility surveillance in Europe, 2017

The European Union summary report on antimicrobial resistance in zoonotic and indicator bacteria from humans, animals and food in 2016

March

Tuberculosis surveillance and monitoring in Europe, 2019

Surveillance report: Avian influenza overview November 2018 – February 2019

May

Developing a reporting system for the surveillance of HIV drug resistance in Europe

August

Avian influenza overview February – August 2019

November

Surveillance of antimicrobial resistance in Europe 2018

HIV/AIDS surveillance in Europe 2019 – 2018 data

December

The European Union One Health 2018 Zoonoses Report

Regional situation assessment – Seasonal influenza, 2019–2020

Surveillance report: Avian influenza overview August – November 2019

Mission reports

January

ECDC country visit to Norway to discuss antimicrobial resistance issues

September

Country visit to Estonia to discuss policies relating to antimicrobial resistance

Corporate publications

January

Single programming document 2019–2021

March

Continuous professional development training activities – Course listing 2019

E-learning courses and training materials 2019

June

Final Annual Accounts 2018

Annual Report of the Director – 2018

Code of conduct of the Management Board

July

Call for application for fellows in the ECDC Fellowship Programme EPIET and EUPHEM paths, EU-track (ECDC/Cohort 2020 (2020–2022) EPIET/EUPHEM)

ECDC Fellowship Programme Manual – Cohort 2020

August

Achievements, challenges and major outputs 2018: Highlights from the Annual Report of the Director

November

Annual Budget 2019 — Amending budget No 1

Annual Budget 2018 — Amending budget No 2

Annual Budget 2018 — Amending budget No 1

December

Financial Regulation of the ECDC, adopted in 2019

Regular publications

Influenza virus characterisation, summary Europe

Measles and rubella monitoring

Communicable disease threats report

Annual Epidemiological Report series on communicable diseases in Europe

New chapters are published as they become available.

January

Zoonotic influenza – Annual Epidemiological Report for 2017

Hepatitis A – Annual Epidemiological Report for 2016

Legionnaires' disease – Annual Epidemiological Report for 2017

Cholera – Annual Epidemiological Report for 2017

Congenital syphilis – Annual Epidemiological Report for 2017

Q fever – Annual Epidemiological Report for 2016

Chlamydia infection – Annual Epidemiological Report for 2017

February

HIV infection and AIDS – Annual Epidemiological Report for 2017

Rabies – Annual Epidemiological Report for 2017

Rift Valley fever – Annual Epidemiological Report for 2017

Trichinellosis – Annual Epidemiological Report for 2017

Trichinellosis – Annual Epidemiological Report for 2016

Plague – Annual Epidemiological Report for 2017

Crimean-Congo haemorrhagic fever (CCHF) – Annual Epidemiological Report for 2017

Malaria – Annual Epidemiological Report for 2016

March

West Nile virus infection – Annual Epidemiological Report for 2016

Creutzfeldt−Jakob disease – Annual Epidemiological Report for 2016

Salmonellosis – Annual Epidemiological Report for 2016

Lymphogranuloma venereum – Annual Epidemiological Report for 2017

Hepatitis C – Annual Epidemiological Report for 2017

April

Chikungunya virus disease – Annual Epidemiological Report for 2017

Shiga toxin/verocytotoxin-producing Escherichia coli (STEC/VTEC) infection – Annual Epidemiological Report for 2017

Campylobacteriosis – Annual Epidemiological Report for 2017

Dengue – Annual Epidemiological Report for 2017

Pertussis – Annual Epidemiological Report for 2017

Haemophilus influenzae – Annual Epidemiological Report for 2017

Invasive meningococcal disease – Annual Epidemiological Report for 2017

Gonorrhoea – Annual Epidemiological Report for 2017

May

Zoonotic influenza – Annual Epidemiological Report for 2018

Poliomyelitis – Annual Epidemiological Report for 2017

Invasive pneumococcal disease – Annual Epidemiological Report for 2017

June

Yellow fever – Annual Epidemiological Report for 2017

West Nile virus infection – Annual Epidemiological Report for 2017

Q fever – Annual Epidemiological Report for 2017

Lassa fever – Annual Epidemiological Report for 2017

Giardiasis (lambliasis) – Annual Epidemiological Report for 2017

Smallpox – Annual Epidemiological Report for 2017

Hepatitis B – Annual Epidemiological Report for 2017

Congenital toxoplasmosis – Annual Epidemiological Report for 2016

Brucellosis – Annual Epidemiological Report for 2017

Diphtheria – Annual Epidemiological Report for 2017

July

Syphilis – Annual Epidemiological Report for 2017

Tularaemia – Annual Epidemiological Report for 2017

Hantavirus infection – Annual Epidemiological Report for 2017

Ebola and Marburg fevers – Annual Epidemiological Report for 2017

Malaria – Annual Epidemiological Report for 2017

Tick-borne encephalitis – Annual Epidemiological Report for 2017

Zika virus disease – Annual Epidemiological Report for 2017

October

Cryptosporidiosis – Annual Epidemiological Report for 2017

Healthcare-associated infections in intensive care units – Annual Epidemiological Report for 2017

Healthcare-associated infections: surgical site infections – Annual Epidemiological Report for 2017

Seasonal influenza, Annual Epidemiological Report for 2018–2019

November

Yersiniosis – Annual Epidemiological Report for 2018

Congenital toxoplasmosis – Annual Epidemiological Report for 2017

Rabies – Annual Epidemiological Report for 2018

Tularaemia Annual Epidemiological Report for 2018

Smallpox – Annual Epidemiological Report for 2018

Antimicrobial consumption – Annual Epidemiological Report for 2018

December

Ebola and Marburg fevers – Annual Epidemiological Report for 2018

West Nile virus infection – Annual Epidemiological Report for 2018

Dengue – Annual Epidemiological Report for 2018

Chikungunya virus disease – Annual Epidemiological Report for 2018

Zika virus disease – Annual Epidemiological Report for 2018

Tick-borne encephalitis – Annual Epidemiological Report for 2018

Rift Valley fever – Annual Epidemiological Report for 2018

Q fever – Annual Epidemiological Report for 2018

Plague – Annual Epidemiological Report for 2018

Cholera – Annual Epidemiological Report for 2018

Crimean-Congo haemorrhagic fever (CCHF) – Annual Epidemiological Report for 2018

Annex 10. Exceptional negotiated procedures conducted in 2019

Reference	Title	Type of procedure: Art. 11.1.of the Financial Regulation	Amount	Contractor	Contract reference
NP/2019/ICT/11128	Telecommunication Services	Art. 11.1.(a) of the Financial Regulation	SEK 4 500 000	Tele2 Sverige	ECDC/2019/044

Annex 11. Environmental management

ECDC measures to ensure cost-effective and environment-friendly working place

ECDC premises have been environmentally certified as a 'Green building' since 2018. The ECDC building is currently being assessed to receive the environmental certification 'BREEAM Very Good in use' in 2019. Building Research Establishment Environmental Assessment Method (BREEAM) is the world's leading sustainability assessment method for master planning projects, infrastructure and buildings. In the new building, where ECDC moved in May 2018 the total electricity consumption is significantly lower than in the previous facilities.

In 2019, ECDC started performing an environmental assessment as an introduction before implementation of an Environmental Management System based on the European Management Audit Scheme (EMAS). ECDC is thus placing considerable emphasis on its environmental performance and on identifying areas of improvement.

ECDC measures to reduce the environmental impact of its operations

100% of the ECDC electricity is provided by hydro powered energy. The ECDC premises are equipped with energy-efficient glass windows optimising daylight admission and reducing solar heat. Light sources are mostly of LED with occupancy sensors and daylight control systems. Since 2016, ECDC has reduced its electricity consumption by 70%.

In August 2019, ECDC introduced a new recycling system with separation of waste into paper, plastic, glass, organic, metal, e-waste, toners, light & bulbs, batteries, corrugated cardboard and boxes.

To reduce environmental impact of the transport, ECDC encourages its staff to use sustainable ways of commuting by providing facilities for bicycles and offering very good connections by public transport. Moreover, videoconferencing is encouraged as a way to limit the environmental impact of missions.

In addition, ECDC requests from some of its suppliers to provide environmental friendly documentation and purchases eco-labelled products (such as stationery and cleaning detergents).

ECDC has pursued a paperless approach through the implementation of its e-administration long-term programme. Together with the implementation of a different approach to printing, ECDC has since 2015, reduced by more than 37% the number of pages printed, which is over 1.5 million sheets, and 55% less energy for printing (the equivalent of 120kg of CO_2 each year. Additionally, digitalisation of various ECDC publications has contributed significantly to reduction in paper use, and since 2011, the number of printed copied of ECDC publications was reduced by is published online, which reduced printing by 90%.

ECDC plans environmental objectives

As an agency of the European Union, ECDC recognises its responsibility towards the environment and the importance of implementation of measures to control and lower the environmental impact of its operations. In 2020, ECDC aims at having an Environmental Management System introduced, and being registered in EMAS (after finalising the second phase of the project). Furthermore, the agency plans to pursue with its efforts towards a more environmentally friendly profile, focusing on selected areas of further improvement.

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